Official Catalogue

OF THE

U.S. INTERNATIONAL EXHIBITION

1876.

REVISED EDITION
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"STAR" ALPACA BRAIDS.

S. B. & M. FLEISHER,
MANUFACTURERS, PHILADELPHIA.

WHY ARE THEY THE BEST?

ANSWER.

As a strong and conclusive evidence of the superior quality of the "STAR" ALPACA BRAIDS, is the preference that is given them over all competitive makes.

Having been subjected to rigid tests for the past ten years, and wherever introduced, they at once became the desired article.

They are made of the very best materials, with the greatest care and efficient workmanship, and upon the most improved machinery.

With these appliances, and a determination to go ahead, the manufacturers have made the "STAR" Alpaca Braids the most popular Braid of the country.

First Prize, Silver Medal, Franklin Institute, Philada., 1874.
First Prize, Silver Medal, Maryland Institute, Baltimore, 1874.
First Prize, Silver Medal, Industrial Exposition, Cinn., 1875.

For Sewing Machines and Hand Sewing

USE

CLARK'S
O.N.T.
TRADE
MARK
SPOOL COTTON.

(WOUND ON WHITE SPOOLS.)

GEORGE A. CLARK, Sole Agent.

IT IS

The Best and Most Popular Thread of the age.

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South of East End of Machinery Hall.

Advertisements taken at this office for the Official Catalogue and all newspapers of the United States and Canadas. The principal papers of the country kept on file for inspection and use of exhibitors and visitors generally.
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1876
Official Catalogue.

COMPLETE IN ONE VOLUME.

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II. DEPARTMENT OF ART.
III. DEPARTMENT OF MACHINERY.
IV. DEPARTMENTS OF AGRICULTURE AND HORTICULTURE.

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INTERNATIONAL EXHIBITION.
1876
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PART I.
MAIN BUILDING AND ANNEXES.

DEPARTMENT I.—MINING AND METALLURGY.
DEPARTMENT II.—MANUFACTURES.
DEPARTMENT III.—EDUCATION AND SCIENCE.

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</table>

* Entire Exhibit in Agricultural Hall.
† For Spanish Educational Exhibit see Part III., p. 132.
The International Exhibition of 1876.

The Congress of the United States, by an act approved March 3d, 1871, provided that the centennial anniversary of the promulgation of the Declaration of American Independence in Philadelphia should be celebrated in that city "by holding an International Exhibition of Arts, Manufactures, and Products of the Soil and Mine." The preparation of the Exhibition was, by the act, confided to the United States Centennial Commission, composed of a commissioner and alternate commissioner nominated by the governor of each State and Territory, and confirmed by the President of the United States. A subsequent act, approved June 1st, 1872, created the Centennial Board of Finance, charged with the financial conduct of the Exhibition.

A proclamation by the President of the United States, dated July 3d, 1873, announced the International Exhibition, and commended it to all nations. An act of Congress, approved June 5th, 1874, requested the President, in the name of the United States, to invite the governments of foreign nations to participate in the Exhibition. The invitation thus extended was accepted by the governments of Argentina, Brazil, Canada, Chili, China, Denmark, Egypt, France, with Algeria, Germany, Great Britain, with colonies.

The Centennial Commission provided for the classification of the objects to be exhibited in seven departments, which were referred to five exhibition buildings in this manner:

<table>
<thead>
<tr>
<th>DEPARTMENT</th>
<th>BUILDINGS</th>
<th>ACRES COVERED</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Mining and Metallurgy,</td>
<td>Main Building,</td>
<td>21.47</td>
</tr>
<tr>
<td>II. Manufactures</td>
<td>Art Gallery</td>
<td>1.5</td>
</tr>
<tr>
<td>III. Education and Science</td>
<td>Machinery Building,</td>
<td>1.4</td>
</tr>
<tr>
<td>IV. Art</td>
<td>Agricultural Building,</td>
<td>1.0</td>
</tr>
<tr>
<td>V. Machinery</td>
<td>Horticultural Building,</td>
<td>1.5</td>
</tr>
<tr>
<td>VI. Agriculture</td>
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<tr>
<td>VII. Horticulture</td>
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<tr>
<td></td>
<td>Total</td>
<td>48.47</td>
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The applications for exhibiting space, however, both at home and from abroad, so exceeded the calculations that had been made as to necessitate the erection of annexes supplementing the capacity of each of these buildings. Enumerations of these additional structures will be found on subsequent pages. The classes of objects grouped in the several departments are indicated in the following synopsis of the classification of the Exhibition.
<table>
<thead>
<tr>
<th>LOCATION</th>
<th>DEPARTMENTS</th>
<th>CLASSES</th>
<th>GROUPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Mining and Metallurgy</td>
<td>100–109</td>
<td>Minerals, Ores, Stone, Mining Products.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>110–119</td>
<td>Metallurgical Products.</td>
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<tr>
<td></td>
<td>120–129</td>
<td>Mining Engineering.</td>
<td></td>
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<tr>
<td></td>
<td>200–205</td>
<td>Chemical Manufactures.</td>
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<tr>
<td></td>
<td>206–216</td>
<td>Ceramics, Pottery, Porcelain, Glass, etc.</td>
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<td></td>
<td>217–227</td>
<td>Furniture, etc.</td>
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<tr>
<td></td>
<td>228–234</td>
<td>Yarns and Woven Goods of Vegetable or Metal Materials.</td>
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<tr>
<td></td>
<td>235–241</td>
<td>Woven and Felted Goods of Wool, etc.</td>
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<tr>
<td></td>
<td>242–249</td>
<td>Silk and Silk Fabrics.</td>
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<td></td>
<td>250–257</td>
<td>Clothing, Jewelry, etc.</td>
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<td>265–271</td>
<td>Weapons, etc.</td>
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<td>272–279</td>
<td>Medicine, Surgery, Prothesis.</td>
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<tr>
<td></td>
<td>280–284</td>
<td>Hardware, Edge Tools, Cutlery, and Metallic Products.</td>
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<tr>
<td></td>
<td>292–296</td>
<td>Carriages, Vehicles, and Accessories.</td>
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<td></td>
<td>300–309</td>
<td>Educational Systems, Methods, and Libraries.</td>
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<td></td>
<td>310–319</td>
<td>Institutions and Organizations.</td>
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<td></td>
<td>330–339</td>
<td>Engineering, Architecture, Maps, etc.</td>
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<tr>
<td></td>
<td>340–349</td>
<td>Physical, Social, and Moral Condition of Man.</td>
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<tr>
<td>II. Manufactures. Main Building.</td>
<td>400–409</td>
<td>Sculpture.</td>
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<tr>
<td></td>
<td>410–419</td>
<td>Painting.</td>
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<td>420–429</td>
<td>Engraving and Lithography.</td>
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<td>430–439</td>
<td>Photography.</td>
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<td></td>
<td>440–449</td>
<td>Industrial and Architectural Designs, etc.</td>
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<td></td>
<td>450–459</td>
<td>Ceramic Decorations, Mosaics, etc.</td>
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<tr>
<td>III. Education and Science</td>
<td>500–509</td>
<td>Machines, Tools, etc., of Mining, Chemistry, etc.</td>
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<tr>
<td></td>
<td>520–529</td>
<td>Machines and Implements of Spinning, Weaving, etc.</td>
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<td>530–539</td>
<td>Machines, etc., used in Sewing, Making Clothing, etc.</td>
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<tr>
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<td>540–549</td>
<td>Machines for Printing, Making Books, Paper Working, etc.</td>
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<td>550–559</td>
<td>Motors, Power Generators, etc.</td>
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<td>560–569</td>
<td>Hydraulic and Pneumatic Apparatus.</td>
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<td>570–579</td>
<td>Railway Plant, Rolling Stock, etc.</td>
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<td></td>
<td>580–589</td>
<td>Machinery used in Preparing Agricultural Products.</td>
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<td>590–599</td>
<td>Aerial, Pneumatic, and Water Transportation.</td>
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<tr>
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<td></td>
<td>Machinery, and Apparatus, especially adapted to the requirements of the Exhibition.</td>
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<tr>
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<td>610–619</td>
<td>Pomology.</td>
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<td>620–629</td>
<td>Agricultural Products.</td>
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<td>630–639</td>
<td>Land Animals.</td>
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<td>640–649</td>
<td>Marine Animals, Fish Culture, and Apparatus.</td>
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<td>650–662</td>
<td>Animal and Vegetable Products.</td>
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<td>665–669</td>
<td>Textile Substances of Vegetable or Animal origin.</td>
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<tr>
<td></td>
<td>670–679</td>
<td>Machines, Implements, and Processes of Manufacture.</td>
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<td>680–689</td>
<td>Agricultural Engineering and Administration.</td>
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<td>690–699</td>
<td>Tillage and General Management.</td>
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<td>710–719</td>
<td>Hot Houses, Conservatories, Grapers.</td>
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<tr>
<td></td>
<td>730–739</td>
<td>Garden Designing, Construction, and Management.</td>
<td></td>
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</tbody>
</table>
The full text of the classification of the several Departments will be found at the commencement of the enumeration of objects shown in each. The distribution of the departments and buildings through the four volumes of the catalogue, is as follows:


VOLUME II.—DEPARTMENT IV. Art. Memorial Hall and Annexes.


VOLUME IV.—DEPARTMENT VI. Agriculture; VII. Horticulture. Agricultural and Horticultural Buildings and Annexes, Alphabetical Index of Exhibitors, Commissioners, Judges, etc.

UNITED STATES CENTENNIAL COMMISSION

<table>
<thead>
<tr>
<th>STATES AND TERRITORIES</th>
<th>COMMISSIONERS</th>
<th>ALTERNATES</th>
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<tbody>
<tr>
<td>Alabama,</td>
<td>Richard M. Nelson, Selma,</td>
<td>James L. Cooper, Huntsville</td>
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<tr>
<td>Arizona,</td>
<td>Richard C. McCormick, Wash'n, D. C.</td>
<td>John Wasson, Tucson</td>
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<tr>
<td>Arkansas,</td>
<td>George W. Lawrence, Hot Springs,</td>
<td>G. C. Dodge, Little Rock</td>
</tr>
<tr>
<td>California,</td>
<td>J. Dunbar Creigh, San Francisco,</td>
<td>Benjamin P. Kooser, Santa Cruz</td>
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<td>Colorado,</td>
<td>J. Marshall Paul, Fair Play,</td>
<td>N. C. Meeker, Greeley</td>
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<tr>
<td>Connecticut,</td>
<td>Joseph R. Hawley, Hartford,</td>
<td>William P. Blake, New Haven</td>
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<tr>
<td>Dakota,</td>
<td>J. A. Burbank, Bonhomme county,</td>
<td>Solomon L. Spink, Yankton</td>
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<td>Delaware,</td>
<td>John K. Kane, Wilmington,</td>
<td>John H. Rodeney, New Castle</td>
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<tr>
<td>District of Col.,</td>
<td>James E. Dexter, Washington,</td>
<td>Lawrence A. Gorbright, Washington</td>
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<td>Florida,</td>
<td>T. H. Osborn, Jacksonville,</td>
<td>J. T. Bernard, Tallahassee</td>
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<td>George Hillyer, Atlanta,</td>
<td>Richard Peters, Jr., Atlanta</td>
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<td>Idaho,</td>
<td>Thomas Donaldson, Boise City,</td>
<td>Christopher W. Moore, Boise City</td>
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<tr>
<td>Illinois,</td>
<td>F. L. Matthews, Carlinville,</td>
<td>Lawrence Weldon, Bloomington</td>
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<td>Indiana,</td>
<td>J. L. Campbell, Crawfordsville,</td>
<td>Franklin C. Johnson, New Albany</td>
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<td>Iowa,</td>
<td>Robert Lowry, Davenport,</td>
<td>Coker F. Clarkson, Eldora</td>
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<td>Kansas,</td>
<td>John A. Martin, Atchison,</td>
<td>George A. Crawford, Fort Scott</td>
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<td>Robert Mallory, La Grange,</td>
<td>Smith M. Hobbs, Mount Wash'n</td>
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<td>Louisiana,</td>
<td>John Lynch, New Orleans,</td>
<td>Edward Penington, Philadelphia</td>
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<td>Maine,</td>
<td>Joshua Nye, Augusta,</td>
<td>Charles H. Haskell, Portland</td>
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<td>Maryland,</td>
<td>John H. B. Latrobe, Baltimore,</td>
<td>S. M. Shoemaker, Baltimore</td>
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<td>Massachusetts,</td>
<td>George B. Loring, Salem,</td>
<td>William B. Spooner, Boston</td>
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<td>Michigan,</td>
<td>James Birney, Bay City,</td>
<td>Claudius B. Grant, Houghton</td>
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<td>Minnesota,</td>
<td>J. Fletcher Williams, St. Paul,</td>
<td>W. W. Felowell, Minneapolis</td>
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<td>Mississippi,</td>
<td>O. C. French, Jackson,</td>
<td>M. Edwards, Gholson</td>
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<td>John McNeil, St. Louis,</td>
<td>Samuel Hays, St. Louis</td>
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<td>J. P. Woolman, Helena,</td>
<td>Patrick A. Largay, Virginia City</td>
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<td>Henry S. Moody, Omaha,</td>
<td>R. W. Furnas, Brownsville</td>
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<td>W. W. McCoy, Eureka,</td>
<td>James W. Haines, Genoa</td>
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<td>Ezekiel A. Straw, Manchester,</td>
<td>M. V. B. Edgerly, Manchester</td>
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<td>Eldridge W. Little, Santa Fe,</td>
<td>Stephen B. Elkins, Washington, D.C</td>
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<td>C. P. Kimball, New York</td>
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<td>Wilson W. Griffith, Toledo</td>
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<td>J. W. Virtue, Baker City,</td>
<td>A. J. Dufur, Portland</td>
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<td>Daniel J. Morrell, Johnstown,</td>
<td>Asa Packer, Mauch Chank</td>
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<td>George H. Corliss, Providence,</td>
<td>R. C. Taft, Providence</td>
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<td>South Carolina,</td>
<td>William Gurney, Charleston,</td>
<td>Archibald Cameron, Charleston</td>
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<td>Tennessee,</td>
<td>Thomas H. Coldwell, Shelbyville,</td>
<td>William F. Prosser, Nashville</td>
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<td>W. H. Parsons, New York,</td>
<td>John C. Chew, New York</td>
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<td>John H. Wickizer, Salt Lake City,</td>
<td>Wm. Haydon, Salt Lake City</td>
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<td>Vermont,</td>
<td>Middleton Goldsmith, Rutland,</td>
<td>Henry Chase, Lyndon</td>
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<td>Virginia,</td>
<td>F. W. M. Holliday, Richmond,</td>
<td>Edmund R. Bagwell, Onancock</td>
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<td>Washington Ter.,</td>
<td>Elwood Evans, Olympia,</td>
<td>Alex. S. Abernethy, Cowltiz county</td>
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<td>West Virginia,</td>
<td>Alexander R. Boteler, Shepherdstown,</td>
<td>Andrew J. Sweeney, Wheeling</td>
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<td>Wisconsin,</td>
<td>David Atwood, Madison,</td>
<td>Edward D. Holton, Milwaukee</td>
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<td>Wyoming,</td>
<td>Joseph M. Carey, Cheyenne,</td>
<td>Robert H. Lamborn, Philadelphia</td>
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</table>
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JOSEPH R. HAWLEY.

Vice-Presidents:
Thomas H. Coldwell, F. W. M. Holliday,
Middleton Goldsmith, Robert Mallory,
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Secretary:
JOHN L. CAMPBELL.

Counsellor and Solicitor:
JOHN L. SHOEMAKER.

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Alfred T. Goshorn, John Lynch,
George H. Corliss, Charles P. Kimball,
Alexander R. Boteler, J. H. B. Latrobe,
Richard C. McCormick, David Atwood,
N. M. Beckwith, Samuel F. Phillips,
George B. Loring, J. T. Bernard,
J. R. Hawley, President, ex-officio.
Myer Asch, Secretary.

Assistant Secretaries:
Myer Asch, Dorsey Gardner.

Chiefs of Bureaus of Administration:

*Foreign*—Director-General and Agriculture—Burnet Landreth.
Myer Asch.
Installation—Henry Pettit.
Transportation—Dolphus Torrey.
Machinery—John S. Albert.

*Horticulture*—Charles H. Miller.
*Fine Arts*—John Sartain.
*Medical*—William Pepper, M.D.
*Awards*—Francis A. Walker.

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John O. James, Philadelphia.
Amos R. Little, Philadelphia.
Wm. L. Strong, New York.
Thos. H. Dudley, New Jersey.
John Cummings, Massachusetts.
INTERNATIONAL EXHIBITION OF 1876.

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N. Parker Shortridge, Philadelphia.
James M. Robb, Philadelphia.
Edward T. Steel, Philadelphia.
John Wanamaker, Philadelphia.
John Price Wetherill, Philadelphia.
Henry Winsor, Philadelphia.

John Gorham, . . . . Rhode Island.
Charles W. Cooper, Pennsylvania.
Robert M. Patton, Alabama.
J. B. Drake, Illinois.
George Bain, Missouri.

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John Welsh, Philadelphia.

Vice-Presidents:

Secretary and Treasurer:
Frederick Fraley, Philadelphia.

Auditor:
Henry S. Lansing.

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[Appointed by the Governors for the management of State and Territorial exhibits.]

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A. Cunningham, Talladega.

Arizona.
J. N. Hopkins, Secretary.  Wm. J. Osborne.

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H. L. Fletcher, President, Little Rock.  W. E. Woodruff, jr., Little Rock.

California.
Jacob Deeth.  James L. Ord.
A. N. Towne.  Jacob R. Neff.
T. J. L. Smiley.  B. M. Sergeant.
Duny Malone.  J. L. Hebron.
John G. Downey.

Colorado.
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Connecticut.
Charles R. Ingersoll, New Haven.
Nathaniel Wheeler, Bridgeport.
Frederick J. Kingsbury, Waterbury.
Ebenezer Learned, Norwich.
Thomas L. Marlor, Brooklyn.
Lyman W. Coe, Torington.
Burdell Loomis, Hartford.
John E. Earle, New Haven.
Thomas R. Pickering, Portland.
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<th>State</th>
<th>President</th>
<th>Secretary</th>
<th>Treasurer</th>
<th>Chairperson</th>
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<tr>
<td>DAKOTA</td>
<td>W. J. L. Trail, Grand Forks</td>
<td>W. A. Burleigh, Bon Homme</td>
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<td>DELAWARE</td>
<td>John H. Bewley, Smyrna</td>
<td>Henry B. Fiddeman, Milford</td>
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<td>John W. Causey, Milford</td>
<td>Charles H. Richards, Georgetown</td>
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<td>Jonathan J. Woodman, Paw Paw</td>
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<td>Merrill J. Mills,</td>
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<td>F. W. Noble,</td>
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<tr>
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<tr>
<td>Mrs. S. B. Bowen,</td>
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<tr>
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<tr>
<td>Thomas Allen, President,</td>
<td>St. Louis</td>
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<tr>
<td>J. P. Cook, LL.D., Lagrange</td>
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### MINNESOTA

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### MISSISSIPPI

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<tr>
<td>A. M. West, President,</td>
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<tr>
<td>H. W. Warren, Vice-President</td>
<td>Jackson</td>
</tr>
<tr>
<td>H. M. Street, Treasurer,</td>
<td>Booneville</td>
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<tr>
<td>A. E. Lewis, Scranton</td>
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<td>James A. Hoskins, Brookhaven</td>
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<td>Frank Burkitt,</td>
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<td>J. L. Power, Secretary</td>
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<tr>
<td>J. B. Yellowlow,</td>
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### MISSOURI

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<td>J. W. Strong, Vice-President</td>
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<td>P. Murphy, Goplin</td>
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<td>J. L. Tracy, St. Louis</td>
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### MONTANA

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<td>J. A. Harding, Radersburg,</td>
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### NEBRASKA

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<td>Gay C. Barton,</td>
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<td>C. C. Stevenson, President</td>
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### NEW HAMPSHIRE

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<td>Edward D. Baker,</td>
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<td>James F. Briggs, Secretary</td>
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### NEW JERSEY

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<td>Nathan W. Condit, Jersey</td>
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<td>Patrick T. Quinn, Secretary</td>
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### NEW MEXICO

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<td>Thomas S. Tucker, Treasurer</td>
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<td>José D. Sena,</td>
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### NEW YORK

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<td>Jackson S. Schultz, No. 63</td>
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<tr>
<td>F. F. Green, Secretary and</td>
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<tr>
<td>Superintendent, Cleveland</td>
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### OHIO

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<td>E. F. Noyes,</td>
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### OREGON

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<td>PENNSYLVANIA.</td>
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<td>William Goddard, Providence.</td>
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<td>Hon. Henry Lippit, Providence.</td>
<td>Rowland Hazard, Providence.</td>
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<td>James V. Smith, Providence.</td>
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<td>Wm. Jennings, President, Salt Lake City.</td>
<td>John T. Caine, Salt Lake City.</td>
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<td>Joseph R. Walker, Salt Lake City.</td>
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<td>Edward M. Pace, Danville.</td>
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<td>T. C. Pound, Chippewa Falls.</td>
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<td>Eli Stilson, Oshkosh.</td>
<td>F. Kuehn, Treasurer, Manitowoc.</td>
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<tr>
<td>Adolph McNeice, Milwaukee.</td>
<td>W. W. Field, Secretary, Madison.</td>
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<td>J. R. Whitehead, Cheyenne.</td>
<td>John Fosher, South Pass City.</td>
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**SYSTEM OF AWARDS.**

The Centennial Commission have substituted for the international juries employed at previous International Exhibitions, a system of awards which provided:

That awards shall be based upon written reports attested by the signatures of their authors.

That the judges should be selected for their known qualifications and character, and should be experts in the departments to which they are respectively assigned; the foreign members of this body being appointed by the Commission of each country and in conformity with the distribution and allotment to each; the judges from the United States by the Centennial Commission.

That judges should be reimbursed for their personal expenses.
That reports and awards should be based upon inherent and comparative merit; the elements of merit being held to include considerations relating to originality, invention, discovery, utility, quality, skill, workmanship, fitness for the purposes intended, adaptation to public wants, economy, and cost.

That each report should be delivered to the Centennial Commission as soon as completed, for final award and publication.

That awards should be finally decreed by the United States Centennial Commission, in compliance with the Act of Congress, and should consist of a diploma with a uniform Bronze Medal, and a special report of the judges on the subject of the Award.

That each exhibitor shall have the right to produce and publish the report awarded to him, but the United States Centennial Commission reserves the right to publish and dispose of all reports in the manner it thinks best for public information, and also to embody and distribute the reports as records of the Exhibition.

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**JUDGES OF AWARDS.**

**GROUP I.**

Minerals, Mining, and Metallurgy, including the Machinery.—(Classes 100 to 108 of the classification. See page 27.)

Metals, Metallurgical Products and Processes.—(Classes 110 to 115.)

Machines, Tools, and Apparatus of Mining and Metallurgy.—(Classes 500 to 507, and 512.)

Mine Engineering—Models, Maps, and Sections.—(Classes 120, 121.)

**AMERICAN.**

Alexander L. Holley, 56 Broadway, N.Y.
Prof. T. Sterry Hunt, LL.D., F.R.S., St. James Hotel, Boston, Mass.
Prof. J. M. Safford, Nashville, Tennessee.
S. B. Axtell, Santa Fé, New Mexico.
John Fritz, Bethlehem, Pa.
Austen Savage, Boise City, Idaho.
W. S. Keyes, M. E., Eureka, Nevada.
Prof. Frederick Prime, jr., Easton, Pa.
Matthew Addy, Cincinnati, Ohio.
Prof. G. C. Broadhead, Pleasant Hill, Missouri.

**FOREIGN.**

Mr. Isaac Lowthian Bell, M.P., F.R.S., Great Britain.
Mr. Ernst F. Althans, Breslau, Germany.
Mr. Louis Simonin, Paris, France.
Mr. F. Valion, France.
Mr. R. Akerman, Stockholm, Sweden.
Mr. Achille Jotttrand, Belgium.
M. L. Nicholsky, Russia.
Mr. Nicholas Jossa, Russia.
Dr. Th. Kjernulf, Christiana, Norway.
Don Daniel de Cortazar, Spain.

**GROUP II.**

Pottery, Glass, Artificial Stone, etc.—(Classes 206 to 216, and 219, 103, 517, 518.)

**AMERICAN.**

Arthur Beckwith, 134 Fifth Avenue, New York.
Prof. E. T. Cox, Indianapolis, Indiana.
Henry Wurtz, Hoboken, N. J.

**FOREIGN.**

R. H. Soden Smith, M.A., Great Britain.
Dr. G. Seelhorst, Nuremberg, Germany.
M. Ch. de Bussy, Paris, France.
Adolf E. Nordenskiold, Sweden.
Mr. K. Notomi, Japan.

**GROUP III.**

Chemistry and Pharmacy, including the Apparatus.—(Classes 200 to 203, and 274, 508, 509, and 659.)

**AMERICAN.**

Prof. C. A. Joy, Columbia College, New York.
Prof. F. A. Genth, University of Pennsylvania, Philadelphia, Pa.
Prof. J. Lawrence Smith, Louisville, Ky.
Prof. C. F. Chandler, Columbia College, New York.
Prof. J. W. Mallet, University of Virginia, Charlottesville, Virginia.

**FOREIGN.**

Dr. William Odling, F.R.S., Great Britain.
Dr. Rudolf von Wagner, Würzburg, Germany.
M. J. F. Kuhlmann Lille, France.
Mr. Prosper De Wilde, Belgium.
Mr Emanuel Paterno, Italy.
GROUP IV.

Animal and Vegetable Products, and the Machinery for their Preparation.—(Classes 650 to 661.)

AMERICAN.

Prof. W. C. Kerr, Raleigh, N. C.
L. B. Arnold, Rochester, N. Y.
Col. John Bradford, Tallahassee, Fla.
Guido Marx, Toledo, Ohio.
Ryland T. Brown, Indianapolis, Ind.
W. S. Green, Millford, Wis.

FOREIGN.

Mr. Edouard Martell, France.
Don Edward Loring, Malaga, Spain.
Dr. Nicolau J. Moreira, Brazil.
M. Jayme Batalha Reis, Portugal.
Mr. Ekeda Kenzo, Japan.
E. Oldendorff, Argentine Confederation.
Dr. E. H. Von Baunhauer, Netherlands.
H. G. Joly, M. P., Canada.
Julius Wegeler, Coblenz, Germany.
G. F. Secchi de Casali, Italy.
Prof. Thomas R. Segelche, Denmark.
Rustem Effendi, Turkey.

GROUP V.

Fish and Fish Products.—Apparatus of Fishing, etc.—(Classes 640 to 643.)

AMERICAN.

Prof. S. F. Baird, Smithsonian Institution, Washington.
T. B. Ferguson, Baltimore, Md.

FOREIGN.

Joachim Anderssen, Norway.

GROUP VI.

Timber, Worked Lumber, Parts of Buildings, Forestry.—(Classes 600 to 607.)

AMERICAN.

Prof. Wm. H. Brewer, New Haven, Conn.
Prof. J. S. Newberry, Cleveland, Ohio, or Columbia College, N. Y.

FOREIGN.

John R. West, Chili.
M. Rodrigues de Vasconcellos, Portugal.
Hon. W. Skeaed, Canada.
Dr. José de Saldanha, Brazil.

GROUP VII.

Furniture, Upholstery, Wooden Ware, Baskets, etc.—(Classes 217, 220, 221, 225, 226, 286, 289, 290.)

AMERICAN.

Addison Boyden, Boston, Mass.
Chauncey Wilse, Omaha, Neb.
Robert Mitchell, Cincinnati, O.

FOREIGN.

Le Marquis de Rochambeau, France.
Mr. Theo. Snyers, Belgium.
Francis Thonet, Austria.

GROUP VIII.

Cotton, Linen, and other Fabrics, including the Materials and the Machinery.—(Classes 228, 229 to 234, 521, 523, 524, 665, 666.)

AMERICAN.

Edward Atkinson, Boston, Mass.
Hugh Waddell, Jr., Savannah, Ga.
Col. Ed. Richardson, Jackson, Miss.
A. D. Lockwood, Providence, R. I.
Chas. H. Wolff, Cincinnati, Ohio.
Samuel Webber, C. E., Manchester, N. H.
George O. Baker, Selma, Ala.

FOREIGN.

Mr. Isaac Watts, Great Britain.
Mr. W. W. Hulse, C. E., Great Britain.
Consul Gustav Gehhard, Germany.
Albert Daninos, Turkey.
Don Alvaro de la Gandara, Spain.
Major A. Goldy, Switzerland.
Prof. Gustave Herrmann, Germany.
Prof. Giuseppe Dassi, Italy.

GROUP IX.

Wool and Silk Fabrics, including the Materials and the Machinery. Woven and Felted Goods of Wool, and Mixtures of Wool.—(Classes 235 to 241, 522, and 667.)

Silk and Silk Fabrics, and Mixtures in which Silk is the Predominating Material.—(Classes 242 to 249 and 520.)

AMERICAN.

Chas. Le Boullier, Philadelphia, Pa.
Chas. J. Ellis, 714 Market St., Philadelphia, Pa.
J. D. Lang, Vassalboro', Me.

FOREIGN.

Mr. Henry Mitchel, Great Britain.
Dr. Max Weigert, Germany.
Mr. Chatel, France.
Carl Arnbarg, Sweden.
Mr. Hayami Kenzo, Japan.
Mr. John G. Neeser, Switzerland.
August Behmer, Egypt.
Theodore Bohner, Austria.
GROUP X.

Clothing, Furs, India Rubber Goods, Ornaments, and Fancy Articles. (Exclusive of Leather Boots and Shoes.)—(Classes 250 to 257 and 288.)

Caoutchouc and Guutta Percha Industry.—(Class 285.)

AMERICAN.

Prof. W. H. Chandler, Ph.D., F.C.S.,
Lehigh University, Bethlehem, Pa.
Wm. O. Linthicum, New York City.
Benj. F. Britton, New York City.
Dr. George Hewstou, San Francisco, Cal.
Prof. E. N. Horsford, Cambridge, Mass.

FOREIGN.

Mr. Dietz-Monnin, France.
Mr. Modest Kittary, Russia.
Mr. Edward Kanitz, Austria.
Mr. M. P. Empey, Canada.

GROUP XI.

Jewelry, Watches, Silverware, Bronzes, etc.—(Class 253.)

AMERICAN.

Martin P. Kennard, Boston, Mass.
Peter Gottesluben, Denver, Col.

FOREIGN.

G. H. Heap, Tunis.
M. Roulleaux du Gage, France.

GROUP XII.

Leather and Manufactures of Leather, including Boots, Shoes, Trunks, etc.—(Classes 532 and 533.)

AMERICAN.

Gov. F. H. Pierpont, Fairmount, Marion Co.,
W. Va.
John Cummings, Boston, Mass.
Thomas Miles, Philadelphia, Pa.
J. P. Postle, Wilmingtou, Del.

FOREIGN.

GROUP XIII.

Paper Industry, Stationery, Printing, and Book Making.—(Classes 258 to 264.)

Machines and Apparatus for Type Setting, Printing, Stamping, Embossing, and for making Books and Paper Working.—(Classes 525 and 540 to 547.)

AMERICAN.

James M. Willecox, Ph.D., Glen Mills, Pa.,
1722 Spruce St., Phila.
Wm. Faxon, Hartford, Conn.
Edward Conly, Cincinnati, Ohio.
H. T. Brian, Government Printing Office,
Washington.

FOREIGN.

Sir Sidney H. Waterlow, Bart., M.P., Great Britain.
G. W. Seitz, Germany.

GROUP XIV.

Apparatus of Heating, Lighting, Ventilation, Water Supply, and Drainage.—(Classes 222 to 224.)

AMERICAN.

C. C. Cox, M.D., LL.D., Washington, D. C.

FOREIGN.

GROUP XV.

Builders' Hardware, Edge Tools, Cutlery, etc.—(Classes 280 to 284.)

AMERICAN.

Charles Staples, Portland, Me.
Daniel Steinmetz, Philadelphia.
George L. Reed, Clarfield, Pa.
Gen John D. Imboden, Richmond, Va.

FOREIGN.

Hon. J. Bain, Lord Provost of Glasgow, Great Britain.
Mr. D. McHardy, Great Britain.
Mr. Diefenbach, Germany.

GROUP XVI.

Military and Sporting Arms, Weapons, Apparatus of Hunting, Explosives, etc.—(Classes 204, 205, and 265 to 270.)

AMERICAN.

George A. Hamilton, St. Paul, Minn.

FOREIGN.

Major Wm. H. Noble, R.A., Great Britain.
Capt. Comm't of Artillerie Lesne, Belgium.
Capt. L. F. Saldanha da Gama, Brazil.
GROUP XVII.

Carriages, Vehicles, and Accessories.—(Classes 292 to 296.)

**AMERICAN.**

Thos. Goddard, Boston, Mass., 134 State St.
B. F. Morse, Augusta, Me.

**FOREIGN.**

Mr. Guig, France.
Mr. Duffus, Canada.

GROUP XVIII.

Railway Plant, Rolling Stock, and Apparatus, Road Engines.—(Classes 570 to 577.)

**AMERICAN.**

Robert E. Ricker, Elizabeth, N. J.
Gen. T. A. Morris, Indianapolis, Ind.
Felician Slataper, Pittsburg, Pa.

**FOREIGN.**

Mr. Ernest Pontzen, Austria.
Mr. E. A. Schaar, Belgium.

GROUP XIX.

Vessels and Articles of Transportation.—(not included in other groups).—(Classes 587 to 594, and 599 to 597.)

**AMERICAN.**

Isaac Newton, New York.
J. W. Griffith, Portsmouth, N. H.
H. C. Goodspeed, Salt Lake City, Utah.

**FOREIGN.**

Col. F. H. Rich, R. E., Great Britain.

GROUP XX.

Motors, Hydraulic and Pneumatic Apparatus, etc.—(Classes 550 to 555, and 562 to 563.)

**AMERICAN.**

C. T. Porter, Newark, N. J.
Joseph Belknap, New York.
James Moore, Philadelphia.
Horatio Allen, South Orange—"Homewood,"
N. J.
Chas. E. Emery, 7 Warren Street, New York.

**FOREIGN.**

Mr. W. H. Barlow, C. E., Great Britain.
Prof. Reuleaux, (Germany).
Nicholas Petroff, Russia.
Emil Brugsch, Egypt.

GROUP XXI.

Machine Tools—Wood, Metal, and Stone.—(Classes 510, 511, and 514 to 516.)

**AMERICAN.**

Irving M. Scott, Union Iron Works, San Francisco, Cal.
George H. Bteblock, Springfield, Mass.
W. F. Durfee, Wisconsin (at 56 Broadway, New York).
Prof. John A. Anderson, President Kansas State Agricultural College, Manhattan, Kan.

**FOREIGN.**

Mr. John Anderson, L.L. D., C. E., Great Britain.
M. Le Commandant F. Perier, France.
Mr. C. A. Angstrom, Sweden.
Mr. Augusie Gobert (fils), Belgium.
Mr. Felix Reifer, Austria.

GROUP XXII.

Machines, Apparatus, and Implements used in Sewing and Making Clothing, Lace, Ornamental Objects, Pins, etc.—(Classes 533, 534, and 534 to 537.)

**AMERICAN.**

George W. Gregory, Boston, Mass.
Edward H. Knight, Patent Office, Washington, D. C.
L. D. F. Poore, Springfield, Dakota.

**FOREIGN.**

Mr. Fred. A. Paget, C. E., Great Britain.

GROUP XXIII.

Agricultural Machines, Implements of Agriculture, Horticulture, and Gardening.—(Classes 673 to 675, and 682 to 683.)

**Tillage and General Management.**—(Classes 692 to 715, 716.)

**Garden Tools, Accessories of Gardening.**—(Classes 720 to 722.)

**Garden Designing, Construction, and Management.**—(Classes 710, and 731 to 733.)

**AMERICAN.**

Hon. John P. Reynolds, Chicago, Ill.
James S. Grinnell, Washington, D. C.
Geo. E. Waring, jr., Newport, R. I.
James Bruce, Corvallias, Oregon.

**FOREIGN.**

Mr. John Coleman, Great Britain.
Dr. Jose de Saidanha, Brazil.
Don Fermín Rosillo, Spain.

GROUP XXIV.

Instruments and Apparatus of Hygiene, Medicine, Surgery, Prothesis, etc.—(Classes 272, 273, and 275 to 278.)

**AMERICAN.**

C. B. White, M. D., New Orleans, La.
J. H. Thompson, A. M., M. D., Washington, D. C.

**FOREIGN.**

Dr. William Roth, Germany.
Dr. Ernst Fleischel, Austria.
**GROUP XXV.**

Instruments of Precision, Research, Experiment, and Illustration, including Tel- 

graphy and Music.—(Classes 320 to 327.)

**AMERICAN.**

Prof. Joseph Henry, LL.D., Secretary of Smithsonin Institution, Washington, D.C.

Prof. F. A. P. Barnard, S.T.D., LL.D., Columbia College, N.Y.

Prof. J. E. Hilgard, Washington, D.C.

Prof. J. C. Watson, Ann Arbor, Mich.

General Henry K. Oliver, Salem, Mass.

Geo. F. Bristow, New York.

**FOREIGN.**


Jul. Schiedmayer, Germany.

Mr. E. Levasseur, France.

P. F. Kupka, Austria.

Edw. Favre Perret, Switzerland.

**GROUP XXVI.**

Architecture and Engineering. (For Agricultural Engineering, see Class 680.) (For Mine Engineering, see Group I.)

**Engineering.—(Classes 330 to 333, and 335.)**

**AMERICAN.**


General Wm. B. Franklin, Hartford, Conn.

Richard M. Hunt, 49 West Thirty-fifth Street, New York.

**FOREIGN.**

Sir John Hawskshaw, C.E., F.R.S., Great Britain.

Mr. Lavoinne, France.

J. M. da Silva Continho, Brazil.

J. G. W. Fynje, Netherlands.

Lourenço Maheiro, M.E., Portugal.

**GROUP XXVII.**

Plastic and Graphic Art Sculpture.—(Classes 400 to 405.)

Painting.—(Classes 410 to 413.)

Engraving and Lithography.—(Classes 420 to 424.)

Photography.—(Classes 430 to 432.)

Industrial and Architectural Designs, Models, and Decorations.—(Classes 440 to 443.) (Classes 450 to 454.)

Decoration with Ceramic and Vitreous Materials; Mosaic and Inlaid Work.

**AMERICAN.**

Frank Hill Smith, Boston, Mass.


Prof. S. F. Weir, New Haven, Conn.

Donald G. Mitchell, New Haven, Conn.

Geo. Ward Nichols, Cincinnati, Ohio.

Prof. Henry Draper, Medical College, New York City.

**FOREIGN.**

Mr. Charles West Cope, R.A., Great Britain.

Mr. Peter Graham, Great Britain.

Carl Schlesinger, Germany.

Dr. H. Vogel, Germany.

Mr. Emile T. Saintain, France.

Fritz L. Dardel, Sweden.

P. N. Arbo, Norway.

Count of Donadis, Spain.

Mr. Tantardini, Italy.

Guglielmo de Sanctis, Italy.

Mr. Carl Costenoble, Austria.

Prof. V. Dahlerup, Denmark.

J. E. van Heemskerck van Beest, Netherlands.

**GROUP XXVIII.**

Educational Systems, Methods, and Libraries.—(Classes 300 to 306.)

Institutions and Organizations.—(Classes 310 to 313.)

**AMERICAN.**

Hon. Andrew D. White, LL.D., President of Cornell University, Ithaca, N.Y.

D. C. Gilman, LL.D., President of St. John's Hopkins University, Baltimore, Md.


Hon. J. W. Hoyt, M.D., LL.D., Madison, Wis.

**FOREIGN.**

Sir Charles Reed, Great Britain.

Mr. Rene Fouret, France.

Col. John Marin, Spain.

Prof. Dr. Otto Martin Torell, Sweden.


**BUILDINGS AND SPECIAL EXHIBITS WITHIN THE EXHIBITION GROUNDS.**

[Note.—The buildings bear the numbers prefixed to them in this table, being the numbers adopted by the Centennial Guide Book Co. (Limited).]

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<th>Buildings South of the Avenue of the Republic.</th>
<th>Buildings North of the Avenue of the Republic, and West of Belmont Av.</th>
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<td>51. United States Government Building,</td>
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<td>2. Machinery Hall,</td>
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<td>3. Machine Shop,</td>
<td>51 ½. Bartholdi Electric Light,</td>
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<td>5. Corliss Boiler House,</td>
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<td>11. Weimer Machine Works,</td>
<td>53 ½. Jerusalem Bazaar,</td>
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<td>19. Annex, Saw Mill,</td>
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<td>20. Boiler House,</td>
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<td>21. Railway Engine House,</td>
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<td>22. St. Cecilia Organs,</td>
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<td>23. Automatic Railway,</td>
<td>56 ½. Police Station,</td>
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<td>24. Monument—American Soldier,</td>
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<td>25. Gunpowder Pile-Driven,</td>
<td>57. Indiana State Building,</td>
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<td>28. Pneumatic Tubes,</td>
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<td>58 ½. Bethlehem Bazaar,</td>
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<td>32. Store House,</td>
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<td>35. Chilean Amalgamating Machinery,</td>
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<td>38. Car House,</td>
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<td>42. Stokes &amp; Parrish, Boiler House,</td>
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<td>43. Ehret's Waterproof Roofing,</td>
<td>63. Massachusetts State Building,</td>
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<tr>
<td></td>
<td>86. Spanish Government Buildings,</td>
</tr>
<tr>
<td></td>
<td>III. 132</td>
</tr>
<tr>
<td></td>
<td>87. United States Signal Office,</td>
</tr>
<tr>
<td></td>
<td>III. 141</td>
</tr>
<tr>
<td></td>
<td>88. Tennessee State Building,</td>
</tr>
<tr>
<td></td>
<td>III. 141</td>
</tr>
<tr>
<td></td>
<td>89. Mississippi State Building,</td>
</tr>
<tr>
<td></td>
<td>III. 142</td>
</tr>
<tr>
<td></td>
<td>90. George’s Hill Restaurant,</td>
</tr>
<tr>
<td></td>
<td>III. 142</td>
</tr>
<tr>
<td></td>
<td>91. Bishop Allen Monument,</td>
</tr>
<tr>
<td></td>
<td>III. 142</td>
</tr>
</tbody>
</table>

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*Note: The buildings bear the numbers prefixed to them in this table, being the numbers adopted by the Centennial Guide Book Co. (Limited).*
TABLE OF BUILDINGS "WITHIN" THE EXHIBITION GROUNDS.

[Note.—Descriptions of the Buildings will be found at the indicated part and page of the Official Catalogue.]

<table>
<thead>
<tr>
<th>Buildings North of the Avenue of the Republic, and West of Belmont Av.</th>
<th>Part Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>92. Office of the Boston &quot;Advertiser&quot; and Boston &quot; Herald,&quot;</td>
<td>II 9</td>
</tr>
<tr>
<td>93. Rowell's Newspaper Exhibition Building,</td>
<td>III 142</td>
</tr>
<tr>
<td>94. California State Building,</td>
<td>III 142</td>
</tr>
<tr>
<td>95. Centennial Fire Patrol, No. 1,</td>
<td>III 142</td>
</tr>
<tr>
<td>96. Turkish Café,</td>
<td>III 143</td>
</tr>
<tr>
<td>97. Office Frank Leslie's Publications,</td>
<td>III 143</td>
</tr>
<tr>
<td>98. Iowa State Building,</td>
<td>III 143</td>
</tr>
<tr>
<td>99. Rhode Island State Building,</td>
<td>III 143</td>
</tr>
<tr>
<td>100. Vermont State Building,</td>
<td>III 143</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Buildings East of Belmont Avenue, and South of Fountain Avenue.</th>
<th>Part Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>101. Art Gallery,</td>
<td>II 9</td>
</tr>
<tr>
<td>102. Art Gallery Annex,</td>
<td>II 10</td>
</tr>
<tr>
<td>103. B'nai B'rith Monument of Religious Liberty,</td>
<td>III 143</td>
</tr>
<tr>
<td>104. Photographic Art Building,</td>
<td>II 137</td>
</tr>
<tr>
<td>105. Vienna Bakery and Coffee House,</td>
<td>III 143</td>
</tr>
<tr>
<td>106. Principal Annex to Main Exhibition Building,</td>
<td>I 374</td>
</tr>
<tr>
<td>107. Swedish Government Building,</td>
<td>III 144</td>
</tr>
<tr>
<td>108. Japanese Bazaar,</td>
<td>III 144</td>
</tr>
<tr>
<td>109. The Judges' Hall,</td>
<td>III 144</td>
</tr>
<tr>
<td>110. Centennial Photographic Co.,</td>
<td>III 144</td>
</tr>
<tr>
<td>111. Sheet-metal Pavilion,</td>
<td>III 144</td>
</tr>
<tr>
<td>112. German Government Building,</td>
<td>III 144</td>
</tr>
<tr>
<td>113. Railroad Ticket Office,</td>
<td>III 144</td>
</tr>
<tr>
<td>114. Office United States Centennial Commission,</td>
<td>III 145</td>
</tr>
<tr>
<td>115. Brazilian Government Build'g</td>
<td>III 145</td>
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<tr>
<td>116. The Dairy,</td>
<td>III 145</td>
</tr>
<tr>
<td>117. Restaurant &quot;La Fayette,&quot;</td>
<td>III 145</td>
</tr>
<tr>
<td>118. House of Public Comfort,</td>
<td>III 145</td>
</tr>
<tr>
<td>119. Empire Transportation Co.,</td>
<td>III 145</td>
</tr>
<tr>
<td>120. French Government Building,</td>
<td>III 145</td>
</tr>
<tr>
<td>121. Centennial Fire Patrol, No. 2,</td>
<td>III 145</td>
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<tr>
<td>122. Penn'a Educational Building,</td>
<td>III 146</td>
</tr>
<tr>
<td>123. Telegraph Office,</td>
<td>III 147</td>
</tr>
<tr>
<td>124. American Fusee Company,</td>
<td>III 147</td>
</tr>
<tr>
<td>125. Klaatschek, Thomas, &amp; Stewart's Glass Magazine,</td>
<td>III 147</td>
</tr>
<tr>
<td>126. Moorish Villa,</td>
<td>III 147</td>
</tr>
<tr>
<td>127. American Bible Society,</td>
<td>III 147</td>
</tr>
<tr>
<td>128. Hunter's Camp,</td>
<td>III 147</td>
</tr>
<tr>
<td>129. Office Water Department,</td>
<td>III 148</td>
</tr>
<tr>
<td>130. Soda Water Stands,</td>
<td>III 148</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Buildings East of Belmont Avenue, and North of Fountain Avenue.</th>
<th>Part Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>131. Cigar Stands,</td>
<td>III 148</td>
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<tr>
<td>132. Singer's Sewing Machines,</td>
<td>III 148</td>
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<tr>
<td>133. Centennial Medical Department,</td>
<td>III 148</td>
</tr>
<tr>
<td>134. Portugal Government Building,</td>
<td>III 148</td>
</tr>
<tr>
<td>135. Bankers' Building,</td>
<td>III 148</td>
</tr>
<tr>
<td>136. French Glass Exhibit,</td>
<td>III 149</td>
</tr>
<tr>
<td>137. Kindergarten,</td>
<td>III 149</td>
</tr>
<tr>
<td>138. Centennial Police Station,</td>
<td>III 149</td>
</tr>
<tr>
<td>139. Philadelphia City Building,</td>
<td>III 149</td>
</tr>
<tr>
<td>140. Music Pavilion,</td>
<td>III 149</td>
</tr>
<tr>
<td>141. Burial Caskets,</td>
<td>III 149</td>
</tr>
<tr>
<td>142. Perforated Metal Building,</td>
<td>III 149</td>
</tr>
<tr>
<td>143. Rubber Roofing,</td>
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</tr>
<tr>
<td>144. Cuban Acclimation Office,</td>
<td>III 149</td>
</tr>
<tr>
<td>145. Naval Group,</td>
<td>III 149</td>
</tr>
<tr>
<td>146. The Dying Lioness,</td>
<td>III 149</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Buildings East of Belmont Avenue, and North of Fountain Avenue.</th>
<th>Part Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>151. Horticultural Hall,</td>
<td>IV 147</td>
</tr>
<tr>
<td>152. Agricultural Hall,</td>
<td>IV 9</td>
</tr>
<tr>
<td>153. The Women's Pavilion,</td>
<td>III 85</td>
</tr>
<tr>
<td>154. The Women's School House,</td>
<td>III 150</td>
</tr>
<tr>
<td>155. New Jersey State Building,</td>
<td>III 150</td>
</tr>
<tr>
<td>156. Restaurant of the South,</td>
<td>III 150</td>
</tr>
<tr>
<td>157. Kansas and Colorado State Building,</td>
<td>III 150</td>
</tr>
<tr>
<td>158. New England Farmer's Home,</td>
<td>III 150</td>
</tr>
<tr>
<td>100 years ago, and Modern Kitchen,</td>
<td>III 150</td>
</tr>
<tr>
<td>159. Great American Restaurant,</td>
<td>III 150</td>
</tr>
<tr>
<td>160. German Restaurant,</td>
<td>III 151</td>
</tr>
<tr>
<td>161. Tea and Coffee Press,</td>
<td>III 151</td>
</tr>
<tr>
<td>162. Butter and Cheese Factory,</td>
<td>III 151</td>
</tr>
<tr>
<td>163. Soda Water Stand,</td>
<td>III 151</td>
</tr>
<tr>
<td>164. Cigar Stand,</td>
<td>III 151</td>
</tr>
<tr>
<td>165. Farm Wagon Building,</td>
<td>IV 135</td>
</tr>
<tr>
<td>166. Pomological Building,</td>
<td>IV 135</td>
</tr>
<tr>
<td>167. Brewers' Building,</td>
<td>IV 136</td>
</tr>
<tr>
<td>168. Model House Apiary,</td>
<td>IV 140</td>
</tr>
<tr>
<td>169. Guano Company,</td>
<td>III 151</td>
</tr>
<tr>
<td>170. Special Flower Exhibit Building,</td>
<td>III 170</td>
</tr>
<tr>
<td>171. Wind Mills,</td>
<td>IV 140</td>
</tr>
<tr>
<td>172. Office &quot;Ohio Farmer,&quot;</td>
<td>IV 140</td>
</tr>
<tr>
<td>173. Hay Press,</td>
<td>III 152</td>
</tr>
<tr>
<td>174. Police Station,</td>
<td>III 152</td>
</tr>
<tr>
<td>175. Elevated Railroad,</td>
<td>III 152</td>
</tr>
<tr>
<td>176. Boiler House,</td>
<td>III 152</td>
</tr>
<tr>
<td>177. Virginia State Building,</td>
<td>III 152</td>
</tr>
<tr>
<td>178. Protective Fire Apparatus,</td>
<td>III 152</td>
</tr>
<tr>
<td>179. Pop-corn Stands,</td>
<td>III 152</td>
</tr>
<tr>
<td>180. J. L. Mott Co. Fountain,</td>
<td>III 152</td>
</tr>
</tbody>
</table>
No. 1. THE MAIN EXHIBITION BUILDING.

Size, 1880 by 464 feet.


Contractor, R. J. Dobbins.


The Main Exhibition Building, containing Departments I, II, III of the Exhibition, is in the form of a parallelogram, extending east and west 1880 feet in length, and north and south 464 feet in width.

The larger portion of the structure is one story in height, and shows the main cornice upon the outside at 45 feet above the ground; the interior height being 70 feet. At the centre of the longer sides are projections 416 feet in length, and in the centre of the shorter sides or ends of the building are projections 216 feet in length. In these projections, in the centre of the four sides, are located the main entrances, which are provided with arcades upon the ground floor, and central facades extending to the height of 90 feet.

The East Entrance forms the principal approach for carriages, visitors being allowed to alight at the doors of the building under cover of the arcade. The South Entrance is the principal approach from street cars, the ticket offices being located upon the line of Elm Avenue, with covered ways provided for entrance into the building itself. The Main Portal on the north side communicates with the Art Gallery, and the Main Portal on the west side gives the main passage way to the Machinery and Agricultural Halls.

Upon the corners of the building there are four towers, 75 feet in height, and between the towers and the central projections or entrances there is a lower roof introduced, showing a cornice at 24 feet above the ground. In order to obtain a central feature for the building as a whole, the roof over the central part, for 184 feet square, has been raised above the surrounding portion, and four towers, 48 feet square, rising to 120 feet in height, have been introduced at the corners of the elevated roof.

The areas covered are as follows:

<table>
<thead>
<tr>
<th></th>
<th>SQUARE FEET</th>
<th>ACRES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground floor</td>
<td>872,320</td>
<td>20.02</td>
</tr>
<tr>
<td>Upper floors in projections</td>
<td>37,344</td>
<td>.85</td>
</tr>
<tr>
<td>&quot; in towers</td>
<td>26,344</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>936,008</td>
<td>21.47</td>
</tr>
</tbody>
</table>
The general arrangement of the ground plan shows a central avenue or nave 120 feet in width, and extending 1832 feet in length. This is the longest avenue of that width ever introduced into an exhibition building. On either side of this nave there is an avenue 100 feet by 1832 feet in length. Between the nave and side avenues are aisles 48 feet wide, and on the outer sides of the building smaller aisles 24 feet in width. In order to break the great length of the roof lines, three cross avenues or transepts have been introduced of the same widths and in the same relative positions to each other as the nave and avenues running lengthwise, viz.: a central transept 120 feet in width by 416 feet in length, with one on either side of 100 feet by 416 feet, and aisles between of 48 feet. The intersections of these avenues and transepts in the central portion of the building result in dividing the ground floor into nine open spaces, free from supporting columns, and covering in the aggregate an area of 416 feet square. Four of these spaces are 100 feet square, four 100 feet by 120 feet, and the central space or pavilion 120 feet square. The intersections of the 48 feet aisles produce four interior courts 48 feet square, one at each corner of the central space. The main promenades through the nave and central transept are each 30 feet in width, and those through the centre of the side avenues and transepts 15 feet each. All other walks are 10 feet wide, and lead at either end to exit doors.

The following table gives the principal dimensions of the different parts of the building:

**DIMENSIONS.**

Measurements taken from centre to centre of supporting columns.

<table>
<thead>
<tr>
<th>Length of building</th>
<th>1880 feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width of building</td>
<td>464 &quot;</td>
</tr>
</tbody>
</table>

**CENTRAL AVENUE OR NAVE.**

<table>
<thead>
<tr>
<th>Length</th>
<th>1832 feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>120 &quot;</td>
</tr>
<tr>
<td>Height to top of supporting columns</td>
<td>45 &quot;</td>
</tr>
<tr>
<td>Height to ridge of roof</td>
<td>70 &quot;</td>
</tr>
</tbody>
</table>

**CENTRAL TRANSFET.**

<table>
<thead>
<tr>
<th>Length</th>
<th>416 &quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>120 &quot;</td>
</tr>
<tr>
<td>Height to top of columns</td>
<td>45 &quot;</td>
</tr>
<tr>
<td>Height to ridge of roof</td>
<td>70 &quot;</td>
</tr>
</tbody>
</table>

**SIDE AVENUES.**

<table>
<thead>
<tr>
<th>Length</th>
<th>1832 &quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>100 &quot;</td>
</tr>
<tr>
<td>Height to top of columns</td>
<td>45 &quot;</td>
</tr>
<tr>
<td>Height to ridge of roof</td>
<td>65 &quot;</td>
</tr>
</tbody>
</table>

**SIDE TRANSFET.**

<table>
<thead>
<tr>
<th>Length</th>
<th>416 &quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>100 &quot;</td>
</tr>
<tr>
<td>Height to top of columns</td>
<td>45 &quot;</td>
</tr>
<tr>
<td>Height to ridge of roof</td>
<td>65 &quot;</td>
</tr>
</tbody>
</table>

**CENTRAL AISLES.**

<table>
<thead>
<tr>
<th>Length at east end</th>
<th>744 &quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot; at west end</td>
<td>672 &quot;</td>
</tr>
<tr>
<td>Width</td>
<td>48 &quot;</td>
</tr>
<tr>
<td>Height to roof</td>
<td>30 &quot;</td>
</tr>
</tbody>
</table>

**SIDE AISLES.**

<table>
<thead>
<tr>
<th>Length at east end</th>
<th>744 &quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot; at west end</td>
<td>672 &quot;</td>
</tr>
<tr>
<td>Width</td>
<td>24 &quot;</td>
</tr>
<tr>
<td>Height to roof</td>
<td>24 &quot;</td>
</tr>
</tbody>
</table>

**CENTRE SPACE OR PAVILION.**

<table>
<thead>
<tr>
<th>Ground plan</th>
<th>120 ft. sq.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height to top of supporting columns</td>
<td>72 &quot;</td>
</tr>
<tr>
<td>Height to ridge of roof</td>
<td>95 &quot;</td>
</tr>
</tbody>
</table>

**TOWERS OVER COURTS.**

<table>
<thead>
<tr>
<th>Ground plan</th>
<th>48</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height to roof</td>
<td>120 &quot;</td>
</tr>
</tbody>
</table>

**CORNER TOWERS.**

<table>
<thead>
<tr>
<th>Ground plan</th>
<th>24 &quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height to roof</td>
<td>75 &quot;</td>
</tr>
</tbody>
</table>

The foundations consist of piers of masonry. The superstructure is composed of wrought iron columns, which support wrought iron roof trusses. These columns are composed of rolled channel bars, with plates riveted to the flanges. Lengthwise of the building the columns are spaced at the uniform distance apart of 24 feet. In the entire structure there are 672 columns, the shortest being 23 feet and the longest 125 feet in length. Their aggregate weight is 2,200,000 pounds. The roof trusses
are similar in form to those in general use for depots and warehouses, and consist of straight rafters with struts and tie-bars. The aggregate weight of iron in the roof trusses and girders is 5,000,000 pounds. This building being a temporary construction, the columns and trusses are so designed that they may be easily taken down and erected again at another site.

The sides of the building, for the height of seven feet from the ground, are finished with brickwork in panels between the columns; above the seven feet, with glazed sash. Portions of the sash are movable for ventilation. The roof covering is of tin upon sheathing boards. The ground flooring is of plank upon sills resting upon the ground, with no open space underneath.

The building stands nearly due east and west, and is lighted almost entirely by side light from the north and south sides. Louvre ventilators are introduced over the central nave and each of the avenues. Skylights are introduced over the central aisles.

Small balconies, or galleries of observation, have been provided in the four central towers of the building at the heights of the different stories.

A complete system of water supply, with ample provision of fire cocks, etc., is provided for protection against fire, and for sanitary purposes.

Offices for foreign commissions are placed along the sides of the building, in the side aisles, in proximity to the products exhibited.

The ground was graded and foundation laid for this building in the autumn of 1874. The erection of iron work at the site commenced on May 8th, 1875; the erection of the iron work was finished December 2d, 1875; and the building was accepted from the contractor February 14th, 1876. The cost of the building was $1,580,000.

KEY TO THE NOTATION.

The location of objects in the Main Building is shown by a letter and figure, indicating the nearest column of the building. The letters—A, B, C, to U—designate the successive ranges of columns, proceeding southward from the northern wall across the width of the building; the figures, the number of the column in each range, counting eastwardly from the western wall, the entire length of the building, from 1 to 79. Thus C 5 is the column in the third range from the north, and the fifth from the western end of the building. The southeasternmost column is U 79.

The class of the classification to which each exhibit belongs is indicated by the small figures at the end of the line.
Main Exhibition Building.

Scale, 360 ft. to 1 in.

Carrige Concourse.
B Ladies' Room.
C Gentlemen's Room.
D Water-closets.
E Offices.
F Restaurants.
G Stairway to Galleries.
H Carriage Annex.

Total Length, 1380 ft. Width, 464 ft. Height, 70 ft.

1. United States.
2. Germany.
3. Austria and Hungary.
4. Russia.
5. Spain and Philippine Islands.
6. Turkey.
7. Egypt.
8. Denmark.
11. Tunis.
15. Chili.
17. Italy.
20. Australasia and other British Colonies.
22. Great Britain and India.
23. France and Colonies.
24. Switzerland.
25. Belgium.
26. Brazil.
27. Netherlands.
28. Mexico.
29. Peru.
30. Orange Free State.
CLASSIFICATION.

DEPARTMENT I.—MINING AND METALLURGY.

MINERALS, ORES, STONE, MINING PRODUCTS.

CLASS 100.—Minerals, ores, etc. Metallic and non-metallic minerals, exclusive of coal and oil. Collections of minerals systematically arranged; collections of ores and associated minerals; geological collections.

CLASS 101.—Mineral combustibles. Coal, anthracite, semi-bituminous, and bituminous, coal-waste and pressed coal; albertite, asphalt, and asphaltic limestone; bitumen, mineral tar, crude petroleum.

CLASS 102.—Building stones, marbles, slates, etc. Rough, hewn, sawn, or polished, for buildings, bridges, walls, or other constructions, or for interior decoration, or for furniture.

Marble—white, black, or colored—used in building, decoration, statuary, monuments, or furniture, in blocks or slabs not manufactured.

CLASS 103.—Lime, cement, and hydraulic cement, raw and burned, accompanied by specimens of the crude rock or material used, also artificial stone, concrete, beton.

Specimens of lime mortar and mixtures, with illustrations of the processes of mixing, etc. Hydraulic and other cement.

Beton mixtures and results, with illustrations of the processes.

Artificial stone for building purposes, building blocks, cornices, etc.

Artificial stone mixtures, for pavements, walls, or ceilings.

Plasters, mastics, etc.

CLASS 104.—Clays, kaolin, silex, and other materials for the manufacture of porcelain faience, and of glass, bricks, terra cotta and tiles, and fire brick. Refractory stones for lining furnaces, sandstone, steatite, etc., and refractory furnace materials.

CLASS 105.—Graphite, crude and refined; for polishing purposes; for lubricating, electrotyping, photography, pencils, etc.

CLASS 106.—Lithographic stones, hone, whetstones, grindstones, grinding and polishing materials, sand quartz, garnet, crude topaz, diamond, corundum, emery in the rock and pulverized, and in assorted sizes and grades.

CLASS 107.—Mineral waters, artesian well water, natural brines, saline and alkaline efflorescences and solutions. Mineral fertilizing substances, gypsum, phosphate of lime, marls, shells, coprolites, etc., not manufactured.

METALLURGICAL PRODUCTS.

CLASS 110.—Precious metals.

CLASS 111.—Iron and steel in the pig, ingot, and bar, plates and sheets, with specimens of slags, fluxes, residues, and products of working.
CLASS 112.—Copper in ingots, bars, and rolled, with specimens illustrating its various stages of production.

CLASS 113.—Lead, zinc, antimony, and other metals, the result of extractive processes.

CLASS 114.—Alloys used as materials, brass, nickel, silver, solder, etc.

MINING ENGINEERING—MODELS, MAPS, AND SECTIONS.

CLASS 120.—Surface and underground surveying and plotting. Projection of underground work, location of shafts, tunnels, etc. Surveys for aqueducts and for drainage.

Boring and drilling rocks, shafts, and tunnels, etc. Surveys for aqueducts, and for ascertaining the nature and extent of mineral deposits.

Construction. Sinking and lining shafts by various methods, driving and timbering tunnels, and the general operations of opening, stoping, and breaking down ore, timbering, lagging, and masonry.

Hoisting and delivering at the surface, rock, ore, or miners.

Pumping and draining by engines, buckets, or by adits.

Ventilation and lighting.

Subaqueous mining, blasting, etc.

Hydraulic mining, and the various processes and methods of sluicing and washing auriferous gravel and other superficial deposits.

Quarrying.

CLASS 121.—Models of mines, of veins, etc.
CLASSIFICATION.

DEPARTMENT II.—MANUFACTURES.

CHEMICALS.

CLASS 200.—Chemicals, pharmaceutical preparations.  
The common commercial alkalies, potash, soda, and ammonia, with their carbonates.  
Bleaching powders and chloride of lime.  
Yeast powders, baking powders.

CLASS 201.—Oils, soaps, candles, illuminating and other gases.  
Oils from mineral, animal, and vegetable sources.  Refined petroleum, benzine, naphtha, and other products of the manufacture.  Oils from various seeds, refined, and of various degrees of purity.  Olive oil, cottonseed oil, palm oil.  Animal oils, of various kinds, in their refined state.  Oils prepared for special purposes besides lighting and for food.  Lubricating oils.  
Soaps and detergent preparations, 
Candles, stearine, glycerine, paraffine, etc., spermaceti.  
Illuminating gas and its manufacture.  
Oxygen gas, and its application for heating, lighting, metallurgy, and as a remedial agent.  
Chlorine and carbonic acid.

CLASS 202.—Paints, pigments, dyes, colors, turpentine, varnishes, printing inks, writing inks, blacking.

CLASS 203.—Flavoring extracts, essences, perfumery, pomades, cosmetics.

CLASS 204.—Explosive and fulminating compounds; in small quantities only, and under special regulations, shown in the building only by empty cases and cartridges.  Black powder of various grades and sizes.  Nitroglycerine and the methods of using and exploding.  Giant powder, dynamite, dualin, tri-nitroglycerine.

CLASS 205.—Pyrotechnics, for display, signaling, missiles.

CERAMICS—POTTERY, PORCELAIN, ETC.

CLASS 206.—Bricks, drain-tiles, terra cotta, and architectural pottery.

CLASS 207.—Fire clay goods, crucibles, pots, furnaces.  Chemical stoneware.

CLASS 208.—Tiles, plain, enameled, encaustic; geometric tiles and mosaics.  Tiles for pavements and for roofing, etc.

CLASS 209.—Porcelain for purposes of construction.  Hardware trimmings, etc.
CLASSIFICATION.

CLASS 210.—Stone china, for chemists, druggists, etc., earthenware, stoneware, faience, etc.
CLASS 211.—Majolica and Palissy ware.
CLASS 212.—Biscuit-ware, parian, etc.
CLASS 213.—Porcelain for table and toilet use, and for decoration.

GLASS AND GLASSWARE.

CLASS 214.—Glass used in construction and for mirrors. Window glass of various grades of quality and of size. Plate glass, rough, and ground or polished. Toughened glass.
CLASS 215.—Chemical and pharmaceutical glassware, vials, bottles.
CLASS 216.—Decorative glassware.

FURNITURE AND OBJECTS OF GENERAL USE IN CONSTRUCTION AND IN DWELLINGS.

CLASS 217.—Heavy furniture.—Chairs, tables, parlor and chamber suits, office and library furniture, vestibule furniture. Church furniture and decoration.
CLASS 218.—Table furniture.—Glass, china, silver, silver-plate, tea and coffee sets, urns, samovars, epergnes.
CLASS 219.—Mirrors, stained and enameled glass, cut and engraved window-glass, and other decorative objects.
CLASS 220.—Gilt cornices, brackets, picture frames, etc.
CLASS 221.—The nursery and its accessories; children's chairs, walking chairs.
CLASS 222.—Apparatus and fixtures for heating and cooking,—stoves, ranges, heaters, etc.
CLASS 223.—Apparatus for lighting,—gas fixtures, lamps, etc.
CLASS 224.—Kitchen and pantry,—utensils, tinware, and apparatus used in cooking (exclusive of cutlery).
CLASS 225.—Laundry appliances, washing machines, mangles, clothes- wringers, clothes-bars, ironing-tables.
CLASS 226.—Bath-room and water closet, shower bath, earth closet.
CLASS 227.—Manufactured parts of buildings,—sash, blinds, mantels, metal work, etc.

YARNS AND WOVEN GOODS OF VEGETABLE OR MINERAL MATERIALS.

CLASS 228.—Woven fabrics of mineral origin.—Wire cloths, sieve cloth, wire screens, bolting cloth.

Asbestos fibre, spun and woven, with the clothing manufactured from it.
Glass thread, floss, and fabrics.
CLASS 229.—Coarse fibres, of grass, rattan, cocoanut, and bark.

Matting, Chinese, Japanese, palm-leaf, grass, and rushes.
Floor cloths of rattan and cocoanut fibres, aloe fibre, etc.
CLASS 230.—Cotton yarns and fabrics, bleached and unbleached.

Cotton sheeting and shirtng, plain and twilled.
Cotton canvas and duck. Awnings, tents.
CLASS 231.—Dyed cotton fabrics, exclusive of prints and calicoes.
CLASS 232.—Cotton prints and calicoes, including handkerchiefs, scarfs, etc.
CLASS 233.—Linen and other vegetable fabrics, uncolored or dyed.
CLASS 234.—Floor oil cloths, and other painted and enameled tissues, and imitation of leather, with a woven base.

WOVEN AND FELTED GOODS OF WOOL AND MIXTURES OF WOOL.

CLASS 235.—Card wool fabrics.—Yarns, broadcloth, doeskins, fancy cassimeres. Felted goods.
CLASS 236.—Flannels.—Plain flannels, domets, opera and fancy.
CLASSIFICATION.

CLASS 237.—Blankets, robes, and shawls.

CLASS 238.—Combined wool fabrics.—Worsted, yarns, dress goods for women's wear, delaines, serges, poplins, merinoes.

CLASS 239.—Carpets, rugs, etc.—Brussels, melton, tapestry, tapestry Brussels, Axminster, Venetian, ingrain, felted carpetings, Druggets, rugs, etc.

CLASS 240.—Hair, alpaca, goat's hair, camel's hair, and other fabrics, mixed or unmixed with wool.

CLASS 241.—Printed and embossed woolen cloths, table covers, patent velvets.

**SILK AND SILK FABRICS, AND MIXTURES IN WHICH SILK IS THE PREDOMINATING MATERIAL.**

CLASS 242.—Cocoons and raw silk as reeled from the cocoon, thrown or twisted silks in the gun.

CLASS 243.—Thrown or twisted silks, boiled off or dyed, in hanks, skeins, or on spools.

CLASS 244.—Spun silk yarns and fabrics, and the materials from which they are made.

CLASS 245.—Plain woven silks, lutestrings, sarsnets, satins, serges, foulards, tissues for hat and millinery purposes, etc.

CLASS 246.—Figured silk piece goods, woven or printed. Upholstery silks, etc.

CLASS 247.—Crapes, velvets, gauzes, cravats, handkerchiefs, hosiery, knit goods, laces, scarfs, ties, veils, all descriptions of cut and made up silks.

CLASS 248.—Ribbons, plain, fancy, and velvet.

CLASS 249.—Bindings, braids, cords, galloons, ladies' dress trimmings, upholsterers', tailors', military, and miscellaneous trimmings.

**CLOTHING, JEWELRY, AND ORNAMENTS, TRAVELING EQUIPMENTS.**

CLASS 250.—Ready-made clothing, knit goods and hosiery, military clothing, church vestments, costumes, waterproof clothing, and clothing for special objects.

CLASS 251.—Hats, caps, boots and shoes, gloves, mittens, etc., straw and palm leaf hats, bonnets, and millinery.

CLASS 252.—Laces, embroideries, and trimmings for clothing, furniture, and carriages.

CLASS 253.—Jewelry and ornaments worn upon the person.

CLASS 254.—Artificial flowers, coiffures, buttons, trimmings, pins, hooks and eyes, fans, umbrellas, sunshades, walking-canes, pipes, and small objects of dress or adornment, exclusive of jewelry. Toys and fancy articles.

CLASS 255.— Fancy leather work, pocketbooks, toilet cases, traveling equipments, valises, and trunks.

CLASS 256.—Furs.

CLASS 257.—Historical collections of costumes, national costumes.

**PAPER, BLANK BOOKS, AND STATIONERY.**

CLASS 258.—Stationery for the desk, stationers' articles, pens, pencils, inkstands, and other apparatus of writing and drawing.

CLASS 259.—Writing paper and envelopes, blank-book paper, bond paper, tracing paper, tracing linen, tissue paper, etc., etc.

CLASS 260.—Printing paper for books, newspapers, etc.

Wrapping paper of all grades, cartridge and manilla paper, paper bags.

CLASS 261.—Blank books; sets of account books, specimens of ruling and binding, including blanks, bill heads, etc., book binding.

CLASS 262.—Cards; playing cards, cardboard, binders' board, pasteboard, paper or cardboard boxes.

CLASS 263.—Building paper, pasteboard for walls, cane fibre felt for car-wheels, ornaments, etc.

CLASS 264.—Wall papers, enamelled and colored papers, imitations of leather, wood, etc.
CLASSIFICATION.

MILITARY AND NAVAL ARMAMENTS, ORDNANCE, FIREARMS, AND HUNTING APPARATUS.

CLASS 265.—Military small-arms, muskets, pistols, and magazine guns, with their ammunition.
CLASS 266.—Light artillery, compound guns, machine guns, mitrailleuses, etc.
CLASS 267.—Heavy ordnance and its accessories.
CLASS 268.—Knives, swords, spears, and dirks.
CLASS 269.—Firearms used for sporting and hunting, also other implements for the same purpose.
CLASS 270.—Traps for game, birds, vermin, etc.

MEDICINE, SURGERY, PROTHESIS.

CLASS 272.—Medicines; officinal (in any authoritative pharmacopoeia), articles of the materia medica, preparations, unofficinal.
CLASS 273.—Dietetic preparations, as beef extract and other articles intended especially for the sick.
CLASS 274.—Pharmaceutical apparatus.
CLASS 275.—Instruments for physical diagnosis, clinical thermometers, stethoscopes, ophthalmoscopes, etc. (except clinical microscopes, etc., for which see Class 324).
CLASS 276.—Surgical instruments and appliances, with dressings, apparatus for deformities, prosthesis, obstetrical instruments.
CLASS 277.—Dental instruments and appliances.
CLASS 278.—Vehicles and appliances for the transportation of the sick and wounded, during peace and war, on shore or at sea.

HARDWARE, EDGE TOOLS, CUTLERY, AND METALLIC PRODUCTS.

CLASS 280.—Hand tools and instruments used by carpenters, joiners, and for wood and stone in general. Miscellaneous hand tools used in industries, such as jewellers’, engravers’.
CLASS 281.—Cutlery, knives, penknives, scissors, razors, razor straps, skates, and implements sold by cutlers.
CLASS 282.—Emery and sand paper, polishing powders, polishing and burnishing stones.
CLASS 283.—Metal hollow ware, ornamental castings.
CLASS 284.—Hardware used in construction, exclusive of tools and implements. Spikes, nails, screws, tacks, bolts, locks, latches, hinges, pulleys. Plumbers’ and gas fitters’ hardware, furniture fittings, ships’ hardware, saddlers’ hardware, and harness fittings and trimmings.

FABRICS OF VEGETABLE, ANIMAL, OR MINERAL MATERIALS.

CLASS 285.—India rubber goods and manufactures.
CLASS 286.—Brushes.
CLASS 287.—Ropes, cordage.
CLASS 288.—Flags, insignia, emblems.
CLASS 289.—Wooden and basket ware, papier mache.
CLASS 290.—Undertakers’ furnishing goods, etc.
CLASS 291.—Galvanized iron work.

CARRIAGES, VEHICLES, AND ACCESSORIES.
(For farm vehicles and railway carriages, see Departments of Agriculture and Machinstry.)
CLASS 292.—Pleasure carriages.
CLASS 293.—Traveling carriages, coaches, stages, omnibuses, hearses, Bath chairs, velocipedes, baby coaches.
CLASS 294.—Vehicles for movement of goods and heavy objects, carts, wagons, trucks.
CLASS 295.—Sleighs, sledges, sleds, etc.
CLASS 296.—Carriage and horse furniture, harness and saddlery, whips, spurs, horse blankets, carriage robes, rugs, etc.
CLASSIFICATION.

DEPARTMENT III.—EDUCATION AND SCIENCE.

EDUCATIONAL SYSTEMS, METHODS, AND LIBRARIES.

CLASS 301.—Elementary instruction. Infant schools and kindergartens, arrangements, furniture, appliances, and modes of training.

Public schools, graded schools, buildings and grounds, equipments, courses of study, methods of instruction, text-books, apparatus, including maps, charts, globes, etc.; pupils' work, including drawing and penmanship; provisions for physical training.

CLASS 302.—Higher education. Academies and high schools.

Colleges and universities. Buildings and grounds; libraries, museums of zoology, botany, mineralogy, art, and archeology; apparatus for illustration and research, mathematical, physical, chemical, and astronomical courses of study; text-books, catalogues, libraries, and gymnasiums.

CLASS 303.—Professional schools, theology, law, medicine, and surgery, dentistry, pharmacy, mining, engineering, agriculture, and mechanical arts, art and design, military schools, naval schools, normal schools, commercial schools, music.

Buildings, text-books, libraries, apparatus, methods, and other accessories for professional schools.

CLASS 304.—Institutions for instruction of the blind, deaf, and dumb, and the feeble-minded.

CLASS 305.—Education reports and statistics.

National bureau of education.

State, city, and town systems.

College, university, and professional systems.

CLASS 306.—School and text-books, dictionaries, encyclopedias, gazetteers, directories, index volumes, bibliographies, catalogues, almanacs, special treatises, general and miscellaneous literature, newspapers, technical and special newspapers and journals, illustrated papers, periodical literature.

INSTITUTIONS AND ORGANIZATIONS.

CLASS 310.—Institutions founded for the increase and diffusion of knowledge. Such as the Smithsonian Institution, the Royal Institution, the Institute of France, British Association for the Advancement of Science, and the American Association, etc., their organization, history, and results.

CLASS 311.—Learned and scientific associations. Geological and mineralogical societies, etc. Engineering, technical, and professional associations. Artistic, biological, zoological, medical schools, astronomical observatories.
CLASS 312.—Museums, collections, art galleries, exhibitions of works of art and industry. Agricultural fairs, state and county exhibitions, national exhibitions. International exhibitions. Scientific museums and art museums. Ethnological and archeological collections.

CLASS 313.—Music and the drama.

SCIENTIFIC AND PHILOSOPHICAL INSTRUMENTS AND METHODS.

CLASS 320.—Instruments of precision, and apparatus of physical research, experiment, and illustration.

Astronomical instruments and accessories, used in observatories.

Transits, mural circles, equatorials, collimators.

Geodetic and surveying instruments. Transits, theodolites, needle compasses. Instruments for surveying underground in mines, tunnels, and excavations.

Nautical astronomical instruments. Sextants, quadrants, repeating circles, dip-sectors.

Leveling instruments and apparatus. Carpenters' and builders' levels, hand levels, water levels, engineers' levels.

Instruments for deep-sea sounding and hydrographic surveying.

Meteorological instruments and apparatus.

Thermometers, pyrometers.

Barometers.

Hygrometers and rain gauges.

Maps, bulletins.

Blanks for reports, methods of recording, reducing, and reporting observations.

CLASS 321.—Indicating and registering apparatus, other than meteorological; mechanical calculation.

Viameters, pedometers, perambulators.

Gas meters.

Water meters, current meters, ships' logs, electrical logs.

Tide registers.

Apparatus for printing consecutive numbers.

Counting machines, calculating engines, arithmometers.

CLASS 322.—Weights, measures, weighing and meteorological apparatus.

Measures of length; graduated scales on wood, metal, ivory, tape, or ribbon; steel tapes, chains, rods, verniers, rods, and graduated scales for measuring lumber, goods in packages, casks, etc., gaugers' tools and methods.

Measures of capacity for solids and liquids.

Weights. Scales and graduated beams for weighing; assay balances, chemical balances. Ordinary scales for heavy weights; weighing locomotives and trains of cars. Postal balances. Hydrometers, alchemometers, lactometers, etc.; gravimeters. (See Class 571.)

CLASS 323.—Chronometric apparatus.


CLASS 324.—Optical and thermotic instruments and apparatus.

Mirrors, plane and spherical.

Lenses and prisms.

Spectacles and eyeglasses, field and opera glasses, graphoscopes and stereoscopes.
Cameras and photographic apparatus.
Microscopes.
Telescopes.
Apparatus for artificial illumination, including electric, oxyhydrogen, and magnesium light.
Stereopticons.
Photometric apparatus.
Spectroscopes and accessories for spectrum analysis.
Polariscopes, etc.
Thermotic apparatus.

**CLASS 325.**—Electrical apparatus.
Friction machines.
Condensers and miscellaneous apparatus to illustrate the discharge.
Galvanic batteries and accessories to illustrate dynamical electricity.
Electro-magnetic apparatus.
Induction machines, Rumkorff coils, etc.
Magnets and magneto-electrical apparatus.

**CLASS 326.**—Telegraphic instruments and methods.
Batteries and forms of apparatus used in generating the electrical currents for telegraphic purposes.
Conductors and insulators, and methods of support, marine telegraph cables.
Apparatus of transmission; keys, office accessories, and apparatus.
Receiving instruments, relay magnets, local circuits.
Semaphoric and recording instruments.
Codes, signs, or signals.
Printing telegraphs for special uses.
Electrographs.
Dial or cadran systems.
Apparatus for automatic transmission.

**CLASS 327.**—Musical instruments and acoustic apparatus.
Percussion instruments, drums, tamborines, cymbals, triangles.
Pianos.
Stringed instruments other than pianos.
Automatic musical instruments, music boxes.
Wind instruments of metal and of wood.
Harmoniums.
Church organs and similar instruments.
Speaking machines.
Vocal music.

**ENGINEERING, ARCHITECTURE, CHARTS, MAPS, AND GRAPHIC REPRESENTATIONS.**

(For Agricultural Engineering, see Class 630.)

(For Mining Engineering, see Class 120.)

**CLASS 330.**—Civil engineering. Land surveying, public lands, etc.
Submarine constructions, foundations, piers, docks, etc.
CLASS 331.—Dynamic and industrial engineering. Construction and working of machines; examples of planning and construction of manufacturing and metallurgical establishments.

CLASS 332.—Railway engineering. Location of railways, and the construction and management of railways.

CLASS 333.—Military engineering.

CLASS 334.—Naval engineering.

CLASS 335.—Topographical map. Marine and coast charts.

   Geological maps and sections.
   Botanical, agronomical, and other maps, showing the extent and distribution of men, animals, and terrestrial products. Physical maps.
   Meteorological maps and bulletins. Telegraphic routes and stations.
   Railway and route maps. Terrestrial and celestial globes. Relief maps and models of portions of the earth's surface. Profiles of ocean beds and routes of submarine cables.

PHYSICAL, SOCIAL, AND MORAL CONDITION OF MAN.

CLASS 340.—Physical development and condition.

   The nursery and its accessories.
   Gymnasiums, games, and manly sports. Skating, walking, climbing, ball-playing, acrobatic exercises; rowing, hunting, etc.

CLASS 341.—Alimentation. Markets; preparation and distribution of food.

CLASS 342.—The dwelling. Sanitary conditions and regulations. Domestic architecture.

   Dwellings characterized by cheapness, combined with the conditions essential to health and comfort.
   Fire-proof structures.
   Hotels, club-houses, etc.
   Public baths.

CLASS 343.—Commercial systems and appliances.

   Mercantile forms and methods, counting-houses and offices.
   Banks and banking.
   Saving and trust institutions.
   Insurance; fire, marine, life, etc.
   Commercial organizations, boards of trade, merchants', produce, and stock exchanges.
   Corporations for commercial and manufacturing purposes.
   Railway and other transportation companies.
   Building and loan associations.

CLASS 344.—Money. Mints and coining.

   Collections of current coins.
   Historical collections.
   Tokens, etc.
   Bank notes and other paper circulating mediums.
   Commercial paper, bills of exchange, etc.
   Securities for payment of money, stocks, bonds, mortgages, ground rents, quit rents.
   Precautions against counterfeiting and misappropriation of money.

CLASS 345.—Government and law. Various systems of government.

   Departments of government. Revenue and taxation, military organization, executive powers, legislative forms and authority, judicial functions and systems, police regulations, government charities.
   International relations; international law; diplomatic and consular service, etc., allegiance and citizenship; naturalization.
   Codes.
Municipal government.
Protection of property in inventions.
Postal system and appliances.
Punishment of crime.
Prisons and prison management and discipline; police stations; houses of correction; reform schools; naval or marine discipline; punishment at sea.

**Class 346.** Benevolence. General hospitals.
Special hospitals for the eye and ear, for women, etc.
Hospitals for contagious and infectious diseases.
Hospitals for the insane—under State control, and private asylums.
Quarantine systems and organizations.
Sanitary regulations of cities.
Dispensaries.
Inebriate asylums.
Lying-in asylums.
Magdalen asylums.
Asylums for infants and children. Foundling and orphan asylums, children's aid societies.
Homes for the aged and infirm; homes for aged men and women; soldiers' homes; homes for the maimed and deformed; sailors' homes.
Treatment of paupers. Almshouses, feeding the poor, lodging houses.
Emigrant aid societies.
Treatment of aborigines.
Prevention of cruelty to animals.

**Class 347.** Co-operative associations.
Political societies and organizations.
Military organizations and orders.
Trade unions and associations.
Industrial organizations.
Secret orders and fraternities.

**Class 348.** Religious organizations and systems. Origin, nature, growth, and extent of various religious systems and faiths. Statistical, historical, and other facts.
Religious orders and societies, and their objects.
Societies and organizations for the propagation of systems of religion by missionary effort.
Spreading the knowledge of religious systems by publications.
Bible societies, tract societies, colportage.
Systems and methods of religious instruction and training for the young.
Sunday-schools, furniture and apparatus.
Associations for religious or moral improvement.
Dispensing charities, church guilds.

**Class 349.** Art and industrial exhibitions. Agricultural fairs, state and county exhibitions, national exhibitions, international exhibitions, international congresses, etc.
CLASSIFICATION.

DEPARTMENT IV.—ART.

SCULPTURE.

Class 400.—Figures and groups in stone, metal, clay, or plaster.
Class 401.—Bas-reliefs, in stone or metal; electrotype copies.
Class 402.—Medals, pressed and engraved; electrotypes of medals.
Class 403.—Hammered and wrought work—repoussé and rehaussé work, embossed and engraved relief work.
Class 404.—Cameos, intaglios, engraved stones, dies, seals, etc.
Class 405.—Carvings in wood, ivory, and metal.

PAINTING.

Class 410.—Paintings in oil on canvas, panels, etc.
Class 411.—Water color pictures; aquarelles, miniatures, etc.
Class 412.—Frescoes, cartoons for frescoes, etc.
Class 413.—Painting with vitrifiable colors. Pictures on porcelain, enamel, and metal.

ENGRAVING AND LITHOGRAPHY.

Class 420.—Drawings with pen, pencil, or crayons.
Class 421.—Line engravings from steel, copper, or stone.
Class 422.—Wood engravings.
Class 423.—Lithographs, zincographs, etc.
Class 424.—Chromo-lithographs.

PHOTOGRAPHY.

Class 430.—Photographs on paper, metal, glass, wood, fabrics, or enamel surfaces.
Class 431.—Prints from photo-relief plates, carbon prints, etc.
Class 432.—Photo-lithographs, etc.
Class 433.—Photographic apparatus and supplies.

INDUSTRIAL AND ARCHITECTURAL DESIGNS, MODELS, AND DECORATIONS.

Class 440.—Industrial designs.
Class 441.—Architectural designs; studies and fragments, representations and projects of edifices; restorations from ruins and from documents.
Class 442.—Decoration of interiors of buildings.
Class 443.—Artistic hardware and trimmings, artistic castings, forged metal work for decoration, etc.

DECORATION WITH CERAMIC AND VITREOUS MATERIALS, MOSAIC AND INLAID WORK.

Class 450.—Mosaic and inlaid work in stone.
Class 451.—Mosaic and inlaid work in tiles, tessarae, glass, etc.
Class 452.—Inlaid work in wood and metal, parquetry, tables, etc.
Class 453.—Stained glass.
Class 454.—Miscellaneous objects of art.
CLASSIFICATION.

DEPARTMENT V.—MACHINERY.

MACHINES, TOOLS, AND APPARATUS OF MINING, METALLURGY, CHEMISTRY, AND THE EXTRACTIVE ARTS.

CLASS 500.—Rock drilling.
CLASS 501.—Well and shaft boring.
CLASS 502.—Machines, apparatus, and implements for coal cutting.
CLASS 503.—Hoisting machinery and accessories.
CLASS 504.—Pumping, draining, and ventilating.
CLASS 505.—Crushing, grinding, sorting, and dressing. Breakers, stamps, mills, pans, screens, sieves, jigs, concentrators.
CLASS 506.—Furnaces, smelting apparatus, and accessories.
CLASS 507.—Machinery used in Bessemer process.
CLASS 509.—Gas machinery and apparatus.

MACHINES AND TOOLS FOR WORKING METAL, WOOD, AND STONE.

CLASS 510.—Planing, sawing, veneering, grooving, mortising, tonguing, cutting, moulding, stamping, carving, and cask-making machines, etc., cork-cutting machines.
CLASS 511.—Direct acting steam sawing machines, with gang saws. Bark mills.
CLASS 512.—Rolling mills, bloom squeezers, blowing fans. Rivet, nail, bolt, and tack making machinery.
CLASS 513.—Furnaces and apparatus for casting metals, with specimens of work.
CLASS 514.—Steam, trip, and other hammers, with specimens of work, anvils, forges, bellows.
CLASS 515.—Planing, drilling, slotting, turning, shaping, punching, stamping, cutting, and coining machines. Wheel cutting and dividing machines, emery wheels, drills, taps, gauges, dies, etc. Grindstones.
CLASS 516.—Stone-sawing and planing machines, dressing, shaping, and polishing, sand blasts, Tilghman’s machines, glass-grinding machines, etc.
CLASS 517.—Brick, pottery, and tile machines. Machines for making artificial stone.
CLASS 518.—Furnaces, moulds, blowpipes, etc., for making glass and glassware.
CLASS 519.—Tools, implements, etc., for working metal, wood, and stone.

MACHINES AND IMPLEMENTS OF SPINNING, WEAVING, FELTING, AND PAPER MAKING.

CLASS 520.—Machines for the manufacture of silk goods.
CLASS 521.—Machines for the manufacture of cotton goods.
CLASS 522.—Machines for the manufacture of woolen goods, carpets, and tapestry.
CLASS 523.—Machines for the manufacture of linen goods.
CLASS 524.—Machines for the manufacture of rope and twine, and miscellaneous fibrous materials.

CLASS 525.—Machines for the manufacture of paper and felting.

CLASS 526.—Machines for the manufacture of india-rubber goods.

CLASS 527.—Machines for the manufacture of mixed fabrics.

CLASS 528.—Machines for the manufacture of wire cloth.

MACHINES, APPARATUS, AND IMPLEMENTS USED IN SEWING AND MAKING CLOTHING AND ORNAMENTAL OBJECTS.

CLASS 530.—Machines used in the manufacture of lace, floor-cloths, fancy embroidery, hair, ribbons, etc.

CLASS 531.—Sewing and knitting machines, clothes, corset, hat, and bonnet making machines.

CLASS 532.—Machines for preparing and working leather.

CLASS 533.—Machines for making boots and shoes.

CLASS 534.—Machines for ironing, drying, scouring, and cleaning.

CLASS 535.—Machines for making clocks and watches.

CLASS 536.—Machines for making jewelry.

CLASS 537.—Machines for making buttons, pins, needles, etc.

CLASS 538.—Pipes for smoking.

MACHINES AND APPARATUS FOR TYPESETTING, PRINTING, STAMPING, EMBOSsing, AND FOR MAKING BOOKS, AND PAPER WORKING.

CLASS 540.—Printing, stamping, embossing, and lithographing presses.

CLASS 541.—Typecasting machines, apparatus of stereotyping.

CLASS 542.—Types and typesetting machines. Type-writing machines.

CLASS 543.—Printers' furniture.

CLASS 544.—Bookbinding machines.

CLASS 545.—Paper-folding machines.

CLASS 546.—Paper and card cutting machines, paper box machines.

CLASS 547.—Envelope machines.

MOTORS AND APPARATUS FOR THE GENERATION AND TRANSMISSION OF POWER.

CLASS 550.—Boilers and all steam or gas generating apparatus for motive purposes.

CLASS 551.—Water-wheels, water engines, hydraulic rams, windmills.

CLASS 552.—Steam, air, or gas engines, electro-magnetic engines.

CLASS 553.—Apparatus for the transmission of power, shafting, belting, cables, transmission of power by compressed air, etc., gearing, cables.

CLASS 554.—Screw propellers, wheels for the propulsion of vessels, and other motors.

CLASS 555.— Implements and apparatus used in connection with motors. steam gauges, manometers, etc. Anti-friction metals.

HYDRAULIC AND PNEUMATIC APPARATUS, PUMPING, HOISTING, AND LIFTING.

CLASS 560.—Pumps and apparatus for lifting and moving liquids.

CLASS 561.—Pumps and apparatus for moving and compressing air or gas.

CLASS 562.—Pumps and blowing engines, blowers and ventilating apparatus.

CLASS 563.—Hydraulic jacks, presses, elevators, lifts, meters, cranes.

CLASS 564.—Fire engines, hand, steam, or chemical, and fire extinguishing apparatus, hose, ladders, and fire-escapes, etc.

CLASS 565.—Beer engines, soda-water machines, bottling apparatus, corksing machines.

CLASS 566.—Stop valves, cocks, pipes, etc.

CLASS 567.—Diving apparatus and machinery.

CLASS 568.—Ice machines.

RAILWAY PLANT, ROLLING STOCK, AND APPARATUS.

CLASS 570.—Locomotives, models, drawings, plans, etc.

CLASS 571.—Carriages, wagons, trucks, cars, etc.
CLASSIFICATION.

CLASS 572.—Brakes, buffers, couplings, and snow-plows.
CLASS 573.—Wheels, tires, axles, bearings, springs, etc.
CLASS 574.—Permanent ways, ties, chairs, switches, etc.
CLASS 575.—Station arrangements, signals, water-cranes, turn-tables.
CLASS 576.—Miscellaneous locomotive attachments.
CLASS 577.—Street railways and cars.

MACHINES USED IN PREPARING AGRICULTURAL PRODUCTS.
CLASS 580.—Flour mills.
CLASS 581.—Sugar refining machines.
CLASS 582.—Confectioners' machinery.
CLASS 583.—Oil-making machinery.
CLASS 584.—Tobacco manufacturing machines.
CLASS 585.—Mills for spices, coffee, etc.
CLASS 586.—Machines for preparing fancy goods.
CLASS 587.—Machines for preparing malt and spirituous liquors.

AERIAL, PNEUMATIC, AND WATER TRANSPORTATION.
CLASS 590.—Suspended cable railways.
CLASS 591.—Transporting cables.
CLASS 592.—Balloons, flying machines, etc.
CLASS 593.—Pneumatic railways, pneumatic dispatch.
CLASS 594.—Boats and sailing vessels. Sailing vessels used in commerce. Sailing vessels used in war. Yachts and pleasure boats. Rowing boats of all kinds. Life boats and salvage apparatus, with life rafts, belts, etc. Submarine armor, diving bells, etc. Ice boats. Models and drawings.
CLASS 595.—Steamships, steamboats, and all vessels propelled by steam.
CLASS 596.—Vessels for carrying telegraph cables and railway trains, also coal barges, water boats, and dredging machines, screw and floating docks, and for other special purposes.
CLASS 597.—Steam capstans, windlass, deck-winches, and steering apparatus, fans.

MACHINERY AND APPARATUS ESPECIALLY ADAPTED TO THE REQUIREMENTS OF THE EXHIBITION.

Boilers, engines, cranes, pumps, etc.
CLASSIFICATION.

DEPARTMENT VI.—Agriculture.

ARBORICULTURE AND FOREST PRODUCTS.

Class 600.—Timber and trunks of trees, entire or in transverse or truncated sections, with specimens of barks, leaves, flowers, seed vessels, and seed. Masts, spars, knees, longitudinal sections of trees, railway ties, ship timber, lumber roughly sawn; as planks, shingles, lath, and staves. Timber and lumber prepared in various ways to resist decay and combustion; as by injection of salts of copper and zinc.

Class 601.—Ornamental woods used in decorating and for furniture; as veneers of mahogany, rosewood, ebony, walnut, maple, and madrona.

Class 602.—Dyewoods, barks, and galls for coloring and tanning.

Class 603.—Gums, resins, caoutchouc, gutta percha, vegetable wax.

Class 604.—Lichens, mosses, fungi, pulu, ferns.

Class 605.—Seeds, nuts, etc., for food and ornamental purposes.

Class 606.—Forestry.—Illustrations of the art of planting, managing, and protecting forests. Statistics.

Class 607.—Fruit trees and shrubs.

POMOLOGY.

Class 610.—Fruits of temperate and semi-tropical regions; as apples, pears, quinces, peaches, nectarines, apricots, plums, grapes, cherries, strawberries, and melons.

Class 611.—Tropical fruits and nuts, oranges, bananas, plantains, lemons, pineapples, pomegranates, figs, coconuts.

AGRICULTURAL PRODUCTS.

Class 620.—Cereals, grasses, and forage plants.

Class 621.—Leguminous plants and esculent vegetables.

Class 622.—Roots and tubers.

Class 623.—Tobacco, hops, tea, coffee, spices, condiments, herbs.

Class 624.—Seeds and seed vessels.

LAND ANIMALS.

Class 630.—Horses, asses, mules.

Class 631.—Horned cattle.

Class 632.—Sheep.

Class 633.—Goats, alpaca, llama, camel.

Class 634.—Swine.

Class 635.—Poultry and birds.

Class 636.—Dogs and cats.

Class 637.—Wild animals.

Class 638.—Insects, useful and injurious. Honey bees, cochineal, silk-worms.

42
CLASSIFICATION.

MARINE ANIMALS, FISH CULTURE, AND APPARATUS.

Class 640.—Marine mammals.—Seals, cetaceans, etc., specimens living in aquaria, or stuffed, salted, preserved in alcohol, or otherwise.

Class 641.—Fishes, living or preserved.

Class 642.—Pickled fish, and parts of fish used for food.

Class 643.—Crustaceans, echinoderms, beche de mer.

Class 644.—Mollusks, oysters, clams, etc., used for food.

Class 645.—Shells, corals, and pearls.

Class 646.—Whalebone, shagreen, fish-glue, isinglass, sounds, fish-oil.

Class 647.—Instruments and apparatus of fishing.—Nets, baskets, hooks, and other apparatus used in catching fish.

Class 648.—Fish culture.—Aquaria, hatching pools, vessels for transporting roe and spawn, and other apparatus used in fish breeding, culture, or preservation.

ANIMAL AND VEGETABLE PRODUCTS.

(Used as food or as materials.)

Class 650.—Sponges, seaweed, and other growths used for food or in the arts.

Class 651.—The dairy.—Milk, cream, butter, cheese.

Class 652.—Hides, furs, and leather, tallow, oil, and lard, ivory, bone, horn, glue.

Class 653.—Eggs, feathers, down.

Class 654.—Honey and wax.

Class 655.—Animal perfumes; as musk, civet, ambergris.

Class 656.—Preserved meats, vegetables, and fruits. Dried, or in cans or jars. Meat and vegetable extracts.

Class 657.—Flour; crushed and ground cereals, decorticated grains.

Class 658.—Starch and similar products.

Class 659.—Sugar and syrups.

Class 660.—Wines, alcohol, and malt liquors.

Class 661.—Bread, biscuits, crackers, cakes, confectionery, cocoa, chocolate, etc.

Class 662.—Vegetable oils, oil cake.

TEXTILE SUBSTANCES OF VEGETABLE OR ANIMAL ORIGIN.

Class 665.—Cotton on the stem, in the boll, ginned, and baled.

Class 666.—Hemp, flax, jute, ramie, etc., in primitive forms and in all stages of preparation for spinning.

Class 667.—Wool in the fleece, carded, and in bales.

Class 668.—Silk in the cocoon and reeled.

Class 669.—Hair, bristles.

MACHINES, IMPLEMENTS, AND PROCESSES OF MANUFACTURE.


Class 671.—Planting.—Manual implements, corn-planters and hand-drills. Animal power machinery, grain and manure drills, corn and cotton planters. Steam power machinery, grain and manure drills.


Class 673.—Preparatory to marketing.—Thrashers, clover-hullers, corn-shellers, winnowers, hay, cotton, flax, jute, ramie, wine, oil, and sugar making apparatus. Cleaners and smutters. Horse powers.
CLASS 674.—Applicable to farm economy.—Portable and stationary engines, chaffers, hay and feed cutters, slicers, pulpers, corn mills, farm boilers and steamers, incubators, edged tools, mills, meat choppers.

CLASS 675.—Dairy fittings and appliances.—Churns for hand and power, butter-workers, cans and pails, cheese-presses, vats, and apparatus, ice-cream freezers, cedar-ware.

AGRICULTURAL ENGINEERING AND ADMINISTRATION.

CLASS 680.—Laying out and improving farms.—Clearing (stump extractors), construction of roads, draining, irrigating, models of fences, gates, drains, out-falls, dams, embankments, irrigating machinery, stack building and thatching.

CLASS 681.—Commercial fertilizers, phosphatic, ammoniacal, calcareous, etc.

CLASS 682.—Transportation.—Wagons, carts, sleds, harness, yokes, traction engines, and apparatus for road making and excavating.

CLASS 683.—Farm buildings.—Models and drawings of farm houses and tenements, barns, stables, hop-houses, fruit-driers, ice-houses, windmills, granaries, barracks, apiaries, cocooneries, aviaries, abattoirs, and dairies.

TILLAGE AND GENERAL MANAGEMENT.

CLASS 690.—Systems of planting and cultivation.

CLASS 691.—Systems of draining and application of manures.

CLASS 692.—Systems of breeding and stock feeding, training.

CLASS 693.—Veterinary surgery and appliances.
CLASSIFICATION.

DEPARTMENT VII.—HORTICULTURE.

ORNAMENTAL TREES, SHRUBS, AND FLOWERS.

CLASS 700.—Ornamental trees and shrubs, evergreens.
CLASS 701.—Herbaceous perennial plants.
CLASS 702.—Bulbous and tuberous rooted plants.
CLASS 703.—Decorative and ornamental foliage plants.
CLASS 704.—Annuals and other soft-wooded plants, to be exhibited in successive periods during the season.
CLASS 705.—Roses.
CLASS 706.—Cactacea.
CLASS 707.—Ferns, their management in the open air and in ferneries, wardian cases, etc.
CLASS 708.—New plants, with statement of their origin.
CLASS 709.—Floral designs, etc.—Cut flowers, bouquets, preserved flowers, leaves, seaweeds. Illustrations of plants and flowers. Materials for floral designs. Bouquet materials, bouquet holders, bouquet papers, models of fruits, vegetables, and flowers.

HOTHOUSES, CONSERVATORIES, GRAPERIES, AND THEIR MANAGEMENT.

CLASS 710.—Hothouse and conservatory plants.
CLASS 711.—Fruit trees under glass.
CLASS 712.—Orchids and parasitic plants.
CLASS 713.—Forcing and propagation of plants.
CLASS 714.—Aquatic plants under glass, or in aquaria, etc.
CLASS 715.—Horticultural buildings, propagating houses, hotbeds, etc., and modes of heating them. Structures for propagating and forcing small fruits.
CLASS 716.—Portable or movable orchard houses and graperies, without artificial heat. Frames, beds.

GARDEN TOOLS, ACCESSORIES OF GARDENING.

CLASS 720.—Tools and implements.—Machines for the transplanting of trees, shrubs, etc. Portable forcing pumps, for watering plants in greenhouses and methods of watering the garden and lawn.
CLASS 721.—Receptacles for plants.—Flower pots, plant-boxes, tubs, fern cases, jardinieres, etc. Window gardening. Plant and flower stands, ornate designs in iron, wood, and wire.
CLASS 722.—Ornamental wirework, viz.: fences, gates, trellis bordering of flower beds, porches. Park seats, chairs, garden statuary, vases, fountains, etc. Designations, labels, numbers.

GARDEN DESIGNING, CONSTRUCTION, AND MANAGEMENT.

CLASS 731.—Treatment of water for ornamental purposes, cascades, fountains, reservoirs, lakes.
CLASS 732.—Formation and after-treatment of lawns.
CLASS 733.—Garden construction, buildings, etc. — Rockwork, grottoes. Rustic constructions and adornments for private gardens and public grounds.
CLASS 734.—Planting, fertilizing, and cultivating.
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<td>Wattson, Thos., &amp; Sons</td>
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<td>West Philadelphia Passenger Railway Company</td>
<td>Second page of cover.</td>
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THE FINEST CIGAR
(At six for 25 cents)
IN THE UNITED STATES,
THE “AROMA,”
FROM
THE UNITED STATES CIGAR MANUFACTORY,
Office, S. W. cor. Fifteenth and Vine Sts.,
PHILADELPHIA.

MAGIC LANTERNS.
STEREO-PANOPTICOS-ARTOPTICOS. 10,000 SLIDES ALWAYS ON HAND,
ILLUSTRATING EVERY SECTION OF THE GLOBE; AND ALL THE ARTS AND
SCIENCES. THE ARTOPTICON IS THE BEST LANTERN, WITH A
BRILLIANT GOALI OIL LAMP, SUITABLE FOR HOME, SUNDAY SCHOOLS
AND LECTURES.
ILLUSTRATED CATALOGUES FREE.
W. Y. M'CALLISTER 728 CHESTNUT ST. PHILA. PA.

TWENTY-EIGHTH ANNUAL REPORT OF
THE PENN MUTUAL LIFE INSURANCE CO.
OFFICE, 921 CHESTNUT STREET, PHILADELPHIA.

ASSETS, JAN. 1st, 1876.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>United States bonds, Philadelphian and other stocks and loans</td>
<td>$1,770,477 50</td>
</tr>
<tr>
<td>Mortgages and ground rents upon property appraised at $3,314,200, all first liens</td>
<td>1,971,908 84</td>
</tr>
<tr>
<td>Real estate owned by Co.</td>
<td>391,466 33</td>
</tr>
<tr>
<td>Premium notes and loans secured by collateral</td>
<td>833,410 13</td>
</tr>
<tr>
<td>Cash on hand and in trust companies</td>
<td>297,916 62</td>
</tr>
<tr>
<td>Scrip dividends held by Co.</td>
<td>111,830 00</td>
</tr>
<tr>
<td>Balance in hand of agents</td>
<td>37,653 48</td>
</tr>
<tr>
<td>All other securities</td>
<td>236,666 14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$5,504,399 24</strong></td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Liabilities</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Losses reported, but not yet due</td>
<td>$90,000 00</td>
</tr>
<tr>
<td>Reserve at 4 per cent interest, required to insure outstanding risks</td>
<td>4,553,118 00</td>
</tr>
<tr>
<td>Scrip yet outstanding</td>
<td>113,030 00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,756,438 00</strong></td>
</tr>
<tr>
<td>Surplus to policy holders, 4 per cent basis</td>
<td>747,891 24</td>
</tr>
<tr>
<td>Surplus to policy holders, 4 1/2 per cent basis</td>
<td>1,083,091 24</td>
</tr>
<tr>
<td>Total number of policies issued in 1875</td>
<td>2,093</td>
</tr>
<tr>
<td>Policies in force Jan. 1, 1876</td>
<td>9,545</td>
</tr>
<tr>
<td>Amount at risk</td>
<td>8,959,361 00</td>
</tr>
</tbody>
</table>

SAMUEL C. HUEY, President,
H. S. STEPHENS, Second Vice-President,
HENRY AUSTIE, Secretary.

SAMUEL E. STOKES, Vice-President,
JAMES WEIR MASON, Actuary.

HASELTINE GALLERIES,
1125 and 1127 Chestnut St., Philadelphia.
UNITED STATES.

DEPT. I.—MINING AND METALLURGY.

UNITED STATES.

Minerals, Ores.

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<th>Description</th>
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<td>8</td>
<td>Foote, A. E., M.D., 3725 Lancaster avenue, Philadelphia, Pa.</td>
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<tr>
<td>9</td>
<td>Cleveland Rolling Mill Co., Cleveland, Ohio.</td>
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<tr>
<td>12</td>
<td>Cook, Isaac, St. Louis, Mo.</td>
</tr>
<tr>
<td>15</td>
<td>Black Band Iron Co., Marietta, O.</td>
</tr>
<tr>
<td>18</td>
<td>Providence Franklin Iron Co., Providence, R. I.</td>
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<tr>
<td>20</td>
<td>Hussey &amp; Howe Mining Co., Plattsburg, N. Y.</td>
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<tr>
<td>26</td>
<td>Davis, O. W., Jr., Bangor, Maine.</td>
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<td>29</td>
<td>Lehigh Zinc Co., Bethlehem, Pa.</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Minerals, Ores.

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<tr>
<th>Mineral/Location</th>
<th>Ore Type</th>
<th>Quantity</th>
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<td>31 Dexter &amp; Co., New York, N. Y.</td>
<td>Native copper</td>
<td>T 67</td>
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<tr>
<td>32 Minong Mining Co., Detroit, Mich.</td>
<td>Iron ore</td>
<td>T 69</td>
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<tr>
<td>33 Shalter, R. M., Carrick Furnace, Franklin county, Pa.</td>
<td>Iron ore</td>
<td>T 69</td>
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<tr>
<td>34 Shelby Iron Co., Shelby Iron Works, Ala.</td>
<td>Iron ore</td>
<td>T 69</td>
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<tr>
<td>36 Tecumseh Iron Co., Tecumseh, Ala.</td>
<td>Iron ore</td>
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<td>37 New River Railroad, Manufacturing Co. of Virginia, Phila., Pa.</td>
<td>Iron ore</td>
<td>T 59</td>
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<td>38 South &amp; North Alabama Railroad, Monticorey, Ala.</td>
<td>Iron ore</td>
<td>T 62</td>
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<td>39 Carpenter, Charles, Kelley's Island, Ohio.</td>
<td>Iron ore</td>
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<tr>
<td>41 Kentucky Geological Survey.</td>
<td>Geological rock</td>
<td>T 63</td>
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<tr>
<td>42 Allen, Oliver, Mumford, N. Y.</td>
<td>Lead ore</td>
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<tr>
<td>43 Vesuvius Furnace, Etna Iron Works, Ironon, Ohio.</td>
<td>Iron ore</td>
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<td>44 Etna Furnace, Etna Iron Co., Hanging Rock, Ohio.</td>
<td>Iron ore</td>
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<tr>
<td>45 Blanche Furnace, Etna Iron Works, Ironon, Ohio.</td>
<td>Iron ore</td>
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<tr>
<td>46 Hecla Iron &amp; Mining Co., John Campbell, President, Ironon, O.</td>
<td>Iron ore</td>
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<tr>
<td>47 Monitor Furnace Co., Ironon, O.</td>
<td>Iron ore</td>
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<tr>
<td>48 Grant Furnace, W. D. Kelley &amp; Sons, Ironon, O.</td>
<td>Iron ore</td>
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<tr>
<td>49 Center Furnace, W. D. Kelley &amp; Sons, Ironon, O.</td>
<td>Iron ore</td>
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<tr>
<td>49a Pennsylvania Geological Survey (by John H. Pease)</td>
<td>Scientific collection of rocks, minerals, models, and maps illustrating the geology of Pennsylvania.</td>
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<tr>
<td>50 Howard Furnace, Charcoal Iron Co., Ironon, O.</td>
<td>Iron ore</td>
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<tr>
<td>50a Benton, Lewis F., Antwerp, N. Y.</td>
<td>Lead ore</td>
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<td>51 Buckhara Furnace, Charcoal Iron Co., Ironon, O.</td>
<td>Iron ores</td>
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<tr>
<td>52 Olive Furnace, Campbell, McGugin, Ironon, O.</td>
<td>Iron ore</td>
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<tr>
<td>53 Lawrence Furnace Co., Ironon, O.</td>
<td>Iron ores</td>
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<td>53a Ward, L. B., Niles, O.</td>
<td>Iron ore</td>
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<td>54 Pine Grove Furnace, Means, Kyle, &amp; Co., Hanging Rock, O.</td>
<td>Iron ore</td>
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<td>55 Ohio Furnace, Means, Kyle, &amp; Co., Hanging Rock, O.</td>
<td>Iron ores</td>
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<td>56 Washington Furnace, Union Iron Co., Portsmouth, O.</td>
<td>Iron ores</td>
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<td>Ores</td>
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<td>58 Bloom Furnace, John Paul &amp; Co., Portsmouth, O.</td>
<td>Iron ores</td>
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<tr>
<td>59 Clinton Furnace, W. I. Bell, Wheelersburg, O.</td>
<td>Iron ores</td>
<td>T 68</td>
</tr>
<tr>
<td>59a Selma &amp; Alabama Railroad, Montgomery, Ala.</td>
<td>Iron ore</td>
<td>T 60</td>
</tr>
<tr>
<td>60 Buckeye Furnace Co., Jackson, O.</td>
<td>Section of coal beds</td>
<td>T 61</td>
</tr>
<tr>
<td>61 Cambria Furnace, D. Lewis &amp; Co., Samsonville, O.</td>
<td>Iron ores</td>
<td>T 66</td>
</tr>
<tr>
<td>62 Jackson Furnace, L. P. N. Smith's Heirs, SciotaWile, O.</td>
<td>Iron ores</td>
<td>T 68</td>
</tr>
<tr>
<td>63 Jefferson Furnace Co., Oak Hill, O.</td>
<td>Iron ores</td>
<td>T 66</td>
</tr>
<tr>
<td>64 Orange Furnace, Orange Iron Co., Jackson, O.</td>
<td>Iron ores</td>
<td>T 68</td>
</tr>
<tr>
<td>65 Star Furnace Co., Jackson, O.</td>
<td>Iron ores</td>
<td>T 68</td>
</tr>
<tr>
<td>66 Huron Furnace, Huron Iron Co., Jackson, O.</td>
<td>Iron ores</td>
<td>T 68</td>
</tr>
<tr>
<td>67 Tropic Furnace Co., Jackson, O.</td>
<td>Iron ores</td>
<td>T 68</td>
</tr>
<tr>
<td>68 Globe Furnace, Globe Iron Co., Jackson, O.</td>
<td>Iron ores</td>
<td>T 68</td>
</tr>
<tr>
<td>69 Fulton Furnace, Globe Iron Co., Jackson, O.</td>
<td>Iron ores</td>
<td>T 68</td>
</tr>
<tr>
<td>69a Liking Iron Co., Neway, O.</td>
<td>Iron ore</td>
<td>T 66</td>
</tr>
<tr>
<td>70 Wellington Twin Furnaces, Wellston Coal &amp; Iron Co., Wellston, O.</td>
<td>Coal</td>
<td>T 68</td>
</tr>
<tr>
<td>70a Hannibal &amp; St. Joseph Railroad, Hannibal, Mo.</td>
<td>Minerals, etc.</td>
<td>T 65</td>
</tr>
<tr>
<td>70b St. Louis &amp; Iron Mountain Railroad, St. Louis, Mo.</td>
<td>Minerals, etc.</td>
<td>T 65</td>
</tr>
<tr>
<td>71 Lincoln Furnace, J. M. McGhee's Knife, Rod's Mills, O.</td>
<td>Iron ores</td>
<td>T 68</td>
</tr>
<tr>
<td>72 Richland Furnace Co., Richland P. O., O.</td>
<td>Iron ores</td>
<td>T 68</td>
</tr>
</tbody>
</table>

For location of objects, indicated by letter and figure, see Key to Notation, p. 25: ground plan, p. 26.
Minerals, Ores, Stone.

73 Eagle Furnace, L. C. Damarin & Co.,
Ruf's Mills, O.—Iron ores. T 68. 100
74 Hope Furnace, L. C. Damarin & Co.,
Portsmouth, O.—Iron ores. T 68. 100
75 Hamden Furnace, L. C. Damarin &
Co., Portsmouth, O.—Iron ores. T 68. 100
75a Marietta, Pittsburg, & Cleveland
Railroad, Marietta, O.—Minerals and
ores. V 63. 100
76 Vincent Furnace, Bancroft, Rades &
Co., Vinton Station, O.—Iron ores. 100
77 Keystone Furnace Co., Portsmouth,
O.—Iron ores. T 68. 100
78 Monroe Furnace, Union Iron Co.,
Portsmouth, O.—Iron ores. T 68. 100
79 Latrobe Furnace, Bundy & Cobb,
Berlin Cross Roads, O.—Iron ores. T 68. 100
79a Barnes, Lewis, Philadelphia, Pa.—
Manganese iron ore, from Warren
county, N. J. 59. 100
80 Logan Furnace Co., Logan county,
O.—Iron ores. T 68. 100
81 Union Furnace, Brooks & Hueston,
Haydensville, O.—Iron ores. T 68. 100
82 Mount Savage Furnace, Lexington
& Carter county Mining & Manufacturing
Co., Lexington, Ky.—Iron ores. T 68. 100
83 Buffalo Furnace, Colbertson, Ear-
hart, & Co., Greensburg, Ky.—Iron
ores. T 68. 100
84 Hunnewell Furnace, Eastern Kent-
cucky Railway Co., Riverton, Ky.—Iron
ores. T 68. 100
85 Pennsylvania Furnace, Eastern Kent-
cucky Railway Co., Riverton, Ky.—Iron
ores. T 68. 100
86 Charlotte Furnace Co., Riverton,
Ky.—Iron ores. T 68. 100
87 Laurel Furnace, Robt. Scott & Co.,
Riverton, Ky.—Iron ores. T 68. 100
88 Gallia Furnace, Norton, Campbell, &
Co., Portsmouth, O.—Iron ores. T 68. 100
88a Iowa, State of.—Minerals, ores, etc.
of Iowa. V 59. 100
89 Raccoon Furnace, Raccoon Mining
& Manufacturing Co., Riverton, Ky.—
Iron ores. T 68. 100
90 Tygert's Valley Mining Co., Riv-
town, Ky.—Section of iron ore. T 68. 100
91 Chester Iron Co., Chester, N. J.—
Iron ore. T 64. 100
91 Bellefonte Furnace, Means, Russell,
& Means, Ashland, Ky.—Iron ores. T 68. 100
92 Buena Vista Furnace, Means & Co.,
Ashland, Ky.—Iron ores. T 68. 100
92a Lowe, S. B., Chattanooga, Tenn.—
Ores. X 63. 100
93 Center Furnace, D. Hillman & Sons,
Empire Iron Works, Ky.—Iron ores. T 68. 100
93a Lowe, S. B., Chattanooga, Tenn.—
Ores. X 63. 100
94 Center Furnace, D. Hillman & Sons,
Empire Iron Works, Ky.—Iron ores. T 68. 100
95 Hanging Rock Iron Region, Iron-
ton, O.—Iron ores. T 68. 100
96 Traber & Aubery, Cincinnati, O.—
Iron ores from twenty-five states and terri-
itories. T 68. 100
97 Borden, William W., New Prov-
dence, Ind.—Fossils of Clark county,
Ind., and stone. X 60. 100
99 Cooper, Hewitt, & Co., New York,
N. V. T 66. 100
a Iron ores. 100
b Ores. 101
100 Ohio Coal Co., Marietta, O.—V 63.
100
a Coal. 100
b Coke. 101
101 Shohodes & Co., Cleveland, O.—V 61
ste 63.
100
a Lake Superior iron ores. 100
b Massillon, Ohio, coals. 101
102 Poplar Creek Mineral Railroad Co.,
Philadelphia, Pa.—T 69.
100
a Iron ores, etc., from Anderson county,
Tenn. 100
b Coal from Anderson county, Tenn. 101
—T 64.
100
a Ores. 100
b Fuel. 101
104 Glendon Iron Co., Easton, Pa.—T
64.
100
a Iron ores. 100
b Fuel. 101
105 Mahoning Valley Centennial Asso-
ciation, Youngstown, O.—V 63.
100
a Ores. 100
b Coal. 100
c Limestone. 103
106 Bye, E. Mortimer, Wilmington,
Del.
100
a Iron ore. (Titaniferous magnetic.) Chrome
ores. (Rock and sand.) 100
b Maryland "verde antique" marble (ser-
entine), various shades of green, hand-
somely blended; takes a brilliant polish,
does not fade or weather, and is adapted
for all kinds of ornamental work. T 70.
107 Northampton Furnace, worked by
the Bethlehem Iron Co., Bethlehem, Pa.,
T 64.
100
a Iron ores. 100
b Fuel. 101
—T 64.
100
a Iron ore. 100
b Coal. 101
—T 64.
100
a Iron ore. 100
b Fuel. 101
111 Allentown Rolling Mill Co., Allen-
town, Pa.—T 64.
100
a Ores. 100
b Fuel. 101
—T 64.
100
a Iron ore. 100
b Fuel. 101
113 Philadelphia and Reading Coal and
Iron Co., Philadelphia, Pa.—T 72 and Y
66.
100
a Iron ores. 100
b Coals for smelting and steam purposes. 100
114 Grand Tower Mining, Manufac-
turing, and Transportation Co., Grand
Tower, Ill.—T 63.
100
a Ores. 100
b Fuel. 101
For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
115 Ironton Furnace Iron & Steel Co., Ironton, O.—T 68.  
a Iron ores.  
b Limestone.  
116 Belfont Furnace, Belfont Iron Works, Ironton, O.—T 68.  
a Iron ores.  
b Bituminous coals.  
117 Ophir Furnace Co., Jackson, O.—T 68.  
a Iron ores.  
b Jackson county stone coal.  
118 Norton Iron Works, Ashland, Ky.—T 68.  
a Iron ores.  
b Coals and coke.  
119 Ashland Furnace, Lexington & Big Sandy Railroad Co., Ashland, Ky.—T 68.  
a Iron ores.  
b Limestone.  
120 Powel, Robert Hare, & Co., 424 Walnut street, Philadelphia, Pa.—X 54.  
a Iron ores.  
b Semi-bituminous and gas coals, from the Powellton, Pennsylvania.  
121 Union Iron Co. of Buffalo, Buffalo, N. Y.—T 64 and V 60 outside.  
a Iron ores.  
b Limestone.  
122 Woodstock Iron Co., Anniston, Ala.—T 63.  
a Iron and manganese ores.  
b Limestone.  
123 Saucou Iron Co., Hellertown, Pa.—T 64.  
a Hematite and magnetic ore.  
b Limestone.  
123a Selma, Rome, & Dalton Railroad (by S. W. Baird), Cincinnati, O.—X 84.  
a Copper and iron ores.  
b Coal.  
c Slate, marble, and limestone.  
d Fire clay.  
124 Andrews, Hitchcock, & Co., Cleveland, O.—V 61 to 64.  
a Lake Superior iron ores.  
b Brier Hill coal.  
c Limestone.  
125 Duncan, John W., Philadelphia, Pa.—T 72.  
a Iron ores.  
b Clays.  
126 Peru Steel & Iron Co., Clintonville, N. Y.—T 63.  
a Iron ore.  
b Graphite ore.  
127 Thomas, W. H. B., Mount Holly, N. J.—T 68.  
a Minerals.  
b Marl for fertilizing purposes; mineral lanters from New Jersey.  
a Magnetic and hematite iron ores.  
b Anthracite coal.  
a Minerals, ores.  
b Mineral spring waters, chalybeate, iron, and sulphur waters.  
128a Andover Iron Co., Phillipsburg, N. J.—T 64.  
a Iron ores.  
b Coal.  
c Limestone and slags.  
129 Crane Iron Co., Catasaqua, Pa.—T 64.  
a Hematite and magnetic iron ores.  
b Fuel.  
c Limestone.  
130 Chattanooga Mineral District, Chattanooga, Tenn.—X 63.  
a Iron and copper ores: gold quartz.  
b Coal.  
c Marble.  
131 Lehigh Valley Iron Co., Copley, Pa.—T 64.  
a Hematite and magnetic ore.  
b Fuel.  
c Limestone.  
132 Ohlton Coal Co., Youngstown, O.—V 63.  
a Black band ore with coal.  
b Mineral ridge coal.  
a Ores.  
b Coal.  
133 Alice Furnace, Etna Iron Works, Hanging Rock, Ohio.—T 68.  
a Iron ores.  
b Bituminous coal and coke.  
c Limestone.  
133a Coleraine Iron Co., Northampton county, Pa.—T 64.  
a Iron ore.  
b Coal.  
134 Hanging Rock Iron Region Furnaces, Charles Campbell, Commissioner, Ironton, O.—T 69.  
a Iron ores.  
b Unders, bituminous coals.  
c Limestone.  
d Fire clay.  
135 Tuscarawas Coal & Iron Co., Cleveland, O.—T 71.  
a Iron ores.  
b Coal.  
c Limestone.  
d Sand, fire clay.  
136 Mount Vernon Furnace, Hiram Campbell & Sons, Ironton, O.—T 68.  
a Iron ores.  
b Bituminous coals.  
c Limestone.  
d Fire clay.  
137 Milton Furnace & Coal Co., Wells- ton, O.—T 68.  
a Iron ores.  
b Coals.  
c Limestone.  
d Fire clay.  
a Iron ores.  
b Coal.  
c Limestones.  
d Fire clays.  
139 State of Wisconsin.—V 60.  
a Minerals, soils, etc.  
b Building stone.  
c Sands, gravel.  
140 State of Ohio (by F. W. Green).—V 61 to 63.  
a Minerals, ores.  
b Stone.  
c Clay, etc.  

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
51

UNITED STATES.

Minerals, Ores, Coal.


a Lead, zinc, and copper ores; minerals, geological suite. 100
b Building stones. 102
c Clays and sands. 104
d Fertilizers. 107

142 State of Indiana (by E. T. Cox, State Geologist).—V. 58.

a Hydrated brown oxide iron ores. 100
b Bituminous and canal coal from various mines. 101
c Marble of various colors, oolithic building stone, limestone, sandstone, marble, flag, hydraulic stone. 102
d Hydraulic cement, caustic lime. 103
e Fire, white porcelain, and potters' clay; sand. 104


a Minerals, ores, geological collections, etc. 100
b Bituminous and canal coal. 101
c Flint, sawed, and polished building stone, marbles, and slates. 102
d Lime and cement. 103
e Clays and silice for glass manufacturers; sandstone, etc. 104
f Mineral waters, natural brines, geyseru, marls, etc. 107

144 State of Delaware (by J. P. Comegys, Dover, Del.).—V. 55.

a Iron ore. 100
b Building stone. 102
c Clays. 104
d Natural woods. 600
e Fruits. 610
f Cereals. 620
g Peas, beans, potatoes, turnips. 621

145 State of Missouri (collective exhibit, by Thos. Allen, President State Board Centennial Managers, St. Louis, Mo.).—V. 65 and T. 60.

a Iron, lead, zinc, copper, and nickel ores, barytes,feldspar, and soils. 100
b Coal. 101
c Stone. 101
d Clays, sand, ochres, and kaolin. 101
e Tripoli. 106
f Peanuts. 605
f Wheat, rye, oats, barley, and corn. 620
h White beans and black-eyed peas. 621
i Millet. 624
j Cotton. 665
k Flax and hemp. 666
l Wool. 667
m Silk. 668


147 Foster Coal Co., Youngstown, O.—Coal. V. 63.

148 Kittanning Coal Co., 125 South Fourth street, Philadelphia, Pa.—Clearfield bituminous coal, for steam and manufacturing purposes. V. 56 and T. 72. 101

149 Westmoreland Coal Co., 230 South Third street, Philadelphia, Pa.—Bituminous coal from the Pittsburg seam, for manufacturing gas and iron, and for locomotive fuel. V. 58. 101

149a Warwick, John G., Massillon, O.—Coal from Warminster mines. V. 63. 101

150 Penn Gas Coal Co., Westmoreland county, Pa.—Section of bituminous coal vein. T. 72 and V. 56. 101

150a Sparks, Westwater, & Co., Columbia, O.—Coal from Minkumking county. V. 63. 101


152 Kyle Coal Co., Youngstown, O.—Coal. V. 63. 101

153 Linderman, G. B., Bethlehem, Pa.—Anthracite coal. T. 64. 101

154 Newton, Jotham, New York, N. Y.—Composition fuel made of coal-dust. T. 57. 101

155 Union Mining Co., of Alleghany county, Md.—Coal. X. 58. 101

155a Stoner, Hitchman, & Co., Mt. Pleasant, Pa.—Coal and coke. X. 57. 101

156 Anthracite Fuel Co., Rondout, N. Y.—Pressed anthracite coal. V. 54. 101

156a Hutchinson, A. A., & Bro., Pittsburg, Pa.—Coal and coke. X. 66. 101

157 Hickory Coal Co., Pottsville, Pa.—Samples of coal. W. 55. 101

158 Harleigh Coal Co., Philadelphia, Pa.—Samples of coal. W. 55. 101

158a Lawton, Burnett, & Co., East Palestine, Ohio.—Bituminous coal, from Columbus county, O. V. 61 to 63. 101

158b Draper, John W., Pottsville, Pa.—Anthracite coal. W. 56. 101

159 Excelsior Coal Mining Co., Philadelphia, Pa.—Samples of coal. W. 55. 101

160 Garretson, Theodore, Philadelphia, Pa.—Coal from the Girard colliery. W. 55. 101

161 Wadsworth Coal Co., Akron, O.—Coal from Medina county, O. V. 63. 101

162 Blauvelt, Jas. C., Marietta, O.—Bituminous coal from Marietta Run, Ohio. V. 61 to 64. 101

162a Hurd Coal & Iron Co., Columbus, O.—Bituminous coal from Perry county, O. V. 63. 101

163 Lexington & Carter county Mining & Manufacturing Co., Lexington, Ky.—Section of bituminous coal. T. 65. 101

163a Church Hill Coal Co., Youngstown, O.—Coal from Brier Hill. V. 63. 101

163b Burton, J. P., Massillon, O.—Coal. V. 63. 101

163c Andrews & Hitchcock, Youngstown, O.—Brier Hill block coal. V. 61 to 63. 101

163d Huddell & Seitzinger, Philadelphia, Pa.—Anthracite coal from Draper's colliery. W. 58. X. 56. 101

164 Hey, John, Brookwayville, Pa.—Lumps of bituminous coal. V. 56. 101

164a Suydam, M. A., & Co., Columbus, O.—Coal from Straitsville Mining Company. V. 63. 101

165 Eastern Kentucky Railway, River ton, Ky.—Sections of cannel and bituminous coal. X. 68. 101

165a Hayden, P., Columbus, O.—Coal from Hocking county. V. 63. 101

165b Steubenville Coal Company, Steubenville, O.—Bituminous coal. V. 63. 101

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Coal, Stone.

165. Pomeroy Coal Company, Pome-
yoy, O.—Coal. V 63. 1 101

166. Brooks, W. B., & Son, Hocking
county, O.—Coal. V 63. 1 101

167. Newark Coal Company, Newark,
O.—Coal. V 63. 1 101

Bituminous white ash coal from Cumber-
land county, Pa. V 57. 1 101

169. Franklin Coal Company, Akron,
O.—Coal from Summit county, V 63.
1 101

169 a. Britch, E. A., Columbus, O.—
Coal from Athens county, V 63. 1 101

169 b. Howells, Anthony, Massillon,
O.—Coal from Pigeon Run. V 63. 1 101

Pa.—Slate mantels, house decorations,
building material. T 59. 1 102

171. Williams Marble & Slate Mantel
Co., Philadelphia, Pa.—Marble and mar-
lblzed slate mantels, etc. T 64. 1 102

171 a. Skillins, L., & Co., Columbus, O.—
Marble and marbleized slate mantels, etc.,
T 59. 1 102

172. Dougherty, E. D., Philadelphia,
Pa.—White and black marble of Ten-
nessee, rough and polished; pedestals,
slabs, etc. The Dougherty marble is used
in the U. S. Capitol, Treasury, South
Carolina State House, and over one
hundred and fifty other buildings, public
and private, in all parts of the country.
Operated since 1835. Quarry in Dough-
ertyville, Hawkins county, Tenn. T 49.
1 102

173. Peninsula Stone Co., Peninsula,
O.—Building stone. V 63. 1 102

174. Columbian Marble Co., Rutland,
Vt.—Marble wainscoting, pedestal, tiling,
etc. T 54. 1 102

175. Van Gunden, Young, & Drumm,
Philadelphia, Pa.—Vermont marble tab-
lets and rustic monument; Italian marble.
T 47. 1 102

176. Innis, G. S., Warden of Ohio Peni-
tentiary, Columbus, O.—Limestone from
State quarries at Columbus, O. V 61 to
64. 1 102

177. Field, F. K., Philadelphia, Pa.—
North River, Pennsylvania, and Virginia
blue stone. T 53. 1 102

178. Gurney, H. D., St. Paul, Minn.—
Minnesota granite—red, white, and blue.
T 59. 1 102

179. Forest City Stone Co., Cleveland,
O.—Sawed stone flagging. T 54. 1 102

180. Chase, M. K., Bluehill, Maine.—
Cut granite pedestal. (Nature.) 1 102

180 a. Martin, H. F., Allentown, Pa.—
Slate mantels and blackboards, school
slates, etc. T 57. 1 102

—Roofing slate. T 51. 1 102

181 a. Allen, James T., & Co., Philadel-
phia, Pa.—Saggiola and Marezzo marble
for interior decoration. T 54. 1 102

182. Fauschere, A. L., & Co., New York,
N. Y.—Marble mantels, etc. T 50. 1 102

183. Williams, Chas., St. Louis, Mo.—
Tennessee, Italian, and Missouri marble
work; jewel box. T 53. 1 102

184. Borter, H., & Bros., Philadelphia,
Pa.—Bituminous coal of Massachusetts granite.
(Nature.) 1 102

185. Denton, Drake W., Office, 17
North Front street, Philadelphia, Pa.—
Excelsior fire and water-proof slate roof-
ing, and flux, waste-composition body.
All orders promptly attended to. T 56.
1 102

186. Tillson, Davis, Rockland, Maine.—
Plain, polished, and ornamented granite
work. T 51. 1 102

187. Fish, W. & Co., Columbus, O.—
Stone from Portsmouth and Black Rock,
Ohio. W 63. 1 102

188. Finch, Pruy, & Co., Glens Falls,
N. Y.—Block of marble. T 51. 1 102

189. Maine Slate Co., Skowhegan,
Maine.—Roofing slate, dark, rich, rustic
rock, dulling color, unequalled elasticity,
toughness, and strength, wonderful rift
and smoothness of surface. T. H. Dins-
more, Business Manager. T 53. 1 102

190. Chapman Slate Co., Bethlehem,
Pa.—Roofing slate, flagging, stairways,
bluestone, pavers, door and window sills,
mantels. T 64. 1 102

191. Lehigh Slate Co., Slaton, Pa.—
Roofing and school slate, mantles, black-
boards, bath tubs; bureau, table, and
washstand tops. T 64. 1 102

192. Hinsdale, Doyle, & Co., New York,
diamic monuments. T 72. 1 102

Marble mantels. T 50. 1 102

194. Howell, C. M., Lancaster, Pa.—
Marble monuments. V 63. 1 102

195. Allentown Slate Mantel Co., Allen-
town, Pa.—Slate mantels. T 51. 1 102

196. Hinton, David, Xenia, O.—
Building limestone. V 61 to 64. 1 102

197. Caguire, Frank, Chicago, Ill.—
Antique vase of limestone. T 53. 1 102

198. Carpenter & Raymond, Cambridge,
City, Ind.—Monumental work. T 71. 1 102

199. McDonald, Alexander, Cambridge,
Mass.—The Centennial Cascade, a rustic
rock-work surmounted by a cross (granite
from Glen quarries, Mason, N. H., carved
at Cambridge, Mass.), exhibiting fine
quality of this granite and its capabilities
for carved and polished work. N 56 and
T 67. 1 102

200. Bosler, Marcus, Dayton, O.—
Limestone. V 61 to 63. 1 102

201. Ballard & Galloway, Finley, O.—
V 61 to 63.

a. Building limestone. 1 102

b. Line, and water lime rock. 1 103

202. Bedwell Granite Co., Rockland,
Maine.—Granite samples. T 72. 1 102

203. Brinton, Joseph H., Thornbury P. O.,
Pa.—Serpentine stone from quarries in
Chester county, Pa. T 55. 1 102

204. Scorgie, Wight, & Co., Cambridge,
Mass.—Polished granite fountain. U

For location of objects, indicated by letter and figure, see Key to Notation, p. 25 ; ground plan, p. 26.
STONE-

195 Struthers, W., & Sons, Philadelphia, Pa.—Mantels, font, group of birds, in Caen stone; alto-relief in statuary, marble, sandstone, font, specimens of foreign marbles and native plaster: models for public buildings; specimens of native granites, marbles, and sandstones. T 52.


197 a Barker, Henry, & Sons, Quincy, Mass.—Quincy granite pedestal. (Note.)

198 Rutland Marble Co., West Rutland, Vt.—Wrought and unwrought marble. T 59.


199 a Graves Brothers, Birmingham, O.—V 63.
   a Building stone.
   b Grindlestones.


201 Martin, F. O., St. George, Maine.—Block of dressed granite. T 64.

202 Wells, Chas. H., Marietta, O.—Sandstone for building purposes. T 64.


204 Merrille, Adams H., Williamsburg, Maine.—Roofing slate. T 59.


209 Sheidons & Slason, West Rutland, Vt.—Pedestal of statuary and blue mottled marble. V 54.

210 Davis, J. J., Newark, O.—White and red sandstone. V 61 to 63.

211 McNally, William G., Cleveland, O.—Coat-of-arms of Ohio, carved from Berea stone. (Ohio State Building.)

211 a Portland Brown Stone Quarries, Portland, Conn.—Steeps and doorways of Connecticut brown stone. (Outside.)

211 b King, T. H., Trumansburg, N. Y.—Flag stones. (Outside.)

211 c Stotler, D. C., Piqua, O.—Building limestone. V 61 to 64.

211 d Strom & De Plancque, New York, N. Y.—Marble table top and mantel piece. T 51.

211 e Fase, Lewis, Covington, O.—V 61 to 64.
   a Building limestone.
   b Lime.

211 f North Pittsford Marble Company, Pittsford, Vt.—Marble monuments, pedestal, and design case. T 56.


211 h Myers, Uhl, & Co., Cleveland, O.—Marble mantel and grate. (Ohio State Building.)

212 Thompson, Wm. S., Springfield, Ohio.—V 63.
   a Stone.
   b Lime.

212 a Truber, Jacob, Cincinnati, O.—Limestone. V 61 to 64.

212 b Mueller, John M., Cincinnati, O.—Buenavista stone. V 64 to 63.

212 c Richey, Morris S., Waverly, O.—Building stone. V 64 to 64.

212 d Singer & Talcott Stone Company, Chicago, Ill.—Illinois limestone dressed by machinery. (At spring S. E. of Horticultural Hall.)

212 e St. Johnsbury Granite Company, St. Johnsbury, Vt.—Granite monument and tablet. T 57.

212 f Richmond Marble Company, of Vermont, Philadelphia, Pa.—White marble pedestal. T 57.

213 Amberst Stone Co., Cleveland, O.—V 63.
   a Blocks of sandstone.
   b Grindlestones.

   a Blocks of sandstone.
   b Grindlestones.

214 a Berea Stone Company, Berea, O.—V 63.
   a Building stone and flagging.
   b Grindlestones, and stone steps.

   a Building stone.
   b Limestone.

216 Worthington & Sons, North Amherst, Ohio.—T 56 and V 63.
   a Amherst building stone.
   b Grindlestones, etc., from quarries at Amherst and Lake Huron, Mich.


217 Williams, R. L., Middle Granville, N. Y.—T 51.
   a Vermont and New York roofing slate.
   b Car coupler.

COLLECTIVE EXHIBIT OF BUILDING STONES USED IN THE Ohio STATE BUILDING.

218 Hoffman, A. O., Thompson, Wm., and others, Springfield, O.

219 Berea Stone Co., Berea, O.

220 Hurst, I. R., Cleveland, O.

221 Ford, O. D., Cleveland, O.

222 Halderman, L., & Son, Cleveland, O.

223 Wagner, John, Cleveland, O.

224 Amherst Stone Co., Cleveland, O.

225 Black River Stone Co., Cleveland, O.

226 Paul, John, & Co., Massillon, O.

227 Wilson & Hughes Stone Co., Cleveland, O.

228 Clough Stone Co., Amherst, O.

229 Worthington & Sons, Amherst, O.
Minerals, Stone.

230 Ohio Stone Co., Cleveland, O.  
231 McDermott, J., & Co., Cleveland, O.  
232 Coshocton Stone Co., Coshocton, O.  
233 Stitt, Price, & Co., Columbus, O.  
234 Finnegan, M., Cincinnati, O.  
235 Finnegan, J. H., Cincinnati, O.  
236 Montgomery, R. M., Youngstown, O.  
237 Caldwell & Tod, Youngstown, O.  
238 Byers & Mcllhany, Youngstown, O.  
239 Mauser & Haid, Youngstown, O.  
240 Hamilton, Homer, Youngstown, O.  
241 Warthorst & Co., Massillon, O.  
242 Stocking, Z. S., Massillon, O.  
243 Bosler, Marcus, Dayton, O.  
244 Huffman, William, Dayton, O.  

245 Tremain, Chas., Manlius, N. Y.—Cement and land plaster. V 72.  
246 Ervin, D. S., Cedarville, Oh. o.—Limestone. V 61 to 64.  
247 Howes Cave Association, Howes Cave, N. Y.—Hydraulic cement and lime, ground plaster, and rock strata. V 53.  
249 Michael, F. M., and others, Eaton, Ohio.—Limestone and lime. V 61 to 63.  
247 Sintz, George, Springfield, O.—Limestone and lime. V 61 to 64.  
248 Mitchell, Wilson, Philadelphia, Pa.—Portlandica artificial stone building blocks, partitions, floors, colored paving tiles, etc. T 52.  
248 Richardson, Geo., Milwaukee, Wis.—Artificial stone, with moulds and apparatus for hardening. X 57.  
250 Wampum Cement & Lime Co., limited, New Castle, Pa.—Portland cement, and samples in artificial stone of various designs. T 57.  
251 Coplay Cement Co., Allentown, Pa.—Cements, building blocks, pipe, ornaments, etc. T 56.  
252 Allen Cement Co., Siegfried's Bridge, Pa.—Crude and manufactured cement. T 57.  
255 Abbott Pavement Co., Brooklyn, N. Y.—Pavement. The Abbott Pavement is a bituminous concrete that has been used for six years past on many miles of roadways in Brooklyn, and for four or five years in Washington. It costs less than the asphalt pavement of Paris; in this country only about one-half. It costs less than one-half for repairs, and it is not nearly so slippery, while in all the other qualities, of smoothness, quietness, cleanliness, comfort to those driving on it, economy of horse-flesh and vehicles, it is admirable. Under patents held by the Abbott Pavement Company, old stone, macadam, and wood pavements can be utilized as a foundation, and millions of dollars' worth of wood pavements, now going rapidly to decay, can be saved, as demonstrated on many miles that have been covered in the city of Brooklyn T 70.  

256 Union Stone Co., Boston, Mass.—T 59.  
256 a Articles in artificial stone, soapstone register borders, millstone cement, etc. T 103.  
256 c Wheels. T 66.  
256 a Shields, King & Co., Newark Star Glass Works, Newark, Ohio.— Sands, etc., for making glass. V 61 to 63.  
258 Such, George, South Amboy, N. J.—Samples of clay. T 58.  
259 Sarchet, J. W. & J. T., Glen Loch Post Office, Pa.—T 57.  
259 a Moulding sand and kaolin.  
259 b Flint. T 106.  
260 Kier Brothers, Pittsburg, Pa.—Fire clay. V 50.  
262 Schreiber, W. A. H., Phoenixville, Pa.—Kaolin, kaolinite, quarz, sand, and potters and decorators material. T 69.  
264 Zihlmann, Joseph, Bellaire, O.—Wooden mould for shaping blown glass. T 64.  
265 Dover Fire Brick Co., Canal Dover, Ohio.—Fire clay. T 63.  
266 Kreischer, B., & Son, Philadelphia, Pa.—Fire clay, etc. X 56.  
271 Morse Bros., Canton, Mass.—Stove polish, lumber pencils, plumbago. The "Rising Sun Stove Polish," noted for beauty of polish, saving of labor, durability, freedom from dust and odor, when heated. This preparation is an excellent article. The Rising Sun Lumber Pencils, and samples of plumbago, from which they are manufactured. T 56.  
273 Jersey City Crucible Manufacturing Co., Jersey City, N. J.—Crucibles and stove polish. T 68.  
275 Webb, Robert, Boston, Mass.—Stove polish; crude and prepared plumbago. T 60.  

For location of object, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 56.
ESTABLISHED 1830.

BAILEY & COMPANY,

Jewelers and Silversmiths,

DIAMONDS, WATCHES, CLOCKS, BRONZES,

Chestnut and Twelfth Sts.,

PHILADELPHIA.
Summer Excursions.

The Pennsylvania Railroad Co.

Have arranged for the Centennial Year a system of Summer Excursion Routes,

More comprehensive and complete than was ever before presented to the American people. These Routes reach every place of interest or attraction in the Eastern, Middle, and Southern States, and the Dominion of Canada, including

Niagara Falls, The Thousand Islands, Watkins Glen, Saratoga, The White Mountains, Newport, Lake George, All the Virginia Springs, and many others.

Visitors to the Centennial Exhibition

Will find the lines of this Company available for reaching, within a few hours' time and at very small outlay, such famous resorts as

Cape May, Long Branch, The Delaware Water Gap, Bedford Springs, Gettysburg, Minnequa Springs, Kane, Renovo,

And hundreds of beautiful villages and towns in the mountains of Pennsylvania, where the accommodations are excellent and the scenic attractions all that can be desired.

The Pennsylvania Railroad Co.

Devote special attention to this Summer Travel. The construction and equipment of their lines render travel over them thoroughly enjoyable, and the tickets issued afford every facility for recreation, recuperation, and pleasure.

Pamphlets of Routes can be had gratuitously at the offices of the Company in New York, Boston, Philadelphia, Baltimore, Washington, Harrisburg, Altoona, and Pittsburg, and also a handsomely illustrated book describing all prominent resorts.

Frank Thomson, L. P. Farmer, D. M. Boyd, Jr.,

276 Nibbinger, Edward, Philadelphia, Pa.—Quartz paste for sharpening razors and knives. T 52. 1.6

277 Hand, James C., & Co., Philadelphia, Pa.—Carbonate manufactured by the Pennsylvania Corundum Co. T 57. 1.6

278 Washington Mills Emery Manufacturing Co., Allentown, Pa.—Emery. T 57. 1.6

279 Boyd & Chase, New York, N. Y.—Arkansas and Washita oolites. N 68. 1.6


285 Patten, F. H., Bath, Maine.— Feldspar and quartz, for pottery and sand paper factories. T 70. 1.6

286 Lehigh Whetstone Co., Allentown, Pa.—Whetstones from Lehigh mountain, near Allentown. Pa. T 57. 1.6

287 Coiffa, Redington, & Co., New York, N. Y.—Electro-reflect, a polishing powder for all fine metals, and refractory silica from Nevada, from which the above is made.

Analysis: 
Silica: 83.5
Alumina: 2.7
Water: 13.5
Loss: 0.3

100

T 72. 1.6

289 Louis, Julius, & Bro., Jeffersonville, Ind.—Hot Springs, Arkansas, and other oolites. N 68. 1.6

290 Sibley, Freeman K., Waltham, Mass.—The prize medal emery and crosset cloth. (Only medals ever awarded in the world.) T 53. 1.6

291 Schults, Carl H., New York, N. Y.—Carbonate acid and mineral spring waters, siphons, glass fountains, etc. T 58. 1.07

291 a Jarves & Hooper, Detroit, Mich., T 53.

1. Blotter and animal charcoal, 107
2. Glue and meat's foot oil. 6.52

292 Knight & Widden, Portland Plaster Mills, Portland, Maine.—Calcined and other Portland plaster. T 58. 1.07

293 Champion Spouting Spring, Saratoga Springs, N. Y.—Saratoga water. T 58.


295 Gettysburg Katalysine Co., Gettysburg, Pa.—Katalysine spring water. T 57. 1.07

296 Navassa Phosphate Co., Baltimore, Md.—Crende and ground phosphates, from Navassa Island, West Indies; and other fertilizing materials. T 57. 1.07


298 Bolen & Byrne, New York, N. Y.—Artificial mineral waters, granular effervescing sals, siphons, etc. T 50. 1.07


300 Lawrence, A. R., & Co., Excelsior Park, Saratoga Springs, N. Y.—Excelsior and Union Spring Saratoga waters, and apparatus for keeping them on draught in their natural condition. T 70. 1.07

300 a Tufts, Jas. W., Boston, Mass.—Soda water fountains. (Nature and Treatment.) 1.07

Metallurgical Products.

301 Hastings & Co., Philadelphia, Pa.—Gold leaf, foil, and bronze; silver leaf, bronze powder, etc. P 47. 1.10

302 Wallis, Jno. G., Fulton, Ark.—Base bullion. N 52. 1.10

303 Cambria Iron & Steel Co., Johnstown, Pa.—Iron—pig, bloom, and muff bar, rail piles and rails; steel—Bessemer pig, and spiegelisen, ingots, blooms, and rails. T 63. 1.11

304 Huntingdon & Broad Top Railroad Co., Philadelphia, Pa.—Fg iron. Y 56. 1.11


305 Park Bro. & Co., Black Diamond Steel Works, Pittsburg, Pa.—Cast steel; samples of homogeneous crucible cast steel, boiler plate, and, tubing. T 60. 1.11

305 a Mahoning Valley Centennial Association, Youngstown, Ohio.—Pig and manufactured iron. V 63. 1.11

306 Rowland, James, & Co., Kensington Iron and Steel Works, Philadelphia, Pa.—Anvil brand, refined bar, bunt, skelp, hoop, and cut iron; plow, cultivator, and shovel steel. T 64. 1.11

307 Wood, Alan, & Co., 519 Arch street, Philadelphia, Pa.—Manufacturers of patent planished, galvanised, and common, and charcoal labour, sheet, and plate iron. T 61. 1.11

307 a Andover Iron Co., Phillipsburg, N. J.—Pig and spiegelisen iron. T 64. 1.11

308 Straus, J. E., & Co., Philadelphia, Pa.—Hoop iron. P 71. 1.11

309 Miller, Metcalf, & Parkins, Crescent Steel Works, Pittsburg, Pa.—Crucible steel and articles manufactured therefrom. T 60. 1.12

309 a Glasgow & Port Washington Iron and Steel Co., Port Washington, O.—Pig iron. W 63. 1.11

310 Hussey, Wells, & Co., Pittsburg, Pa.—Steelable cast steel bars, sheets, homogeneous boiler plates, railway rails, forgings, edge tools, rake teeth. T 69. 1.11


312 Union Iron Co. of Buffalo, Buffalo, N. Y.—Solid wrought iron rolled beams. T 64 and U 60.

312 a State of Indiana (by E. T. Cox, State Geologist).—Pig, bar, and railroad iron; cut nails. V 57. 1.11

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 77-45.
<table>
<thead>
<tr>
<th>No.</th>
<th>Metallurgical Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>314</td>
<td>Cleveland Rolling Mill Co., Cleveland, O.—Pig metals, rails, bars, etc., of iron and Bessemer or Siemens's Martin steel. T 60.</td>
</tr>
<tr>
<td>315</td>
<td>South &amp; North Alabama Railroad, Montgomery, Ala.—Iron. Y 60 and T 57.</td>
</tr>
<tr>
<td>317</td>
<td>a Silicon Steel Co., New York, N. Y.—Silicon steel, rails, etc.; steelified iron. T 63.</td>
</tr>
<tr>
<td>320</td>
<td>Youngstown Rolling Mill Co., Youngstown, Ohio.—Horse shoe, bar, hoop, and band iron; steel mixed with iron. V 61 to 64.</td>
</tr>
<tr>
<td>321</td>
<td>Wick, Ridgway, &amp; Co., Youngstown, Ohio.—Railroad iron, of all sizes. V 61 to 64.</td>
</tr>
<tr>
<td>322</td>
<td>Brown, Bonnett, &amp; Co., Youngstown, Ohio.—Pig, bar, and sheet iron. V 61 to 64.</td>
</tr>
<tr>
<td>324</td>
<td>American Sheet &amp; Boiler-plate Co., Cleveland, Ohio.—Plate, sheet, corrugated, galvanized, metallic tile, universal plate, and agricultural iron, Bessemer or Siemens's Martin steel. T 59.</td>
</tr>
<tr>
<td>326</td>
<td>Hanging Rock Iron Region Furnaces (Chas. Campbell, Commissioner), Ironton, Ohio.—Pig iron, with articles manufactured therefrom. T 69.</td>
</tr>
<tr>
<td>329</td>
<td>Reese, Graff, &amp; Woods, Pittsburg, Pa.—Wrought iron of all descriptions; cast and special steel; tool steel, spring steel, plow steel, machinery and agricultural steel, fire steel, steel hoop, steel cotton ties, horse and mule shoes, steel toe calls, steel boiler-plate. T 66.</td>
</tr>
<tr>
<td>330</td>
<td>Andrews Brothers, Youngstown, O.—Bessemer, foundry, and mill pig iron. V 61 to 64.</td>
</tr>
<tr>
<td>333</td>
<td>Henderson, James, Hamburg, Pa.—Wrought iron made by the Henderson Process. T 66.</td>
</tr>
<tr>
<td>335</td>
<td>Edgar Thomson Steel Co. (limited), Pittsburg, Pa.—Bessemer steel rails, billets, blooms, and ingots. T 66.</td>
</tr>
<tr>
<td>336</td>
<td>Lucy Furnace Co., Pittsburg, Pa.—Pig metal, etc. T 66.</td>
</tr>
<tr>
<td>337</td>
<td>Carnegie Bros. &amp; Co., Pittsburg, Pa.—Wrought iron beams, channels, bridge iron, etc. T 66.</td>
</tr>
<tr>
<td>342</td>
<td>Martin, John W., Philadelphia, Pa.—Pig metal. T 72.</td>
</tr>
<tr>
<td>343</td>
<td>Tuscarawas Coal &amp; Iron Co., Cleveland, Ohio.—Pig iron. T 71 and V 63.</td>
</tr>
<tr>
<td>344</td>
<td>Rhodes &amp; Co., Cleveland, Ohio.—Bessemer car-wheel and malicable charcoal iron. T 62.</td>
</tr>
<tr>
<td>345</td>
<td>Woodstock Iron Co., Anniston, Ala.—Hot blast, cold-blast, and spiegeleisen iron, charcoal. T 63.</td>
</tr>
<tr>
<td>347</td>
<td>Crane Iron Co., Catasauqua, Pa.—Foundry and forge pig iron; cinder. T 64.</td>
</tr>
</tbody>
</table>

For location of objects, indicated by letter and figure, see Key to Notation, p. 35; ground plan, p. 26.
Metallurgical Products.

348a Chester Iron Co., Chester, N. J.—Iron ore. T 64.
350 Winch, Corydon, Philadelphia, Pa.—Forged iron splices. T 66.
353 Davis, O. W., jr., Bangor, Me.—Charcoal pig iron, fluxes, cinders; articles made in part from Kataladin iron. T 69.
354 Durham Iron Co., Riegelsville, Pa.—Flux, pig iron, and cinders. T 64.
355 Glendon Iron Co., Easton, Pa.—Flux, slag, and pig iron. T 64.
356 Selma, Rome, & Dalton Railroad, by S. W. Baird, Cincinnati, O.—Charcoal pig iron, slag and charcoal, spiegel, car wheels. X 64.
359 Northampton Furnace, worked by the Bethlehem Iron Co., Bethlehem, Pa.—Pig iron, flux, slags. T 64.
360 Lehig Iron Co., Allentown, Pa.—Flux, slag, and pig iron. T 64.
361 Bethlehem Iron Co., Bethlehem, Pa.—Charges and products of iron, Bessemer iron and spiegels, furnaces; products from Bessemer steel mill. T 64.
362 Emaus Iron Co., Allentown, Pa.—Flux, slag, and iron. T 64.
363 Coleraine Iron Co., Northampton county, Pa.—Pig iron. T 64.
364 Thomas Iron Co., Hokendaqua, Pa.—Iron and flux. T 64.
365 Allentown Rolling Mill Co., Allentown, Pa.—Flux, iron, and slag, flat-plate bolts, nuts, spikes, rivets, etc. T 64.
366 Allentown Iron Co., Allentown, Pa.—Pig iron. T 64.
367 Lehig Valley Iron Co., Copley, Pa.—Pig iron, cinders. T 64.
368 Carbon Iron Co., Parryville, Pa.—Flux, slag, and pig iron. T 64.
369 Saucon Iron Co., Hellertown, Pa.—Pig iron. T 64.
370 Catasaqua Iron Co., Catasaqua, Pa.—Rolled iron and steel, iron and steel bars bent hot and cold and fractured. T 64.
371 Lehig Zinc Co., Bethlehem, Pa.—Metallic and sheet zinc, zinc oxide. T 64.
372 Stewart & Co., South Easton, Pa.—Round, square, and triangular iron wire. T 64.
373 Gough, Edward, Allentown, Pa.—Forged rails. T 65.
374 Bay State Iron Co., Boston, Mass.—Homogeneous iron boiler plates and iron. T 64.
375 Co-operative Iron & Steel Works, Danville, Pa.—T and street passenger railroad iron. T 63.
376 Blatcher, R. M., Carrick Furnace, Franklin county, Pa.—Cold-blast pig iron. T 63.
380 Chrome Steel Co., Brooklyn, N. Y.—Chrome steel, with samples showing torsional, tensile, and compressive strength; welded chrome steel and iron; ingredients of manufacture. T 64.
381 Cartwright, McCurdy, & Co., Youngstown, O.—Hoop, band, and horse-shoe iron and steel. V 63 and T 64.
384 Tucumseh Iron Co., Tucumseh, Ala.—Charcoal pig iron, limestone, charcoal. T 70.
385 Albany & Rensselaer Iron & Steel Co., Troy, N. Y.—Bessemer steel and iron rails, plates, merchant bars, axes, hammers, etc. T 68.
386 Nes, Charles M., York, Pa.—Silicon steel; steel and steel capped rails. T 63.
388 Grand Tower Mining, Manufacturing, & Transportation Co., Grand Tower, Ill.—Iron ore products; coke. T 68.
390 Lackawanna Iron & Coal Co., Scranton, Pa.—Steel and iron railroad bars. T 63.
391 Passaic Rolling Mill Co., Paterson, N. J.—Rolled iron, rivets, nuts. T 64.
392 Cox, Justice, Jr., & Co., Philadelphia, Pa.—Pig, bar, sheet, tank, pipe, and angle iron; spikes, railroad car axles. T 70.
395 Vesuvius Furnace, Etna Iron Works, Ironton, Ohio.—Pig iron, cold blast charcoal car-wheel iron. T 68.
396 Etna Furnace, Etna Iron Co., Hanging Rock, O.—Pig iron, cold-blast charcoal car-wheel iron. T 68.
397a Briar Hill Iron & Coal Company, Youngstown, O.—Pig iron of various grades. V 61 to 64.
398 Blanche Furnace, Etna Iron Works, Ironton, Ohio.—Pig irons, Whitwell hot blast and Ferry process. T 68.
399 Hecla Iron & Mining Co. (John Campbell, President), Ironton, O.—Pig iron, cold blast charcoal car-wheel iron. T 68.
399a Struthers Iron Co., Youngstown, O.—Bessemer, foundry, and gray forge pig iron. V 61 to 63.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
400 Monitor Furnace Co., Ironton, O.—Pig iron, hot blast charcoal car- 
ished iron. T 68. 111

401 Mount Vernon Furnace, Harris 
Campbell & Sons, Ironton, O.—Pig iron, hot blast charcoal fur- 
ye iron. T 68. 111

402 Grant Furnace, W. D. Kelly & 
Sons, Ironton, O.—Pig iron, hot blast charcoal irons. T 68. 111

403 Center Furnace, W. D. Kelly & 
Sons, Ironton, O.—Pig iron, hot blast charcoal irons. T 68. 111

404 Howard Furnace Charcoal Iron 
Co., Ironton, O.—Pig iron, hot blast charcoal irons. T 68. 111

405 Buckhorn Furnace, Charcoal, 
Iron Co., Ironton, O.—Pig iron, hot blast charcoal irons. T 68. 111

406 Olive Furnace, Campbell, McGu- 
gin, & Co., Ironton, O.—Pig iron, hot blast charcoal irons. T 68. 111

407 Lawrence Furnace Co., Ironton, 
O.—Pig iron, hot blast charcoal iron. T 68. 111

408 Pine Grove Furnace, Means, Kyle, 
& Co., Hanging Rock, O.—Pig iron, hot blast charcoal irons. T 68. 111

409 Ohio Furnace, Means, Kyle, & Co., 
Hanging Rock, O.—Pig iron, hot blast charcoal iron. T 68. 111

410 Ironton Furnace Iron and Steel 
Co., Ironton, O.—Pig iron, Player hot blast. T 68. 111

411 Belleville Iron Works, Ironton, 
O.—Pig iron, Player hot blast. T 68. 111

412 Washington Furnace, Union Iron 
Co., Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111

413 Sciotoville Furnace, L. C. Robinson & 
Co., Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111

414 Bloom Furnace, John Paul & Co., 
Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111

415 Clinton Furnace, W. L. Bell, Whi- 
thersburg, O.—Pig iron, hot blast charcoal iron. T 68. 111

416 Buckeye Furnace Co., Jackson, 
O.—Pig iron, hot blast charcoal iron. T 68. 111

417 Cambria Furnace, D. Lewis & Co., 
Sauusville, O.—Pig iron, hot blast charcoal iron. T 68. 111

418 Jackson Furnace, L. P. N. Smith’s 
hers, Scioville, O.—Pig iron, hot blast charcoal iron. T 68. 111

419 Jefferson Furnace Co., Oak Hill, 
O.—Pig iron; cold blast charcoal car- 
wheel and machinery iron. T 68. 111

420 Orange Iron Co., Jackson, O.—Pig 
iron, hot blast Jackson county stone coal 
iron. T 68. 111

421 Star Furnace Co., Jackson, O.—Pig 
iron, hot blast Jackson county stone coal 
iron. T 68. 111

422 Huron Furnace Co., Jackson, O.—Pig 
iron, hot blast Jackson county stone coal 
iron. T 68. 111

423 Tropic Furnace Co., Jackson, O.— 
Pig iron, hot blast Jackson county stone coal 
iron. T 68. 111

424 Globe Iron Co., Jackson, O.—Pig 
iron, hot blast Jackson county stone coal 
iron. T 68. 111

425 Fulton Furnace, Globe Iron Co., 
Jackson, O.—Pig iron, hot blast Jackson 
county stone coal iron. T 68. 111

426 Ophir Furnace Co., Jackson, O.— 
Hot blast pig iron. T 68. 111

427 Milton Furnace & Coal Co., 
Wells- 
ton, O.—Pig iron, Jackson county softener iron. T 68. 111

428 Wells Oil & Iron Co., Wells- 
ton, O.—Pig iron, Jackson county stone coal iron. T 68. 111

429 Lincoln Furnace, I. M. McGhee’s 
estate, Rud’s Mills, O.—Pig iron, hot blast charcoal iron. T 68. 111

430 Eagle Furnace, L. C. Damarin & 
Co., Rud’s Mills, O.—Pig iron, hot blast charcoal iron. T 68. 111

431 Richland Furnace Co., Richland 
P. O., O.—Pig iron, hot blast charcoal iron. T 68. 111

432 Hope Furnace, L. C. Damarin & 
Co., Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111

433 Hammond Furnace, L. C. Damarin & 
Co., Portsmouth, O.—Pig iron, hot blast charcoal iron. T 68. 111

434 Vinton Furnace, Bankcroft, Rader, 
& Co., Vinton Station, O.—Pig iron, 
hot blast bituminous coal and coke irons. T 68. 111

435 Keystone Furnace Co., Ports- 
mouth, O.—Pig iron, hot blast charcoal 
iron. T 68. 111

436 Monroe Furnace, Union Iron Co., 
Portsmouth, O.—Pig iron, hot blast charcoal 
iron. T 68. 111

437 Latrobe Furnace, Bundy & Cobb, 
Berlin Cross-roads, O.—Pig iron, 
hot blast charcoal iron. T 68. 111

438 Logan Furnace Co., Logan county, 
O.—Pig iron, hot blast charcoal iron. T 68. 111

439 Union Furnace, Brooks & Hueston, 
Haydenville, O.—Pig iron, hot blast 
charcoal iron. T 68. 111

440 Pascal Iron Works, Philadelphia, 
Pa.—Cast iron work for Main Exhibition 
Building. 111

441 Lewis, Oliver, & Phillips, Pitts- 
burg, Pa.—Iron in merchant bars and cold 
shapes. T 64. 111

442 Roberts, Henry, Newark, N. J. — 
Iron Besserer steel, and cast steel .111
N 69. 111

443 Andrews, Hitchcock, & Co., Cleve- 
lund, O.—Merchant bar and sheet iron 
V 61 to 64. 111

444 Mount Savage Furnace, Lexington 
& Carter county Mining & Manufacturing 
Co., Lexington, Ky.—Pig iron, hot blast 
charcoal iron. T 68. 111

445 Hickford Furnace Co., Youngs- 
town, O.—Besserer, foundry, and forge 
pig iron. V 61 to 64. 111

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 56.
For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
### Mining Engineering

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>484</td>
<td>Holley, Alexander L., New York, N. Y.—Exhibit relating to metallurgical engineering. (West gallery.)</td>
</tr>
<tr>
<td>485a</td>
<td>Lowe, S. B., Chattanooga, Tenn.—Map of Chattanooga iron district. X 63.</td>
</tr>
</tbody>
</table>

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
THE American Newspaper Union.
A. J. AIKENS, President.

<table>
<thead>
<tr>
<th>Newspaper Union</th>
<th>Number of Newspapers</th>
<th>Price per line, per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York Newspaper Union, 148 and 150 Worth St., New York</td>
<td>315</td>
<td>$3.00</td>
</tr>
<tr>
<td>Chicago Newspaper Union, 114 Monroe St., Chicago</td>
<td>350</td>
<td>$3.50</td>
</tr>
<tr>
<td>Milwaukee Newspaper Union, 365 East Water St., Milwaukee</td>
<td>120</td>
<td>$1.25</td>
</tr>
<tr>
<td>Aikens Newspaper Union, 143 Race St., Cincinnati</td>
<td>200</td>
<td>$2.00</td>
</tr>
<tr>
<td>Southern Newspaper Union, 227 Second St., Memphis, Tenn.</td>
<td>145</td>
<td>$1.50</td>
</tr>
<tr>
<td>St. Paul Newspaper Union, 17 Wabashaw St., St. Paul, Minn.</td>
<td>73</td>
<td>$.75</td>
</tr>
</tbody>
</table>

THE ORIGIN OF CO-OPERATIVE NEWSPAPER ADVERTISING.

Co-operative newspaper printing, as now practised, originated in Wisconsin twelve years ago. It is termed co-operative for the reason that one side of each of the newspapers is printed at a central office, and the paper sent in its half-printed state to the home office, where it is completed with editorials, local news, and other matter prepared by the editor or publisher. In December, 1846, the idea of co-operation, with advertisements, occurred to Mr. Aikens, while yet serving his time as an apprentice, in printing the message of President Polk on one side of a country newspaper of New England at Boston, and the other half being printed at the local office.

Mr. A. J. Aikens, a practical printer and business man, conceived the idea of reducing the cost of ready-printed paper, as it is now termed, to country publishers, by making an agreement with them to use a certain space in each of their papers for advertisements that he might procure. This plan of co-operation he put into practice twelve years ago, at the office of Cramer, Aikens & Cramer, Milwaukee. It at once became successful, leading to the establishment of co-operative newspaper printing-offices in Chicago, New York, St. Louis, Cincinnati, Memphis, St. Paul, and other places. There are now over two thousand newspapers printed upon the co-operative plan in the United States and Canadas, and the number is constantly increasing, it having more than doubled in the last five years. The enterprise is no longer an experiment, but an established success, and the system is one yielding manifold advantages to advertisers as well as to local publishers.

The American Newspaper Union

Is essentially national. The papers represented in it are located in all the States of the Union and in nearly five hundred county seats. They circulate over the whole area of the country from Maine to Colorado, distributing at least one hundred copies every year to each square mile of the settled portions of the United States.

Although, as a whole, the Union List is national, covering all sections, it is so made up of different members as to be susceptible of easy division into sections—East, Middle, West, South.

The distribution of the papers is as follows:

<table>
<thead>
<tr>
<th>State</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>New England</td>
<td>72</td>
</tr>
<tr>
<td>New York</td>
<td>101</td>
</tr>
<tr>
<td>New Jersey</td>
<td>27</td>
</tr>
<tr>
<td>Pennsylvania</td>
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<td>Virginia</td>
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<td>No. and So. Carolina</td>
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<td>Ohio</td>
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<td>Indiana</td>
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<td>Illinois</td>
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<td>Michigan</td>
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<td>Wisconsin</td>
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<td>Alabama</td>
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<td>Louisiana</td>
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<td>Mississippi</td>
<td>29</td>
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<td>Other States</td>
<td>46</td>
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</table>

AGGREGATE CIRCULATION.

The circulation of these papers is large and constantly increasing. It is larger than the circulation of any other lists or combinations of country papers in the United States—the last aggregate weekly circulation being seven hundred thousand seven hundred and thirty copies (700,730).

SEND TO EITHER OFFICE FOR A CIRCULAR.
HEALTH! BEAUTY!!

Strong, Pure, and Rich Blood, Increase of Flesh and Weight, Clear Skin, and Beautiful Complextion secured to all through

DR. RADWAY'S SARSAPARILLIAN RESOLVENT

Every drop of the Sarsaparillian Resolvent communicates through the Blood, Sweat, Urine, and other fluids and juices of the system the vigor of life, for it repairs the wastes of the body with new and sound material. Scrofula, Consumption, Glandular Disease, Ulcers in the Throat, Mouth, Tumors, Nodes in the Glands and other parts of the system, Sore Eyes, Strumous Discharges from the Ears, and the worst forms of Skin Diseases, Eruptions, Fever Sores, Scald Head, Ring Worm, Salt Rheum, Erysipelas, Acne, Black Spots, Worms in the Flesh, Tumors; and all Weakening and Painful Discharges and Night Sweats are within the curative range of this wonderful of Madura Chemistry, and a few days' use will prove to any person using it for either of these forms of disease, its potent power to cure them. If the patient, daily becoming reduced by the wastes and decomposition that are continually progressing, succeeds in arresting these wastes, and repairs the same with new material, made from healthy blood, and this the Sarsaparillian will and does secure, a cure is certain; for, when once this remedy commences its work of purification and succeeds in diminishing the loss of wastes, its repairs will be rapid, and every day the patient will feel himself growing better and stronger, the food digesting better, appetite improving, and flesh and weight increasing. Not only does the Sarsaparillian Resolvent excel all known remedial agents in the cure of Chronic, Scrofulous, Constitutional; and Skin Diseases, but it is the only positive cure for Kidney, Bladder, and Urinary Diseases, Gravel, Diabetes, Dropsey, Stoppage of Water, Incontinence of Urine, Bright's Disease, Albuminuria, and in all cases where there are brickdust deposits, or the water is thick, cloudy, mixed with substance like the white of an egg; or threads like white silk, or there is a morbid, dark, bilious appearance, and white bonedust deposits, and when there is a pricking, burning sensation when passing water, and pain in the Small of the Back along the Lungs.

Tumor of 12 years' growth cured by Radway's Resolvent.

BEVERLY, MASS., July 18th, 1869.

DR. RADWAY: I have had Ovarian Tumor in the ovaries and bowels. All the doctors said "there was no help for it." I tried everything that was recommended, but nothing helped me. I saw your Resolvent, and thought I would try it, but had no faith in it, because I had suffered for TWELVE YEARS. I took six bottles of the Resolvent, one box of Radway's Pills, and used two bottles of your READY RELIEF, and there is not a sign of a tumor to be seen or felt, and I feel BETTER, SMARTER, and happier than I have for twelve years. The worst tumor was in the left side of the bowels, over the groin. I write this to you for the benefit of others. You can publish if you choose. * * * HANNAH F. KNAPP.

RADWAY'S READY RELIEF

Cures the worst pains in one to twenty minutes. Not one hour after reading this advertisement need any one suffer with pain. Radway's Ready Relief is a cure for every pain. It was the first and is THE ONLY PAIN REMEDY that instantly stops the most excruciating pains, allays Inflammations, and cures Congestions, whether of the Lungs, Stomach, Bowels, or other glands or organs, by one application, in from one to twenty minutes. No matter how violent or excruciating the pain, the Rheumatic, Bedridden, Infirm, Crippled, Nervous, Neuritic, or prostrated with disease may suffer.

RADWAY'S READY RELIEF

Will afford instant ease. Inflammation of the Kidneys, Inflammation of the Bladder, Inflammation of the Bowels, Congestion of the Lungs, Sore Throat, Difficult Breathing, Palpitation of the Heart, Hysteries, Croup, Diphtheria, Catarrh, Influenza, Headache, Toothache, Neuralgia, Rheumatism, Cold Chills, Ague Chills. The application of the READY RELIEF to the part or parts where the pain or difficulty exists will afford ease and comfort. Twenty drops in a half tumbler of water will, in a few moments, cure Cramps, Spasms, Sour Stomach, Heartburn, Sickness in the Head, Diarrhoea, Diuresy, Colic, Wind in the Bowels, and all Internal Pains. Travelers should always carry a bottle of RADWAY'S RELIEF with them. A few drops in water will prevent sickness or pains from change of water. It is better than French Brandy or Bitters as a stimulant.

FEVER AND AGUE.

FEVER AND AGUE cured for FIFTY CENTS. There is not a remedial agent in this world that will cure Fever and Ague and all other Malarious, Bilious, Scarlet, Typhoid, Yellow, and other Fevers (aided by RADWAY'S PILLS) as quick as RADWAY'S READY RELIEF. Fifty cents per bottle.

DR. RADWAY'S PILLS,

Perfectly tasteless, elegantly coated, for the cure of all Disorders of the Stomach, Liver, Bowels, Kidneys, Bladder, Nervous Diseases, Headache, Constipation, Costiveness, Indigestion, Dyspepsia, Biloiosis, Bilious Fever, Inflammation of the Bowels, Piles, and all Derangements of the Internal Viscera, Add to a Positive Warrant to effect a Kidney Cure. RADWAY'S PILLS will free the system from all the above-named disorders. Price, 25 cents per box.

Read FALSE AND TRUE. Send one letter stamp to Radway & Co., No. 32 Warren Street, New York. Information worth thousands will be sent you.
Minerals, Ores, Stone, Mining and Metallurgical Products.

1 West Cumberland Iron & Steel Co. (limited), Workington, Cumberland.
   a Iron ores. 100
   b Coal and coke. 102
   c Limestone. 103

2 Wigano Coal & Iron Co. (limited), Wigan, Lancashire, England.—Cannel and coal. 103

3 Penrose & Richards, Swansea, South Wales.—Coke fuel. 102

4 Dixon, Frederick, London.—Patent fuel. 101

5 Dudgeon, Arthur, Westminster, London.—Peat fuel, manufactured by the Irish Peat Fuel Co. 102

6 Lindley, Robert Charles, Mansfield, Nottinghamshire.—Stones from the Mansfield quarries. 102

7 Cwmthor Slate Co. (limited), Fortunac, North Wales.—Roofing slates. 102

8 Hunter, James, Aberdeen, Scotland.—Red polished granite monument. 102

9 Macdonald, Field, & Co., Aberdeen Granite Works, Aberdeen, Scotland.—Polished red granite monument. 102

10 Pen-yr-orseid Slate Quarry Co. (limited), Carnarvon, North Wales.—Roofing slates, slate slabs, cisterns, ridges for roofs, billiard slabs, slate partly manufactured. 102

11 Shearer, Smith, & Co., Dalbeattie Granite Quarries, Scotland.—Scotch polished granite, and street paving blocks. 102

12 Bessbrook Granite Works, Bessbrook, Ireland.—Blue and gray Irish granites in headstones, monuments, and building use. 102

13 Great North of Scotland Granite Co. (limited), Peterhead, Scotland.—Monumental pedestal and vase in polished red granite. 102

14a Campbell, Hugh, & Son, Newry.—Polished granite. 102

14 Hollick & Co., Greenwich, London.—Portland cement. 103

15 Patent Scientic Cement Co. (limited), London.—Method of preparing lime for mortar, for plastering and brickwork, and also for concrete. 103

16 Wouldham Cement Co., Wouldham-on-the-Medway, Kent, England.—Portland cement and its ingredients in different stages of manufacture. Concrete blocks and other objects made therefrom. 103

17 Lavers, Alfred Hamilton, London.—Portland cement, test blocks, cement plaster of Paris, whitening. 103

17a Busse, G., & Co., London.—Cement. 103

18 Francis & Co., Cliffe Creek, Rochester.—Cements, cement concrete, parian scagliola, and decorated parian. 103

19 Grays Chalk Quarries Co. (limited), Grays, Essex.
   a Chalk, whitening, kilndried chalk, gilders' whitening. 103
   b Flint. 106

20 Eastwood & Co. (limited), London.—Portland cement. 103

21 Pike, William Joseph, Wareham, Dorsetshire.—Clays. 104

22 Harrison, George King, Lye & Brettell Lane Fire Clay Mines & Brick Works, Stourbridge, England.—Stourbridge fire clays. 104

23 Dunn, Robert, & Co., St. Austell, Cornwall.—China clay, in its raw material; materials for potting, bleaching, paper manufacturing, etc. 104

24 Oakey, John, & Sons, Wellington Mills, London.—Clay, emery stone; grain emery; flour emery. 106

24a Star Plate & Universal Polishing Powder Co., London.—Plate and polishing powder. 106

Metallurgical Products.

25 Johnson, Matthey, & Co., London.—Articles in platinum; rare and precious metals. 110

26 Wigan Coal & Iron Co. (limited), Wigan, Lancashire.—Hematite, foundry, and forge pig iron. 111

27 Great Western Iron Co., Soudley Newnham.—Pig iron. 111

28 West Cumberland Iron & Steel Co. (limited), Workington, Cumberland.—Pig iron, spiegeleisen, granulated blast furnace slag, Bessemer steel in the ingot; steel forgings, rails and rail sections, boiler and bridge plates, railway chains, etc.; samples illustrating the testing of steel, and its metallurgy. 117

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Metallurgical Products.

29 Smith, Frederick, & Co., Caledonia Works, Halifax, Yorkshire.—Rope, rigging, telegraph, card, reed, and bonnet wire; iron in its various stages of manufacture into wire.

30 Houghton, William Dickson, Warrington.—Wire for special and general purposes.


31 Edge & Sons, Coalport Works, Shropshire.—Wire ropes and chains for mining and engineering purposes.

31a Hawksworth, Ellison, & Co., Carlisle Works, Sheffield.—Steel, and articles made therefrom.

32 Ash & Lacy, Globe Works, Staffordshire.—Galvanized, tinned, plain, and corrugated iron sheets; perforated zinc, metals, etc.

32a Ward & Payne, Sheffield.—Steel.

32a Whitwell, Thomas, Stockton-on-Tees.—Pig iron.

33 Cammell, Charles, & Co. (limited), Cyclops Steel & Iron Works, Sheffield.—Rolled iron armor plates.

34 Siemens, Charles William, London.—Specimens of iron and steel.

34a Jessop, William, & Sons (limited), Sheffield.—Steel in bars, sheets, and large and small plates.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
NEW ZEALAND.

(North of Nave, Columns 10 to 17.)

Stone, Mining Products, Metallurgical Products.

Minerals, Ores, Stone, Mining Products.

1 Parapara Iron & Coal Co., Nelson.
a Brown hematite ore. 100
b Coal from the Aorere river. 101
c Limestone used as a flux for hematite ore. 103

2 Johnstone Bros., Nelson.—Hematite iron ore. 100

3 Nelson Committee, Nelson.
a Iron, plumbago, galena, zinc blende, copper, antimony, and argentiferous lead ores. 100
b Coal from Cealbrookdale, Mount Rochefort, and Reefton. 101
c Marble from Ruatanuka, Golden Bay. 102
d Porcelain clays from Pakawau and Ruatanuka; steatite from Golden Gully, Collingwood. 104

4 Louisson, T. B., Nelson.—Iron ore, calcined iron ore. 100

5 Washbourn, W. E., Nelson.—Argentiferous lead ore. 100

6 Taranaki Committee.
a Titanite iron sand, older tertiary marl, trachyte pebble, trachyte with crystals of hornblende, trachyte cast, hornblende, obsidian, nephrite, taranakite, carneil. 100
b Lignite from Urenui. 101
c Potter's clay from Urenui. 104

d Colonial Museum, Wellington.—James Hector, Director.
a Collection of minerals, containing magnetic iron, hematite, chrome, copper, lead, zinc, and manganese ores. 100
b Specimens illustrating the classification of New Zealand coals; petroleum from Sugar Loaf Point, Waiapu, Waipawa. 101
c Marble from Collingwood, Nelson. 102
d Steatite from Parapara Valley, Nelson. 104

8 Kennedy Brothers, Nelson.
a Coal from the Brunner Mine, and coke manufactured from it. 101
b Raw and ground fire clay. 104

9 Albion Coal Co., Nelson.—Coal from Ngakauau. 101

10 Reid, Alexander W., Canterbury.—Coal from Kowai Pass. 101

11 Oakden, J. J., Canterbury.—Anthracite coal from Lake Coleridge. 101

12 Rowley, Wilson, & Co., Otago.—Coal from Shag Point, Palmerston. 101

13 Ross, A., Poverty Bay, Auckland.—Petroleum. 102

14 Wilson, W., Christchurch.—Hewn white and yellow limestone. 102

Metallurgical Products.

15 New Zealand Commissioners.—Specimens of alluvial gold and gold-bearing quartz from Auckland, Westland, and Otago, collected by the Bank of New Zealand. 110

16 Government of New Zealand.—Specimens of alluvial gold from Nelson and Westland, and of auriferous quartz from the west coast; specimens of alluvial gold from Otago; bars of melted and refined gold; bars of chloride of silver, and silver; model representing gold exported from New Zealand 1862–75. 110

17 Nelson Committee.—Specimens of auriferous quartz from Reefton. 110

18 Reefton Committee.—Specimens of auriferous quartz from the Inangahua and Lyell districts, Nelson. 110

19 Telhurst, George E., Bank of New Zealand, Wellington.—Models of gold ingots. 110

For classes of exhibits, indicated by numbers at en of entries, see Classification, pp. 27–45.
NEW SOUTH WALES.

(North of Nave, Columns 13 to 15.)

Minerals, Metallurgical Products, Mining Engineering.

<table>
<thead>
<tr>
<th>Minerals, Ores, Stone, Mining Products.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 McCallum, Argyle, Yaas.—Copper and lead ores from Woolgarloo Mine; iron ore from Bogolong.</td>
</tr>
<tr>
<td>2 Stuart, Seymour C.—Auriferous quartz from Adelong; lode and stream tin ore.</td>
</tr>
<tr>
<td>3 King, P. G., Goonoo.—Sulphuret of antimony, from Nundle.</td>
</tr>
<tr>
<td>4 Howard, John, Sofala.—Antimony, from Crudine creek.</td>
</tr>
<tr>
<td>4a Dewhurst, Arthur, Tamworth.—Collection of minerals.</td>
</tr>
<tr>
<td>5 Coulter, Edward, Sydney.—Magnetic iron ore containing gold and copper, from Mount Lambe.</td>
</tr>
<tr>
<td>5a Cleghorn, Wm., Uralla.—Collection of minerals.</td>
</tr>
<tr>
<td>6 Department of Mines, Sydney. a Mineralogical and geological collection; specimens of gold from the Southern, Western, and Northern districts; models of gold nuggets found in New South Wales; gold trophy, showing production of New South Wales.</td>
</tr>
<tr>
<td>6b Coal trophy.</td>
</tr>
<tr>
<td>7 Towns &amp; Co., Sydney.—Kerosene shale from Murrumbidgee.</td>
</tr>
<tr>
<td>8 Fountain, John, Gosford, Brisbane Water.—Iron ore from Brisbane Water.</td>
</tr>
<tr>
<td>9 King, P. G., Goonoo Goonoo.—Lepidotendron fossils from Goonoo Goonoo.</td>
</tr>
<tr>
<td>10 Wilson, W., Monaltrie, Richmond river.—Fossils.</td>
</tr>
<tr>
<td>11 Butchart, J. Hawkins, Sydney.—Lode and stream tin ore.</td>
</tr>
</tbody>
</table>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

<table>
<thead>
<tr>
<th>Metallurgical Products.</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Caddell, Alfred, Sydney.—Tin ore and wash dirt from Vegetable Creek Tin Mines.</td>
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<tr>
<td>13 New South Wales Shale &amp; Oil Company, Sydney.—Kerosene shale.</td>
</tr>
<tr>
<td>14 Towns, R. &amp; Co., Sydney.—Kerosene shale from Murrumbidgee.</td>
</tr>
<tr>
<td>15 Browne, Thomas, Bishop's Bridge.—Sandstone from West Maitland.</td>
</tr>
<tr>
<td>16 Douglass, W., Sydney.—Slate from a quarry near Goulburn.</td>
</tr>
<tr>
<td>17 Young, John, Sydney.—Granite from Moruya; marble.</td>
</tr>
<tr>
<td>18 Mackintosh &amp; Oakes, Bathurst.—Kaolin.</td>
</tr>
<tr>
<td>19 Warden, David, Ulladulla.—Kaolin.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Mining Engineering.</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 Caddell, Alfred, Sydney.—Model of shaft of Vegetable Creek Tin Mine, and report, plan, and photographs.</td>
</tr>
</tbody>
</table>
## VICTORIA.

(North of Nave, Columns 11 to 13.)

Minerals, Ores, Stone, Mining Products.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Collection of Rocks, Minerals, and Fossils, illustrative of the geology, mineralogy, and mining resources of Victoria, exhibited for, and on behalf of the Government, by R. Brough Smyth, F.G.S., F.L.S., Assoc. Inst. C.E., Secretary for Mines, and Chief Inspector of Mines for the colony. 100</td>
</tr>
<tr>
<td>2</td>
<td>Older igneous or plutonic rocks.</td>
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<tr>
<td>3</td>
<td>Newer igneous or volcanic rocks.</td>
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<td>4</td>
<td>Aqueous rocks.</td>
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<td>5</td>
<td>Upper Palaeozoic.</td>
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<td>6</td>
<td>Mesozoic-carbonaceous.</td>
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<td>7</td>
<td>Tertiary.</td>
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<tr>
<td>8</td>
<td>Collection of mineral specimens.</td>
</tr>
<tr>
<td>9</td>
<td>Economic collection: auriferous quartz.</td>
</tr>
<tr>
<td>10</td>
<td>Faç-similes of gold nuggets found in Victoria.</td>
</tr>
<tr>
<td>11</td>
<td>Economic minerals.</td>
</tr>
<tr>
<td>12</td>
<td>Fossil fruit.</td>
</tr>
<tr>
<td>13</td>
<td>Acadia Catherine Gold Mining Company, Sandhurst.—Golden stone. 100</td>
</tr>
<tr>
<td>14</td>
<td>Bleasdale, J. I., Melbourne.—Collection of gems and precious stones, consisting of diamonds, blue sapphires, oriental emeralds, rubies, aqua-marines, topazes, spinels, beryls, opals, garnets, tourmalines, etc. 100</td>
</tr>
<tr>
<td>15</td>
<td>Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Faç-similes of nuggets found in Victoria, and mineralogical and geological specimens. 100</td>
</tr>
<tr>
<td>16</td>
<td>Coal. 101</td>
</tr>
<tr>
<td>17</td>
<td>Sawm slate, block of granite, polished marble. 102</td>
</tr>
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<td>18</td>
<td>Limestones from Major Plains. 103</td>
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<td>19</td>
<td>Black clay, clay and sand; kaolin clay. 104</td>
</tr>
<tr>
<td>20</td>
<td>Sharpening stones from Wangunyah. 106</td>
</tr>
<tr>
<td>21</td>
<td>Costerfield Gold &amp; Antimony Mining Co., Melbourne.—Antimony ore. 100</td>
</tr>
</tbody>
</table>

6 Hanckar, J. H. H., Melbourne.—Nickel ore from the Boa Kaine Mine New Caledonia. 100
7 McGie, James, & Co., Melbourne.—Nickel ore. 100
8 Shenandoah Gold Mining Co., Sandhurst.—Gold-bearing quartz. 100
9 Mining Department of Victoria, Melbourne.—Coal. 101
10 Mansfield Shire Council, Mansfield.—Polished marble, hewn sandstone. 102
11 Arthu. & Dogherty, New Zealand.—Lithographic stone. 106
12 Lewis & Whitty, Fitzroy.—Knife polish. 106
13 Hattersley, J., Yackandandah.—Aerated waters. 107
14 Lyon, George, Spring Creek, Beechworth.—Lemonade, soda water, and ginger ale. 107
15 Rowlands & Lewis, Ballarat.—Tonic potass, soda, lithia, and seltzer waters, and ginger ale. 107

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16 Bright Bros. & Co., Melbourne.—Star antimony in ingots. 113
17 Costerfield Gold & Antimony Mining Co., Melbourne.—Antimony. 113
18 Hodgson, Richard, Collingwood.—Star antimony, pig lead, block tin. 113
19 Croaker, Scott, & Co., Melbourne.—Star antimony. 113

**Mining Engineering.**

20 Smyth, R. Brough, Department of Mines, Melbourne.—Geological maps, reports, etc. 121

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
# BAHAMAS.

*(South of Nave, Columns 15 to 17.)*

Minerals, Ores, Stone, Mining Products.

<table>
<thead>
<tr>
<th>Minerals, Ores, Stone, Mining Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Dupuch, Joseph.—Building stone.</td>
</tr>
<tr>
<td>2 George, Jno. S.—Building stone.</td>
</tr>
</tbody>
</table>

# BERMUDAS.

*(North of Nave, Columns 15 to 17.)*

Minerals, Ores, Stone, Mining Products.

<table>
<thead>
<tr>
<th>Minerals, Ores, Stone, Mining Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bermuda, Government of.—Top of a pillar of stalagmite, and a small stalactite from a submerged cave.</td>
</tr>
<tr>
<td>2 Ness, Ph.—Building stones.</td>
</tr>
</tbody>
</table>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
QUEENSLAND.

Mineral and Metallurgical Products, Mining Engineering.

Minerals, Ores, Stone, Mining Products.

1 Aplin, D.—Trophy of tin ores. 100
2 Brisbane Tin Mining Co.—Tin ores, wash dirt, etc. 100
3 Cloncurry Mine, Proprietors of.—Manganese. 100
4 Daintree, Richard.—Collection of rocks, soils, and fossils illustrative of the colony. 100
5 Foote, Alfred.—Iron ores from West Moreton. 100
6 Gregory, A. C.—Antimony ores. 100
7 Henry, Captain.—Nugget of native copper. 100
8 Hume, W. C.—Collection of tin ores. 100
9 Mount Marley Tin Mining Co.—Collection of tin ores. 100
10 Perry, Matthew.—Copper pyrites. 100
11 Staiger, C.—Antimony ores. 100
12 Tyrrell, J. de F.—Tin ores. 100
13 Wilkinson Mine, Proprietors of.—Cinnabar. 100
14 Government of Queensland.
   a Copper ores, fossils, etc., from Ipswich; quartz and gold bearing stone from Gympie, Rockhampton, Ravenswood, Cawarrol, Palmer, Cloncurry, etc. 100
   b Coal from Ipswich. 101
   c Building stone. 102
   d Plumbago. 105
5 Aberdare Mine, Proprietors of.—Coal. 101
16 Alexander, W. R.—Coal. 101
17 Allora Mine, Proprietors of.—Coal. 101
18 Bingera Mine, Proprietors of.—Coal. 101

19 Blackfellows' Creek Mine, Proprietors of.—Coal. 101
20 Bland & Wright, Perseverance Mine.—Coal. 101
21 Flagstone Creek, Proprietors of.—Coal. 101
22 Gulland & Co., Ipswich.—Coal and coke. 101
23 Rosewood Mine, Proprietors of.—Coal. 101
24 Tivoli Mine, Proprietors of.—Coal and coke. 101
25 Peak Downs Copper Mining Co.—Slab of polished malachite. 102

Metallurgical Products.

26 Government of Queensland.
   a Gold, in nuggets, from Gympie, Rockhampton, Ravenswood, Cawarrol, Palmer, Cloncurry, etc. 110
   b Tin in ingots. 113
27 Government of Queensland.—Refined copper. 112
28 Mount Perry Copper Mining Co.—Ingots of copper. 112
29 Peak Downs Copper Mining Co.—Trophy of copper ingots. 112
30 Bulimba Tin Smelting Co.—Refined tin, in ingots. 112
31 Mount Marley Tin Co.—Refined tin, in ingots. 112
32 Queensland Smelting & Assaying Co.—Trophy of tin ingots. 112

Mining Engineering.

33 Clifton Mine, Proprietors of.—Fossils, kaolin, etc., showing strata of mine. 121

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
**TASMANIA.**

(South of North Avenue, Columns 13 to 15.)

Minerals, Ores, Stone, Mining and Metallurgical Products.

<table>
<thead>
<tr>
<th>Minerals, Ores, Stone, Mining Products</th>
<th>Metallurgical Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 British &amp; Tasmanian Charcoal Iron Co.—Iron ores.</td>
<td>18 Harcourt, James, Hobart Town.—Pig iron and castings.</td>
</tr>
<tr>
<td>2 Hammond, W., Hobart Town.—Bismuth, from Mount Ramsey.</td>
<td>19 Hematite Iron Works, West Tamar. —Pig iron and castings.</td>
</tr>
<tr>
<td>3 Harrap, A., Launceston.—Petrified wood.</td>
<td>20 Mount Bischoff–Tin Mining Co., Mount Bischoff.—Tin, in ingots.</td>
</tr>
<tr>
<td>4 Hull, Henry J., Hobart Town.—Tin ore, from George's Bay.</td>
<td></td>
</tr>
<tr>
<td>5 Innes, J. H., Hobart Town.—Tin ore, from Rongarooma.</td>
<td></td>
</tr>
<tr>
<td>6 Just, T. C., Launceston.—Iron ores and asbestos.</td>
<td></td>
</tr>
<tr>
<td>6a Royal Society of Tasmania.—Topazes and beryls from Bass's Straits Island.</td>
<td></td>
</tr>
<tr>
<td>7 Smart, Dr., Hobart Town.—Gold, in quartz.</td>
<td></td>
</tr>
<tr>
<td>8 Smith, James, Launceston.—Bismuth, from Mount Ramsey.</td>
<td></td>
</tr>
<tr>
<td>9 Stanhope Company.—Tin ore.</td>
<td></td>
</tr>
<tr>
<td>10 Harcourt, James, Hobart Town.</td>
<td></td>
</tr>
<tr>
<td>11 Hematite Iron Works, West Tamar.</td>
<td></td>
</tr>
<tr>
<td>a Iron ores.</td>
<td></td>
</tr>
<tr>
<td>b Blue and white marble limestone.</td>
<td></td>
</tr>
<tr>
<td>12 Lyell &amp; Gowan, Melbourne.</td>
<td></td>
</tr>
<tr>
<td>a Tin ore from Mount Bischoff.</td>
<td></td>
</tr>
<tr>
<td>b Coal from river Don.</td>
<td></td>
</tr>
<tr>
<td>c Slate from Piper's river.</td>
<td></td>
</tr>
<tr>
<td>d Marble limestone from river Don.</td>
<td></td>
</tr>
<tr>
<td>13 Groom, P., Harefield.—Coal.</td>
<td></td>
</tr>
<tr>
<td>14 Hurst, J., Hobart Town.—Coal from Tasmania's Peninsular.</td>
<td></td>
</tr>
<tr>
<td>15 Kermode, W. A., Mona Vale.—Gray and brown freestone.</td>
<td></td>
</tr>
<tr>
<td>16 Raynor, E., Bridgewater.—Limestone, with fossils.</td>
<td></td>
</tr>
<tr>
<td>17 Coverdale, John, Port Arthur.—Pipe clay.</td>
<td></td>
</tr>
</tbody>
</table>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Minerals, Ores, Stone, Mining and Metallurgical Products.

Collections selected from the India Museum by J. Forbes Watson, M.A., M.D., L.L.D., Director of the India Museum, &c.

Minerals, Ores, Stone, Mining Products.

a Iron ores and magnetic iron sand from the Madras Presidency; iron ores from the Bombay Presidency; iron ores and magnetic iron sand from the Bengal Presidency; chrome iron ores from Salem and South Arcot; manganese ores from the Madras Presidency; copper ores from Nellore, Singbhum, and Deogur; copper pyrites from the hills of Beloochistan; malachite from Central India; lead ore from Deogur; galena from the Malanna and Parbutti mines, and from Catloor, Karnul, Chota Nagpur, Duttiah, Hazari-bagh, and Beloochistan (stilbite antimony ore) from Shigri, Busoh, Borneo, and Sarawak; tin stone from Junk Ceylon, Malacca, Kahun, Mergui, Tenasserim, Larut, and Johore; gold sand from Purulia, Toradanally, Dandput, Rangoon, and Ramagherry; arsenical ores from Pegu, Burmah, Tenasserim, Bengal, and Madras; sulphur from Rangoon and Shorun.

b Coal from Nerudda Coal and Iron Co., Guurrarwra, Oormoo, Chigo, and Malacca; lignite from Darjiling; petroleum and naphtha from Burmah.

c Limestone from South Arcot, Nellore, Tripattur, Masulipatam, and Beronda; calcite from Ramgunj; calc spar from Kabul; selenite from Ava; white nica from Salem; jack mica from Behar; agalmatolite from Chota Nagpur; zeolites from Deccan; lime from Bownee, Salem, Bellary, and Soonporah.

d Clays, for pottery, from South Arcot, Madura, North Arcot, Sadligeri, Bengalore, and Vizianagram; powdered mica from Labore; quartz, yellow and red ochre, fire and china clays from Madras; ball clay from Mangalore and Raepore; raw, fine white, and prepared clay, powdered marble, red lead and red ochre from Pattan; litharge from Calcutta; white lead from Punjab; white earth from Beronda; geroo from Raepore; pink and yellow earth from Baldeo; white earth from Punnah; yellow earth from Alipore; pipe clay from Singapore; red clay from Duttiah; white earth from Kotee; fullers' earth from Sind.

e Graphite from Caviattten Coodul, Trevandrum, Almorah, and Ceylon.

f Corundum from Madras, Salem, and Myssore; agates and carnelians from Cambay; gem sand from Ceylon; ruby sand from Travancore; rough garnets from Nlysore and Vizianagram; calderite from Nepal; tourmaline from Nellore; epidote granite from Madras.

g Fibrous gypsum from Karnul; reh from Butiana.

Metallurgical Products.

h Crude iron from Assam; Wootz steel; native iron; native iron with slag.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
C A N A D A.

(North of page, Columns 16 to 23.)

Minerals, Ores, Stone, Mining and Metallurgical Products.

15 Marks, T., & McKellar Bros., Fort William, Ont.—Silver ores. 100
16 Dawson, S. J., Ottawa, Ont.—Silver ores. 100
16a Simpson, John, Upham, N. B.—Manganese. 100
17 Cyrette, Ambrose, Fort William, Ont.—Silver ores. 100
18 Van Norman, Judge, Prince Arthur's Landing, Ont.—Native silver and silver ores. 100
19 Plumber, McIntyre, & Russ, Fort William, Ont.—Silver ores. 100
19a Jones, T. R., & Co., St. John, N. B.—Copper ore. 100
20 Eames, Prof., Pie Island, Ont.—Silver veinstone. 100
21 Stephen, George, Montreal, Q.—Silver ores. 100
22 Eureka Mining Co., Victoria, Br. Col.—Silver ores. 100
23 Mechanics' Institute, North West-miner, Br. Col. 100
a Platinum. 100
b Anthracite. 101
24 West Canada Mining Co., Welllington, Ont.—Copper pyrites, copper ore. 100
25 Hime, H. L., Toronto, Ont.—Copper pyrites. 100
26 Plumber, B., Bruce Mine, Ont.—Copper pyrites. 100
27 Oliver, Geo., Perth, Ont.—Copper pyrites, bog iron ore. 100
28 Ontario Advisory Board, Toronto, Ont. 100
a Copper pyrites, magnetic hematite, galena. 100
b Serpentine, syenite. 102
C Graphite. 105
d Emery. 106
E Phosphate of lime, shell marl. 107
29 Shaw, P., Harvey Hill, Q.—Copper pyrites. 100
30 Stewart, W. W., Montreal Q.—Copper ore. 100
31 Douglas, Dr., Quebec, Q.—Copper ore. 100
32 Davidson, Wm., Alma, N. B.—Copper glance. 100
33 Russell, Grand Manan, N. B.—Copper glance. 100
34 Cole, Rufus, Dorchester, N. B.—Copper glance. 100
35 Sweet, R. J., Halifax, N. S.—Copper glance. 100
36 Lloyd, H. C., Madoc, Ont.—Magnette, hematite. 100

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Mining and Metallurgy.

37 Ledyard, T. D., Toronto, Ont.—Magnetite. 100
38 Haycock, Will., Templeton, Q.—Magnetite. 100
39 Cobourg & Petersboro' Iron Co., Belmont, Ont.—Magnetite. 100
40 Bishop, A., Bell's Corners, Ont.—Magnetite. 100
41 Foley, James, Bathurst, Ont.—Magnetite with apatite. 100
42 Baldwin, A. H., Hull, Q.—Magnetite. 100
43 Chipman, David, Berwick, N. S.—Magnetite. 100
44 Lewis, Queen Charlotte's Island, Br. Col.—Magnetite. 100
45 Cowan, A., Brockville, Ont. a Hematite, burnt iron pyrites. 100
b Phosphate and superphosphate of lime. 107
46 Crawford, J. D., & Co., Montreal, Q.—Hematite, spathic iron ore. 100
47 Ganther, O., St. Urbain, Q.—Titanic iron ore. 100
48 Matheson & Gilice, Sydney, N. S.—Hematite. 100
52 Ottawa Iron & Steel Co., Ottawa, Ont.—Iron ore. 100
53 Stobie, James, Sault St. Marie, Ont.—Iron ore. 100
54 Duval, H. H., Quebec, Q.—Titanic iron ore. 100
55 McDougall, John, Three Rivers, Q.—Bog iron ore. 100
56 Steel Co. of Canada, Londonderry, N. S.—Iron ores. 100
57 Mackinnon, J. C., Whyecomagh, N. S.—Iron ores. 100
58 Duhamel, Dr., Quebec, Q.—Iron pyrites. 100
59 Russell, Willis, Lotbiniere, Q.—Antimony ore. 100
60 Hibbard, F., Prince William, N. B.—Antimony ore. 100
61 Hime, L. H., Toronto, Ont.—Galena and copper pyrites, with silver and gold. 100
62 Sibley, Col., & McIntyre, J., Silver Islet, Ont.—Galena. 100
63 Johnson, C. J., Wallaceburg, Ont.—Galena, blende. 100
64 Devine, Thos., Toronto, Ont.—Galena. 100
65 Weare, Capt., Toronto, Ont.—Galena, blende. 100
66 Markham, A., Hammond, N. B.—Pyrolusite. 100
67 Brown, J., N. S.—Pyrolusite. 100
68 Galway Lead Mining Co., Galway, Ont.—Barytes, calcspar. 100
69 Dolphin Manufacturing Co., Fish Islands, N. S.—Barytes. 100
70 Starr, John, Halifax, N. S.—Barytes. 100
71 Baker Mine, North Burgess, Ont.—Mica in plates. 100
72 Ackery, James, Five Islands, N. S.—Dogtooth spar. 100
73 Dopp, Geo., Berlin, Ont.—Amethyst, fluor spar, and pyrites. 100
74 McVicar, Geo., Toronto, Ont.—Amethyst. 100
75 Blackwood, R., Toronto, Ont.—Amethyst, fluor spar, and pyrites. 100
76 Morrison, W. A., Toronto, Ont.—Collection of Canadian precious stones. 100
77 Poole, H. S., Halifax, N. S.—Ores and associated rocks. 100
78 Honeyman, Dr., Halifax, N. S.—Collection of Nova Scotia rocks. 100
80 Bailey, G., Grand Lake, N. B.—Coal. 101
81 Hall, William, Springhill, N. S.—Coal. 101
82 Mitchell, Henry L., Glace Bay Mines, N. S.—Coal. 101
83 McQueen, Wm., Blockhouse Mines, N. S.—Coal. 101
84 Brown, R. H., Sydney Mines, N. S.—Coal. 101
85 McDonald, R. A., International Mines, N. S.—Coal. 101
86 McKeen, David, Caledonia Mines, N. S.—Coal. 101
87 Archibald, T. D., Gowrie Mines, N. S.—Coal. 101
88 Sutherland, James, Big Glace Bay, N. S.—Coal. 101
89 Fraser, J. W., Victoria Mines, N. S.—Coal. 101
90 Routledge, William, Gardiner Mines, N. S.—Coal. 101
91 Campbell, C. J., North Campbellton, N. S.—Coal. 101
92 Hoyt, Jesse, Acadia Mines, N. S.—Coal. 101
93 Hudson, James, Albion Mines, N. S.—Coal. 101
94 Simpson, Robert, Intercolonial Mines, N. S.—Coal. 101
95 Greener, John, Vale Colliery, N. S.—Coal. 101
96 Bennett, Wm., Scotia Mines, N. S.—Coal. 101
97 Sterling, E., Cape Breton, Big Glace Bay and Sydney, and L. Mines, N. S.—Coal. 101
98 Union Mining Co., Union Mines, Comox, Br. Col.—Coal. 101
99 Baynes Sound Mining Co., Baynes Sound Mines, Br. Col.—Coal. 101
100 Vancouver Mining Co., Vancouver Mines, Br. Col.—Coal. 101
101 Wellington Mining Co., Wellington Mines, Br. Col.—Coal. 101
102 Ketchum, E. K., Albert Mines, N. B.—Albertite and bituminous shale. 101
103 Byers, J., Albert Mines, N. B.—Albertite. 101
104 Smith, Wm., Toronto, Ont.—Peat. 101
106 Griffin, R. A., Huntingdon, Q.—Peat. 101
107 Belliveau Albertite & Oil Co., Westmoreland, N. B.—Albertite mineral oil. 101
108 Waterman Bros., London, Ont.—Petroleum and products. 101
109 Gibson, Robert L., Grimsby, Ont.—Building sandstones. 102

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Mineral Water, Metallurgical Products.

110 Farquhar & Booth, Esquesing, Ont. —Building sandstones and flagging. 102
111 Sread, Gloucester, Ont.—Building sandstones. 102
112 Londley, Beckwith, Ont.—Building sandstones. 102
113 Rankin, John, Pembroke, Ont.—Building sandstones. 102
114 Bishop, Henry, Nepean, Ont.—Building sandstones. 102
115 Decew, William, Oneida, Ont.—Building sandstones. 102
116 McGregor, Lachute, Q.—Building sandstones and limestones. 102
117 Goodfellow, Joseph, North Esk, N. B. a Building sandstones. 102 b Grindstones. 106
118 Dor. U. Free Stone Co., Budreau, Vii., N. B.—Building sandstones. 102
119 Caledonia Free Stone Co., Rockland, N. B.—Building sandstones. 102
120 Roberts & Co., Mary’s Point, N. B.—Building sandstones. 102
121 Bayview Quarry Co., Albert City, N. B.—Building sandstones. 102
122 Hopewell Quarry Co., Shepody Mt., N. B.—Building sandstones. 102
123 McQuarrie, John, George River, N. S.—Building sandstones. 102
124 Gilpin, Edwin, Springville, N. S. a Building sandstones. 102 b Limestone. 103 c Fire brick and fire clay. 104
125 Heustis, R. B., Wallace, N. S.—Building sandstones. 102
126 McDonald, George J., Cornwallis, N. S.—Building sandstones. 102
127 Peters, Henry S., Halifax, N. S.—Building sandstones. 102
128 Vancouver Coal Co., Vancouver Island, B.C.—Building sandstones, marble, limestone. 102
129 Howley, James, Montreal, Q. a Building and flagging sandstones. 102 b Sandstone for glass-making. 104
130 Pitton & Co., Quebec, Q.—Sandstone, flagging, curbstones. 102
131 Worthington & Co., Montreal, Q. a Polished marble. 102 b Limestone. 103
132 Somerville, P. T., Arnprior, Ont.—Marble monument. 102
133 Halon, Alphonse, Quebec, Q.—Marble. 102
134 Benjamin, H., & Co., Montreal, Q. a Marble. 102 b Lime. 103
135 Brunet, Joseph, Montreal, Q.—Marble monument. 102
136 Langevin, A. B., Quebec, Q.—Marble. 102
137 Silver, John, Halifax, N. S.—Marble. 102
138 McQuarrie, John, George River, N. S.—Marble and syenite. 102
139 Ingram, Wm., St. George, N. B.—Red granite clock case. 102
140 Baxter, B., Cayuga, Ont. a Dolomite. 102 b Lime and limestone, hydraulic cement. 103

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 37-45.
Minerals, Stone.

172 Gregory, V. R., & Co., Toronto, Ont.—Artificial stone monument. 103
173 Wandy, Henry, Clover Hill, Toronto, Ont.—Artificial stone.
174 Milner & Herd, Strathroy, Ont.—Artificial stone window cap. 103
175 Joslyn, J. H. L., Box 153, Tilsonburg, Ont.—Marbleboard roofing, a seamless sheet of artificial stone, not excessively heavy, but wonderfully efficient; not resting on the roof boards, but accommodated to them by an intervening plastic water-proof composition. 103
176 Riggins, George, Kincardine, Ont.—Clay for bricks. 104
177 Russell, Samuel, London, Ont.—Clay for bricks. 104
178 Munn & Cochran, Dundas, Ont.—Clay for bricks. 104
179 Leslie, Robert, Glenwilliam, Ont.—Clay for bricks. 104
180 Townshend, Mrs. Mary, Rockville, Ont.—Clay for bricks. 104
181 Anderson, Thos., Nepean, Ont.—Clay for bricks. 104
182 Cashmore, Thos., Pembroke, Ont.—Clay for bricks. 104
183 McGregor, Daniel, Pembroke, Ont.—Clay for bricks. 104
184 Baker, William, Arnprior, Ont.—Clay for bricks. 104
185 Foshick, Eneas, Ramsay, Ont.—Clay for bricks. 104
186 Moore, Gilbert, Ramsay, Ont.—Clay. 104
187 Coultar, James, Ramsay, Ont.—Clay. 104
188 Detaille, James, Ramsay, Ont.—Clay. 104
189 Foster, W. A., Belleville, Ont.—Clay. 104
190 Workman, Hugh, Brantford, Ont.—Clay. 104
191 Pecl, Thos. W., Montreal, Q.—Clay. 104
192 Mochan, Albert, St. Johns, Q.—Clay. 104
193 Jackson, Charles, Woodstock, N. B.—Clay. 104
194 Wells, William, Beamsville, Ont.—Pottery clay. 104
195 Ahren, J. H., Paris, Ont.—Pottery clay. 104
196 Pratt, Charles, London, Ont.—Pottery clay. 104
197 Farrar, G. H. & L. E., St. Johns, Q.—Pottery clay. 104
198 Bell, David, St. Johns, Q.—Clay roof tile. 104
199 Copeland & McLaren, Montreal, Q.—Fire clay, sandstone facing for furnaces. 104
200 McManus, G. N., Grand Lake, N. B.—Fire clay. 104
201 Bannerman, Robert, Montreal, Q.—Pipe clay. 104
203 Bishop, H., Nepean, Ont.—Sandstone for glass-making. 104
204 McDougall, John, & Sons, Three Rivers, Q.—Sandstone for furnace lining. 104
205 Oil Cloth Factory, Yorkville, Ont.—Sand. 104
206 Jackson, Charles, Woodstock, N. B.—Brick sand. 104
207 Sweet, S. H., Wentworth, N. S. a Kaolin. 104
& Gypsum. 107
208 H. McDonald, George J., Cornwallis, N. S.—Refractory stone. 104
209 Law, John, London, Ont.—Black lead crucible. 104
210 Dominion of Canada Plumbago Co., office, Ottawa, Ont.; mines and works, Buckingham, Province of Quebec.—Manufacturers of electrolytting, lubricating, pencil, crucible, stave polish, and other stock of every grade. Assays and tests prove quality. Prices are ordinary current market rates. 105
211 Millet, John G., Grenville, Q.—Graphite. 105
212 Montreal Plumbago Mining Co., Montreal, Q.—Stove polish. 105
213 Martin, Charles, Montreal, Q.—Stove polish. 105
214 Kelly, John, Belleville, Ont.—Lithographic stones. 105
215 Ontario Lithographic Stone Co., Marmorora, Ont.—Lithographic stone. 106
216 Read, Stevenson, & Co., Dorchester, N. B.—Grindstone polishing and cutters' stone. 106
217 Seaman & Co., Lower Cove, N. S.—Grindstones. 106
218 Douglass, David, Port Philip, N. S.—Grindstones. 106
219 Leroux, G., Quebec, Q.—Millstones. 106
220 Casgrain, Stoneham, Q.—Tripoli. 106
221 Fisher, W., Victoria, Br. Col.—Tripoli. 106
222 Coleman, William, Paris, Ont.—Raw and prepared gyspum. 107
223 Ontario Plaster Co., Mt. Healy, Ont.—Raw and prepared gyspum. 107
224 Converse, John A., Montreal, Q.—Raw and prepared gyspum. 107
225 Brown, A., Petitcodiac, N. B.—Gypsum and selenite. 107
226 Tebique Gypsum Co., Tobique, N. B.—Gypsum. 107
227 Albert Manufacturing Co., Hillsborough, N. B.—Calcined and anhydrous gyspum; alabaster. 107
228 McDonald, R. N., International Museum, N. S.—Gypsum. 107
229 Nova Scotia Advisory Board, Halifax, N. S.—Gypsum. 107
230 Davidson, H. A., Black River, N. S.—Gypsum. 107
231 Cove, Jas. A., Claremont Hill, N. S.—Gypsum. 107

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Minerals, Metallurgical Products.

232 Meighen Bros., Perth, Ont.—Phosphate of lime. 107
233 McLennan, Jos., Montague, N. S.—Gypsum. 107
234 Merchants’ Salt Co., Seaford, Ont.—Brine. 107
235 International Works, Goderich, Ont.—Brine. 107
236 Ransford, H., Clinton, Ont.—Brine. 107
237 Tecumseh Works, Goderich, Ont.—Brine. 107
238 Gray, Young, & Spalding, Seaford, Ont.—Brine. 107
239 Jourvie, J. A., & Co., Caledonia Springs, Ont.—Saline, gas, and sulphur waters. 107
240 Winning, Hill, & Ware, Montreal, Q.—Carratraca water. 107
241 Gee, J. N., St. Francis Spring, Q.—Mineral water. 107
242 Hickman, James S., Amherst, N. S.—Saline water. 107
243 Murray, Edmund W., Buckingham, Q.—Phosphate of lime. 107
244 Buckingham Mining Co., Buckingham, Q.—Crystal phosphate of lime. 107

Metallurgical Products.

245 Silver Islet Co., Silver Islet, Ont.—Ingot of silver. 110
246 Ottawa Iron & Steel Manufacturing Co., Ottawa, Ont.—Iron billets. 111
247 Field & Aydon Patent Smelting Co., Marmora, Ont.—Pig iron, smelted with pure petroleum. 111
248 Gauthier, O., St. Urbain, Q.—Titanic pig iron. 111
249 McDougall, John, & Sons, Three Rivers, Q.—Charcoal iron; iron bars, bent and twisted cold; axes, tomahawk, slag. 111
250 Canadian Titanic Co., Baie St. Paul, Q.—Slags, titanic iron. 111
251 Chicin Eugene, Quebec, Q.—Viger steel. 111
252 Moisic Iron Works, Montreal, Q.—Iron, iron bloom. 111
253 McDougall, John, Montreal, Q.—Iron bloom, car-wheels. 111
254 Stee. Co. of Canada, Londonderry, N. S.—Iron and steel. 111
255 West Canada Mining Co., Bruce Mines, Ont.—Ingot copper. 112
256 Lake George Antimony Co., Prince William, N. B.—Babbit metals, regulus, slags, oxidized ore. 113

FRANCE.
(The French Exhibits in Mining and Metallurgy are installed in the Agricultural Building, and Catalogued in Part IV.)

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
# Germany

(South of Nave, Columns 28 to 38.)

Minerals, Ores, Mining and Metallurgical Products.

<table>
<thead>
<tr>
<th>Company/Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Krupp, Fr., Essen</td>
<td>Ores and raw products.</td>
</tr>
<tr>
<td>Burbach Works, Burbach</td>
<td>Iron.</td>
</tr>
<tr>
<td>Burbach Works, Burbach</td>
<td>Coal.</td>
</tr>
<tr>
<td>Burbach Works, Burbach</td>
<td>Stone.</td>
</tr>
<tr>
<td>Heinrichshütte, Au-on-the-Sieg</td>
<td>Spathic iron ore.</td>
</tr>
<tr>
<td>Mine Owners of the Siegerland</td>
<td>Ores, etc.</td>
</tr>
</tbody>
</table>

(The above exhibits are installed in Machinery Hall.)

<table>
<thead>
<tr>
<th>Company/Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal Prussian Smelting Works of the Upper Harz, Clausthal</td>
<td>Lead, copper, and zinc ores.</td>
</tr>
<tr>
<td>Royal Prussian Smelting Works, Clausthal</td>
<td>Argenteiferous copper and lead ores.</td>
</tr>
<tr>
<td>Joint Stock Association for Mining &amp; Lead &amp; Zinc Manufacturers, Stolberg, near Aix-la-Chapelle</td>
<td>Lead and zinc ores.</td>
</tr>
<tr>
<td>Rheinish-Nassau Co, Stolberg, near Aix-la-Chapelle</td>
<td>Lead ores.</td>
</tr>
<tr>
<td>Solenhofen Joint Stock Co, Solenhofen</td>
<td>Tiles for malt-house floors.</td>
</tr>
<tr>
<td>Zimmermann, Otto, Greussen, Toephus</td>
<td>Lithographic stones.</td>
</tr>
<tr>
<td>Hiller, Otto, Berlin</td>
<td>Mastic roofing and model roof.</td>
</tr>
<tr>
<td>Häusler, Carl Sam., Hirchberg, Silesia</td>
<td>Wood cement and model roof.</td>
</tr>
<tr>
<td>Scharlach, Louis, jr., Hamburg</td>
<td>Roofing.</td>
</tr>
<tr>
<td>Wovohl Asphalt Works, Eschershausen</td>
<td>Asphalt mastic blocks.</td>
</tr>
<tr>
<td>Schindel, John Adam, Solenhofen</td>
<td>Lithographic stones.</td>
</tr>
<tr>
<td>Apollinaris Co, Ahnweiler</td>
<td>Mineral waters.</td>
</tr>
<tr>
<td>Bisresborn Mineral Spring Co, Bisresborn</td>
<td>Mineral waters.</td>
</tr>
<tr>
<td>Junger, A., Berlin</td>
<td>Amber.</td>
</tr>
<tr>
<td>Stantien &amp; Becker, Berlin</td>
<td>Raw amber.</td>
</tr>
</tbody>
</table>


(For mill and grindstones, see Machinery Hall.)

<table>
<thead>
<tr>
<th>Company/Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borsig, A., Berlin</td>
<td>Iron, cast steel, boiler plates, plates for fire boxes, etc.</td>
</tr>
<tr>
<td>Burbach Works, Burbach</td>
<td>Rolled double T iron.</td>
</tr>
<tr>
<td>Krupp, Fr., Essen</td>
<td>Wheels, pistons, flanges, rollers, springs, etc.</td>
</tr>
</tbody>
</table>

COLLECTIVE EXHIBIT, SIEGERLAND.—SPIEGLEISEN AND ORES.

24 Heinrichshütte, Au-on-Sieg | Spiegel iron. |
25 Cologne Müsen Mining Co, Kreuzthal | Spiegel iron. |
26 Joint Stock Co, Charlottenhütte | Niederschelden | Spiegel iron. |
27 Wissen Mining & Smelting Co, Wissen | Spiegel iron. |
28 Lohmann & Söding, Witten | Steel for tools and arms. |
29 Westphalian Union Joint Stock Co, for Mining & for Iron & Wirework, Hamm | Wire. |

(The above exhibits of Metallurgical Products are installed in Machinery Hall.)

<table>
<thead>
<tr>
<th>Company/Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal Prussian Smelting Works of the Upper Harz, Clausthal</td>
<td>Lead, copper, silver, zinc fumes, slags, drawings, etc.</td>
</tr>
<tr>
<td>Royal Prussian Smelting Works, Clausthal</td>
<td>Lead bars, slag, and copper composition.</td>
</tr>
<tr>
<td>Royal Prussian Smelting Works, Friedrichshütte</td>
<td>Lead bars, slag, and drawings.</td>
</tr>
<tr>
<td>Hirsch, Aron, &amp; Son, Brass Works at Neustadt-Eberswalde</td>
<td>Seamless brass tubes, etc.</td>
</tr>
<tr>
<td>Joint Stock Association for Mining, &amp; Lead &amp; Zinc Manufacturers, Stolberg, near Aix-la-Chapelle</td>
<td>Lead and zinc plates, etc.</td>
</tr>
<tr>
<td>Krüger &amp; Co, Breslau</td>
<td>Sheet zinc.</td>
</tr>
<tr>
<td>Rheinish-Nassau Co, Stolberg, near Aix-la-Chapelle</td>
<td>Lead.</td>
</tr>
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Mining Engineering.

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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
**AUSTRIA.**

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Minerals, Ores, Stone, Metallurgical Products.

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<th>Minerals, Ores, Stone, Mining Products.</th>
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<td><strong>3</strong> Chief Mountain &amp; Mining Administration, Pozoritta, Bukowina.—Pyrolusite for aniline pigments for soda factories, German silver ware, and manganese products.</td>
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<tr>
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**SWITZERLAND.**

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Minerals, Metallurgical Products.

Minerals, Ores, Stone, Mining Products.

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Metallurgical Products.

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Ores, Stone, Metallurgical Products.

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<tr>
<td>2 Bofors Stock Co., Gullspang, Bofors. — Iron ores.</td>
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<tr>
<td>3 Berg, Axel, Warby, Stockholm. — Iron ores.</td>
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</tr>
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<tr>
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<tr>
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<tr>
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<tr>
<td>9 Ekman, Carl, Finspong. — Iron ores.</td>
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<tr>
<td>10 Hermansson, C. F., Count von, Forna. — Iron ores.</td>
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<tr>
<td>11 Hofors &amp; Hammarby Iron Works, Gele. — Iron ores.</td>
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<td>12 Larsbo Norn Stock Co., Kasilla. — Iron ores.</td>
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<td>13 Laxa Iron Works Co., Laxa. — Iron ores.</td>
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<td>19 Schisshytte-Molnebo Iron Works, Morgongåva. — Iron ores, krukeite, lincores, and galena.</td>
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<tr>
<td>20 Stockenström, Axel von, Aker, Marielund. — Iron ores.</td>
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<tr>
<td>21 Stora Kopparbergs Bergslag, Stockholm. — Iron ores.</td>
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<tr>
<td>22 Sundström, J. O., Charlottenberg. — Iron ores.</td>
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<tr>
<td>23 New Gellivara Company (limited), Lulea. — Iron ores.</td>
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<tr>
<td>24 Osterby &amp; Strömbacka Iron Works, Osterby. — Iron ores.</td>
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<td>25 Uddevaål Company, Rada. — Iron ores.</td>
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<tr>
<td>26 Larsson, P. M., Löa, Rausa. — Iron ores.</td>
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<tr>
<td>27 Sandvikens Stock Co., Gefle. — Iron ores.</td>
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<td>28 Schough, Robert, Lulea. — Iron and copper ores.</td>
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Metallurgical Products.

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<td>44 Fagersta Stock Co., Westanfors. — Pig iron, Bessemer steel ingots, bar, plates, etc.; steel samples, showing the strength of the steel.</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 37-43.
Metallurgical Products.


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50 Laxa Iron Works, Laxa.—Pig iron, blooms, and bar iron.

COLLECTIVE EXHIBIT OF IRON MANUFACTURERS, STOCKHOLM.

51 Goteborgs Mechanical Works Stock Co., Avesta.—Pig iron, blooms, and bar iron.

52 Bjarneborgs Iron & Steel Works, Bjorneborg.—Pig iron, Bessemer steel ingots, and manufactured Bessemer steel.

53 Degersfors Stock Co., Degersfors, Vemdland.—Pig iron, blooms, wire rods, and plate.

54 Ekman, Carl. Finseorgen.—Pig iron for guns, malleable blooms, and bar iron.

55 Gysinge Iron Works, Gysinge.—Pig iron, blooms, and bar iron, in the pig and bars, with specimens of slag.

56 Hermansson, C. F., Countov, Farna, Bernhammar.—Pig iron, spiegelseisen, and bar iron.

57 Hofors & Hammarby, Hammarby, Stockholm.—Pig iron, blooms, and bars, with specimens of slag.

58 Larssons, Norm, Stock Co., Kafala.—Pig iron, blooms, and bar iron; blooms.

59 Laxa Iron Works, Laxa.—Pig iron, blooms, and bar iron.

60 Reitig, C. A., Kilaars, Soderhamn.—Pig and bar iron.

61 Stocksberg, Axel von, Mariebro.—Pig iron for malleable iron.

62 Bergslag Iron Works, Stockholm.—Pig iron, Bessemer ingots, blooms, bar iron, and samples of iron showing the quality.

63 Sundström, J. O., Charlotteberg.—Pig and bar iron; spikes.

64 New Goliath Company (Limited), Lulea.—Pig and bar iron; nails.

65 Gaterby & Strombacka, Dannemora.—Pig iron, Bessemer steel ingots, blooms, bar steel, crucible cast steel, and bar iron.

66 Surahammars Iron Co., Surahammars Iron Co., Surahammars Iron Co., Rida.—Pig iron, ingots of Bessemer and Martin steel, and iron in bars, springs, etc.

67 Uddeholms Stock Co. (Limited), Rada.—Pig iron, ingots of Bessemer and Martin steel, and iron in bars, springs, etc.

68 Larsson, P. M., Loda, Railla.—Samples of pig iron.

69 Metala Mechanical Co., Metala.—Iron and steel, in bars, plates, and sheets, with products of working.

70 Sandvikens Iron Works (Limited), Sandvikens.—Pig iron, Bessemer steel ingots, forgings for engines, steamers, etc.

71 Adelswärd, Baron, Th., Atvidaberg.—Copper, with products of working.

72 Skultuna Stock Co., Westerna.—Copper, with products of working.

73 Foss, works in different stages of production.

74 For rails, railway and wagons wheels, fified steel, etc., see Class 773, Machinery Hall.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 47-48.
## Minerals, Ores, Stone, Mining Products.

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<td>2</td>
<td>Fasmer, I. H., &amp; Son, Bergen. - Feldspar. 100</td>
</tr>
<tr>
<td>3</td>
<td>Hinderager Mining Co., Bergen. - Copper ore, pyrites. 100</td>
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<td>4</td>
<td>Hoyem, Andr., Bergen. - Titanium iron ore. 100</td>
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<td>5</td>
<td>Kongsberg Silver Mines, Kongsberg. - Ores, crystals. 100</td>
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<td>5a</td>
<td>Dahl, J., Kragerø. - Apatite ore. 100</td>
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<td>6</td>
<td>Bamble Nickel Mines, Johan Dahl, Kragerø. - Samples of nickel ores, with specimens illustrative of the melting process. 100</td>
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<td>Glorud Nickel Co., F. H. Frolich &amp; Son, Christiania. - Nickel ores. 100</td>
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<tr>
<td>8</td>
<td>Ringerige’s Nickel Works. - Nickel ores, with rocks and specimens of the melting process. 100</td>
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<td>Rom Nickel Works. - Nickel ores, with rocks and specimens of the melting process. 100</td>
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<td>Moestue &amp; Co., Thv., Christiania. - Slates for tables, roofs, and floors, from Siludre quarries. 102</td>
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## Metallurgical Products.

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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
ITALY.

(North of Nave, Columns 1 to 5.)

Minerals, Stone, Metallurgical Products.

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<td>Chamber of Commerce &amp; Arts, Sienna</td>
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</tr>
<tr>
<td>Crispo, Moncada Carlo, Catania</td>
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<td>Bolari &amp; Yellow Earth Co., Sienna</td>
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<td>Fusse Bros., &amp; Co., Rome</td>
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BRAZIL.

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<td>Iron ores</td>
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6 Commission General for the National Exhibition.

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</thead>
<tbody>
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<td>b</td>
<td>Coal</td>
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<tr>
<td>c</td>
<td>Marbles</td>
</tr>
<tr>
<td>d</td>
<td>Clay, argil, and schist</td>
</tr>
<tr>
<td>e</td>
<td>Minerals, showing gold and diamond formations</td>
</tr>
</tbody>
</table>

7 National Museum.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Minerals</td>
</tr>
<tr>
<td>b</td>
<td>Coal</td>
</tr>
<tr>
<td>c</td>
<td>Marbles</td>
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<td>d</td>
<td>Gems</td>
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For classes of exhibits, indicated by number at end of entries, see Classification, pp 27-45.
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9 Lemos, J. A. de.—Minerals. 100
10 Correia, J. Severo.—Calcareous rocks, galena, and pyrites. 100
11 Athayde, M. E. de S.—Mica. 100
12 Moraes, Rozeira, M. G. de.—Martial pyrites. 100
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18 Barbacena, Viscount of.—Coal. 101
19 Province of Santa Catherina. 
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\[\text{Marble.} 102
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21 Carvalho, A. P. S.—Bituminous schist. 101
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\[\text{Quartz, agates, and grindstones.} 106
23 Steraux, E.—Marbles. 102
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<td>2</td>
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<td>Province of Mendoza</td>
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<td>3</td>
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<td>4</td>
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<td>5</td>
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<td>6</td>
<td>Illanes, Manuel I.</td>
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<td>Minerals of Cerro de Vinchona</td>
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<td>7</td>
<td>Bascuñan, Francisco</td>
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<td>8</td>
<td>Provincial Commission</td>
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<td>Minerals</td>
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<td>9</td>
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<td>Minerals of Olta</td>
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<td>10</td>
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<td>11</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-15.
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<th>Description</th>
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CHILI.
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Minerals, Ores, Stone, Mining Products.

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Metallurgical Products.

Mining Engineering.
**MEXICO.**

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<tr>
<td>3 School of Engineers, City of Mexico.—Minerals. 100</td>
<td>26 Guadalupe Company.—Wrought and cast iron. 112</td>
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<tr>
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<td>29 Natural History Society, City of Mexico.—Minerals. 100</td>
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<td>7 Natural History Society, City of Mexico.—Minerals. 100</td>
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<td>9 Soto, Mayor C., State of Michoacan.—Minerals from the mineral district of Angangueo. 100</td>
<td>33 Mala Noche Company, Zacatecas City.—Minerals. 100</td>
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<td>10 Rull, Miguel, City of Mexico.—Minerals. 100</td>
<td>34 Ponce, Juan, Zacatecas City.—Minerals. 100</td>
</tr>
<tr>
<td>10 Corcuera, Manuel, State of Jalisco.—Iron ores. 100</td>
<td>35 Ramírez, S. &amp; C. J., City of Mexico.—Rocks. 100</td>
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<td>11 Real del Monte Company.—Minerals. 100</td>
<td>36 Barcena, Maniño, City of Mexico.—Fossils, rocks, and geological maps. 100</td>
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<td>2 Fernandez, Diego, Cuevas, Province of Almería.—Argilliferous rock and bar-</td>
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<tr>
<td>3 Campos, Francisco, Fondón, Province of Almería.—Laminated calcaire.</td>
</tr>
<tr>
<td>4 Montoro, Francisco, Vera, Province of Almería.—Laminated calcaire.</td>
</tr>
<tr>
<td>5 Bachiller, Guillermo, Cuevas, Province of Almería.—Argilliferous rock with iron pyrites.</td>
</tr>
<tr>
<td>6 Cerezo, Gonzalo, Berja, Province of Almería.</td>
</tr>
<tr>
<td>7 Gonzalez, Gabriel, Laujar, Province of Almería.—Laminated calcaire.</td>
</tr>
<tr>
<td>8 Terriz, José, Berja, Province of Almería.—Carboniferous rock.</td>
</tr>
<tr>
<td>9 Rapal, José, Almería, Province of Almería.—Calcareous.</td>
</tr>
<tr>
<td>10 Olmo, José del, Berja, Province of Almería.—Calcareous, stained with min-</td>
</tr>
<tr>
<td>11 Cavañillas, Juan, Cuevas, Province of Almería.—Argilliferous rock.</td>
</tr>
<tr>
<td>12 Correlo, Rafael, Almofita, Province of Almería.—Calcareous.</td>
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<tr>
<td>13 Abad, Jerónimo, Nijar, Province of Almería.—Pyrolusite.</td>
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<td>14 Ayala, Antonio, Lucar, Province of Almería.—Steatite.</td>
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<tr>
<td>15 Padilla, Francisco, Nijar, Province of Almería.—Carbonate and cobalt.</td>
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<tr>
<td>16 Blanco, Prudencio, Alcolea, Province of Almería.—Gray calamine.</td>
</tr>
<tr>
<td>17 Duran, Esteban, Almería.—Oxide of copper and calamine.</td>
</tr>
<tr>
<td>18 Ramirez, Luis, Lucar, Province of Almería.—Black oxide of cobalt.</td>
</tr>
<tr>
<td>19 Rio, Eustaquio, Huércal-Oliva, Province of Almería.—Arseniate of cobalt.</td>
</tr>
<tr>
<td>20 Real, José, Almería.—Carbonate of lead.</td>
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<tr>
<td>21 Gomez, Cristóbal de, Nijar, Province of Almería.—Carbonate of lead.</td>
</tr>
<tr>
<td>22 Treil, Miguel del, Berja, Province of Almería.—Carbonate of calamine.</td>
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<tr>
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</tr>
<tr>
<td>23a Daza y Ruiz, Serón, Province of Almería.—Iron ore.</td>
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<tr>
<td>23b Daza y Ruiz, Lucar, Province of Al-</td>
</tr>
<tr>
<td>24 Vivas Asqueros, Antonio, Pechina, Province of Almería.—Iron ore.</td>
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For classes of exhibits indicated by numbers at end of entries, see Classification, pp. 27-45.
Classified List of Exhibits of Mining Engineers and Ores.

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2. Figueroa, Ignacio, Linares, Province of Jaén.—Galena.
3. Amado Salazar, Enrique, Bailén, Province of Jaén.—Galena.
4. Lohnstein, Emilio, Linares, Province of Jaén.—Galena.
5. Arboledas, Martin, Linares, Province of Jaén.—Sulphate of lead.
6. Villanova, José Genaro, Linares, Province of Jaén.—Earth from a lead mine, and potter’s antimony.
7. Polo Leoncio, Villafeliz, Province of Leon.—Iron ore.
8. Alonso, Casimiro, Leon.—Oxidized iron ore.
10. Reynante y Cancio, Manuel, Riva- deo, Lugo.—Ores.
11. Corps of Mining Engineers, Madrid.—Ores.
12. Naranjo y Garza, Felipe, from various towns of the Province of Madrid.—Ores.
13. Mining Engineers, Málaga.—Mala- chite copper ore.
14. Mining Engineers, Marbella, Province of Málaga.—Magnetic iron.
15. Mining Engineers, Estepona, Province of Málaga.—Magnetic iron.
16. Mining Engineers, Mijas, Province of Málaga.—Hydrated iron, galena, and magnetic iron.
17. Mining Engineers, Istán, Province of Málaga.—Magnetic iron.
18. Mining Engineers, Carratraca, Province of Málaga.—Hematites.
19. Mining Engineers, Antequera, Province of Málaga.—Ologistic iron.
20. Mining Engineers, Coin, Province of Málaga.—Hematites.
22. Mining Engineers, Benalmadena, Province of Málaga.—Hydrated iron. 
23. Mining Engineers, Alora, Province of Málaga.—Nickel.
24. Mining Engineers, Almogia, Province of Málaga.—Malachites and pyrites of copper.
25. Mining Engineers, Alhaurín el Grande, Province of Málaga.—Galena and carbonate of lead.
26. Mining Engineers, Colmenar, Province of Málaga.—Galena and pyrites of copper.
27. Mining Engineers, Nerja, Province of Málaga.—Galena.
28. Mining Engineers, Archidona, Province of Málaga.—Oligistic iron.
29. Blandin y Carreño, Manuel, Vera, Province of Navarra.—Iron ores.
86 Vila, Francisco, Pentes, Province of Orense.—Tin ore. 100
87 Mining District of Oviedo, various towns of the Province of Oviedo.—Ores. 100
88 Acebal y Menéndez, Benito, Carreño, Province of Oviedo.—Iron ore. 100
89 Uriá Pinilla, Navia de Luarca, Province of Oviedo.—Iron ores. 100
90 National Factory of Trubia, Trubia, Province of Oviedo.—Iron ores. 100
91 Diestro y Lostra, Antonio del, Mier, Province of Oviedo.—Ores. 100
92 Somosó Pía eiro, Ramon, Merza, Province of Pontevedra.—Magnetic iron. 100
93 Mining Society of Salamanca.—Tin ore. 100
94 Neeoshourer Bellesfrod & Co., from various towns and provinces.—Ores. 100
95 Mining & Foundry Co. of Santander.—Ores. 100
96 Buen Deseo Mining Society, Peñalcazar, Province of Soria.—Argentiferous lead ore. 100
97 Perez, Bernardo, Peñalcazar, Province of Soria.—Argentiferous lead ore. 100
98 Director of the Company of Mines & the Manufactory del Pedrero, Casalla de la Sierra, Province of Seville.—Iron ores. 100
99 Gomez, José Maria, Vimbodi, Province of Tarragona.—Pyrites and barytes in powder. 100
100 Monner, Francisco, Las Borjas, Province of Tarragona.—Oligistic iron. 100
101 Britó & Sierra, Camañas, Province of Teruel.—Crystallized manganese ore, pyrolusite. 100
102 Maorad, Benito, Camañas, Province of Teruel.—Manganese. 100
103 Valdernoro, Juan Francisco, Teruel.—Oxide of iron. 100
104 Belles, James, Albarracín, Province of Teruel.—Oxide of iron. 100
105 Perez, Francisco, Linares, Province of Teruel.—Calamine. 100
106 Diego, Vicente de, Bilbao, Province of Vizcaya.—Iron ores. 100
107 Bourson, Miguel, Somorrostro, Province of Vizcaya.—Iron ore. 100
108 Bilbao Iron Ore Company (limited), Galámandes, Province of Vizcaya.—Iron ore. 100
109 Zabalo, Andrés, Illeuca, Zaragoza.—Oligistic iron. 100
109a Monner, Francisco, Reus, Province of Tarragona.—Ores. 100
110 Rueda, Manuel, Mesones, Province of Zaragoza.—Ores. 100
111 Boiven y Senty, Adolfo, Maestu, Province of Alava.—Natural rock asphaltum, refined bitumen, pure and dry asphaltum. 100
112 Asphaltum Company of Maestu, Vitoria.—Asphaltum. 100
113 Mining Union, Calaf, Province of Barcelona.—Lignite. 100
114 La Perla Bergadana Mining Society, Pont de Raveinti, Province of Barcelona.—Mineral coal. 100
115 Gismera y Pujals, Manuel, Barcelona.—Mineral coal. 100
116 Oriá, Eugenio, Brieva de Juarrs, Province of Burgos.—Dry pit-coal. 100
117 Juarréa Society, San Adrian de Juarrs, Province of Burgos.—Dry pit-coal. 100
118 Miró y Cerda, C., from various towns of the Province of Castellón.—Coal. 100
119 Metallurgical Coal-pit Company of Belmez, Peñarroya, Province of Córdoba.—Pit-coal, and coke. 100
120 El Veterano Mineral Society, Surroca, Province of Gerona.—Pit-coal and coke; rocks, illustrating the geological composition of the coal districts of Surroca and Ugassa. 100
121 Board of Agriculture, Industry, & Commerce, Oviedo.—Coal and mineral coal. 100
121a Board of Agriculture, Industry, & Commerce, Mieres, Province of Oviedo.—Coal block, weighing 30 cwt. 100
122 Coal-pit Society of Muñón, Muñón, Pola de Lena, Province of Oviedo.—Mineral coal. 100
123 National Factory of Trubia, Trubia, Province of Oviedo.—Mineral coal and coke. 100
124 García de los Ríos, Eduardo, Mieres, Province of Oviedo.—Pit-coal. 100
125 Vígon, Brauilo, Carrándi, Province of Oviedo.—Anthractite coal. 100
126 Mines of Castilla, Barruelo, Province of Palencia.—Pit-coal and coke. 100
127 Fernandez Castañeda, Telesforo, Reinosa, Province of Santander.—Lignite. 100
128 Pereire, Isaac, Villanueva del Rio, Province of Seville.—Coal. 100
129 Corps of Mining Engineers, Soria.—Impregnated asphaltum. 100
130 Peguero, Andrés, Utrillas, Province of Teruel.—Coal. 100
131 Sierra, Francisco, Utrillas, Province of Teruel.—Coal. 100
132 Esteban, Cristóbal, Libros, Province of Teruel.—Brinestone. 100
133 Fernandez, Francisco, Havana, Island of Caba.—Asphaltum. 100
134 Blanquer Ronda, Mariano, Callosa de Ensarría, Province of Alicante.—Black marble. 100
135 Serrano, Cardona & Co., Monóvar, Province of Alicante. Tubing and pillar, with enclosure. 100
136 Jové, Francisco, Almería, Province of Almería.—Construction stones. 100
136a Abelló y Boada, Pablo, Sarreall, Province of Tarragona.—Alabaster. 100
137 Daza, Francisco, Macael, Province of Almería.—Marble. 100
138 Tréll, Miguel del, Berja, Province of Almería.—Marble for construction. 100
139 Chief Engineer of Highways, Valdemolinos, Province of Avila.—Granite. 100

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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147 Corporation of Chiclana, Province of Cádiz.—Jasper. 102
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170 Corps of Mining Engineers, Province of Murcia.—Marble, grit, construction stone, and alabaster. 102
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185 Board of Public Works, Villamentero, Province of Valladolid.—Crystallized gypsum. 102
186 Corporation of Ricla, Province of Zaragoza.—Marbles. 102
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188 Corporation of Fuentes de Ebro, Province of Zaragoza.—Alabaster. 102
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190 Navarro, Antonio, Las Palmas, Canary Islands.—Calcareous stone and powdered lime. 102
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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209 Provincial Commissions of various towns, Province of Bérgo.—Argil and clay. 104
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211 Banante, Juan, Chantada, Province of Lugo.—Argil. 104
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239 Corporation of Montoro, Province of Córdoba.—Sulphurous water. 107
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243 Medinaceli, Duke of, Gerona.—Ferruginous and sulphurous water. 107
244 García, Gabriel, Gerona.—Ferruginous carbonic water. 107
245 Vilaret, José, Gerona.—Carbonic water. 107
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249 Borregan del Blanco, Domingo, Mogrovejo, Province of Leon.—Mineral waters. 107
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255 Niera Gayoso, Dositeo, Lugo.—Sulphurous waters. 107
256 Pardo Montero, Ramon, Trasparaga, Province of Lugo.—Sulphurous waters. 107
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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274 Arroyo, Juan, Cervantes, Province of Lugo.—Iron. 111
275 Ojeda Porras, José, Cervantes, Province of Lugo.—Iron. 111
276 Somora, Juan Manuel, Caurel, Province of Lugo.—Iron. 111
277 Lopez, José Maria, Puertomarin, Province of Lugo.—Iron. 111
278 Poundry & Delf Factory of Sargadelos, Servo, Province of Lugo.—Cast iron. 111
279 Monriz, Gabriel, Lugo.—Horse bit. 111
280 Corral, Francisco, Triacastela, Province of Lugo.—Horse shoes. 111

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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<td>Inspection of Mines, Province of Camarines Norte.—Cupreous sand with native copper.</td>
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<td>Commission of the District of Benguet, Province of Benguet.—Auriferous sand.</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45

Metallurgical Products.

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(South of Nave, Columns 16 to 18.)
### PORTUGAL

(South of South Avenue, Columns 13 to 17)

Minerals, Ores, Stone.

| 2 | Cortes Pereira Antimony Mine Exploring Co. | Antimony ore. |
| 3 | Antimony Mining Co. of Corte Pereira. | Antimony ore. |
| 5 | Barriga, Antonio F., Portalegre. | Quartz of Valle de Peso. |
| 6 | Cavreira Mining Co., Grandola. | Copper ore from the Cavreira mine. |
| 7 | Deliguy, Ernest, Lisbon. | Copper ore. |
| 8 | Elliott, George, & Ferreira Castello, José H., Lisbon. | Iron ores from Ares Zambujal and San Bartholomeu mines. |
| 9 | Elliott, George, Alvito. | Iron ores from San Bartholomeu and Zambujal mines. |
| 10 | Peurheerd, F. Detlof, & Cruickshank, William, Braçal. | Lead and zinc ores from Braçal and Malhada mines; copper ore from Chança. |
| 12 | Gomes, Alonso, Mertola. | Manganese ore from the Paraíso, Ferragudo, and Calvo mines. |
| 13 | Malhada Mining Co., Malhada. | Copper ore from Malhada mine. |
| 14 | Monges Iron Co. (limited), Lisbon. | Iron ore from Serra dos Monges. |
| 15 | Moraes, José Gonçalves, Arronches. | Iron, manganese, and argentiferous lead ore. |
| 16 | Mason & Barry, Mertola. | Copper ores from San Domingo. |
| 17 | Oliveira, Joao Correia, Senhora de Castello. | Tin ore. |
| 19 | Portuguese Copper Mining Co., Evora. | Specimens of ores from Basalho mine. |
| 20 | Portuguese Mining Co., Covelas. | Tin ore. |
| 21 | Perseverança Co., Oporto. | Antimony ore from Valde Ache, and tin ore from Logar d'Aborin. |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-43.
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51 Direction of the Public Works of Oporto, Oporto.—Building materials. 102
52 Direction of the Public Works of Aveiro, Aveiro.—Building materials. 102
53 Direction of the Public Works of the Mondego river & Figueira bar, Coimbra.—Building materials. 102
54 Direction of the Public Works of Coimbra, Coimbra.—Building materials of the district. 102
55 Direction of the Public Works of Leiria, Leiria.—Building materials of the district. 102
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70 Fialho & Bro., Lisbon.—Mineral waters. 107
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78 Perseverança Company, Oporto.—Tin ingot. 113
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Mining Engineering.
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81 Mason & Barry, Mertola.—Plans of mines; model of a Roman wheel. 121
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
TURKEY.

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Minerals, Ores, Stone.

Minerals, Ores, Stone, Mining Products.

1 Wilkinson, Rizzo, & Co., Koumarlar, Dardanelles.—Sulphur ore, sulphurous copper. 100
2 Tapas, Daniel, Cian, Dardanelles.—Lead ore. 100
3 Sarrai, Moudadite, Trebizond.—Argentiferous galena. 100
4 Sarrai, Lokhia, Trebizond.—Iron pyrites. 100
5 Schirin Agha, Tirepola, Trebizond.—Copper pyrites. 100
6 Soleiman, Gueugine, Trebizond.—Galena. 100
7 Omer, Ogloou Osman, Lokhia, Trebizond.—Galena. 100
8 Omer, Eiffendi, Ordou, Trebizond.—Argentiferous galena. 100
9 Nimetoulah, Trebelau, Trebizond.—Copper ore. 100
10 Nimetoulah, Kurell, Trebizond.—Copper pyrites. 100
11 Pappazaki, Nicola, Sfakia, Crete.—Lignite. 100
12 Nimetoulah, Mouradite, Trebizond.—Argentiferous galena. 100
13 Moustapha, Eiffendi, Cherkech, Casamouni.—Chalk. 100
14 Gonsan, Government of, Adana.—Iron pyrites. 100
15 Multesim Oulah, Tireboli, Trebizond.—Ferruginous sediment. 100
16 Multesim, Abdoulah, Tirebole, Trebizond.—Argentiferous galena, copper pyrites. 100
17 Mandené, Diarbeikir.—Silver ore. 100
18 Multesim, Tireboli, Trebizond.—Cupreous pyrites. 100
19 Ligory, Eiffendi, Stanken, Dardanelles. a Manganese, iron ore, and sulphur ore. 100 b Emery. 106
20 Kara-Hissar, Government of, Sivas.—Argentiferous galena, aluminous earth. 100
21 Ali, Hadji Diarbeikir.—Brimstone of the desert. 100
22 Moustapha, Hadji, Nich, Danube.—Iron stone. 100
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25 Aydin, Government of.—Argentiferous galena, lignite, iron ore. 100
26 Adana, Government of.—Sulphate of chalk and galena. 100
27 Gumuch Hanê, Government of, Trebizond.—Argentiferous and cupreous galena. 100
28 Ichkodra, Government of, Monastir.—Sulphur ore. 100
29 Ichkloura, Government of, Monastir.—Brimstone, arsenical ore, and sulphate of copper. 100
30 Havret, Government of, Salonica.—Argentiferous galena. 100
31 Topouz, Oglou, Imbros, Dardanelles. a Lead ore. 100 b Coal. 101
32 Koniah, Government of.—Brimstone. 100
33 Michere, Government of, Yanina.—Lignite. 100
34 Medina, Government of, Hidjaz.—Rocks crystals. 100
35 Magilé, Government of, Aydin.—Argentiferous galena, iron and chrome ores. 100
36 Militinous, Government of, Samos. a Talus. 100 b Yellow earth, argil. 104
37 Lapsaki, Government of, Dardanelles.—Brimstone. 100
38 Karssendi, Government of, Adana. a Copper and silver ore, lignite and galena. 100 b Grit sandstone. 102
39 Tdomane, Government of, Yanina.—Galena. 100
40 Trebizond, Government of.—Galena. 100
41 Uskup, Government of, Monastir.—Aluminaeous earth. 100
42 Samos, Government of. a Galena. 100 b White and colored marble. 102 c Argill. 104 d Emery. 106
43 Suleimaneyah, Government of, Bagdad. a Melted brimstone, cut rock crystal. 100 b Argill. 104
44 Smyrna, Government of, Aydin.—Lignite, argentiferous galena, iron ore, manganese. 100 b Emery, grindstones. 106
45 Syros, Government of, Salonica.—Lignite. 100

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 37-45.
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<tr>
<td>46</td>
<td>Souké, Government of, Aydin.</td>
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<tr>
<td>a</td>
<td>Iron ore. 100</td>
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<td>b</td>
<td>Red sandstone. 100</td>
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<td>c</td>
<td>Tripoli. 104</td>
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<td>d</td>
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<td>a</td>
<td>Chrome ore. 100</td>
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<td>Mineral water. 107</td>
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<td>Samakon Factory, Sophia, Danube. —Iron ore. 100</td>
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<td>49</td>
<td>Ergain, Diarbekir.—Copper ore. 100</td>
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<td>50</td>
<td>Doncl Aghop, Esnæ, Dardanelles.—Manganese. 100</td>
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<td>51</td>
<td>Dardalah, Mouradile, Trebizond.—Copper pyrites. 100</td>
</tr>
<tr>
<td>52</td>
<td>Pappazaki, Dimitri, Sfakia, Crète.—Argillus talc. 100</td>
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<td>53</td>
<td>Abdi Bey, Mytilene, Dardanelles.—Chrome. 100</td>
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<td>54</td>
<td>Abdoullah Pey, Mytilene, Dardanelles.—Antimony. 100</td>
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<td></td>
<td>b Emery. 106</td>
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<td>55</td>
<td>Azit Anelé, Olevek, Trebizond.—Manganese. 100</td>
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<tr>
<td>56</td>
<td>Ulmusrati, Ahmed, Tripoli, Tripoli.—Crude brimstone. 100</td>
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<td>57</td>
<td>Administration of the Mines, Constantinople.—Collection of ores. 100</td>
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<td>58</td>
<td>Mehemed Agha, Aleppo.—Coal. 101</td>
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<td>59</td>
<td>Bridore, Government of, Bosnia.—Lignite. 101</td>
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<td>60</td>
<td>Djeziré, Diarbekir.—Coal. 101</td>
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<td>61</td>
<td>Krairov, Government of, Monastir.—Coal. 101</td>
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<td>62</td>
<td>Mosul, Government of, Bagdad.—Coal. 101</td>
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<td>63</td>
<td>Nich, Government of, Danube.—Coal. 101</td>
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<td>64</td>
<td>Panaloko, Government of, Bosnia.—Coal. 101</td>
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<td>65</td>
<td>Ychtip Government of, Monastir.—Coal. 101</td>
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<td>66</td>
<td>Erelli, Castamouni, Castamouni.—Lignite. 101</td>
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<td>67</td>
<td>Serkiz, Aleppo.—Red marble. 102</td>
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<td>Razoula, Aleppo.—Yellow marble, calcareae stone. 102</td>
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<td>Koyondja, Government of, Bosnia.—Marble. 102</td>
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<td>Nenedès, Government of, Samos.—White marble. 102</td>
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<td>71</td>
<td>Nicolaki, Jovan Oglou, Dardanelles, Dardanelles.—Cement. 103</td>
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<td>Sfakia, Government of, Crète.—Crude lime. 103</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
RUSSIA.

(South of Nave, Columns 19 to 23.)

Minerals, Ores, Stone, Metallurgical Products.

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<th>Minerals, Ores, Stones, Mining Products</th>
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<td>1 Yoogoff Iron Works, Government of Perm.—Copper ores.</td>
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<td>2 Pootiloff Iron Works Company, St. Petersburg.—Iron ores.</td>
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<tr>
<td>3 Administration of the Goroblagodati Mining District, Government of Perm.—Magnetic and other iron ores.</td>
</tr>
<tr>
<td>4 Administration of the Mining Districts in Western Poland. a Iron ore, calamine, and lead blende.</td>
</tr>
<tr>
<td>b Coal.</td>
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<td>c Refractory clay.</td>
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<td>5 Administration of the Clonetz Mining District.—Lake iron ore.</td>
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<td>6 Rogosloosky Crown Copper Works, Government of Perm.—Copper ores.</td>
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<tr>
<td>7 Demidoff, Paul, Prince of San Donato, Nigii Tagil, Ural Mountains, Government of Perm.—Iron and copper ores.</td>
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<tr>
<td>8 Gessrick &amp; Woerfel, St. Petersburg.—Siberian minerals and hard stones.</td>
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<td>9 Kniaze Michailoff Crown Steel Works, Government of Orenburg.—Magnetic iron ore.</td>
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<tr>
<td>10 Mining School, St. Petersburg.—Minerals and paleontological collection.</td>
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<tr>
<td>11 Bashkoff, Basil, Bogoyavlensk, &amp; Verkhotoorji, Government of Cofa.—Copper ores.</td>
</tr>
<tr>
<td>12 Russian Rail Manufacturing Company, Government of Riazan, District of Trosn.—Iron ore.</td>
</tr>
<tr>
<td>13 Saltkinsky Crown Iron Works, Government of Orenburg.—Brown and sparry iron ores.</td>
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<tr>
<td>14 Sidoroff, Michael, St. Petersburg. a Iron ore. (Northern limits of Russia.)</td>
</tr>
<tr>
<td>b Siberian graphite from the district of Toorookhans.</td>
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<tr>
<td>15 Yakovlev, John, Alexandria, Government of Kherson. a Iron ore.</td>
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<td>b Graphite.</td>
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<td>16 Russian Navigation &amp; Trade Company, Odessa.—Specimens of anthracite coal.</td>
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<td>17 Majervsky, T., &amp; Stochelaky. M., Government of Pietrkoft, district of Bendzin.—Coal.</td>
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<tr>
<td>18 Sidoroff, Michael, St. Petersburg.—Bituminous coal, from underground fire burning since 1700.</td>
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<td>20 Zievers, B. Wesenberg, Government of Estland.—Portland cement.</td>
</tr>
<tr>
<td>21 Schmidt, C., Riga.—Cement.</td>
</tr>
<tr>
<td>22 Sytenko, John, Moscow.—Limestone and plaster.</td>
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<td>23 Lanin, Nicolas, Moscow.—Mineral water.</td>
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</tbody>
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Metallurgical Products.

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<tr>
<th>Metallurgical Products</th>
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<tr>
<td>27 Mining Department, St. Petersburg.—Native platinum, osmiridium (purified), and platinum.</td>
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<tr>
<td>28 Miasky Government Gold Mines, Government of Orenburg.—Gold-bearing sands; illustration of gold washing machines.</td>
</tr>
<tr>
<td>29 Votkinsk Crown Iron Works, Government of Perm.—Iron (in bars), and cast steel.</td>
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<tr>
<td>30 Pootiloff Iron Works Company, St. Petersburg.—Cast and wrought iron, steel, twisted rail.</td>
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<tr>
<td>31 Gun Foundry, Perm.—Cast and wrought iron; steel sections of cast steel guns.</td>
</tr>
<tr>
<td>32 Kama Armor Plate Works, Government of Perm.—Armor plate.</td>
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<tr>
<td>33 Administration of the Goroblagodati Mining District, Government of Perm.—Cast iron projectile.</td>
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<td>34 Administration of the Clonetz Mining Districts.—Cast and wrought iron; section of cast iron guns.</td>
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<tr>
<td>35 Demidoff, Paul, Prince of San Donati, Nigii Tagil, Ural Mountains, Government of Perm. a Iron; pig bars, ingots, rails, sheets, slags, and flakes.</td>
</tr>
<tr>
<td>b Copper ingots, bars, sheets; illustrations of style of working.</td>
</tr>
<tr>
<td>36 Russian Rail Manufacturing Company, Government of Riazan, District of Trosn.—Cast iron and iron wire.</td>
</tr>
<tr>
<td>37 Saltkinsky Crown Iron Works, Government of Orenburg.—Cast iron.</td>
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<tr>
<td>38 Admiralty Tyora Works, near St. Petersburg.—Boiler plates.</td>
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<tr>
<td>39 Yoogoo Copper Works, Government of Perm.—Copper (in bars and ingots), and products of working.</td>
</tr>
<tr>
<td>40 Pashroff, Basil, Bogoyavlensk &amp; Vennihotoorji, Copper Works, Government of Oofa.—Copper ingots, bars, rolled wire, and spangles; illustrations of methods of working.</td>
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</tbody>
</table>

For classes of exhibits indicated by numbers at end of entries, see Classification, pp. 27-45.
<table>
<thead>
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<th>No.</th>
<th>Author/Name</th>
<th>Title/Description</th>
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<tbody>
<tr>
<td>43</td>
<td>Rastergaeff, Gregory, St. Petersburg</td>
<td>Tinned iron sheets.</td>
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**Mining Engineering.**

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<th>No.</th>
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<tbody>
<tr>
<td>44</td>
<td>Administration of Mines in Finland, Helsingfors’ editions and reports on local mine engineering and geology</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Author/Name</th>
<th>Title/Description</th>
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<tbody>
<tr>
<td>45</td>
<td>Scientific Committee of the Mining Department, St. Petersburg</td>
<td>Special editions and periodicals on mine engineering.</td>
</tr>
<tr>
<td>46</td>
<td>Demidoff, Paul, Prince of San Donati, Nigni Tagil, District of Ural Mountains, Government of Perm</td>
<td>Maps, plans, and views of this mining district; illustrations of gold washing process.</td>
</tr>
<tr>
<td>47</td>
<td>Babin, Victor &amp; Lepooshinsky, Moscow</td>
<td>Illustrations of boring process, artesian well, and apparatus.</td>
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</table>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
GLOUCESTER IRON WORKS,
GLOUCESTER CITY, NEW JERSEY.

Cast Iron Gas & Water Pipes, Stop Valves, Fire Hydrants, Gas Holders, &c.
Office, Philadelphia. No. 6 North Seventh St.

PHILADELPHIA LEAD WORKS.
ESTABLISHED 1812.

John T. Lewis & Bros.,
MANUFACTURERS OF
WHITE LEAD, RED LEAD, LITHARGE,
ORANGE MINERAL, SUGAR OF LEAD, ACETIC ACID,
Linseed Oil, Painters' Colors.

BUSINESS OFFICE, 231 SOUTH FRONT STREET,
PHILADELPHIA.
FIRE ARMS, Etc.

PRICES quoted, description given, and some SAMPLES shown, of the following Manufacturers’ Goods, now on exhibition in the Main Building of the Centennial Exposition.

JOS. C. GRUBB & CO.,

Manufacturers’ Agents.

J. RUPERTUS, Empire Revolvers.
C. SHARPS, Pat. & Shot Repeaters.
F. WESSON, Breech-Loading Rifles.
WINCHESTER, Reptg. Rifles and Cartridges.
SHARPS, Target and Sporting Rifles.
FOREHAND & WADSWORTH, Revolvers.

SMITH & WESON, Revolvers.
WHITNEY, Rifles and Target Pistols.
REMINGTON, “ ” and Breech-loading Double Guns.
AMERICAN FLASK AND CAP Company.
AMERICAN PERCUSSION CAP Association.
WM. G. RAWBONE, Patent Creasers.
PARKER BROS., American Breechloading Guns.

JAMES PURDEY, London, Breechload’g Guns.
JOHN RIGBY & CO., “ ”
E. M. REILLY & CO., “ ”
J. LANG & SONS., “ ”
ALBERT LANCASTER, “ ”
CHAS. LANCASTER, “ ”
ALEX. HENRY, Edinburgh, Harpoon and Bomb Lance Guns.
W. & C. SCOTT & SON, Birmingham.

P. WEBLEY & SON, Birmingham, Breechloading Guns.
W. W. GREENER, Birmingham, Breechloading Guns.
ELEY BROS., London, Shells, Wads, Caps, etc.
SELLIER & BELLOT, Percussion Caps.

BAEDER, ADAMSON & CO.,

MANUFACTURERS OF

GLUE, SAND PAPER,

GROUND FLINT AND EMBRY,
EMERY PAPER AND EMBRY CLOTH,
CURLED HAIR AND STUFFING HAIR,
MOSS, COW-HIDE WHIPS, FELTED HAIR, AND FELTING.

FACTORIES:
PHILADELPHIA, Pa.
NEWARK, N. J.
WOBURN, Mass.

STORES:
Philadelphia, 730 Market Street.
New York, 67 Beekman Street.
Boston, 143 Milk Street.
Chicago, 182 Lake Street.
For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Chemicals, Pharmaceutical Preparations.


24 Savage, Keyser, & Stovell, Philadelphia, Pa.—Acids and salts. T 44. 200.

25 Philadelphia Quartz Co., 9 North Front street, Philadelphia, Pa.—Silicate of soda, in its various forms, especially adapted to the different uses. T 45. 200.

26 Coyne, Geo. S., Philadelphia, Pa.—Manufacturer and importer of dyewood liquids, extracts, dyestuffs, and chemicals generally. (Stores, 104 and 127 Church street, Philadelphia, Pa.; Chester Chemical Works, Delaware county, Pa.) T 44. 200.

a Acids and chemicals. 200
b Dyestuffs. 202


30 Lewis, John T., & Bros., Philadelphia, Pa.—T 42.

a Acids. 200
b White and red lead; litharge, orange mineral; paints, colors, and oils. 200

31 Stillman Chemical Works, Philadelphia, Pa.—Chemical products, from tar and fine chemicals, known as Fresenius's tests. P 43. 200.


38 Libe, John C., Philadelphia, Pa.—Baking yeast powder. T 47. 200.

39 McIlvaine Brothers, Philadelphia, Pa.—Ground and powdered drugs, paints, etc. P 43. 200.


46 Browning & Brothers, Philadelphia, Pa.—T 44.

a Acetic acid, acetate of lime, lead, alumina and iron, sulph. copper. 200
b Naphtha. 201
c Dye woods. 205


50 Bean, Lewis U., Philadelphia, Pa.—P 49.

a Pharmaceutical preparations, drugs, and medicines. 200
b Paints—dry and in oil. 200

51 Pfizer, Chas., & Co., New York, N. Y.—Pharmaceutical and chemical products; cream tartar, tartaric acid, refined borax, and camphor. P 49. 200.

52 Preston & Merrill, Boston, Mass.—P 49.

a Yeast powder. 200
b Sugar of lemons, flavoring extracts. 203

53 Meyer, Jas., jr., & Co., New York, N. Y.—Girondin disinfectant. Inodorous and colorless; does not injure any object or material it may be applied to; destroys and neutralizes almost instantly the most offensive odors, vapors, or gases; arrests putrefaction, prevents contagion, and is infallible as an agent for embalming. T 49. 200.


58 Phillips & Jacobs, Philadelphia, Pa.—Illustration of the recovery of gold and silver from wastes in the industrial arts. T 49. 200.


60 White, Charles T., & Co., No. 54 Maiden Lane, New York.—Pharmaceutical chemicals, quinia, morphia, strychnia, and their salts; iodides, bromides, acids C. P., etc. Medals of merit for appearance and purity, Am. Institute, 1867—1879; Cincinnati, 1879; Cordova (Arg. Repub.), 1879; Vienna, 1873. P 43. 200.

61 United States Salicylic Acid Works, Brooklyn, N. Y.—Salicylic acid and its preparations. P 47. 200.


64 King, Wm., Son, & Co., Philadelphia, Pa.—Crude and refined petroleums. T 41. 200

For location of objects, indicated by letter and figure, see Key to Notation, p. 95; ground plan, p. 26.
64 Frazer Lubricator Co., Jersey City, N. J.—Axle grease. T 50. 201
65 Pease, F. S., Buffalo, N. Y.—Pease’s “Premium Oils.” Improved Oils for Railroads, Steamers, and all classes of Machinery and Burning. P. 41. 201
66 Baker, John C., & Co., Philadelphia, Pa.—Medicinal cod-liver oil, pure, and in combination with other agents. P. 43. 201
67 Leonard & Ellis, New York, N. Y.—Cylinder oil. T 54. 201
68 Eavenson, Jones, & Sons, Philadelphia, Pa.—Laundry soaps. T 43. 201
69 Morgan’s, Enoch, Sons, New York, N. Y.—Sapolio, for cleaning and polishing; hand sapolio, for toilet. T 48. 201
70 Wrigley, Wm., & Co., Philadelphia, Pa.—Mineral scouring soap. T 44. 201
72 Conway, Wm., Philadelphia, Pa.—Laundry soaps. T 49. 201
73 Marx & Rawolle, New York, N. Y.—49. a Glycerine. 201 b Lacquers and French varnishes, bleached and refined gum shellac, sealing wax. 201
74 Gest & Atkinson, Cincinnati, O.—Lard, tallow, grease; lubricating, burning, and paint oils; car candles. T 39. 201
75 Loper & Doughten, Philadelphia, Pa.—Naval stores. T 43. 201
76 Faller, Geo. J., Philadelphia, Pa.—Sewing machine oils. T 44. 201
77 Dreydoppel, Wm., Philadelphia, Pa.—Borax soap. T 50. 201
78 Elkins, Wm. L., Philadelphia, Pa.—Lubricating oils, gasoline, and deodorized naphtha. T 49. 201
79 Page, Kidder, & Fletcher, New York, N. Y.—Coal tar products and their uses. T 42. 201
80 Aladdin Oil Co., Pittsburg, Pa.—Illuminating and lubricating oils, paraffine, etc. T 43. 201
81 Robinson Bros., & Co., Boston, Mass.—Toilet soaps, silver soap. P 47. 201
82 Williams, J. B., & Co., Glastonbury, Conn.—Soaps. Manufacturers of Genuine Yankee, Barber’s Bar, Clipper, Pranceo, Bath, Pockect Shaving, Verbena, Cream, and other popular shaving and toilet soaps. P. 47. 201
83 Brown, Robt. B., & Co., St. Louis, Mo.—Castor oil. T 50. 201
84 Marvin Brothers & Bartlett, Portsmouth, N. H.—Cod liver oil. T 47. 201
85 Kelley, Ezra, New Bedford, Mass.—Watchmakers’ mechanics’, and sewing machine oils. T 45. 201
86 Hartmann, Laiat, & Co., Cincinnati, O.—Glycerine. T 50. 201
87 Crew, Moore, & Levick, Philadelphia, Pa.—Illuminating and lubricating oils. T 46. 201
88 Pratt, Charles & Co., New York, N. Y.—Petroleum at & its products, and packages for same. Model of refinery and astral oil works. T 43. 201
89 Smith, Chas. K., & Co., Philadelphia, Pa.—Burning and lubricating petroleum oils, miners’ and railroad oils. T 40. 201
90 Nye, Wm. F., New Bedford, Mass.—Sewing machine, watch, and clock oils. These oils are obtained from the head of the sperm whale, the black fish, and porpoise, and most carefully refined for the purposes mentioned, only during the severest cold of winter. T 49. 201
91 Houghton, E. F., & Co., Philadelphia, Pa.—Cosmoline, for medical purposes; cylinder and machinery oils, hydrocarbonated bone black. T 40. 201
92 Boyé, M. H., & Lewis, Geo. T., Philadelphia, Pa.—Cottonseed oil, manufactured and refined. T 50. 201
93 Harkness, N. W., Philadelphia, Pa.—Refined petroleum, naphtha, residual natural lubricating oils, Harkness’ wells, W. Va.; filtering apparatus. T 43. 201
94 Eastman & Brooke, Philadelphia, Pa.—P 47. 201
95 Washing blue, Russian dressing, and French blacking. 202
96 Devoe Manufacturing Co., New York, N. Y.—Cans with Devoe’s faucet nozzle-top, and samples of oil. T 40. 201
97 Day & Frick, Philadelphia, Pa.—Laundry soap; polishes for cleaning paint, metal, etc. T 45. 201
98 Dodd, A. W., & Co., Gloucester, Mass.—Cod-liver oil. P 47. 201
99 Warden & Oxnard, Pittsburg, Pa.—Refined petroleum. T 49. 201
100 Oleophine Oil Co., refinery & works, Greenpoint, L. I.; offices, 320 and 322 Broadway, New York, N. Y. & 8 Beaver street, New York, N. Y.—Refined petroleum illuminating oils. Refiners of petroleum; proprietors of the celebrated Oleophine illuminating oils, and manufacturers of the Company’s superior patented can. Oils delivered, in barrels and cans, for export and domestic use. T 44. 201
101 Munger, John W., Portland, Me.—Detergent compound. P 49. 201
102 Eavenson, J., & Sons, Philadelphia, Pa.—Soaps and candles. T 43. 201
103 Jewett, John, & Sons, New York, N. Y.—P 47. a Linseed oil. 201 b White lead. 202
104 Rush & Co., Philadelphia, Pa.—Oils. T 41. 201
105 West, C., & Sons, Baltimore, Md.—Refined petroleum oil. T 41. 201
107 Calena Oil Works (limited), Franklin, Pa.—Lubricating oil. P 46. 201
108 Bassett, George A., Washington City, D. C.—Liquid laundry gloss. T 71. 201
109 Todd, A. M., Nottawa, Mich.—Natural oil of peppermint. P 47. 201

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 57-45.
DEPT. II.—MANUFACTURES.

Oils, Paints, Pigments.

111 Cook, Caleb, Provincetown, Mass.—Watch and clock oil. T. 50. 201
112a Williston, A. L., Northampton, Mass.—Indelible ink and marking pens. T. 46. 202
113 Hover, J. E., & Co., Philadelphia, Pa.—Chemical writing fluid; black ink, carmine, violet, and copying inks; mucilage. T. 47. 202
113a Prunier, Pierre, Philadelphia, Pa.—Indigo extract, indigo carmine, tannins, gallo-tannic acid, archil, greens, etc. P. 47. 202
114 Vetherill & Bro., Philadelphia, Pa.—White and red lead, lighthouse, orange mineral. T. 44. 202
115 Lucas, John, & Co., Philadelphia, Pa.—White lead, white zinc, colors, paints, varnishes, Swiss and imperial grade lampblack, iron oxide, greens. P. 47. 202
117a Reisinger Manufacturing Co., Harrisburg, Pa.—Chemical writing fluid. P. 68. 202
118 Koeising Oil Co., Gambler, O.—Lampblack. V. 63. 202
120 Felton, Rau, & Sibley, Philadelphia, Pa.—Coach, furniture, and Japan varnishes. T. 40. 202
120a Rue, Mrs. S., Philadelphia, Pa.—Furniture polish. W. 53. 202
121 Reynolds, C. T., & Co., New York, N. Y. (Established 1770).—Paints, dry and in oil, fine colors, chemically pure; superfine quick-drying colors for coach and car painting; ready mixed paints for house and villa painting; laundry bleaching, in bags, ready for use; artists’ materials, embracing prepared canvas for oil painting, Tyrian water-color tablets, drawing papers and materials; crayons, gilders’ tools, brushes for art, painters’ and decorators’ brushes, grainer’s special tools, painters’ cutlery, wax-flower materials, etc. The whole line of goods exhibited were taken from their regular stock, made for practical use, and not display. P. 42. 202
129 Keystone Paint Co., Muncy, Pa.—Filler for coach, car, and safe painting; paint for school-house blackboards. T. 40. 202
129a Kembleton Paint Co., Muncy, Pa.—Filler for coach, car, and safe painting; paint for school-house blackboards. T. 40. 202
132 Carter, Dinsmore, & Co., Boston, Mass.—Writing fluid, inks, and mucilage; Lombard’s inks and mucilage. T. 47. 202
134 Fromherz, Jos., Cincinnati, O.—Inks. T. 47. 202
135 Heller & Merz, New York, N. Y.—Ultramarine. T. 41. 202
136 Rosenberg & Co., & Sons, New York, N. Y.—Varnishes and baking japanes. Manufacturers of coach, railway, cabinet, agricultural implements, and miscellaneous varnishes; baking japanes for all uses; bronzing and colored varnishes, of all colors, a specialty. T. 44. 202

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 36.

127 Ware, M. J., Philadelphia, Pa.—Ostrich feathers, dyed and scoured. P. 47. 202
128 Lockwood, Brooks, & Co., Boston, Mass.—Writing inks and mucilage. P. 47. 202
130 Davids, Thad., & Co., New York, N. Y.—Writing inks and fluid, mucilage, sealing wax, notarial seals, wafers, etc. T. 47. 202
132 Raynald, John, 214 George street, Philadelphia, Pa.—Black and colored writing inks, copying inks, mucilage, hair dye, indelible ink. Inventor of the "Jet Black Writing Ink," invented 1850; instantaneously black, and remains so for ages. Raynald’s instantaneous black Japan ink; for architecture. Raynald’s instantaneous black copying ink, giving three or four copies distinct and perfect; Raynald’s purple and greenish fluids at first, afterwards turning very black; Raynald’s indelible ink for marking linen, silk, and cotton, with a clean pen or stencil, will not wash off —no paper preparation; fifteen different permanent albumen colors for coloring maps and photographs, all first class. T. 47. 202
133 Iron Clad Paint Co., Cleveland, O.—Paints manufactured from iron ore, as used in iron smelting furnaces. T. 41. 202
135 Brooklyn White Lead Co., New York, N. Y.—White lead, red lead, lighthouse. T. 41. 202
137 Barker, Moore, & Mein, Philadelphia, Pa.—White lead. T. 40. 202
138 Parsons, John, New York, N. Y.—Glove powder, Dixon’s silver powder, carmine and violet inks, pocket mucilage. T. 41. 202
140 Thompson, Albert, Bridgewater, Conn.—American sienna paint. T. 40. 202
143 Mathers’, Geo., Sons, New York, N. Y.—Type and lithographic printing inks. T. 47. 202
144 Meyers, Simon S., Philadelphia, Pa.—Stove polish, liquid blueing, in jet- black, etc. T. 47. 202
145 Valentine & Co., New York, N. Y.—Varnishes, etc., for fine coach and car work. T. 43. 202
146 Milliken, Eugene, Boston, Mass.—Electrocoen liquid polish. T. 56. 202
147 Masury, J. W., & Son, New York, N. Y.—Grained doors, showing graining colors; superfine colors for coach, oil-rage, and car painting. T. 41. 202
Pigments, Essences, Perfumery.

168 Marble, Jerome, & Co., Worcester, Mass.—Patent indigo blue dye. A pure indigo color produced in any shade, perfectly fast, saving in time and expense, stands all indigo tests; process learned in half a day. T 70.

169 Zinsser, Wm., & Co., New York, N. Y.—Bleached and refined shellac, French alcohol copal varnishes, sealing wax. Paints and varnishes are in quality same as unbleached; refined, give clear, transparent solutions; varnishes, quick drying, hard surface; lacquers of lasting colors. P 47.


171 Shaw, Thomas Ogg, Providence, R. I.—Paint made from mineral from Wyoming Territory. T 50.


173 Stimson & Babcock, Boston, Mass.—P. 47.

174 Tetlow, Henry, & Bro., Philadelphia.—Perfumery, bouquet and toilet soaps, fine toilet preparations, bleaching, illuso, etc. P 48.


176 Upham, Sam'l C., Philadelphia, Pa.—Extract, cologne, Florida water. Perfume fragrant and lasting. Two medals awarded. P 47.


180 Sulzberger, David, Philadelphia, Pa.—Fluid extracts, by cold process; cooking extracts, fruit and liquor flavors, fruit essences, etc. P 47.

181 Savournin, W. H., Philadelphia, Pa.—Lily whites, rouges, toilet powders, etc. P 47.

182 Malcom & Stevenson, Philadelphia, Pa.—Fruit flavoring extracts. P 47.


185 Chesbrough Manufacturing Co., New York, N. Y.—Vaseline, pomades, cerates, ointments, perfumes, cold cream, etc. P 43.

186 Lorenz Bros., Toledo, O.—Concentrated perfumes. P 47.


For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 77-45.
Perfumery, Toilet Articles, Explosive Compounds, Pottery.

191a Hotchkiss, L. B., Phelps, N. Y.—Peppermint, spearmint, wintergreen, and pansey essential oils. P 47. 203
193 Blair’s, H. C., Sons, Philadelphia, Pa.—Toilet articles. T 47. 203
194 Colgate & Co., New York, N. Y.—Pancy soaps and perfumery. P 47. 203
195 Watson, Richard H., Philadelphia, Pa.—Handkerchief extracts. De Vries’s quadruple handkerchief extracts. These celebratory extracts are produced with great skill, from the finest articles known in perfumery, and for delicacy of perfumes, truthfulness to nature, and tenacity, they are particularly recommended; they are guaranteed to be of quadruple strength, and warranted not to turn rancid. Although not old extracts, they have taken favor immediately, and the best proof of their quality is their large and constantly increasing sales. A trial will convince you. P 47. 203
196 Hoyt, E. W., & Co., Lowell, Mass.—Cologne. P 47. 203
197 Read, Wm. H., Baltimore, Md.—Cologne, tooth wash, perfumeries. P 47. 203
198 Worsley, Thos., & Co., Philadelphia, Pa.—Toilet and fancy soaps, and toilet powders. P 47. 203
199 Wright, R. & G. A., Philadelphia, Pa.—Extracts, cologne, cosmetics, pomades, oils, dentifrices, toilet soaps, etc. P 47. 203
200 Wolf Brothers & Keech, Centreville, Mich.—Essential oils. P 47. 203
201 Aschenbach & Miller, Philadelphia, Pa.—Flavoring extracts and perfumery. P 47. 203
202 Fricke, Arthur, Philadelphia, Pa.—Perfumery. P 47. 203
203 Burnett, Jos., & Co., Boston, Mass.—Flavoring extracts, cologne water, and toilet articles. P 48. 203
204 Colton, J. W., Westfield, Mass.—Colton’s select flavoring extracts of choicest fruits and spices. They are strictly pure, rich flavors of the fruits, and are great saving in actual cost, to all. In a sale of thousands of gross, not one particle of coloring or adulteration has ever been used. P 43. 203
205 Hale & Parshall, Lyons, N. Y.—Essential oils. P 47. 203
206 Atwood, Hermon W., New York, N. Y.—Cologne. The proprietor takes pride in comparing this product of home manufacture with the best imported colognes. Delicacy of fragrance is combined with lasting and invigorating qualities. P 47. 203
208 Hamblen, J., & Son, Philadelphia, Pa.—Bay rum, pomades, cosmetics, colognes, extracts, hair infus. etc. P 43. 203
209 Weaver, James E., Philadelphia, Pa.—Cologne, Florida water, bay rum. T 49. 203
209a Oriental Powder Mills, Boston, Mass.—Imitation samples of military, sporting, and blasting powder. P 49. 204
210 Barber Match Co., Akron, O.—Drawing-room and slipper matches. T 44. 204
211 Toy, Bickford, & Co., Simsbury, Conn.—Safety fuses. T 45. 204
211a Du Pont de Nemours, E. I., Wilmington, Del.—Powder canisters and salt-petre. T 40. 204
212a Zennig, R. H., & Co., New York, N. Y.—Wax matches and tapers. P 43. 204
213 Hazard Powder Co., Hazardville, Conn.—Sporting and blasting gunpowder. H 71. 204
214 Willis, Aug. L., Philadelphia, Pa.—Pyrotechnic fog signals. H 71. 204
214a Harris, H. G., New York, N. Y.—Balloons signals. H 68. 205
Ceramics—Pottery, Porcelain, Glass, etc.
215 Galloway & Graff, Philadelphia, Pa.—Terra-cotta statuary, vases, tazzas, pedestals, fountains, flower pots, garden edging, etc. B 72. 206
216 Neukumet, Philip, Philadelphia, Pa.—Fire bricks, clay retorts, gas-house tiles, and ornamental building brick. X 56. 206
216a Burns, Russell & Co., Baltimore, Md.—Pressed brick masonry. V 60. 206
217 Moorhead Clay Works, Philadelphia, Pa.—Terra-cotta sewer and water pipes, drain and roofing tiles, garden vases, chimney tops, and flues. (Outside.) 206
218 Harvey & Adamson, Philadelphia, Pa.—Drain and sewer pipe, garden vases, statuary, chimney tops, flues, etc. B 72. 206
218a Davis & Chaddock, Boston, Mass.—Fire bricks. V 61. 206
220 Gossin, F., Philadelphia, Pa.—Terra-cotta ware, statuary, vases, fountains, pedestals, etc. B 69. 206
221 Bowman, O. O., & Co., Trenton, N. J.—Terra-cotta drain and sewer pipe, chimney tops, and flues; garden vases and statuary. B 71. 206
221a Alexander, J. Park, Akron, O.—Fire brick. V 6. 206
6 a Fire brick. 206
6 b Stone ware. 210
222 Fritz, John, Philadelphia, Pa.—Terra-cotta work, hanging baskets, rustic flower pots, vases, fern cases, etc.; imitation gas logs. B 63. 206
222a Ogden, Isaac, Newark, N. J.—Drain pipe. V 55. 206
For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
228 Scioto Fire Brick Co., Sciotoville, Ohio.—Fire bricks and fire clays. V 61 to 64. 206

229a) Dover Fire Brick Co., Canal Dover, O.—Fire brick. T 63. 206


230 Ambruster, John, Camden, N. J.—Pressed brick work. X 58. 206

231 Union Mining Co., of Allegheny county, Md.—Fire brick. X 58. 206

232 Wood Brothers, Hartford, Conn.—Drain tiles. W 53. 206

233 Hinaveit, Rott., New York, N. Y.—Clamp and band for securing masonry, hollow brick for ventilation, chimney top. (Outside.) 206

233a) Scattered good, W. W., Racconas, N. J.—Drain tile. X 56. 206


233c) Richardson, Geo., Milwaukee, Wis.—Artif. Stone and Pipe. T 51 & X 57. 206

234 Hews, A. H., & Co., North Cambridge, Mass.—Flower pots, fancy terra-cotta, garden vases, ferneries, battery jars, etc. B 69. 206

235 Hall, A., & Son, Perth Amboy, N. J.—Brick used in chimney of New Jersey State Building. 206

236 Maurer, Henry, Perth Amboy, N. J., and 418 to 422 East Twenty-third street, New York, N. Y.—Roofing tiles used upon the New Jersey State Building. Cheap, light in weight, thoroughly fire-proof, perfectly water-tight. 206

237 American Kaolin Co., Works, New Garden, Chester Co., Pa.; office, 233 South Third street, Philadelphia, Pa.—Fire brick, tile, etc. X 58. 206

238 Wassel Fire Clay Co., Columbus, Ohio.—

a) Terra-cotta work. 206

b) Fire brick. 207

239 Kreischer, B., & Son, Philadelphia, Pa.—X 56.

a) Fire bricks, tiles, blocks, and slabs. 206

b) Clay gas retorts, furnaces, and muffles. 207


a) Fire brick. 206

b) Stove linings, heater fire-brick linings, portable clay furnaces. 207

239b) Friese, C., Philadelphia, Pa.—Statury, vases, stumps, flower pots, hanging baskets, etc. T 76. 206


a) Dianantine front and fire bricks. 206

b) Street paving blocks. 206

c) Rockingham antique and yellow ware. 210

240 Hicks, George C., & Co., Baltimore, Md.—

a) Terra-cotta pipe, vase, clays, etc. 206

b) Fire bricks, gas retorts. 207

c) Tiles. 208

Standard fire-clay gas retort, made from the renowned Maryland fire clays, and remarkable for refactoribility, tenacity, and freedom from gathering carbon. Fire clays, all within the city limits of Baltimore. 210

241 Walker, N. U., Wellsville, O. (Outside.)

a) Sewer pipe, terra-cotta ware, chimney top and statuary. 206

b) Fire tiles, stove linings. 207

c) Roofing tile. 208


a) Sewer and drain pipe; fine and common pottery. 206

b) Fire bricks. 207

c) Stoneware. 210

d) Window glass. 214

e) Apothecaries' and bottle glass. 215

243 Hampton, Cutter, & Son, Woodbridge, N. J.—T 64.

a) Fire brick. 207

b) White ware. 210

244 Dixon Crucible Co., Jersey City, N. J.—Graphite crucibles, retorts, etc. P 72. 207

244a) Haws, A. J., Johnstown, Pa.—Fire brick bottoms for blast furnaces, rolling mills, etc. Y 60. 207

245 Mcllvaine Bros., Philadelphia, Pa.—Foundry facings. P 43. 207

245a) Kier Bros, Pittsburg, Pa.—Y 56.

a) Fire bricks. 207

b) Tiles. 208


246a) Burlington Manufacturing Co., Burlington, Vt.—Samples of tile floor. T 56. 208

246b) Peck, Kennedy, & Co., New York, N. Y.—Clay roofing tile. (Outside.) 208

246c) Field, F. K., Philadelphia, Pa.—Flagging and floor tiles. T 53. 208

247 Young’s, Wm., Sons, Trenton, N. J.—Crockery and porcelain hardware trimmings. T 74. 209

248 Empire China Works, James L. Jensen, Proprietor, Green Point, Brooklyn, E. D., N. Y.—Porcelain hardware and cabinet trimmings; also, patent lemon squeezers, wood frame, porcelain lincd; porcelain blade knife sharpeners, etc. N 70. 209

249 Moore, Joseph H., Trenton, N. J.—Earthware. T 76. 210

250 Carr, James, New York, N. Y.—White granite, majolica and parian ware. T 77. 210

250a) Laughlin Bros., East Liverpool, O.—Ironstone china ware. T 75. 210

251 Davis, Isaac, Trenton, N. J.—White granite and decorated crockery ware. T 75. 210


252a) Coxon & Co., Trenton, N. J.—Earthware. T 77. 210

253 Astbury & Maddock, Trenton, N. J.—Earthware for sanitary purposes; china and earthenware for general use. T 73. 210

254 Ott & Brewer, Trenton, N. J.—White granite, porcelain, and parian wares; vases, figures, table and toilet goods. T 73. 210

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp 27-45.

UNITED STATES.

Pottery, Porcelain.
Pottery, Porcelain, Glassware.

249 Thompson, C. C., & Co., East Liverpool, O.—Pottery ware. T 76. 210

250 Yates, Bennett, & Allen, Trenton, N. J.—Dinner, dessert, tea, and toilet sets; crockery ware. T 77. 210

252 Brunt, Bloom, Martin, & Co., East Liverpool, O.—American white granite dinner, dessert, tea, and toilet decorated ware. T 74. 210

253 Spyler Pottery Co., Trenton, N. J.—T 75.

253a Baggott, S. & W., East Liverpool, O.—Rockingham and yellow ware. T 75. 210

253a Glasgow Pottery Co., Trenton, N. J.—T 73.

254 American Crockery Co., Trenton, N. J.—Chamber sets and table ware of bisque, white granite, and stone china. T 74. 210

255a Greenwood Pottery Co., Trenton, N. J.—Ironstone china, decorated dinner and toilet sets. T 74. 210

256 Mercer Pottery Co., Trenton, N. J.—Plain and decorated earthenware and china. T 75. 210

256a Union Porcelain Works, Greenpoint, N. Y.—Porcelain ware. T 75. 210

257 Onondaga Pottery Co., Geddes, N. Y.—White granite, and decorated table and toilet ware. T 77. 210

258 Hambleton, J., & Son, Philadelphia, Pa.—Decorated porcelain plates, pitchers, barber mugs. P 43. 210

258a Bullock, Charles, Trenton, N. J.—China ware. T 77. 210

259 Lucas, John, & Co., Philadelphia, Pa.—Window glass. T 45. 214

260 Sallandrouze, S. P., Cincinnati, O.—Plate glass. P 43. 214


262 Gilbert, F. A., New Haven, Conn.—Combination table. P 51. 217

262a Lambie & Sargent, New York, N. Y.—Adjustable table. P 51. 217

263 Klaustheck, Thomas, & Stewart, Philadelphia, Pa. (Pavilion in park.)

263a Window glass. 214

264 Diamond Glass Co., Ravenna, O.—Double-thick glass from ground white sandstone, in windows of Ohio State Building. 214

265 Wenc & Co., New York, N. Y.—Atomizers. P 47. 215


266 Holzer, Wm., Philadelphia, Pa.—Druggists', chemists', philosophical, and fancy glassware. N 52. 215


269 Caterson, Wm. M., Philadelphia, Pa.—Bottles for poisons. T 53. 215

270 Fox, H. C., & Sons, Philadelphia, Pa.—Limoges' and perfumers' glass made from glass not containing lead. N 53. 215


272 Whitney Bros., Glassboro', N. J.—Green and other colored glassware, for druggists, chemists, etc. N 54. 216

272a Smith Bros., New Bedford, Mass.—Engraving and decorating of glass. N 51. 216

273 Boston & Sandwich Glass Co., Boston, Mass.—Glassware. Manufacturers of cut crystal chandeliers; rich cut glassware of every description, including the "Daniel Webster Punch Bowl," N 51. 216


274a Smith Bros., New Bedford, Mass.—Decorated vases, shades, globes, etc. N 51. 216

274b Jones, Thomas, New York, N. Y.—Ornamental cut and ground glass. N 49. 216

274c Hobbs, J. H., Brockunier, & Co.,—Wheeling, W. Va.—Soda-lime glassware. N 52. 216

275 Dobelmann, J. B., Greenpoint, N. Y.—Cut and engraved glassware. N 53. 216

276 Hartell & Letchworth, Philadelphia, Pa.—Gas globes, ornamental sheet glass, and Centennial devices. P 64. 216


278 Labelle Glass Co., Bridgeport, Ohio.—Table, bar, and lamp goods, cut and engraved ware. N 52. 216

279 Keystone Flint Glass Co., Pittsburgh, Pa.—Pure lead glass, lamp chimneys, silvered glassware. N 51. 216

279a Passwell, Pears, & Co., Pittsburgh, Pa.—Pressed and blown crystal and opal glass. N 51. 216

281 Ripley & Co., Pittsburgh, Pa.—Imitation cut glassware, lamps blown and cut; bar goods cut and engraved. N 49 to 51. 216

282 Adams & Co., Pittsburgh, Pa.—Flint and opal glassware. N 49 to 51. 216

285 Atterbury & Co., Pittsburgh, Pa.—Lamps and glassware, gas and kerosene globes. N 49 to 51. 216

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26
Furniture and Objects of General Use in Construction and in Dwellings.

291 Collender, H. W., New York, N. Y.—Billiard tables, cue stand and marker, pool cues and buffets. P 55. 217
291a Doremus, P. C., New York, N. Y.—Sofa bed and lounge. V 52. 217
292 Mitchell & Rammelsburg Furniture Co., Cincinnati, O.—Rosewood bed and bureau, renaissance style; walnut dining furniture and hall stand, medieval style. P 63. 217
292a Collignon Bros., New York, N. Y.—Folding rocking chairs, settees, etc. V 51. 217
293 Cole, Alexander, Manumuskin, N. J.—P 52. 217
293a Iron and wood spring-bottom bedsteads. 217
293b Sash fastener. 217
294 O'Hara, Chas. M., Philadelphia, Pa.—"Hygienic" chairs. P 58. 217
295a Miller, L. H., Baltimore, Md.—Fire and burglar proof safes. H 63. 217
296 Gardner & Co., New York, N. Y.—Chairs, settees, car and depot seats, etc. T 53. 217
296a New Haven Folding Chair Co., New Haven, Conn.—Portable folding chairs. T 59. 217
297 McKinley, John, Philadelphia, Pa.—Patent bariers' chairs. T 58. 217
297a Pabst, Charles, Philadelphia, Pa.—Sofa bed. P 52. 217
298a Reeves, S. H., & Co., New York, N. Y.—Spring bottom bed. P 52. 217
299 Adjustable Folding Chair Co., Pittsburg, Pa.—Adjustable folding chair. P 58. 217
299a Brady, E. W., Davenport, la.—Wooden slate window shades. T 52. 217
300 Henkels, Geo. J., Philadelphia, Pa.—Chamber furniture of wood from Independence Square; sofa beds. P 57. 217
300a Meriden Curtain Fixture Co., Meriden, Conn.—Curtain fixtures. P 53. 217
301 Smith & Campton, Philadelphia, Pa.—Parlor, dining-room, chamber, and library furniture. T 55. 217
301a Sawyer & Buckley, Meriden, Conn.—Chess and backgammon tables. P 53. 217
302 Hart, Clarence A., Philadelphia, Pa.—Military equipments, gold fringes, etc. B 78. 217
302a Krause, Frederick W., Chicago, Ill.—Rocking chairs. W 52. 217
303 Campbell, Wm., New York, N. Y.—Spring rollers for window curtains. T 52. 217
303a Harmon, J. C., Philadelphia, Pa.—Inlaid checker board. (East Gallery.) 217
304 Delaware Chair Co., Delaware, O.—Double cane-seat chairs. T 58. 217
305a Smith, Wm. B., New York, N. Y.—Improvement in counter show case. N 41. 217
306 Moore, York, & Howell, Philadelphia, Pa.—Parlor furniture, folding tables. T 54. 217
306a Shroeder, F. H., Cincinnati, O.—Pulpit, with sounding board. P 47. 217
307 Loth, Henry, Philadelphia, Pa.—Folding table. P 51. 217
307a Spofford, Jennie H., Philadelphia, Pa.—Mattress bracket holders, mosquito bar. P 50. 217
308 Ferrari, Guiseppe, New York, N. Y.—Chair, richly carved, in Italian style of fifteenth century. P 58. 217
308a Briggs, M., & Son, Rochester, N. Y.—Fire and burglar proof safes. H 71. 217
309 Everitt, Elisha E., Philadelphia, Pa.—Portable and stationary washstand and writing desk combined; sofa bed. P 56. 217
309a Clae's & Co., St. Louis, Mo.—Silver-plated show case. T 60. 217
310 Schubeuter, J., St. Louis, Mo.—Silver-plated show case. T 60. 217
311 Spiral Elliptic Spring Works, Cincinnati, O.—Springs for upholstery. P 53. 217
311a Brunswick Bros., Stephani, & Hart Co., St. Louis, Mo.—Billiard table and cue rack. T 54. 217
312 Woven Wire Web Bed Co., New Britain, Conn.—Woven wire bed bottom. P 53. 217
313 Knell, Geo., Philadelphia, Pa.—Sofa bed, invalid chair and bed, rocking reclining chair, chair and lounge, photographic chairs. T 59. 217
313a Adams, Dan., Nashville, Tenn.—Hat-rack and chairs made of wood from "The Hermitage," the old home of Andrew Jackson. V 72. 217

For names of exhibitors, indicated by numbers at end of entries, see Classification, pp. 27-43.

315 Sheppard, Arrison, & Sheppard, Philadelphia, Pa.—Curtains, decorations, and upholstered furniture. P 55. 217

316 Marcotte, L., & Co., New York, N. Y.—Library (L.), and dining-room (Louis XIII.) furniture. T 52. 217

317 Lever Spring Bed Co., Springfield, O.—Spring bed. P 52. 217

318 Lamb, J. & R., New York, N. Y.—Church furniture, metal work, embroideries, and decorations. P 43. 217


320 Wakefield Rattan Co., Boston, Mass.—Rattan furniture and ornamental ware. T 57. 217

321 White, Otis C., Hopkinton, Mass.—Stationary and portable head- rests for chairs and car- seats. This is a new mechanical combination of simple construction, which affords a complete opposition movement of great range, to all positions, without removing the head from the upholstered seat, and fastened by a single clamp. The portable kind sold up to take but little space, make their own fastening to almost any form where support to the head is desired; they are simple, elegant, and thoroughly practical. Correspondence and orders solicited. T 59. 217

322 Lambie & Sargent, New York, N. Y.—Adjustable table. P 51. 217

323 Heret & Co., New York, N. Y.—Chair suite, carved amaranth, ebony, and maple woods; upholstery, Horsfall’s dressing-case wardrobe. P 54. 217

324 Cutter, Ephraim, Cambridge, Mass.—Adjustable chair for supine postures. N 58. 217


325 Kaiser & Herzog, 1005 Walnut street, Philadelphia, Pa.—Decorative painting for ceilings and side walls, in the modern renaissance style, executed after original designs by the firm. P 56. 217

326 Steele, John, Louisville, Ky.—Folding opera chairs; church, lawn, and school seats. T 58. 217

327 Kimbel & Cabus, New York, N. Y.—Parlor furniture and decorations. P 56. 217

328 Vaill, E. W., Worcester, Mass.—Patent folding chairs, in great variety. Business established 1861. I claim for my chairs durability, thoroughness of finish, simplicity in folding, and compactness when folded. Very extensive assortment of styles, adapted for parlor, drawing-room, library, veranda, and shipboard; also, a line suitable for tropical climates. On account of limited space allotted, am compelled to make a comparatively meagre exhibit. T 57. 217

329 Cutler, A., & Son, Buffalo, N. Y.—Business desks, reading tables, patent automatic folding parlor tables. P 53. 217


Furniture and Decoration.

331 Koechling B. H., New York, N. Y.—Opera folding chairs. P 51. 217

COLLECTIVE EXHIBIT OF THE SCHOOL OF DESIGN, UNIVERSITY OF CINCINNATI, OHIO. (South Gallery.) 217

331 Whittemore, R. L.—Laocoone. 217

331 Woodward, W. W.—Fugitive Slave. 217

331 Humphreys, Ella.—Illumination and frescoed ceiling. 217

331 De Camp, Essie.—Panel. 217

331 Rettig, John.—Centre for ceiling and border for wainscoting. 217

331 Merrill, Susie.—Panel centre. 217

332 Seymour, H. J., Chair Co., Troy, N. Y.—Bent chairs, patent braced chairs and rockers, walnut dining and library chairs. T 58. 217

333 Cooper, Jas. W., & Bro., Philadelphia,—Fancy cabinet ware, wood carvings, etc. P 57. 217

334 Stiles, Mrs. E. W., Philadelphia, Pa.—Combination desk. P 50. 217

335 Karcher’s, Daniel M., Sons, Philadelphia, Pa.—Sideboard. P 60. 217


337 Schrenkeisen, M. H., New York, N. Y.—Upholstered rocking chair on castors. P 53. 217

338 Kilian Brothers, New York, N. Y.—Easels, parlor table, music stand, table, card receiver. P 51. 217


340 Brown & Bliss, 159 Canal street, New York, N. Y.—Dining-room furniture, extension tables, sideboards, etc. Special manufacturers and importers of dining-room furniture “en suite,” including extension tables of every description, with patent slides and patent screw-leg corner blocks, also sideboards and side tables with leaves of extension table enclosed within. T 50. 217


342 Kittle, S. P., No. 203 Canal street, New York, N. Y.—Spring mattresses for under-mattress, or with mattress and bolster combined, and made to fold compactly for transportation, when desired; also, spring mattresses with straight frame and elastic edges; others so constructed that both sides and all the edges are alike elastic and most comfortable. A moderate outlay in these goods will insure a most exquisite bed. P 52. 217

343 Schenck, Jas. V., New York, N. Y.—Crescent spring mattress. P 51. 217

344 Paton, Robt., & Son, New York, N. Y.—Church and school furniture, Sunday-school and lecture-room sets. P 55. 217

345 Postawka, L., & Co., Cambridgeport, Mass.—The “X” piano taboret. P 60. 217


For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
Furniture.

347 Deetz, Edward, Philadelphia, Pa.—Adjustable sleeping apartment or retiring room. P 57.

348 Reeves & Eastburn, Philadelphia, Pa.—Folding bedstead, sofa or parlor bed-

349 Ahrens, Geo., Crete, Ill.—Extension table. T 59.


35a National Wire Mattress Co., New Britain, Conn.—Wire mattresses. P 53. 217

35b United States Spring Bed Co., Springfield, Mass.—Spring beds. P 59. 217

35c Chormann, E. G., Philadelphia, Pa. —Parlor, sketching, and studio easels. P 50. 217

35d Griendling, John, 213 N. Second street, Philadelphia, Pa.—Barber's chair, footrest, and hair-dressing standard. This chair is easily regulated for shaving and hair-cutting combined. An examination will satisfy any one of its merits. P 51. 217

35e Maires & Reed, New York, N. Y.—Adjustable iron chairs. P 50. 217


35g Gale, D. A. T., Syracuse City, N. Y.—Metallic spring webbing mattress. P 50.


35i Excelsior School Furniture Man-


35k Wooton Desk Co., Indianapolis, Ind.—Cabinet office secretary, rotary writing desk. P 52.


35m Peck, Henry, New York, N. Y.—Show cases for various exhibitors.

35n Junge, Albert, Pittsburgh, Pa.—Spring mattress. P 53


36b Richmond, Backus, & Co., Detroit, Mich.—Combined coupon and local railroad ticket case, with secretary and desk. P 58.


36d Halm, Bellows, & Butler, Columbus, O.—Furniture. P 50.

36e Buschor, Chas., Philadelphia, Pa.—Parlor furniture, decorations, window beds, with cornice, curtains, and outside shutters; show cases. P 56.

36f Volmer, G., Philadelphia, Pa.—Furniture. T 54.

36g Thole, B., St. Louis, Mo.—Book case. P 59.

36h Swasey, I. N., M.D., Yonkers, N. Y.—Billiard tables; Trichoroma tab-

36i Hover, H. F., Philadelphia, Pa.—Folding wardrobe and lounge. P 50. 217

36j Most, John H., Old Saybrook, Conn.—Furniture made from wood of the "Charter Oak," Hartford, Conn. P 62.

36k Snyder, C. Ridgway, Minneapolis, Minn.—Work table, combining lap board and writing desk. P 50.


36n Schafft, Fridolin, Detroit, Mich.—Sideboard. P 60.

36o Ransom, D. L., & Co., Buffalo, N. Y.—Adjustable desks and business cabin-

36p Killgore, J. L., Wilmington, Del.—Tourists' and miners' folding bedstead and spring bed. W 54.


36s Centennial Rolling Chair Co., Phila-


36u Nichols, W., Boston, Mass.—Boo k rack. P 47.


36w Beard & Bro., St. Louis, Mo.—Bargain proof safes. B 70.


36y Lord, J. E., & Co., Quincy, Ill.—Spring bed bottom. P 52.


36ac Seidler & May, Hartford, Conn.—Sofa bed and adjustable extension chair. P 51.

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Corner of Belmont and Fountain Avenues, 
NEAR THE LAKE.

FRENCH RESTAURANT,
LES TROIS FRÈRES PROVENCAUX.
The same which had such a great success in the Vienna Exhibition, in 1873.

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NEW YORK.

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DAILY "EVENING CHRONICLE."

ESTABLISHED 1841.
The only Evening Paper in Pittsburgh receiving the Associated Press Dispatches.

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Germantown, Phila'd'a.

McCallum, Crease & Sloan
Manufacturers, Importers, Jobbers, and Retailers of
Carpetings,
1012 and 1014 Chestnut Street,
Philadelphia.
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For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
505 Cleveland Non-explosive Lamp Co., Cleveland, O., and 42 Barclay street, New York.—Perkins & House's patent metallic kerosene or coal oil safety lamps and filling cans. Thousands of families now using this lamp testify to its superiority; because, first, it is perfectly safe from explosion, owing to its scientific structure; 2d, it will not break, being made of metal; 3d, it is rendered perfectly clean by its patent drip-cup; 4th, it uses a very small amount of oil, in proportion to the light it gives, without odor or smoke; 5th, it gives a brilliant light, in consequence of its peculiar construction. Our filling can is perfectly safe from explosion, owing to its scientific structure—a flame cannot be communicated to the oil in it, either by accident or design. N 64. 223

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537 Wakefield Rattan Co., Boston, Mass.—Matttings and matting. T 57. 229


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540a Slater, Wm. S., Providence, R. I.—Bleached cotton goods. N 73. 230


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Woven Goods.

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<th>Price</th>
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<td>R 78.</td>
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<tr>
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<td>N 74.</td>
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<tr>
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<td>D 78.</td>
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<td>Clinton Manufacturing Co., Providence, R. I.</td>
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Woven Goods.

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597 Massachusetts Cotton Mills, Lowell, Mass.—Sheetings, shirtings, drillings, etc. N 73. 230
598 Tremont & Suffolk Mills, Lowell, Mass.—Brown and bleached cotton flannels, twenty-six varieties, from the lightest to the heaviest grade, for summer, fall, and winter wear, from twenty-seven to thirty-six inches in width, superior in quality of material, grade, and finish; Suffolk drills, blued, brown and bleached. Sheetings, shirtings, and corset jeans. N 73. 230
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Woven Goods.

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626 Border City Mills, Fall River, Mass.—Printing cloths. B 77. 230
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645 Lyman Mills, Holyoke, Mass.—Brown and bleached sheetings and shirtings. F 69. 230
646 Great Falls Manufacturing Co., Great Falls, N. H.—Bleached and brown sheetings and shirtings. F 69. 230
647 Schum, Philip, Lancaster, Pa.—Coverlets and counterpanes. Well known manufacturer of genuine Lancaster quilts, coverlets, counterpanes, carpets, cradle, bureau and tidy covers, stacking yarns, woolen carpet chains, etc. All kinds of dyeing done. These goods being all of my own manufacture, made of the very best of material, I guarantee them as represented and to give entire satisfaction in every respect. G 78. 230
647a West, Wm., & Co., Philadelphia, Pa.—Cottons. B 77. 230
649 Webster Mills, New York, N. Y.—Jute bagging. F 76. 230
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652 Bullock, George & James M., Conshohocken, O.—Cotton warp. F 75. 230
654 Moss Manufacturing Co., Westerly, R. I.—Shirtings. N 74. 230
655 Harris Manufacturing Co., Providence, R. I.—Bleached shirtings. The "Gem of the Spindle" exemplifies the limit of fineness consistent with durability. N 74. 230
656 Knite, B. B., & R., Providence, R. I.—Bleached cotton goods. N 75. 230
657 Glassow Company, South Hadley Falls, Mass.—Gingham, yarns. N 74. 230
658 Allendale Company, Providence, R. I.—Bleached shirtings and sheetings. N 74. 230
660 Franklin Manufacturing Co., Providence, R. I.—Bleached cottons. N 74. 230
662 Renfrew Manufacturing Co., South Adams, Mass.—B. cottons. a Cotton warps, shirtings. 230
663 Gingham Mills, Gloucester City, N. J.—B. A. cottons. n Gingham, dress goods. 231
664 Gloucester Gingham Mills, Gloucester City, N. J.—N 76. a Cottons, shirtings. 230
666 Whittenton Manufacturing Co., Taunton, Mass.—N 76. a Cottons, shirtings, tickings, denim and awnings. 230
b Dress goods and fancy checks. 231
667 York Manufacturing Co., Saco, Me.—Geo. C. Richardson & Co., selling agents, Boston and New York. 'N 74. a Cottons light and heavy, ticking 24 inches by 32 inches wide, dinems plain, striped and plaid; shirtings and sheetings. 230
b Dress goods, in great variety; nankins, and seersuckers. 231
668 Everett Mills, Lawrence, Mass. —B. 73. a Fancy cottons, cottons, ticking, denim and chintz. 230
b Stripes, gingham, dress goods. 231
b Fancy cotton fabrics. 232

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
670 Hamilton Manufacturing Co.,
Lowell, Mass.—N 73.
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lings. 230
b Printed and dyed calicoes, shirtings and
awning stripes. 232
671 Holt, R., Paterson, N. J.—N 74.
a Cotton and Turkish towels, terry cloth,
dusters, etc. 230
b Linen towels. 233
672 Stark Mills, Manchester, N. H. —
N 74.
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b Linen crash twilling. 233
673 Millville Manufacturing Co.,
R. D. Wood & Sons, Philadelphia and
New York, sole agents.—F 75.
a Bleached sheetings, cambrics, silesias. 230
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hums. 231
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674 Bates Manufacturing Co., Lew-
iston, Me.—R 76.
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knitting cotton, etc. 230
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675 Ripka & Elton Mills, Philadel-
phia—Cotton manufactures. N 74. 233
676 Lancaster Mills, Clinton, Mass. —
Fancy ginghams. N 77. 231
677 Belfast Mills, Philadelphia, Pa.—
Ginghams. N 76. 231
678 Albion Print Works, Consho-
hocken, Pa.—Solid colors suiting, plain
blacks, grays, mourning prints, shirtings,
and printed articles for men. N 73. 232
678a Pacific Mills, Lawrence, Mass.—
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a Calicoes. 233
b Lawas, percales. 233
679 Harter, Andrews, & Co., Penn-
ypack Print Works, Philadelphia, Pa.—
Madder and fancy prints and shirtings. N 75.
680 Brown, David S., & Co., Phila-
delphia, Pa.—Madder fancies, shirtings and
mourning papers from Gloucester Manufac-
turing Co., Gloucester, N. J.; aniline,
alejarine, oil, and madder colors and shir-
tings from Ancona Printing Co., Glouce-
ter, N. J. N 77. 232
681 Simpson, Wm., & Sons, 129 Chest-
nut street, Philadelphia, Pa.—Calico prints
in mourning, fancy, and shirting styles. Manu-
facturers and calico printers of the
popular alpaca finish, solid blacks, Berlin
solids of all colors, aniline blacks, moun-
ing prints, silver grays, Eddystone choc-
lates, hair cloth cloths, and fancy prints.
These styles are all fast colors, and are
printed exclusively on the best extra
durable cloth. N 75. 233
682 Pretty, Grime, & Co., Philadel-
phia, Pa.—Calico prints. N 74. 233
683 Green, S. H., & Sons, Clyde
Bleachery and Print Works, River Point,
R. I.—Printed calicoes. N 74. 232
684 Richmond Manufacturing Co.,
Providence, R. I.—Printed calicoes. N 75.
233
685 Manchester Mills, Manchester,
N. H.—Prints. N 73. 233

688 American Print Works, Fall
River, Mass.—Printed calicoes, percales,
cambrics, shirtings, indigo blues, greens,
robes, gingham, etc. Specially styles of
colorings printed for export. N 75. 232
687 Hamilton Woollen Co., South-
bridge, Mass.—Prints, shirting prints,
printed cambrics. N 74. 232
688 Merrimac Mills, Lowell, Mass.—
Printed and dyed calicoes. N 73. 232
689 Stevens Linen Works, New York,
N. Y.—Printed and twilled linen crashes
and diapers. B 75. 233
690 Barkour Flax Spinning Co., Pat-
son, N. J.—Flax threads. N 76. 233
690a American Linen Thread Co., Me-
chanicville, Saratoga county, N. Y.—
Flax, gilled, and machine threads, warp,
filling, and twines. Manufacturers of pat-
ient linen thread (on spools and in skeins)
of all kinds, numbers, and colors; also,
gilled thread, of all numbers; machine,
shroud, fringe, whip, and Mcnary
threads, in all varieties; linen floss, selv-
age, and hose warp; hose filling, broom
and brush twines; pink and variegated
twines; lawn and cord; fine and tow yarns.
All manufactured from the best foreign
stock. H 75. 233
691 McCrossan & Farr, New York,
N. Y.—Printed linen and cotton, and white
cotton handkerchiefs. N 76. 233
692 American Linoleum Manufac-
turing Co., New York, N. Y.—Linoleum
floor cloth. N 77. 234
693 Hiabon, Geo. W., & Co., Phila-
delphia, Pa.—Floor, carriage, upholstery,
and table oil cloths and window shades. N 77.
234
694 Virolet & Durlach, Elizabeth, N.
J.—Floor oil cloths. F 73. 234
695 Potter, Thos., Sons & Co., Phila-
delphia, Pa.—Oil cloths. N 77. 234
700 Brasher, Wm. M., & Co., Brook-
llyn, N. Y.—Floor oil cloths. F 71. 234
701 Reeve, R. H. & B. C., Camden,
N. J.—Oil cloths. F 71. 234
702 Powers, D., & Sons, New York,
N. Y.—Floor oil cloths. F 77. 234

Woven and Felted Goods of Wool and
Mixture of Wool.
703 Shaffner & Stringfellow, Phila-
delphia, Pa.—Knitting cotton and Ger-
mantown wool. B 75. 235
703a Knox Woolen Co., Camden, Me.—
Paper makers’ feltings and machine
cloths. R 78. 235
704 Bacon, Chas. N., Winchester,
Mass.—Felts for polishing, printing, eras-
ing, etc.; cotton and wool wadding. N 74.
235
705 New England Co., Rockville,
Conn.—Fine fancy camisoles, finest wool
fine spinning, indigo colors. The first
mill in America to make fancy camisoles.
B 75. 235
—Woolen felts. F 72. 235
706 Philadelphia Worsted Spinners’
Association, Philadelphia, Pa.—Worsted
yarns. F 75. 235

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Woven and Felted Goods.

707 Midnight Yarn Co., Philadelphia, Pa.—Woolen knitting and Germantown yarns, representing process of manufacture. B 77. 235

708 Thornton, Samuel, & Sons, Philadelphia, Pa.—Woolen fabrics. N 76. 235

709 Phillips, James, jr., Fitchburg, Mass.—Fine worsted coverings and seatings. Hunt, Catlin, & Valentine, sole agents, 727 Franklin street, New York, N.Y. B 77. 235

709a Kirkman, James, Chester, Pa.—Doeskins. B 79. 235

710 Ledward, J., & Son, Chester, Delaware county, Pa.—Cassimeres and doesskins. B 76. 235

711 Horstmann, Wm. H., & Sons, Philadelphia, Pa.—Woolen knitting yarns. These goods are known generally as Germantown, balmoral, cashmere, saxonia, and stockinings yarns. They are particularly noted for brilliancy of colors, variety of shades, evenness of thread, and the low prices at which they are sold. H 73. 235

712 Obbe Woolen Co., New York, N.Y.—Fancy cassimeres. F 74. 235

713 Drygoos, L., & Co., New York, N. Y.—Felt skirts, embroidered and braided; Italian cloth skirts, trimmed and quilted. B 77. 235

713a Kent Woolen Co., Centreville, R. I.—Cassimeres. B 74. 235

713b Stillwater Woolen Mills, Stillwater, R. I.—Cassimeres. B 74. 235

714 Worumbo Manufacturing Co., Taunton Falls, Me.—Moscow beaver and other overcoatings. K 79. 235

715 Bel Air Manufacturing Co., Pittsfield, Mass.—Fancy all-wool cassimeres. F 73. 235

716 Burlington Woolen Co., Winookski Falls, Vt.—Woolens, castorines, moscowes, kerseys, broadcloths, doesskins, elastic doesskins, elysians. F 73 and 74. 235

717 Broad Brook Co., Broad Brook, Conn.—Fancy cassimeres. F 75. 235


719 Howard, R., & Son, Appoquinimink, R. I.—Woolen stocking yarns, fancy and plain colors. B 75. 235

719a State of Oregon (by A. J. Dufur),—Woolen fabrics. H 71. 235

720 Wansuck Co., Providence, R. I.—Worsted coverings, overcoating, kerseys. B 75. 235

721 Rodman, Robt., La Fayette, R. I.—Doesskins. N 75. 235

722 Sawyer Woolen Mills, Dover, N. H.—Silk and wool cassimeres, fancy cassimeres, double and twist cassimeres. F 75. 235

722a Clinton Mills Co., Norwich, Conn.—B 74. 235

723 Hinsdale Bros., Hinsdale, Mass.—Kerseys, beavers, worsted suitings, etc. B 74. 235

724 Rockville Manufacturing Co., Rockville, Conn.—Fancy cassimeres and worsteds. B 74. 235

725 Hockanum Co., Rockville, Conn.—Fancy cassimeres and worsteds. B 74. 235

727 Eddy's, Jesse, Sons, Fall River, Mass.—Woolens for men's wear. F 74. 235

728 U. S. Bunting Co., Lowell, Mass.—Bunting, flags, worsted damasks and moirens, and dress bunnies. H 76. 235

729 Middlesex Co., Lowell, Mass.—Woolen goods. B 77. 235

729a Shuler & Benninghofen, Hamilton, O.—Felts for paper-makers. B 79. 235

729b Uxbridge Woolen Co., Uxbridge, Mass.—Cassimeres. B 74. 235

730 Germania Mills, Holyoke, Mass.—Eskimos, doesskins, and fur beavers, overcoatings. C 78. 235


732 Norwich Woolen Co., Norwich, Conn.—Blankets and repellents. B 73. 235

733 Union Manufacturing Co., Wollaston, Conn.—Large black doesskins. B 73. 235

734 Meriden Woolen Co., West Meriden, Conn.—Fancy cotton warp cassimeres and coverings. B 73. 235

734a Baltic Woolen Mills, Philadelphia, Pa.—Woolen goods. F 72. 235

735 Niantic Woolen Mills, Norwich, Conn.—Suitings and repelents. B 73. 235


737 Wood, Morrell, & Co., Wood Dale Woolen Mills, Johnstown, Pa.—Cassimeres made from half-blood wool. B 77. 235

738 Kirkman, James, Chester, Pa.—Duvans. B 78. 235

740 Peirce, C. W. & J., Bristol, Pa.—G 78. 235

740a Polishing felts and crumb cloths. 235

740b Skirts. 238

741 Mississippi Mills, Wesson, Miss.—Wood fillings, jeans, cassimeres, tweeds, linseys. F 76. 235

742 Bullock, Geo., & Jas. M., Conshohocken Woolen Mills, Conshohocken, Pa.—Doesskins, moscowes, beavers, cloth. F 75. 235

743 Fox, Henry, & Co., Urbana, O.—D 78. 235

743a Cassimeres, tweeds, satins, and yarns. 235

743b Flannels. 236

744 Belfast Mills, Philadelphia, Pa.—N 76. 235

745a Cheviots. 235

745b Dress goods. 238

745 Roy, Jas., & Co., West Troy, N. Y.—F 77. 235

745a Suitings and yarns. 235

745b Woolen shawls. 237

746 Fay, C. J., Camden, N. J.—F 74. 235

746a Felt roofing and siding. 235

746b Ceiling and floor carpeting. 235

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26
**Woven Goods.**

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<td>Lippitt Woolen Co., Providence, R. I.—F 73.</td>
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<td>Schofield, Sevile, Philadelphia, Pa.—B 74.</td>
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<td>Piqua Woolen Mills, F. Gray, O'Ferrall &amp; Co., Piqua, O.—B 73.</td>
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<td>Washington Mills, Lawrence, Mass.—F 72 and 74.</td>
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<td>Landenberger's, Martin, Sons, Philadelphia, Pa.—F 67.</td>
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<td>Dobson, Jno. &amp; Jas., Philadelphia, Pa.—H 77.</td>
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<td>Pontousuc Woolen Manufacturing Co., Pittsfield, Mass.—F 76.</td>
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<td>Belvidere Woolen Manufacturing Co.—Flannels. F 74.</td>
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<td>Gilbert, Geo. H., Manufacturing Co., Ware, Mass.—F 73.</td>
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<td>771</td>
<td>Mission Woolen Mills, San Francisco, Cat.—B 75.</td>
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<td>772</td>
<td>Arlington Mills, Lawrence, Mass.—Black alpacas, in ten qualities; black mohair brilliants, in five qualities; figured mohair brilliants, in two qualities; and roxburgh poplins, in assorted colors. The black alpacas and mohair brilliants are &quot;warped dyed,&quot; and are made from the choicest materials, in the most thorough manner. Especial attention is invited to the softness of finish, brilliancy of color and texture, uniformity and perfection of manufacture. The roxburgh poplin is a &quot;yarn dyed&quot; fabric,—not dyed in the piece,—consequently, the strength of the fibres is preserved, and the color more permanent than if &quot;piece-dyed.&quot; The peculiarity of the finish is such that the goods will not cockle. F 77.</td>
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<td>773</td>
<td>Pacific Mills, Lawrence, Mass.—Plain flannels, jerseys, shawls, and blankets. B 73.</td>
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<td>776</td>
<td>Turner, John, Norwich, Conn.—Dyed and printed worsted, woolen, and cotton yarns, for weaving, knitting, etc. B 77.</td>
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<td>777</td>
<td>Tunxis Mills, Poquonnock, Conn.—White and colored worsted yarns; process of manufacture from raw wool. B 76.</td>
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<td>779</td>
<td>Hamilton Woolen Co., Southbridge, Mass.—Delaines, etc. N 74.</td>
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</tbody>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Silk and Silk Fabrics, and Mixtures in which Silk is the predominating Material.

**800 Roxbury Carpet Co., Boston, Mass.**—Tapestry carpeting. F and H 73 to 76.

**801 Read Carpet Co., Bridgeport, Conn.**—Two ply ingrain carpets. H 77.

**802 Farrington & Kinsey, Rahway, N. J.**—Wool extracted from rags. B 76.


**804 Belding Bros. & Co., Rockville, Conn.**—H 74.


**806 S. & H. Haslam, Camden, N. J.**—H 77.

**807 Smith, A., & Sons Carpet Co., Brooklyn, N. Y.**—Power loom, Axminster, tapestry Brussels, and tapestry ingrain carpeting. F and H 73 to 76.


**812 Mayall, Miles, Boston, Mass.**—Carpet linings and stair pads. D 78.

**813 Bromley, Jno., & Sons, Philadelphia, Pa.**—Ingrain and damask Venetian carpetings. F 77.


**815 Leedom, Shaw, & Stewart, Philadelphia, Pa.**—Carpetings. F 77.


**818 Taylor, Jas., & Muller, S. N., Newark, Del.**—Rag and rug carpet. P 74.

**819 Hartford Carpet Co., Hartford, Conn.**—Brussels and three and two ply ingrain carpeting. F and H 73 to 76.


**821 Evans, Dietz, & Magee, Philadelphia, Pa.**—Three and two ply ingrain carpets. H 75.

**822 Bigelow Carpet Co., Clinton, Mass.**—Jacquard Brussels and Wilton carpets, rugs and mats. F and H 73 to 76.

**823 Lowell Carpet Co., Boston, Mass.**—Wilton and Brussels, two and three ply ingrain carpeting. F and H 73 to 76.

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
Silk, Clothing.

818 Cheney Brothers, Hartford and South Manchester, Conn.—H 75.
   a Twist. 243
   b Spun silks and spun silk fabrics. 244
c Dress goods, serges, florentines, and foyards. 245
   d Organzine, tram, and handkerchiefs. 247
d Ribbons. 248
814 Atwood & Richmond, Brooklyn, Conn.—Ounce silk machine twist, black and colors. H 77. 243
815 Nonotuck Silk Co., Florence, Mass.—Black and colored machine twist, buttonhole twist, embroidery and sewing silk. H 74. 249
816 Hayden, J. H., & Son, Windsor Locks, Conn.—Black sewing silk. H 76. 243
817 Heminway, M., & Sons Silk Co., New York, N. Y.—Spool, embroidery, and saddlers’ silk; machine and buttonhole twist, etc. H 73. 249
818 Holland Manufacturing Co., Williamstown, Conn.—Silk machine twist and sewing silk. H 74. 243
819 Baare, Fred., Paterson, N. J.—Millinery, tie, and umbrella silks. H 76. 244
820 Strange, Wm., & Co., Paterson, N. J.—H 73.
   a Millinery and dress silks. 245
   b Ribbons. 248
   a Silk piece goods. 245
   b Ribbons. 248
c Dress trimmings. 249
823 Wright, Wm. P., Philadelphia, Pa.—Oiled silks and muslins. H 76. 245
825 Weidmann & Greppo, Paterson, N. J.—Dyed silk, blacks and colors. H 76. 246
826 American Silk Label Manufacturing Co., 366 Broome street, New York, N. Y.—Names of signers of Declaration of Independence, labels, and other designs, woven in silk; for clothiers, merchant tailors, and hatters. H 76. 247
   a Upholstery satins. 246
   b Ladies’ silk scarfs, sewing silk veils; millinery silks and gauze fabrics. 247
   a Brocade silks. 246
   b Silk handkerchiefs. 247
831 Horstmann, W. H., & Sons, Philadelphia, Pa.—Dress, carriage, upholstery, and undertakers’ trimmings; narrow textile fabrics; passementerie. H 73. 249
832 Koh, Tobias, Novelty Weaving and Bridging Works, Hartford, Conn.—Star and embroidery brads. H 76. 249
833 Dale Manufacturing Co., Paterson, N. J.—Silk, molihar, and fancy trimming brads; cords, bindings, hat bands, braided sewings, and watch guards. H 75. 249
836 Sutro Bros., New York, N. Y.—Embroidery brads, put up on patent cards, stating correctly the measurement of each skin. F 71. 249
837 Nottingham Lace Works, Brooklyn, N. Y.—Guipure, thread, cashmere, and other laces and trimmings; hair nets. Manufacturers from original designs of guipure laces, thread, cashmere, Spanish and millinery laces, silk purlings, lace fringes, hair nets, etc.; also, a specialty of all desirable styles of silk lace ties and scalloped borders sent to A. G. Jennings, 428 Broome street, New York. H 75. 249
838 Turner, John, Norwich, Conn.—Picture and furniture cords. B 77. 249
839 Goff, D., & Son, Pawtucket, R. I.—Alpaca skirt braid. F 71. 249
840 Silver Lake Co., Boston, Mass.—Solid braided cords. F 68. 249
841 Kelty, G. L., & Co., New York, N. Y.—Furniture coverings, gimps, fringes, cords, tassels, and other upholstery goods. C 78. 249

Clothing, Jewelry, and Ornaments, Traveling Equipments.

842 Hapke, A. B., Harrisburg, Pa.—Knit goods and embroideries. F 60. 250
842 Lowery & Williams, Utica, N. Y.—Merino and cotton underwear. F 73. 250
843 Moore, Leopold, Philadelphia, Pa.—H 69.
   a Wrappers, shirts. 250
   b Silk hats. 251
844 Mason Manufacturing Co., Co- hoes, N. Y.—Merino and cotton underwear. F 73. 250
844 Sachse, F., & Son, S. E. corner Eighth and Vine streets, Philadelphia, Pa.—Finest American dress shirts; also, crepe, chintz, fine, hosiery, yachting, and society shirts. F 69. 250
846 Maize & Schwartz, Philadelphia, Pa.—Military uniforms. C 78. 250
847 Chapman, Mrs. Dr. H. M., 219 South Eighth, and 306 South Fifth street, Philadelphia, Pa.—Patent skirt supporting, shoulder brace, puff corset. Requires no padding; allows the form its natural shape without pressure. F 60. 250
847 Wyoming Valley Knitting Co., Pittston, Pa.—Hosiery and underwear. F 73. 250
848 Cooper, Henry Prouse, New York, N. Y.—Clothing. F 72. 250
849 Schuyler, Hartley, & Graham, New York, N. Y.—Military and naval equipments, society and theatrical goods. F 70. 250
850 Moeller, C. H., St. Louis, Mo.—Netted underwear. F 71. 250
850 Glazier, J. J., Bro. & Co., Phila- delphia, Pa.—Brown, bleached, and cel- luloide and half-celluloide. F 72. 250
850 Fall River Merino Co., Fall River, Mass.—’Ladies’ and men’s underwear. F 73. 250

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
CLOTHING, ORNAMENTS.

851 Judson Bros., New York, N. Y.—Shirts, underwear, drawers. F 70. 250
851a Welden, Dana, & Co., San Francisco, Cal.—Stocking supporters, ladies' belts, etc. F 71. 250
852 Thalheimer & Hirsch, Philadelphia, Pa.—Gentlemen's white and fancy shirts, underwear, collars, and cuffs. F 61. 250
852a Dudley Hosier Co., Newton Lower Falls, Mass.—Knit underwear, hosier. F 73. 250
853 Michaelis & Kaskel, 653 Broadway, New York, N. Y.—Shirts, underwear, and pajamas; anti-rheumatic flannels, and embroideries. Manufacturers of the finest dress shirts and underwear, to order only; embroiderers, and importers of gentleman's furnishing goods; depot for Dent London-made kid gloves, Cartwright and Warner's merino underwear, and Martin's umbrellas; sole agents in the United States for Lalibert's celebrated anti-rheumatic flannels and medicinal preparations. Office, during the exhibition, at the Transcontinental Hotel, opposite the Main Building. F 67. 250
853a Leighton, Chas., New Orleans, La.—Shirt. F 71. 250
854 Harvey & Baird, Philadelphia, Pa.—Shirts. F 72. 250
     a Oiled clothing. 250
     b Oiled hats. 250
855 Griswold, Catherine A., New York, N. Y.—Corsets. F 69. 250
856 Devlin & Co., Clothiers, Broadway, corner Grand street; Broadway, corner Warren street, New York, N. Y.—Military uniforms, for army, navy, and national guard; gentlemen's dress and business suits; duck vests, robé-de-chambre, breakfast jackets, and shirts; also, boys' and youths' clothing. F 67. 250
856a Hemple, J. C., Baltimore, Md.—Rubber cloth diaper. F 72. 250
857 Prindle, G. H., Philadelphia, Pa.—Muffs and boas, caps, cloaks, afghans, caps, shawls, designs for bed spreads. F 73. 250
857a Thudium, C. A., & Son, Philadelphia, Pa.—Woolen and worsted cardigan jackets. B 70. 250
859 Moore, George, New York, N. Y.—Bias and bias neck cutter. H 71. 250
859a Bishop & Northrup, Wyandotte, Mich.—Wool dusters. F 71. 250
859 Thomas, A. W., Philadelphia, Pa.—Bustle, skirt elevator, bosom form. F 72. 250
859a Jacobs, Strouse, & Co., New York, N. Y.—Corset clasps and buckles. T 60. 250
860a Schoenhof, J., & Co., New York, N. Y.—Shirts in embroidered and trimmed effects. F 70. 250
861 Conrad Bros., Philadelphia, Pa.—Shirts, collars, cuffs, etc. F 67. 250
862 National Suspender Co., New York, N. Y.—Shoulder braces and suspenders. F 68. 250
862a Oliver, Thomas, New York, N. Y.—Transfer for measuring and cutting coats. F 68. 250
863 Cohn, M., & Co., Novelty Corset Works, New York, N. Y.—Woven corsets. F 60. 250
864 Piqua Woolen Mills, Piqua, O.—Jackets and woolen socks. B 75. 250
865 Taylor, S. T., New York, N. Y.—System of dressmaking, bias cutter, fashion journals F 71. 250
866 Hopkins, W. T., Philadelphia, Pa.—Ladies' and children's undergarments, infants' dresses, hoop skirts, corsets, panniers, bustles. F 69. 250
867 Horstmann, Wm. H., & Sons, Philadelphia, Pa.—Military and theatrical goods, Military society, regalias, theatrical and historical goods; flags, banners, bunting, army, navy, national guard, and band equipments, in great variety; regalias, jewels, and properties for theatrical Blueridges, chapters, and mandolins; Knights Templar uniforms a specialty. A full line of materials and trimmings suited to all the above lines. F 73. 250
868 Demoest, Mme., New York, N. Y.—Fashion patterns and bulletin, dress-cutting system, corsets, shoulder brace, skirt and stocking suspenders. F 68. 250
869 Nashawannuch Manufacturing Co., Easthampton, Mass.; factories, Easthampton, Mass.; salesrooms, 74 and 76 Worth street, New York.—Elastic rubber suspenders and webs. Manufacturers of elastic suspenders, frills, and webs, in silk, worsted, and cotton; new styles, plain and figured, in great variety, constantly produced. This company successfully introduced in this country the "Goodyear's" patent vulcanized rubber, in woven elastic goods, and continues its use very extensively. F 67. 250
871 Thompson, E. O., merchant tailor, 638 Walnut street, Philadelphia, Pa.—Clothing. Exemplification of mechanical and artistic tailoring is displayed in these garments, made to order for competition, designed, also, to illustrate accurately the national workmanship, in their embellishment, by trimmings made of the national colors and coins; also particular merit is claimed for the perfect fitting pantaloons, cut according to the process patented by the exhibitor. F 71. 250
872 Sternberger, L. & S., Philadelphia, Pa.—White shirts. Manufacturers of the "Eclipse" fine white shirts; shirt fronts, drawers, overalls, etc. F 68. 250
873 Norfolk & New Brunswick Hosier Co., New Brunswick, N. J.—Ladies', gentleman's, and children's knitted underwear; shirts, vests, pants, and drawers; ladies' and misses' union dresses, gentlemen and boys' suits, wool half hose; ladies' and misses' merino and wool hose and three-quarter socks, in various colors. We manufacture only full fashioned or regular made goods of fine qualities. H. J. Libby & Co., agents, No. 57 White street, New York. F 70. 250

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 20.
PROVIDENT
LIFE AND TRUST COMPANY,
OF PHILADELPHIA.
INCORPORATED 3 MO. 23, 1865.

ASSETS, over $3,000,000

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Successors to WM. B. WARNE & CO.,
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David F. Conover. B. Frank Williams. C. Edgar Righter.

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PHILADELPHIA, PA.,
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Morgan & Headly,

Manufacturers of
Spectacles,
Fine Jewelry, Chains, Bracelets,
18-Karat Plain Rings, etc. Diamonds A Specialty.

Artisan Hall, 611 and 613 Sansom St.
Philadelphia.
Our Case Is No. 3731, Centre of Main Building.

Minton's Tiles,

As exhibited in the British Section, Main Building, by
Messrs. Minton, Hollins & Co.,
(The Founders of the Manufacture in 1840) and as laid by us in the Capitol at Washington.

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MILLER & COATES, Agents,
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J. J. S. Seitzinger.

Huddell & Seitzinger,
Miners and Shippers of Coal

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New York Office,
111 Broadway.
Boston Office,
13 Kilby Street.

Samples of Coal on Exhibition in Mineral Annex.
collar is made to fit the neck perfectly and easily, is controlled exclusively by its company. These goods have been awarded the first prize at several exhibitions. F 70.


900 Sweet, Orr, & Co., factory, Wappinger's Falls, N. Y.; office, 345 Broadway, New York City. —Orr’s pantaloons, overalls, and engineer jackets. The peculiar cut of these overalls must be noticed, by which such seat-room is given that the wearer feels perfect ease, in all positions; no binding or straining in any part; their strength is such that they are “warranted never to rip,” F 76.

901 Bickford, Dana, New York, N. Y. —Knitted articles made on Dana Bickford’s knitting machines. F 68.

902 Beatty Hosiery Mills, Philadelphia, Pa.—Hosiery. F 73.

903 Landenberger’s, Martin, Sons, Philadelphia, Pa.—Hosiery and knit goods. F 67.


906 Rothschild Bros. & Gutman, New York, N. Y.—Shirts, drawers, and under-shirts. F 69.

907 Cameron, Wm., & Son, Philadelphia, Pa.—Embroidering, braiding, and stamping designs; children’s clothing, indelible ink marking. F 70.


909 Otis Co., Ware, Mass.—Hosiery and underwear. N 75.

910 Hayden, James, Philadelphia, Pa.—Shirts, drawers, and necktie shields. F 72.

911 Peck & Greene, Brooklyn, N. Y.—Worsted and silk goods for theatrical, boating, and general underwear. B 75.


916 Bennett, E., Brooklyn, N. Y.—Shirts. F 68.


918 Ellis Manufacturing Co., Waltham, Mass.—Steeking supporters. H 71.
  a Ladies’ dresses, trousseaux, neck-ties, scarfs, and furnishing goods. 250
  b Embroidery, lingerie. 252
  * All articles contained in this exhibit are of A., C. & Co.’s own manufacture, and
  are their extensive establishment, Nos. 1452 and 1474 Chestnut street, above
  Broad street, Philadelphia, will be found articles of a similar character, in great
  variety.

920 Pettinell & Sawyer, East Cambridge, Mass.—F 70.
  a Waterproof oil clothes. 250
  b Waterproof hats. 251

920a Brady, Edward, Philadelphia, Pa.—U 63.
  a Collars for men’s wear. 250
  b Button. 254


923 Megele, Fortuné, New York, N. Y.—Material for kid glove manufacturing, and
  kid gloves. B 63.

924 Stetson, John B., & Co., Philadelphia, Pa.—Soft and stiff felt hats in various
  stages of manufacture. B 68.


930 Fenton, J. H., & Bro., Philadelphia, Pa.—Gentlemen’s dress, silk, soft
  and stiff felt, and other hats. B 70.

931 Vanerson & Herman, Newark, N. J.—Hat blocks and flanges, hatters’ tools.
  B 70.


934 Hays, Daniel, Gloversville, N. Y.—Buckskin and peccary skin gloves, gaunt-
  letts, and mittens. B 71.

  a Straw hats; hats. 253
  b Furs, robes, fur caps, turbans, gloves, etc. 256

935 Jeannison, Lewis, & Son, Johnson-


938 Solmans, Alden, South Norwalk, Conn.—Felt hats. B 71.


940 Amidon’s Son, T. H., New York, N. Y.—Hats and caps. B 70.

941 Dunlap & Co., Hatters, 174 Fifth
  avenue and 559 Broadway, New York, N. Y.; manufactury and wholesa-
  e department, 16 Mercer street, New York, N. Y.—Gentlemen’s silk, felt, straw
  and opera hats; ladies’ riding hats. B 70.

942 Kennedy, Thos., & Bro., Philadelphia, Pa.—Wax figure in bridal costume;
  trimmed bonnets and hats. F 72.

943 Schiller, Jos., & Co., St. Louis, Mo.
  —Hats for gentlemen’s wear. B 69.

945 Hutchinson, John C., Johnstown, N. Y.—Men’s lined dogskin, calf skin,
  and lambskin gloves and gauntlets.

946 Northrup, W. S. & M. S., & Co., Johnstown, N. Y.—Fine lamb, real calf,
  and buckskin caster lined gloves. Most glove dealers know the reliability of gloves
  made by this firm. B 71.


948 Miller, Geo. F., Jacksonville, Fla.
  —B 74.
  a Palmetto hats. 251
  b Florida curiosities. 254

949 Bancroft, J. S., & Co., New York, N. Y.—Hats and caps, boys’ and child-
  ren’s hats. B 72.

950 Kursheed & Co., 190 to 194
  South Fifth avenue, New York, N. Y.—Standard manufacturers—Embroiderers,
  puffings, plattings, and flutings, made on patented machines; ladies’ collars and
  cuffs, ties, collarettes, lock-stitch all-over buckskin, and tucked frockings. F 69.

950a Beatty & Thorne, New York, N.
  Y.—Hat, badge, and ornamental printing
  in gold, silver, etc. P 78.

951 Bentey, Jeff. O., Philadelphia, Pa.—Embroidered, braided, and stamped
  goods; indelible marking, designs, stamps. F 68.

951a Roberts & Hevell, Newark, N. J.
  —T 65.
  a Dress, hat, and shoe trimmings. 252
  b Metal facay goods, notions. 254
  c Fur caps, and bag trimmings. 255

952 Barratt, J. W., Philadelphia, Pa.—Embroidery and braiding designs, hand
  worked and printed. F 72.

953 Thomas, Joel, Philadelphia, Pa.
  —Ruches, ladies’ and infants’ caps, ruf-
  fings, and collarettes. F 71.

  —Embroidery on linen cambic. F 63.

955 Palmer & Kendall, Middletown,
  Conn.—Mosquito net canopies with attach-
  ments, machine-tented wide fabrics, mos-
  quito nettings, cords, and window lines. F 77.

956 Bedichimer, Isaac, Philadelphia,
  Pa.—Masonic marks, society jewels, pins,
  and emblems in gold and silver. N 43.

956a Barrows, H. F., & Co., New York,
  N. Y.—Plated jewelry. P 43.

957 Mubr’s, H., Sons, Philadelphia, Pa.—Gold finger rings. P 43.

957a Celluloid Novelty Co., New York,
  N. Y.—Celluloid jewelry. N 43.

  —Jewelry. N 43.
Jewelry, Toys, Fancy Articles.

960 Caldwell, J. E., & Co., Philadelphia, Pa.—Jewelry and artistic manufactures in the precious metals, for use and decoration. N 41. 253
961 Vulcanite Jewelry Co., New York, N. Y.—Vulcanite and jet, and collection of vulcanite and jet jewelry. P 43. 253
962 Goggin, Jas., New York, N. Y.—Suites of jewelry, and jewel cases of shell, jet, and bog oak. P 59. 253
963 Neher, Chas., Philadelphia, Pa.—Hair jewelry. P 43. 253
964 Starr & Marcus, New York, N. Y.—Diamonds, pearls, precious stones, rich jewels, and stone cameos. N 41. 253
965 Morgan & Headly, Philadelphia, Pa.—Gold spectacles and chains, fine jewelry. N 42. 253
966 Cottier, C., & Son, N. Y.—Imitation of precious stones and fancy cut stones. P 44. 253
967 Tillinghast, Mason & Co., Providence, R. I.—Imitation diamond jewelry. N 43. 253
968 Richards, J. J. & J. M., New York, N. Y.—Sleeve and collar buttons, studs, crosses, pins, and cardrums. B 43. 253
970 Hamilton P. Hunt, Providence, R. I.—Plated chains and buckle bracelets. P 43. 253
971 Kipling's, R., Sons, New York, N. Y.—Precious and imitation stones for jewelry. N 43. 253
  a Jewelry, precious stones.
  b Gift goods.
973a Robbins, Clark & Biddle, Philadelphia, Pa.—N 43.
  a Jewelry, damonds.
  b Bronzes, fancy goods.
973b Sand, M., New York, N. Y.—Wax flowers. F 71. 254
974 Miller, Thos., New York, N. Y.—Silk umbrellas. B 70. 254
975 Pope Manufacturing Co., Boston, Mass.—Rifle air rifle for target shooting. H 71. 254
976a Oakville Company, Waterbury, Conn.—Shawl, bankers', and mixed pins; toilet pin rolls. H 68. 254
976b Galena Oil Works (limited), Franklin, Pa.—Silver card cards and cases. P 47. 254
977 Wallace & Keller, Philadelphia, Pa.—Walking canes, bell earrings, and fancy articles. B 72. 254
976a Pratt, D. G., Cambridgeport, Mass.—Wood and ivory turned goods. N 57. 254
977 Birge & Berg, Philadelphia, Pa.—Artificial flowers; picture of lion, made of flowers. F 72. 254
978 Glendening & Truitt, Philadelphia, Pa.—Whips. B 71. 254
979 Lacmann, J., & Sons, Philadelphia, Pa.—Doll bodies. F 72. 254
979a Weintrob, Paul, Philadelphia, Pa.—Fancy articles of olive wood from Jerusalem. T 54. 254
980 Pilling, George P., Philadelphia, Pa.—Gold, silver, and plated masonic, odd fellows, and society jewels, marks, emblems, and other small silver wares. N 52. 254
981a Bene, Creighton, & Co., New York, N. Y.—Feathers. H 76. 254
982 Wilson, John, Philadelphia, Pa.—Carved walking canes. B 69. 254
983 Harsh & Brother, Philadelphia, Pa.—Umbrellas, parasols, and materials. B 72. 254
983a Bacon, George W., Philadelphia, Pa.—Artistic transfers in ferruginet. N 55. 254
984 Galbraith, Alex., Philadelphia, Pa.—Wax flowers and materials. F 75. 254
984a Dudley, Dana, Philadelphia, Pa.—Toy gyroscopes. P 71. 254
985 Watson, Brock, Philadelphia, Pa.—Fancy articles carved from nuts and fruit stones; wood relics. H 69. 254
986 Potter, W. K., Providence, R. I.—Tooth shell goods, combs, jewelry, etc. P 43. 254
987 Nickle, Robt., Rochester, N. Y.—Magical apparatus and toys. H 78. 254
987a Goodwin, W. C., New Haven, Conn.—Hot-air toy, gins, games, novelties; banking bank. N 71. 254
988 Bloodged, Miss, De Etta, New York, N. Y.—Sheet wax, wax flowers, leaves, shells, fruit, etc.; illuminated and rustic crosses. P 42. 254
988a Noyes, W. F., Newburyport, Mass.—Combs. F 71. 254
989a Leighton, Charles, New Orleans, La.—Sleeve buttons mounted with Long Branch pebbles. F 71. 254
990 Johnson, E. S., New York, N. Y.—Tooth picks and ear spoons. N 43. 254
990a Jackson, Samuel C., New York, N. Y.—Silverware and jewelry trays and cases, fancy wood boxes. N 43. 254
992 Wahl, Emil, Philadelphia, Pa.—Fancy bone work, dominos, chessmen, crochet needles, buttons, jewelry, etc. N 43. 254
993 India Rubber Comb Co., New York, N. Y.—Hardware rubber combs, syringes, drinking flasks; surgical, telegraphic, and photographic goods, etc. Manufacturers of hard rubber combs, syringes, drinking flasks, whip sockets, inksstands, oils, thimbles, doll-heads, martingale rings, tumbler, rulers, funnels, scoops, dice cups, soup trays.
castor rolls, napkin rings, whip handles, salad spoons and forks, gas faucets, mustard spoons; photographic, telegraphic, electrical, and surgical goods, and all kinds of special goods; sheet, rod, and tubing. P 65. 254

994 Leiner, Moritz, New York, N. Y.—Ear cleaners, filtering racks, sponge baskets, bath and bottle brushes, probangs. P 65. 254


996 Koch, Sons, & Co., New York, N. Y.—Albums and backgammon boards. P 76. 254

997 Birch, John S., New York, N. Y.—Watch key that will wind any watch. P 43. 254

998 Ellis, Knapp, & Co., New York, N. Y.—Umbrellas and parasols. P 70. 254

998a Feust & Rice, New York, N. Y.—Toys, jardiniers, and parlor ornaments. P 51. 254


999a Buffalo Decorating Co., Buffalo, N. Y.—Artificial ivy and autumn leaves. P 62. 254

1000 Hopkins & Robinson Manufacturing Co., Akron, O.—Smoking pipes. T 44. 254

1000a Smithers, Mrs. G. H., New York, N. Y.—Wax flowers and figures; sheet wax. F 70. 254

1001 Orange Judd Co., New York, N. Y.—Crandall’s building blocks. T 73. 254

1003 Dickinson, Mrs. C. J., Chicago, Ill.—Wax flowers, leaves, Inuit, ferns, etc. P 42. 254

1004 Tobin, Joseph F., No. 82 Duane street, New York, N. Y.—Whalebone goods. Manufacturer of dress, corset, whale, cane, probe, hucks, brush, ribbon, round and half-round bone. F 72. 254

1005 Mabie, Todd, & Bard, New York, N. Y.—Tooth-picks. N 43. 254

1007 Riley & Lynch, Newark, N. J.—Bag and umbrella trimmings, military metal goods, masonic ornaments, etc. F 67. 254

1008 Celluloid Manufacturing Co., Newark, N. J.—Toilet brushes, etc., made from celluloid. N 43. 254

1009 American Mechanical Toy Co., N. Y.—Mechanical toys. F 70. 254

1010 Leonhard, Theo., Paterson, N. J.—Pure white beeswax bleached by sun, wax tapers or gaslighters, sheet wax and gilded brass moulds for wax flowers. N 56. 254

1011 Bradley & Hubbard Manufacturing Co., West Meriden, Conn.—Bronzes, call bells. N 47. 254

1013 Carlisle, Henry, & Son, Philadelphia, Pa.—Tortoise shell and horn combs, jewelry sets, and fancy articles. N 52. 254

1014 Altthof, Bergmann, & Co., New York, N. Y.— Tin and mechanical toys. F 76. 254

1016 Bickel, August, & Son, Philadelphia, Pa.—Canes. B 71. 254

1017 Heister & Gans, New York, N. Y.—Automatic umbrellas and parasols. B 69. 254


1019 Holland, John, Cincinnati, O.—Toothpicks. N 43. 254

1020 Adams, J. S., & Co., Providence, R. I.—Tortoise shell jewelry and combs. N 42. 254


1022 Wagan, R. M., Mount Lebanon, N. Y.—Fan’ry articles made by the Shakers. P 52. 254

1023 Stehr, Carl, New York, N. Y.—Meerschaum and amber goods. B 72. 254

1024 Harvey & Ford, Philadelphia, Pa.—Canes, umbrella and whip handles; pipes, billiard balls; pearl, horn, and ivory work. B 70. 254

1025 Waterbury Button Co., Waterbury, Conn.—Army, navy, railroad, police, ladies’, livery, and cloth buttons; ladies’ belt buckles, medals, and badges. B 76. 254

1027 Armstrong, F., Bridgeport, Conn.—Duplex ventilated garters and suspenders. F 72. 254

1028 Field, A., & Sons, Taunton, Mass.—Buttons and eyelets. P 68. 254

1029 Lewy, F., New York, N. Y.—Kid glove safe. E 73. 254

1030 Matthias, Mrs. C. E., Philadelphia, Pa.—Umbrellas and parasols. F 70. 254


1031a Griffin, A. B., Ravenna, O.—Box and pyramid made of the woods of the world, containing 9665 pieces. P 49. 254

1032 Independent Cloth Co., Wappinger’s Falls, N. Y.—Ladies’ horn and rubber combs, dressing combs, pipe stems, and bits. B 73. 254

1033 Barnhurst & Robinson, Philadelphia, Pa.—Umbrella and parasol stretchers. B 70. 254

1034 Grottenthaler, V., Philadelphia, Pa.—Block for wood engravers, wooden smoking pipes. B 70. 254

1035 Ives, Blakeslee, & Co., Bridgeport, Conn.—Mechanical toys and novelties. F 72. 254


1037 Nax, Kuhn, & Silberman, Philadelphia, Pa.—Tobacco pipes; umbrella, parasol handles, cigar tubes, etc. B 75. 254

1038 National Button Co., Easthampton, Mass.—Cloth-covered and vegetable ivory buttons, in great variety. Williston, Knight & Co., selling agents, Nos. 74 and 76 Worth street, New York, who sell by the case or package only. B 76. 254

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
1039 Spaulding, D. S., Mansfield, Mass. — Tortoise shell jewelry, back combs, and fancy goods. N 43. 254

1040 Seyve, J. A., Boston, Mass. — Articles of whalebone, for whips, canes, corsets, dresses, etc. F 71. 254


1042 Joaln, Palmer, & William, New York, N. Y. — Horn and rubber goods, fancy back combs, and jewelry. N 43. 254


1044 Mahn, L. H., Jamaica Plains, Mass. — Base balls. F 71. 254

1047 Porter Brothers & Co., New York, N. Y. — Buttons and presses for attaching same. H 71. 254

1048 Holland, J. C., New York, N. Y. — Needles. F 71. 254

1049 Harris, S., & Sons Manufacturing Co., Clinton, Mass. — Dressing and fancy combs, imitation jet and shell chains. F 71. 254


1052 Moutoux, Emil W., New York, N. Y. — Hair pictures and devices for breas...pins. P 52. 254


1054a Conrad, Wm. C., Middletown, Pa. — Cane. T 61. 254

1055 Ansley, Fred. W., St. Augustine, Fla. — Jewelry made from native Florida material. H 69. 254


1057 Platt Bros. & Co., Waterbury, Conn. — Buttons. H 71. 254

1058 Cheshire Manufacturing Co., West Cheshire, Conn. — Buttons. H 71. 254

1059 Greifery, C. J., & Son, Naugatuck, Conn. — Thimbles. H 71. 254

1057 Comstock Dickinson Ivory Co., Center Brook, Conn. — Ivory fine combs. H 71. 254

1058 Blake & Johnson, Waterbury, Conn. — Satin finish hair pins. H 71. 254

1059 Ives, Blakeslee, & Co., Bridgeport, Conn. — Silk covered ventilated metal gal...mers. H 71. 254

1059a Lodl, S. J., Providence, R. I. — Gold thimbles. N 43. 254

1060 Peacock, H. H., Philadelphia, Pa. — Fancy cases in morocco, velvet, and marqueterie, for jewelry, etc.; physicians' cases. P 69. 254


1061 Rump, Cha.., Philadelphia, Pa. — Fancy leather goods, dressing case, work boxes, pocketbooks, satchels, etc. H 69. 255

1061a Langfield, J., & Sons, Philadelphia, Pa. — Pocketbooks, satchels, and fancy leather articles. F 70. 255


1062a Arms Manufacturing Co., Northampton, Mass. — Pocketbooks, photograph cases, chess boards, etc. B 75. 255

1063 Rumpf C. F., 116 & 118 North Fourth St., Philadelphia, Pa. — Fancy leather goods, pocketbooks, cigar and match cases, bankers' cases, dressing cases, writing desks, satchels, traveling bags, etc. Any article exhibited is kept in store, and any similar goods will be made to order at short notice. B 68. 255

1063a Spitzer, George W., 33 Maiden Lane, New York, N. Y. — Fans, jewelry cases, and fancy leather goods. Manufacture of leather fancy goods. Our specialties are jewelry cases and fans. These are the only fans of the kind made in this country. B 71. 255

1064 Parkhurst & Gridley, Newark, N. J. — Shawl and book strap. P 68. 255

1065 Likly, McDonald, & Rockett, Cleveland, Ohio. — Fancy leather work, gun case, etc. B 70. 255


1067 Mawson, Ed. S., & Sons, Philadelphia, Pa. — Seal sacci... ...muffs, caps, gloves; seal, sable, and mink skins, etc. B 68. 256

1068 Fishblatt, Lewis, Philadelphia, Pa. — Ladies' furs and carriage robes. B 70. 256

1069 Mahler, M., New York, N. Y. — Furs. B 67. 256


1071 Boos, F., & Bro., 449 Broadway, New York, N. Y. — Furs, sacci... ...coats, muffes, boas, caps, robes, gloves, fur trimmed and skins of all kinds. B 69 and 71. 256

1075 Kaehler, Otto, Philadelphia, Pa. — Stuffed animals, raw and dried skins, fur robes, fancy furs, etc. B 68. 256

1076 Duruy & Hallet, Rahway, N. J. — Dressed and dyed furs. H 68. 256

1077 Burnett, W. H., & R., Newark, N. J. — Furs, fur cloaks, and fur-lined mantles. B 68. 256

Paper, Blank Books, and Stationery.

1078 Dixon Crucible Co., Jersey City, N. J. — Pencils of graphite. P 72. 256

1078a Amberg, William A., New York, N. Y. — File and binder. P 77. 256

1079 McGill, Geo. W., New York, N. Y. — McGill's patent fasteners, for binding papers of all descriptions; sampling for wooden, dry, and fancy goods, and for all descriptions of light binding; McGill's patent fasteners and clips for binding books; McGill's patent letter clips, punches, presses, copying press, water cups; McGill's patent letter clips, punches, presses, copying press, etc. Factories at Waterbury, Conn.; warehouses, at 49 Chambers street, New York, and 18 Federal street, Boston. P 73. 256

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
1083: Goldsborough, John, Philadelphia, Pa.—Ribbon machine and hand stamps, perforating and canceling stamps. P 77. 258.
1085: Fairchild, Leroy W., & Co., New York, N. Y.—Gold pens, pencil and pen cases, toothpicks and desk holders of gold and silver, etc. Awarded highest premium at Paris, 1867; Vienna, 1873; and gold and silver medals from other fairs wherever in competition. N 43. 258.
1086: Faber, Eberhard, New York, N. Y.—Lead pencils, penholders, rubber goods, and stationers' articles. P 73. 258.
1088: Johnson, E. S., New York, N. Y.—Gold pens, pencils, and cases. N 43. 258.
1089: Muller's, Nicholas, Sons, New York, N. Y.—Bronze stationery ware, inkstands. P 76. 258.
1090: Janentzky & Co., Philadelphia, Pa.—Artists' materials, oil colors, water colors, paint boxes, artists' canvases, adjustable drawing table, artists' brushes and color stand, sketching cases, and other articles appertaining to the fine arts, all of our own manufacture. P 77. 258.
1100: Young, W. A., Jacksonville, Fla.—Pencil sharpener. H 68. 258.
1102: Mabie, Todd, & Bard, New York, N. Y.—Gold pens, cases, penholders, N 43. 258.
1103: Hall, P. W., Austin, Texas.—Postage stamp and ticket holders. N 68. 258.
1104: Drake, Louis, Philadelphia, Pa.—Portfolio and stationery. Specimens of steel and copper plate engraving, die sinking, printing, illuminating and designing. All work exhibited executed in our establishment. P 74. 258.
1105: Parkhurst & Gridley, Newark, N. J.—Stationers' goods. P 68. 258.
1110: Holland, John, Cincinnati, O.—Gold pens, pencil cases, penholders. N 68. 258.
1111: United States Soapstone Manufacturing Co., Cincinnati, O.—Soapstone slate pencils, crayons for blackboard or metals, tailors' markers, hair crimpers and curlers, boot powder, shoemakers' blocks, foundry facings; manufacturers of soapstone goods of any description. P 77. 258.
1113: James, Samuel, Philadelphia, Pa.—Artists' rotary color and brush-stain. P 77. 258.
1121: Rowland, Joseph S. C., Philadelphia, Pa.—Canceling ink-pad, T 47. 258.
<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohen, Chas. J.</td>
<td>South Fifth Street, Philadelphia</td>
<td>Account books, lithographic work. P. 259.</td>
</tr>
<tr>
<td>Byron, Weston, Dalton</td>
<td>Massachusetts</td>
<td>Ledger and record paper. Linen, strong, double-sized paper for books, where great strength and long use are required. P. 75.</td>
</tr>
<tr>
<td>Owen Paper Co.</td>
<td>Housatonic</td>
<td>First-class linen ledger papers, bond and thin linen papers; tinted wedding royal and folio, plain and patent finish, artist boards, and staple writing papers of all kinds. P. 74.</td>
</tr>
<tr>
<td>Brown, L. L.</td>
<td>Paper Co., South Adams</td>
<td>copper plate, envelope, and writing papers. P. 75.</td>
</tr>
<tr>
<td>Southworth Co.</td>
<td>Innernea</td>
<td>Writing papers. P. 75.</td>
</tr>
<tr>
<td>Whiting Paper Co.</td>
<td>Holyoke, Massachusetts</td>
<td>Fine papers. P. 77.</td>
</tr>
<tr>
<td>Crescent Mills</td>
<td>Springfield, Massachusetts</td>
<td>Writing papers. P. 74.</td>
</tr>
<tr>
<td>Holyoke Paper Co.</td>
<td>Holyoke, Massachusetts</td>
<td>Writing papers. P. 74.</td>
</tr>
<tr>
<td>Carson &amp; Brown Co.</td>
<td>Dalton, Massachusetts</td>
<td>Writing paper. P. 74.</td>
</tr>
<tr>
<td>Parsons Paper Co.</td>
<td>Holyoke, Massachusetts</td>
<td>Writing paper. P. 74.</td>
</tr>
<tr>
<td>Parker, Joseph, Son &amp; Co.</td>
<td>New Haven, Connecticut</td>
<td>Treasury blotting paper is well known for its durability and great absorbent quality, cleanliness in its use; grows soft and pliable by exposure, and never hardens on the desk. It will absorb more ink than the same thickness of papers more than the ordinary. P. 74.</td>
</tr>
</tbody>
</table>

For classes of exhibits, indicated by numbers at end of entries see Classification, pp. 97-45.
Stationery.

1159 Murphy's, W. F., Sons, Philadelphia, Pa.—Blank books, made to order for actual use. P 77. 261

1159a Lippincott, J. B., & Co., Philadelphia, Pa.—Blank books of their own manufacture. T 72. 261

1160 Thomas, Chas. F., Wilmington, Del.—Index for public records, and mercantile accounts. P 76. 261

1161 Kohler, Ignatius, Philadelphia, Pa.—Samples of bookbinding; samples of hand-finished ornamental, artistic, tool-worked bibles, and large royal photograph albums, holding from 600 to 1000 pictures. (Hand-finished by Ig. Kohler himself.) T 74. 261

1161a Holman, A. J., & Co., Philadelphia, Pa.—Bookbinding and photograph albums. T 73. 261


1163 Walker, Evans, & Cogswell, Charleston, S. C.—Blank books, law blank case. P 74. 261

1163a Robinson, Savage & Co., Cleveland, O.—Russia bound register books. (Ohio State Building) 261

1164 Appleton, D., & Co., Philadelphia, Pa.—Bookbinding. (Gallery) T 73. 261

1164a Hindsill, Henry M., Grand Rapids, Mich.—Office scratch-books. T 77. 261

1165 Sandford & Co., Cleveland, O.—Full Russia bank books. P 77. 262

1165a Beckett & Cervi, Cambridge, Mass.—Specimens of bookbinding. T 74. 261

1166 Siddall Bros., Philadelphia, Pa.—Vellum printing, conveyancers' envelopes, and job and book printing. P 74. 261

1167 Lange, Little, & Co., New York, N. Y.—Wood cut, railroad, and job printing. T 78. 261

1168 American Tract Society, New York, N. Y.—Bookbinding. T 78. 261

1169 Oldach & Mengenthaler, Philadelphia, Pa.—Bookbinders' work. T 75. 261


1171 Reed, A., & Co., Philadelphia, Pa.—Ornamental bookbinding. T 74. 261


1172 Lindsay & Blakiston, Philadelphia, Pa.—Specimens of binding. T 73. 261

1173 Boorum & Pease, New York, N. Y.—Blank books. P 75. 261

1174 Bradley & Gilbert, Louisville, Ky.—P 75.
a Blank books, specimens of printing. 261
b Bonnet boards, file paper boxes. 262

1175 Kerr, N. M., & Co., Philadelphia, Pa.—Paper boxes, jewelers' findings. 263

1175a Richardson, J. N., Boston, Mass.—Playing cards. P 78. 262


1177 American Paper Box Co., Philadelphia, Pa.—Fancy paper boxes. P 74. 262

1178 Porter & Bainbridge, New York, N. Y.—Cardboard, stationery, paperettes, etc. N 72. 262

1179 Dennison & Co., Boston, Mass.—Jewelers' paper boxes, cards, tags, labels, seals, tissue papers, sealing wax; jewelers' and surgical cotton. P 75. 262

1180 Osborn, Bennet, Newark, N. J.—Paper boxes. P 73. 262

1181 Dennison & Brown, Portland, Me.—Wood pulp and products, paper boxes, etc. P 77. 262

1182 Cornell & Shelton, Birmingham, Conn.—Folding paper boxes. P 74. 262

1183 Crompton, John, & Co., Philadelphia, Pa.—Jewelers' druggists', and perfumers' boxes. P 74. 262

1184 Rhode Island Cardboard Co., Pawtucket, R. L.—Cardboard, cards for printers and photographers, manilla tag stock. P 74. 262

1185 McClement Brothers, Philadelphia, Pa.—Embossed business cards, embossed labels, cut and gummed, and impressions from notorial and society seals. P 74. 262


1187 Dougherty, A., New York, N. Y.—Playing cards. P 77. 262

1188 Beck, Charles, Philadelphia, Pa.—P 76.
a Cards, cardboard. 262
b Boxed, colored, glazed, enameled, and embossed papers. 264

a Bonnet and carpet boards. 262
b Paper carpet and building paper. 263

1189 Davey, W. O., & Sons, Jersey City, N. J.—P 77.
a Binders' trunk and box boards. 262
b Oakum. 266

1190 Stelwagon, Jos. & Sons, Philadelphia, Pa.—Raw roofing paper; prepared roofing and sheathing paper; carpet and sheathing paper. P 76. 263

1193 Grice, Jas., & Sons, Downingtown, Pa.—Wrappers for paper manufacturers. P 77. 263

1194 Gordon, A. Dunlop, Philadelphia, Pa.—Building and manila concrete felts. P 74. 263

1195 Case Brothers, South Manchester, Conn.—Paper boards. P 74. 263

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
Quality Unexcelled.

E.D. & W. A. FRENCH,
S. E. corner Third and Vine Streets,
CAMDEN, N. J.,
OPPOSITE PHILADELPHIA, PA.,

SLATE MANTELS,
AND PAINTERS' AND BUILDERS' SUPPLY DEPOT

Third and Vine, Camden, N. J.

S. P. KITTLE,
MANUFACTURER OF

Spring Beds and Bedding,
Bed and Table Linen, Spiral Springs, Feathers, Hair, etc., etc.

BUY WHERE A THING IS MADE.

Half Border and Double Border

SPRING BEDS.

Hotels, Steamboats, and the Trade Supplied.

203 and 205 Canal Street, New York.
See Goods in Main Building, P 52, No. 3228.
JAMES SMITH & SONS
SOLE AGENTS IN THE UNITED STATES.

For JAMES SMITH & SONS
STUCK IN PAT-WRAPPIERS

JAMES SMITH & SONS
GENUINE NEEDLES

THE UNITED PRESBYTERIAN,
PUBLISHED AT PITTSBURGH, PA.,

THOMAS WATTSOON & SONS,
PHILADELPHIA,

COMERCIALES COMISIONISTAS,
NEGOCIANTES COMMISSIONAIRES,
COMMISSION MERCHANTS,

Receive on consignment West India and South America Pro-
duce. Buy and Ship all sorts of American Pro-
duce and Manufactures.

ASPHALTUM FOR SALE.

IMPORTANT TO ADVERTISERS.

THE UNITED PRESBYTERIAN,
PUBLISHED AT PITTSBURGH, PA.,

Has a larger circulation than any Religious News-
paper in the West, and, as an advertising
medium, is unsurpassed.

H. J. MURDOCH & CO.,
Editors and Proprietors.
1196 Barrett, Arnold, & Kimball, Chicago, III.—P 76.
   a Aluminous and ornamental building paper. P 264.
   b Paper oil cloth. 264.


1199 Beck, Fr., & Co., 206 & 208 West Twenty-ninth street, New York, N. Y.—Wall papers. The goods exhibited by this firm are of two classes: one made by hand-printing alone, the other by machinery alone. In the former a great variety of colors can be used, matching furniture coverings and draperies, if desired, and indeed, the appearance of watered silks, or satins, or rich embroidered stuffs, can be so closely imitated that the printed paper can scarcely be distinguished from the genuine fabric. The goods made by machinery are commended for skill in workmanship, for graceful drawing in pattern, for a close resemblance to hand-printed papers, and for cheapness in price. P 76.

1200 Howell & Brothers, Philadelphia, Pa.—Paper hangings, borders, fireboard prints, and window papers. P 76.

1201 Spurr, Chas. W., Boston, Mass.—Wood hangings and marquetries. P 72.


Military and Nava Armaments, Ordnance, Firearms, and Hunting Apparatus.

1205 Union Metallic Cartridge Co., Bridgeport, Conn.—Metallic shells, bullets, wads, and percussion caps; cartridge machinery. P 72.


1207 Billings & Spencer Co., Hartford, Conn.—Breechloading firearms. H 72.


1210 Colt’s Patent Firearms Manufacturing Co., Hartford, Conn.—Breechloading military and sporting small arms, and military and pocket revolvers for metallic ammunition. H 72.

1211 Gardner, Wm., Hartford, Conn.—Breechloading cannon, machine guns, magazine shoulder arms. H 70.


1214 Sharps Rifle Co., Bridgeport, Conn.—Rifles. H 72.


1216 Burgess, Andrew, Owego, N. Y.—Magazine rifles for military and sporting purposes. H 68.


1220 Schoverling & Daly, New York, N. Y.—Hunting and target rifles, revolvers, breechloading implements. H 70.

1221 Winchester Repeating Arms Co., New Haven, Conn.—Repeating military and sporting firearms, metallic cartridges for small arms. H 72.

1222 Wesson, Frank, Worcester, Mass.—Breechloading sporting and pocket target rifles. H 70.


1224 United States Cartridge Co., Lowell, Mass.—Metallic cartridges. Manufacturers of a perfect brass shell, central fire, solid head cartridge, capable of reloading many times; also, manufacturers of central and rim fire ammunition, of all kinds. H 72.


1227 Evans’ Rifle Manufacturing Co., Mecum and Falls, Me.—Magazine rifles, carbine, and musket. H 70.

1228 Clark & Sneider, Baltimore, Md.—Guns and parts of breechloading shot guns. H 71.


For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
DEPT. II.—MANUFACTURES.

Weapons, Ammunition, Medicines.

1231 Stevens, J., & Co., Chicopee Falls, Mass.—Breechloading shotguns, rifles, and pistols. They now supply thoroughly well-made strong and close-shooting breechloading double shotguns, 10 or 12 gauge twist, $40.00; laminated steel, $50.00; extra finish, $55.00. Their rifles and pocket rifles shoot with wonderful accuracy. Circulars and full particulars on application to their agent, Charles Folsom, 53 Chambers street, New York, or H 71 Main Building. H 71. 265


1233 Gatling, Richard J., Hartford, Conn.—Battery gun. This celebrated machine gun fires from 800 to 1000 shots per minute, has great accuracy, and the larger calibres have an effective range of over two miles. Manufactured by the Gatling Gun Company, at Hartford, Conn. H 70. 266

1234 Witty, Calvin, New York, N. Y.—Breechloading field cannon. H 69. 266

1235 Nekervis, W. M., Philadelphia, Pa.—Model of Parrott gun, with caisson complete. H 72. 266

1236 South Boston Manufacturing Co., Boston, Mass.—Bronze and steel rifle cannon, boat howitzer. H 71. 265

1237 Boon, B., West Medford, Mass.—Miniature field artillery, limber, and field carriage. H 72. 266

1239 Ridgway, John, Heirs of, Boston, Mass.—Revolving battery. H 69. 267

1239 A Stevens Institute of Technology, Hoboken, N. J.—Model of the Stevens battery. T 67. 267

1239 Paulding, Kemble, & Co., Cold Spring, N. Y.—Model of gun carriage. H 72. 267

1240 A. Ames Manufacturing Co., Chicopee, Mass.—United States regulation, Masonic, and society swords. H 72. 268

1241 Collins & Co., New York, N. Y.—Machetes, swords, bayonets, etc. N 67. 268

1242 Gaylord Manufacturing Co., Chicopee, Mass.—Presentation and society swords. N 70. 268

1243 Wurfflein, Wm., Philadelphia, Pa.—Parlor or gallery rifles and mechanical targets. H 72. 269

1244 Krider, John, Philadelphia, Pa.—H 72.

a. Guns, pistols. 269

b. Fishing tackle and sporting goods. 270

1245 Providence Tool Co., Providence, R. I.—Breechloading rifles for military, target, and sporting purposes. Manufacturers of "Peabody-Martini" rifles, for military, target, and sporting purposes. The standard arm of Great Britain, noted for strength, accuracy, simplicity, and beauty; 1,000,000 shots have been fired at the factory from 300,000 of these rifles, without accident; also manufacturers of heavy hardware, ship-chandlers' and sailmakers' hardware, nuts, bolts, hinges, etc. H 72. 269

1246 Tryon, E. K., jr., & Co., Philadelphia, Pa.—Muzzle loading rifles, shotguns, revolvers, gunmakers' tools, etc. H 70. 269

1247 Harder, J., & Son, Lock Haven, Pa.—Single, double, and three-barrel guns. Manufacturers of all kinds of muzzle-loading guns. H 71. 269

1248 Parker, Chas., Meriden, Conn.—Double-barreled breechloading shot guns. H 70. 269

1249 Harrington & Richardson, Worcester, Mass.—Revolving firearms with shell ejector. H 74. 269

1250 Burton, Bethel, Brooklyn, N. Y.—Military and sporting magazine rifles, revolvers, portable cartridge reloaders. H 72. 269

Medicine, Surgery, Prosthesis.

1252 Boericike & Tafel, 635 Arch street, Philadelphia, Pa.—Official homeopathic medical preparations, books and periodicals. Manufacturing homeopathic pharmacists. Complete assortment of homeopathic medicines, in their different degrees and forms, for physicians, families, druggists; sugar of milk, pedes, cases, corks, vials. Publishers of homeopathic literature. N 50. 272


1253a Dick, Dundas, 35 & 37 Wooster street, New York.—Tasteless medicines. These soft capsules are acknowledged by the most eminent physicians as a true method to administer nauseous medicines, which often detract from, if they do not destroy, the beneficial effects of some of the most valuable remedies prescribed. No patent or proprietary medicines are put up in soft capsules. Explanatory circulars free at every drug store in the United States. These capsules were admitted to the last Paris Exposition. T 56. 272

1254 Seabury & Johnson, New York, N. Y.—Plasters. T 44. 272

1255 Mitchell, Geo. E., Lowell, Mass.—Surgical, medicinal, and pharmaceutical plasters and plaster compounds, lung protectors. N 53. 272

1256 Fehr, Julius, Hoboken, N. J.—Compound talcum—baby powder. The hygienic dermal powder, useful for infants and adults, containing most valuable therapeutic properties. N 52. 272

1257 Randle, Wm. H., Baltimore, Md.—Barbadoes medicines. N 52. 272

1258 Tims, Wm., Paterson, N. J.—Homeopathic pellets. N 52. 272

1259 Wilson, B. O. & G. C., Boston, Mass.—Pressed medicinal herbs, leaves, flowers, seeds, roots, barks, etc. N 52. 272

1260 Smith's Homeopathic Pharmacy, New York, N. Y.—Homeopathic preparations in tinctures, triturations, and globules, cases for professional and family use. N 54. 272

1261 Ayer, J. C., & Co., Lowell, Mass.—Cherry pectoral, cathartic pills, sarsaparilla, ague cure, hair vigor. N 52. 272

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
United States.

Medicines, Surgical Appliances.

1822 Blair's, H. C., Sons, Philadelphia, Pa.—T. 47.
  Wheat food. 273
  & Fountain syringes. 274

1823 Hance Bros. & White, Philadelphia, Pa.—Conical plate drug mill and filter apparatus. 274

1823a Rohrbeck & Goebeler, New York, N. Y.—School air pump. N 55. 274

1824 Bishop, Joaquin, Sugar town, Chester Co., Pa.—Platina crucibles, stills, bottles, blowpipe tubes, ignition tubes, etc. of manufacturers of platinum crucibles, ignition tubes, stills, bottles, wire, and articles used by analytical chemists; refining and melting of scrap or native grain platinum. Old platinum bought and taken in exchange. P 40. 274

1825 Gilbert, Alfred A., Philadelphia, Pa.—Medicine chest and saddlesbags. N 51. 274

1826 Hechelman, H. W., Allegheny City, Pa.—Anatomical preparations of human hair and eye. N 54. 274

1826a Seaman, Louis Livingston, New York, N. Y.—Auscultatory percussion, for diagnosing. N 58. 275

1826b Longaker, H. D., Allentown, Pa.—Surgical and anatomical specimens of malignant tumors. T 47. 275

1826c Bowen, Truman, Boston, Mass.—Casting in the lungs of a calf. N 54. 275

1826d McCloy, T., New York, N. Y.—Invalid, elevating, and fracture bedsteads, surgical operating and dissecting tables, oculists' and surgical operating chairs. N 59. 276

1827a Whittemore, Joshua, Wakefield, Mass.—Elastic crutches. H 72. 276

1828 Condell, J., & Son, New York, N. Y.—Artificial limbs. N 58. 276

1828a Vaughan, W. R., Council Bluffs, Ia.—Helt trusses and supporters. N 58. 276

1829 Everett, B. C., Philadelphia, Pa.—Trusses, supporters, shoulder braces, elastic stockings, belts, and artificial limbs. N 56. 276

1829a Shepard & Dudley, New York, N. Y.—Surgical instruments and orthopedic apparatus. N 56. 276

1829b Taylor, Charles F., New York, N. Y.—Orthopedic apparatus and machines for local exercise. N 52. 276

1829c Day, G. Hayden, Bennington, Vt.—Fracture splints. N 55. 276

1830 Tiemann, Geo., & Co., No. 67 Chatham street, New York, N. Y.—Manufacturers of surgical instruments and orthopedic appliances. Established in 1826; branch store, 107 East Twenty-Eighth street, New York; steam factory, 51, 53, and 55 Boerum street, Brooklyn, E. D. Exhibit a most complete and compact operating set, containing, in ten compartments, over one hundred and eighty instruments, ample for every modern operation; specimens of operating cases used in America; Heine's osteotome for resection; Tiemann & Co.'s new rotating-blade osteotome; Tiemann & Co.'s new apparatus for fracture of arm and leg; anatomical syringes; Dawson's cautery battery, smallest battery known; Tiemann & Co.'s patent and other aspirators; patent steam atomizer; patent automatic and other hypodermic syringes; laryngo-scopes; ophthalmologists', aurists', gynecologists', and other instruments; a variety of entirely new instruments of American origin, etc., etc. All articles exhibited are Tiemann & Co.'s own manufacture. Their catalogue, bound in cloth, numbering four hundred and twenty-six pages, and containing over fifteen hundred engravings, can be obtained in New York for the cost of binding—seventy-five cents, N 56. 276

1827b Newbauer, Wm. G., Long Island City, N. Y.—Medical-plaster spreading machine. P 47. 276

1827c Marks, A. A., New York, N. Y.—Artificial limbs, india rubber hands and feet. N 58. 276

1827d Lee, Benjamin, Philadelphia, Pa.—Apparatus for the treatment of spinal curvatures. N 56. 276

1827e Woods, J. T., Toledo, O.—Splint for leg and thigh. N 59. 276

1827f Ahl, David, Newville, Pa.—Adaptable porous splints. P 71. 276

1827g Pilling, Geo. P., Philadelphia, Pa.—Gold, silver, and plated surgical instruments. N 52. 276

1827h Merivine, S. P., jr., Philadelphia, Pa.—Gynecological apparatus. N 52. 276

1827i Gemmig, J. H., Philadelphia, Pa.—Surgical instruments and appliances. N 57. 276

1827j Perry, Vincent, Germantown, Pa.—Elastic bandages for surgical purposes. N 57. 276


1827m Blanck, Wm., & Son, Philadelphia, Pa.—Artificial limbs and appliances. N 58. 276

1827n Leiner, M., New York, N. Y.—Surgical instruments, ear cleaners, filtering racks. P 66. 277

1827o Rhodes, Isaac M., Hancock, Mich.—Eazy chair, invalid bed, and fracture apparatus combined. N 59. 277


1827q Horn, W. H., & Bro., Philadelphia, Pa.—Trusses, abdominal supporters, etc. N 50. 276

1827r Darrach, S. A., Newark, N. J.—Wheel crutch and attachments; vulcanized rawhide spine support. N 38. 278

1827s Goodier, John, Philadelphia, Pa.—Lever and shield trusses for ruptures. N 58. 278


1827v Beckel, August, & Son, Philadelphia, Pa.—Crutches. 276

1827w Hinkle & Mayon, San Francisco, Calif.—Surgical and mechanical appliances, splints, operating chairs, crutches, support, and trusses. N 56. 276

For classes ′e′ exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Medical and Surgical Appliances, Tools.

1292 Handy & Boland, Atlanta, Ga.—Surgical and mechanical appliances, splints, operating chairs, crutches, supports, and trusses. N 56. 276


1296 Foster, James A., Philadelphia, Pa.—Artificial limbs. These limbs are manufactured at Philadelphia, Pa.; Cincinnati, O.; St. Louis, Mo.; Chicago, Ill.; and Detroit, Mich. Illustrated descriptive pamphlets free. N 53. 276

1297 Pingree, Luther F., Portland, Me. —Artificial limbs. N 53. 276

1298 Otto, F. G., & Sons, New York, N. Y.—Surgical instruments and orthopedic appliances. N 56. 276

1299 Bartlett, Buttran, & Packer, Boston, Mass.—Trusses. N 51. 276


1301 Palmer, B. Frank, L.L.D., Philadelphia, Pa.—New patent leg and arm, safety socket united to the stump, securing positive comfort. Original patent, 1846; new patent, perfected, 1873. New automatic system, for universal motion, power, and sound applied to writing, printing, music, etc. Original writing machine (type-writer) made in 1851, perfected in 1876. N 54. 276

1302 Seeley, I. B., Philadelphia, Pa.—Hard rubber trusses, abdominal supports, pile instruments, plastic surgical hoisyeri, bandages, etc. N 53. 276

1303 McElroy, P. J., East Cambridge, Mass.—Glass and family syringes, feeding and drinking tubes, nipple shields, medicine droppers, etc. N 51. 276

1304 Miller, Jas. S., Philadelphia, Pa.—Carpentry and bronzes. N 58. 276


1306 Allen & Johnson, Philadelphia, Pa.—Surgical and mechanical appliances, splints, operating chairs, crutches, supporters, and trusses. N 56. 276

1307 Atchley, John P., Philadelphia, Pa.—Surgical and gynaecological apparatus; artificial steel leg. N 57. 276

1308 Philadelphia Truss Co., Philadelphia, Pa.—Trusses, supporters, shoulder braces, elastic stockings, belts; combination truss and supporter. N 57. 276

1310 Gunning, Thomas Brian, 34 East Twenty-first street, New York, N. Y.—Fractured jaw appliances, including Secretary Seward's; illustrating heads; cleat palate appliances; teeth plates; regulating plates. N 51. 276

1311 Spillman, Henry, New Orleans, La.—Trusses, supporters, and shoulder braces. N 58. 276

1312 Davis, James T., New York, N. Y.—Artificial human eyes. N 54. 276

1313 Teufel, J. J., office and factory, No. 103 South Eighth street, Philadelphia, Pa. —N. 54. 276

1314 Codman & Shurtleff, Boston, Mass.—N 57.

a Surgical instruments, apparatus and appliances.

b Dental instruments, furniture, and materials; laboratory tools, etc.

1315 Justi, H. D., Philadelphia, Pa.—Artificial teeth, tools, and materials for their manufacture. N 54. 276

1316 Johnson & Lund, Philadelphia, Pa.—Artificial teeth, corundum wheel, gold foil, tooth powders, amalgams, dental instruments and materials. N 59. 277

1316a Neve, Edward, Omaha, Neb.—Artificial teeth. N 58. 277

1317 Wardle, Thos., Philadelphia, Pa.—Artificial teeth and models. N 58. 277

1318 Chapman, John Winslow, Hyannis, Mass.—Artificial teeth. N 58. 277

1317 Brown, E. Pamly, Flushing, N. Y.—Gold fillings in human teeth, dentists' cases, dental improvements. N 57. 277

1319 White, Samuel S., Philadelphia, Pa.—Artificial teeth, instruments, chairs, dental engines, stools, lashes, brackets, specimen, gold foil, corundum wheels, etc. N 55. 277

1320 White, Chas. A., Philadelphia, Pa.—Celluloid apparatus and dental tanks, process of forming sets of artificial teeth, artificial dentures. N 56. 277

1321 Metcalf, David H., Battle Creek, Mich.—Tinman's pattern sheets and squares. N 68. 28c

1322 Allen, J., & Son, New York, N. Y.—Artificial dentures. N 57. 277

1323 Abbey, Chas., & Sons, Philadelphia, Pa.—Dentists' fine gold foil, soft or non-adhesive and adhesive. Our specialty for fifty years. N 58. 277


1325 Taylor, J. Hare, Philadelphia, Pa.—Tooth paste, etc. N 57. 277

1326 Wardle, S., Cincinnati, O.—Specimens of dentistry. N 58. 277

1327 Neall, Daniel W., Camden, N. J.—Porcelain teeth. N 57. 277

1329 Crowther, D. W., Hagerstown, Md.—Mechanical and operative dentistry. N 58. 277

1330 Scott, Quincy A., Pittsburgh, Pa.—Atmospheric disk for holding artificial teeth in the mouth, dental specimens, dentrifice. N 56. 277

1331 Ludwig, Schmidt, & Mohl, Houston, Texas.—Enamel; specimens of teeth. N 57. 277

1332 Vallee, William, jr., New York, N. Y.—Gold and silver leaf, gold and platinum filling for dentists' use. N 63. 277

1334 Cutter, Ephraim, Cambridge, Mass.—Adjustable chair for invalids. N 58. 278

Hardware, Edge Tools, Cutlery, Metallic Products.


1336 Elgin National Watch Co., Elgin, Ill.—Watchmakers' tools. P 67. 280

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
1334a Shephardson, H. S., & Co., Shelburn, Falls, Mass.—Diamond, pool, and screw driver bits, nail sets, gimlets, tool cases, etc. H 68. 280
1337 Douglas Axe Manufacturing Co., Boston, Mass.—Axes, hatchets, adzes, picks, etc. N 67. 280
1338 Fugh, Job T., Philadelphia, Pa.—Screw augers and anger bits. Known as an old established manufacturer of augers and bits; established 1774: a descendant of the inventor of the screw auger. These augers are known to all the trade as the old hand-made auger, thereby gaining great durability. N 72. 280
1338a Ernst & Elterich, Jersey City, N. J.—Tools. N 68. 280
1339 Conard, A. & I., Whitemarsh, Pa.—Last steel wood-boring implements. P 71. 280
1339a Eagle Square Manufacturing Co., South Shaftsbury, Vt.—Boring machines, squares, and rules. P 78. 280
1340 Elmira Nobles' Manufacturing Co., Elmira, N. Y.—Carpenters' and shipwright's tools. N 71. 280
1340a Buck, Charles, Milbury, Mass.—Edge tools. N 71. 280
1341 Quint, S. H., & Son, Philadelphia, Pa.—Stencils, stamps, checks, tags, etc.; metallic pattern letters, for raised lettering or casting, names, addresses, etc. H 71. 280
1341a Genkinger, Adolph, Newark, N. J.—Tools, etc. N 68. 280
1342 Carter, Edwd., Troy, N. Y.—Nickel-plated goods; planes, mechanics' tools. P 69. 280
1342a Howell, S. J., Orange, Mass.—Polishing lathes and wheels, tweezers, saw frames. N 68. 280
1343 Stanley Rule & Level Co., New Brittain, Conn.—Rules, levels, squares, and carpenters' tools. N 68. 280
1343a Holland, James C., New York, N. Y.—Self-threading surgical and sewing machine needles, nail and packing needles. F 69. 280
1344 Billings & Spencer Co., Hartford, Conn.—Drop forgings, machinists' small tools, sewing machine shuttles. H 72. 280
1344a Bossard, H., Philadelphia, Pa.—Watchmaker's slide rest. N 43. 280
1345a Fry's Bookbinder's Stamp & Tool Manufactory, Philadelphia, Pa.—Stamps and tools for the embellishment of books. T 75. 280
1346 Rose, Wm., & Bros., Philadelphia, Pa.—Bricklayers', plasterers', moulders' and saddlers' tools. N 72. 280
1346a Douglass Manufacturing Co., New York, N. Y.—Mechanics' tools, cutting and boring implements. N 70. 280
1347 Colton, Alfred J., Philadelphia, Pa.—Stair hand-rail planes and double-edge cutters, carpenters' moulding planes. N 69. 280
1347a Pratt, Jas. T., & Co., New York, N. Y.—Tool chests for amateurs or mechanics. N 68. 280
1350 Kohler, Martin, Philadelphia, Pa.—Knee-rest for tailors. N 70. 280
1351 Carter, Henry, New York, N. Y.—Moulders' and plasterers' tools. N 70. 280
1352 Sinz, Philip, Baltimore, Md.—Glaziers' diamonds, machinery for circular and oval cutting, engravers' points, carbon steel. N 69. 280
1353 King, Josiah, & Son, New York, N. Y.—Planes and tools for wood workers. N 71. 280
1354 Booth, John, & Son, Philadelphia, Pa.—Carpenters' tools and sundries. N 69. 280
1356 American Shovel Co., Birmingham, Conn.—Shovels and scoops. F 68. 280
1357 Johnson, Wm., Hedenberg Works, Newark, N. J.—Carpenters' and other mechanics' tools and hardware. N 69. 280
1358 Hampton, Chas. F., Ardmore, Pa.—Augers and bits. N 71. 280
1359 Ten Eyck Axe Manufacturing Co., Colfax, Vt.—Axe, carpenters' edge tools, etc. N 68. 280
1360 White, Wm., Newark, N. J.—Axes, hatchets, adzes, bush hooks, stone hammers, picks, etc.; carriage shaft-couplings. P 71. 280
1361 Selser, Geo., & Co., Philadelphia, Pa.—Hammers, edge and railroad tools, coffee mills, saw cutters, tacks, and nails. N 68. 280
1362 Star Tool Co., Middletown, Conn.—Mechanists' and carpenters' tools; squares, bevels, gauges, standard steel rules, etc.; blind trimmings. These goods are of the finest finish; the squares are perfectly accurate and of different varieties, adapted to the wants of workers in wood or iron; they are finely graduated on spring-tempered steel, and are made only by this company. P 67. 280
1362a Gardam, Williams, & Son, New York, N. Y.—Index plates, dividing and draughting machines. 280
1363 Snell Manufacturing Co., Fiskdale, Mass.—Augers, auger bits, and boring machines. P 71. 280
1364 Buck Bros., Riverin Works, Milbury, Mass.—Shank and socket firmer chisels and gouges, plane irons, screw drivers, nail sets, etc. N 69. 280
1366a Forster & Kraenter, Newark, N. J.—Tools. N 68. 280
1367 Davis Level & Tool Co., Spring- field, Mass.—Adjustable levels and plane and iron planes. P 77. 280
1368 DeWitt, Morrison, & Kelley, Philadelphia, Pa.—Carpenters', millwrights', gasfitter's, pump, and car builders' machine and auger bits. These are the celebrated arrow brand for boring all kinds of wood. P 71. 280
1369 Shepherd & Lloyd, Philadelphia, Pa.—Scales, glass cutters, lard presses, and hardware specialties. N 71. 280

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
DEPT. II.—MANUFACTURES.

Hardware, Tools, Cutlery.

1371 Verkes & Plumb, Philadelphia, Pa.—Edge tools, hammers; railroad, mining, and blacksmiths' sledges. N 70. 280

1372 Bailey, Leonard, & Co., Hartford, Conn.—Linen planes, try squares, bevels. N 68. 280

1373 Mayo, M. C., Boston, Mass.—Plane. P 71. 280

1374 Miller, Edward, & Co. Meriden, Conn.—N 43.
1375 Machine oilers. 280
1376 Timmers' hardware. 284

1377 Bemis & Call Hardware & Tool Co., Springfield, Mass.—Machinists' tools. P 72. 280

1378 Newton, C. C., Dunkirk, N. Y.—Twisted drill taps, dies, and reamers. T 60. 280


1381 Donaldson, J. W., Massillon, Ohio.—Block stamps for stamping garmets for bridging and embroidery. P 68. 280

1382 Bailey Wringing Machine Co., New York, N. Y.—Metallic bench planes, spoke-shaves, box scrapers, etc. N 69. 280

1383 Klein, Logan, & Co., Birmingham Tool Manufactory, Birmingham, Pa.—Picks, mattocks, fire shovels, etc. N 71. 280

1384 Crossman, A. W., & Son, West Warren, Mass.—Carpenters' hand tools. N 70. 280

1385 Nixon, G. W. C., New York, N. Y.—Engravers' tools. N 63. 280

1386 Ohio Tool Co., Columbus, O.—Planes, screws, edge tools, plane irons, handles, etc. N 71. 280

1387 Palmer, Wm. F., Berry street, bet. Fourth & Fifth streets, San Francisco, Cal.—Edge tools. All tools warranted of excellent cutting qualities. N 70. 280

1388 Rue, Theodore, Philadelphia, Pa.—Stencils and tools, nickel-plated signs and numbers, steel stamps. T 54. 280

1389 Taylor, Thomas, cor. Eddy & Friendship streets, Providence, R.I., P.O. box 993.—Bloodstone burnishers. Bloodstone burnishers and reflectors made to order. N 71. 280

1390 Smyth & Pennington, Paterson, N. J.—Files and rasps. N 69. 280

1391 Whitney Manufacturing Co., South Ashburnham, Mass.—Tools used in manufacturing chairs. W 50. 280

1392 Franklin, Mrs. Esther P., Philadelphia, Pa.—Marking stencils and branding irons. T 38. 280

1393 Sandusky Tool Company, Sandusky, O.—Planes, plane irons, bench and hand screws, chiseled and file handles. P 71. 280

1394 Hopkins, C., Waltham, Mass.—Watchmakers' tools. N 68. 280

1396 Carpenter's planes, wrenches, adjustable clamps. 280
1397 Hairpins and police implements, padlocks. 284

1398 Harrison & Kellogg, Troy, N. Y.—N 68.
1399 Screw wrenches. 280
1400 Plain, tinned, japanned, and nickel-plated mailing iron castings to order, in all varieties; extra refined air-furnace irons. (Low freight opens all the year.) 283

1401 Wills, Edwin S., Philadelphia, Pa.—N 69.
1402 Tools. 282
1403 Wood screws, etc. 284

1404 Miller's Falls Co., Miller's Falls, Mass.—P 71.
1405 Mechanics' tools. 280
1406 Hardware. 284

1407 Lloyd, Supplee & Walton, Philadelphia, Pa.—N 70.
1408 Harmon, auger, speak shave. 280
1409 Locks. 284

1410 Vatterlein, John, Plainfield, N. J.—N 69.
1411 Carpenter's gauges. 280
1412 Gate hardware. 284

1413 Lowentrant, P., Newark, N. J.—N 70.
1414 Mechanics' tools. 280
1415 Hardware. 284

1417 Carpenter's tools. 280
1418 Carpenter's, sadders', and carriage hardware; gong door bells. 284

1419 Hotchkiss's Sons, Bridgeport, Conn.—N 72.
1420 Hand drills, saw sets, currycombs. 280
1421 Pruning shears. 281
1422 Harness snaps, bull rings. 284

1423 Beaver Falls Cutlery Co., Beaver Falls, Pa.—Table, pocket, and miscellaneous cutlery. Special exhibits, large carving knife and fork, nine and a half feet long, cost $350; revolving knife, with three hundred and sixty-five blades. N 70. 281

1424 Barney, E. H., Springfield, Mass.—Skates, perforating stamp, show case and counter combined. Barney & Berry's celebrated "Club All-clamp and Rink Skates," patented 1859, 1866, 1868, 1873. I show the advantage of a screw fastening for operating clamps on metal-topped skates; also, originality of the designs, fine quality, workmanship, and finish. P 68. 281

1425 Will & Finck, San Francisco, Cal.—California sizing and cutlery, bar tools. P 71. 281

1426 Union Hardware Co., Wolcottville, Conn.—Skates, skate straps, tool handles, wood turning, dog collars, etc. N 69. 281


1428 Goldechmidt, Herrmann, New York, N. Y.—Razor strops. N 71. 281

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
1408 Herder, L., & Son, Philadelphia, Pa.—Shears and scissors. N 60. 282
1409 Russell, John, Cutlery Co., Green River Works, New York, N. Y.—Table cutlery, butchers', hunters', painters', and druggists' knives, etc. N 67. 282
1410 Shipley, Howard W., Philadelphia, Pa.—Pocket cutlery. P 71. 282
1413 Meriden Cutlery Co., New York, N. Y.—Table cutlery. N 69. 282
1414 Holley Manufacturing Co., Lakeville, Conn.—Pocket cutlery. P 71. 282
1415 Lamson & Goodnow Manufacturing Co., Shelburne Falls, Mass.—Table and butchers' cutlery. N 70. 282
1416 United States Steel Shear Co., West Meriden, Conn.—Nid cast steel scissors and shears. N 71. 282
1417 Miller Bro. Cutlery Co., West Meriden, Conn.—Pocket cutlery. N 70. 282
1418 Heinisch's, R., Sons, Newark, N. J.—Tailors' shears, scissors, and trimmings. N 69. 282
1419 Wiss, J., Newark, N. J.—Cutlery, shears, and scissors, hand and pole pruning shears. P 68. 282
1420 Plimpton, J. L., New York, N. Y.—Parlor skates. P 71. 282
1421 Friedman & Lauterjung, New York, N. Y.—Razors. P 70. 282
1422 Funke, Leopold, St. Louis, Mo.—Knife with three hundred and sixty-six blades. T 60. 282
1423 Robbins, Clark & Biddle, Philadelphia, Pa.—Cutlery. N 43. 282
1424 Gesswein & Reichhelm, New York, N. Y.—Polishing implements and materials. N 70. 282
1425 Northfield Knife Co., Northfield, Conn.—Pocket cutlery. N 71. 282
1426 Breeden & Nelke, New York, N. Y.—Spring scissors and shears. P 71. 282
1428 Marx Bros., New York, N. Y.—Folding pocket scissors. N 69. 282
1430 Brady, Edward, Philadelphia, Pa.—U 63.
   a Metal boot fastening. 282
   b Model of iron fort. 283
1431 Willis, Aug. L., Philadelphia, Pa.—Ice creeper. H 71. 282
1432 Peck & Snyder, New York, N. Y.—Lace and skate knives. H 72. 282
1433 New York Knife Co., Walden, N. Y.—Table, pen, and pocket cutlery. N 67. 282
1434 Mitchell, J. E., Philadelphia, Pa.—Carpenters', engravers', opticians', and cutters' grindstones; ollstones, razor boxes, etc. P 67. 282
1435 Boyd & Chase, New York, N. Y.—Arkansas and Washita ollstone. N 69. 282
1436 Zucker & Levett, New York, N. Y.—Hard and soft rouge and composition for polishing metals. T 53. 282
   a Sund and emery paper, emery cloth, emery, corundum, flint. 282
   b Glue. 652
   c Curled hair. 669
1438 Ninninger, Edward, Philadelphia, Pa.—Quartz paste for sharpening knives, etc. T 52. 282
1439 Tucker, Geo., New York, N. Y.—Polishing compositions. N 68. 282
1440 White, T. R., Philadelphia, Pa.—Sandlino, for cleaning marble, metal, glass, etc. T 54. 282
1441 Harrison, W. H., & Bros., Philadelphia, Pa.—Lawn and elevated firegrates, fireplaces, etc. T 52. 282
1443 Dixon, Thos. S., & Sons, Philadelphia, Pa.—Grates, fenders, fireplace fittings, and gas logs. T 49. 283
1444a Manly, M. M., & Son, Philadelphia, Pa.—Wrought iron hand rails, mouldings, and bridge railings. T 60. 283
1446a Lalance & Grosjean Manufacturing Co., New York, N. Y.—Stamped iron culinary ware. T 68. 283
1448 Tin Plate Decorating Co., New York, N. Y.—Decorated tin plates, boxes, cans, etc. N 70. 283
1449 Miller & Krips, 716 & 718 Cherry street, Philadelphia, Pa.—Plain and ornamental bronze; white bronze, brass, German silver, and zinc castings. Also, sole manufacturers of bronze reliefs; a new style of mounting; bronze relief made to order, from life or photograph. P 72. 283
1450 Demuth, Wm., & Co., 501 Broadway, New York, N. Y.—Show figures in metal and wood, meerschaum and brier pipes, with rubber and amber mouthpieces; smokers' articles in general. P 69. 283
1451a Mott, J. L., Iron Works, New York, N. Y.—Fountains, vases, statues, settees, aquaria, aquarium fountains, drinking fountains, candlebra, lamp pillars, crestings, castings, railings, gates, summer houses, band stands, stable fixtures. N 54. 283
1452 Paxon, Comfort & Co., New York, N. Y.—Zinc monuments. T 64 and outside. 283
1453a Woods, Sherwood, & Co., Lowell, Mass.—White hulst wire ware, comprising an extensive line of household, table, and fancy goods, such as fruit, cake and jewel baskets, tea and coffee strainers, castors, toilet articles, etc. N 72. 283

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 37-43.
Wrought and Cast Metal Work, Hardware.

1447 Ansonia Brass & Copper Co., Ansonia, Conn.—Brass and nickel-plated kettles. N 57.

1448 Rohrman, J. Hall, & Son, Philadelphia, Pa.—Iron, coffee, and spice paddles; water coolers and decorated japanned tinware. P 70.


1450 Champion Fence Co., Kenton, O.—Wrought and malleable iron fence and gate. The seamless joints claimed for the champion iron fence are: 1st—The longitudinal rail is rolled in T shape, thus giving the greatest lateral strength, also horizontal strength, when put up in fence, without bolts, rivets, or forging whatever, leaving the iron as it comes from the rolls. 2d—As the arched or cylindrical form of the iron resists the greatest strain, the pickets are round, or concave, convex, with a flange on each side, forming the strongest picket that can be made from the same amount of iron. 3d—The ornamental used, together with the different connecting parts, are made of refined malleable iron, or stamped from wrought iron plates, and of any desired form, and at one-tenth the cost of making them by the forge. 4th—The pickets are driven into the ornaments and passed to nearly the top of the picket, at the rear of the ornaments. There are lugs and clips, which are clinched, combining ornament and picket together, forming a strong and durable top-head for the picket. 5th—the fence is put together with clips; these are slipped on the T rail, and the sides of the ornaments form circles, or segments of circles, thus rendering them adjustable to any and all grades or angles. 6th—the panels are connected with a compound clamp, which holds them firmly together, at the same time allowing for the expansion and contraction of the iron. 7th—that we have in the combination of our rail and picket the strongest and most ornamental fence that can be made, from the same amount of material. 8th—that we can, by our adjustable posts, keep our fence in perfect line; also, that we can set the fence upon coping or stone walk of any grade, the same as upon our iron foundation. 9th—that we can pack the fence for shipment, in compact bundles, and put it upon the ground as conveniently as a wooden fence can be put up. 10th—that we manufacture the fence without the use of any costly and cumbersome machinery, being virtually made when the iron comes from the foundry and the rolls. 11th—the brake upon which the fence is set is of cast iron, eighteen inches wide at the bottom, and six inches at the top; twenty-eight inches in length, which is set in the ground; upon its foundations is placed a light iron post, adjustable front and rear, and also adjustable at the top, while at the bottom it would be stationary, or vice versa. Upon this post we also adjust the height of the fence. One of the benefits of our invention is, that we make a fence that looks light, yet strong and durable. (Ohio State Building.)


1452 Armbruster, Jacob H., Philadelphia, Pa.—Organ and sash weights. (Organ, East Gallery.)


1454 Bray, Edw. L., Boston, Mass.—Balance spring curtain fixture. (Art Gallery.)

1454 Stewart & Mattson, Philadelphia, Pa.—Building hardware, locks, door knobs and trimmings. N 69.

1454a Dexter Spring Co., Hultan, Pa.—Carriage springs. T 60.


1455a Cleveland Steel Horseshoe Co., Cleveland, O.—Steel horseshoes and bars, hand shoe formers. T 59.

1456 Trenton Lock & Hardware Co., Philadelphia, Pa.—Patent lever and spring, with corrugated bolt door locks, latches, knobs, and other hardware. N 68.


1457a Smith & Egge, Bridgeport, Conn.—Blacksmithing, hinges, chains, etc. N 70.

1457 Wells & Hope Co., Philadelphia, Pa.—Metallic show cards and advertising signs; decorative glass printing, etc. P 71.


1459 Corbin, P. & F., New Britain, Conn.—House trimmings and miscellaneous hardware. N 72.


1461 Stanley Works, New Britain, Conn.—Wrought iron bars, japanned, bronzed, and plated; hinges, door bolts, etc. P 71.

1461a Orbeton, W. W. S., Boston, Mass.—Horse shoes, brads, and screw-brace blind hinges. N 68.


1467 Dunbar, Hobart, & Whidden, South Abington, Mass.—Tacks, brads and nails, steel shanks, heel plates, etc. P 74.

1468 Hildebrand &Wolf, Philadelphia, Pa.—Trunk locks, padlocks, dead-latches, door springs, etc. P 69.

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
1469 Carr, Crawley, & Devlin, Philadel-
phia, Pa.—Building, carriage, and saddlery hardware; malleable iron
brass, and steel castings. N 72. 284
1470 Hall’s Safe & Lock Co., Cincin-
nati, O.—Bank and time locks. H 67. 284
1471 Whitaker & Skirm, Trenton, N. J.—Iron chains, chute nails. T 65. 284
1472 Gould’s, M., Sons, 83 & 85
Duane street, New York, N. Y., and
Commerce street, Philadelphia.—Stair
rods, step plates, dog collars, uphol-
stery, and trunk hardware. Manu-
facturers of stair rods, stair plates, dog
collars, step ladders, trunk rivets, and all
kinds of trunk hardware; also, a general
line of upholstery hardware. Factory,
Newark, N. J. N 71. 284
1473 Morton, Thos., New York, N. Y.—
Sash chain and attachments for sus-
pending windows, doors, etc. T 49. 284
1474 Mallory, Wheeler, Co., New Ha-
ven, Conn.—Door locks and knobs, pad-
locks, etc. N 69. 284
1475 Gaylord Manufacturing Co.,
Chicago, Mass.—Cabinet locks. N 70. 284
1476 Union Manufacturing Co., New
Britain, Conn.—Plain and ornamental but
t hinges. N 69. 284
1477 Mersereau, W. T. & J., Newark,
N. J.—Stair rods and plates, dog collars
and muzzles, bridle front, and upho-
sterers’ hardware. N 71. 284
1478 Marvin’s Safe Co., New York, N.
Y.—Locks. H 69. 284
1479 Bohannan, Wilson, Brooklyn, N.
Y.—Brass spring padlocks and ear locks.
P 68. 284
1480 Union Steel Screw Co., Cleve-
lund, O.—Bessemer steel wood screws,
with samples showing stages of manufac-
ture. T 59. 284
1481 Clark & Co., Buffalo, N. Y.—
Nickel-plated ‘builders’ hardware. N
71. 284
1482 Van Wagoner & Williams, 82
Rock street, New York, N. Y.—
Spring hinges and door springs of the
leading kinds, for screen and other doors,
gates, etc. All articles of superior manu-
facture. N 74. 284
1483 Gong Bell Manufacturing Co.,
East Hampton, Conn.—Bells. P 72. 284
1484 Romer & Co., Newark, N. J.—
Locks for railroad switches, cars, prisons,
stores, etc. N 71. 284
1485 Cowell, J. J., & Co., Newark, N. J.—
Builders’ and trunk hardware. Manu-
facturers of trunk and builders’ hardware,
sash pulleys, trunk rollers, catches, hand-
le caps, stay hinges, clamps, etc. Also
malleable and gray iron small castings. N
71. 284
1486 Middletown Tool Co., Middle-
town, Conn.—Plane iron, harness snips,
washer cutters, hitching chains, plane-
makers’ hardware, etc. P 71. 284
1487 Whipple, H. J. P., West Meriden,
Conn.—Door-knob attachment. P 68. 284
1488 McEachern, Daniel, Wiliington,
Del.—Cast iron Centennial chain, each
link representing a State and giving the
Governor’s name. Q 78. 284
1490 Tiebout, W. & J., New York, N.
Y.—Brass, galvanized, and ship chandlery
hardware. H 66. 284
1491 Parker & Whipple Co., West Meri-
den, Conn.—Door-knob attachment and
adjustment. N 69. 284
1492 Thorn, Stephen S., 39 Oliver
street, Newark, N. J.—Brass, copper,
and iron wire ferules, from 3/4 to 3½ inches,
for paint brushes; these ferules warranted
not to burst or expand; bonnet and insta-
lation wire. N 69. 284
1493 Worrell Bank Lock Manufactur-
ing Co., Philadelphia, Pa.—Bank lock.
H 70. 284
1496 Herring & Co., New York, N. Y.—
Safe, bank, and time locks. H 69. 284
1497 Neuman, R. & Co., Newark, N. J.
—Satchel and traveling bag frames, and
bag trimmings. P 68. 284
1498 Van Alen & Co., Northumberland,
Pa.—Cut nails and spikes. T 66. 284
1499 Blake Bros. Hardware Co., New
Haven, Conn.—Hardware for builders’,
cabinet makers’, and carriage makers’ use.
P 69. 284
1500 Miller, D. K., Lock Co., Philadelp-
phia, Pa.—Locks. P 70. 284
1501 Eagle Lock Co., Terryville, Conn.
—Trunk and cabinet locks. H 67. 284
1502 Judd, Hubert L., New York, N.
Y.—Upholstery and fancy hardware. N
69. 284
1503 Coleman Eagle Bolt Works, Phil-
adelphia, Pa.—Carriage bolts, nuts, and
axle clips. P 71. 284
1504 Meeker, D. M., & Son, Newark, N.
J.—Iron, bronze, and German silver cast-
ings. N 71. 284
1505 Hall, P. W., Austin, Texas.—Com-
bination door, drawer, and trunk locks.
P 68. 284
1506 Norwalk Lock Co., South Nor-
walk, Conn.—Door locks, knobs, pad-
locks, and builders’ hardware. N 70. 284
1507 Terwilliger & Co., New York, N.
Y.—Safe locks. H 72. 284
1508 Arms, Bell, & Co., Youngstown,
Ohio.—Bolts, washers, and washers. V 65. 284
1509 Wheeling Hinge Co., Wheeling,
W. Va.—Hinges, butt, wrought goods,
and washers. N 68. 284
1511 Vanduzen & Tift, Cincinnati,
O.—Bells. T 53. 284
1512 American Screw Co., Providence,
R. I.—Ginier pointed screws of iron,
brass, and steel; coach, hand rail, and ma-
chine screws; rivets; stove and tire bolts.
P 69. 284
1513 Branford Lock Works, New
York, N. Y.—Rim and mortise door locks
and latches, brass and steel keys, door
knobs, lock furniture. P 69. 284
—Rim and mortise locks and latches;
safety locks and night latches. N 72. 284
1515 Wilson, John, Chicago, Ill.—Fire
nozzles. T 69. 284
1516 Keystone Hardware Manufac-
turing Co., Reading, Pa.—Hardware.
P 69. 284
—Hand-made horseshoes. T 71. 284

For classes of exhibits, indicated by numbers * end of entries, see Classification, pp. 27-45.
HARDWARE, RUBBER GOODS, CORDAGE, ETC.

1517 Evans, F. H., Brooklyn, N. Y.—Expansion bolts and screw fastenings; photographs of other manufacturers. P 69. 284
1519 Field, A., & Sons, Taunton, Mass.—Tacks, brads, nails, etc. P 68. 284
1520 Valentine & Butler Safe & Lock Co., New York, N. Y.—Safe locks. H 70. 284
1521 Lewis, Oliver, & Phillips, Pittsburgh, Pa.—Wagon and heavy hardware, fence pickets, etc. T 64. 284
1522 New Britain Lock Co., New Britain, Conn.—Key register; dial, bank, safe, and time locks. N 72. 284
1523 American Wire & Screw Nail Co., cor. Madison and State streets, Covington, Ky.—Common, bright, smooth, and barbed wire nails with sharp points; small, large, depressed heads and without heads. Moulding nails, wire cigar-box nails, iron and brass oval head escutcheon pins. Wire screws, steel nails (patented). These nails have round, tapering points, and screw thread till under the head. Are to be driven with a hammer as quick as common nails, but turn and are self-tightening, while driving, under the hammer. Wire nails of every description, also blued, tinned, and colored nails. P 71. 284
1524 Buckman, Ira, Brooklyn, N. Y.—Torsion spring hinge, automatic window lock and door fittings. N 68. 284
1525 Riverside Iron Works, Wheeling, W. Va.—Nails and spikes. T 64. 284
1526 Turner & Seymour Manufacturing Co., Wallingvillle, Conn.—Brass and iron upholstery goods and hardware, and notion goods. N 68. 284
1527 Sargent & Greenleaf, Rochester, N. Y.—Chronometer, bank, safe, and flat key locks. I 72. 284
1528 Wilcox, Wm., Manufacturing Co., Middletown, Conn.—Padlocks, plate locks, and keys. N 71. 284
1529 King, J. M., & Co., Waterford, N. Y.—Stocks and dies, plug and taper taps, flairs, etc. N 71. 284
1530 Keyless Padlock Co., New York, N. Y.—Keyless padlocks. N 70. 284
1531 Lyon, Sylvanus, New York, N. Y.—Locks. N 72. 284
1532 Johns, H. W., New York, N. Y.—Tacks, etc. P 47. 284
1533 Barton, W. E., East Hampton, Conn.—Bells. N 71. 284
1534 Clarke Combination Lock Co., Baltimore, Md.—Combination keyless locks. P 63. 284
1535 Orbeton, Wm. W., Boston, Mass.—Screw braces and hinges. N 68. 284

FABRICS OF VEGETABLE, ANIMAL, OR MINERAL MATERIALS.

1536 Glendale Elastic Fabrics Co., Easthampton, Mass.—Woven and braided elastic rubbers. F 68. 284
1537 Easthampton Rubber Thread Co., Easthampton, Mass.—India rubber thread and rubber in process of manufacture. F 68. 285
1539 Sellers, Chas. P., Philadelphia, Pa.—Cork boxes and whisks. T 46. 285
1541a Isaacs, M. C., & Co., Chicago, Ill.—Wire brooms, casting, and wire brushes. N 71. 285
1541a Kerr, Hugh S., Philadelphia, Pa.—Sponge brushes. B 71. 286
1542 Lovell, G. H. & M. F., Philadelphia, Pa.—Ear brush. T 50. 286
1542a Pollock & Son, Newark, N. J.—Brushes, buffs, etc. N 68. 286
1543 Miles, Bros., & Co., New York, N. Y.—Brushes. N 69. 286
1544 Grand Rapids Brush Co., Grand Rapids, Mich.—Brushes. N 72. 286
1546 Bowman, C. A., & Bro., Madison, Ind.—Clothes brushes made of broom corn. T 46. 286
1547 Johns, H. W., New York, N. Y.—Brushes. P 47. 286
1548 Florence Manufacturing Co., Florence, Mass.—Hair brushes. B 70. 286
1552 Vuye, Robt. H., Brooklyn, N. Y.—Rawhide, rope, sash cord, and round belting. B 68. 287
1553 Hooper, Wm. E., & Sons, Baltimore, Md.—Twine. D 78. 287
1554 Hart, A. H., & Co., 90 White street, New York, N. Y.—Flax Mills; flax twines for upholsterers, sail, barrel makers, etc.; flax yarns, hemp twines, and hemp threads, etc. B 68. 287
1555 Wall's, William, Sons, New York, N. Y.—Ships' rigging: rope and cordage. E 78. 287
1557 Hart, Clarence A., Philadelphia, Pa.—Painted silk banners. B 78. 288
1558 Lilley, M. C., & Co., Columbus, O.—Masonic goods and society supplies. Manufacture society furniture, jewels, regalas, uniforms, banners, band and military goods. Price lists upon application. P 65. 288
1559 Wilson, J. H., Philadelphia, Pa.—Regalas, flags, and banners. F 70. 288
1560 New England Bunting Co., Lowell, Mass.—Bunting. B 75. 288
1561 Salisbury & Co., New York, N. Y.—Weaving flags, engraving, designing, lithographing, and printing; original manufacturers of American, election, and other decorations—all nations—in sets or single. H 77. 288

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
HERRING'S SAFES.

AWARDED HERRING'S SAFES.

WORLD'S FAIR, LONDON.

EXPOSITION UNIVERSELLE, PARIS.

"FIRES TRIED, TIME PROVEN."

HERRING'S BANKERS' SAFES.

Security against the powerful tools and ingenious devices of the scientific Burglar.

Herring's Infallible Bank Lock

Affords the security of both a Combination and Time Lock,

INSURING PROTECTION AGAINST MASKED BURGLARS

MANUFACTURED BY

HERRING & CO.,

251 & 252 BROADWAY, NEW YORK,
56-60 SUDBURY ST., BOSTON.
E. C. PRATT, BRO. & CO.,
29 MERCER ST.,
NEW YORK,
SOLE AGENTS FOR
JOHN ENGLISH & CO.'S
CELEBRATED PINSTUCK
NEEDLES
See Show Case in Main Building, Class 254, Siding 4.

ALSO,
PEARL BUTTONS,
ON PATENT CARDS, MOUNTED IN SQUARES OF ONE DOZEN EACH.

FISH LINES,
FISH HOOKS,
SMALL WARES,
ETC., ETC.
1562 Piton, Camille, Philadelphia, Pa.—Trophies representing America, Europe, Asia, and Africa. (Arms and Centre Triangle.) 268

1563 Tremain, Chas., Manlius, N. Y.—Paper barrels; cheese and fruit packages. T 57. 269

1564 Trasel, Edward G., New York, N. Y.—Papier maché household ware, chamber sets, pails, cuspidors, etc. P 64. 269

1565 Wakefield Rattan Co., Boston, Mass.—Rattan baskets. T 57. 269

1566 Beaudett, Homer J., Greenpoint, N. Y.—Fancy scroll work. P 50. 269

1567 Waters, E., & Sons, Troy, N. Y.—Boat barrels, camp stools, seats, packages for volatile liquids, etc., made of paper. B 73. 269

1568 Jennings Brothers, 352 Pearl street, New York, N. Y.—Japanese paper ware. Their manufacture of pails, basins, pitchers, spittoons, cuspidors, etc., are thoroughly waterproof, durable, and ornamental; are not affected by the climate. T 68. 269

1569 Preston & Merrill, Boston, Mass.—Wooden boxes. P' 48. 269

1570 Dorman Manufacturing Co., New York, N. Y.—Baskets, urns, carriage bodies, etc. P 59. 269

1571 Paxton, Comfort, & Co., Philadelphia, Pa.—Burial robes and dresses; cas ket trimmings. B 73 and outside. 290

1572 Smith, Wm. M., West Meriden, Conn.—Casket trimmings, handles, name plates, and ornaments. N 43. 290

1573 Rogers, C., & Bros., West Meriden, Conn.—Gold and silver plated coffin and casket trimmings. F 72. 290

1574 Chase, F. & P. F., Penn Galvanic Works, Philadelphia, Pa.—Galvanized iron goods, sheet iron, water pipe, boilers, hardware, shipping and railroad, bar, hoop, and chain iron. P 68. 291

1574e Danby, Geo., & Co., Philadelphia, Pa.—Galvanized sheet iron, mantels, cornices, railings, etc. Y 59. 291


1577 Kittredge Cornice & Ornament Co., Salem, O.—Sheet metal cornices, doors, shutters, and pavilion; architectural ornaments, light wrought iron work. (Outside.) 291

1579 Falstrom & Tomvquist, Passaic City, N. J.—Galvanized iron cornice and ornamental sheet iron work for buildings. P 68. 291


1582 Brown & Owen, Philadelphia, Pa.—Cemetery inclosure, ornamental iron work, and wrought iron pipe. (Outside.) 291

1583 Cornell, J. B. & J. M., 141 Centre street, New York, 9 Studio Buildings, Boston, 477 Walnut street, Philadelphia. —All kinds of heavy and light wrought and cast iron work for buildings and bridges; cast iron fronts, stairs, columns, girder, lamp posts, etc.; wrought iron columns, girders, beams, railings, sheet bath, etc.; steel and iron rolling shutters, fire-proof columns, burglar proof safes and vaults. Works cover six acres of ground. P 70. 291


1585 Zinc Roofing & Ornamenting Works, Chicago, III.—Ornaments in pressed and cast zinc, brass, and copper; zinc statues, emblematic signs, etc. P 69. 291

1586 Buringer Brothers, Dayton, O.—Ohio coat-of-arms of galvanized iron. (In guide of Ohio State Building.) 291


Carriages, Vehicles, and Accessories.

1587 Blake Bros. Hardware Co., New Haven, Conn.—Trucks for moving open barrels and kegs. P 69. 294

1588 Newichawanick Co., South Berwick, Me.—Horse blankets and goods for horse clothing. R 78. 296

1588e Hopkins & Robinson Manufacturing Co., Akron, O.—Animal poles. 296

1589 Pettingell & Sawyer, East Cambridge, Mass.—Horse and wagon covers. F 76. 296

1590 Eager, P. B., Tower, & Co., Boston, Mass.—Oiled horse covers. C 78. 296


For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
GREAT BRITAIN.

(North of Nave, Columns 23 to 38.)

Chemical Manufactures.

1 Hutchinson, John, & Co., Widnes, Lancashire.—Soda ash, soda crystals, caustic soda, bicarbonate of soda, salt cake, bleaching powder, and sulphur recovered from vat waste. 200

2 Corbett, John, Stoke Prior Salt Works, Worcestershire.—Refined salt. 200

3 Richards, Kearne, & Gasquoine, Maltins Bank Alkali Works, Sandbach, Cheshire.—Brine, sulphate of ammonia, soda ash, bicarbonate of soda. 200

4 Gaskell, Deacon, & Co., Widnes, Lancashire.—Carbonated soda ash, and refined alkali, bleaching powder, soda crystals, bicarbonate of soda, and chloride of calcium. 200

5 Brunner, Mond, & Co., Northwich, Cheshire.—Alkali or carbonate of soda. 200

6 The Desoto Alkali Co. (limited), Widnes, Lancashire.—Caustic soda, and black ash or ball soda. 200

8 Runcorn Soap & Alkali Co. (limited), Liverpool.—Bleaching powder, soda ash, crystals of soda, caustic soda, and refined resin. 200

9 Muspratt Bros, & Huntley, Liverpool.—Soda ash, caustic soda, bleaching powder, soda crystals, and bicarbonate of soda. 200

10 Muspratt, James, & Sons, Liverpool.—Soda ash, cream caustic soda, bleaching powder, chloride of potash, salt cake, and brimstone. 200

12 Spence, Peter, Manchester.—Crystallized alum, in block and crystals, and a new alumino-ferric compound for precipitating sewage and for paper making. 200

13 Higgin, Thomas, & Co., Liverpool.—Salt. (Agricultural Hall.) 200

14 The Newcastle Chemical Works Co. (limited), Newcastle-on-Tyne.—Soda ash, alkali, bleaching powder, crystals and bicarbonate of soda, caustic soda, chloride of calcium. 200

15 White, John & James, Shawfield Works, Glasgow.—Bichromate of potash. 200

16 Liver Alkali Works Co. (limited), Liverpool.—Caustic soda. 200

17 Young, James, Kelly, Wemyss Bay, N. B.—Illustrations of manufacture of carbonate of soda, chloride of potash, products from petroleum, coal, and shale, preservation of iron ships. 200

18 Greenbank Alkali Co., St. Helen's, Lancashire.—Chemical products, pure caustic soda, chloride of potash. 200

20 Jennings, T., Brookfield Chemical Works, Cork.—Carbonate of and calcined magnesia. 200

   a Carbolic and cresylic acids and derivatives. 200
   b Carbolic acid soaps. 201

22 Parkinson Bros., Burnley.—Baking powder. 200

23 Morson & Son, London.—General chemicals and specialities, creaseo, petroleum, etc. 200

24 Allen & Hanburys, London.—Paté de jujube and analogous articles. 200


26 Chance Bros., Alkali Works, near Birmingham.—Chemical products. 200

27 Wyndham, F., & Co., London.—"Esprit des (Eufs" (spirit of eggs), a medicinal compound. 200

28 Price's Patent Candle Co. (limited), Belmont Works, London.—Candles, night-lights, glycerine, fatty acids, machinery oils; toilet, household, and mill soaps, glycerine, paraffine, stearine, and tapers. 201

29 Field, J. C., & J., London.—Candles, toilet soaps, beeswax, and refined yellow wax, white wax, dyers' soaps, sealing wax, and fancy ornamental candles. 201

30 Pears, A. & F., Lanadron Soap Works, Isleworth, near London.—Transparent soap. 201

31 Wright & Holdsworth, London.—Dog soap, worm powders, Bauer's baby soap. 201

32 Cohné, Sigismund, London.—Chemical and medical soaps. 201

33 Craig & Rose, Caledonian Oil & Color Works, Edinburgh.
   a Oils. 201
   b Paints and colors. 202

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 77-45.
BRITISH ADVERTISEMENTS.

PRIZE MEDAL.
BARLOW & JONES,
LIMITED,
Spinners, Printers & Manufacturers
by Power,
LONDON, 1862.

SILVER MEDAL.
TOILET AND MARSEILLES QUILTS,
COUNTERPANES, ALHAMBRA, SHEETS,
SHEETINGS, COTTON BLANKETS, TOWELS TOILET COVERS & MATS,
SKIRTS, QUILTINGS,
WHITE AND PRINTED DAMASKS, PLAIN AND FANCY MUSLINS, &c.
2, Portland Street, Manchester, England.

American Agent—Mr. D. A. LINDSAY, No. 54, Howard Street, New York.

W. & C. SCOTT & SON
Winners of the International Gun Trial, NEW YORK, 1873, for Points of Merit of Shooting Qualities, System of Action, Workmanship, &c. &c.
PATEENTEES & MANUFACTURERS OF GUNS & RIFLES for
India,
China,
Ceylon,
Australia,
Cape,
ON SALE AT MESSRS. GRUBB & CO.'S,
Philadelphia.

PREMIER GUN WORKS, BIRMINGHAM, ENGLAND.

W. W. GREENER'S
PATENT TREBLE WEDGE-FAST BREECHLOADER,
THE WINNING GUN at the great London Gun Trials, in all the classes, for improved boring. Will kill game at over 100 yards.
The strongest and most durable breach action ever invented,
and the easiest to load.
On Sale at

PREMIER GUN WORKS, BIRMINGHAM, ENGLAND.

DAVID SMITH & CO., LIMITED, Wool Extractors, HALIFAX, and the MILL HILL WOOL & RAG EXTRACTING COMPANY, LIMITED, HUDDERSFIELD, WHOSE INTERESTS ARE AMALGAMATED.

ALEX. HENRY,
Gun and Rifle Manufacturer,
By Special Appointment to their Royal Highnesses the Prince of Wales & the Duke of Edinburgh.

American Agent—Mr. D. A. LINDSAY, No. 54, Howard Street, New York.

ALEX. HENRY,
Gun and Rifle Manufacturer,
By Special Appointment to their Royal Highnesses the Prince of Wales & the Duke of Edinburgh.

London Branch, 118, PALL M'LL.

Neither bugs, lice, fleas, moths nor vermin will live in cloths, blankets or rugs made of these Wools; nor will they lodge in any bed, bedding or stuffings made therewith. On account of their chemical properties and the manner in which they are manipulated, goods manufactured with these Wools are not subject to mildew. Contracts may be entered into for regular supplies of them. Samples supplied.

ST. MARY'S WORKS, BIRMINGHAM.

MANUFACTORY, 12, SOUTH SAINT ANDREW STREET, EDINBURGH, N.B.
EDWARD & JOHN BURKE'S
CELEBRATED
EXTRA FOREIGN STOUT
AND
ALLSOPP'S BURTON ALES
To be obtained at the Restaurants in
the Exhibition Buildings,
And sold by all first-class Liquor Dealers, Restaurateurs, Hotels &c.,
in the whole of the United States.

JOSEPH HAMBLET,
Percy Blue Brick Works,
WEST BROMWICH, Staffordshire,
MANUFACTURER OF
VITRIFIED BLUE BRICKS, COPINGS, TILES, PIPES,
AND EVERY VARIETY OF
TERRA METALLIC IMPERISHABLE PAVINGS,
&c., &c.

PRICES AND BOOKS OF ILLUSTRATIONS ON APPLICATION.

CLEEVE HOOPER, Junr.,
6, 7 & 8, NEW WESTON STREET
BERMONDSEY, LONDON, S.E.,
ENGLAND.

JOHN G. MCGEE & CO.,
BELFAST, IRELAND,
INVENTORS AND SOLE MAKERS OF THE
CELEBRATED "ULSTER" COAT.

W. BARTLEET & SONS,
MANUFACTURERS OF
NEEDLES, SEWING MACHINE NEEDLES,
FISH HOOKS AND FISHING TACKLE,
ABBEY MILLS, REDDITCH, ENGLAND.
GREAT BRITAIN.

Chemicals, Ceramics.

34 Williams, Miles, Britannia Varnish Works, Wigan, Lancashire.
- Fluid carburetter and drawings; improvement in manufacture of gas and liquid fuel. 201
- Varnishes, varnish paints, enamels, lacquers, and specimens of work. 202

35 Hickason, Mrs. M. A., London.—Marking ink, pens, pen-stretcher, and blacking, and framed specimens. 202

36 Turner, Chas., & Son, London.—Varnishes, fine colors, gums. 202

38 Lyons, William, Manchester.—Writing and copying fluids and inks, marking ink, ink powders, paper dye tablets. 202

39 Bowman, Charles, London.—Solid ink, stencil plates, stencil brushes, etc. 202

40 Rawlins & Son, BrookWorks, Prescot.—Ultramarine and smalls, with raw materials. 202

41 Chambers, T. F., Hull.—Black varnish. 202

42 Johnson Bros., Hull.—Colors, varnishes, machinery oils, and locomotive and anti-friction greases. 202

44 Rowncy, George, & Co., London.—Pigments, colors, varnishes, artists’ materials, and framed specimens. 202

45 Storer, David, & Sons, Glasgow.—Colors, pigments, and wood stains; Venetian, Indian, and other reds; drop black, greens, and other pigment colors. 202

46 Cooper & Co., London.—Writing, register, and Japan inks, copying and fluid ink; red, scarlet, blue, and violet inks. 202

47 Silicate Paint Co., Liverpool.—Silicate paints and colors; petrifying liquid for damp walls; enameling and anti-fouling paints; cement for steam joints, anti-incrustation fluid, nitre killer, etc. 202

47a Young & Strang, Glasgow.—Gums for calico printing. 202

48 Blackwood, John, & Co., London.—Writing, copying, and indelible marking inks. 202

49 Mackay, John, Edinburgh.
- Spirit varnishes and polishes for coating wood of all colors, white, mahogany, oak, or ebony. 202
- Fluid flavoring essences from spices, fruits, and vegetables. 203

50 Stephens, Henry Charles, London.—Writing fluids and copying inks, ink powders, machine ruling and indorsing inks; stains for wood. 202

51 Crown Perfumery Co., London.—Perfumes and toilet requisites. 203

52 Brooks, Henry, & Co., London.—Perfumery. 203

53 Atkinson, J. & E., London.—Perfumery and toilet articles. 203

54 Jaap, John, Glasgow.—Flavoring essences and other preparations. 203

55 Lew, Son, & Haydon, London.—Perfume extracts, toilet soaps. 203

56 Perks, Samuel, Hitchin Herts.—Essential oil of lavender, extract lavender flowers, etc. 203

57 Thilellay, Eugene Henry, London.—Hair tincture, dyes, and bleaching liquid, tonics, and cultivators. 203

58 Rimmel, Eugene, London.—Perfumery and toilet articles; perfumed vaporizers, etc. 203

59 Evans, Sogs, & Co., Liverpool, and Evans, Lescher, & Evans, London.—Perfumery. 203

59a Sturge’s Montserrat Co. (limited), Broad street, Birmingham.—Essences. 203

60 Bryant & May, Fairfield Works, London.—Safety matches, wax vestas and vesuvians, decorated metal and other boxes. 204

62 Bickford, Smith, & Co., Tuckingmill, Cornwall.—Safety fuses for blasting operations. 204

63 Pigou, Wilks, & Laurence (limited), London.—Military, sporting, African, and mining powders of every description. 204

64 Lacey, Richard George, Coast Guard Station, Leigh, Essex.—Rocket apparatus for throwing lines from one ship to another. 205

Ceramics—Pottery, Porcelain, Glass, etc.

65 Peake, Thomas, The Tileries, Tunstall, Staffordshire.
- Paving and facing bricks. 206
- Ridge, roofing, and flooring tiles; ornamental tiles for garden borders, skirtings, and mural decorations. 206

66 Hamblet, Joseph, Piercy Blue Brick Works, West Bromwich, Staffordshire. 206
- Vitrified blue bricks, copings, plinths, stable floor bricks, and quarries. 206
- Ridges, roofing tiles, and terra metallic pavings. 206

67 Wood & Ivery, Albion Brick Works, West Bromwich, Staffordshire.—Blue terra metallic building and fancy bricks; mouldings, copings, footpath paving bricks, grooved stable floor bricks, terminals; terra metallic vases, trusses, etc. 206

68 Johnson & Co., Dittoing Potteries, Sussex.—Terra-cotta as applied to building purposes; terminals, vases, ridge tiles, and general terra-cotta work. (Agricultural Hall.)

69 Matthews, John, Royal Potteries, West-sur-le-Mâre, Somerset.—Terra-cotta vases, fountains, and baskets; garden pottery, etc. 206

70 Watcombe Terra-Cotta Co. (limited), Watcombe, South Devon.—Terra-cotta, painted vases and plaques, statuettes, etc.; frescoes for mural adornment, and architectural terra-cotta specimens. 206

71 Brooke, Edward, & Sons, Fieldhouse Fire Clay Works, Huddersfield, Yorkshire.
- Sanitary tubes. 206
- Fire bricks and clay for furnaces; sewer ventilators; silica fire bricks for furnaces. 207

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 97-145.
DEPT. II.—MANUFACTURES.

Ceramics.

72 Stiff, James, & Sons, London.  
- Terra-cotta jars, bottles, tiles, vases, mauldines, water filters, refrigerators, air bricks, stoves, and stove linings, tablets with figures in bas-relief, figures for church and other decorations; sanitary ware, sewer traps, drain pipes, etc.  
- Terra-cotta stoves and stove hinges.  
- Files.  
- Chemical stoneware, water filters, refrigerators, etc.  

73 Jennings, George, London.  
- Appliances for ventilation, terra-cotta bricks, etc.; stoneware drain pipes, gulley traps.  

74 Holland, William Thomas, Yrisymud, South Wales.  
- Architectural terra-cotta, bricks and tiles, sanitary pipes and ware.  
- Fire bricks and fireproof cements.  
- Ceramic goods, earthenware, or faience, in table, tea and toilet services, etc.  

75 Lindsay & Anderson, Lilliehill Fire Clay & Terra-Cotta Works, Dunfermline, Scotland.  
- A fountain in terra-cotta, bust and pedestrian of Sir Walter Scott, statue of Sir James Y. Simpson, nymphs at fountain, garden vases and pedestals, sewage pipes and sanitary appliances, collection of terra-cotta.  
- Gas stove in terra-cotta, fire-clay bricks, chimney cans.  

76 Doulton, H. & Co., London.  
- Terra-cotta goods for architectural purposes; sanitary pottery in salt-glazed stoneware, queensware; vitrified metallic bricks and pavings.  

76a Eastwood & Co., (limited), London.  
- Building, paving, ornamental, and fire bricks; Staffordshire blue bricks, grooved paviers.  
- Red paving and roofing tiles; ridges and clinkers.  

77 Brownhills Pottery Co., Tunstall,  
- A terra-cotta and black glazed ware.  
- Floor and roof tiles, ridge ornaments, etc.  
- Jugs.  
- Earthenware dinner, dessert, and toilet ware.  

78 Dean, Henry, Rugby, Warwickshire.  
- Stoneware drain traps and yard gullies of different patterns.  

78a Maw & Co., Bentall Works, Bursley, Shropshire.  
- Architectural majolica, and terra-cotta.  
- Geometrical mosaic, encaustic, and majolica tiles.  

79 Tinworth, George, London.  
- Panels in terra-cotta, illustrative of Scripture, and articles in colored stoneware.  

79a Daniell, A. B., & Son, London.  
- Porcelain and pottery, ornamental vases, candelabra, etc.; fountains, jardinières, garden seats, vases, etc.  
- Dinner, dessert, tea, and coffee services; toilet services.  

80 Harper & Moores, Stourbridge.  
- Fire clays, prepared clays, fire bricks, crucibles, melting pots, bricks for smelting furnaces, etc.  

81 Cliff, John, Runcorn, near Liverpool.  
- Fire brick.  

- Portable furnaces; stellite pots for glass melting; crucibles for jewelers, assayers, dentists, etc.; founders' blacking.  

83 Price, J. & C., & Bros., Bristol.  
- Ale bottles, spirit jars, barrels, preserve jars, water filters, feet warmers, etc.; stoneware.  

- Ironmongers', artists', and gardenware; earthenware goods; signboard letters, 200  
- Spirit barrels.  
- Dinner, dessert, toilet, and tea ware; porcelain slates, menu tablets, etc.  

85 Doulton & Co., London.  
- Mantelpieces, stoves, hearth, and fenders of clay; crucibles, furnaces, muffles, in fire clay and plumbago.  

86 King Bros., Stourbridge.  
- Fire brick, gas retorts, etc.  

88a Doulton & Watts, Lambeth Pottery, London.  
- Stoneware for chemical works.  
- Tile decorations.  
- Stoneware for manufacturing purposes; pulpit and font in fine art pottery faience.  
- Stoneware for domestic purposes.  

89 The Campbell Brick & Tile Co., Stoke-upon-Trent.  
- Encastre, geometrical, majolica, and all kinds of glazed tiles and mosaics, bricks, and roofings.  

- Tiles for pavements and hearths; ornamental spays for fireplaces; tiles for walls and furniture.  

- Tile-mosaic, tile fender, chimney piece, fire grate, flower vases, etc.  

92 Stanley Bros., Midland Tile Works, Nuneaton, Warwickshire.  
- Perforated tiles for malt kiln floors.  

93 Brown-Westhead, T. C., Moore, & Co., Cauldon Place, Staffordshire Potteries.  
- Tiles and sanitary ware.  
- China, earthenware, statuary, porcelain, and majolica ware.  
- Druggists' and perfumers' goods.  
- Dinner, dessert, and toilet services.  

93a Matthews, Edward, & Son, London.  
- Decorative tiles.  

93b Minton China Works, Stoke upon Trent.  
- Ware enamelled tiles, etc.  

93c Colhurst, Symons & Co., Bridge-water.  
- Bricks and tiles. (In Agricultural Hall.)  

94 Brownfield, Wm., & Son, Cobridge, Staffordshire Potteries.  
- China, majolica, ironstone china, parian, earthenware, stoneware, etc.  

95 Edwards, J., & Son, Burslem, Staffordshire.  
- Ironstone whiteware. (In Agricultural Hall.)  

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-43.
BRITISH ADVERTISEMENTS.

CANTRELL & COCHRANE'S
GINGER ALE &

Works DUBLIN Thos: Cochrane.

Works BELFAST Comme Building.

IRELAND.
MINERAL-WATER-MANUFACTORIES

FIVE PRIZES, PARIS EXHIBITION, 1867.

CAUTION.

TO MERCHANTS, DRAPERS, & TAILORS
WHO BUY AND USE

"BLISS' CHIPPING NORTON TWEEDS."

WHEREAS—It having come to the knowledge of W. B. and Son that certain manufacturers are trying to introduce a spurious imitation of the above goods, less in substance and strength, made from very inferior materials, W. B. and Son, wishing to maintain the reputation they have so many years enjoyed for making the stoutest, most durable and approved Tweed for Riding Trousers, and at the same time wishing to protect their own interest as well as that of their friends, have determined to stamp each piece of their Tweed every two-and-a-half yards, "BLISS, CHIPPING NORTON."

The above-mentioned goods supplied direct from W. B. and Son, only to WHOLESALE HOUSES AND SHIPPERS, as heretofore.

Having started an additional new mill, full of the best machinery, they can now supply any quantity of perfect Tweeds, punctually delivered.
FIVE PRIZE MEDALS AWARDED.

GOODALL'S HOUSEHOLD SPECIALTIES.

A single trial solicited from those who have not yet tried these splendid preparations.

GOODALL'S BAKING POWDER
THE BEST IN THE WORLD.
The cheapest because the best, and indispensable to every household, and an inestimable boon to housewives. Makes delicious Puddings without eggs, Pastry without butter, and beautiful light Bread without yeast. Sold by Grocers, Oilmen, Chemists, &c., in 1d. Packets: 6d., 1s., and 2s. Tins. Prepared by GOODALL, BACKHOUSE & CO., LEEDS.

YORKSHIRE RELISH.
THE MOST DELICIOUS SAUCE IN THE WORLD.
This cheap and excellent Sauce makes the plainest viands palatable, and the daintiest dishes more delicious. To Chops and Steaks, Fish, &c., it is incomparable. Sold by Grocers, Oilmen, Chemists, &c., in Bottles, 6d., 1s., and 2s. each. Prepared by GOODALL, BACKHOUSE & CO., LEEDS.

GOODALL'S QUININE WINE.
The best, cheapest, and most agreeable tonic yet introduced. The best remedy known for Indigestion, Loss of Appetite, General Debility, &c. Restores delicate invalids to health and vigour. Sold by Chemists, Grocers, &c., at 1s., 1½d., 2s., and 2½d. each Bottle. Prepared by GOODALL, BACKHOUSE & CO., LEEDS.

DR. HASSALL'S FOOD FOR INFANTS, CHILDREN, AND INVALIDS.

DR. ARTHUR HILL HASSALL, M.D., the inventor, recommends this as the best and most nourishing of all infants' and invalids' Foods which have hitherto been brought before the public. It contains every requisite for the full and healthy support and development of the body, and is, to a considerable extent, self-digestive. Recommended by the 'Lancet,' and Medical Faculty, &c. Sold by Druggists, Grocers, Oilmen, &c., &c., in Tins, 6d., 1s., 2s., 3s. 6d., 5s., 1s., and 2s. each. A Treatise by Arthur Hill Hassall, M.D., London, on the "Alimentation of Infants, Children, and Invalids, with hints on the general management of children," sent post free on application to the Manufacturers, GOODALL, BACKHOUSE & CO., LEEDS.

The following PRIZE MEDALS have been awarded—
Nismes, 1863; Cologne, 1865; Paris, 1872;
Havre, 1868; Beauvais, 1869; Marseilles, 1874;
Paris, 1875;
AND SEVERAL HONOURABLE MENTIONS.

ENGLISH ROOFING & SHEATHING FELTS,
MANUFACTURED AND EXPORTED BY
D. ANDERSON & SON, BELFAST, IRELAND,
And 23 & 23½, BILLITER STREET, CITY, LONDON, ENGLAND.

Sole Makers and Patetees for the U.S. of America of
ANDERSON'S PREPARED ROOFING FELT,
Ready Coated and Sanded, especially for HOT CLIMATES.

BLOOD, WOLFE & CO.'S
XXX DUBLIN STOUT

AND

PALE ALES,

LIVERPOOL AND LONDON, ENGLAND.

Agents in all principal cities in the United States.
96a Gardner, Peter, Dunmore Pottery, by Stirling, Scotland.—Rockingham teapots. 210
97 Edwards, John, Fenton, Staffordshire.—Ironstone china and porcelain de tea, dinner, toilet, and jug services, (Artistic and Agricultural Halls). 213
98 Bailey, W. & J. A., Alloa, Scotland.—Rockingham earthenware teapots. 213
98a Powell & Bishop, Hanley, Staffordshire.—Dinner, dessert, tea, and toilet services, white granite, etc. 213
99 Hetley, J., & Co., London.—Glass shades; glass used for photographic bending, and horticultural purposes. 214
100 Chance Bros., & Co., Glass Works, near Birmingham.—Glass for optical instruments. 214
101 Kilner Bros., London.—Glass bottles and glass, useful for scientific applications. 215
102 Aire & Calder Glass Bottle Co., Leeds.—Glass bottles, combination stoppers, packing cases, corks, straw envelopes. 215
103 Green, James, & Nephew, Thames Cut Glass Works, London.—Table glass, cut and engraved table decorations; flower stands, glass chamberlains, and lustre candlesticks. 216
109 Millar, John, & Co., Edinburgh.—Engraved and cut glass. 216
109a Jenkins, Alexander, Edinburgh.—Venetian glass in antique shapes. 216

Furniture and Objects of General Use in Construction and in Dwellings.
110 Cox & Sons, London.—Chimney piece, embroidered mantel board, ebonized corner cupboard, carved oak furniture, bronze ornament, stained glass church window, wrought iron pupil body, lecterns, church plate, wrought iron and brass work, art tiles and plagues; the challenge prize of the National Musical Union, etc. 217
110a Turner, George, & Co., London. a Hammock bedstead and sofa, mosquito curtains. 217
  b Camp oven. 222
111 Wright & Mansfield, London.—Cabinet furniture of the 18th century. 217
112 Hems, Harry, Exeter.—Alabaster statue; carved oak chest made out of ancient beams (nearly 600 years old) from the choir of Salisbury cathedral. 217
113 Peyton & Peyton, Bordesley Works, Birmingham.—Metallie bedsteads. 217
114 Morton, W. Scott, & Co., Art Furniture Works, Edinburgh.—Decorative furniture, ebonized and decorated cabinet, sideboard. 217
115 Hart, Son, Pearson, & Co., London. a Artistic metal work (chiefly for ecclesiastical purposes), stove grates, etc. 217
  b Stove grates, etc. 222
  c Gas fixtures. 223
116 Shoolbred, James, & Co., London.—Furniture in the Jacobean and Queen Anne styles; bedroom furniture in the Anglo-Indian style; curtains and carpet. 217
116a White, William George, London.—Steel safe. 217
117 Barnard, Bradly, London.—Furniture and hammock. 217
118 Cooper & Holt, London.—Furniture, sideboard, portion of bedroom suite, decorative drawing-room furniture. 217
119 Pfizer, Miss Emma, Monk Sherborne, Basingstoke, Hants.—Sideboard, ladies' work table, dressing glass, and candlesticks. 217
119a Chatwood, Samuel, London.—Fire and burglary proof safes. 217
120 Ward & Co., London.—Bed arranged as dumb waiter to hold tray and lamp. 217
122 Arthur, Frederick, London.—Cabinet work and fittings for Royal School of Art needlework exhibits. 217
123 Wethered, Edwin Robert, Woolwich, Kent. a Hammock. 217
  b Friction pulley block, exhibited as a device for escape. 227
124 Matthews, Edward, & Son, London.—Stained glass windows, mural brasses. 217
125 Barnard, Bishop, & Barnards, Norfolk Iron Works, Norwich. a Stoves. 222
  b Stoves. 225
  c Ornamental wrought and cast iron gates, pillars, pavilions, etc. 710
  d Lawn mowers, hose reels, garden rollers, and iron garden requisites. 720
125a Howard & Sons, London.—Household furniture. 217
126 Singer, J. W., & Son, Frome, Somerset.—Artistic metal work, altar crosses and candlesticks, alms dishes, and mural brass plates for churches. 227
126a Sage, Frederick, London.—Airtight show cases, velvet show stand, etc. 217
127 Knight, Miss Mary, London.—Bedstead. 217
128 Jeffreys, Charles, London. a Show cases, bronzed shop fittings, and show stands. 217
  b Cut glass mirrors. 219
  c Reflecting lamps. 223
129 Royal School of Art Needlework, London.—Artistic needlework and embroidery in applique, crewels, and silk. 217
130 Macintosh, James, London.—Decorative doors and panels; imitations of woods and marbles, decorative designs and paper-hanging. 217
130a Collmann, L. W., London.—Piano in carved satinwood case, etc. 217
130b Watson, & Son, Bombay, East India.—Indian furniture, etc. 217
131 Collinson & Lock, London.—Furniture in all papers, and textile fabrics in the old English style. 217
131a Neal, John, London.—Table ware. 218
132 Goggins, Jeremiah, Dublin. a Table ornaments, drinking cups, tankards, etc. 218
  b Mirrors. 219

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
### Table: Furniture, Heating and Lighting Apparatus, Woven Goods

<table>
<thead>
<tr>
<th>DEPT. II.—MANUFACTURES.</th>
<th>Yarns and Woven Goods of Vegetable or Mineral Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>133 Bailey, W. &amp; J. A., Alloa, Scotland.—Engraved table glass.</td>
<td>157 Brown, J. B., &amp; Co., London.—Galvanized wire netting for inflating poultry, pheasants, dogs, etc. (in Agricultural Hall.)</td>
</tr>
<tr>
<td>133a Gill, James, London.—General engraving on metals, etc.</td>
<td>157a Engert &amp; Rolfe, London.—Felts for roofing, fibrous asphalt, etc. (in Agricultural Hall.)</td>
</tr>
<tr>
<td>134 Elkinston &amp; Co., Birmingham.</td>
<td>158 Greening, N., &amp; Sons, Warrington.—Woven wire. (In Agricultural Hall.)</td>
</tr>
<tr>
<td>a Solid silver and electro-silver plate for domestic use; decorative table plate relief with electro-gold and oxidized silver.</td>
<td>158a McTeer &amp; Co., Belfast, Ireland.—Roofing, ship sheeting, and inodorous felt; model of roof.</td>
</tr>
<tr>
<td>b Cloisonné and champlevé enamels on silver and copper.</td>
<td>159 Cox Bros., Camperdown Linen Works, Dundee, Scotland.—Jute yarns, twines, etc.</td>
</tr>
<tr>
<td>c Works of art in gold, silver, and other metals; bronzed statuary.</td>
<td>160 Sandeman, Frank Stewart, Manchester—Hattan Works, Dundee, Scotland.—Linen and jute yarns, carpet yarns, burlaps, baggings, canvas paddings, scrim cloth, horse covers, and lap robes.</td>
</tr>
<tr>
<td>d Antique art treasures, in metal, from the South Kensington Museum.</td>
<td>161 Laird, William, &amp; Co., Canmore Linen Works, Forfar, Scotland.—Textile fabrics, washed damasks, fancy towelling, horsecloths, sheetings, osnaburgs, stair covering, seamless bags, hessians, striped beddings, paddings, ducks, buckram, etc.</td>
</tr>
</tbody>
</table>

| 137 Kent, George Barton, & Co., London. | 162 Johnson, Jabez, & Fildes, Manchester— |
| a Ivorine mirrors. | a Quilts and bedcovers, toilet or bureau covers, brocades, damasks, dimities, muslins. b Printed cretons, towels, dress fabrics, etc. |
| b Photograph stands. | 163 Dewhurst, John, & Sons, Belle Vue Mills, Skipton, Yorkshire.—Sewing cotton, finished and in various stages of manufacture. |
| 139 Hieronimus, W., London.—Frame mouldings, window cornices, decorating mouldings, etc. | 164a Greenmount Spinning Co., Greenmount Factory, Dublin. a Cotton goods for domestic and clothing purposes. b Linen goods. |
| 140 Heaps & Wheatley, Brotherton, Yorkshire.—Oil cooking stove, gas stove, water boilers, etc. | 165 Neilson, Storer, & Sons, Thorn Mills, Johnstone, near Paisley.—Yarns; knitting, mending, and other cottons; yarns for lace, curtain, and fancy dress manufacturers. |
| 143 Steel & Garland, Wharncliffe Works, Sheffield.—Steel grates, with porcelain tiles; fenders, encaustic tile hearths, stoves with china tiles, fire irons, etc. | 165a McBride, Robert, & Co., Belfast. a Cotton goods. b Mixed cotton and linen goods. |
| 144 Smart, Walter, Buckhurst Hill, Essex.—Sub-fire oven. | 166 Clark, John, Jr., & Co., Glasgow, Scotland.—Spool cotton. |
| 148 Thornton, Ebenezer, Bradford, Yorkshire.—Cooking stove for gas or solid fuel. | 168 Barlow & Jones (limited), Manchester.—Toilet quilts, covers, and mats; cloakings, cotton towels, blankets, alhambras, and counterpanes, plain and fancy muslins, etc. |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
BRITISH ADVERTISEMENT.

Established 1801.

JONAS BROOK & BROTHERS

Meltham Mills,  near Huddersfield,

MANUFACTURERS OF

SEWING, CROCHET, AND EMBROIDERING COTTON,

DEPÔTS:

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36, Fountain Street, Manchester.
10, Garthland Street, Glasgow.

WM. H. SMITH & Co., 32, Greene Street, New York, Sole Agents for the U.S.

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BROOK'S SIX CORD SOFT FINISH SPOOL COTTON.

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The extraordinary strength, smoothness, and durability obtained by this invention have secured for it great popularity, and it is consequently much imitated in inferior qualities. This Cotton is always labelled BROOK'S PATENT GLACE THREAD, and without their name and crest (a GOAT'S HEAD), the words "Glacé," or "Patent Glacé," do not denote that it is of their manufacture.

BROOK'S PATENT NINE AND SIX CORDS will be found of very superior quality, and are strongly recommended wherever a SOFT COTTON is preferred.

EXHIBITION PRIZES.


ONLY DIPLOMA OF HONOUR. VIENNA. 1873.
BRITISH ADVERTISEMENT

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Established 1830.

York Street Flax Spinning Co., Ltd.,
Belfast, Ireland,
Flax Spinners, Power-loom Weavers, Bleachers & Merchants,
Manufacturers of
Dress Linens,
Clothing Goods & Household Linens.

MANUFACTURES.

DRESS LINENS.
Irish Linen Brocade, Viennese Dress Linen,
Natural Dress Linen, Grenadines,
Printed Lawns.

CLOTHING.
Brown Diagonal Drills, Plain,
Brown Diagonal Drills, Fancy Stripe,
Brown Diagonal Tweeds,
Bleached Drills and Ducks,
Brown Ducks and Duck Coatings,
Canvas & French Elastic Ducks,
Pale Hollands,
Blay Linens.

HOUSEHOLD.
Light Shirting Linen,
Light Fronting Linen,
Super Fronting Linen,
Medium Family Linens,
Heavy Family Linens,
Sheetings,
Interlinings,
Drawer Linens.

BRANCHES & AGENCIES.

NEW YORK... 154, Church Street.
NEW ORLEANS... Messrs. Anderson & Simpson.
PARIS... 38, Rue des Jeuneurs.
LONDON... 2, Russia Row, Milk Street.
MANCHESTER... 12, Piccadilly.
195 Boulainikon Floor Cloth Manufacturing Co. (limited), Manchester.—Floor cloth.

Woven and Felted Goods of Wool, etc.


197 Brown, John S., & Sons, Belfast.—Yarns.

198 Hooper, Charles, & Co., Eastington Mills, Stonehouse, Gloucestershire.—Woolens, broducloths, military cloths, doekins, beavers, eelysians, kerseys, meltons, coverings, and trowerings.


200 Dunbar, McMaster, & Co., Gilford, Ireland.—Gray and bleached yarns.

201 Mahony, Martin, & Bros., Blarney, Ireland.—Tweedings, woollen serges, worsted coatings, railway traveling wraps.

202 Anderson, David, & Son, Lagan Felt Works, Belfast, Ireland.—Kooting, flooring, and ship sheathing felt, lining felt, hair felts for covering boilers and steam pipes. (In Machiniry Hall.)

203 Bliss, William, & Son, Cipping Norton, Oxon. a Tweeds, woolen serges, and saddlers' woollens.

204 Briggs, J. F., & Co., Huddersfield, Yorkshire.—Beavers, coatings, cheviots, cassmeres, carriage and livery cloths, doekins, eelysians, meltons, kerseys, pilots, rugs, vestings, and quiltings, velvets, union cloths, wineyes, and reversible coatings.

205 Carr, Isaac, & Co., Twerton Mills, Bath.—Woolen cloths, meltons, twills, beavers.

206 Bubb & Co., Southfield Mills, near Stroud.—Woolen cloths; billiards, government, and piano cloths.

207 Marling & Co., Ebley and Stanley Mills, Stroud, Gloucestershire.—Raw, scoured, and dyed wool; woolen cloths, beavers, venetians, doekins, deerskins, cassmeres, etc.

208 King, William, Gilroyd and Albert Mills, Morley, Leeds.—Union and melton cloths.


211 Hargreaves & Nusseys, Farney Low Mills, Leeds.—Coatings, overcoatings, kerseys, meltons, woolen cloths.

213 Davies, Robert S., & Sons, Stonehouse Mills, Gloucestershire.—Cloths, doekins, venetians, meltons, coverings, beavers.

214 Little, T. W., & Co., Leeds.— Mantle cloths, waterproof tweeds, twills, meltons, blue and black deerskins, and diagonals.
Woven Goods, Silk, Clothing.

215 Jones, Pryce, Newtown North Wales.
a Welsh flannel, homespuns, tweeds, yarns, etc. 236
b Shawls. 237

216 Buckley, Joseph, & Co., Moorcroft Mills, Delph, near Manchester.—Shawls, raised fauces, Rob Roy, and shepherd silks. 237

217 Farmer & Rogers, London.—Cashmere shawls. (In Indian Section.) 237

218 Buckley, J. E. & G. F., Linfitts Mill, Delph, near Manchester.—Queensland and beaver shawls. 237

218 Hepworth, B., & Sons, New Wakefield Mills, Dewsbury, Yorkshire.
a Railway knee wrappers. 237
b Rugs. 239

a Traveling wraps, shawls, etc. 237
b Rugs. 239

219 Williams, E. G., & Co., Bradford, Yorkshire.—Textile fabrics for dress goods. 235

220 Pim Bros. & Co., Dublin.—Irish poplins, silk terries, and brocadelles. 235

221 Henderson & Co., Durham.—Durham axminster. 239

222 Lewis, John, Halifax, Yorkshire.—Brussels and Wilton carpets. (British Offices.) 239

223 Gregory & Co., London.—Indian and Persian carpets. 239

224 Robinson, Vincent, & Co., London.—Carpets and rugs. 239

225 Crossley, John, & Sons (limited), Dean Clough Mills, Halifax, Yorkshire.—Carpets, rugs, sofa carpets, table covers, etc. 239

226 Tomkinson & Adam, Kidderminster.—Axminster carpets. 239

227 Lapworth Bros., London.—Carpets and rugs. 239

228 Templeton J. & J. S., Glasgow.—Brussels and Wilton carpeting; silk and wool window curtains. 239

228* Welch, Margetson, & Co., London.—Rugs. 239

229 Templeton, James, & Co., Glasgow.—Axminster carpets, breadth carpeting, hearth rugs. 239

229* Tapling, Thomas, & Co., London.—Tapestry. 239

230 Webb, Edward, & Sons, Worcester.—Hair cloth for furniture covering, hair cloth paddings, curled hair, crinoline, hair cloth. 240

230* McLintock, James, & Sons, Barnsley, Yorkshire.—Down quilts and pillows. 240

231 Wild, John, Greenfield Mills, Shaw, near Oldham.—Cotton plush velvet. 231

Silk and Silk Fabrics.

232 Sheldon & Fenton, London.— Sewing silks, tailors' twist, machine silks, etc. 243

233 Rickards, Charles Ayscough, Bell Busk Mills, near Leeds.—Sewing and machine silks, twist; embroidery, knitting, and crochet silks. 243

234 Milner, Wm., & Sons, Leek, Staffordshire.—Sewing silks. 243


236 Adams & Co., London.—Knitting silks, filoelle. 243

a Silk and silk fabrics. 245
b Velvets. 245

238 Norris & Co., London.—Silk for furniture and upholstery purposes. 246

238* Stewart, Moir, & Muir, Glasgow.—Curtains for window and decorative purposes and for use in the British section. 246

239 French & Co., St. Mary's Mills, Norwich.—Black crape. 247

239* Simon, May, & Co., Nottingham.—Nets, Shetland scarfs, shawls, elastic webs, etc. 247

239* Welch, Margetson, & Co., London.—Scarfs, ties, and silk handkerchiefs. 247

240 Stevens, Thomas, Stevengraph Works, Coventry.—Jacquard loom at work; ribbons, neckties, sashes, badges, and emblematical regalia; navy hat ribbons, gold and silver lace, silk-centred satchets. 245

241 Heymann & Alexander, Nottingham.—Nets, quiltings, trimmings, etc. 249

243 Turner, Archibald, & Co., Leicester.—Elastic fabrics, cords, and braids. 249

Clothing, Jewelry, and Ornaments; Traveling Equipments.

a Hosiery. 250
b Gloves. 251

246 McLintock, James, & Sons, Barnsley, Yorkshire.
a Down quilts, skirts, jackets, and dressing gowns; dress improvements. 250
b Slippers. 251

247 Welch, Margetson, & Co., London.
a Linen collars, shiftings, etc. 250
b Umbrellas. 254

248 Sykes, Josephine, & Co., London.—Corsets and ladies' belts. 250

249 Hitchcock, Williams, & Co., London.—Costumes of mixed fabrics. 250

250 McGee, John G., & Co., Belfast, Ireland.—Ulster overcoats and Irish homespun goods. 250

250* Connor, Mrs., Dublin.—Patchwork quilt. 250

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
BRITISH ADVERTISEMENT.

PIM BROTHERS & CO.

SOUTH G. ST. GEORGES ST., DUBLIN.

MANUFACTURERS OF
Irish Poplins and Irish Linens.

HAVE BEEN AWARDED PRIZE MEDALS FOR THEIR POPLINS WHEREVER EXHIBITED.

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WILLIAM EWART & SON,
Flax Spinners, Linen Manufacturers, Bleachers and Merchants.
BELFAST, NEW YORK, AND MANCHESTER.

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OFFICES, WAREHOUSE, and WEAVING FACTORY—BEDFORD STREET.
BLEACH GREEN—GLENBANK.

SPINNERS OF FLAX AND TOW YARNS.
MANUFACTURERS, BLEACHERS, DYERS, AND FINISHERS OF LINENS AND UNIONS.
Brown, Bleached and Printed Drills; Imperial and Brown Ducks.
Canvas; Clothing and Dress Goods; White and Printed Lawns; Hollands; White Shirting Linens; Sheetings;
Damasks; Table Napkins; Diapers; Handkerchiefs; &c., &c., &c.

The Works employ 3,200 hands, and contain 31,000 Spindles and 1,500 Power Looms.
251 Smyth & Co., Balbriggan, Ireland.
   —Balbriggan hosiery, lace hose, light stockings.

   a Military and traveling equipments; appli-
   ance for picketing horses.
   b Hammock-valise and canteen.

252 Roe, William Allen, Leicester.
   —Boots and shoes.

253 Lobb, John, London.—Gentlemen's
   and ladies' boots.

254 Dash, Osmond, Brighton.
   a Hats and caps.
   b Umbrellas.

255 Lincoln, Bennett, & Co., London.
   —Hats.

261 Humbert, Hermann, London.
   —Hats and bonnets; hat and bonnet
   shapes.

262 Debenham & Freebody, London.
   —Gloves.

264 Tress & Co., London.—Hats; pith
   and felt solar hats and helmets.

   —Valenciennes and silk guipures; imitation
   Brussels curtains, lace curtains.

268 Smith, George John, London.
   —Irish lace made by the Industrial
   Poor.

270a Heymann & Alexander, Notting-
   ham.—Silk, wool, and cotton laces.

280 Lunnarven, the Countess of, Adare,
   County Limerick, Ireland.—Embroidery
   on lawn; robes, pocket handkerchiefs, in-
  insertion for dresses, pincushion cover,
   etc.

   —Lace curtains, valances.

287 Goggin, Jeremiah, Dublin.
   a Jewelry.
   b Reading-stands, walking-canes, pipes,
   etc.

293 Francati & Pantamaria, London.
   —Jet ornaments, brooches, earrings, brace-
   lets, necklaces, etc.; jet cameo mosaic,
   carved by Roman cameo cutters.

293a Neal, John, London.—Gold and sil-
   ver jewelry, precious stones.

293a Aitchison, James, Edinburgh.
   —Scottish jewelry, in gold and silver; High-
   land ornaments, and stones found in Scot-
   land.

293 Gibson, William, Belfast.
   a Gold, diamond, and Irish bog oak jewelry.
   b Walking-sticks and table ornaments.

294 English, John, & Co., Peckenham,
   Worcestershire.—Needles; fishhooks;
   steel pins; hairpins; bodkins.

295 Johnson, J., & Co., Charterhouse
   Works, Sycamore street, London.—Shell
   boxes, toy furniture and ornaments, and
   fancy paper boxes.

296 Davis & Wilson, Birmingham.
   —Whip, walking-stick, and umbrella mount-
   ings; African chiefs' cases; whips and
   general whip materials.

277 Millward, Henry, & Sons, Red-
   ditch.—Needles, sewing machine needles,
   fishhooks.

278 Turner, R., & Co., Old Factory,
   Redditch.—Needles, pins, fishhooks, etc.,
   displayed in a glass case, forming
   model of the exhibition of 1851.

278 Swaine & Adney, London.
   —Whips, whip lashes, thongs, and sockets;
   horns, canes, and walking-sticks; sport-
   ing apparatus.

280 Smith, John Wright, Leicester.
   —Self-acting needles used in hosiery
   frames.

281 Kent, George Barton, & Co., London.
   —Ivory paper knives and shoe lifts.

282 Evans, David, Studley, Redditch.
   —Needles for hand and machine sew-
   ing.

283 Fenton, James, Birmingham.—
   Pearl buttons.

284 Kirby, Beard, & Co., Birmingham.
   —Pins, needles, hairpins, fishhooks,
   etc.

284a Elrick, Charles Gray, Aberdeen,
   Scotland.—Dressing combs; real and imi-
   tation shell, side braid, and high Spanish
   combs, etc.

285 Sangster & Co., London.—Umb-
  rellas, parasols, sunshades, whips, canes.

286 Smith, James, & Son, Astwood
   Bank, near Redditch.—Needles, showing
   stages of manufacture; bodkins, hairpins,
   and fancy cases for holding needles.

287 Hayes, Crossley, & Co., London.
   —New shape sewing needles, machine ne-
   edles, pins, bodkins, and specimens in
   various stages of preparation.

288 Cooke Bros., Birmingham.
   —Safety pins, curtain hooks, and fancy
   nails.

289 Woodfield, William, & Sons, Ease-
   more Works, Redditch.—Needles, sew-
   ing machine needles, fishhooks, etc.; sail
   tools and fancy needle cases.

   —Umbrellas, walking-sticks, whips.

   Works, Birmingham.—Solid-headed toilet
   pins, hairpins, hooks and eyes, pearl but-
   tons.

   —Leather portmanteaus, hat cases, and
   bags.

   —Fancy leather work.

   —Imitation leather hat linings, shoes and
   shoe linings, wall decorations, patience
   books, belts, dispatch boxes, dressing and
   jewel cases, glove and handkerchief boxes,
   etc.

   —Chili leather portmanteaus, trunks, trav-
   eling bags, and leather and waterproof
   goods used for shooting and traveling
   purposes.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Stationery, Weapons.

297a Jeffrey's, Charles, London.—Leather traveling and jewel cases; morocco and velvet cases. 255

Paper, Blank Books, and Stationery.

299 Hinks, Wells, & Co., Buckingham
Steel Pen Works, Birmingham.—Steel pens, penholders. 258

300 Stephens, Henry Charles, London.
—Inkstands, gun maule, quills, sealing wax, parallel rulers. 258

301 Ortner & Houle, London.—Seal engraving, steel and copper plate heraldic engraving, and die sinking. 258

   a Writing paper and envelopes, diaries, calendars, etc. 258
   b Photograph albums and scrap books. 261
   c Cards and valentines. 262

—Sealing and bottle wax. 258

304 Lyons, William, Manchester.—Sealing wax, gun mauleage. 258

305 Waterston, George, & Son, Edinburgh.—Sealing wax. 258

—Paper stock, manufactured from esparto grass; products from esparto, bamboo, megasse, phormium tenax, maize, and other fibres. 259

307 Dudgeon, Arthur, London.—Writing-papers; paper pulp manufactured from peat. 259

308 Pirie, Alexander, & Sons, London.
   a Writing-papers. 259
   b Cardboard. 262
   c Enamelled papers. 264

310 Fletcher, Robert, & Son, Kersley
Paper Works, Stoneclough.—White and colored papers, fine tissues, silver tissues, copying and cigarette papers. 259

311 Birdsall & Son, Northampton.
—Binding of the Hexaglot Bible. 261

312 Goodall, Charles, & Son, Camden Works, London.—Playing and Christmas cards. 262

313 Rimmel, Eugene, London.
   a Valentines. 262
   b Fancy crackers. 661

313a Stevens, Thomas, Stevengraph Works, Coventry.—Cards and valentines. 262

314 Jeffrey & Co., London.—Artistic wallpaper decorations. 264

Military and Naval Armaments, Ordnance, Firearms, and Apparatus of Hunting and Fishing.

315 Reilly, E. M., & Co., London.—Breechloading guns and express rifles. 265

315a Bussey, Geo. G., & Co., London.—Breechloading guns and their accessories; gyro pigeon. 265

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

316 Greener, William Wellington, Birmingham.—Sporting guns and rifles; breechloading guns. 265

317 Rigby, John, & Co., Dublin.—Guns and rifles and their accessories. 265

318 Henry, Alexander, Edinburgh.—Breechloading express rifles, fowling-pieces, harpoon and bomb-lance guns; military arms and target rifles. 265

319 Clay, Randolph, London.—Converter for breechloading firearms. 265

320 Dougall, James Dalziel, Glasgow.
—Long-range shotguns and rifles. 265

322 Lancaster, Charles, London.—Guns, rifles, cannon; drawings and models of the evil bored. 265

323 Scott, W. & C., & Sons, Premier
Gun Works, Birmingham.—Sporting firearms, revolvers, gun materials. 265

—Breechloading double guns. 265

325 Purdy, Jas., London.—Guns, rifles, etc. 265

326 Lancaster, Alfred, London.
—Sporting guns and rifles. 265

327 Soper, William, Reading.—Rifles. 265

328 Lang, J., & Sons, London.—Guns and rifles. 265

328a Eley Bros. (limited), London.
—Paper and metal cartridge cases (empty), sporting and military percussion caps, gun wadings. 265

329 Webley, P., & Son, Birmingham.
—Sporting breechloading guns, rifles, and revolvers. 265

329a Hewitt, William, Bristol.
—Breechloading gun, gun carriage. (In Machinery Hall). 266

330 Needham, John, Sheffield.—Daggers. 268

331 Brookes & Crookes, Atlantic Works, Sheffield.—Sportsmen's and bowie knives. 268

333 Buchanan, James, Glasgow.—Sea fishhooks. 269

334 Ryder, William Henry, Birmingham.
—Fishing tackle. 270

335 Green, E. C., Cheltenham.
—Sporting guns, with their appurtenances; cleaning rods, with attachments; cartridge-loading implements, nipple keys, gun cases and bags. 269

336 Tolley, J. & W., Pioneer Works, Birmingham.—Sporting breechloading shot guns, implements, cartridge cases, lubricators, bullets, and primers for reloading cartridges. 269

337 Williams & Powell, Liverpool.
—Breechloading guns. 269

Medicine, Surgery, and Prophesy.

338 Allen & Hanburys, London.—Cod-liver oil; gelatine impregnated with atropine and calabar bean, for application to the eye. 272
JOHN CLARK, JR. & CO.'S

MILE END, GLASGOW,

BEST

Six-cord Spool Cotton

ON BLACK SPOOLS,

IS UNRIVALLED

FOR

HAND AND MACHINE USE.

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MONTREAL.
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Cotton Spinners,
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SEWING COTTON,
Remarkable for its strength, pliability, evenness, and freedom from knots. It meets all the requirements of the different kinds of Sewing Machines, and is equally suitable for hand use.

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SKIPTON, YORKSHIRE
COTTON SPINNERS FROM A.D. 1794.
SEWING COTTON MANUFACTURERS FROM A.D. 1870.
AGENTS IN THE UNITED STATES,
MESSRS. WILSON & MERRILL, BOSTON.
Medical and Surgical Appliances, Hardware, Cutlery, Vehicles.

—Mustard plasters. 272

340 Evans, Sons, & Co., Liverpool.—
Vegetable, animal, and mineral drugs; pharmaceutical products and accessories. 272

341 Usher, Rufus, Bodicote, Oxon.—
Medicinal rhubarb; extract of henbane and dried henbane leaves; photographs of henbane plants. 272

342 Mackay, John, Edinburgh.—Articles of diet for invalid and table use. 273

343 Melin, Gustav, London.—Non-farinaeous food for infants and invalids. 273

344 Goodall, Backhouse, & Co., Leeds.—Food for infants and invalids. 273

345 Lynch & Co., London.—Druggists' sundries and surgical instruments; spinal apparatus, chest protectors, feeding bottles, spray producers, poison boxes, etc. 276

346 Glasgow Apothecaries Co., Glasgow.—Surgical appliances and antiseptic dressings. 276

347 Mayer & Meltzer, London.—Surgical instruments. 276

348 Lee, Robert James, London.—Steam draft inhaler and disinfector. 276

348a Haywood, J. S., Nottingham.—Surgical bandages, belts, trusses, etc. 276

349 Turner, Archibald, & Co., Leices-
ter.—Surgical bandages and bandages. 276

350 Pulvermacher, Isaac Louis, London.—Electrical instruments for medical purposes. 276

353 Liverpool Spun Oakum Co., Liver-
pool.—Oakum, styphnium; pure antiseptic dressing for hospital use. 276

353a Clay, Randolph, & Co., London.—Portable invalid bed tray. 278

354 Turner, George, & Co., London.—Ambulances. 278

Hardware, Edge Tools, Cutlery, and Metallic Products.

355 Ward & Payne, Sheffield.
a Tools for carpenters, joiners, coatchmakers, shipwrights, millwrights, masons, bricklayers, tanners, curriers, engravers, diesinkers, plasterers; wood, stone, and metal carvers and turners, etc. 280
b Sheep shears. 281

356 Smith, John & Samuel, Low Bridge Works, Keighley, Yorkshire.—Engineers' and machinists' tools. (In Machinery Hall.) 280

357 Baker, William, London.—Awls, bodkins, needles for saddlers, packers, and upholsterers; screwdrivers. 280

358 Addis, J. B., & Sons, Arctic Works, Sheffield.—Tools for carving stone and wood; turning tools for iron, brass, ivory, hard wood, etc.; carpenters' tools. 280

359a Needham, John, Sheffield.—Cutlery, table and dessert knives and forks, fish eaters. 281

359b Wostenholm, George, & Son (limited), Sheffield.—Cutlery. 281

359c Brooks, Henry, & Co., London.—Metal stoppers and collapsible tubes for artists' colors. 281

359d Burnand, James, & Co., Sheffield.—Table cutlery, etc. 281

360 Needham, John, Sheffield.—Cutlery. 281

360a Neal, John, & Co., London.—Table, dessert, and fish cutlery. 281

360b Brookes & Crookes, Atlantic Works, Sheffield.—Pen, pocket, and table knives, scissors, razors, and dressing case instruments, cutlery. 281

360c Ryder, William Henry, Birmingham.—Taps for drawing effervescing wines or aerated waters. 281

360d Mayer & Meltzer, London.—Cutlery. 281

361 The Patent Nut & Bolt Co. (limited), London Works, near Birmingham.—Iron bolts, nuts, screws, rivets, and washers; fish and sole plates; fish bolts, spikes, and fang bolts. 284

362 Francis, Thomas, & Co., Birmingham.—Nails. 284

363 Baker, Christopher, & Sons, Bir-
ingham.—Coffin furniture; cabinet and general brass fittings; rails, stair rods, nails, and bolts. 284

364 The Phosphor Bronze Co. (limited), London.—Phosphor bronze tools, locks, tubes, wire, sheet, steam fittings, parts of machinery, etc. 284

365 Adams, Robert, London.—Hinges and shoes, secure fastening bolts, weather-tight sill bars for French casements, etc. 284

366a Turner, George, & Co., London.—Screw anchor peg. 284

367a Ullathorne & Co., London.—Heel balls and shoe findings. 284

367b Turner, Archibald, & Co., Leices-
ter.—Elastic fabrics. 285

Fabrics of Vegetable, Animal, or Mineral Materials.

368 Low, Son, & Haydon, London.—Brushes. 286

369 Kent, George Barton, & Co., Lon-
don.—Brushes. 286

370 Culmer, W., & Sons, London.—Brushes used in decorative art. 286

371 Bevis, Henry, London.—Silk banner with emblematic designs. 288

372 Spill, Daniel, London.—Ivory. 289

372a Barnard, Bradly, London.—Bassinettes, baskets, etc. 289

Carriages, Vehicles, and Accessories.

373 Windever, Charles Sandford, Lon-
don.—Brougham, coach, landau, Victoria, Parisian, and Stanhope phaetons. 292

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
154 DEPT. II.—MANUFACTURES.

Vehicles.

—Carriages. 292
375 McNaught & Smith, Worcester.—Barouche, landau, and broughams. 292
376 Thorn, Charles, Norwich.
   a Carriages. 292
   b Shooting and baggage cart. 294
377 Roberts, John, Manchester.—Parisian phaeton. 292
378 Hooper & Co., London.—Carriages and drawings. 292
380 Peters, Thomas, & Sons, London.
   —Carriages. 292
381 Thompson, Charles, London.—Perambulator. 293
381a Roberts, Digby, Coventry.—English bicycle. 293
382 Hawkins Bros., Hatherton Works, Walsall.—Bits, stirrups, spurs, chains, buckles, and general saddlery iron work. 296

383 Hudson, Samuel, Dublin.—Trace and shaft tug safety buckles; safety stirrup. (In Swaine & Adeney's case.) 296
384 Martin, Robert, Old Charlton, Kent.
   —Horse clipping machines; circular cutters for cutting the teeth of the above machines. (In Machinery Hall.) 296
385 Pollock, Sydney, London.—Apparatus for checking runaway and unmanageable horses. 296

387 Goodall, Chas., & Son, London.—Card printing. 424
388 Cohné, Sigismund, London.—Bearings requiring no lubricant. 573
389 Parkinson Bros., Burnley.—Spiced pickling vinegar. 660

(N. B.—Certain exhibits in this Department, from Great Britain, are installed in Agricultural Hall, and catalogued in Part IV.)

For classes of exhibits indicated by numbers at end of entries, see Classification, pp. 27-45.
BRITISH ADVERTISEMENT.

A. LAMOTTE,
3, RUE ELZÉVIR, PARIS,
COMMISSION AGENT
For Chemical Products, Drugs, Colours, Dyes, and all Raw Material.
Agent for Merchants, Growers and Manufacturers at Industrial
and Commercial Exhibitions.

SHELL BOX MANUFACTURERS,
J. JOHNSON & CO.,
Charterhouse Works,
LONDON, ENGLAND.

SHELL COTTAGES,
HANDKERCHIEF & GLOVE BOXES,
TOY FURNITURE,
And all kinds of Ornamental Boxes.
Incorporated 1853.

EXCHANGE
Fire Insurance Company,
172 BROADWAY,
Corner Maiden Lane, NEW YORK.

ASSETS, JANUARY 1, 1876.

Cash Capital ........ $200,010.00
Surplus ............. 224,317.95
Total Assets ........ $424,327.95

R. CARMAN COMBES, President.
ASHER TAYLOR, Vice-President.
C. S. VAN NORDEN, Ass't Vice-Pres't.
GEORGE W. MONTGOMERY, Secretary.
THOMAS B. PECK, Ass't Sec'y.

BRANCH OFFICE,
Southwest corner Fourth and Library Sts., Philadelphia.

MORDECAI D. EVANS, Manager.
Manufactures, Education and Science.

### Chemicals.

1. **Horler, John, Woolston, Canterbury.**—Soap and mould candles. 201
2. **Innes, W. M., Port Chalmers, Otago.**—Cod-liver oil. 201
3. **Louiison, T. B., Nelson.**—Paint made from hematite ore. 202
4. **Johnstone Brothers, Nelson.**—Umbre and red pigments made from hematite ore. 202
5. **Grayling, W. S., Taranaki.**—Extract of towai (Weinmannia racemosa); extract of hinou (Eldeocarpus dentatus). 202

### Ceramics—Pottery, Porcelain, Glass, etc.

6. **Kennedy Bros., Nelson.**—Fire bricks. 207

### Yarns and Woven Goods of Vegetable or Mineral Materials.

8. **Government of New Zealand.**—Specimens of fabrics made from Phormium tenax. 233

### Woven and Felted Goods of Wool, etc.

9. **Webley Bros., Nelson.**—Nelson tweeds made from New Zealand wool. 235
10. **Cook, James, Nelson.**—Woolen rugs, woven and dyed at Nelson. 239

### Clothing, Jewelry, and Ornaments, Traveling Equipments.

11. **Taylor, B. K., Wanganui.**—Hat made of kiekie (condyline). 251
12. **Liardet, H. E., Wellington.** A fancy articles made from feet and bones of sea birds. 254
13. **Taylor, Mrs. Richard, Wanganui.** Ornamental satchel and table mat. 254
15. **New Zealand Commissioners.**—Garments and ornaments of the Maoris. 257

### Fabrics of Vegetable, Animal, or Mineral Materials.

16. **Moyle, Edward, Taranaki.**—Cord made from phormium tenax. 257

### Institutions and Organizations.

26. **Colonial Museum, J. Hector, Director.**—Garments and ornaments of the Maoris. 312
27. **National Museum at Washington, J. Henry, Secretary.**—Garments of the Maoris. 312

### Engineering, Architecture, Maps, etc.

28. **Government of New Zealand.**—Geological maps of New Zealand, by James Hector. 335
29. **Geological Survey Department, James Hector, Director.**—Geological plans and sections. 335
30. **Canterbury Museum, J. von Haast, Director.**—Geological plans and sections. 335
31. **Hector, J.**—Relief Model of New Zealand, geologically colored. 335
32. **Government of New Zealand.**—Topographical map of the colony, engraved by E. Ravenstein. 335

### Physical, Social, and Moral Condition of Man.

33. **National Museum, Washington, J. Henry, Secretary.**—Canoe paddles of Maoris; skulls of Maoris and Moriori from the Chatham Islands. 340

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 37-45.
Education and Science, Art, Agriculture.

34 Woon, R. W., Wanganui.—Canoe paddles of the Maoris. 340
35 Government of New Zealand.—Statistics and census of New Zealand for 1874, prepared by W. R. E. Brown, Registrar-General. 345
35a Hector, J.—Transactions and Proceedings of the New Zealand Institute, Vols. I. to VII. 345
35b Vogel, Sir Julius.—Hand-book of New Zealand. 345

Painting.
35c Geological Survey Department, James Hector, Director.—Water color sketches by W. M. Cooper. 411

Engraving and Lithography.
35d New Zealand Commissioners.—Pictures from W. L. Buller’s “Birds of New Zealand,” drawn by J. H. Keulemans. 422

Photography.
36 Burton Bros., Dunedin.—Views of scenery of South Island. 430
36a Bothamley, A. T.—Photographs of Maoris. 430

37 Government of New Zealand.—Views of scenery, etc., by H. Deveril. 430
38 Taranaki Committee.—Views of New Plymouth and surrounding country. 430
38a Hector, J.—Photographs exhibiting domestic life of the Maoris. 430
39 Mundy, D. L.—Views of scenery, foliage, buildings, gold mining, etc. 430

Railway Plant, Rolling Stock, etc.
40 Government of New Zealand.—Photographs of engines and engineering works used in New Zealand. 570

Arboriculture and Forest Products.
41 Cruickshank, J. D., Upper Hutt Saw Mills, Wellington.—Section of trunk of rimu (Dacrydium cupressinum), red pine of settlers. 650
42 Westland Committee.—Specimens of woods with bark. 600
43 Taranaki Committee.
a Specimens of woods. 601
b Barks of the Atawhero and the Pukatea; earth used by the Maoris as a mordant for dyes. 602
c Dried ferns; fungus exported as food to China; esculent fern root; birds’ nest fungus and curious parasite. 604
44 Black, W. B., American Coach Factory, Wellington.—Specimens of woods. 601
45 New Zealand Commissioners.—Specimens of woods. 601
46 Grayling, W. S., Taranaki.—Bark of hinuia; blue earth, used by the Maoris, mixed with shark oil, as blue paint. 602

47 Colonial Museum, Wellington, James Hector, Director.—Tanbarks, native to New Zealand. 602
49 Walker, Renwicks & Co., New York.—Kauri gum. 603
50 Forbes, R. W., New York.—Kauri gum. 603

Agricultural Products.
51 Banks, E. H., Christchurch.—Oats and other cereals. 620
52 Wood, W. D., Christchurch.—Wheat. 620
53 Cunningham, P., & Co., Christchurch.—Wheat grown in Canterbury. 620
54 Ruddenklau, J. G., Addington, Canterbury.—Wheat. 620
55 Hooper & Dodson, Nelson.—Hops. 623
56 Wilkin, Robert, Christchurch.—Perennial rye grass and cockfoot seed. 624
57 Armstrong, J. B., Christchurch.—Phormium seeds. 624

Animal and Vegetable Products.
58 Wilson, Thomas, Woolston, Canterbury.—Saddle, harness, and shoemakers’ leather; fancy colored skins for shoemakers and bookbinders. 650
59 Armitage, Taranaki.—Dressed kip and calf leather. 652
60 Morris, Thomas, Oamaru, Otago.—Gentleman’s town saddle. 652
a Specimens of kiwi; skeleton and bones of moa. 652
b Egg of the kiwi, and model of egg of moa. 653
62 Gilmour, John, Christchurch.—Hams and bacon. 656
63 New Zealand Provision & Produce Company, Christchurch.—Preserved meats. 656
64 Nairn, David, Addington, Canterbury.—Tomato sauce. 656
65 Trent Brothers, Woolston, Canterbury.—Chicory in different stages of preparation. 657
66 Smith, James, Nelson.—Fruit wines. 660
67 Henderson & Farrah, Wanganui.—Ale and porter. 660

Horticulture.
68 Coates, Laning, Christchurch.—Live ferns. 707

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 37-45.
NEW SOUTH WALES.

(North of Nave, Columns 10 to 17.)

Manufactures, Education, Art.

Chemical Manufactures.
1 Read, R. B., Randwick.—Extract, leaves, and berries of Smilacis glycyphylla, or Australian sarsaparilla.
2 Barrett & Co., Sydney.—Aerated waters and cordials.
3 Giroy & Hurst, Sydney.—Baking, custard, egg, and butter powders.
5 Swaia & Co., Parramatta.—Washing fluid and soap.
6 New South Wales Shale & Oil Co., Sydney.—Kerosene oil, etc.
7 New South Wales Commissioners, Sydney.—Stearine candles.
8 Layton, Fred., Grafton, Clarence river.—Soap and candles.
9 Underwood, Thomas, Paddington.—Paints and paint pigment.
10 Hoff, M. Camille, Nakutakinna, New Caledonia.—Indigo.

Ceramics—Pottery, Porcelain, Glass, etc.
11 New South Wales Commissioners.—Churns, jars, etc.

Furniture, etc.
12 Lyons, Cottier, & Co., Sydney.—Stained glass staircase window; subject, 'Captain Cook.'
13 Hudson Brothers, Steam Joinery Mills, Sydney.—Window sashes, outside hall door, inside four-panel door, drapery panel door, French casements, cedar table legs.

Yarns and Woven Goods of Vegetable or Mineral Materials.
14 Read, John Cecil, Darlinghurst, Sydney.—Mats and matting made of cocoa fibre yarn, by aborigines of New South Wales and Frazer’s Island.
15 Rudder, E. W., Kempsey.—Linen.

Woven and Felted Goods of Wool, etc.
17 New South Wales Commissioners.
17a Tweeds.
17b Shawls.
18 Jennings, P. A., Sydney.—Rug of tanned platypus skin.
19 New South Wales Commissioners.—Wallaby skin rug.

Clothing, Jewelry, and Ornaments, Traveling Equipments.
20 Jennings, P. A., Sydney.—Collaret and cuffs of platypus skin.
21 Midgley, Mrs., Cook’s River.—Wool flowers, copied from Australian native flowers.
22 Layton, Fred., Grafton.—Furs and skins of opossum, kangaroo, wallaby, and platypus.

Paper, Blank Books, and Stationery.

Medicine, Surgery, Prosthesis.
24 Spencer, John, Sydney.—Mechanical dentistry.

Fabrics of Vegetable, Animal, or Mineral Materials.
25 New South Wales Commissioners, Sydney.—Brushware.
26 New South Wales Commissioners, Sydney.—Manila rope, New Zealand flax rope, and lines.
27 Green, R., Sydney.—Cradles, flower stand, chair, perambulator; cane and willow work.

Carriages, Vehicles, and Accessories.
28 John Robertson, Sydney.—Buggy.
29 New South Wales Commissioners.—Lady’s side saddle.
30 New South Wales Commissioners, Sydney.—Saddlery.

Educational Systems, Methods, and Libraries.
30b Sutherland, George.—Christian psychology.
30c Australian Museum.—Collection of birds, animals, etc.
30d New South Wales Commissioners.—Collection of birds.

Photography.
30e New South Wales Commissioners.—Photographs.
30f Holtermann, B. O.—Photographs.
30g Barnet, James.—Photographs.
30h Richards, Thomas.—Photo-lithographs.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Forest and Agricultural Products, Animal and Vegetable Products.

Arboriculture and Forest Products.
31 Macarthur, Sir W., assisted by Hill & Hanrahan & J. Hassell.—Woods of southern districts. 600
32 Moore, Charles.—Woods indigenous to the northern districts. 600
33 Shoobert, James, Sydney.—Iron bark and turpentine timber. 600
34 Deregus, W., Yarramgara Station.—Boree, and straight and curly yarran timber. 600
35 Hedgson, George, Redfern.—Timber from Bellinger river. 600
36 Penzer, J., Bundamar, near Dubbo.—Timber. 600
37 Du Faur, E., Sydney.—Timber from Mount Victoria. 600
37a New South Wales Commissioners.—Woods indigenous to New South Wales. 600
38 Hudson Bros, Botany Road, Redfern.—Timber. 600
39 Deregus, R., Yarramgara.
   a Yarram gum. 603
   b Quandong nuts. 605
40 Harling, Mrs., & H. H. Field, Sydney.—Pressed ferns. 604
41 Moore, Charles, Botanic Gardens, Sydney.—Seeds, ginger-root, and bitter bark. 605
42 Hemmings, F. W., Loma Loma, Fiji.—Dried coconaut. 605
43 Ryder Bros, Mango Island, Fiji.—Dried coconaut. 605

Agricultural Products.
44 Lovegrove, W., Terrastra, Shoalhaven river.—Maize. 620
45 Ryder Bros, Mango Island, Fiji.
   a Maize. 620
   b Beans. 621
   c Turmeric and turmeric powder. 622
46 Peden, M. J., Bega.—Maize. 620
47 Demestre, E., Shoalhaven.—Maize. 620
48 Eggrins, James, Grafton, Clarence river.—Maize. 620
49 Blain, C. R., Grafton, Clarence river.—Maize. 620
50 Macarthur, Sir W.—Maize. 620
51 Lewis Bros, Tamworth.—Wheat. 620
52 Dalton Bros, Orange.—Wheat. 620
53 Nelson Bros, Orange.—Wheat. 620
54 Jaeschke, Gustave, Clarence river.—Cigars and tobacco leaf. 623
55 Schweigert, W., & Co.—Cigars. 623
56 Muirhead, R., Grafton, Clarence river.—Cigars. 623
57 Hoff, M. Camille, Nakutakina, New Caledonia.—Coffee. 623

Land Animals.
58 Jennings, P. A., Sydney.—Stuffed platypus. 637

Water Animals, Fish Culture and Apparatus.
60 Hemmings, F. & W., Loma Loma, Fiji.—Bêche de mer. 643

Animal and Vegetable Products.
61 Secombe, R., Milton, Ulladulla.—Preserved milk. 651
62 Wright, Davenport, & Co., Sydney.—Leather. 652
63 Forsyth, J., & Sons, Sydney.—Leather. 652
64 Alderson & Sons, Sydney.—Leather. 652
65 Bell, H., Sydney.—Tallow and neat’s-foot oil. 652
66 Hewitt, T. G., Grafton, Clarence river.—Tallow and neat’s-foot oil. 652
67 Berry, J. S., Botany, Sydney.—Neat’s-foot oil and glue. 652
68 Layton, Fred., Grafton, Clarence river.—Beeswax. 654
69 Sydney Meat Preserving Co., Sydney.—Preserved meats. 656
70 Squires, Elam, Penrith.—Preserved fruits, jams, and jellies. 656
71 Hoff, Camille, Nakutakina, New Caledonia.—Preserved pineapples. 656
72 Biddell Bros, Sydney.—Preserved lemons and oranges. 656
73 Moore, Charles, Botanic Gardens, Sydney.—Preserved lemons and oranges. 656
74 Watson Bros., Young.—Flour. 657
75 Lewis Bros, Tamworth.—Flour. 657
76 Cohen & Levy, Tamworth.—Flour. 657
77 Dalton Bros, Orange.—Flour. 657
78 Nelson Bros, Orange.—Flour. 657
79 Waters, James, Ravensdale, Brisbane Water.—Arrowroot. 658
80 Cole, W., & Son, Tomago, Hunter river.—Arrowroot. 658
81 Laurie, W. & L., Gloucester, Port Stephens.—Arrowroot. 658
82 Ryder Bros, Mango Island, Fiji.—Arrowroot. 658
83 Payne, George, Grafton, Clarence river.—Arrowroot. 658
84 Champion, George, Ulmarra, Clarence river.—Arrowroot. 658
85 Munn, A. L., Merimbula.—Maizena. 658
86 Colonial Sugar Refining Co.—Refined sugars. 659
87 Martin, George, Grafton, Clarence river.—Sugar. 659
88 Chowne, E. G., Ulmarra, Clarence river.—Sugars. 659
89 Biddell Bros, Sydney.—Confecions. 659
90 New South Wales Co, Clarence river.—Raw sugars. 659
91 Fallon, James T., Albury.—Wines. 660
92 Munro, A., Bebeath, Singleton.—Wines. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 97-45.
Textile Substances of Vegetable or Animal Origin.

103 Hemmings, F. & W., Loma Loma, Fiji.—Cotton. 663
104 Ryder Bros., Mango Island, Fiji.—Cotton. 663
105 Hoff, Camille, Nakutakina, New Caledonia.—Cotton. 663
106 Moore, Charles, Botanic Gardens, Sydney.—Vegetable fibres of various kinds. 666
107 Rudder, E. W., Kempsey.—Fibre of gigantic nettle tree. 666
107a Cox, E. K.—Wool. 667
107b Cox, G. H.—Wool. 667
107c Cox, F. & A.—Wool. 667
107d Lamb & Roberts.—Wool. 667

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
VICTORIA.

(North of Nave, Columns 12 to 13.)

Chemical Manufactures, Ceramics, Furniture.

Chemical Manufactures.

1 Bosisto, Joseph, Richmond, Melbourne.—Chemical and pharmaceutical preparations obtained from the eucalyptus or gum trees of Australia, and other indigenous vegetation. 200

3 Hood & Co., Melbourne.—Chemical and pharmaceutical preparations. 200

4 Lewis & Whitty, Fitzroy.—Washing and baking powders, ball lye. 200

5 Stringer & Co., Melbourne.—Baking powder. 200

6 Sullivan, Joseph, Melbourne.—Pest man's filter; disinfectants flake specific and lick, hydrated silicate of aluminium. 200

7 Woodward, George, Kew.—Guano, deodorants, block of deodorized night soil. 200

8 Charles, & Son, Emerald Hill.—Neat's-foot and trotter oil. 201

9 Apollo Stearine Candle Co. (limited).—Footsewery.—Stearine and paraffin candles, and products. 201

9 Kitchen & Sons, Melbourne.—Stearine and large carriage candles. 201

10 Borthwick, Alex., Melbourne.—Varnishes, anti-fouling composition for ships' bottoms, enamelled cast iron pedestal pilars, anti-corrosive paint. 202

11 Bowman, John S., Melbourne.—Colonial crayons. 202

12 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne. 200

13 Lewis & Whitty, Melbourne.—Blacking. 202

14 Hogg, S. P., & Co., Melbourne.—Curry powder. 203

15 Lewis & Whitty, Fitzroy.—Salt, essences, curry powder. 203

16 Perry, Hunter, & Co., Sandhurst.—Safety fuse. 204

Ceramics—Pottery, Porcelain, Glass, etc.

17 Birmingham & Lacy, Brunswick.—Red building and white pressed and moulded bricks. 206

   a Stoneware drain pipes. 206
   b Bronze vases, stone porous jugs, patent damp-proof for floor ventilation. 210

19 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.
   a Fire-clay crucibles. 207
   b Encaustic tiles, trusses, vases, etc. 208
   c Earthenware and pottery. 210
   d Glassware. 216

20 Adams, R. T., Melbourne.—Filters. 210

21 Bendigo Pottery Co., Sandhurst.—Earthenware worn for still. 210

23 Ferguson & Urie, Melbourne.—Stained glass for windows. 214

24 Gledhill, Melbourne.—Glass bottles. 215

25 Melbourne Glass Bottle Works Co., Emerald Hill.—Glass bottles. 215

26 Mount & Co., Emerald Hill.—Glassware. 215

Furniture, etc.

27 Alcock & Co., Melbourne.—Blackwood billiard table with appliances; console table. 217

28 Carr & Sons, Melbourne.—Window blinds, window sash, with Venetian shutters, etc. 217

29 Davis, J., Richmond.—Window sash. 217

30 Hodgson Bros., Sandhurst.—Self-acting Venetian blind, spring roller blind. 217

31 McEwan, James, Melbourne.—Sideboard. 217

32 Musciali, Lewis, Melbourne.—Pier glass, console table. 217

33 Baker, John, Emerald Hill.—Safety steps. 220

34 Wiegmann, August, Melbourne.—Basketware cradles, perambulators, chairs and flower stands, baskets. 221

35 Walker, A. R., Melbourne.—Gas cooking stoves. 222

36 Shaw, Alfred, & Co., Melbourne.—Millet brooms and whisks. 224

37 Guthrie, G. D., Epsom, Sandhurst.—Collection of pottery ware for household use, etc. 224

38 Bogle, Andrew, & Co., Melbourne.—Boot and shoe brushing and cutters' polishing and sharpening machine. 224

39 Draper & Sons, Melbourne.—Earth靠着 and fittings. 226

Yarns and Woven Goods of Vegetable or Mineral Materials.

40 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Flax, ropes, lines, twines, etc. 229

41 Donaghy, Michael, Geelong.—Ropes and lines. 229

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>43 McPherson, Thomas, Melbourne.</td>
<td>Medicine, Surgery, Prosthesis.</td>
</tr>
<tr>
<td>47 Director of Botanic Gardens, Melbourne.</td>
<td>(For farm vehicles and railway carriages, see Departments of Agriculture and Machinery.)</td>
</tr>
<tr>
<td>48 Robertson, John, Melbourne.</td>
<td>Painting.</td>
</tr>
<tr>
<td>49 Zoological and Acclimatization Society, Melbourne.</td>
<td>Carriages, Vehicles, and Accessories.</td>
</tr>
<tr>
<td>50 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.</td>
<td>62 Stanway, W., South Yarra.—Models of chairs for invalids.</td>
</tr>
<tr>
<td>51 Timbrell, Ann, Collingwood.</td>
<td>63 Danks, John, Melbourne.—Valves, cocks, lubricators, injectors, etc.</td>
</tr>
<tr>
<td>52 Victoria Ladies' Sericulture Co., (limited), Castlemaine.</td>
<td>64 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.</td>
</tr>
<tr>
<td>53 Ford Brothers, Melbourne.</td>
<td>—Victorian and English ensigns.</td>
</tr>
<tr>
<td>54 Inspector-General of Penal Department, Melbourne.</td>
<td>Silk and Silk Fabrics.</td>
</tr>
<tr>
<td>55 Rosier, John, Melbourne.</td>
<td>50 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.</td>
</tr>
<tr>
<td>56 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.</td>
<td>Silk cocoons from the Acclimatization Society, Victoria, and Mrs. Bladen Nell; cultivated silk in cocoons and hanks, also bleached, dyed, and worked upon llama.</td>
</tr>
<tr>
<td>57 De Richelieu, Madam F., Windsor.</td>
<td>51 Timbrell, Ann, Collingwood.</td>
</tr>
<tr>
<td>58 Pausacker, Evans, &amp; Co., Melbourne.</td>
<td>52 Victoria Ladies' Sericulture Co., (limited), Castlemaine.</td>
</tr>
<tr>
<td>59 Botanic Gardens, Director of, Melbourne.</td>
<td>53 Ford Brothers, Melbourne.</td>
</tr>
<tr>
<td>60 Ramsden, Samuel, Melbourne.</td>
<td>a Pitt hats, in felt, silk, merino, etc.</td>
</tr>
<tr>
<td>61 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.</td>
<td>b Pith sunshades for horses.</td>
</tr>
<tr>
<td>62 Commissioner for Victoria, for the Philadelphia Exhibition, Melbourne.</td>
<td>a Myall pipes; royle box cases of myall wood.</td>
</tr>
<tr>
<td>63 Danks, John, Melbourne.—Valves, cocks, lubricators, injectors, etc.</td>
<td>b Address-case of inland leather.</td>
</tr>
<tr>
<td>64 McIlwraith, John, Melbourne.</td>
<td>57 De Richelieu, Madam F., Windsor. —Ornaments made from fish scales, etc.</td>
</tr>
<tr>
<td>66 Bothwell, Wade, Melbourne.—Harness, saddles, whips, etc.</td>
<td>Paper, Blank Books, Stationery.</td>
</tr>
<tr>
<td>67 Glenister, W. A., Geelong.—Axes, Colling's crank, etc.</td>
<td>59 Botanic Gardens, Director of, Melbourne. —Paper made from various barks, stems, and leaves and stems.</td>
</tr>
<tr>
<td>68 Stoneman, Alfred, Richmond.—Carriage springs.</td>
<td>60 Ramsden, Samuel, Melbourne. —Various grades of paper, including cartridge, printing, and wrapping paper.</td>
</tr>
<tr>
<td>69 Commissioners for Victoria, for the Melbourne.—Boots and shoes.</td>
<td></td>
</tr>
<tr>
<td>70 Campbell, O. R., Windsor.—Crossing the Plains.</td>
<td>61 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne. —Medals of the Victorian Intercolonial Exhibition, 1875; seals of the Melbourne Public Library, University, and Exhibition of 1852.</td>
</tr>
<tr>
<td>71 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne. —Heraldic painting on panels.</td>
<td>72 Curtis, J. W., Melbourne.—Track off the Point Nepean road.</td>
</tr>
<tr>
<td>73 Guerard, E. Von, Melbourne.—Pulpit rock, Phillip Island, Ballarat, 1873.</td>
<td>74 Johnston, H. J., Melbourne.—Summer Sunset.</td>
</tr>
<tr>
<td>75 Whitehead, Isaac, Melbourne.—Dandenong State Forest.</td>
<td>76 Bowman, John S., Melbourne. —“The Knob in the Alps,” crayon, Miss Bowman.</td>
</tr>
<tr>
<td>77 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne. —Lithographs of fossils, roots, and seeds.</td>
<td>a “In the Alps,” crayon, Miss Adams.</td>
</tr>
<tr>
<td>81 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne. —Weapons, etc.</td>
<td>77 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne. —Lithographs of fossils, roots, and seeds.</td>
</tr>
<tr>
<td>82 For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.</td>
<td>83 Johnson, H. J., Melbourne.—Summer Sunset.</td>
</tr>
</tbody>
</table>
Photography.
8 Ararat, Shire Council of, Ararat.—Photographic views and statistics of the
shire. 430
79 Batcheller & Co., Melbourne.—Photographs of persons born in the colony
of Victoria. 430
80 Bock, Henry, Gippsland.—Photographs of Victorian native flowers. 430
81 Chuck, T. P., Melbourne.—Photographs of persons born in the colony of
Victoria. 430
82 Colac, Shire Council of, Colac.—Photographic views of the district. 430
83 Commissioner for Victoria, for the Philadelphia Exhibition, Melbourne.
—Photographic views of scenery, public and private buildings, cattle, etc. 430
84 Creswick, Borough Council of, Creswick.—Photographic views and statistics
of the Borough. 430
85 Darebin Shire, Council of, East
bourne.—Photographic views and statistics of the shire. 430
86 Echuca, Borough Council of, Echuca.—Photographic views and statistics. 430
87 Emerald Hill, Borough Council of, Emerald Hill.—Photographic views. 430
88 Hotham, Town Council of, Hotham.—Photographic views and statistics
of the town. 430
89 Johnstone, O’Shannessy & Co., Melbourne.—Photographs of persons born
in the colony of Victoria, photographs colored in oil. 430
90 McDonald, D., St. Kilda.—Photographic views. 430
92 Phoenix Foundry Co. (limited), Ballarat.—Photograph of locomotives,
enGINE, and tender, manufactured for the Victorian Government. 430
93 Prahran, Town Council of, Prahran.—Photographic views and statistics
of the town. 430
94 Robertson Brothers, Colac.—Colored photographs of cattle, bred by exhibi-
tors. 430
95 Sandhurst, City of, Sandhurst.—Photographic views and statistics of the
city. 430
96 Stewart & Co., Melbourne.—Photographs of persons born in the colony of
Victoria. 430
97 Surveyor General of Victoria, Melbourne.—Photographic views of botanical
and other gardens. 430
98 Wangaratta, Shire Council of, Wangaratta.—Photographic views and statistics of the shire. 430
99 Willett, G., Ballarat.—Colored photographs. 430
100 Wilson, Sir Samuel, Ercildoun.—Photographs; team of Hereford bullocks,
bred by himself; prize sheep; his residence, etc. 430
101 Melbourne, City of.—Photographic views of city. 430

Industrial and Architectural Designs, etc.
102 Dowling, William, Emerald Hill.—Centre flowers, trusses. 442
103 Heathcote, T. S., Carlton.—Painted panels. 442
104 Murphy, Edward, Sandridge-road.—Cepe flowers, and ventilators, orna-
mental chimney cap. 442
105 Patterson Brothers, Carlton.—Tables of imitation wood and marble. 442
106 Pepper, George, Windsor.—Plasters’ models, ceiling and wall ventila-
tors. 442

Machines, Tools, etc., of Mining, Chemistry, etc.
107 Morrison, L. K., Melbourne.—Abyssinian tube-wells and pumps, with
boring apparatus. 501
108 White, David, Stawell.—Safety hook, to prevent accidents from over-
winding in mining claims. 501
109 O’Malley, Edmund, Melbourne.—Ventilating safety cage, for mines. 504
110 Harkness, A., & Co., Victoria Foundry, Sandhurst.—Disk, fitted on
screwed stumper shank, and showing principle; cam or wiper. 505
111 Perry, Davis, & Co., Sandhurst.—Stamper gossings. 505

Railway Plant, Rolling Stock, etc.
112 Cornish & Co., Melbourne.—Seats for railway carriages. 571
113 Stoneman, Edward, Richmond.—Railway truck spring. 573

Aerial, Pneumatic, and Water Trans-
portation.
114 Cornish & Co., Melbourne.—Life-preserving buoys, mattresses, belts, rafts,
etc.; seats, couches, and mattresses for ships. 590

Arboriculture and Forest Products.
115 Bass River Steam Saw-Mills, Bass
river.—Blue gum timber. 630
116 Director of Botanic Gardens, Mel-
bourne. a Carpological collection; barks, polished
woods, fibre and tow prepared from barks,
leaves, and stems. 600
b Resins, gums, oleo fat, and caoutchouc. 603
117 Lands and Agriculture, Depart-
ment of, Melbourne.—Native woods. 600
118 Commissioners for Philadelphia
Exhibition, Melbourne. a Boxes, paper knives, and tubs, made of
Victoria woods. 601
b Myall and grass-tree gum, rubber and
rubber stamp. 603
119 Clark, John, & Sons, Melbourne.—
Wattle bark. 612

Agricultural Products.
120 Taylor, John, Allansford.—Adel-
side wheat, grown at Merunga, near
Warrnambool. 650

For clauses of exhibits, indicated by numbers at end of entries, see Classification, pp. 97-95.
Agricultural, Animal, and Vegetable Products.

120. Patience, John, Ichuca.—Purple straw wheat. 620
120 Wright, Thomas Spencer, Rochester.—Purple straw wheat. 620
120 Kelly, Mortimer, Bridgewater.—Wheat. 620
120 Patterson, J. Matthew, Londond.—Wheat. 620
121 St. Arnaud Pastoral & Agricultural Society, St. Arnaud.—Short oats, District, barley. 620
121 O'Reilly, Thomas, Toolamba.—Wheat. 620
121 Adams, John, Warring.—Wheat. 620
121 Smith, George, Ballard.—White Tuscan wheat. 620
122 Scott, James, Indigo, Chiltern.—Wheat. 620
123 Commissioners for Philadelphia Exhibition, Melbourne. a Collection of varieties of wheat and grass-tree plant. 620
123 p Collection of beans. 621
124 O'Keefe, Andrew, Adelaide Vale, Clare Inn.—Purple-straw wheat. 620
124 Myring, Joseph, Campbell's Creek, Colac.—Barley. 620
126 Adams, James, Warring.—White Tuscan wheat. 620
127 Laidlay, John, Bundooma, Plenty-road.—Wheat. 620
128 McNair, Angus, Bellerine East.—New fodder-pea. 620
129 Stewart & Ferguson, Indigo, Chiltern.—Wheat. 620
129 Connor, James, Allansford.—Forty-tall oats, grown at Merunga, near Warrnambool. 620
131 Schmitt, Lewis, Mornington.—Wheat. 620
132 Buckley, Edward, Newbridge, Lodden.—Red-straw wheat from counties of Gladstone and Bendigo, oats. 620
133 Jack, John, Oxley Plains, Ovens district.—Farmpton white wheat, grown on chocolate soil after English grass. 620
134 Northeastern Pastoral & Agricultural Society, Murchison.—Wheat grown by J. McNab, Tabilk. 620
134 Catlin, James, Runnymede.—Purple-straw, white Tuscan and other wheats. 620
135 Moncrieff, John, Tabilk, Goulburn river.—Purple-straw and white wheat. 620
135 Gilmour, Andrew, Colomsky, Bungur.—Oats from parish of Ballyrogan. 620
136: Ararat Flour Mill Co., (limited).—Prime miller's wheat. 620
137 Ross, Thomas, Dry Diggings, near Marysville.—Purple-straw wheat. 620
138 Polson, Angus, Chapman, Moyston.—English barley, Tartarian oats, purple-straw and white wheat. 620
139 West Bourke Pastoral & Agricultural Society, Romsey.—White Tuscan wheat, grown by Hon. T. F. Hamilton. 620
140 Aboriginal Mission Station, Coranderrk.—Hops. 623

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

141 McKenzie, James F., & Co., Melbourne.—Coffee, chirecory, cocoa, and chocolate made from Trinidad nuts; mustard, spices. 623

Land Animals.

142 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne. a Water fowl, stufied by Chess. French. 635
143 St. John, F., Melbourne.—Ducks, plover, grouse, quail, black swan, etc. 635
144 Grimwood, Thomas, Fern Tree Gully.—Quail, snipe, landrail. 635
145 Gaskell, Joseph, Melbourne.—Australian snipe. 633
146 Robertson, W. W., Richmond.—Australian native birds. 633
147 Gaskell, Joseph, Melbourne.—Wild animals. 637
148 Godfrey, F. R., Melbourne.—Wild animals. 637
149 McCoy, Prof., Melbourne University.—Wild animals, and black swan. 637
150 French, C., Melbourne.—Australian longicorn, buprestis, lepadopera. 638
151 Timbrell, Ann, Collingwood.—Japanese silkworms, modeled in wax. 638

Water Animals, Fish Culture and Apparatus.

153 St. John, F., Melbourne.—Fish. 641

Animal and Vegetable Products.

154 Bird, George, Interman, Lyndhurst.—Cheese. 651
155 Pierce, G. G., Melbourne.—Cheese. 651
156 Riddle, J., Lancefield.—Cheese. 651
157 Clark, John, & Sons, Melbourne.—Leathers, skins, barks. 651
158 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Rugs made from skins of Victorian animals. 652
159 Fink, M., Geelong.—Skins. 652
160 Quinn, H. S., Richmond.—Dyed and white wool mats, kangaroo glove leathers. 652
161 Brearley Brothers, Geelong.—Sole leather. 652
162 Dunckley & McBride, Melbourne.—Sash lines, whip gut, gut lath bands, sausage casings. 652
163 Pearce Brothers, Fremantle, Western Australia.—Hides, leather, skins. 653
164 Fitts, Charles, & Sons, Emerald Hill.—Gloes. 654
165 Penal Department, Inspector-General, Melbourne.—Leather. 652
166 Wallis & Co., Richmond.—Leather, goat skin mat. 652
167 Bennett, T. K., Melbourne.—Preserved meats. 656
173 Director of Botanic Gardens, Melbourne.—Jan. 656
174 Zorn, Edward, Clayton's-road, near Oakleigh.—Tomato and Oakleigh sauces. 666
175 Wright, Payne, & Co., South Yarra.—Fruit jams. 666
176 Watson & Paterson, Melbourne.—Hams, bacon, mess pork. 666
177 Western Meat Preserving Co., Colac.—Preserved meats. 666
178 Melbourne Meat Preserving Co., Melbourne.—Preserved meats. 666
179 Lyon George, Beechworth.—Tomato sauce. 666
180 Grant, Mrs., Richmond.—Tomato sauce. 666
181 Comport, Henry, Cheltenham.—Tomato sauce. 666
182 Stringer & Co., Melbourne.—Mixed pickles, sauces, curry powder. 666
182a Boddle, Edward, Nagambie.— 667
182b Hood, F. J., Melbourne.—Malt. 667
183 McKenzie, Jas. F., & Co., Melbourne.—Oatmeal, groats, brose meal. 667
183c Martin, P. J., Melbourne.—Malt. 667
184 Troutte & Blampied, Great Western, Arrarat District.—Wines. 667
184a Myring, Joseph, Campbell's Creek, Castlemaine.—Malt. 667
185 Best, Joseph, Great Western, Arrarat District.—Wine. 667
185a Perrin, William, jr., Richmond.—Malt. 667
186 Docker, F. G. & J. B., Wangaratta, Beechworth District.—Wine. 667
187 Evans, Henry, Beechworth District.—Wine. 667
188 Mellon, Francis, Dunolly, Castlemaine District.—Wines. 667
189 Botten, William, Eddington, Castlemaine District.—Wine. 667
190 Jung, Otto, Castlemaine, Castlemaine District.—Wine. 667
191 Schroeder, Castlemaine, Castlemaine District.—Wine. 667
192 Crippa, Fabrizio, Hepburn, Castlemaine District.—Wine. 667
193 Greer & Co., Echuca, Echuca District.—Wines. 667
194 Vetterl, John, Echuca, Echuca District.—Wines. 667
195 Weber, Jacob, Geelong, Geelong District.—Wine. 667
196 Deppeler, Jacob, Gheringhap, Geelong District.—Wine. 667
197 Ritchie, John, Murghelobuc, Geelong District.—Wine. 667
198 Bear & Ford, Tabilk Vineyard, near Seymour, Goulburn District.—Wine. 667
199 Egli, F., Tabilk, Goulburn District.—Wine. 667
200 Schmitt, Franz, Berwick, Melbourne District.—Wine. 667
201 Francis, Charles, Sunbury, Melbourne District.—Wines. 667
202 St. Hubert's Vineyard Co., Yering, Melbourne District.—Wines. 667
203 Johnston, J. S., Craigie Vineyard, Sunbury, Melbourne District.—Wines. 667
204 Maplestone, Charles, Ivanhoe Lodge, Heidelberg, Melbourne District.—Wines. 667
205 Brasche, Charles, Sunbury, Melbourne District.—Wine. 666
206 Snowden, E. G., Boroondara, Melbourne District.—Wine. 666
207 Smith, G. S., Wahgunyah, Melbourne District.—Wine. 666
208 Pohl, Carl, Strathfield'saye, Sandhurst District.—Wines. 666
209 Bruhn, Albert, Strathfield'saye, Sandhurst District.—Wines. 666
210 Fuchs, Adolph, Strathfield'saye, Sandhurst District.—Wines. 666
211 Fischer, August, Shamrock Vineyard, Enn Creek, Strathfield'saye, Sandhurst District.—Wines. 666
212 Shaw, F. K., Goornong, Sandhurst District.—Wine. 666
213 Grosse, Frederick, Strathfield'saye, Sandhurst District.—Wines. 666
214 Grosse, Fred., Toorongo Vineyard, Bendigo, Sandhurst District.—Wine. 666
215 Greiffenhagen, Wm., Strathfield'saye, Sandhurst District.—Wines. 666
216 Brown, H. J., Australian Distillery, Melbourne.—Geneva spirits of wine. 666
217 Fuller, Alfred, Kew.—Ale, stout. 666
218 Henelly, James, Melbourne.—Ale. 666
219 Latham, Edward, Carleton Brewery, Carleton.—Ale, porter. 666
220 Martin, P. J., Melbourne.—Ale. 666
221 Reed, Henry, & Co., South Yarra.—Vinegar. 666
222 Steward, James, Eaglehawk, Sandhurst.—Ale. 666
223 Treacy, John, & Co., Geelong.—Ale, stout. 666
224 Warrenheip Distillery Co., Ballarat.—Whisky, Geneva spirits of wine. 666
225 Guest, T. B., & Co., Melbourne.—Fancy biscuits. 666
226 Smith & Son, West Melbourne.—Biscuits. 666
227 Swallow & Ariell, Sandridge.—Biscuits. 666

Textile Substances of Vegetable or Animal Origin.

228 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Cotton. 665
229 Atkinson, Wm., Camperdown.—Teasels. 666
230 Longmire, Thomas, Kooroongang, Sunshine.—Flax stalks and seeds. 666
231 McPherson, Thomas, & Co., Melbourne.—Jute. 666
232 Armstrong, Alex., Warramting, Shellford.—Wools. 667
233 Arnold, George, & Co., Melbourne.—Assorted wools grown by James Gibson, Cleveland, Tasmania; Wm. Gibson & Son, Scone, Tasmania; F. Russell, Langi Willi and Cangam, Victoria; Wm. Cumming, Mt. Pisans, Victoria; A. M. Campbell, Melaluka, Victoria; John...

234 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Wools; wool from S. Robertson, Geelong.

235 Cumming, Thomas F., Stoney Point.

236 Currie, John Lang, Larra, Derimallum.—Wools.

236 Degrawes, C. & J., Coliban Park, Elphinstone.—Wool.

237 Elder, W. & N. G., Elder, Rockwood.—Wools.

238 Gilbert, Alfred N., Warwilla Station, Waangunilla, Deniliquin.—Wools.


240 Greaves, Edward G., Berriallcock, Skipton.—Wool.

241 Hastings, Cunningham, & Co., The Australian Wool Stores, Melbourne.—Fleeces of wool from the following breeders: H. Cattanach, Tellogra; C. W. Simson, Mundagali; Godfrey & Chambers, Pevensey; F. L. Parker, Quamong; Everett & Watson, Tchelery and Nyang; Wm. Lang, M. L. A., Wargam; Hon. Phillip Russell, M. L. A., Carngham and Langi Willi; John L. Currie, Larra; Thomas Dowling & Sons, Jellalabad; Executors of late A. Russell, Mawallock; Wm. Lewis, Stonleigh; Ewan McPherson, Binduck; Godfrey McKinnon, Goonambill; Russell & Shew Eli Elwah; Rutherford Brothers, W. A.; H. & Robert Simson, M. L. A., Langi Kal Kal; Nichol & Telford, Narrawong; Knight & Lydiard, Kooringal; Mount Battery Co., Mount Battery; Alfred Chenery, Delatite; Alexander Wilson, Mount Emu; J. G. Reeves, Footscray.

242 Henty, Edward, Portland.—Wools.

243 Reeves, Isaac G., Footscray, Melbourne.—Wool.

244 Russell, Thomas, Barunah Plains, Mount Hesse.—Wool.

245 Siddge, William, Farnham Park, Warrnambool.—Fleeces.

246 Rutherford, Andrew, Como, Kennington, Geelong.—Wool.

250 Synnot, Monckton, Melbourne.—Wool.

251 Synnot, George, & Co., Geelong.—Wool.

253 Thomas, C. T., North Sandridge.—Dressed skin of pure Romney ewe, bred by R. Muldoon, Bogs.

254 Timms Brothers, Mount Hesse, Beeac.—Wools.

255 Watson, Alexander, Warribee.—Fleeces.

256 Wilson, Sir Samuel, Oakleigh Hall, East St. Kilda.—Wools and silks.

257 Wilson, John, Lismore.—Wool.

258 Howard, John, near Albury.—Sample cocoons of mulberry silkworms, with wound silk in its natural colors; floss silk; Japanese and Italian grain; hanks of suffocated and pierced cocoons.

259 Machines, Implements, and Processes of Manufacture.

260 Bondington, Robert, Carlton.—Sheep support on rollers.

Ornamental Trees, Shrubs, and Flowers.

261 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Tree ferns from Dandenong State Forest and Mount Macedon; toadstools from Mount Macedon.

262 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Fac-similes of specimens of fruit, the originals of which were selected during the past season,模式 and arranged by Thomas McMillan:

- Apples and pears from Josiah Trevestan, Ballarat; Chas. Draper, Hazelghen; H. U. Cole, Twyford; Robert Whatmough, Greensborough; Horticultural Society of Victoria; John Harrison, Essendon; John Smith & Sons, Riddell's Creek; T. C. Cole; King & Sons, Fyansford; Geelong and Western District Agricultural and Horticultural Society; W. L. Hunt, Malvern; Chas. Allen, North Brighton; Thos. Christian, Mount Macedon; W. Lawford, Doncaster; J. Carson; J. Roberts; H. Boyce; Mr. Freike, Carisbrook; C. May, Sunbury; J. C. Cole, Richmond; J. D. Roberts, Hawthorne; Robt. Hepburn, Hawthorne; A. Stuart, Toorak; Geo. Kihou, Caulfield; J. Weber, Geelong; Jas. Lang, Harcourt; Sir Redmond Barry; J. Banks, Flemington; Mr. James, Ballarat; Jos. Bosisto, Richmond; and Joseph Webster, Wanganui.

- Quinces from Sir Redmond Barry and J. Webler, Geelong.

- The medlar and the loquat.

- Peaches from C. C. Whatmough, J. Lawford, J. McDonald, G. & W. D. Agricultural and Horticultural Society.

- Nectarines from R. Whatmough and others.

- Apricots, plums, cherries, and olives europea.

- Grapes, mulberries, figs, pomegranates, and oranges.

- Fruits from Mr. Graham and the Melbourne Botanical Gardens.

- Gooseberries from Thos. Lang & Co. and F. Moss, Bunyipong.

- Plums, red, and white currants from Thos. Lang & Co.

- Raspberries from Henry Boyce.
SOUTH AUSTRALIA.

(North of Page, Columns 10 to 17.)

COLLECTIVE EXHIBIT.

Minerals, Chemicals, Manufactures, Clothing.

Minerals, Ores, Stone, Mining Products.

1 Clark, F., & Sons, Adelaide.—Iron ores.
2 Ballannah Mining Co., Adelaide.—Copper ores and bismuth.
3 North Yelta Mine, near Adelaide.—Copper ores.
4 Moonta, Wallaroo, and other mines, near Adelaide.—Copper ores.
5 Crabb, R. S., Adelaide.—Azurite and malaebite from the Burra Burra mine, near Adelaide.
6 South Australian Commissioners.—Specimens of gold quartz from the northern territory.
7 Coobong Oil & Coal Co.—"Coozon-gill," a mineral caomel-house.

COLLECTIVE EXHIBIT OF AURIFEROUS QUARTZ FROM THE NORTHERN TERRITORY OF SOUTH AUSTRALIA, BY THE COMMISSIONERS, FOR THE FOLLOWING OWNERS.

6 Ayliffe, I. H., W. Union Mine.
7 Becker, I., Yar Creek.
8 Brese & Starke, Extended Union Mine.
9 Caledonia New Amalgamated Co.
10 Golden Stream Claim.
11 Griffiths, W. K., South Union Mine.
12 Grove Hill Co.
13 Gunn, J. H., Britannia Reef.
14 Lewis, John, Pine Creek.
15 Bernardo, M., Pine Creek.
16 New Telegraph Co.
17 Sandy Creek Claim.
18 Shepperd, E., John Bull Reef.
19 Sandy Creek Puddling Co.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

20 Tripp, J. P., Lady Alice & Union Reef.
21 Union Prospectors Co.
22 Whitelaw, E. H., Pine Creek.
24 South Australian Commissioners, Adelaide.—Marble, sandstone, and slate from quarries near Adelaide.

Chemical Manufactures.

25 Barnard, George L., Adelaide.—Olive oil.
26 Davenport, Samuel, Adelaide.—Olive oil.

Yarns and Woven Goods of Vegetable or Mineral Materials.

27 Knight, J. G., Adelaide.
28 Steiner, Henry, Adelaide.—Shell necklace, gold brooch and earrings; shell brooch and earrings set in gold.
29 Davenport, Samuel, Adelaide.—Egg made up in imitation of jewelry.
30 Nitsche, W., Adelaide.—Copper vase, cross, and pipe; silver cups made from a dollar and a five-franc piece; tea-pot made from a shilling.
31 Knight, J. G., Adelaide.—Aboriginal ornaments from the northern territory of South Australia.

Clothing, Jewelry, and Ornaments, Traveling Equipments.

28 Steiner, Henry, Adelaide.—Shell necklace, gold brooch and earrings; shell brooch and earrings set in gold.
29 Davenport, Samuel, Adelaide.—Egg made up in imitation of jewelry.
30 Nitsche, W., Adelaide.—Copper vase, cross, and pipe; silver cups made from a dollar and a five-franc piece; tea-pot made from a shilling.
31 Knight, J. G., Adelaide.—Aboriginal ornaments from the northern territory of South Australia.
Manufactures, Education, Art, Agriculture.

32 Steiner, Henry, Adelaide.—Silver-mounted emu egg inkstand. 254
33 Wendt, J. M., Adelaide.—Silver-mounted emu egg inkstand. 254
34 South Australian Commissioners, Adelaide.—Skins of Indigenous birds and animals of South Australia made into muffs, collarettes, etc. 256

Military and Naval Armaments, Ordnance, Fire Arms, and Hunting Apparatus.

35 Knight, J. G., Adelaide.—Aboriginal weapons from the northern territory of South Australia. 269

Hardware, Edge Tools, Cutlery, and Metallic Products.

36 South Australian Commissioners, Adelaide.—Iron castings made from Adelaide ore. 263

Educational Systems, Methods, and Libraries.

37 South Australian Commission, Adelaide.—Herbarium, comprising specimens of all the known plants indigenous to South Australia, prepared by Dr. Schomburgk, director of the Botanic Gardens at Adelaide. 363
38 Adelaide Museum, Adelaide, F. G. Waterhouse, curator.—Collection of birds, mammals, reptiles, skins of animals, and eggs of South Australia. 391

Engineering, Architecture, Charts, Maps, and Graphic Representations.

39 South Australian Commissioners, Adelaide.—Statistical records and maps relating to South Australia, compiled by the Surveyor-General. 335

Photography.

40 Scott, G. B., South Australia.—Photograph of northern territory of South Australia. 430
41 South Australian Commission, Adelaide, South Australia.—Photographs descriptive of town, pastoral, and farming life in South Australia, the Adelaide Botanic Gardens, suburban views, and mining. 430
42 Angas, G. H., Collingwood, near Adelaide.—Photographs of stud stock. 430

Arboriculture and Forest Products.

43 Hardy, Arthur, Mt. Lofty, near Adelaide.—Cork from tree raised from an acorn imported from Spain in 1861. 630
44 Davenport, Samuel, Adelaide.—Wood tools, useful and ornamental. 630
45 South Australian Commissioners, Adelaide.

a Woods, useful and ornamental, from the northern territory of South Australia, forwarded by J. B. Scott, government resident; woods from the neighborhood of Adelaide, collected by Mr. Mais, engineer in chief, and others. 630
b Fungi, supplied by W. B. Hughes, northern territory of South Australia. 634
c Red berries (seeds of the creeping licorice) and cork screw pine seeds, from J. E. Kelsey and W. B. Hughes, northern territory of South Australia. 635

46 Wilke, H., & Co., Port Adelaide.—Barks for tanning; ground and chopped mimosa (black wattle), and ground agacia. 623
47 Knight, J. G., Adelaide.—Bark from the northern territory of South Australia. 623

Pomology.

48 South Australian Commissioners, Adelaide.—Wax models of fruit taken from originals grown in South Australia. 620

Agricultural Products.

49 Carling, Thomas, Adelaide.—Wheat. 620
50 Riggs, John, Adelaide.—Wheat. 620
51 Young, C. B., Adelaide.—Wheat. 620
52 South Australian Commissioners, Adelaide.

a Wheat, barley, oats, and rye. 620
b Peas. 621
c Linseed; hemp, rape, sunflower, prairie and rib grass seed. 624
53 Kelsey, J. E., Mt. Gambier, Adelaide.—Hops, grown in volcanic soil. 623

Water Animals, Fish Culture and Apparatus.

54 Cardwell, Robert, Port Essington, northern territory of South Australia.—Trepang, cured at the fishery, Port Essington, northern territory of South Australia. 644

Animal and Vegetable Products.

55 Kemp, W., Adelaide.—Sheepskin mats. 652
56 Angas, J. H., Collingwood, near Adelaide.—Sheepskins; skins of the spotted emu. 652
57 South Australian Commissioners, Adelaide.

a Dressed skins of the kangaroo, wallaby, and other indigenous animals; also, skins made up in designs. 652
b Emu eggs. 653
c Raisins, plums, figs, and currents. 656
d Wines. 660
58 Davenport, Samuel, Adelaide.

a Skins of native animals and birds. 652
b Emu eggs. 653
59 Bagot, E. M., Adelaide.—Extract of meat. 656
60 Hardy, Thomas, Adelaide.

a Raisins and currents. 656
b Wine. 660
61 Murray, Alexander, near Adelaide. 656
61a McEwen, George, Adelaide.—Assorted jams. 656
62 Dunn, John, & Co., Adelaide.—Flour. 657
63 Magarey, Thomas, & Co., Adelaide. —Flour. 657
64 Cowan, Thomas, & Co., West Adelaide.—Flour. 657
65 Gilbert, Joseph, Pewsey Vale, Adelaide.—Wine. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
### DEPT. II.—MANUFACTURES.

Wines, Textiles.

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Location</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>66</td>
<td>Clark &amp; Crompton</td>
<td>Adelaide</td>
<td>Wines</td>
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<tr>
<td>67</td>
<td>Richman, J.W., Watervale</td>
<td>—</td>
<td>Wines</td>
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<tr>
<td>68</td>
<td>Quick, H. C., Marden</td>
<td>Adelaide</td>
<td>Wines</td>
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<tr>
<td>69</td>
<td>Ross, R. D., Highercombe</td>
<td>Adelaide</td>
<td>Wines</td>
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<tr>
<td>70</td>
<td>Kaines, John H.</td>
<td>Adelaide</td>
<td>Wines</td>
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<tr>
<td>71</td>
<td>Auld, Patrick</td>
<td>Adelaide</td>
<td>Wines</td>
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<tr>
<td>72</td>
<td>Barnard, G. L.</td>
<td>Adelaide</td>
<td>Wines</td>
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<tr>
<td>73</td>
<td>Hornabrook, C. A.</td>
<td>Adelaide</td>
<td>Wines</td>
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<td>74</td>
<td>White, George</td>
<td>Rosefield, Adel</td>
<td>Wines</td>
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<td>75</td>
<td>Baker, Isabella</td>
<td>Morialta, Adel</td>
<td>Wines</td>
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<td>76</td>
<td>Gillard, Joseph</td>
<td>Adelaide</td>
<td>Wines</td>
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<tr>
<td>77</td>
<td>Ind, G. F., Paradise</td>
<td>Adelaide</td>
<td>Wines</td>
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<td>78</td>
<td>Foote, Henry</td>
<td>Adelaide</td>
<td>Wines</td>
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<tr>
<td>79</td>
<td>Holbrook, J. D.</td>
<td>Adelaide</td>
<td>Wines</td>
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<tr>
<td>80</td>
<td>Kelly, Dr.</td>
<td>Tintara, Adel</td>
<td>Wines</td>
</tr>
<tr>
<td>81</td>
<td>Salter, W., &amp; Son</td>
<td>Saltram, Adel</td>
<td>Wines</td>
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<tr>
<td>82</td>
<td>Davenport, Samuel</td>
<td>Beaumont, Adel</td>
<td>Wines</td>
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<tr>
<td>83</td>
<td>Martin, James</td>
<td>Gawler, Adel</td>
<td>Wines</td>
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<tr>
<td>83a</td>
<td>Young, C. B.</td>
<td>Adelaide</td>
<td>Wines</td>
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<tr>
<td>84</td>
<td>Thornber, Unley</td>
<td>Adelaide</td>
<td>Wines</td>
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<tr>
<td>85</td>
<td>Wright, E. W., Horne Park</td>
<td>Adelaide</td>
<td>Wines</td>
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<tr>
<td>86</td>
<td>Bickford, A. M., &amp; Sons</td>
<td>Adelaide</td>
<td>Bitters, quinine wine, and lime-juice cordial</td>
</tr>
<tr>
<td>87</td>
<td>Davis, F. C.</td>
<td>Adelaide</td>
<td>Bitters and cordials</td>
</tr>
<tr>
<td>88</td>
<td>Nitsche, W.</td>
<td>Adelaide</td>
<td>Cordials and liquors</td>
</tr>
</tbody>
</table>

#### Textile Substances of Vegetable or Animal Origin.

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Location</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>89</td>
<td>Angas, J. H., Collingrove</td>
<td>Adelaide</td>
<td>Wool</td>
</tr>
<tr>
<td>90</td>
<td>Keynes, Joseph, Keynton</td>
<td>Adelaide</td>
<td>Wool</td>
</tr>
<tr>
<td>91</td>
<td>Murray, John, Murrayvale</td>
<td>Adelaide</td>
<td>Wool</td>
</tr>
<tr>
<td>92</td>
<td>Graham, Thomas</td>
<td>Adelaide</td>
<td>Wool</td>
</tr>
<tr>
<td>93</td>
<td>Browne, W. J., Moorak</td>
<td>Adelaide</td>
<td>Wool</td>
</tr>
<tr>
<td>94</td>
<td>Hayward, Armstrong &amp; Co.</td>
<td>Wooffa, Adel</td>
<td>Wool</td>
</tr>
<tr>
<td>94a</td>
<td>Crozier, W.</td>
<td>Adelaide</td>
<td>Wool</td>
</tr>
<tr>
<td>95</td>
<td>McFarlane, Allan, Wellington</td>
<td>Lodge, Adel</td>
<td>Wool</td>
</tr>
<tr>
<td>95a</td>
<td>Price &amp; Browne, Adelaide</td>
<td>Adelaide</td>
<td>Wool</td>
</tr>
<tr>
<td>96</td>
<td>Wurm, Frederick</td>
<td>Adelaide</td>
<td>Silk and silk cocoons</td>
</tr>
</tbody>
</table>

#### Agricultural Engineering and Administration.

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Location</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>97</td>
<td>Dalwood, W. F.</td>
<td>Adelaide</td>
<td>Guano from Browse Island, off west coast of Australia</td>
</tr>
</tbody>
</table>

For a list of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
CAPE OF GOOD HOPE.
(South of North Aisle, Columns 15 to 17.)

COLLECTIVE EXHIBIT.

Minerals, Manufactures, Education and Science.

Minerals, Ores, Stone, Mining Products.
1 Cape Copper Mining Co. (limited), Cape Town.—Copper ores from Oakliep, Spectakel, Narrap, Karolusburg, and Kilderman mines, Little Namaqualand. 100

2 Bright, H. C. R., Mowbray, near Cape Town.—Copper ores and collection of minerals. 100

2a Muskett, E. B.—Galenite from Banghock mine, Hope Town division. 150

3 Dickson, W. W., Cape Town.—Black oxide of manganese, from Hercules mine. 100

4 Stonestreet, Samuel, Kemberly Diamond Fields.—Diamonds and associated rocks. 100

5 Vice, G., Stormbergen.
   a Saltpetre from the Stormbergen. 100
   b Coal from the Stormbergen. 101

6 Wilson, A., Gas Works, Cape Town.
   —South African coals, cokes, and ashes. 101

Metallurgical Products.
7 Cape Copper Mining Co. (limited), Cape Town.—Copper. 111

Chemical Manufactures.
8 Smithers, J. & G., Cape Town.—Soaps. 201

Furniture and Objects of General Use in Construction and in Dwellings.
9 Moulton, R., Swellendam.—Workbox constructed of South African woods. 217

10 Lesar, W., Cape Town.—Table constructed of various colonial timbers. 217

Yarns and Woven Goods of Vegetable or Mineral Materials.
10a Cawood, Hon. S., Grahamstown.—Cotton table cloth. 230

Clothing, Jewelry, and Ornaments, Traveling Equipments.
11 Perry, Mrs., Cape Town.—Melon seed necklaces, bracelets, etc. 253

12 Gladwin, J. P., Kafirland.—Hair of Pondomise, surmounted by ring of Euphorbia japa; ivory earrings of Pondomise baboon skin; dress of witch doctor. 253

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

13 Local Committee, Cape of Good Hope.
   a Native articles of dress—necklaces, armlets, earrings etc. 253
   b Native aprons, head-dress, etc. 254

14 Ayliff, Mrs., Grahamstown.—Skeletrontized flowers. 254

Weapons, etc.
15 Local Committee of Cape of Good Hope.—Knoe kierle of rhinoceros horn. 268

16 Vigors, P., Cape Town.—Native weapons, Kafrassegaais, Bushman axe. 268

Medicine, Surgery, Prothesis.
17 Auret, W. H., Paarl.—Vegetable drugs and medicines. 272

18 Barkly, Sir H., Governor of Cape Colony.—Bitter barks used by Kafir doctors in fever cases. 277

Fabrics of Vegetable, Animal, or Mineral Materials.
19 Local Committee of Cape of Good Hope.—Kafir beer and milk pots, Kafir, and Basuto baskets. 289

Educational Systems, Methods, and Libraries
20 Solomon, C., Cape Town.—Map of South Africa. 300

21 Solomon, Saul, & Co., Cape Town.—Specimens of bookbinding. 306

22 Local Committee of Cape of Good Hope.—Catalogue of South African Public and Sir G. Grey's Libraries; University calendar; repose of South African Museum, Public Library, and Botanic Gardens; Dr. Bleck's Bushman Researches. 306

25 Juta, J. C., & Co., Cape Town.—Books. 306

26 Mabille, A., Morija, Basutoland.—Books printed, bound, and published at Morija Mission Station, Basutoland. 306

27 Stewart, G., Lovedale, Kafirland.—Books printed, bound, and published at the Lovedale Kafir Mission Institution. 306

Engineering, Architecture, Maps, etc.
28 Local Committee of Cape of Good Hope.—Models of harbor works and dry docks at Cape Town. 339
DEPT. II.—MANUFACTURES.

Art, Agricultural, Animal, and Vegetable Products.

29 Dunn, E. I., Cape Town.—Geological sketch map of Cape Colony. 335
29a Coates, H. C., Commissioner, Philadelphia, Pa.—Photograph of city of Cape Town. 335
29b Aylliff, Reuben, Grahamstown.—Photographs of Cape Town, harbor works, etc. 335

Paintings.
30 Hermann, W., Cape Town.—Oil paintings. 410
a View in Kuyena Forest, Cape Colony.
b View of Three Anchor Bay, near Cape Town.
31 Coppen, F., Cape Town.—Water color sketches. 413
a Sketch of Hangklip, a spur of the Stormbergen, Queenstown division.
b Sketch of the Mac Mac Falls, Lydenburg gold fields, South African Republic.
32 Hays, Miss Anna, Cape Town.—Water color sketch of the native population of Cape Town. 411
33 Hermann, W., Cape Town.—Six water color sketches of colonial scenery. 411
34 Thwaites, Miss F. C., Cape Town.—Six water color drawings of indigenous Cape flowers. 411

Engraving and Lithography.
35a Bruton, C. I., Cape Town.—Photographs. 430
a Views in Cape Town.
b View of Kloof Lodge, near Cape Town.
c Views of scenery around Cape Town.
35b Barnard, S. B., Cape Town.—Photographs of Cape Town, natives, etc., in a book. 430
35c Ferneysey, C. D., George.—Photographs of colonial scenery. 430

Agricultural and Forest Products.
36 Carson, E. J., Ookiep, Namaqualand.—Ebony. 601
37 Hollond, B. H., Alexandria, Cape Colony.—Specimens of timber from the Alexandria crown forests, with articles made from various woods. 601
38 Mossop & Garland, Cape Town.—Harks in the rough and ground. 602
39 Smithers, J. & G., Cape Town.—Vegetable wax. 603
40 Dale, Dr., Cape Town.—Vegetable wax. 603

Agricultural Products.
41 Barry, Arnold, & Co., Cape Town.—Wheat. 620
42 Myburgh, N., Meerlust, Eerste river.—Wheat. 620
43 Barry & Herdon, Mossel Bay.—Aloes. 623
44 Barry & Nephews, Cape Town.—Snuff. 623
45 Jongh, S. J. de, Cape Town.—Snuff. 623
46 Powrie, E., Mossel Bay.—Leaf tobacco and snuff. 623

Land Animals.
46a Coates, H. C., Commissioner, Philadelphia, Pa.—King penguin. 635
47 Gibbon, J. M., Cape Town.—Choco- nial, grown and dried in the Botanic Gar- dens, Cape Town. 633

Water Animals, Fish Culture and Apparatus.
48 Merriman, John, Cape Town.—Preserved crayfish from Table Bay. 643
49 Moodie, D., Swellendam.—Pearl oys- ter shells from the south coast of the col- ony. 645

Animal and Vegetable Products.
50 Dier & Diets, Port Elizabeth.—Skulls. 652
50a Benningfield & Son, Natal.—Ele- phant tusks. 652
51 Mossop & Garland, Cape Town.—Leather. 652
52 Local Committee, Cape of Good Hope.—Robs of skins of the blackbuck jackal and aard wolf. 652
53 Dickson, W. W., Cape Town.—Skins of the lion and cheetah or hunting leop- ard. 652
53a Coates, H. C., Commissioner, Philadelphia, Pa. a Pair of horns and head. 652
b Ostrich eggs. 653
54 Vigors, P., Cape Town.—Lion and leopard skins, head of a leopard, antelope and rhinoceros horns. 652
54a Clipp, G. W.—Pair of horns. 652
55 Local Committee of Cape of Good Hope.—Ostrich feathers and eggs. 653
56 Douglass, A., Grahamstown.—Ostrich incubator, with stuffed ostriches and eggs. 653
57 Powrie, E., Mossel Bay.—Bees- wax. 654
58 Barry & Nephews, Cape Town.—Beeswax. 654
59 Tolt, A. L. du, Rondebosch.—Grapes in brandy. 656
59a Volstedt, P. J., Cape Town.—Preserved lemons, citrons, nartjes, bitter oranges, melons, and Cape gooseber- ries. 656
60 Merwe, J. H. van der, Robertson.—Grapes in brandy. 656
60a Merriman, John, Cape Town.—Preserved tomatoes and Cape gooseberries. 656
61 Falck, J. A. H., Montagu.—Peaches in brandy. 656
62 Clear, E., Cape Town.—Wheat flour. 657
63 Letterstedt & Co., Cape Town.—Wheat flour. 657
64 Barry, Arnold & Co., Cape Town.—Wheat flour. 657
65 Heydenrych, B. G. P., Cape Town.—Sarch from wheat flour. 658
74 Ryn, J. H. van, Cape Town.—Pon- tac, red, and white wines, brandy. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-25.
Wines, Textiles, Flower Work.

75 Renen, S. van, & Co., High Constantia.—Red and white wines. 660
75a Cloete Brothers, Constantia.—Red and white wines. 660
76 Anderson & Murison, Cape Town.—Pentac, pale, and golden sherry wines. 660
76a Cloete, H., Bellevue, Constantia.—Red and white wines. 660
77 Green, E. K., Cape Town.—Red, white, and sherry wines. 660
78 Collison, H. C., Cape Town.—Sher-ty, Madeira, Pentac, and Constantia wines. 660
78a Cloete, J. P., Groot Constantia.—Red and white wines. 660
79 Joubert, W. A., Stellenbosch.—Dry white wine. 660
80 Paarl Wine and Brandy Co., Paarl.—Red and white wines. 660
81 Rosenberg, S., Cape Town.—Brandy. 660
82 Barry & Nephews, Cape Town.—Brandy. 660
83 Collison, H. C., Cape Town.—Cog-nac. 660
84 Hauf, Dr., Robertson.—Brandy. 660
85 Marais, H. H., Robertson.—Cape sherry wine and Congo brandy. 660
86 Villiers, A. J. J. de, Cape Town.—Sherry, port, and red wines. 660
87 Villiers, A. B. de, Paarl.—Red and white wines. 660

Textile Substances of Vegetable or Animal Origin.
88 Cawood, Hon. S., Grahamstown.—Cotton. 665
89 Grevar, John W., Uitenhage.—Wool. 667
90 Priest, W., Graff Reinet.—Wool. 667
91 Rubidge, C., Graff Reinet.—Wool. 667
92 Stewart, A. C., Port Elizabeth.—Wool. 667
93 Court, P. W., Port Elizabeth.—Wool. 667
94 Barry & Nephews, Cape Town.—Wool. 667
95 Barry, Arnold, & Co., Cape Town.—Wool. 667
96 Dier & Diets, Port Elizabeth.—Wool. 667
97 Stewart, A. C., & Co., Port Elizabeth.—Angora hair. 669

Ornamental Trees, Shrubs, and Flowers.
98 Villiers, Miss de, Fransche Hoek.—Articles made of everlasting flowers. 709
99 Smuts, Miss G., Cape Town.—Articles made of everlasting flowers. 909

JAMAICA.

(North of Page, Columns 15 to 17.)

COLLECTIVE EXHIBIT.

Chemicals, Woven Goods, Clothing.

Chemical Manufactures.
1 Reynolds, John N.—Salt. 200
2 Frith & Murphy.—Salt. 200
3 Grant, Charles. 200
4 Bisulphate of Lime. 200
7 Chewstick powder and odontine. 203
4 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.—Essential oils. 203
5 Auvrav, P. E.—Odontine. 203

Yarns and Woven Goods of Vegetable or Mineral Materials.
6 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.—Palm and plantain leaf mats. 229

Clothing, Jewelry, and Ornaments, Traveling Equipments.
7 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.
7a Nash, Mrs. 251
7b Hats made of dagger plant, lace bark, and strainer fibre. 251
7c dagger plant and lace bark ornaments, comprising fans, flowers, baskets, etc.; earrings and brooch made of lobster shell. 254
8 Brooks, Mrs. G.—Dollies and fans made from lace bark, etc. 254

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Manufactures, Agricultural, Animal, Vegetable Products.

8a Reid, William.—Cocoanut Shell Ornaments; walking sticks, etc. 254

Paper, Blank Books, and Stationery.

9 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.
   a Rulers. 258
   b Paper stock. 260

Medicine, Surgery, Prothesis.

10 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.—Cinchona bark, jalap, sena, aloes, etc. 272

Hardware, Edge Tools, Cutlery, and Metallic Products

11 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.—Razor strops made from stems of plants. 281

Fabrics of Vegetable or Mineral Materials.

12 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.
   a Brushes from the penitentiary. 286
   b Ropes from sisal hemp; coir; wild cotton, cocoanut, etc. 287
   c Bamboo baskets. 289

Carriages, Vehicles, and Accessories.

13 Brass, John, & Son.—Carriage harness and riding saddle. 296

Arboriculture and Forest Products.

14 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.
   a Cedar and juniper shingles; lancewood, etch, card; carriage building; cashew, etc., for railway sleepers; pimento leaves, juniper wood, etc., for making perfumery. 665
   b Mahogany, cedar, bull tree, brazjellet, lignum vitae, ebony, satinwood, rosewood, etc. 631
   c Logwood, fistic, annatto, turmeric, etc.; divi-divi, mangrove, catechu, guama, etc. 602
   d Dried ferns. 604

15 Pantrepan Estate.—Lace bark. 660

16a Fisher.—Concrete for tanning. 662

Agricultural Products.

16 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.
   a Peas and beans. 621
   b Ginger, pimento berries, nutmegs, vanilla, cayenne pepper, etc.; tobacco, tea, cocoa, and chocolate; coffees from the following parties: John McLean, Francis Chalmer, John Davidson, Mrs. Macleverty, Mrs. Lascelles, Dr. Stephens, James Harrison, Ernest Elliott, and Geo. Henderson. 623

16a Thompson & Weitzmann.—Tobacco. 623

16b Esvent, W. B.—Cigars. 623

17 Soutar & Co.—Tobacco and cigars. 623

17a Major, Dr.—Nutmegs. 623

18 Richards, W. S.—Coffee. 623

Animal and Vegetable Products.

18a Fisher.—Leather. 652

19 Grant, Charles.—Beeswax. 654

20 Brass, John, & Son.—Honey and beeswax. 654

20a Fegan.—Bleached wax. 654

21 Auvray, P. E.—Bleached wax. 654

22 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.
   a Candied fruits and preserves; pickles, etc.; fruits preserved in alcohol; meal made from plantains, bananas, cassava, bread, and other fruits. 656
   b Corn, rice, and flour. 657
   c Starch, arrowroot, etc. 657
   d Sugars from the following parties: W. S. Richards, Albion estate and Constant Spring estate; Louis Verley, Mona estate; Ernest Elliott, Bog estate; James Harvey, Hillside estate; Joseph Reid, Caymannas estate, and J. McPhail. 659
   e Rums from the following parties: David Galloway, Vale Royal estate; William Vickers, Erome, and other estates; M. C. Morgan, Appleton estate; James Harrison, Hordley and other estates; Plato Elphick, Belvidere estate; W. S. Richards, Hopewell estate; Ernest Elliott, Bog and other estates; Louis Verley, Mona estate; C. W. Steer, Belenheim estate; F. Hall, Mexico estate; James Harvey, Hillside estate; Joseph Reid, Camanas estate; J. Wray & Nephew, George J. Peynado, Alberga & Mitchell. 660

f Cocoanut, castor, groundnut, and other oils. 662

22a Esvent, W. B.—Rum. 660

23 Gadpaille, Charles.—Rum. 660

23a Wray, J., & Nephew.—Orange and ginger wine, pimento dram, lime-juice, etc. 660

24 Melville James.—Rum and Falernian wine. 660

25 Desnoes, P., & Son.—Rum, ginger cordial, orange wine, pimento dram, etc. 660

25a Alberga & Mitchell.—Orange and ginger wine, pimento dram, chutney, etc. 660

26 Nunes, Robert.—Rum. 665

27 King, Alexander, & Co.—Rum and lime-juice. 660

Textile Substances of Vegetable or Animal Origin.

28 Thomson, Robert, Superintendent of Botanical Gardens, Kingston, for the government.
   a Wild cotton. 665
   b Sisal hemp, China grass, pineapple, coir, bamboo, mahoe trumpet tree, bastard cedar, and other fibres, etc. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45
### BAHAMAS.

(South of North Avenue, Columns 15 to 17.)

**COLLECTIVE EXHIBIT.**

**Manufactures, Agricultural, Animal, Vegetable Products.**

<table>
<thead>
<tr>
<th>Chemical Manufactures.</th>
<th>20 Sawyer, R. H. &amp; Co.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Sargent, D., Inagua.—Specimens of salt and table salt.</td>
<td>a Stopper wood; ship's knees of sabicu wood; bark.</td>
</tr>
<tr>
<td>2 Meadows, John G., Inagua.—Salt and table salt.</td>
<td>b Mahogany, sabicu, satin, bull, cedar, and cocoanut woods.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Furniture and Objects of General Use in Construction and in Dwellings.</th>
<th>20 Sawyer, R. H. &amp; Co.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Robertson, Mrs. S. E.—Epergne.</td>
<td>b Mahogany, sabicu, satin, stopper, orange, and lignum vitae woods.</td>
</tr>
<tr>
<td>4 Dorsette, Thomas.—Dripstone for filtering water.</td>
<td>c Green ebony, braziletto wood, and logwood.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clothing, Jewelry, and Ornaments, Traveling Equipments.</th>
<th>20 Sawyer, R. H. &amp; Co.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Minns, Albert C. J.—Necklaces, locket, pin and earrings, bracelets, solitaires and studs, vest button, spoon, and paper knife.</td>
<td>d Myrtleberry wax.</td>
</tr>
<tr>
<td>6 Dupuch, Joseph.—Card tray, bread platters, and walking canes.</td>
<td>21 George, John S.</td>
</tr>
<tr>
<td>7 Grant, Misses Julia and Mary.—Mimosa bean ornaments, card tray, watch cases, mats, and cross.</td>
<td>a Specimens of bark and palmetto leaves, yellow pine and cedar woods.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Armbrister, James A.—Walking canes.</th>
<th>21 George, John S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 Centennial Exhibition Committee, Nassau.—Mimosa bean card basket, bags, and bracelets, manufactured by Misses Jarrett, Nassau; tortoise back, cleaned and polished by J. R. Saunders, Nassau; palmetto fans and hats, manufactured by Mrs. John Taylor, Inagua.</td>
<td>b Wax made from myrtleberry.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evans, Ellen, G. E.—Basket, basket, and bridal weave.</th>
<th>22 Saunders, Samuel P.—Vegetable sponge.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Atwell, Misses.—Memorial wreath, cornucopia, brooches, and earrings, made of shells and fish scales.</td>
<td>23 Agricultural Products.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symonett, Mrs. Matthew.—Palm tree, and watch stand.</th>
<th>23 Agricultural Products.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Eldon, Mrs. James.—Case containing orange tree.</th>
<th>25 Troo, P. A.—Bahama shells, collected and arranged by J. K. Saunders.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garner, Mrs. Maria E.—Basket, fruit basket, bridal weave, and sprays.</td>
<td>26 Saunders, Samuel P.—Small shells.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fabrics of Vegetable, Animal, or Mineral Materials.</th>
<th>27 George, John S.—Queen conch shells.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrol, Richard E., Long Island.—Rope made of aloe fibre.</td>
<td>28 Sawyer, R. H. &amp; Co.—Sponges.</td>
</tr>
<tr>
<td>16 Rope made of aloe fibre.</td>
<td>29 George, John S.</td>
</tr>
<tr>
<td>17 Centennial Exhibition Committee, Nassau.—Palmetto rope.</td>
<td>a Beeswax.</td>
</tr>
<tr>
<td>18 Knowles, Joseph A., Long Island.—a Rope and net made out of wild fig tree bark.</td>
<td>b Arrowroot and cassava starch.</td>
</tr>
<tr>
<td>18 Rope and net made out of wild fig tree bark.</td>
<td>30 Centennial Exhibition Committee, Nassau.—Assorted preserved fruits, assorted pickles; pimento manufactured of native fruits by Daphne Fife.</td>
</tr>
<tr>
<td>19 Knowles, Joseph A., Long Island.—Wild fig tree bark.</td>
<td>31 Sawyer, R. H., &amp; Co.—Specimens of cotton produced principally at Long Island.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a Stopper wood; ship's knees of sabicu wood; bark.</td>
<td>33 Brice, D. A.—Cotton.</td>
</tr>
<tr>
<td>b Mahogany, sabicu, satin, bull, cedar, and cocoanut woods.</td>
<td>34 Centennial Exhibition Committee, Nassau.—Fibres of the pita and pineapple plants, plantain, banana, and aloe trees, and esparto grass; wool made from leaves of the forest pine, pita plant, banana tree, and plantain.</td>
</tr>
<tr>
<td>c Green ebony, braziletto wood, and logwood.</td>
<td>35 Saunders, Samuel P.—Cave earth (fertilizer).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>21 George, John S.</th>
<th>36 Agricultural Engineering and Administration.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a Specimens of bark and palmetto leaves, yellow pine and cedar woods.</td>
<td>35 Saunders, Samuel P.—Cave earth (fertilizer).</td>
</tr>
<tr>
<td>b Wax made from myrtleberry.</td>
<td>36 Agricultural Engineering and Administration.</td>
</tr>
<tr>
<td>22 Saunders, Samuel P.—Vegetable sponge.</td>
<td>37 Agricultural Engineering and Administration.</td>
</tr>
<tr>
<td>23 Agricultural Products.</td>
<td>38 Agricultural Engineering and Administration.</td>
</tr>
</tbody>
</table>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
BERMUDAS.

(North of Main Aisle, H 16.)

COLLECTIVE EXHIBIT.

Manufactures, Education and Science, Art, Agriculture.

Furniture and Objects of General Use in Construction and in Dwellings.
1 Bermuda, Government of.—Inlaid tables.

Clothing, Jewelry, and Ornaments, Traveling Equipments.
2 Trimmingham, J. a Bermuda straw plait, bonnets, etc., palmetto plait, and articles made from the palmetto leaf.
3 Wrench of shell work.
3 Middleton, T. D.—Articles in point lace, from Somerset Island.
4 Smith, Mrs. R. T.—Fine point lace.
5 Ness, Miss.—Point lace sleeveless basque.
6 Ness, Miss C.—Point lace sofa pillow.
7 Lines, Mrs.—Point lace.
9 Bermuda, Government of.—Walking canses.

Medicine, Surgery, Prophesy.
10 Hugh, J. B.—Medicinal herbs and drugs.

Educational Systems, Methods, and Libraries.
11 Education, Board of.—School-map of the Bermudas.
12 Thorpe, Mrs. W.—“Afternoon in Bermuda.”
13 Wilkinson, Major H. J.—“The Sand Hills.”
14 Anon.—Bermuda flowers from nature.

Engineering, Architecture, Maps, etc.
15 Bermuda, Government of.—Large general map of the Bermudas, details by Royal Engineers and Major Crawford, R.A.; diagram showing the monthly mean temperature of Bermuda compared with other places of winter resort, drawn by Lieut. Colonel Bland, R.E.; fac-simile of the earliest published map of Bermuda, from Norwood’s survey of 1616.

Physical, Social, and Moral Condition of Man.
18 Bermuda, Government of.—Examples of the ancient records of the colony of Bermuda, from 1616; title deeds, or original grants of land of the Bermuda Company, 1658-9.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

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19 Somerset, Col. Fitzroy, R. E.—Photographs of Bermuda scenery, by the Royal Engineers.
20 Hugh, J. B.—Photographs of Bermuda scenery.

Aerial, Pneumatic, and Water Transportation.
21 Hinson, Dr.—Model of a Bermuda yacht, cutter-rigged.
22 Admiralty, Lords of the.—Model of her Majesty’s floating dock at Bermuda; sectional drawing of same.

Arboriculture and Forest Products.
24 Several Contributors.—Sections and specimens of woods.
25 Astwood, Mrs.—Bird’s-eye cedar, and other ornamental woods.

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26 Committee, The.—Bananas and other fruits.

Marine Animals, Fish Culture and Apparatus.
27 Bermuda, Government of.—Conch shells used by cameo cutters; an extinct land shell of relatively large size; Sp. of hyalline; corals, nullipores, corallines, sea fans, and sea rods.

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28 Bermuda, Government of.—Sponges.
29 Hugh, J. B.—Dried and preserved fruits.
30 Tucher, Tho. Fowle.—Arrowroot.
31 Bertram, J. T.—Arrowroot and Tous les Mois.

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32 Peniston, W.—Fibre prepared from the leaves of fourcroye gigantea.

Machines, Implements, and Processes of Manufacture.
33 Bermuda, Government of.—Tools used in freeing the ground of the roots of sage and wild mimosa.

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34 Bermuda, Government of.—Flowers ferns, and ornamental plants.
**BRITISH GUIANA.**

*(North of Main Aisle, F 16.)*

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**COLLECTIVE EXHIBIT.**

Manufactures, Agricultural and Vegetable Products.

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<td>1 Great Diamond Plantation.—Rice straw ornaments.</td>
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<td>2 Fresson, William.—Drugs and other medicinal productions of the colony.</td>
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<td>3 Mackey, T. H.—Greenheart wood, nearly 100 years old.</td>
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<td>Agricultural Products.</td>
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<td>7 Columbia Plantation.—Common process sugar.</td>
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<td>8 Greenfield Plantation.—Vacuum pan sugar.</td>
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<td>9 La Bonne Intention Plantation.—Vacuum pan sugar.</td>
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<td>18 Tuschen de Vrienden Plantation.</td>
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<td>19 Lusignan Plantation.—Rum.</td>
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<td>Textile Substances of Vegetable or Animal Origin.</td>
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<tr>
<td>20 Godfrey, B. J.—Plantain, silk grass mahoe, sweet brier, and monkey apple fibres.</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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(North of North Avenue, Columns 15 to 17.)

**COLLECTIVE EXHIBIT.**

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<tbody>
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<td>3 Armitage Bros., Colombo.</td>
<td>8 Armitage Bros., Colombo.—Mother-of-pearl and other shells.</td>
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<tr>
<td>a India-rubber.</td>
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</tr>
<tr>
<td>b Ropes.</td>
<td>b Seeds.</td>
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<thead>
<tr>
<th>Educational Systems, Methods, and Libraries.</th>
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<tbody>
<tr>
<td>4 Armitage Bros., Colombo.—Almanacs and other books.</td>
<td>9 Armitage Bros., Colombo.</td>
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<th>Sculpture.</th>
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<tr>
<td>5 Armitage Bros., Colombo.—Elephant, carved in plumbago.</td>
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<tr>
<th>Photography.</th>
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(North of North Avenue, Columns 15 to 17.)

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<th>Pomology.</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>b Dyed silk from Rungpore.</td>
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<tr>
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</tr>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Photography.</th>
<th></th>
</tr>
</thead>
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<thead>
<tr>
<th>Arboriculture and Forest Products.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>a Woods from Singapore, Madras, Bombay, and Nagpore.</td>
<td>6 Meyer, Behn, &amp; Co., Singapore.</td>
</tr>
<tr>
<td>b Dye-woods, galls, bark, etc.</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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(North of Main Aisle, B 16.)

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## MAURITIUS.

*(North of North Avenue, Columns 15 to 17.)*

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QUEENSLAND.

(North of North Avenue, Columns 10 to 15.)

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<td>2 Ching, John.—Dugong oil.</td>
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<td>3 Daintree, Richard.—Essences from Queensland vegetables.</td>
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<td>6 Clarke, David.—Eucalyptus medicinal preparations.</td>
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90 Davenport, G. H.—Merino wool. 667
91 Fenwick & Scott.—Australian wool. 667
92 Fisher, C. B., Headington Hill.—Merino wool. 667
93 Gore & Co., Yandilla.—Ewe fleece wool. 667
94 Green, C. H., Goomburra.—Fleece wool. 667
95 Gunn, Donald, Pikedale.—Wool. 667
96 Marshall & Slade, Glenhall.—Fleece wool. 667
97 North British Australian Co.—Fleece wool. 667
98 Parr, B. le, Chiverton.—Australian merino fleece wool. 667
99 Parr, B. C.—Fleece wool. 667
100 Shanahan & Jennings, Westbrook.—Merino wool. 667
101 Government Penal Establishment.—Silk worm cocoons. 669
102 Hine, Mrs., Ipswich.—Silk cocoons. 668

Ornamental Trees, Shrubs, and Flowers.
103 Bailey, F. M.—Flora of Australia, and Botany of Queensland. 709
ARCHIPELAGO OF SEYCHELLES.

(North of North Avenue, Columns 15 to 17.)

COLLECTIVE EXHIBIT.

Manufactures, Agricultural, Animal, Vegetable Products.

Furniture and Objects of General Use in Construction and in Dwellings.

1 Bouquet, Miss.—Teacups and saucers. 218

Clothing, Jewelry, and Ornaments; Traveling Equipments.

2 Bouquet, Miss.
   a Straw hats and slippers. 251
   b Straw baskets, watch-pockets, and fans. 254

3 Cayol, Mrs. Tony.—Bouquets of shell flowers. 254

4 Bury, J. Ames.—Walking-canes. 254

Arboriculture and Forest Products.

6 Seychelles, Chief Commissioner of.
   —Samples of woods and planks. 600

7 Briard, Mr., Praslin Island.
   a Black bark dye and samples of dyed stuffs. 609
   b Nuts. 605

Agricultural Products.

8 Houareau, Sylvain.—Tobacco. 623
9 Madine, Mr.—Cigars. 623
10 Lemarchand, Mr.—Cacao, cloves, coffee, and vanilla. 623

Water Animals, Fish Culture and Apparatus.

10a Beyron, F.—Turtle shell. 645

Animal and Vegetable Products.

11 Bouquet, Miss.—Coca de mer straw. 630
13 Cauvin's Distillery.—White rum. 660
14 Nageon, Mr., La Digue Island.—Coconut oil. 662

Textile Substances of Vegetable or Animal Origin.

15 Brooks & Dupuy.—Cotton from Denis Island. 665
16 Briard, Mr.—Cotton. 665

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
DEPT. II.—MANUFACTURES.

TASMANIA.
(South of North Avenue, Columns 13 to 15.)

COLLECTIVE EXHIBIT.

Manufactures, Education and Science, Art, Agriculture.

Chemical Manufactures.
1 Ker mode, W. A., Mona Vale.—Salt. 200
2 Strachan, R., Cambridge.—Salt. 200
3 Colvin, Charles, Hobart Town.—Oil from nuttong birds, from islands in Bass's Straits. 201
4 Coverdale, John, Port Arthur.—Red ochre, earth for paints. 202
5 Laughton, James, Hobart Town.—Earth for paints. 202

Clothing, Jewelry, and Ornaments; Traveling Equipments.
6 Bidencope, J., Hobart Town.—Silk and felt hats and caps, with material of manufacture. 251
7 Tasmanian Commissioners.—Opossum and cat skin rugs. 256
8 Hull, H. M., Hobart Town.—Portraits of aborigines. 257

Weapons, etc.
9 Moir, J., Queenborough, Hobart Town.—Shot. 265

Educational Systems, Methods, and Libraries.
10 Hull, H. M., Hobart Town.—"Hull's Hints to Emigrants," parliamentary journals. 306
11 Nowell, E. C.—Books. 306
12 Tasmanian Commissioners.—Newspapers and statistics. 306
13 Walsh & Sons, Hobart Town.—Almanac and guide. 306

Scientific and Philosophical Methods and Systems.
14 Royal Society of Tasmania.—Meteorological tables. 320

Engineering, Architecture, Maps, etc.
15 Randall, A., Hobart Town.—Chart of waterworks. 330
16 Dibbs, T. F., Launceston.—Chart of Launceston. 335
17 Cemetery Commissioners, Hobart Town.—Chart of cemetery. 335
18 Moore, Hon. Wm., Hobart Town.—Geological map of Tasmania. 335

19 Walch & Sons, Hobart Town.—Charts of Hobart Town and Launceston. 335
19a Hull, H. M., Hobart Town.—Map of Tasmania. 335

Physical, Social, and Moral Condition of Man.
20 Walch & Sons, Hobart Town.—Tasmanian postage stamps. 345

Sculpture.
21 Carlsen, P. O., Port Arthur.—Carved ivory and wooden egg and crust stand; carved ivory and myrtle Danish pipe. 405

Photography.
22 Bailey, H. H., Hobart Town.—Photographs. 430
23 Hobart Town, Corporation of.—Photographs of public buildings. 430
24 Launceston, Corporation of.—Photographs of public buildings. 430
25 Tondeur & Lempriere, Melbourne.—Photographs of the British and Tasmanian Charcoal Iron Company's (limited) Works in Tasmania. 430

26 Coverdale, J., Port Arthur.—Spinning jenny of Tasmanian myrtle. 521

 Arboriculture and Forest Products.
27 Creswell, C. F., Hobart Town.—Forest trees seeds (340 varieties). 600
28 Gulliver Brothers, Hobart Town.—Tree seeds. 600
29 Hull, Hugh M., Hobart Town.—Polished Tasmanian woods. 600
30 Edwards, G. W., Hobart Town.—Grass-tree gum and resin, for varnish. 603
31 Mitchell, Mrs., Swansea.—Gum, from Oyster Bay pine. 603
32 Lipscombe, F., Sandy Bay.—Blue gum seeds. 605

Agricultural Products.
33 Dalgety, Moore, & Co., Launceston.—Wheat and oats. 620
34 Dean, W., New Norfolk.—Wheat. 620

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 19-45.
Agricultural, Animal, Vegetable Products.

35 Gibson, W., Hobart Town.—Wheat. 620
36 Harrap, A., Launceston.—Wheat. 620
37 Hogarth, D., Launceston.—Wheat. 620
38 Kemp, G., Upper Bagdad.—Wheat. 620
39 Archer, W. H. D., Longford. a Wheat and English barley. 620
b Linseed. 624
40 Creswell, C. F., Hobart Town. a Wheat, barley, oats, and rye. 620
b Peas and beans. 621
c Grass and other seeds. 624
41 Graves, J. W., Hobart Town.—Native bread. 621
42 Sharland, W. C., New Norfolk.—Hops. 623
43 Shoobridge, E., New Norfolk.—Hops. 623

Land Animals.

44 Archer, W. H. D., Longford. Cream-colored opossum, platypus. 637

Water Animals, Fish Culture and Apparatus.

45 Salmon Commissioners of Tasmania.—Brown trout. 641
46 Davies, R. H., Torquay.—Tasmanian shells. 645

Animal and Vegetable Products.

47 Coverdale, John, Port Arthur.—Sea-weed, and jelly made therefrom. 650
48 Archer, W. H. D., Longford.—Native furs and skins. 652
49 Arnot, S., Bothwell.—Leather of kangaroo skins. 652
50 Gardner & McKenzie, Launceston.—Skins of kangaroo, tanned and dressed; native furs and skins. 652
51 Tasmanian Commissioners. a Native furs and skins. 652
b Blue gum tree oil. 662
52 Holroyd, Kennedy, & Co., Hobart Town.—Jams and tart fruits. 656
53 De Graves, John, Hobart Town.—Malt. 657
54 De Seteror Brothers, Hobart Town.—Flour. 657

Textile Substances of Animal or Vegetable Origin.

55 Gracie, William, Hobart Town.—Malt. 657
56 Archer, W. H. D., Brickendon, Longford.—Merino wool. 667
57 Brock, J.—Merino wool. 667
58 Cameron, Hon. Donald, Burnside.—Merino wool. 667
59 Gibson, James, Belle Vue, Cleveland.—Merino wool; portrait of stud sheep. 667
60 Gibson, W. H., Fairfield, Snake Banks.—Merino wool. 667
61 Gibson, W., & Son, Scone, Perth.—Merino wool; portraits of stud sheep. 667
62 Headlam, Charles, Egleston, Macquarie river.—Merino wool. 667
63 Keach, G. W., Chiswick, Ross.—Merino wool. 667
64 Lindley, G. W., Runnymede, Richmond.—Leicester wool. 667
65 McLanachan, Hon. James, Ballochmylo.—Merino wool. 667
66 Page, Samuel, Belle Vue, New Town.—Merino wool. 667
67 Parramore, Thomas, Beaumont, Ross.—Merino wool. 667
68 Ralston, John, Logan, Evandale.—Merino wool. 667
69 Searle, C.—Leicester wool. 667
70 Sharland, W. S., Woodbridge, New Norfolk.—Merino wool. 667
71 Shaw, Fred., Redbanks, Swansea.—Leicester wool. 667
72 Simmons, W. C.—Leicester wool. 667
73 Taylor, David, St. Johnstone’s, Macquarie river.—Merino wool. 667
74 Taylor, G. Milford, Campbell Town.—Merino wool. 667
75 Taylor, John, Winton, Campbell Town.—Merino wool. 667
76 Wilson, George, Oatlands.—Merino wool. 667

Agricultural Engineering and Administration.

77 Anglo-Australian Guano Company, Hobart Town.—Guano from Bird’s Island. 687

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Minerals, Manufactures, Animal and Vegetable Products.

Minerals, Ores, Stone, Mining Products.

1 André, L. A. F.—Surface coals from the eastern coast. 101
2 Finlayson, Thomas A.—Asphalt, boiled and crude. 101

Furniture and Objects of General Use in Construction and in Dwellings.

3 Devenish, Syl., Surveyor General.—Gourd calabash. 224

Clothing, Jewelry, and Ornaments; Traveling Equipments.

4 Trinidad, Government of.—Mats, fans, strainers, etc. 254
5 McAdam, Miss Venus.—Baskets made of gourds. 254
6 Devenish, Syl., Surveyor General.—Walking-sticks. 254

Hardware, Edge Tools, Cutlery, and Metallic Products.

7 Devenish, Syl., Surveyor General.—Razor strips. 281

Fabrics of Vegetable, Animal, or Mineral Materials.

8 Trinidad, Government of.—Baskets. 289

Arboriculture and Forest Products.

9 Prestoe, Hy., Government Botanist.—Collection of native woods. 606
10 Devenish, Syl., Surveyor General.—Samples of woods. 606
11 Trinidad, Government of.—Gutta-percha, liquid and solid. 603

Textile Substances of Animal or Mineral Origin.

12 Cumming, A., & Co., Port of Spain.—Cocoa. 611

Agricultural Products.

13 Prestoe, Hy., Government Botanist.—Nutmegs, cloves, mace, etc. 623
14 Needham, Sir Jos., San Antonio.—Cocoa. 623
15 Penco, Jos., La Merced.—Cocoa. 623
16 Cleaver, C., Verdant Vale.—Cocoa. 623
17 D'Abadie, St. L., St. Pedro.—Cocoa. 623
18 Flamant, Mrs. C.—Snuff of native tobacco. 623

Animal and Vegetable Products.

19 Prestoe, Hy., Government Botanist.—Preserved fruits. 656
20 Trinidad, Government of.—Cassarip. 656
21 Flamant, Mrs. Ch. a Farina and plantain flour. 657
  b Cassada starch. 658
22 Jenny, Miss.—Farina. 657
23 Colonial Company's Agency.—Sugar. 659
24 Seigert, Dr., Port of Spain.—Angostura bitters. 660
25 Somes & Co.—Cocoanut oil. 662
26 Devenish, Syl., Surveyor General.—Carap oil. 662

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
INDIA.

(Collective Exhibit.)

Chemicals, Ceramics, Woven Goods, Clothing.

Chemical Manufactures.

COLLECTIONS FROM THE INDIAN MUSEUM, BY J. FORBES WATSON, M.A., LL.D., DIRECTOR OF THE INDIAN MUSEUM, ETC.

a Rock salt from Salt range; salt from Poorthemauk, Nellore, Toombook, Balasore, Cutch, and Jeypore; black salt from Calcutta; saltpetre from Cutch, Sarun, Bengal, Ahmednugger, Lahore, Central India, Ellore, Nellore, Cawnpore, Salem, Madras, and Calcutta; alum from Madras, Lahore, and Bengal; carbonate of soda from Lind and Calcutta; sulphate of iron from Salt range; borax from Thibet; sal ammoniac from Kurnal and Calcutta; sulphate of copper from Calcutta.

b Gamboge from Bombay; indigo from South Arcot, Moorsheadabad, Madras, and Shikarpore; cutch from Calcutta, Madras, and Burmah; gambier from Bombay and Malacca; lac dye from Jubbulpore and Malwa.

Ceramics—Pottery, Porcelain, Glass, etc.

c Ornamental tiles from Hyderabad. 208

d Water vessels from Patna, Ghallawar, Madras, South Canara, and Allahabad; vass from Sind; hookah bowl and bottom from Patna; cup, dish, and cover from Hyderabad; milk pan from Madras; goblet from Vizagapatam. 210

Furniture and Objects of General Use in Construction and in Dwellings.

e Copper and brass lamps, boxes, plates, d shoes, basins, cups, etc., from Calcutta, Benares, Bengal, Bombay, Patna, Indore, Madras, Mirzapore, Travancore, Nepal, Cachar, and Poona; betel plates inlaid with silver, from Hyderabad; copper amulet case from Thibet; brass spoon for oil from Madras. 224

Yarns and Woven Goods of Vegetable or Mineral Materials.

f Phulgat mat from Travancore. 229
g Muslin and cotton from Daaca and Madras. 230

h Striped and checked cotton from Madras. 231

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

Woven and Felted Goods of Wool, etc.

i Cashmere and woolen carpets from Madras, Scind, and Ferahan. 239

j Cashmere long and square shawls, net shawls, chuddas, scarfs, burnoose, cravats, gold embroidered cloaks and table covers. 240

Silk and Silk Fabrics.

k Raw silk from Surdah, Berhampore, Bogra, Seetapore, and Bengal; Tussah silk thread from Bengal, Gyah, and Bhaigulpore; cocoons from Bengal and Cutch; Eria silk thread from Rangpore and Assam. 242

l Floss silk from Umrisur, Punjab, Vellore, Tatta, and Cashmere. 243

m Striped and plain piece silk from Beerechoom, Hyderabad, Ahmedabad, Burmah, and Benares. 246

Clothing, Jewelry, and Ornaments; Traveling Equipments.

n Women's garments from Madras, Pegu, and Dhawar; men's garments from Godapare, Moulton, and Sind; pineapple skirt from Madras. 250

o Embroidered shoes and turbans from Hyderabad, Gwallor, Sind, Kotah, and Madura. 253

p Nets, muslin, cloth, and silk embroidered in gold and colors from Sindh, Madras, Benares, Hyderabad, Delhi, Bhurtpore, and Bombay; gold, silver, white, and colored laces from Bonibay, Nagpore, and Madras; handkerchief from Poona convent; doyleys from Madras. 255

q Collection of jewelry from Bombay. 253

r Dolls from Benares; fans from Madras, Delhi, Tipperah, South India, Poona, and Moughyr; chourie split ivory from Sylhet; chourie, split sandal wood from Madras. 254

s Leather box, embroidered with quill work, from Simla. 255

Weapons, etc.

t Spears, bows and arrows from Lahore, Delhi, and South India; velvet quivers and arm covers from Lahore; battle axes from Delhi and Nagpore; coat of mail from Punjab; daggers, swords, breastplates, etc., from Lahore, Burmah, Decan, Coorg, and Bengal. 260
Manufactures, Education, Art, Agriculture.

Medicine, Surgery, Prothesis.

Barks, liquorice, opium, nux vomica, aconite, patchouli, tamarinds, anise, cardamom and croton seeds, cubeb, blistering beets, juniper berries, aloes, and other medicinal products from Madras, Travancore, Bombay, Penang, Bengal, Mysore, North India, Malacca, and Calcutta.

Hardware, Edge Tools, Cutlery, and Metallic Products.

Copper bell from Burmah.
Lock and key from Indore.

Fabric of Vegetable, Animal, or Mineral Materials.

Baskets and cigar case from Madras; cane stands from Singapore; grass window shades from Travancore; paper-mache articles from Cashmere, Kurnool, and Sindh; lacquered wood work from Burmah and Sindh; japanned cabinet from Bareilly.

Carriages, Vehicles, and Accessories.

Model of state carriage from Poona.
Models of passenger and luggage carts, and palanquin from Bombay.
Sikh saddle; velvet and gold trappings from Punjab.

Educational Systems, Methods, and Libraries.


Stringed and wind instruments from Madras; kettle drum from Bengal; horn from Moorshedabad.

Engineering, Architecture, Maps, etc.

Maps illustrative of Indian surveys; relief map of India.

Sculpture.

Scultured stone bull from Nandi.
Scultures from the Amravati Tope, viz.
Base of large slab; panel figure of temple with Buddha seated; portions of frieze; figure standing; slab; Buddha's feet.
Carved model of Burman chuttare, and sandal wood model of Hindoo temple from Booj; carved vase, sandal wood fan, and glove box from Bombay; carved stone idol, "Vishnu riding on Garuda" from Madras; carved wooden idols from Nepal; carved ivory box from Burmah; carved elephant with howdah from Berhampore; carved horn taza from Gokah; carved pith figures from Trichinopoly, and carved horn drinking cup from Rutsagbherry.

Photography.

Photographic views of India; photographs of races and tribes of Hindooostan; photographs of Indian architecture.

Ceramic Decorations, Mosaics, etc.

Inlaid marble boxes from Agra and Mysoor.

Aerial, Pneumatic, and Water Transportation.

Models of passenger, ferry, coating, and freight boats from Calcutta.

Arboriculture and Forest Products.

Ornamental and other woods.

Gums, resin, incense, guuta-percha, myrrh, etc., from Kaejore, Gyah, Burmah, Mau- raus, Pegu, Salem, Travancore, Malacca, Indore, and Bombay.

Agricultural Products.

Wheat from Sindh, Punjab, Faridpur, and Bengal; barley from Belgaum, and other places; oats from Patna and Monghyr; maize from Northwestern India; millet; ragge; buckwheat from the Himalayas; illustrations of food plants of India.

Peas, beans, lentils, and vetche.

Tea from Assam, Dinshat, Cachar, Dehra-Doon, Punkabaree, Kangra, Kurrachee, and other places; tea buds from Silcorie; coffee from Aden, Bombay, Tinnevelly, Paradise estate, and Chittagong; coffee berries from South India; Mysore, and Coorg; spices, pepper, ginger, mustard, curry powder, and turmeric from Bombay, Travancore, Indore, Dehra-Doon, Bengal, Nepal, Madras, and other places.

Coriander, dill, and fennel seed from Berar, Oudh, Faridpur, and Dharwar; water lily stems from Sindh; oil seeds from Faridpur, Nagpore, Ahmednagger, Bengal, and Indore; poppy seed from Central Provinces and Bengal; groundnuts from Berar, Indore, and Khandeish.

Land Animals.

Various kinds of silk worms from India.

Water Animals, Fish Culture and Apparatus.

Pearl oysters from Kurraheee.

Edible birds' nests from Ceylon; fish maws and sharks' fins from Bombay.
Animal and Vegetable Products.

*ax* Glue from Cawnpore. 652
*ay* Beeswax from Travancore, Pegu, Rangoon, Singapore, and Chota Nagpore. 654
*az* Soojee flour from Madras; rice from Punjab, Sindh, and Bengal. 657
*ba* Arrowroot, tapioca, and sago. 658

Textile Substances of Vegetable or Animal Origin.

*bb* Cotton from various parts of India, in its different stages of growth and manufacture. 665
*bc* Flax from Punjab; rhea stems and fibre from Assam; brown hemp from Bombay; Jubulpore hemp; pineapple fibre from Madras and Mangalore; aloe fibre from Madras; Manila hemp; mat grass from Bengal; illustrations of fibre-producing plants of India. 666
*bd* Sheep’s wool from Bombay, Mysore, Lakh, and Bokhara; goat’s wool from Umrissur, Punjab, Turkian, and Yarkand; camel’s wool from Bokhara and Punjab. 667

Machines, Implements, and Processes of Manufacture.

*be* Plow and yoke from Berar. 670
*bf* Native cotton gin from Bengal. 673

Agricultural Engineering and Administration.

*bg* Models of water and cotton cart from Bombay. 682

Chemical Manufactures.

1 Iowan, A., Brockville, Ont.—Salt, nitre cake; nitric, muriatic, and sulphuric acids; sodium nitrate. 200
12 Geological Survey of Canada, Q. a Salt, salt cake, salt gypsum cake, residue for crystallizing pans, salt scales. 200
  b Ochres. 202
14 Sharp, Jos. S., Apohaqui, N. B.—Salt. 200
17 Cooper, Robert, Toronto, Ont.—Washing crystals. 200
18 Lane, T. G., Hamilton, Ont.—Washing and bleaching crystals. 200
19 Saunders, Wm., London, Ont. a Pharmaceutical preparations. 200
  b Perfumery. 202
20 Lyman, Clare, & Co., Montreal, Q. a Pharmaceutical preparations. One of the longest established drug firms in the Dominion. Specialty—pure drugs. Also, linseed oil crushers and paint grinders. 200
  b Oil. 201
  c Paints. 202
22 Lyman Bros., & Co., Toronto, Ont. a Pharmaceutical and chemical preparations. 200
  b Oil for paints. 201
  c Paints in oil. 202
23 Wilson, John, St. John, N. B.—Soaps. 201
24 Savage, Alfred, & Son, Montreal, Q.—Oil. 201
25 Morse, Geo. D., & Co., Toronto, Ont. —Soap, candles, tallow, lard, and oils. 201
26 Walker, J., Hamilton, Ont.—Soaps. 201
28 Hood, A. W., & Son, Montreal, Q.—Soaps. 201
29 Albert Toilet Soap Co., Montreal, Q.—Soaps. 201
30 Spinelli, R., Montreal, Q.—Paraffine soaps. 201
31 Lyman, S. J., Montreal, Q. aPhosphorous soap. 201
  b Perfumery. 203
33 Waterman Bros., London, Ont.—Hard and soft coke from petroleum, crude and refined petroleum, paraffine oil, benzine, axle oil, tar from petroleum, paraffine scales. 201
36 Leeds Paint Manufacturing Co., Mallorytown, Ont.—Ferruginous rock and paints. 202
39 Buchanan Mineral Co., Walsingham, Ont.—Paints and colors. 202
40 McKay, William, Ottawa, Ont.—Liquid drier for paint, printers’ ink. 202
42 Ramsay, T., Montreal, Q.—Paints. 202
44 Ramsay, A., & Son, Montreal, Q.—Paints. 202
45 Montreal Plumbago Mining Co., Montreal, Q.—Stove polish, crucibles. 202
46 Martin, Charles, Montreal, Q.—Stove polish, crucibles. 202
48 Hall, G. B., Quebec, Q.—Ochres. 202
53 Copeland & McLaren, Montreal, Q.—Iron oxide. 202

For classes of exhibits, indicated by numbers at end of entry, see Classification, pp. 27-45.
Ceramics, Furniture, Woven Goods.

55 Thompson, G. F., & Sons, St. John, N. B.—White lead. 202
57 Edgell, W., Pudsey’s Point, N. S.—Iron ochre. 202
58 Miller, Hugh, & Co., Toronto, Ont.—Ponad. 203
62 Manuviling, J. J., Hampton, N. B.—Matches. 204

Ceramics—Pottery, Porcelain, Glass, etc.
81 Pratt, Charles, London, Ont.—Pottery. 205
82 Ahren, J. H., Paris, Ont.—Pottery. 205
83 Bell, David, Little River, Q.—Drain tiles. 206
84 Mochan, Albert, St. John, Q.—Bricks. 206
86 Geological Survey, Montreal, Q.—Bricks. 206
87 Advisory Board, Quebec, Q.—Bricks. 206
91 Bell, W. & D., Quebec, Q.—Tobacco pipes. 206
93 Mee Brothers, St. John, N. B.—Brick, drain tiles. 206
94 Smith & Kaye, Halifax, N. S. a Bricks, drain tiles. 206 b Earthware. 206
98 St. John Stone Chinaware Co., St. John, Q.—Stone chinaware. 210
99 Cape Rouge Pottery Co., Quebec, Q.—Crockery ware. 210
103 Booth, W., Toronto, Ont.—Sign painting on glass. 216
104 McAusland, J., Toronto, Ont.—Stained glass, figured work. 216

Furniture and Objects of General Use in Construction and in Dwellings.
105 Hay, R., & Co., Toronto, Ont.—Sideboard. 217
107 Riley & May, Toronto, Ont.—Bil- liard tables, etc. 217
110 Kremer, C., Preston, Ont.—Furniture. 217
111 Muirphy, A. A., Montreal, Q.—Store windows. 219
112 Roy & Co., Montreal, Q.—Invalid mechanical chair. 217
113 Reinhardt, C., Montreal, Q.—Com- bination spring-bottom bedstead. 217
114 Reid, R., Montreal, Q.—Marble mantelpiece. 217
115 Stephen, A., & Son, Halifax, N. S.—Secretary. 217
117 Drum Cabinet Manufacturing Co., Quebec, Q.—Parlor and bedroom sets, sideboard. 217
118 Whiteside, H., & Co., Montreal, Q.—Beds and mattresses. 217
121 Chapelleau, Godfrey, Montreal, Q.—Fireproof safes, burglar-proof door. 217
122 Bennett, Jas., St. John, N. B.—Newspaper files. 217
123 Hutching & Co., St. John, N. B.—Mattresses. 217
127 Huber, Allen, Berlin, Ont.—Mirrors. 219

129 Ewing & Co., Toronto, Ont. a Mirrors. 219 b Mouldings. 220
130 Dixon, A. H., Toronto, Ont.—Show cases. 219
131 Shantz, J. Y., Berlin, Ont.—Mirror. 219
132 Spence, John C., Montreal, Q.—Stained glass window. 219
135 Wade, J. M., Montreal, Q.—Orna- ment on glass and wood. 219
136 Cockburn, D., Ottawa, Ont.—Carved frame. 220
140 Brown, J. T., St. John, N. B.—Frames, book-rack. 220
141 Copp Bros., Hamilton, Ont. a Stoves. 222 b Sad irons. 225
142 Moore, D., & Co., Hamilton, Ont.— Stoves, tubular lanterns. 222
143 Elliot, J. W., Toronto, Ont.—Stoves. 222
144 White, H. A., Hamilton, Ont.— Stovepipe damper. 222
145 Newfernburg & Co., Toronto, Ont.— Sheet metal elbows. 222
150 Harris, J., & Co., St. John, N. B. a Ship camboose and register grates. 222 b Iron mantels. 227
151 Trudeau, P., Ottawa, Ont.—Gas burner, globe, and gallery. 223
154 Williams, J. M., & Co., Hamilton, Ont.—Tin and stamped ware. Manufac- turers of plain, stamped, re-tinned and japanned tinware, tubular lanterns, etc. etc. Price lists sent on application. 224
158 Penton, Thos., Sarnia, Ont.—Com- bined cooking and heating engine. 225
161 Elliott, T. C., Guelph, Ont.—Wash- ing machine. 225
163 Lavelle & Co., Montreal, Q.—Washing machines. 225
164 Hall, G. B., Quebec, Q. a Washing machines. 225 b Blinds, etc. 227
166 Cable, Bayard, & Co., Montreal, Q.—Clothes rack. 225
168 Foster, S. R., & Son, St. John, N. B.—Fireproof shutters. 225
172 Wood, T. M., & Co., Toronto, Ont.—Venetian blind. 227
174 Evans, Oscar C., Hamilton, Ont.—Blinds. 227
176 Fontaine, J., Montreal, Q.—Hot- house windows. 227
177 Wells & Co., Toronto, Ont.—Win- dow fastener. 227
178 Fairbank, Hawes, & Co., St. John, N. B.—Doors, blinds, sash, turned work. 227
179 Wilson, Gilmour, & Co., St. John, N. B.—Marbelized mantels and grates. 227

Yarns and Woven Goods of Vegetable or Mineral Materials.
180 Dundas Cotton Mills Co., Hamil- ton, Ont.—Cotton fabrics. 230
181 Canada Cotton Manufacturing Co., Cornwall, Ont.—Domestics, tickings, bags, yarn, etc. 230

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

182 Smith & Wilby, Toronto, Ont.—
Samples of cotton batts. 230

183 Woodworth, J. L., St. John, N. B.—
Cotton yarns. 230

184 Parks, W., & Son, St. John, N. B.—
White and colored cotton yarns. 230

185 Winger, H., Elmira, Ont. 230
a Canadian and Oxford gray cloth. 230
b Linen sheeting. 233

c Sheeting, 234

186 Stevens, A. J., & Co., Paris, Ont.—
Floor oil cloth. 234

Woven and Felted Goods of Wool, etc.

191 Toronto Tweed Co., Toronto, Ont. 235
a Tweeds. 235
b Flannels. 236

192 Rosamond Woolen Co., Almonte, Ont.—Cassimeres. 235

193 Mills & Hutchison, Montreal, Q.—
Tweeds. 235

196 Paton Manufacturing Co., Sherbrooke, Q.—Cloths and tweeds. 235

197 Woodworth, J. L., St. John, N. B.—Woolen yarns. These 4-ply woolen yarns, chiefly for knitting purposes, are made of pure native wool, with special regard to durability. 235


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201 Lomas, Adam, & Son, Sherbrooke, Q.—Flannels. 236

202 Willett, S. T., Chambly, Q.—Flan-
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203 St. John Woolen Mills, St. John, Q.—Flannels. 236

205 Smith & Wilby, Toronto, Ont.—Fancy flannels. 236

206 Cantic, Ewan, & Co., Montreal, Q.—Plain and fancy flannels. 236

205 Winger, H., Elmira, Ont. 237
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207 Wardlaw, J., Galt, Ont.—Woolen yarns. 238

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212 McCracle & Co., Guelph, Ont.—Knit goods and hosiery. 239

213 Ancaster Knitting Co., Hamilton, Ont.—Knitted and fancy goods. 239

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215 Smith, H. H., Goderich, Ont.—Suits of Canadian goods. 240

216 Shorey & Co., Montreal, Q.—Ready made clothing. 240

217 Fisher, T. S., Toronto, Ont.—Shirts, pants, clouds, and scarfs. 240

218 Skelton, Tooke, & Co., Montreal, Q.—Shirts, collars, and cuffs. 240

219 Brown & Clagget, Montreal, Q.—Dresses. 230


222 May, James S., St. John, N. B.—Ready-made clothing. 230

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229 Sutherland, A., Kingston, Ont.—Boots and shoes. 231

231 King & Brown, Toronto, Ont.—Boots and shoes. 231

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235 Corestone, J., & Co., Montreal, Q.—Hats and caps. 231

237 Gentesse, C., Montreal, Q.—Improved head conformatour. 231

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239 Cloutier, George, Pointe Levis, Q.—Sewing boots. 231

242 Ramsay, D., Cobourg, Ont.—Boots and shoes. 231

244 Dominion Suspender Co., St. Ste-
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2. *Coignet, Father & Son, & Co.*, Paris.—Chemical and pasture products. 200
3. *Galzy, E.*, Lyons.—Insect products. 200
4. *Fournier, Jean, Roanne,* Loire.—Cream of tartar. 200
5. *Hygienic Products Manufacturing Co.*, Paris.—Chemical preparations. 200
8. *Michel, Pyrrhus, Vaison, Vaucluse.* —Digestive elixir and vermifuge. 200
10. *Rouault, Ch.*, Paris.—Syrup of iron and tar. 200
11. *Audibran, Paris.—Anti-scorbutic elixir.* 200
12. *Baudon, Paris.—Wine of antimony.* 200
13. *Boude & Son, Marseilles.—Refined sulphur.* 200
15. *Brasseur, Romorantin, Loir & Cher.* —Pectoral tonic syrup. 200
17. *Chevrier, Paris.—Pharmaceutical preparations.* 200
18. *Clery, Hughes, Paris.—Pharmaceutical preparations.* 200
   a. Insect powder, and instruments for its use. 200
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20. *Tancrède Bros., Paris.—Glue and gelatin, animal charcoal, bone tallow.* 200
22. *Drueelle, Reims, Marne.—Champagne wines.* 200
23. *Dubois, Charles, Marseilles.—Special chemical preparations for the navy.* 200
26. *Jacquand, Father & Son, Lyons.*—Tobacco, gelatins, bone phosphates, etc. 200
27. *Joseph, Victor, Petit Quévilly, near Rouen.—Oil for burns.* 200
28. *Lefebvre, Fortuné, Illiers, Eure & Loire.—Green water.* 200
30. *Rigand & Dusard, Paris.—Chemical and pharmaceutic preparations.* 200
32. *Solvay & Co., Varangeville, Dom- bale, Mewthe and Moselle.—Chemical products.* 200
33. *Torchon, Ch.*, Paris.—Pharmaceutical preparations. 200
34. *Hottot, A., & Co.*, Paris.—Pepsin and other digestive preparations. 200
35. *Thomas Brothers, Avignon, Vaucluse.*
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   a. Soaps. 201
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246 Faye & Thévenin, Lyons.—Colored silks.

246a Droz, Juillet & Co., Lyons.—Silks.

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265 Bressen-Agnés & Co., Lyons.
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  a Silks.
  b Velvets.

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<td>Nuremberg</td>
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<td>65</td>
<td>Eiernann &amp; Tabor</td>
<td>Fürth</td>
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<td>67</td>
<td>Spiegelberger</td>
<td>Ludwig, Fürth</td>
</tr>
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<td>68</td>
<td>Cramer, J. W.</td>
<td>Fürth</td>
</tr>
<tr>
<td>69</td>
<td>Beckh, Georg Adam</td>
<td>Nuremberg</td>
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<td>71</td>
<td>Kühn's Wire Factory</td>
<td>Nuremberg</td>
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<tr>
<td>72</td>
<td>Meier, J. C., Fürth</td>
<td>near Nuremberg</td>
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<tr>
<td>73</td>
<td>Beyer, Edward</td>
<td>Chemnitz</td>
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| 74  | Jänecke Bros. & F. Schneemann | Frankfurt-on-Main |- Flax in rolls, size, starch, varnish, 
| 75  | Vogel, M. B. | Leipsic |- Colors. |
| 75a | Lesser, G. & Co. | Leipsic | Preparations for finishing textile manufactures. |
| 76  | Farina, Johann Maria | Jülich |- glue. |
| 77  | Farina, F. Maria | Glockengasse |- Glue and glue, chemical glue, chemically treated glue, 
| 78  | Schimmel & Co. | Leipsic |- Essential oils. |
| 79  | Gadamer & Jaeger | Waldenburg |- Swedish matches. |
| 80  | Hochstätter, Heinrich | Langen | near Darmstadt |- Matches. |

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<td>Berlin</td>
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<td>81a</td>
<td>Lonitz, Hugo</td>
<td>Neuhaldensleben</td>
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<td>82</td>
<td>Gundlach Bros., Grossalmerode</td>
<td>- Crucibles and fire-bricks.</td>
</tr>
<tr>
<td>83</td>
<td>Gundlach, W., &amp; Son</td>
<td>Grossalmerode</td>
</tr>
<tr>
<td>84</td>
<td>Stettin Fire-brick Manufacturing Co.</td>
<td>- Fire-brick retorts and fire-bricks.</td>
</tr>
<tr>
<td>85</td>
<td>Gundlach, Jeh., jr., Grossalmerode</td>
<td>- Crucibles and jars for cement.</td>
</tr>
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<td>87</td>
<td>Villeroy &amp; Boch, Mettlach</td>
<td>- Mosaic tiles.</td>
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<tr>
<td>87a</td>
<td>Wagner &amp; Starker, Stuttgart</td>
<td>- Parquet tiles.</td>
</tr>
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<td>88</td>
<td>Telegraph Supply Manufacturing Co., Berlin</td>
<td>Porcelain for chemical uses.</td>
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<td>89</td>
<td>Royal Porcelain Works, Berlin</td>
<td>Porcelain, biscuit work, etc.</td>
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<td>90</td>
<td>Hanke, Reinhold, Höff., near Coblenz</td>
<td>- Antique German pottery.</td>
</tr>
<tr>
<td>91</td>
<td>Merkelbach &amp; Wick, Grenzhausen</td>
<td>- Pottery partly in the antique German style.</td>
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**COLLECTIVE EXHIBIT OF BAVARIAN LOOKING-Glasses AND LOOKING-Glass PLATES.**

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<tr>
<td>97a</td>
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<td>- Looking-glass plates.</td>
</tr>
<tr>
<td>97c</td>
<td>Brann &amp; Reich, Fürth</td>
<td>- Looking-glass plates.</td>
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<td>99</td>
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<td>Schöttle, Georg, Stuttgart</td>
<td>Furniture.</td>
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<td>106</td>
<td>Völker, Otto, Berlin</td>
<td>- Carved furniture.</td>
</tr>
<tr>
<td>107</td>
<td>Tenner, A. B., Eisfeld</td>
<td>- Wooden rolling blinds.</td>
</tr>
<tr>
<td>108</td>
<td>German Sewing Machine Factory, Frankfurt-on-Main</td>
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</tr>
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<td>109</td>
<td>Neuhusen, J., Berlin</td>
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</tr>
<tr>
<td>110</td>
<td>Bahse &amp; Haendel, Chemnitz</td>
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</tr>
<tr>
<td>111</td>
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<tr>
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<td>- Near Schwarzenberg.</td>
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<tr>
<td>114</td>
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<td>- Ornamental drinking utensils.</td>
</tr>
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<td>115</td>
<td>Woldemar, Wimmer, Annaberg</td>
<td>- Saxony.</td>
</tr>
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<td>116</td>
<td>Voeltzkow, W., Berlin</td>
<td>- Picture frames.</td>
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<td>118</td>
<td>Voeltzkow, G. W., jr., Berlin</td>
<td>- Picture frames.</td>
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<tr>
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<tr>
<td>120</td>
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</tr>
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<td>123</td>
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265 Storck & Simsheimer, Hanau.
266 Baker & Co., Hanau.
267 Volz-Bier, A., Hanau.
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271 Keller, Heinrich, Pforzheim.
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      b. Perfumery.  
      a. Toilet and glycerine soap.  
      b. Perfumery.  
      a. Toilet soap.  
      b. Perfumeries, pomades, etc.  
  13. Wagennann, G., Vienna.—Petroleum, mineral wax, candles, taps, etc.  
  15. Palme, Elias, Steinschonan, Bohemia.—Glass and bronze lustre.  
  17. Herbert, Franz Paul, Klagenfurt.—White lead.  
  18. Riha, Ernst, Pilsen, Bohemia.—Water colors for artists.  
  19. Andes & Son, Vienna.—Lac, varnish, oil color, mastic.  
  20. Ecker, Alexander, Stockerau, near Vienna.—Colors for painters and carriage varnishers.  
Ceramics—Pottery, Porcelain, Glass, etc.

34. Klammerth, Alois, Znaim, Moravia.—Earthenware vessels.

35. Zasche, Joseph, Vienna.  
   a. China.  
   b. Porcelain.  
36. Fischer, Samuel, Vienna.—China-ware; flowers made of china, bouquets, wreaths, and jewelry.

41. Eberhardt, Carl, Prague.—China-ware; flowers made of china, bouquets, wreaths, and jewelry.

42. Chemical Technical Manufactory, Elbogen, Bohemia.—Porcelain (lustrous colors).

43. Riedl von Riedenstein, David & Fredrich, Dallwitz, Bohemia.—China ser vices.


47. Ziegler's Son, Andreas, Sofienhutte, Bohemia.—Cast looking-glass, glass tiles.


50. Batka, Franz, Prague.—Glassware for chemical purposes.

51. Franke, Carl, Prague.—Chemists' fixtures.

52. Umann, John, Tiefenbach, Bohemia.  
   a. Flagons.  
   b. Glass articles.  

53. Rasch, Clemens, Meistersdorf, Bohemia.—Concave glass articles.  

54. Lobmeyr, I. & L., Vienna.—Glass articles.  

55. Grohmann & Kessler, Haida, Bohemia.—Glass articles.

58. Muller, Hermann, Ulrichsthal, Bohemia.—Concave glass articles.  

59. Von Harrach, Count, Neuvolt, Bohemia.—Glass articles.

60. Tyrolean Glass Painting Manufactory, Innsbruck.—Glass painting and annealing.

61. Hartmann, Moritz, Pribram, Bohemia.—Glass pearls and cylinders.

62. Wagner, Franz, Meistersdorf, Bohemia.—Glass and bronze articles.

63. Zeckert, John, Meistersdorf, Bohemia.—Glassware and bronze.

64. Brunfant, Jules de, Vienna.—Glassware.

65. Schreiber, S. Neffen, Jos., Vienna.—Glassware.

66. Palme's Son, F. E., Zvecevo, Slavonia.—Glassware.

67. Stolze's Sons, C., Vienna.—Glassware.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 47-45.
Furniture, Woven Goods, Silk, Clothing.

Furniture and Objects of General Use in Construction and in Dwellings.

68 Meyr's Nephew, Adolf, near Winterberg, Bohemia.—Glassware. 216

69 Kohn, Jacob & Joseph, Vienna.—Furniture of bent wood. 217

70 Dillmann, I., & Fischer, L., Vienna.—Iron furniture. 217

71 Rigl, Rudolf, Vienna.—Iron double bed. 217

73 Stein, Carl, Vienna.—Cabinet furniture. 217

74 Thomes Brothers, Vienna.—Furniture of bent wood. 217

75 Hoyer, Joseph, Svetla, Hungary.—Plates of crystal. 218

76 Moser, Ludvig, Carlslad, Bohemia.—Glass articles, painted services. 218

77 Lerl, Gustave, & Sons, Vienna.—Frames for photographs (in bronze). 220

78 Scheidl, Alois, Vienna.—Gold frames and cornices. 220

79 Kraulitz, M., Vienna.—Frames for photographs. 220

80 Bambula, John, Vienna.—Bronze picture frames. 220

81 Sommerschuh, W. I., Prague.—Earthenware stoves and slabs. 222

82 Osterzetzer Brothers, Vienna.—Paper lamp screens. 223

83 Kell's Heir, F. A., Platten, near Carlslad, Bohemia.—Plated and tinned spoons, boxes, tin articles. 224

84 Kirchhof's Sons, C. F., Vienna.—Refrigerators. 224

85 Buchsbaum, Max, Vienna.—Ceiling ornaments. 227

86 Caänk & Co., Vienna.—Wood work, blinds, table mats, wall screens. 227

Yarns and Woven Goods of Vegetable or Mineral Materials.

87 Bentel, Franz, Vienna.—Wicker work. 229

88 Richter, Ignar, & Sons, Niedergrund, Bohemia.—Cotton velvets. 231

89 Parma, Joseph, Tichau, Moravia.—Bleached piques. 233

90 Regenhart, Raymann, & Kufferle, Vienna.—Table linen, linen. 233

91 Siegl, Carl, Vienna.—Bleached linen. 233

92 Weiss & Grohmann, Vienna.—Linen and cotton thread. 233

Woven and Felted Goods of Wool, etc.

95 Huckel Sons, I., Neutitschelm, Moravia.—Hatters' articles, felt. 235

96 Cloth Manufacturers' Association, Reichenberg, Bohemia.—Cloths, with and without finish. 235

98 Schmidt, I. Ph., & Sons, Reichenberg, Bohemia.—Woolens. 235

99 Jakob, Adolf, Reichenberg, Bohemia.—Woolens, military cloth. 235

100 Von Bauer, Otto, Brunn.—Woolens. 235

103 Siegmund, Wilhelm, Reichenberg.—Woolens. 235

104 Koch, Max, Vienna.—Woven long and square shawls. 237

106 Hlawatsch & Isbary, Vienna.—Woven shawls. 237

107 Voslau Yarn Manufactory, Voslau, near Vienna.—Dyed woolen yarns. 238

111 Schweinburg, Gustav, Vienna.—Carpets. 239

Silk and Silk Fabrics.

113 Hornbostel, C. G., & Co., Vienna.—Silk and half silk goods. 245

114 Reichert's Sons, F., Vienna.—Silks. 245

115 Frettsch, S., & Son, Vienna.—Silk articles. 245

117 Hetzer, Carl, & Sons, Vienna.—Silk ribbon and velvet. 248

118 Kemperling, John, & Sons, Vienna.—Silk ribbons. 248

119 Stefsky, Joseph, Stockerau.—Haberdasheries, woolen and silk cords and laces for military purposes. 249

120 Schmidl Sons, W., Vienna.—Passementerie. 249

Clothing, Jewelry, and Ornamental Traveling Equipments.

121 Bauer, Albert, Humpoletz, Bohemia.—Cloth, velvets, clothing for military purposes. 250

122 Keller & Alt, Vienna.—Clothing. 250

124 Mottl Sons, M., Prague.—Men's clothing. 250

126 Straschitz, Beermann, Prague.—Men's clothing. 250

127 Schwarzman, D., & Co., Vienna.—Men's clothing; European costumes, from coarse to fine. 250

128 Thieben, Emanuel, Vienna.—Woven shawls and dressing garments. 250

130 Werner, John, Prague.—Men's clothing. 250

131 Budan, Joseph, Prague.—Leather gloves. 251

132 Eckstein Brothers, Prague.—Kid gloves. 251

133 Engelmuller, Ferdinand, Prague.—Leather gloves. 251

134 Habig, Peter, & Co., Vienna.—Leather gloves. 251

135 Bencker, M., & Son, Prague.—Kid gloves. 251

136 Lörincz, Stephan, Budapest.—Boots. 251

137 Micka, Karl, Prague.—Leather gloves. 251

138 Pilat, Anton, Prague.—Leather gloves. 251

139 Pokorny, Karl, Prague.—Leather gloves. 251

140 Reichert, Adolf, Vienna.—Shoes. 251

141 Repper, Joseph, Vienna.—Leather gloves. 251

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Clothing, Fancy Goods, Jewelry.

142 Stiasny, Franz & Max, Vienna.—Leather gloves.  
143 Dewidels, Simon, Prague.—Kid gloves.  
144 Stoger, Ludwig, Vienna.—Leather gloves.  
145 Hauer, Carl, Brunn.—Leather gloves.  
146 Straub, August, Prague.—Leather gloves.  
147 Frese, Anton, Prague.—Kid gloves.  
148 Steinhilber, Anton, Prague.—Leather gloves.  
149 Bencker, I. U., Prague.—Leather gloves.  
150 Turnwald, Ch., Prague.—Leather gloves.  
151 Brauneck, Edward, Vienna.—Leather gloves.  
152 Beutel, Franz, Vienna.—Bath shoes made of plated rushes.  
153 Aue, Fred. v. d., and Kollmann, Prague.—Kid gloves.  
155 Berg, S., Krakau.—Albumen for the manufacture of gloves, condensed yolks of eggs.  
156 Roth, Franz, Prague.—Leather gloves.  
158 Suchy, Anton, Prague.—Leather gloves.  
159 Schwarz & Son, Joh., Vienna.—Hatbands.  
160 Vcelicka, August, Prague.—Kid gloves.  
161 Haberkorn, George, Prague.—Leather gloves.  
162 Hamerli, John, Funfkirchen, Hungary.—Leather gloves.  
163 Hoffmann, Joseph, Prague.—Leather gloves.  
164 Irmenbach's successor, Gottlieb, Prague.—Kid gloves.  
168 Lowenstein, Adolf R., Vienna.—Fancy shoes.  
170 Skriván, John, & Son, Vienna.—Hats, felts.  
171 Port, Alois, Vienna.—Leather gloves.  
172 Bloch, E., & Sons, Brunn.  
174 Martius, W., Vienna.—Leather gloves.  
175 Korb, Vincenz, Graslitz, Bohemia.—Silk laces, lace articles.  
176 Czernimska, Inocenta, Wisniowczyk, Galicia.—Embroidery.  
178 Richter, Edward A., Vienna.—Variegated embroidery, working materials requisite for the same.  
179 Schnabl, Joseph, Gossengrun, Bohemia.—Laces, fichus, handkerchiefs, and fan decorations of lace.  
181 Ullmann, J. F., Neudeck.—Laces.  
182 Dorner, Emilie, Bosing, Hungary.—Laces and embroideries.  
183 Erlebeck, Anton, Gossengrun.—Laces, fan decorations, handkerchiefs, and lace fichus.  
184 Horner, Anton, Gossengrun, Bohemia.—Laces, lace fichus, and fan decorations.  
185 Schmidl & Sons, W., Vienna.—Haberdashery, trimmings, silk and wooden braids.  
186 Fritsch, Joseph, Gossengrun.—Laces, handkerchiefs, fichus, and fan decorations of lace.  
187 Lapaine, Caroline, Idria.—Bobbins.  
189 Metzner, Bernhard, Graslitz, Bohemia.—Laces, handkerchiefs, and fan decorations.  
190 Stramitzer, L., Vienna.—Point gaze tape laces.  
191 Menzel, W. E., Teplitz, Bohemia.—Garnets, genuine and imitation stones (pierres de strasse).  
192 Reif, Joseph, Prague.—Jewelry of precious stones.  
193 Goldschmidt's Sons, Michael, Prague.—Gold and silver ornaments.  
194 Steiner & Kolliner, Prague.—Garnets, gold and silver jewelry.  
196 Markowitsch & Scheid, Vienna.—Silver trinkets.  
197 Neustadt, M. H., Prague.—Garrot jewelry.  
199 Bolzani & Fussl, Vienna.—Gold chains.  
200 Bergmann, Franz, Gablonz.—Imitation gems.  
202 Rodek Brothers, Vienna.—Bronze and leather jewelry.  
206 Kersch, Moritz, Prague.—Garnet articles.  
207 Ulbrich, Franz, Ober-Kukan, near Gablonz.—Imitation of precious stones.  
209 Hofrichter's Son, Joseph, Reichenauf, near Gablonz, Bohemia.—  
   a Imitation precious stones.  
   b Papier-maché boxes.  
213 Schadelbauer, Vincenz, Vienna.—Mother-of-pearl buttons.  
216 Baudissin, Countess Pauline, Vienna.—Artificial flowers.  
217 Turner's Sample Office, Vienna.—  
   Cork articles, tobacco pipe tube, and amber cigar holders.  
223 Iaruschka, Joseph, Vienna.—Mother-of-pearl buttons.  
226 Hieke, Augustine, Tyssa, near Bodenbach, Bohemia.—Horn and metal buttons.  
227 Lux, Cl., Vienna.—Bronze articles.  
228 Bergman, Franz, Vienna.—Bronze articles.  
231 Hellmich, F. A. Eidam, Wolfsdorff, Bohemia.—Glass, pearls, bone, ivory, horn, and tortoise-shell buttons, real and imitation.  
232 Heller's Sons, Balduin, Teplitz, Bohemia.—Metal buttons and trinkets.  

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45
Fancy Goods, Stationery, Medical Appliances, Hardware.

234 Hiess, Franz, Vienna.—Turners’ articles, meerschaum and amber. 254
237 Kemperling, Hermann, Vienna.—Turners’ articles, pipes, cigar holders, canes. 254
241 Krehan, Ignaz, Vienna.—Mother-of-pearl buttons. 254
243 Kuzel, John, & Jankowsky, C., Vienna.—Turners’ articles, inksandcigar holder, ash bowls, watch holder, candle screens. 254
248 Umann, John, Tiefenbach, Bohemia.—Paper weights. 254
251 Wagner, Franz, Meistersdorf.—Bronze trinks. 254
252 Lederer, K., Gablonz, Bohemia.—Glass trinks. 254
254 Hartmann, L., & Eidam, Vienna.—Turners’ articles, smoking requisites made of meerschaum and amber. 254
256 Lukasch, L., Vienna.—Mother-of-pearl fancies. 254
256 Schneider, Wenzel, Prague.—Necessaries for the toilet, threading machines. 254
267 Sittig, Joseph, Vienna.—Horn buttons. 254
271 Coffani, Maria, Vienna.—Parasols, fans, and trinks, made of straw. 254
272 Bauer & Pokorny, Vienna.—Meerschaum pipes. 254
274 Osterriitter, Joseph, Vienna.—Fans of tortoise-shell, ivory, feathers, silk, wood, and leather. 254
278 Puschner, Franz Anton, Tyssa, near Bodenbach, Bohemia.—Metal buttons, brooches, sets of earrings, emblems, medals, decorative buckles. 254
279 Schwam, Wilhelm, Willendorf.—Mother-of-pearl buttons. 254
283 Witterk, Adalbert, Vienna.—Mother-of-pearl buttons. 254
285 Steindl, Carl, Vienna.—Mother-of-pearl buttons. 254
286 Blazinic & Sons, John, Vienna.—Watches, etc. 254
290 Trebitsch, Arnold, Vienna.—Articles of meerschaum and amber. 254
291 Unger, Franz, Vienna.
   a Smoking requisites. 254
   b Leather articles. 255
293 Danberger, George, Vienna.—Bronze ware, frames for photographs, toilet looking glass, cigar holders, inksands, match boxes. 254
297 Bechmann, A. F., Vienna.—Bronze ware. 254
298 Beihl, Franz, Vienna.—Bronze ware. 254
299 Frank, Joseph, Vienna.—Bronze ware. 254
300 Driedzinski & Hanusch, Vienna.—Bronze articles. 254
301 Bohm, Anton, Vienna.—Bronze ware. 254
302 Bohm, Ludwig, Vienna.—Bronze ware. 254
306 Wethammer, Joseph, Vienna.—Fans. 254
307 Wielander, Peter, Vienna.—Mother-of-pearl buttons. 254
308 Bambula, John, Vienna.—Bronze goods, albums, writing portfolios, belts. 254
310 Unger, Franz, Vienna.—Portemonnaie, frames for manufacture of leather fancy goods. 255
315 Seewald, Michael, Vienna.—Leather ware and trinks. 255
316 Rodek Bros., Vienna.—Leather articles. 255
317 Osterriitter, Joseph, Vienna.—Leather articles. 255

Paper, Blank Books, Stationery.
321 Fialkowski Bros. & Twerd, Hiebitz, Austria-Silesia.
   a Writing paper. 299
   b Printing paper. 296
322 Eichmann & Co., Arnau, near Prague.—Samples of paper. 299
323 Opitz & Son, Carl, Teplitz, Bohemia.
   a Paper. 299
   b Pasteboard. 292
325 Knepper, W., Vienna. 260
327 Schloglmuhl Paper Factory, Vienna.—Paper rolls for printing machines. 260
327 Schoffel, Anton, Reichenau, Bohemia.—Papier-maché boxes. 262
328 Wesely, Veit., Vienna.—Boxes. 262
331 Osterriitter Bros., Vienna.—Paper laces. 264

Weapons, etc.
333 Percussion Caps, Cartridge, & Breech Ring Factory, Prague.—Percussion caps, cartridges, and breech rings. 265

Medicine, Surgery, Prosthesis.
334 Wilhelm, Franz, & Co., Vienna.—Drugs, medicinal herbs, volatile oils, etc. 272
335 Wartpatrikoff Bros., Vienna.—Insect powder. 272
336 Pollak, Jacques, Vienna.—Edible substances. 272
337 Zacherl, John, Vienna.—Insect powder and tinctures. 274
338 Hamerli, John, Funckirchen, Hungary.—Leather trusses. 276
338 Politzer, Adam, Vienna.—Anatomical and pathologico-anatomical preparations. 276
339 Berghammer, Fr., Vienna.—Set of artificial teeth. 277
340 Perl, Joseph, Klausenburg, Hungary.—Teeth, sets of teeth. 277
341 Zsigmondy, Adolf, Vienna.—Teeth. 277

Hardware, Edge Tools, Cutlery, and Metallic Products.
343 Wertheim, Baron Franz, Vienna.—Complete representation of the Austrian tool manufacture. 280
344 Schneider, Wenzel, Prague.—Fine penknives. 281
346 Winkler, Alois, Vienna.—Cast zinc articles, plates, emblems, letters, and coat of arms. 283
347 Winkler, Michael, Vienna.—Cast metal signs and letters. 283

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27–45.
AUSTRIA.

Manufactures, Art, Machinery, Animal Products.

284 Moravia Ironware Industry & Trade Co., Vienna.—Nails, screws.

285 Fabrics of Vegetable, Animal, or Mineral Materials.

350 Schnek & Kohnberger, Vienna.—India-rubber goods.

351 Hausmann, Wilhelm, Reichenberg.—Rope articles, twine, cords, girths.

352 Kohl, August, Vienna.
   a Hemp hose, mill straps for mills. 287
   b Fire buckets for mills. 289

Carriages, Vehicles, and Accessories.

353 Lohner & Co., Jacob, Vienna.—Phaeton carriages.

356 Armbruster, Sebastian, Vienna.—Landau coach.

357 Bloch & Sons, E., Brunn.—Sole-leather saddle cloths.

Painting.

357a Hofrichter's Sons, Reichenau, near Gablonz.—Oil paintings.

357b Isella, Pietro, Vienna.—Painting.

358a Lott, Ludwig, Vienna.—Chromotygraphs. 424

358b Reiffenstein & Rösch, Vienna.—Chromos. 424

358c Sieger, Edward, Vienna.—Lithographs. 424

358d Czeiger, S., Vienna.—Chromos. 424

Ceramic Decorations, Mosaics, etc.

359 Steinmetz, Franz, Petronberg, Illyria.—Inlaid work and veneer. 452

360 Egger, I. B., Villach, Karnthen.—Inlaid work and veneer. 452

Machines for Printing, Making Books, Paper Working, etc.

361 Wuste, F., Vienna.—Cylinder coverings. 543

Arboriculture and Forest Products.

362 Frankl, J. G. & L., Vienna.—Wood specimens for the manufacture of furniture.

Water Animals, Fish Culture and Apparatus.

364 Nachtmann, Jacob, Tannwald, Bohemia.—Chamber leech aquariums. 649

Animal and Vegetable Products.

365 Zacherl, John, Vienna.—Cleaned sponges.

370 Uhely & Co., H., Stockerau.—Wax.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 17-45.
SWITZERLAND.

(North of Nave, Columns 52 to 55.)

Chemicals, Ceramics, Woven Goods, Silk.

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<th>No.</th>
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<tr>
<td>1</td>
<td>Guyot-Lupold, A., Locle, Ct. Neuchâtel</td>
<td>Chemical products, artificial black diamond, diamondine, powder of rubies, enamels for jewelry.</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Silk, Clothing, Jewelry, Weapons.

42 Schreer, Emil, & Co., Zürich.—Silks.

43 Schroeder, Wilhelm, & Co., Zürich.—Silks.

44 Schwarzenbach, Landis J., Thalwil, near Zürich.—Silks.

45 Stapfer, Joh., Sons, Horgen, Ct. Zurich.—Silks.

46 Stunzi & Sons, Horgen, Ct. Zurich.—Silks and satins.

Clothing, Jewelry, etc.

47 Blumer & Wild, St. Gallen.—Hosiery, ladies' fancy articles.

48 Bourquin, C. F., Cormondrèche, near Neuchâtel.—Wool hosiery, jackets, and waistcoats.

49 End-Ulmi, Ali., Lucerne.—Knitted under-garments.

50 Hess, Gebr., Amriswil, Ct. Thurgau.—Colored shirts and over-shirts.

51 Huggenberger, U., Frauenfeld, Ct. Thurgau.—Hosiery.

52 Meyer-Weisspi & Co., Altstetten, near Zurich.—Knitted under-garments.

53 Wiki, B., Lucerne.—Gentlemen's clothing.

54 Bell, August, Kriens, near Lucerne.—Crinoline braid.

55 Chiesa Bros., Locarno, Ct. de Tessin.—Braids and straw hats, Canton Tessin specialty.


57 Indermühle, E. Th., Berne.—Straw hats.

58 Isler, Aloysie, & Co., Wildegg, Ct. Aargau.—Hair and cotton plaits, fancy goods of hair, straw, cotton, and silk for hats and bonnets.

59 Isler, Jacob, & Co., Wohlen, Ct. Aargau.—Straw goods.

60 Walser, Conrad, Wohlen, Ct. Aargau.—Straw hats, plaits, and fancy articles of straw, crinoline, cotton, and manila hemp, tissues of straw, silk, and other materials for fancy boxes, sparrowie, embroidery, and ornaments for bonnets.

61 Alder Bros., Herisau, Ct. Appenzell, Inner Rhodes.—Hand and mechanical embroidery.


63 Baerlocher-Custer, Rheineck, Ct. St. Gallen.—Embroidery, lace curtains, tidles, bed-covers, pillow-case covers.

64 Basquin, Hector, & Schweizer, St. Gallen.—Machine embroideries.

65 Bion & Tschumper, St. Gallen.—Mechanical embroideries.

66 Fisch Bros., Buholer, Ct. Appenzell, Inner Rhodes.—Mechanical embroideries.


68 Hirschfeld Bros. & Co., St. Gallen.—Swiss lace curtains.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Medical Appliances, Hardware, Animal and Vegetable Products.

92 Lapp, C., Freiburg.—Food for children, condensed milk. 273
93 Naumann-Burkhardt, H., Basle.—Extract honey, syrup, and flour of meat. 273
94 Nestlé, Henry, Vevay, Ct. Vaud.—Milk food or lacteous krina. 273
94 a Wander, G., Berne.—Extracts of malt and malt drops. 273
95 International Bandage-shiff Factory, Schaffhausen.—Dressings, lint, appliances for the dressing of wounds, pharmaceutical apparatus. 276

Hardware, Edge Tools, Cutlery, and Metallic Products.
96 Spillmann, Heinrich, Unterstrass, near Zurich.—Engineering tools. 280
97 Schneider, C. F., Geneva.—Compli- cated pocket-knives. 280
98 Bürgin, Bros., Schaffhausen.—Up- holsterers’ nails. 280
98 a Le Coutre, Jacques, Sentier, Ct. Vaud.—Razors. 281
98 b Bossi, Gaetano, Locarno, Ct. Tes- sin.—New system of safety locks. 284

Fabrics of Vegetable, Animal, or Mineral Materials.
99 Bally & Schmitter, Aargau, Ct. Aar- gau.—Elastic webs for boots. 285

AGRICULTURE.

Agricultural Products.
1 Anastasio, Giuseppe, Lugano, Ct. Tessin.—Cigars. 623
2 Kottmann, J., Solothurn.—Ciga- res. 623
3 Sauter, A., Diessenhofen, Ct. Thur- gau.—Cigars. 623

Animal and Vegetable Products.
4 Schleife Tanneries, Winterthur, Ct. Zurich.—Blackened calf leather. 632
5 Hürlimann, J. J., Rapperswyl, Ct. St. Gallen.—Swiss honey. 654
6 Society for Bee Culture, Lukmanier, Sobrio, Ct. Tessin.—Honey and wax. 654
7 Coffee Surrogate Factory, Zurich.—Fig-meal (surrogate of coffee), con- served coffee. 656
8 Robbi & Co., Geneva.—Choco- late. 976
9 Schweiger, Auguste, Geneva.—Theodoro’s sauce. 98
10 Suchard, Ph., Neuchatel.—Choco- late, cacao. 656
11 Almen, von, & Kopp, Fleurier, Ct. Neuchâtel.—Absinthe. 660
12 Berger, C. F., Couvet, Ct. Neucha- tel.—Absinthe. 660
13 Bernhard, S., Samaden, Engadin, Ct. Graubünden.—Jva bitter, Jva perfume, and tincture. 660
15 Grandpierre, J., Geneva.—Ver- mouth. 660
16 Henny & Moulet, Fleurier, Ct. Neufchâtel.—Absinthe. 660
17 Kirschwasser Company Zug, Zug.—Kirschwasser. 660
18 Nievergelt, Joh., Maschwanden, Ct. Zurich.—Kirschwasser. 660
19 Pernod, Ed., Couvet, Ct. Neucha- tel.—Green and white absinthe, gentian- liqueur, kirschwasser. 660
20 Scherer, Bros., Meggen, Lucerne.—Kirschwasser. 660
21 Schmidt, Joseph, Zug.—Sweet-liqueurs, righblitter, stomach-bitters, kirsch- wasser. 660
22 Stauffenegger, Chr., Travers, Ct. Neuchâtel.—Absinthe. 660
23 Gessler-Zeller, J., Basle.—Leckerly of Basle. 660
24 Mattmann, Brothers, C. & J., Horw, near Lucerne.—Italian pastry. 661

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
BELGIUM.

(North of Nave, Columns 54 to 59.)

Chemicals, Ceramics, Glass.

Chemical Manufactures.

1 Hemptinne, A. de, Son, Molenbeek, St. Jean, near Brussels.—Plan of apparatus for manufacturing sulphuric acid. 202

3 Meeus, M. & J., Antwerp.—Refined sulphur. 202

4 Solvay & Co., Couillet, near Charleroi.—Chemicals, soda-salt. 202

6 Des Cressonnieres ( widow) & Son, Molenbeek, St. Jean, near Brussels.—Toilet soap. 201

8 Staes, Sproelants, Termonde, East Flanders.—Limestone, rape-seed, hemp-seed, cotton, and other oils. 201

9 Botelberge, Gustave, & Co., Melle, near Ghent, East Flanders.—Ultramarine. 202

10 Gilkinet, C. J., Ensival, near Verriers.—Cache-sapouil, or special ink, to point out the defects on cloth and dyestuffs. 202

11 Lummerzheim, M. H., & Co., Wondelgem, near Ghent, East Flanders.—Bituminous and re-asphaltic roof and ship sheathing paper, lamblack. 202

12 Offergeld Bros., Forest, near Brussels.—Red, brown, and chestnut iron paint. 202

13 Planche, Edouard, Son, Laeken, near Brussels.—Writing ink. 202

14 Planche, Mechichor, Ixelles, near Brussels.—Writing ink. 202

15 Singer, Max, Tournais (Hainaut).—Aniline products for dyes extracted from coal-tar, etc. 202

16 White Lead & Iron Paint Joint Stock Co., Anderghem, near Brussels.—White lead, iron paint, mastics. 202

17 Van der Velden, Leopold, Liége.—Writing, glassing, and indelible ink, liquid glue, etc. 202

18 Van Laer, Guillaume, Verriers.—Dyers' practical guide, mordant processes. 203

19 Marbaux, Auguste de, Antwerp.—Aromatic liquid, Anvers water, essential oil, caraway essence, cedar essence, Florentine iris, and oil of cloves. 203

20 Cooppal & Co., Wetteren, East Flanders.—Charcoal, sulphur, powder and cartridges. 204

Ceramics.—Pottery, Porcelain, Glass, etc.

23 Seilles lez Andenne & Bouffioux Joint Stock Co. of Refractory Products and Plastic Clay, Seilles, near Andenne, Province of Liége.—Burnt refractory earthenware, brick for gas furnaces, etc., gas retorts, refractory plastic clay. 207

25 Wingender Bros., Chokier, near Liége.—White and colored clay pipe. 210

26 Floresse Co., Floresse, near Namur.—Plate glass for windows. 214

26a Schmidt Brothers & Sisters, Lodelinsart.—Window glass. 214

27 Andris, Lambert, & Co., Marchienne-au-Pont, near Charleroi (Hainaut).—White window and heavy muslin glass. 214

27a National Glass Works Joint Stock Co., Jumet.—Window glass. 214

28 Baudoux & Co., Charleroi.—White and colored window and unpolished and corrugated muslin glass, with variegated rosettes engraved and cut. 214

29 Baudoux, E., & Jonet, Lodelinsart.—Colored and fancy window glass. 214

30 Bennet & Bivort, Jumet, near Charleroi.—Window glass. 214

31 Bouvard, A., Le Brun, H., & Co., Roux, near Charleroi.—Window glass. 214

32 Dorlodot, L. de, & Co., Lodelinsart.—Unpolished and corrugated window glass, greenhouse, cathedral, and stained glass, old glass imitation. 214

33 Looper, de, Haind, & Co., Courcelles.—Window glass. 214

34 Dessent, J., & Bros., Jumet.—Window glass. 214

35 Fourcault-Fraison, A., & Co., Dempremy, near Charleroi.—Window glass. 214

36 Hans, Octave, & Co., Jumet, near Charleroi.—Window glass. 214

37 Lambert, Casimir, Son, Charleroi.—Window glass. 214

38 Lambert, L., & Co., Hamendes Glass Works, Jumet.—Window glass. 214

39 Leurant, Emile, Jumet (Heigene), near Charleroi.—Glass cylinder. 214

40 Mondron, Leon, Lodelinsart, near Charleroi.—Window glass. 214

41 Monnoyer, J., & Son, Dempremy, near Charleroi.—Window glass. 214

42 Morel, Alphonse, Lodelinsart, near Charleroi.—Window glass. 214

43 Schmidt, A., & Co., L'Alliance Glass Works, Jumet (Brunotte), near Charleroi.—Window and fluted glass. 214

44 Schmidt, Devillez, & Co., Dempremy, near Charleroi.—Window glass. 214

45 Glass Works Joint Stock Co., Charleroi.—Window glass. 214

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
DEPT. II.—MANUFACTURES.

Glass, Furniture, Woven Goods.

46 Plate Glass Manufacturing Joint Stock Co., Courcelles, near Charleroi.—Clean polished and plated glass.

47 Hainaut Glass Manufacturing Joint Stock Co., Roux, near Charleroi.—Plate glass for windows, silvered glass, samples of plate glass at different stages of manufacture.

48 Glassware & Plate Glass Manufacturing Joint Stock Co., Brussels.—Framed plated and unplated mirrors.

49 Boussu, Familleureux & Blanc Missner Glass Works Joint Stock Co., Boussu, near Mons (Hainaut).—Crystals and half crystals, dinner service, and articles for lighting.

Furniture and Objects of General Use in Construction and in Dwellings.

51 Demeuter, Leopold, Son, Brussels.—Furniture and hangings.

53 Goyers, J. A. & H., Bros., Louvain.—Pulp and the ogive style.

54 Snyers, Rang, & Co., Brussels.—Carved walnut furniture, renaissance style, ebony inlaid with ivory.

55 Teugels, Emile, Malines, Province of Anvers.—Carved furniture, a chair of the sixteenth century, a Flemish chair of the sixteenth century.


57 Boucneau, Leon, Schaerbeek, near Brussels.—Marble mantelpiece, Belgian mosaic marble panels for dining-room decoration, brick pavement and Belgian mosaic marble table.

58 Guyaux Bros., Bouffioulx, near Charleroi.—Black marble, St. Anne mantelpiece.

59 Lintelo, A., Brussels.—Clocks and marble slabs.

60 Parmentier, Gosset, & Co., rivy (Hainaut).—Marble mantelpieces with vases and clocks.

61 Tainsy, P., Brussels.—Marble mantelpieces.

62 Brodure, Mathieu, Spa.—Painted, varnished, and gilt wooded work.

63 Bronfort Bros., Spa.—Painted and ornamented wooden boxes, etc.

64 Debrus-Leclaire (widow), Spa.—Painted and ornamented wooden boxes, etc.

65 Debrus, Willeme Alexandre, Spa.—Wooden boxes, etc.

66 Krins, E., Spa.—Wood carvings.

67 Van Ginderdeuren, Brussels.—Wood carvings, furniture.

68 Costermans, Jean, Brussels.—Hearth of the Flemish Renaissance.

69 Miedel, Dieudonné, Sombreffe, near Gembloux, Province of Namur.—A brick layer ventilator for chimneys and coal hearths.

70 Serta, G. N., Director of the State Railroad.—A plan for utilizing the heat wasted by kitchen stoves, and a heating and ventilating system for passenger railroad cars.

71 L'Eclair Joint Stock Co., Kessel-Loo, near Louvain (Brabant).—Match tapers.

72 F. a. a. Gerard, Brussels.—Silver, copper, and bronze household utensils.

74 Tremouroux, N. & J., Bros., Saint Gilles, near Brussels.—Polished, varnished, bronzed, cuanmed, plated, and wrought iron household utensils.

75 Valania, Jean, Ixelles, near Brussels.—Machines for confectioners.

76 Vandervest, Guillaume, Brussels.—Machine for the manufacture of sweet-meats.

76: Dogny, Jean Baptiste, Brussels.—Balusters, ornaments for door panels.

Yarns and Woven Goods of Vegetable or Mineral Materials.

77 Baertssoen, A., & Buysse, A., Ghent.

a Cotton, textile fabrics.

b Linen textile fabrics.

78 Smet, E. de, & Co., Ghent.—Thread in packages; warped, unbleached and dyed skeins.

79 Desmet Bros., Ghent.—Dyed, bleached, and unbleached textile fabrics.

80 Parmentier, Van Hoegarden & Co., Ghent.—Spun cotton, bleached and unbleached cotton textile fabrics.

81 Devos, Camille, & Brother, Court-
ral.—Stuff for trousers.

82 Idiers, Emile, Auderghem, near Brussels.—Spun cotton, dyed Adrienpoel red, etc.

83 Brandt, Jacques de, Alost.—Dia-
pered and damasked table linen.

86 Declercq, Clement, Iseghem, East Flanders.—Twisted linen thread for machine and hand sewing.

87 Guerart Bros., Alost, East Fland-
ers.—Canvas, sackcloth and bags for grain, guano, salt, etc.

88 Leirens-Eliaert of Eliaert-Cools, Alost, East Flanders.—Thread and tow for weaving, sewing thread.

90 Re y, senie, Brussels.—Linen fab-
rics.

91 Sak-Volders, Joseph, Turnhout, Province of Antwerp.—Tickings for beds and awnings.

92 La Lys Co., Ghent.—Jute and linen thread.

93 Van Damme Bros., Roulers, East Flanders.—Cloth.

94 Vande Wyckele Bros., Als-
berge, Ghent.—Tow and linen thread bleached, at every stage.

95 Wilford, William, Tamise, East Flanders.—Imperial extra flax, merchant and navy canvas; combed flax and thread for its manufacture.

Woven and Felted Goods of Wool, etc.

96 Hauzeur-Gerard, Son, Bever., Carved woolen thread.

99 Baras-Navaux, Verliers.—Cloth and woolen stuff.

100 Bettonville, Clement, Hodimont, near Verliers.—Cloth and woolen stuff.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
BELGIUM.

Woven Goods, Silk, Clothing, Stationery.

101 Bioley, Francois, & Son, Verviers.—Cloth and woolen stuff. 235
102 Bioley Bros. & Co., Juslennville, near Verviers.—Cloth and woolen stuff. 235
103 Chatten, M., & Co., Dison, near Verviers.—Cloth and woolen stuff. 235
104 Delhez Bros., Dison.—Cloth and woolen stuff. 235
105 Devosse-Blaise, Dison.—Cloth and woolen stuff. 235
106 Dole, Lekeux, & Co., Dison.—Cloth and woolen stuff. 235
107 Domken Bros., Verviers.—Cloth and woolen stuff. 235
108 Dreze, H. & J., Dison.—Cloth and woolen stuff. 235
109 Franck Bros., Dison.—Cloth and woolen stuff. 235
110 Henrion, J. J., Dison.—Cloth and woolen stuff. 235
111 Herve, Fanchamps, Verviers.—Cloth and woolen stuff. 235
112 Lecloux, G. J., Dison.—Cloth and woolen stuff. 235
113 Lejeune-Vincent, H. J., Dison.—Cloth and woolen stuff. 235
114 Olivier, J. J., & Son, Verviers.—Cloth and woolen stuff. 235
115 Peltzer & Son, Verviers.—Cloth and woolen stuff, carded woolen thread. 235
116 Simonis, Iwan, Verviers.—Cloth and woolen stuff. 235
117 Trasté, J., Verviers.—Cloth and woolen stuff, carded woolen thread. 235
118 Wihl, M., & Co., Verviers.—Cloth and woolen stuff. 235
119 Jamme, Armand, Saint Hadelin, (Nessonvix), near Verviers.—Carded woolen thread. 235
120 Begasse, Charles, Liège.—Felt for paper manufacture, fag-end fabrics, and woolen bed blankets. 237
121 Jacobs, Pocaert, & Co., Brussels.—Woolen bed blankets. 237
122 Rolin, H., Son, & Co., Saint Nicholas, East Flanders.—Tartan shawls, thin, light cloth, tweeds, waterproofs, lady cloth, fancy cloths, etc. 237
123 Braquenié Bros., Malines.—Materials tapestry. 239a, Portrait of Rubens, panel from Gallia. 239b Portrait of Cousin, in Arabian costume. 239c Eight panels together, representing eight gods, from. Olympia, with all their attributes, from Audran. 239d Full length painting—style Louis XVI.

Silk and Silk Fabrics.

124 Fonteyn Bros., Lede, East Flanders.—Black silk goods. 245
125 Van Bellingen, Jos., Son, Antwerp.—Black silk cassimere, Antwerp silk and trimmings. 245
126 Van Bellingen, J. H., & Suremont, Max, Antwerp.—Antwerp black silk tissus. 245

Clothing, Jewelry, etc.

127 Dujardin Bros., Leuze (Hainaut).—Cotton and woolen hosiery. 250

128 Leynen-Hougaerts, J. A. H., Peet, (Leuven, near Antwerp).—Black silk, satin, damask, bourdon, kaschmir, and woolen damask cloths. 250
129 Bouhon, François, Verviers.—Wooden and other shoes. 251
131 Frenay Bros., Roclenge-sur-Geer (Limbourg).—Brails and straw hats. 251
132 Level, Leon, Brussels.—Kid gloves. 251
133 Vandenbos-Poelman, G., Ghent.—Shoes. 251
134 Watrigant, Alphonse, Brussels.—Gentlemen's, ladies', and children's shoes. 251
135 Begerem, René, Ypres.—Valenciennes lace. 252
136 Cremmelincck, Courtrai.—Lace. 252
137 Dassonville, Courtrai.—Lace. 252
138 Declercq-Clement, Iseghem, East Flanders.—Common lace of twisted thread. 252
139 Des Mares, P. T., Laeken, near Brussels.—Lace. 252
140 Vergnies, O. De, & Sisters, Brussels.—Lace. 252
141 Duden Bros., Brussels.—Lace. 252
142 Everaert, Julie, & Sisters, Brussels.—White and black lace. 252
143 Bruyneel, senior, Grammont.—Black lace. 252
144 Groote, Vierandeel de, Grammont.—Black lace. 252
145 Everaert—Declercq, Jules, Grammont.—Black lace. 252
146 Everaert—Declercq, Jules, Grammont.—Black lace. 252
147 Ghys-Bruneel, Grammont.—Black lace. 252
148 Leclercq (widow), Grammont.—Black lace. 252
149 Saligo-Vandenbergh, Grammont.—Black lace. 252
150 Gillon-Steyaert, Courtrai.—Valenciennes lace. 252
151 Rectem, Jean, Brussels.—Gold embossed picture. 252
152 Sacré, L., Brussels.—Lace. 252
153 Vanderzeande—Goemaere, Courtrai.—Valenciennes lace. 252
154 Verde, Delisle Bros., & Co., (India Co.), Brussels.—Lace. 252
155 Coryn, Jules, Ghent, East Flanders.—Chignons and wigs. 254
157 Gossiaux, Felicien, Wavre (Brabant).—Hair picture. 254
157a Graf, Emilie, Son, Liège.—Trunk. 255

Paper, Blank Books, Stationery.

158 Vandamme, Pierre Jean, Brussels.—Proofs of steel engraving for stamping with colors, illuminated with gold and silver, chromographs, and coats of arms. 259
159 Braff, Pfeffer, & Co., Ghent.—Raw material for the manufacture of paper, worked and cleaned rags, and old paper. 259

For classes of exhibits, indicated by numbers at end of entries, see Classification.
DEPT. II.—MANUFACTURES.

Weapons, Medical Appliances, Animal and Vegetable Products.

160 De Mesmaecker, Fr., Brussels.—Samples of bindery work. 264
161 De Tournay-Catala, Brussels.—Printing, writing, and wrapping paper, and pasteboard. 259
162 Poissonnier, Jean Baptiste, Brussels.—Cases for jewelers, confectioners, druggists, etc.; card of samples. 262
163 Daye, F. & Co., Scharbeek, near Brussels.—Pressed leather, pasteboard made from Cordoue and Malines old lides. 264

Weapons, etc.

164 Fusnot, Charles, & Co., Cureghem, near Brussels.—Cartridges for weapons of every description. 255
165 Heuse, Ernest, Nessonvaux, near Liège.—Gun-barrels. 265
166 Mairiot & Heuse, Fraipont (Liège).—Magnum barrels for warfare and export. 267
167 Bayet Bros., Liège.—Fine weapons. 269
168 Neumann Bros., Liège.—Double-barreled hunting guns. 269
169 Tambeur, Michel, Liège.—Hunting weapons. 269

Medicine, Surgery, Prosthesis.

170 Depuy, Barthélèmy, Brussels.—Pharmaceutical preparations, pamphlets on toxicology, pharmacy, and hygiene. 272
173 Guillery, Hippolyte, Brussels.—Sanitary report of the battle-field of Sedan in 1870; apparatus for the rapid dressing of wounds on the battle-field, etc., and for the treatment of limb fractures. 276
174 Hermant, Emile, Bruges.—Treatise on flying ambulances, model of ambulance bags adopted by the Belgian government, memoir of the military physician. 276
174a Buys, L., Brussels.—Car for the transport of the sick and wounded. 273

Hardware, Edge Tools, Cutlery, and Metallic Products.

175 Lambert, A. de, Liège.—Files for watchmakers and jewelers. 280
175a Jean, Emile de, Brussels.—Collection of iron and tools for horse-shoeing. 280
176 Constant, Emile, Monceau-sur-Sambre, near Charleroi.—Cheese-vat bolts, clamps for rails, rivets, tinker's ware. 284
177 Demanet, Albert, Gosselies (Hainaut).—Forged nails. 284
178 Fondu, Jean Baptiste, Brussels.—Locksmiths' work, locks for vehicles, carriages, and railway cars; nickel ware used in construction. 284
179 Houlickx, Guillaume, Brussels.—Two large chests—one representing an old-fashioned Flemish trunk, the other the present style. 284
180 Nicaise, Charles, Louvrière (Hainaut).—Locomotive and other bolts, screws for locomotives, screw nuts, rivet-clamps for rails, etc. 284

180a Fix, A. J., Brussels.—Nails, rivets, etc. 284
181 Nicaise, Pierre & Nicolas, Marchienne, near Charleroi.—Bolts, screw-nuts and rivets, spoons, and round-nose chisels, carriage tenders, clamps, etc. 284
182 Velins & Co., Chatelet, near Charleroi (Hainaut).—Iron wire, tacks, nails. 284

Fabrics of Vegetable, Animal, or Mineral Materials.

183 Ryckere, Edouard de, senior, Isegem, East Flanders.—Brushes and pencils. 286

Carriages, Vehicles, and Accessories.

184 Ruytter, Charles de, Ghent.—Carriages. 292
185 Van Aken, Louis, Anvers.—Carriages. 292

AGRICULTURE.

Agricultural Products.

1 Le Bailly-D'Inghem, Viscount Arthur John, Villeneuve, Switzerland.—Cereals cultivated in a sandy soil. 650
2 Ameye Berte, Rodolphe, Ghent.—Chicory, raw, in the pod, and manufactured. 623
5 Vandendaele-Rigot, Charles, Quiévrain (Hainaut).—Ground mustard. 623
6 Delannoy, Nicholas, Tournaï.—Chocolate. 623
6a Mottie, L., Brussels.—Tobacco and cigars. 623
7 Joveneau, Arthur, Tournaï (Hainaut).—Powdered cocoa and chocolate; detail of chocolate manufacture. 623

Animal and Vegetable Products.

9 Bodart, Ed., Louvain (Brabant).—Sheepskins, white leather, morocco, salted roans. 652
10 Baugniet, T., & Co., Brussels.—Crystallized blood. 652
11 Lebermuth, J., & Co., Brussels.—Waxed leather and goat skins. 652
12 Ocreman, L., & Wit doeck, E., Mechlin, province of Antwerp.—Varnished skins. 652
13 Schmitz, F. A., & Co., Koekeberg, near Brussels.—Skins for hats; manufactured morocco leather. 652
15 Versé-Spelmans, Brichot, Ant, & Co., Brussels.—Carried leather. 652
17 Remy & Co., Louvain (Brabant).—Starch and similar products. 658
20 Vandendaele-Rigot, Ch., Quiévrain (Hainaut). a Pear, apple, and beet-root sugars. 659
22 De Beukelaer, F. X., Antwerp.—Antwerp elixir, hygienic cordial. 660
23 Melkior, P. J., Brussels.—Liquors. 660

For classes of exhibits, indicated by numbers at end of curties, see Classification, pp. 37-45.
### Agricultural Products and Machines.

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<th>Number</th>
<th>Name</th>
<th>Address</th>
<th>Description</th>
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<tbody>
<tr>
<td>24</td>
<td>Schaltin, Pierre &amp; Co., Spa.</td>
<td>Cor-</td>
<td>Cordial, mineral waters, etc.</td>
</tr>
<tr>
<td>27</td>
<td>Bergh, van den, &amp; Co., Antwerp</td>
<td>Gin made from fine grains.</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Wauters-de-Busscher, Mechlin,</td>
<td>Province of Antwerp.</td>
<td>Cordials.</td>
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<tr>
<td>31</td>
<td>Couvreur Sisters, Brussels.</td>
<td></td>
<td>Confections.</td>
</tr>
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### Textile Substances of Vegetable or Animal Origin.

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Address</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>32</td>
<td>Leclercq, Henry, Courtrai.</td>
<td></td>
<td>Flax.</td>
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<tr>
<td>33</td>
<td>Taulez-Bottelier, Charles</td>
<td>Bruges, East Flanders.</td>
<td>Oakum, flax.</td>
</tr>
<tr>
<td>35</td>
<td>Mullender, S., Verviers.</td>
<td></td>
<td>Flocks of wool and shearings.</td>
</tr>
<tr>
<td>36</td>
<td>Delmotte, Hippolitus, Ghent.</td>
<td></td>
<td>White bristles.</td>
</tr>
<tr>
<td>37</td>
<td>Dassonville de Saint-Hubert,</td>
<td>Namur.</td>
<td>Stones for grinding grain, cements, etc.</td>
</tr>
<tr>
<td>38</td>
<td>Vandendaele, Rigot, Charles</td>
<td>Quievrain (Hainault).</td>
<td>Steam machine for manufacturing chicory.</td>
</tr>
</tbody>
</table>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Netherland.

(North of Main Aisle, Columns 60 to 65.)

Chemicals, Ceramics, Furniture, Woven Goods, Silk.

### Chemical Manufactures.

1. Matthias, W. E., Amsterdam.—Sulphate of ammonia. 200
2. Gorter, D. & S., Sneek.—Soap. 201
3. Willena, P. J., Schiedam.—Oils. 201
4. Saunders & Co., Leyden.—Soaps. 201
5. Henny, C. O., Deventer.—Glue. 202
7. Verrocq & Van Heusde, Tiel.—Dyes, turpentine, inks, wax, colors, salves. 202
8. Grootes, M., Westzaan.—Blueing. 202
9. Leur, W., Schooten, near Haarlem.—Red lead made from iron ore. 202
10. Mills, M. A.—Inks. 202
12. Louisbourg, V., Gravenhage.—Colors. 202
13. Van den Bergh, N. L. J., Arnhem.—Cologne. 203

### Ceramics—Pottery, Porcelain, Glass, etc.

15. Van Henkelom, H. C., Utrecht.—Building stone. 206
17. Goedwaagen, P., Gouda.—Chemical stoneware and stoves. 207
18. Fontein, R., Franeker.—Roofing tiles. 208
19. Ravesteijn, H. F., Westraven.—Painted wall stone. 208
20. Bouvy, J. J. B. J., Dordrecht.—Glassware. 214

### Furniture and Objects of General Use in Construction and in Dwellings.

21. Noodjen, L. J., Rotterdam.—Furniture and fancy articles. 217
22. Van Vliet, W. F., Gravenhage.—Chairs. 217
23. Lowman, J., Zwolle.—Folding screen. 217
24. Van der Lugt, Gravenhage.—Furniture and fancy articles. 217
25. Lommen, C. H., Roermond.—Painted and cut glass. 219
26. Grolman, C. W., Utrecht.—Picture frames. 220
27. Batenburg & Co., Rotterdam.—Lamps. 223
28. Cool, G. Thz., Amsterdam.—Mantels. 227

### Yarns and Woven Goods of Vegetable or Mineral Materials.

31. Director of Prison, Utrecht.—Mating and rugs. 229
32. Ter Horst, J. H., Ryssen.—a Jute matting. 229
33. Aratzienius, Jannink, & Co., Goor.—Fish nets and yarn. 230
34. Hilversumsche Spinning & Weaving Manufactury, Amsterdam.—Spun and woven cotton goods. 230
35. Planteijdt, L., Krommenie.—Thread cloth and canvas. 230
36. Maas en Zonen, A. E., Scheveningen.—Fish nets. 230
37. Bottenheim, D. S., Amsterdam.—Yarns. 230
38. Stork, C. F., Hengelo.—Colored woven goods. 231
39. Swinkels, W., Helmond.—Yarns. 231
40. Veltman, J. A., jr., Amsterdam.—Covers and scarfs. 232
41. Veetman, J. A., Amsterdam.—Scarfs. 232
42. Elias, J., Strijp.—Table cloths, napkins, and dress goods. 233
43. Nieuwenhuijen & Van Stratum, Geldrop.—Towels, napkins, and table cloths. 233

### Woven and Felted Goods of Wool, etc.

44. Tilburg Woollen Manufacturing Co.—Flannels, opera cloaks, and fancy goods. 236
45. Zaalberg, J., Leyden.—Woolen covers. 237
46. De Lange, A. G., Delft.—Imitation Smyrna rugs. 239
47. Garjeanne, A. G., Delft.—Imitation Smyrna carpets. 239
48. Royal Carpet Manufactury, Deventer.—Deventer hangings. 239
49. Prins, M., Deventer.—Artificial wool and cowhair carpets. 239
50. Van Leer, B., Amersfoort.—Hangings. 239
51. Veelo, P. J., Gravenhage.—Sofa cloths. 241

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52. Travaglino, P. J. & W. J. P., Haarlem.—Silks. 244

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55. Costermans, C., jr., Gravenhage.—Trunks, satchels, and bags. 255

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57 Abrahams Bros., Middleburg.—Blank books. 261
58 Simons, Ph., Gravenhage.—Bindings for maps, etc. 261
59 Cramer, H. G. D., Ootmarsum.—Pasteboard. 262
60 Van der Burgh, M., Schiedam.—Imitations of marble and wood. 264
61 Van der Burgh, A. R. & P., Rotterdam.—Imitations of marble and wood. 264
62 Ripperman, C. J. F., Velzen.—Wood painting. 264
63 Dobbe, J. P., Gravenhage.—Wood and marble painting. 264
64 Kerkhoven, R., Utrecht.—Wood and marble painting. 264

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66 Betou, J. P. de, Delft.—Breechloading rifle. 265

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67 Van de Loo, J. P. H., Venlo.—Plaster and bandages. 276
68 Schokking, J. A. J., Amsterdam.—Conical tube for injections. 276
70 Krol, W., Kampen.—Plasters and bandages. 276
71 Mathijzen, A., Budel.—Plaster and bandages. 276
73 Gori, M. W. C., Amsterdam.—Water and land conveyances for sick and wounded. 278
74 Committee on Sick & Wounded Soldiers.—Work of the "Red Cross." 278

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75 Erdman-Schmidt, J. D., Helmond.—Cast engraving plates. 280
77 Enthoven, H. S., Zalt-Bommel.—Tinned iron kitchen utensils. 284
78 Van Heukelom, H. C., Utrecht.—Machine screws. 284

Fabrics of Vegetable, Animal, or Mineral Materials.
79 Reus, N., Pzn, Dordrecht.—House and ship brushes. 286

Netherlands East Indian Colonies.

Collective Exhibit.

Minerals, Manufactures.

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1 Netherlands Commission.
  a Gold, quicksilver, lead, and hematite iron ores; sulphur, feldspar, quartz, porphyry, trachyte, obsidian, garnet rocks, talc, flinty schist.
  b Coal. 100
  c Marble, granite, sandstone, syenite, diorite. 102
  d Limestone. 103
  e Clays, chalk bamboo. 104

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  f Gold, from Soepayang. 110
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  i Indigo. 202

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45

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  j Water jug. 210

Furniture and Objects of General Use in Construction and in Dwellings.
  k Table, benches, rocking chairs, footstools. 217

Yarns and Woven Goods of Vegetable or Mineral Materials.
  l Mats, fabric of beaten bark. 229
  m Native cotton thread. 230
  n Native calico. 232

Clothing, Jewelry, and Ornaments; Traveling Equipments.
  w Native garments of silk, cotton, etc. 250
  n Native caps, headkerchiefs, plaited hats, and Chinese slippers. 251
Manufactures, Agricultural Products.

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<th>DEPT. II.—MANUFACTURES.</th>
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<tbody>
<tr>
<td><strong>Lace</strong>, silk embroideries, embroidered handkerchiefs, etc.</td>
</tr>
<tr>
<td>Silver filigree necklace, brooches, ear drops, and bracelets.</td>
</tr>
<tr>
<td>Artificial flowers, lacquered boxes, cases, fruits, etc.; nutmeg-tree made of feathers; flower baskets, cigar cases, vases, box, native boat and sedan chair made of cloves, book mark, tortoise-shell covers, models of Malay dwelling, chapel, rice barns, baskets, tea-set of silver filigree work, etc.</td>
</tr>
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</table>

**Weapons, etc.**

| Native weapons, small models of inland arms. | 265 |
| East Indian weapons, creeses, swords, knives, sabres, head-choppers, blow pipes for arrows, arrows, and shields, (Loaned by His Majesty the King of the Netherlands.) | 265 |

**Medicine, Surgery, Prosthesis.**

| 'Alkaloids from cinchona bark, quininum, quinine, quinidine, cinchonine, cinchonidine, and chinconia powder; gum damar, catechu. | 272 |

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| Small models of inland tools. | 280 |
| Rice knife. | 281 |

**Fabrics of Vegetable, Animal, or Mineral Materials.**

| Ropes made of fibres of native trees and plants. | 287 |
| Baskets, lacquered wooden box and trays. | 289 |

**Arboriculture and Forest Products.**

| Cotton reeds; East Indian loom; trunks, roots, barks, etc., of various species of the cinchona tree; collection of native woods; leaves, fruit, and pulp of the vegetable tallow tree; samples of bamboo. | 600 |
| Ebony, sapan, and fustic woods. | 601 |
| Gutta-percha, gutta-giang, gutta-soesoe, India-rubber, agar-agar, gum benjamin, camphor, dragon's blood, vegetable tale, etc. | 603 |

| Wild nuts, binamoe, langa bidjan, lea-doeri flue seeds, sapo ranto, fruit, preserved wild nutmegg, etc. | 605 |

**Agricultural Products.**

| Rices, hulled, unhulled, and in the stalk; millet, dragong wheat. | 620 |
| Benkoeroe and tarok roots. | 622 |
| Coffees, teas, cocoa, nutmegg, white and black peppers, mace, cloves, tobacco. | 623 |

**Land Animals.**

| Birds of Paradise. | 624 |

**Marine Animals, Fish Culture and Apparatus.**

| Tripang fish. | 641 |
| Tortoises. | 643 |
| Mother-of-pearl shells. | 645 |

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| Edible birds' nests. | 650 |
| Tiger skins. | 652 |
| Wax. | 654 |
| Preserved victuals. | 656 |
| Arrow-root, sese, ketella, red obi, tales, aren, cassava, and potato flours. | 657 |
| Sago. | 658 |
| Sugars. | 659 |
| Arrack. | 660 |
| Kajoe-poeti, Macassar, and Tekawan oils. | 662 |

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| Kapok (cotton), cotton. | 665 |
| Ramie flax, leaves, etc.; oakum; fibrous materials from trees and plants; rattan, sambaboe pipit, and sambaboe besar reeds. | 666 |
| Imitation clove-tree. | 709 |

2 | Berenlot, Moens, J. C.—Herbarium exhibiting the cinchona cultivation in Java. | 721 |
3 | Noordendorp, J., Amsterdam.—Photographs of the government cinchona establishments, and the Bouda Temple at Boro Bodor. | 430 |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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1 Aalborg Chemical Works, Aalborg.
—Bicarbonate and carbonate of soda. 200
2 Holmblad, L. P., Copenhagen.—
Stearine candles. 201
3 Guldborg, C. Hoegh, Copenhagen.—
Varnish, and wood polished with it. 202
4 Hansen, C., Copenhagen.—Cheese
rennet extract and coloring fluid; butter
coloring. 202
5 Meyer & Henckel, Copenhagen.
—Butter and cheese coloring, cheese rennet
extract, varnishes. 202
6 Riise, A. H., St. Thomas, West
Indies.—Double-distilled bay spirit and
oil of bay leaves. 202
7 Odense Match Factory, Odense.—
Matches. 204

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etc.
8 Hesse, Georg W., Copenhagen.—
Terra-cotta vases, jugs, etc. 206
9 Ibsen's, P., widow, Copenhagen.—
Terra-cotta vases, tazzas, figures, etc. 206
10 Wendrich & Son, Copenhagen.—
Terra-cotta bas-reliefs, bowls, vases,
etc. 206
11 Royal Porcelain Manufactory, Co-
openhagen.—Biscuit bas-reliefs after Thor-
waldsen, exhibited by the Commiss-
ioner. 212
12 Argentine Manufactory, Copenhagen.—
Porcelain covered with copper,
silver, and gold. 213

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in Construction and in Dwellings.
13 Hansen, C. B., Copenhagen.—Fur-
niture. 217
14 Meidel, F., Copenhagen.—Fire-proof
safes. 217
15 Christesen, V., Copenhagen.—Sil-
verware; large table ornament of silver,
representing Art, Science, and Industry;
tea and coffee sets, etc. 218
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painting. 217

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or Mineral Materials.
17 Ramsing, Th., Aarhus.—Dyed
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19a Sorensen, C. P., Copenhagen.—
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20 Larsen, N. F., Copenhagen.—
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21 Christesen, V., Copenhagen.—Jew-
elry and ornaments. 253
22 Assam, H. M., Odense.—Tobacco
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23 Ovre, Mrs., Copenhagen.—Artificial
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25 Hansen, Carl, & Co., Ebeltoft.—
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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<td>10</td>
<td>Steen, C., &amp; Son, Copenhagen.—Geographical, historical, meteorological, and other maps. 335</td>
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<td>k</td>
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<td>Oersted.</td>
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**Painting.**

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<td>1</td>
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**Agricultural Products.**

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<td>Heymann, P. W., Copenhagen.—Preserved butter for export, also butter which was at the Vienna Exposition in 1873. 651</td>
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<tr>
<td>5</td>
<td>Copenhagen Leather Manufactory, Copenhagen.—Consolidated leather soles, heels, sheets, etc. 652</td>
</tr>
<tr>
<td>6</td>
<td>Pork Packing Co., Copenhagen.—Lard packed in bladder. 652</td>
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<tr>
<td>7</td>
<td>Eriksen, C., Lyngby.—Honey and wax. 654</td>
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<tr>
<td>8</td>
<td>Müller, P. A. E., Copenhagen.—Honey and wax. 654</td>
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<tr>
<td>9</td>
<td>Herreborg, Otto, Copenhagen.—Preserved fruit, vegetables, jellies, etc. 656</td>
</tr>
<tr>
<td>10</td>
<td>Brøndum, A., Copenhagen.—Corn brandy and table liquor. 660</td>
</tr>
<tr>
<td>11</td>
<td>Aalborg Syrup &amp; Spirit Factory, Aalborg.—Table liquor and spirit. 660</td>
</tr>
<tr>
<td>12</td>
<td>Anthony, F., Copenhagen.—Brandy and liquors. 660</td>
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<td>13</td>
<td>Been, C. A., Copenhagen.—Liquors, etc. 666</td>
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<td>14</td>
<td>Gottschalk, I. C., Holbek.—Essences. 666</td>
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<td>15</td>
<td>Heering, Peter F., Copenhagen.—Cherry cordial. 666</td>
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<td>16</td>
<td>Lorenzen, L., Aarhus.—Bitters, cordial. 660</td>
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<td>17</td>
<td>Odin Distillery, Randers.—Corn brandy flavored with caraway seeds, table liquor, and rectified spirit. 663</td>
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<td>18</td>
<td>Sabo, I. C., Randers.—Bitters, etc. 666</td>
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<tr>
<td>19a</td>
<td>Farch, J., &amp; Son, Nibe.—Alcohol, raw spirits, and brandy. 663</td>
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<tr>
<td>19b</td>
<td>Schucani &amp; Wegmann, Copenhagen.—Liquors, bitters, etc. 660</td>
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<tr>
<td>20</td>
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<td>21</td>
<td>Ramsing, T., Aarhus.—Chocolate. 661</td>
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**Textile Substances of Vegetable or Animal Origin.**

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**Machines, Implements, and Processes of Manufacture.**

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<td>24</td>
<td>Schütz, Thurebyholm.—Model of milk cooler. 675</td>
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**Agricultural Engineering and Administration.**

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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
SWEDEN.

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Chemical Manufactures.
1. Aseptin Amykos Stock Co. - Filters for preservation of provisions and animal materials. 200
2. Bengtsson, B., Astra Torp, Trelleborg. - Chemicals. 200
3. Friedstedt, A. W., Stockholm. - Chemicals. 200
4. Gullberg Stock Co. (limited), Göteborg. - Sulphuric acid. 200
5. Liljeholmen Stearine Manufacturing Stock Co., Stockholm. - Stearine candles, oleine, glycerine, and stearine. 201
6. Sjöberg, A. P., Malmö. - Soaps. 201
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11. New Match Manufacturing Co. (limited), Stockholm. - Safety matches. 204
12. Berg, Gottfried Warby, Stockholm. - Gunpowder. 204
14. Guesta Match Manufactory, Stockholm. - Paraffined safety matches. 204
15. Holmberg, Eric, Södertelje. - Safety matches. 204
16. Jönköping Match Manufacturing Co. (limited), Jönköping. - Safety matches. 204
17. Kreuger, P. E., & Jennings, Kalmar. - Safety matches. 204
18. Elabo Göteborg Match Factory, Göteborg. - Matches. 204
19. Lindafl, J. F., Kalmar. - Safety matches. 204
20. Lover Manufacturing Co. (limited), Kalmar. - Matches. 204
21. Norrköping Match Manufacturing Co. (limited), Norrköping. - Safety matches and apparances. 204
22. Stregnas Match Manufacturing Co. (limited), Stregnas. - Safety matches. 204
23. Phænix Match Manufacturing Co. (limited), Malmö. - Matches. 204
24. Vulcain Match Manufacturing Co. (limited), Göteborg. - Matches. 204
25. Westervik Match Factory, Westervik. - Matches. 204
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27. Ystad Match Manufacturing Co. (limited), Ystad. - Safety matches. 204

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29. Högmanäs Coal Mining Co., Högmanäs. - Fire clay goods. 207
30. Rörstrands Stock Co. (limited), Stockholm. - Tiles for pavements. 208
32. Biscuit ware and parian. 212
33. Porcelain and Argentine. 213
34. Malmö Porcelain Manufacturing Co., Malmö. - Porcelain for table use. 213
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36. Reymyre Glass Factory (limited), Reymyre. - Glassware. 215

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39. Lastbom, Iven, Stockholm. - Cupboard of birchwood. 217
40. Peterson, C. E., Stockholm. - Table. 217
41. Frame. 220
42. Rambach, C. Stockholm. - Chair. 217
43. Rusch, P. O., Göteborg. - Japanese furniture. 217
44. Holm, F. F. W., Stockholm. - Furniture. 217
45. Sandberg, A. Cook, Stockholm. - Writing chair. 217
46. Wahlström, S. Fr., Stockholm. - Willow furniture. 217

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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58 Bruzewitz, Fr., Limared.—Table glass. 218
59 Goldsmiths' Stock Co. (limited), Stockholm.—Silver tankard. 218
60 Gustafberg Manufacturing Co., Stockholm.—Table china. 218
61 Reymyr Glass Factory (limited), Stockholm.—Table glass. 218
62 Röstrand Stock Co. (limited), Stockholm.—Table china. 218
63 Stoves. 222
64 Bolinders, J. & C. G., Machine Co. (limited), Stockholm.—Heating apparatus. 222
65 Stove for smoothing-irons. 225
65 Hedengren, A. F., & Son, Eskilstuna.—Stove sets. 222
66 Eriksson, G., Eskilstuna.—Brass doors for stoves. 222
68 Moberg Machine Co., Stockholm.—Range. 222
73 Elfving, C. E., Stockholm.—Apparatus for cutting lamp wicks. 223
74 Kuntze & Co., Stockholm.—Water filters, refrigerators. 224
74a Kallinge Iron Works, Ronneby.—Kitchen utensils of iron and steel sheets. 224
75 Laquisn, J. A., Eskilstuna.—Smoothing-irons. 225
76 Björk, J. O., Eskilstuna.—Hardware of moulded iron. 227
77 Dickson, James, & Co., Sandarne.—Woodwork for buildings. 227
78 Essen, Baron H. H. von, Tidaholm.—Woodwork for buildings. 227
79 Hedlund, Joh., Eskilstuna.—Metal work for buildings. 227
82 Wengström, J. O., Stockholm.—Manufactured parts of buildings. 227

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84 Berg, J. Th., Nääs, Floda. 230
85 Dyed cotton yarn. 231
86 Malmö Manufacturing Co. (limited), Malmö.—Cotton yarns. 230
87 Rosenlunds Spinning Co. (limited), Göteborg.—Cotton yarns and fabrics. 230
89 Johansson & Carlander, Göteborg.—Calicoes. 232
90 Stenburs' G., Widow, Jönköping.—Linen fabrics. 233

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91 Bergsbro Stock Co., Norrköping.—Card-wool fabrics. 234
92 Drag Stock Co. (limited), Norrköping.—Card-wool fabrics. 235
93 Landskrona Manufacturing Co., Landskrona.—Card-wool fabrics. 235

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-43.

94 Malmö Woolen Manufacturing Co. (limited), Malmö.—Card-wool fabrics. 233
95 Stockholm Woolen Manufacturing Co. (limited), Stockholm.—Woven and felted goods of wool. 233

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96 Almgren, K. A., Stockholm.—Plain woven silks. 745

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98 Ek, J. A., Stockholm.—Military equipment. 250
99 Fernlund, E. F., Stockholm.—Military and civil clothing. 250
100 Heurlin, G. U., & Co., Stockholm.—Military clothing. 250
101 Royal War Office, Department of Stockholm.—Complete equipment of foot and mounted soldiers; specimens of cloth, linen, etc. 250
103 Swedmark, G., Malmö. 750
104 Wallgren, A. R., Stockholm.—Military clothing. 750
105 Forsell, David, & Co., Stockholm.—Hats and caps. 751
106 Jacobson & Anderson, Malmö.—Gloves. 751
107 Svanson, C. E., Jönköping.—Shoes. 751
109 Tornberg, Olof, Göteborg.—Boots and shoes. 751
110 Odberg, C. R., Stockholm.—Hunting boots. 751
111 Peterson, C. E., Stockholm.—Embroidered portrait of Washington. 752
112 Klintberg, J. W., & Co., Wisby.—Jewelry made of petrifications. 753
113 Anderson, J., Kjärdingagårde, Gnosjö.—Pins. 754
114 Berg, F. J., Göteborg.—Wigs, braids, and chinongs. 754
114a Carlberg, T. A., Stockholm.—Jewel case. 754
116 Fogström, P. N., Stockholm.—Furs. 756
118 Royal Swedish Commission, Stockholm.—Life-size figures, dressed in national costume. 757

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119 Berggren, A. N., Stockholm.—Penholders of cork. 258
120 Brunell, J. E., Stockholm.—Penholders of common reed. 258
121 Klintberg, J. W., & Co., Wisby.—Letter-presses of petrifications. 258
122 Kullgren's, C. A., Widow, Uddevalla.—Letter-presses of polished granite. 258
123 Nordström, M. S., Stockholm.—Stamps for marking on linen or paper. 258
125 Munkell, J. H., Grycksbo, Falun. 258
125b Munkell, J. H., Grycksbo, Falun.—Filtering paper. 259
125c Wood pulp. 260
127 Nynäs Pasteboard Factory, Nynäshamn.—Pasteboard. 260
129 Lewenhaupt, Count, Sten, Wermuth, Katrineholm.—Wood pulp, chemically prepared. 260
130 Malmö Wood Pulp Manufacturing Co. (limited), Delaryd, Elmhult.—Wood pulp, chemically prepared. 260
131 Munkedal Manufacturing Co. (limited), Uddevalla. a Wrapping, bagging, and sketching paper. 260 b Building papers. 260 c Wall paper. 263
132 Munksjö Paper Factory, Jönköping.—Wrapping paper. 260
133 Rosenhäll Manufacturing Co., Göteborg.—Paper pulp of wood and straw, paper. 260
134 Wargöns Stock Co., Rännum.—Printing paper for newspapers. 260
135 Litorafiska Stock Co., Norrköping. a Blank books, sets of account books, billheads, etc. 261 b Playing cards. 262
136 Tidström, C. W., Stockholm.—Account books, portfolios. 261
137 Djupafors’ Manufacturing Co. (limited), Ronneby, Djupafors.—Pasteboard; building paper. 262
138 Köhler & Co., Malmö.—Playing cards. 262
140 Munksjö Paper Mill, Jönköping.—Building paper. 263
141 Edgren, Julius, Jönköping.—Wall paper. 264
142 Kaberg, C. A., Stockholm.—Wall paper. 264
143 Mineur, C. G., Stockholm.—Wall paper, imitation of leather, and ornaments of wood pulp. 264
145 Rosell, P. A., & Co., Jönköping.—Wall paper. 264

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146 Husqvarna Arms Manufacturing Co. (limited), Jönköping. a Military small arms, muskets, and revolvers. 265 b Fire arms for sporting and hunting. 269
147 Royal War Office, Artillery Department, Stockholm. a Military small arms from the royal factory at Carl Gustafs Stad. 265 b Field gun with carriage, ammunition carriage, field forge. 266 c Fortification ordnance with carriage and shots. 267
148 Motala Mechanical Works Co. (limited), Motala.—Hoops for guns. 266
149 Palmcrantz, Helge, Stockholm.—Mitrailleuse. 266
150 Ekman, Carl, Finspång, & De Maré, A., Ankarsrum.—Steel guns and shot. 267
151 Eskilstuna Iron Manufacturing Co. (limited), Eskilstuna.—Blades of swords, sabres, foils, and hunters’ hangers. 263
153 Norrström, C. A. & C. H., Eskilstuna.—Hunting knives. 268

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155 Lamm, Axel, M., Stockholm.—Galvano-caustic apparatus, gynecological apparatus. 273
156 Royal War Office, Sanitary Department, Stockholm.—Surgical instruments for military use. 276
157 Stille, Alb., Stockholm.—Surgical instruments. 276
158 Zander, G., Stockholm.—Apparatus for mechanical gymnastics. 276

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161 New File Manufactory, Eskilstuna.—Files. 280
162 Oberg, C. O., & Co., Eskilstuna.—Files. 280
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164 Uddeholm Stock Co. (limited), Råda. a Hand tools. 280 b Springs and hardware. 284
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167 Halling, A., Eskilstuna.—Knives. 281
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169 Stähler, L. F., Stählersfors.—Cutlery. 281
170 Swalling, E. M., Eskilstuna.—Knives. 281
171 Söderén, F. W., Eskilstuna.—Knives. 281
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173 Jernberg, S., Eskilstuna.—Latches. 284
174 Lafqvist, J. A., Eskilstuna.—Hinges. 284
175 Lagerbäck, H., Eskilstuna.—Locks. 284
178 Stenman, F. A., Eskilstuna.—Locks. 284
179 Strandberg, J., Eskilstuna.—Brass. 284
181 Walén, Joh., Eskilstuna.—Locks. 284
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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<td>Sundström, J. O., Charlottenberg. — Nails.</td>
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<td>187</td>
<td>Wiklund, W., Stockholm. — Brass hardware.</td>
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<td>191</td>
<td>Kallinge Iron Works, Ronneby. — Galvanized iron vessels.</td>
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<td>Karlskrona Galvanizing Stock Co. (limited), Karlskrona. — Galvanized sheet iron.</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Textiles, Ceramics, Woven Goods, Clothing.

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4 Devold, L. C., Aalesund.—Medical cod-liver oil. 201
5 Jordan, C., Trondhjem.—Medical cod-liver oil. 201
6 Moller, Peter, Christiania.—Cod-liver oil. 201
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7 Steen, Daniel, Christiania.
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8 Holmen’s, G. R., Technical Works, Fuglesang, Christiania.—Writing ink, asceptine, diamond oil blacking, grease for leather. 202
10 Rode, C. N., Porsgrund.—Scandinavian ink, writing and copying, dark violet copying ink. 202
11 Pettersen, Andr., Bergen.—Hair dressing and perfumery. 203
12 Dons, Henrik, Christiania.—Matches from Brya manufactory. 204
16 Jonsen, H., Match Manufactory, Christiania.—Matches. 204
17 Nitedals Match Manufactory, Christiania.—Safety and common matches. 204

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18 Schwarzenhorn, Fr. von, Christiania.—Painted and decorated porcelain. 213
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   c Candlesticks. 223
22 Holst, Chr., Head Steward to His Majesty the King, Christiania.—Buffet chairs, antique arm chairs, peasant chairs. 217
23 Klemetsen, Chr., Christiania.—The fittings of the Norwegian section. 217
24 Moestue, Thv., & Co., Christiania.—Iron safe. 217
25 Opahl, P. J., Christiania.—Iron sales. 217
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43 Falck-Yster, Christiania.—Snow shoes. 251
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| 54 | Moestue, Thv., & Co., Christiania. | 261 |
| 55 | Christophersen, Chr., Christiania.—Wood pulp for paper manufacturing. | 262 |
| 56 | Frolich, F. H., & Son, Christiania.—Paper hangings and borders. | 264 |
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| 59 | Michelsen, John B., Bergen. | 281 |
| 59a | Smith, William.—Knives with carved handles. | 281 |
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| 61a | Opsahl, P. J., Christiania.—Locks. | 284 |

*For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.*

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| 68 | Sorensen & Klovstad, Christiania.—Carriages (kariols). | 292 |
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| 71 | Gjerdrum, Otto, Christiania.—Model of self-acting smoke-consuming apparatus for boilers. | 592 |
| 72 | Klem Hansen & Co., Trondheim.—Belt ing. | 553 |
| 73 | Roed Works, near Sandefjord.—Rotating steam-engine with boiler and feed-water heater. | 554 |

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| 75 | Arentz, Hjalmar, Christiania.—Models and drawings of iron ships. | 594 |
| 76 | Board of Commerce, Aalesund.—Models of fishing boats. | 594 |
| 77 | Brandi, J., Christiania.—Drawings and models of sailing vessels. | 594 |
| 78 | Brunchorst & Dekke, Bergen.—Models of sailing vessels. | 594 |
| 79 | Gran, Jens, Bergen.—Models of sailing vessels. | 594 |
| 80 | Hansen, Carl A., Porsgrund.—Models and drawings of sailing vessels. | 594 |
| 81 | Museum of Bergen, Bergen.—Models of fishing boats. | 594 |
| 82 | Naval Establishment of Carl Johansvæn, Horten.—Models of boats. | 594 |

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| 76 | Board of Commerce, Aalesund.—Models of fishing boats. | 594 |
| 77 | Brandi, J., Christiania.—Drawings and models of sailing vessels. | 594 |
| 78 | Brunchorst & Dekke, Bergen.—Models of sailing vessels. | 594 |
| 79 | Gran, Jens, Bergen.—Models of sailing vessels. | 594 |
| 80 | Hansen, Carl A., Porsgrund.—Models and drawings of sailing vessels. | 594 |
| 81 | Museum of Bergen, Bergen.—Models of fishing boats. | 594 |
| 82 | Naval Establishment of Carl Johansvæn, Horten.—Models of boats. | 594 |
ITALY.

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1 Mineralogical Society of Naples.—Sulphurous products. 200
2 Salinella, Baron Michele, Nicosia, Catania.—Rock salt. 200
3 Musumei, Gulli Gaetano, Catania.—Liquorice. 200
4 Giacomazzi, Favare Salvatore, Trapani.—Sea salt. 200
5 Giacomazzi, Rocco, Trapani.—Liquorice. 200
6 Martorana, Paladino S., Trapani.—Sea salt. 200
7 Mazullo, Cav. Agostino, Manganu, Messina.—Rock salt. 200
8 Pirrone, Antonino, of Gaetano, Messina.—Liquorice. 200
9 Labonia, B. G., Naples.—Liquorice. 200
10 Romano, Gaetano, Palermo.—Salt. 200
11 Ferrino, Cesare, Turin. —Nitrate. 200
b Colors in powder and paste. 202
12 Barconcelli, Baldassarre, Cinciano, Sienna.—Bicarbonate of potassium and sodium. 200
13 Borelli, Luigi, late Tommaso, Asti, Alexandria.—Cream of tartar, acids. 200
14 Reimandi, Giuseppe, Acqui, Alexandria.—Cream of tartar, tartaric acid. 200
15 Gentili, Grassi, late Giuseppe, Pavia.—Cream of tartar. 200
16 Sbertoli, Giuseppe, late Domenico, Genoa.—Carbonate of lead. 200
17 Candiani & Biffi, Milan.—Acids and chemicals. 200
18 Emmanuele, Francesco, Catania.—Cream of tartar. 200
19 Grimaldi, Giovanni, Paterno, Sicily.—Extract of liquorice. 200
20 Pastore, Gio., late Filippo, Catania.—Juice of liquorice. 200
21 Grasso, Giuseppe, Catania.—Juice of liquorice. 200
22 Catanzaro, Giuseppe, Termini, Palermo.—Liquorice paste. 200
23 Lancia di Brolo, Duke Federigo, Palermo.—Sea salt. 200
24 Fonzo, Domenico, Catania.—Cream of tartar. 200
25 Di Mauro, Francisco, Catania.—Cream of tartar. 200
26 Scuder, Giuseppe, Catania.—Cream of tartar, zamba. 200
27 Rampazzini, Frederico, Milan.—Sulphur and chemicals. 200
28 Solinas, Arras Giuseppe, Sassari.—Olive oil. 200
29 Oneto, Agostino, & Co., Sampierdarena, Genoa.—Soap. 200
30 Agostini Della Seta, Count Alfredo, Pisa.—Olive oil. 200
31 Cenami, Count Bartolomeo, Lucca.—Olive oil. 200
32 Mingori, Vincenzo, Lucca.—Olive oil. 200
33 Tellini, Vincenzo, Calci, Pisa.—Olive oil. 200
34 Tellini, Dario, & Co., Cascina, Pisa.—Olive oil soap. 200
35 Bonei, Casuccini Ottavio, Sienna.—Olive oil. 200
36 Contucci, Eustachio, Montepulciano, Sienna.—Olive oil. 200
37 Lanza Bros., Turin.—Stearine, candles, soap. 200
38 Rinaldo, Raffaele, Salerno.—Olive oil. 200
39 Guglielmini, Andrea, Salerno.—Olive oil. 200
40 Virgili, Angelo, Vacone, Perugia.—Olive oil. 200
41 Rosselli Del Turco, Pier Francesco, Florence.—Olive oil. 200
42 Capponi, Conti Bros., Florence.—Olive oil. 200
43 Ali Maccarani Claudio, Florence.—Olive oil and paste of Zanza. 200
44 Corsini, Prince Tommaso, Florence.—Olive oil. 200
45 Merlini, Alfonso, & Enrico Bros., Terrichina, Pisa.—Olive oil. 200
46 Farinola, M. Paolo, Florence.—Olive oil. 200
47 Albergo, Geo., & Agostino Bros., Arazzo.—Olive oil. 200
48 Rospigliosi, Prince Clemente, Lamponvecchia, Florence.—Olive oil. 200
49 Chamber of Commerce & Arts, Sienna.—Olive oil. 200
50 Saracini, Alessandro, Sienna.—Olive oil. 200
51 Pucci, Sansedoni Aless., Sienna.—Olive oil. 200
52 Ricasoli, Baron Bettino, Florence.—Olive oil. 200

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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| 53 | Botti, Alessandro, Chiavari, Genoa. | —Olive oil. | 201 |
| 54 | Calamari, Pietro, Milan. | —Soaps. | 201 |
| 55 | Gianoll Bros., Milan.—Soaps. | 201 |
| 56 | Giuffrida, Leotta Giovanni, Catania. | —Oil of sweet almonds. | 201 |
| 57 | Merlo, Baron Vincenzo, Palermo.—Olive oil. | 201 |
| 58 | Sciaccia della Scala, Baron, Palermo.—Olive oil. | 201 |
| 59 | Martines, Filippo, Palermo.—Olive oil. | 201 |
| 60 | Ingaggiato, Baron Croce, Palermo.—Olive oil. | 201 |
| 61 | Pacchiani, Eliseo, Passignano, Umbria.—Olive oil. | 201 |
| 62 | Rossi, Leopardi Cav. Cesare, Como—Syracuse.—Soaps. | 201 |
| 63 | Pazzo, Domenico, Palermo.—Olive oil. | 201 |
| 64 | Galli, Cesare, Florence.—Olive oil. | 201 |
| 65 | Piacenti, Francesco, Bari.—Olive oil. | 201 |
| 66 | Agrarian Committee for Thirty Exhibitors, Florence.—Olive oil. | 201 |
| 67 | Jatta, Antonio, Ruvo di Puglia.—Olive oil. | 201 |
| 68 | Chamber of Commerce & Arts, of Bari.—Olive oil. | 201 |
| 69 | Mazzullo, Cav. Luigi, Messina.—Olive oil. | 201 |
| 70 | Di Salvo, Salvatore, Messina. | a—Olive oil. | 201 |
| 71 | Agrarian Committee of Chiavari.—Olive oil, soap. | 201 |
| 72 | Marzi Bros., Poggibonsi, Sienna.—Olive oil. | 201 |
| 73 | Russo, Calogero, Terminillo, Palermo.—Olive oil. | 201 |
| 74 | Favara, Marchese della, Palermo.—Olive oil. | 201 |
| 75 | Martillaro, Mar. Carlo, Palermo.—Olive oil. | 201 |
| 76 | Tucci-Savo Benedetto, Rome.—Olive oil. | 201 |
| 77 | Agosti Brothers, Bagnoria, Rome.—Olive oil. | 201 |
| 78 | Marini, Marq. Pietro, Rome.—Olive oil. | 201 |
| 79 | Rotali, Francesco, Rome.—Olive oil. | 201 |
| 80 | Isnardi, Pierre, Leghorn.—Olive oil. | 201 |
| 81 | Conti, E., & Sons, Leghorn.—Soaps. | 201 |
| 82 | Tarussi, Luigi, & Bros., Leghorn.—Olive oil. | 201 |
| 83 | Generosi, Felice, & Sons, Naples.—Soaps. | 201 |
| 84 | Anselmi & Marassi, Naples.—Oils. | 201 |
| 85 | Rocco, Francesco, Catania.—Olive oil. | 201 |
| 86 | Rolando, Giacomo, Modena.—Ink. | 203 |
| 87 | Mora, Domenico, Turin.—Chestnut extract for dyeing. | 202 |
| 88 | Morandi, Pietro, Milan.—Ink. | 202 |
| 89 | Bassolini, Vincenzo, Milan.—Various colors. | 202 |
| 90 | Bonacina, Cesare, Milan. | a—Varnishes, ink. | 202 |
| 91 | Maranesi, Gaetano, & Masetti Bartolomeo, Bologna.—Ink. | 202 |
| 92 | Gnocchi, Giovanni, Milan.—Inks. | 202 |
| 93 | Scarselli, Benedetto, Rome.—Gruma, incrustation from casks. | 202 |
| 94 | Ghibellini Bros., S. Giovanni in Piacetto, Bologna.—Varnish. | 202 |
| 95 | Santi, Amantini, Adamo, Florence.—Perfumery. | 203 |
| 96 | Lardera, A., Milan.—Perfumery. | 203 |
| 97 | Cosentini & Caruso, S. Manno Marchesato, Calabria Citra.—Extract of liqueur. | 203 |
| 98 | Scocchioli, Adone, Rome.—Potassium. | 203 |
| 99 | Patteguzza Bros., N. & A., Rome.—Perfumery. | 203 |
| 100 | Bortolotti, Pietro, Bologna.—Felsina water (for the toilet). | 203 |
| 101 | Antonelli, Cav. Alessandro, Bologna.—Essence of lemon. | 203 |
| 102 | Alessi & Bonaventura, Messina.—Essences. | 203 |
| 103 | Alessi, Gaetano, Messina.—Essences. | 203 |
| 104 | Ottaviani Bros., Messina.—Essences. | 203 |
| 105 | Rizzuto Carmelo, Reggio-Calabria.—Essences. | 203 |
| 106 | De Sieto Bros., Reggio-Calabria.—Essences. | 203 |
| 107 | Siles, Ignazio, Reggio-Calabria.—Essences. | 203 |
| 108 | Lacoria, Felice, Reggio-Calabria.—Essences. | 203 |
| 109 | Enological & Agrarian Society of Acireale, Sicily.—Essence of lemon. | 203 |
| 110 | De Nava, Giuseppe di P., Reggio-Calabria.—Essences. | 203 |
| 111 | Mostardini, Adolfo, Florence.—Perfumery. | 203 |
| 112 | Mellissari, Giuseppe, Florence.—Essences. | 203 |
| 113 | Pennise, Baron di Floristallo, Catania.—Boiled essence of lemon (agro). | 203 |
| 114 | Lavaggi, Francesco, Trofarello, Turin.—Matches. | 204 |
| 115 | Dellachi, Ambrogio, Moncalieri, Turin.—Wax and wood matches. | 204 |

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| 116 | Trojani, G. Batta, Florence.—Bas-relief in baked clay. | 205 |
| 117 | Pagliaccetti, Raffaello, Florence.—Statues in baked clay. | 205 |
| 118 | Stock Company for Manufacturing Bricks, Reggio, Emilia.—Bricks. | 205 |

For classes of exhibits indicated by numbers at end of entries, see Classification, pp. 37-45.
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119 Tomei, Albani Franco, Pietra santa, Lucca.—Sample of pavements.

120 Pellac, Giuseppe, Florence.—Galan vasto plastic ornaments.

121 Bertini, Emilio, Pisa.—Crockery.

122 Miliani, Cesare, Fabriano, Ancona. —Crockery.

123 Torrelli, Jafet, Florence.—Crockery.

124 Castellani, Torquato, Rome.—Crockery.

25 Ferniani, Count Annihafe, Faenza. —Crockery.

126 Crockery Society of Farina, Faenza.—Artistic crockery.

127 Benucci & Latti, Pesaro.— deviations and dishes.

Furniture and Objects of General Use in Construction and in Dwellings.

128 Ammirati, Domenico, Palermo.—Chairs.

129 Lopez, Salvatore, Palermo.—Stone tables.

130 Coco, Salvatore, Palermo.—Ebony furniture.

131 Cavallaro, L. & G., Palermo.—Metallic beds.

132 Catalano, Antonio, Palermo.—Furniture.

133 Martinotti, Luigi, Turin.—Cane furniture.

134 Buzzi, Gilberto Francesco, Varese, Lombardo.—Marble furniture.

135 Lancetti, Federigo, Perugia.—Furniture.

136 Elli, Luigi, Milan.—Seats for theatres.

137 Fava, Avo, Niccolo, Florence.—Carved walnut furniture.

138 Castelvedere, Luigi, Brescia.—Metal scandelabra and chased dish.

139 Rolandi, G. Batto, Milan.—Crystals and glasses.

140 Grattarola, Cesare, Bologna.—Picture frames of other exhibitors' pictures. (In Art Gallery.)

141 Ponti, Oiograpic Society, Bologna.—Frames.

142 Sarettiere, Giuseppe, Palermo.—Lamps.

143 Menici, Angiolo, Leghorn.—Show er bath.

144 Della, Casa Nicola, Baveno, Novara.—Granite cornices.

145 Bianchi & Molinari, Milan.—Wooden floor.

146 Vajani, Pietro, Milan.—Window blinds, curtains, etc.

147 Rizzi, Augusto, Milan.—Persian window blinds.

Yarns and Woven Goods of Vegetable or Mineral Materials.

148 Vecchiotti, Cesare, Florence.—Green wool (ginestro) products.

149 Polidori, Count Augusto, Anghiari, Arezzo.—Prepared green wool (ginestro).

150 Scutari, Manzoni de G., Biella, Novara.—Skin of cotton.

151 Assetto di Graziani Bros., Chieri, Turin.—Cotton goods.


154 Meda, Bernardo, Monza, Milan.—Colored calico.

155 Alessio Bros., Milan.—Red calico.

156 Special Committee of Salerno.—Linen goods.

157 Remaggi Bros., Navacchio, Pisa.—Linen goods.

Woven and Felted Goods of Wool, etc.

158 Calda, Salvatore, Palermo.—Cloths.

159 Mangeri, Antonino, Messina.—Cloths.

160 Barbarulo Bros., Naples.—Cloths.

161 Radieri Bros., Gandino, Bergamo.—Felted flannel and cloth.

162 Barbarulo, Antonio, Peluzzano, Salerno.—Cloths.

163 Correction Department of Saliceto, Modena.—Cloths.

164 Assetto di Graziani Bros., Chieri, Turin.—Blankets.

165 Chapelle & Co., Turin.—Woolen blankets.

166 Bass, Abate, & Co., Turin.—Blankets.

167 Woolen Manufactory of Borgo Scelsia, Turin.—Worsted wool.

168 Bozzalla, Gio, & Son, Biella, Novara.—Woolen goods.

169 Bozzalla, Antonio, & Brother, Cogiola, Novara.—Woolen goods.

Silk and Silk Fabrics.

170 Keller, Alberto, Milan.

171 Cheironi, Ugolino, Messina.—Cocoons.

172 Giannotti, Giuseppe, Barga (Lucca).—Raw silk.

173 Diana, M. G., Modena.—Raw silk.

174 Sinigaglia, Salomone, Heir of, Lattes, Turin.—Raw silk.

175 Franzoni Bros., Alzano Maggiore, Bergamo.—Raw silk.

176 Dalla Pozza, Filippo, Vicenza.—Raw silk.

177 Frizzone, Antonio F., Bergamo.—Raw silk.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Silk, Clothing, Jewelry, Stationery.

* Raw silk.  
* Spun silk.  

179 Sciaccia della Scala, Baron, Piacenza.—Silk.  

180 De Silvestri, Salvatore, Rome.—Silk goods.  

181 Cagliani, Leopoldo, Milan.—Silk velvets.  

Clothing, Jewelry and Ornaments; Traveling Equipments.

182 Morandi, G. Montepulciano, Siena.—Dress for lady.  

183 Incerti Anselmo, Modena.—Knit goods.  

184 Comelli & Buratti, Bologna.—Corsets.  

185 Marchesini, Pietro, Bologna.—Straw hats.  

186 Ricci, Luigi, & Sons, Florence.—Straw hats.  

187 Duranti, Agostino, Florence.—Straw hats.  

188 Angelucci, Gerolamo, Ancona.—Shoes.  

189 Lodi, G. Batta, Palermo.—Gloves.  

190 Di Rosalia, Antonino, Palermo.—Shoes.  

191 Vinci, Mechiuore, Palermo.—Shoes.  

192 Petroli, Pietro, Pallanza.—Shoes.  

193 Shoemakers’ Co-operative Society, Bologna.—Shoes.  

194 Bacciliere, Lorenzo, Bologna.—Gloves.  

195 Bossi, Eduardo, Naples.—Gloves.  

196 De Notaris, Sigismondo, Naples.—Shoes.  

197 Calise, Tommaso, Ischia Island, Naples.—Ladies’ straw hats.  

198 Rumieri, Gabriele, Naples.—Silk and felt hats.  

199 Casella, Giuseppe, Salerno.—Shoes.  

200 Moiraghi, Antonio, Turin.—Shoes.  

201 Brussesi, Giacinto, Milan.—Shoes.  

202 Scarselli, Benedetto, Rome.—Straw hats and braided straw.  

203 Taddei, Gaetano, Florence.—Straw hats and braided straw.  

204 Straw Hat Stock Co., Pianoro, Bologna.—Straw hats and braided straw.  

205 Santini Bros, Florence.—Straw hats and braided straw.  

206 Working Men’s Benevolent Association of Palerme.—Straw hats and braided straw.  

207 Angeli Candido, Reggio, Emilia.—Hats and braided straw.  

208 Kubli, Gio Giacomo, Florence.—Straw hats and braided straw.  

209 Romani, Eugenio, & Wife, Milan.—Embroidered pictures.  

210 Gerosa, Adele Educanda, Milan.—Embroidered pictures and handkerchiefs.  

211 Stack Co. for Manufacturing Laces, Venice.—Laces, old and new styles.  

212 Bon Regina, Como.—Laces.  

213 Gioiuzza, Giuseppe, Naples.—Jewelry and coral.  

214 Melliolo, Giacinto, Naples.—Jewelry and coral.  

215 Francati & Santamaria, Rome.—Jewelry.  

216 Geraldini, Ettore, Rome.—Gold and silver jewelry.  

217 Bellozzi, Niccolo Aless, Rome.—Jewelry.  

218 Accarisi, Giuseppe, Florence.—Roman jewelry.  

219 Jacobini, Raffe, & Gioebe, Pio, Rome.—Old precious stones.  

220 Ponti, Rovera, & Co., Piacenza.—Jewelry.  

221 Olivi, Luigi, Venice.—Fancy articles.  

222 Forte, Emilio, Genoa.—Silver filigree work.  

223 Salvo, C., & Sons, Genoa.—Objects in filigree and gold.  

224 Righini Bros., Turin.—Umbrella and parasol.  

225 Labriola, Luigi, Naples.—Tortoiseshell work.  

226 Castellani, Alessandro, Rome.—Gold and silver articles.  

227 Brusa, G. Batta, Venice.—Album.  

228 Rossetti, Cav. Giacomo, Brescia.—Album, with photographs.  

229 Cavalieri, Avo, Michele, Milan.—Album and miniatures.  

230 Leoni, Angelo, Catania.—Sicilian costumes.  

Paper, Blank Books, Stationery.


232 Cartiera Italiana, Turin.—Paper and envelopes.  

233 Agostì, Agnes, Rome.—Paper embroideries.  

234 Cattaneo, Alessandro & Bros., Bergamo.—Common paper.  

235 Vallini, Natale, Bologna.—Paper.  

236 Miliani, Pietro, Faleiano, Marche.—Various kinds of paper.  

237 Fornari, Antonio G. B., Fabriano, Ancona.  
  * Papers.  
  * Pasteboard.  

238 Migliaciocco, Raffaeo, Salerno.—Paper.  

239 Giordano, Scipione, Turin.—Blank form of contract for nurses.  

240 Cassinara, Eugenio, Pavia.—Billheads.  

241 Fagiolì, Gaetano, Piacenza.—Paper boxes.  

242 Mottrù, Ing. Oreste, Piacenza.—Bricks of pasteboard.  

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Weapons, Medical Appliances, Hardware, Vehicles, Sculpture.

**Weapons, etc.**

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247 Garau, Salvatore, Milan.—Tamarind powder; extract to prevent sea sickness. 227
248 Morreale, Ettore, Palermo.—Medical liquors. 272
249 Margani-Valenti, Gaetano, Niscemi, Sicily.—Medicines. 272
250 Pagliaro, Domenico, St. Stefano Camostra, Palermo.—Medicines. 272
251 Pagliaro, Andrea, Mistretta, Messina.—Medicinal gelatines. 272
252 Valentini, Gottardo, Milan.—Medicines. 272
253 Arrosto, Gioacchino, Messina.—Citrates and medicines. 272
254 Spadaro, Grassi P., Catania.—Medical citrate. 272
255 Ponzoni, Luigi, Milan.—Hygienic liquors and medicine. 272
256 Menici, Angiolo, Leghorn.—Appliance for raising the sick. 276
257 Bernabei, Alessandro, Rome.—Tubes and metallic syringes. 276
258 Papini, Leopoldo, Florence.—Hernial truss. 276
259 Gramignani, Leopoldo, Ancona.—Dental prosthesis. 277
260 Noel-Winderling Bros., Milan.—Dental anatomy. 277
261 Testi, Ulisse, Bologna.—Dental machines. 277
262 Sirletti, Francesco, Rome.—Sets of teeth. 277

**Hardware, Edge Tools, Cutlery, and Metallic Products.**

263 Guelpa-Piazza Bros., Biella, Novara.—Gimlets. 280
264 Giulivo, B., & Co., Turin.—Iron and tin knives, forks, and spoons. 283
265 Ferrino, Cesare, Turin.—Sand linen and sand paper. 282
266 Bonini, Emilio, Pignone, Florence.—Articles in zinc. 283
267 De Poli Bros., Vittorio, Trevisto.—Bronze church bell. 283

268 Zalaffi, Benedetto, Sienna.—Iron work. 284
269 Parise, Achille, Sons, Naples.—Mechanical lock. 284
270 Cane, Geremia, Bologna.—Tools for umbrellas. 284
271 Namei, Giovanni, Florence.—Turned metallic articles. 284
272 Olivieri, Luigi, Venice.—Hardware. 284
273 Escoffier, Giuseppe Gio, Florence.—Mechanical articles. 284

**Fabrics of Vegetable, Animal, or Mineral Materials.**

274 Giacomini, Luigi, & Co., Treviso.—Brushes. 286
275 Bargioni, Ferdinando, Florence.—Ropes of rush. 287
276 Chamber of Commerce of Syracuse.—Ropes. 287
277 Rosso, Leopardo Cav. Cesare, Comiso, Syracuse.—Ropes. 287
278 Vincenzi, Paolo, Carpi, Modena.—Corks. 289
279 Marchini, Cesare, Fiesole, Florence.—Straw works. 289

**Carriages, Vehicles, and Accessories.**

280 Sarrettiere, Giuseppe, Palermo.—Lamps for carriages. 292
281 Locati, Cav. Alessandro, Turin.—Carriages. (In Annex.) 292
282 Mainetti, Francesco, Milan.—Carriage (landau). (In Annex.) 292

**Sculpture.**

283 Bazzantie, Figlio, Florence.—Cupid and Psyche (group). 400
284 Porcini, Antonio, Florence. a Surprised (bust). 400 b Venus of Canova (statue). 400
285 Torelli, Lot, Florence.—David, by Michael Angelo (copy). 400
286 Garofoli, Oreste, Rome. a Trasteverina (Roman costume). 400 b After the Theatre. 400 c Ciociara (Roman costume). 400 d Genzane. 400
287 Ricci, Paolo, Florence.—Dante (statuette). 400

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
E Y P T.

(South of South Avenue, Columns 12 to 15.)

COLLECTIVE EXHIBIT.

Minerals, Manufactures.

Minerals, Ores, Building Stones, Mining Products.

1 National Museum.
   a Rough gold-dust, petrified wood. 100
   b Rough, hewn, and polished marbles, alabaster, and limestones. 102
   c Crude lime rock, cement, burned lime, and plaster. 103
   d Clays and materials for manufacturing porcelain and faience. 104
   e Sand. 106
   f Soil and water. 107

Metallurgical Products.

2 National Museum.
   a Solid rough gold pieces. 110
   b Iron. 112

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3 Laboratory of the Government.
   a Chemicals of all kinds and pharmaceutical preparations. 200
   b Prepared oils, solid and liquid. 201
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4 National Museum.
   a Bricks from Lower Egypt. 206
   b Porcelain: tiles. 208
   c Egyptian earthenware, from Upper Egypt. 210
   5 Brugsch Bey, Cairo.
      a Majolica ware of different designs. 211
      b Porcelain of all kinds. 213

Furniture, and Objects of General Use in Construction and in Dwellings.

6 Parvis, Mrs., Cairo.—Oriental drawing-room furniture. 217

7 National Museum.
   a Table furniture of porcelain, solid gold and silver ware, coffee sets, and vessels of brass. 218
   b Utensils for kitchen, and tinware. 224

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8 National Museum.
   a Coarse fabrics of rattan, bark, palm-leaf, grass, and rushes. 225
   b Cotton fabrics, unbleached, bleached, and dyed. 231
   c Linen fabrics, uncolored and dyed, and linen canvas and duck for awnings and tents. 233

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9 National Museum.
   a Fabrics of wool, fancy cassimere. 235
   b Flannels. 236
   c Flannel. 237

10 National Museum.—Collection of Brussels carpet, Melton, and tapestry, from wool and camel’s hair. 239

Silk and Silk Fabrics, and Mixtures in which Silk is the Predominating Material.

11 Tramontino, Mr., Cairo.—Cocoon s and raw silk. 242

12 National Museum.
   a Twisted silk in spools and skeins. 243
   b Woven silk, lute-strings, satins, and furbards. 245
   c Woven figured silk goods. 246
   d Fancy silk and velvet ribbons. 248

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13 National Museum.
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   b Hats, and boots; women’s shoes embroidered in velvet, silk, gold, and silver. 251
   c Silk dress trimmings and embroideries, woven with gold and silver. 252
   d Turquoises, jewelry, and ornaments worn upon the person. 253
   e Fancy articles, dress adornments, fans, walking-canes, sunshades, and pipes of all descriptions, with gold, silver, and silk woven ornaments, ostrich and marabout feathers. 254
   f Fancy leather work. 255
   g Historical collection of the national costumes from Abyssinia and the Soudan. 257

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14 National Museum.
   a Stationers’ articles of the Orient. 258
   b Writing paper. 259

Military and Naval Armaments, Ornament, Firearms, and Hunting Apparatus.

15 National Museum.—Swords, spears, and dirks. 264

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 97-45.
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16 Cassegrain, F. P., of Cairo.—Hunting firearms of a special pattern. 269

Medicine, Surgery, and Prophylaxis.

17 National Museum.—Medicinal plants. 272

18 National Museum of Egypt, Mr. Zucchinetti, of Cairo.—Veterinary instruments. 276

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19 Mechanic Institute of Boolak.—Iron hardware for different mechanical purposes. 284

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20 National Museum of Egypt, Mr. Zucchinetti, of Cairo.—Furniture for horses and mules, harness and saddlery, ornamental mule blankets, and silk woven saddle blankets. 296

Educational Systems, Methods, and Libraries.

21 Ministry of Public Instruction.—Maps, charts, penmanship, drawings of pupils’ work and course of study in water colors, from the public schools and academies. 300

22 National Museum.
   a Map of Egypt and the new annexed provinces made by Mr. Friederichsen. 300
   b Mechanical instruments executed by scholars at the Polytechnic school. 302
   c Text-books and apparatus. 306

23 Onsy, Mr., of Cairo.—Types and books for the education of the blind. 303

24 Ministry of Public Instruction.
   a College and school statistics and educational reports of Egypt. 304
   b Statistical reports. 305

25 Mörels & Co., Cairo, Ministry of Public Instruction.—Printed works, school and text books, and dictionary, from the public schools of Egypt; literature in the Arabic language, newspapers, and periodical literature. 308

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26 National Museum.—Ethnographical collection and publications. 312

Scientific and Philosophical Instruments and Methods.

27 National Museum.
   a Egyptian weights and measures. 322
   b Musical instruments from Egypt and the provinces of Soudan. 327

Engineering, Architecture, Charts, Maps, and Graphic Representations.

28 National Museum.—Maps of railways, roads, telegraphs, and postal service; topographical maps and charts. 335

Physical, Social, and Moral Condition of Man.

29 National Museum.—Collection of Egyptian gold, silver, and copper coins. 344

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

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30 National Museum.—Plaster casts from Egyptian monuments. 406

31 National Museum.
   a Stones with ancient Arabic Inscriptions. 401
   b Hammered relief works in copper, and collection of plates, trays, and vases of the modern time of Egypt. 403

32 vegis, Mr., Cairo.—Repose and rehaussé work in copper and iron of the ancient Arab time. 403

33 National Museum.—Specimens of “Moucharabie” window patterns in wood and ivory, engraved wood. 405

Painting.

34 National Museum.
   a View of Cairo and other water-color paintings, executed by Mr. Weidenbach, Berlin. 417
   b Painted water-bottles. 418

Engraving and Lithography.

35 Ravon, H., Staff-officer National Museum.—Drawing in ink of the citadel of Cairo, list of the names of the caliphs and sultans who have reigned in Egypt, from Omar to Ismail Pacha, Khedive of Egypt, list of the names of Pharaohs. 420

35a penasson, A., alexandria.—Samples of lithographic printing. 423

Photography.

36 National Museum.—Collection of photographs, views of public works, costumes, scenery, panorama, and a collection of albums. 430

Industrial and Architectural Designs, Models, and Decorations.

37 National Museum.—Collection of Arabic ornaments (plaster and zinc casts, painted and gilt), from time of the caliphs, made by Schmo-ranz. 443

Decorations with Ceramic and Vitreous Materials, Mosaic and Inlaid Work.

38 National Museum.
   a Ancient glass lamps from the mosques. 451
   b Woodwork inlaid with ivory; ancient door from the sanctuary of a mosque, carved and inlaid in ivory and ebony. 452

Arboriculture and Forest Products.

39 National Museum.
   a Collection of woods from Egypt and the annexed provinces, cotton tree. 600
   b Materials for dyeing and other industrial purposes. 602

40 National Museum & Mr. Heller.—Samples of gums. 603

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   b Legumes—beans, lentils, etc. 621
   c Tuberculous alimentaries. 622
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Chemical Manufactures.

2 His Highness Sidi Mohammed Essadok, Bey of Tunis.—Essences and flavoring extracts. 203

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3 Valensi, M., Tunis and Paris.—Pottery. 206

3a His Highness Sidi Mohammed Essadok, Bey of Tunis.

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5 His Highness Sidi Mohammed Essadok, Bey of Tunis.

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6 His Highness Sidi Mohammed Essadok, Bey of Tunis.

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7 Valensi, M., Tunis and Paris.

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9 Valensi, M., Tunis and Paris.

a Woven silks. 245

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10 His Highness Sidi Mohammed Essadok, Bey of Tunis.

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12 His Highness Sidi Mohammed Essadok, Bey of Tunis.—Ancient and modern arms. 265

13 Valensi, M., Tunis and Paris.—Arms. 265

Carriages, Vehicles, and Accessories.

14 His Highness Sidi Mohammed Essadok, Bey of Tunis.—Saddlery; furniture and accoutrements for horses, mules, and camels; ornamental horse and mule saddles and bridles. 256

Scientific and Philosophical Instruments and Methods.

15 Valensi, M., Tunis and Paris.—Musical instruments. 327

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16 Ancient mosaics from Carthage. 450

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Minerals, Clothing, Animal and Vegetable Products.

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- Diamondiferous soil, with a diamond in it. 150
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- Pebbles accompanying the diamond. 102
- Kaolin. 104
- Springbuck mats. 399
- Angora, blesbuck, and jackal ka-russes. 239
- Boots of native manufacture. 231
- Pipes of native manufacture. 234
- Baskets of native manufacture. 239
- Harnesses and whips. 296
- Figures in wood, cut with a pen-knife. 405
- Blue gum, olive, and thorn woods. 600
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- Wheat, mealies, and Kaffir corn. 620
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- Butterflies and other insects. 638
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GRAND DUCHY OF LUXEMBURG.

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2 Charles, Auguste, & Co., Bonnevoie, near Luxemburg.—Kid gloves. 251
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Animal and Vegetable Products.

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1 Harman, G., Swatow.—Petrafac-
tion. 100
2 Imperial Maritime Customs.
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b Granite stones. 102
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d Gypsum. 107

Metallurgical Products.
3 Imperial Maritime Customs.
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b Steel. 111
c Tin foil. 113

Chemical Manufactures.
4 Imperial Maritime Customs.
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b Varnish, indigo, and sundry other dyes and colors. 202
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6 Tack Loong, Canton.
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8 Fow Loong, Canton.—Porcelain
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Examination paper for students.

Designs and photographs for schools.

Sectional specimens of woods.

Leaves of various plants.

Books of botany.

Tabular statements of botanical classification.

Moku-za-sho-yan (album showing samples of the various woods used for industrial purposes).

Artificial fruits.

Ancient and modern medical and surgical books, and modern surgical instruments made by K. Iwashiy.

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1-in-zaa-si, miscellaneous reports of the hospital pertaining to the medical academy.

Anatomical designs.

Paintings and painting materials.

Lacquer, working, showing process of manufacture and implements used.

Wood engravings and engraving-tools, blocks and types; printing materials.

Photographs.

Outline of the history of education in Japan; history of the literature and short historical sketch of the educational department. (All accompanied by the English translation.)

Educational regulations, notifications, reports, miscellaneous information, and Ri-ji-ko-tel (educational reports by F. Tanaka).

Statistical table, showing the number of public and private schools, with their scholars, tabular statement of the revenue and expenditure of the public schools and the public school property, and other statistical tables relating to education.

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230 Minodo, Ch., Tokio.—Metal pipe, paper weight, and statue.

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233 Yoshida, Ys, Kyiyo.—Bronze vases and censers.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
For classes of exhibit, indicated by numbers at end of entries, see Classification, pp. 27-45.
## DEPT. II.—MANUFACTURES.

### HAWAII.

**COLLECTIVE EXHIBIT.**

**Minerals, Manufactures, Education.**

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<td>Harness and stirrups.</td>
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<td>Spurs and horse cloth.</td>
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<tr>
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</tr>
<tr>
<td>283</td>
<td>Provincial Commission, Province of Santa Fé</td>
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<td>284</td>
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<td>286</td>
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<td>Horse cloth.</td>
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<td>Andalgala Commission, Province of Catamarca</td>
<td>Horse cloth, harness, girths, reins, bridles, etc.</td>
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<td>295</td>
<td>Andalgala Commission, Province of Catamarca</td>
<td>Vizcacha leather caparison.</td>
</tr>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 37-45.
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</thead>
<tbody>
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</tr>
<tr>
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</tr>
<tr>
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</tr>
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<th>Woven and Felted Goods of Wool, etc.</th>
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</tr>
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</thead>
<tbody>
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<td><strong>6 School for Poor Girls, Molina, Department of Lontue.—</strong> Assorted worsteds.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woven and Felted Goods of Wool, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>7 School for Poor Girls, Molina, Department of Lontue.</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Woven and Felted Goods of Wool, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8 Astudillo, J. M., Santiago.—</strong> Leather and silk boots and shoes.</td>
</tr>
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<table>
<thead>
<tr>
<th>Monastery, of the Good Shepherd, Santiago.— Embroidered handkerchief.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>9 School for Poor Girls, Molina, Department of Lontue.</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Woven and Felted Goods of Wool, etc.</th>
</tr>
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<tr>
<td><strong>10 Cadiz, Jose, Gabriel, Santiago.—</strong> Gypsum ornaments.</td>
</tr>
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<table>
<thead>
<tr>
<th>Woven and Felted Goods of Wool, etc.</th>
</tr>
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<tbody>
<tr>
<td><strong>11 Schreiber, Federico, Santiago.—</strong> Card baskets.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woven and Felted Goods of Wool, etc.</th>
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<tbody>
<tr>
<td><strong>12 Schreiber, Federico, Santiago.—</strong> Blank books; samples of printing, lithography, and binding.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Woven and Felted Goods of Wool, etc.</th>
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<tr>
<td><strong>13 &quot;Mercurio&quot; Printing &amp; Binding Office.—</strong> Specimens of printing and binding.</td>
</tr>
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<table>
<thead>
<tr>
<th>Woven and Felted Goods of Wool, etc.</th>
</tr>
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<tbody>
<tr>
<td><strong>14 Celeonia, Diaz de la Vega, Valparaiso.—</strong> &quot;Wine of life,&quot; medicinal.</td>
</tr>
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<tbody>
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<td>20 Aurora Factory, Saltillo City.—Cotton goods.</td>
</tr>
<tr>
<td>3 Rio de la Loza, Manuel, City of Mexico.—Salts of sodium.</td>
<td>21 Comte, Manuel, City of Puebla.—Cotton goods.</td>
</tr>
<tr>
<td>4 State Government of Yucatan, Merida.—Salts of sodium.</td>
<td>22 Patriotismo Factory.—Cotton cloths.</td>
</tr>
<tr>
<td>6 State Government of Mexico.—Salts of sodium.</td>
<td>24 La Beneficencia Factory.—Cotton goods.</td>
</tr>
<tr>
<td>7 Rio de la Loza, Maximino.—Chemical products.</td>
<td>25 Benites, D., City of Puebla.—Cotton goods.</td>
</tr>
<tr>
<td>8 Laguna, M., City of Puebla.—Sterline.</td>
<td>Woven and Felted Goods of Wool, etc.</td>
</tr>
<tr>
<td>8a Hurtado, H.—White and red lead.</td>
<td>25a Zempoala Factory, State of Guanajuato.—Woolen goods.</td>
</tr>
<tr>
<td>9 Casarir, Alexander, &amp; Co., City of Mexico.</td>
<td>26 Rosa, Manuel, City of Mexico.</td>
</tr>
<tr>
<td>a Indian vases.</td>
<td>a Cassimeres.</td>
</tr>
<tr>
<td>b Porcelain.</td>
<td>b Blankets.</td>
</tr>
<tr>
<td>10 Guerrero, Ygnacia, Puebla City.—Bricks.</td>
<td>Silk and Silk Fabrics.</td>
</tr>
<tr>
<td>11 State Government of Morelos.—Indian vases.</td>
<td>27 City of Puebla.—Silks and silk fabrics.</td>
</tr>
</tbody>
</table>

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| 12 Garcia, Francisco, State of Oaxaca.—Chairs of Mexican reeds.     | 28 State Government of Coahuila.—Zarapes. |
| 12a State Government of Hidalgo.—Mexican agave fibre manufactures. | 29 Tailors' Society, City of Mexico.—Charro dress. |
| 12b State Government of Yucatan.—Hammocks, shawls, bags, and other objects, made of isle, or fibres, of the Mexican haresquen (agave of Yucatan). | 30 State Government of Yucatan.—Indian baby dress. |
| 13 Gomez, Poloma J., Guadalajaran City.—Cotton yarns.               | 31 Polo, Miss Luz, City of Mexico.—Fancy shirt. |
| 14 Rosario Hacienda, State of Coahuila.—Cotton goods.               | 32 Hernandez, Mrs. Amalia, City of Mexico.—Fancy shirts. |
| 15 Trapaga, Torriello, & Co., State of Oaxaca.—Yarns; cotton cloth. | 33 Cusset, N., City of Mexico.—Gloves. |
| 16 Colima Workingmen's Club.—Cotton goods for vestings, etc.        | 34 Fernandez, Gertrude.—Embroidery. |
| 17 Bermejillo, Plo, City of Mexico.—Cotton goods.                    | 35 Robles, Miss Rita.—Embroidery. |
| For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-44. | 36 Perry, Miss Concepcion.—Embroidery. |
| 18 Davia, Hoyas, Saltillo City.—Cotton goods.                        | 37 Castorena, Miss Merced.—Embroidery. |
| 19 El, Labrador Factory, Saltillo City.—Cotton goods.               | 38 Fuentes, Miss Loreto.—Embroidery. |
| 20 Aurora Factory, Saltillo City.—Cotton goods.                     | Woven and Felted Goods of Wool, etc. |
| 21 Comte, Manuel, City of Puebla.—Cotton goods.                     | 25a Zempoala Factory, State of Guanajuato.—Woolen goods. |
| 22 Patriotismo Factory.—Cotton cloths.                              | 26 Rosa, Manuel, City of Mexico. |
| 23 Quijano, Alexandro.—Cotton goods.                                 | a Cassimeres. |
| 24 La Beneficencia Factory.—Cotton goods.                            | b Blankets. |
| 25 Benites, D., City of Puebla.—Cotton goods.                       | Silk and Silk Fabrics. |
| Woven and Felted Goods of Wool, etc.                                 | 27 City of Puebla.—Silks and silk fabrics. |

Clothing, Jewelry, and Ornaments: Traveling Equipments.

| 28 State Government of Coahuila.—Zarapes.                           | 29 Tailors' Society, City of Mexico.—Charro dress. |
| 30 State Government of Yucatan.—Indian baby dress.                 | 31 Polo, Miss Luz, City of Mexico.—Fancy shirt. |
| 32 Hernandez, Mrs. Amalia, City of Mexico.—Fancy shirts.            | 33 Cusset, N., City of Mexico.—Gloves. |
| 34 Fernandez, Gertrude.—Embroidery.                                 | 35 Robles, Miss Rita.—Embroidery. |
| 36 Perry, Miss Concepcion.—Embroidery.                             | 37 Castorena, Miss Merced.—Embroidery. |
| 38 Fuentes, Miss Loreto.—Embroidery.                               | Woven and Felted Goods of Wool, etc. |

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1 Community of Heirs of Añana, Salinas de Añana, Province of Alava.—Salt obtained by filtering and by evaporation. 200
2 Salines of Torrevieja, Province of Alicante.—Salt. 200
3 Rosa Martinez, Joaquín de la, Berja, Province of Almería.—Syrup of potassium of iron and of ferruginous Peruvian bark. 200
4 Zabala Iñiguez, Justo, Dalias, Province of Almería.—Syrup of ferruginous Peruvian bark and concentrated essence of sarsaparilla. 200
5 Padilla, Francisco, Almería.—Carbonate of lead. 200
6 Sureda & Villalonga, Juan, San José, Ibiza, Baleares.—Chloride of sodium. 200
7 Estruch & Co., Andrés, Barcelona.—Mamre. 200
8 Tobella & Argila, Francisco, J., Hospital de Llibregat, Province of Barcelona.—Nalmaure. 200
9 Medinaclini, Duchess, Cardona, Province of Barcelona.—Séla gemma. 200
10 Sanchez, Miguel, Barcelona.—Mineral and sea salt. 200
11 Pons, Bartolomé, Sans, Province of Barcelona.—Cream of tartar and tartar crystal. 200
12 Fortuny Bros., Barcelona. 200
   a Magnesia, mustard paper, etc. 200
   b Almond oil. 201
13 Ve Mondeva, Juan, San Juan, Porto Rico.—Cocoa butter, orange-flower water, citrate of lime, ricinus oil, almond oil, cocanunt oil, essential oil of orange-flower and lemon. 200
14 Dominguez, Celestino, Guayana, Porto Rico.—Cocoa butter, castor oil, and tobacco pepper essence. 200
15 Taurino, Juan, Toledo.—Remedy for deafness. 200
16 Formiguera, G., Barcelona.—Pastilles, extracts, oil, syrups, liniments, etc. 200
17 Ferrer & Batlle, Barcelona.—Chemical and pharmaceutical preparations. 200
18 Arola, A., & Domenech, Francisco, Barcelona.—Chemical and pharmaceutical preparations. 200
19 Boada, G., & Traversa, Gracia, Province of Barcelona.—Salphate of copper, chloride of tin, sulphuric acid, nitric acid, etc. 200
20 Provincial Commission, Burgos.—Caleined and black animal bone. 200
21 Regis Cisneros, Francisco, Burgos.—Cream of tartar. 200

22 Bensusan, Antonio J., Puerto-Real, Province of Cádiz.—Sea salt. 200
23 Calle, Bernardo, M. de la, Cádiz.—Sea salt. 200
24 Hidalgo y Berjano, Eduardo, Sanlúcar de Barrameda, Province of Cádiz.—Sea salt. 200
25 Forner Sales, Domingo, Burriana, Province of Castellón.—Orange flower and orange-flower water. 200
26 Corporation of Minglanilla, Province of Cuenca.—Salt. 200
27 Gamba y Calvo, José, Villalcazado, Province of Guadalajara.—Salt. 200
28 Muñoz, Marcelino, Imon, Province of Guadalajara.—Salt. 200
28a Marin, Manuel, Córdoba.—Essence of sarsaparilla, extract and syrup of eucalectus, cod-liver oil, balsam opodeldoc, etc. 200
29 Leon Teruel, José, Huelva.—Salt obtained by evaporation. 200
30 Lopez de Codes, Tomás, Isle of Cristina, Province of Huelva.—Chemical guano. 200
31 Tapia y Pereira, Pedro, Isle Cristina, Province of Huelva.—Artificial guano. 200
32 Soriano, Aniceto, Jaén.—Salt obtained by evaporation. 200
33 Tiburcio Escabias, José, Jaén.—Salt. 200
34 Miguel García, Manuel de, Jaén.—Salt. 200
35 Más, Ramon, Lérida.—Barilla (impure soda). 200
36 Arteche, Angel Maria, Azofra, Province of Logroño.—Inalterable carbonate of iron. 200
37 Baanante, Juan, Chantada, Province of Lugo.—Mustard and carthariides powder. 200
38 Armesto Vinuesa, Francisco, Mondoñedo, Province of Lugo.—Peat. 200
39 Delf Factory of Sargadelos, Cerro, Province of Lugo.—Peat. 200
40 Jorge de la Peña, José, Lugo.—Peat. 200
41 Puerta, Gabriel de la, Madrid.—Emetic tartar. 200
42 Canales, Juan Bautista, Málaga.—Essence of lemon, citric acid. 200
43 Fuentes & Sons, Palencia.—Blister. 200
44 Escarpizo, Lorenzana, Augusto, Cangas, Province of Pontevedra.—Antiscorbutic and odontalgic elixir. 200
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Chemical Manufactures.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27–45.
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321 Sanmullan, Manuel, Astudillo, Province of Palencia. — Cloth.
322 Rodriguez Mambilla, Manuel, Astudillo, Province of Palencia. — Cloth.
323 Hera, Vicente de la, Palencia. — Mantas.
324 Arroyo, Geromina, Palencia. — Mantas.
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327 Corporation of Vitigudino, Province of Salamanca. — National manta and sayal.
329 Alia & Lopez, Miguel, Escalonilla, Province of Toledo. — Counterpane.
330 Miquez y Tomas, T., Valencia. — Mantas and fabrics for upholstering.
331 Fernandez Laza, & Sons, M., Valladolid. — Manta.
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339 Volta Vives, Jose, Sabadell, Province of Barcelona. — Woolen fabrics and fine woolen yarns.

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345 Piedrola, Juan de Dios, Granada. —
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346 Economica de Mancia. — Silks and cord made of the gut of silkworms.
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351 Provincial Deputation of Mancia. —
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76 Rojas, Juan M. de, Province of Pan-
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77 Martinez, Dorotea, Province of Ba-
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78 Mendoza, Perfecta, Province of Ma-
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79 Morales, Lúcina, Santa Cruz, Prov-
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80 Dávila, Teodora, Navotas, Province 
of Manila.—Embroidered shawl. 252
81 Trinidad, Maria, Province of Ba-
tangas.—Silk bag embroidered with gold. 
252
82 Badon, Bartolomé, Province of 
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83 Battle y Hernandez, José, Hermita, 
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84 Provincial Board, Lucban, Province of 
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85 Cadelifio, Pedro, Province of Ta-
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86 Feced, José, Province of Manila.— 
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87 Vidal, Balinag, Province of Bula-
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89 Reyes, Laureana; Huerto, Josefa; 
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90 Provincial Board, Province of Ba-
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91 Ilustre, Gregoria, Taal, Province of 
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92 Usón, Antonio, Province of Ilocos 
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93 Provincial Board, Province of Ma-
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95 Iilagan, Gregoria; Iilagan, Leoncia; Cabrera, Eulalia; Garcia, Leoncia; Montenegro, Eulalia; Montenegro, Maria, Province of Batangas.—Feathers with gold.

96 Ilustre, Timotea, Province of Batangas.—Flowers of glass beads.

97 Maximo, Isabel & Evarista, Province of Batangas.—Artificial flowers.

98 Jordana & Morera, Manila, Province of Manila.—National wearing apparel.

99 Provincial Board, Province of Batangas.—Pantaloons and saya, the national garment.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

Weapons, etc.

100 Economical Society, Province of Manila.—Collection of national arms and photographs of same.

101 Provincial Board, Province of Mindanao.—Collection of national arms and photographs.

102 Provincial Board, Province of Bulacan.—Hunting-knives and sheaths.

Carriages, Vehicles, and Accessories.

103 Osmena, Rita, & Co., Province of Cebu.—Harness made of abacá.
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1. Direction of the Works at Mondego River & Figueira bar, Figueira da Foz.—Salt. 200
2. Samora Correa, Baroness, Lisbon.—Salt. 200
3. Companhia das Lezirias do Tejo e Sado, Lisbon.—Salt. 200
4. Vinva, A. J. Judice, Masilhaeira.—Salt. 200
5. Bandeira, A.S.B.M., Setubal.—Salt. 200
6. Branca, Anna Delphina, Alcacer do Sal.—Salt. 200
7. Bivar, Jeronimo, d’A. C. de, Algarve.—Salt. 200
8. Cooke & Co., Figueira da Foz.—Salt. 200
9. Drack, Jr., José R. G., Lisbon.—Pharmaceutical preparations. 200
10. Cresswell & Co., Lisbon.—Salt. 200
11. Castello Branco, Joao da S. F., Villa Franca de Xira.—Salt. 200
12. Delegny Bros., Lisbon.—Chemicals. 200
13. Franco, Pedro Augusto, Belem.—Pharmaceutical preparations. 200
14. Figueiredo, Joaquim, Aviz.—Pharmaceutical preparations. 200
15. Ferraz, José Libertador Magalhaes, Coimbra.—Pharmaceutical preparations. 200
16. Galiano, Manuel d’Asfeis, d’Oliveira, Oporto.—Pharmaceutical preparations. 200
17. Gragera, Antonio Maria Mendes, Villa Nova de Reguengos.—Pharmaceutical preparations. 200
18. Judice, V. A. J., Mexilhoeira.—Salt. 200
19. Jesus, Manuel Vicente de, Lisbon.—Salt. 200
20. Lezirias Co., Lisbon.—Salt. 200
21. Leite, Francisco de Paula, Alcacer do Sal.—Salt. 200
22. Lima, Guilherme A. E., Lisbon.—Pharmaceutical preparations. 200
23. Meirelles, Antonio Moreira de Sousa, Faro.—Salt. 200
24. Miranda & Sons, Lisbon.—Salt. 200
25. Pires, Joao Luiz, Lisbon.—Salt. 200
26. Pedroza, Dellaria José Lopes, Figueira.—Salt. 200
27. Pires, Joao de Jesus, Lisbon.—Patent medicines. 200
28. Rei, Jose Joaquim, Lisbon.—Pharmaceutical preparations. 200
29. Salgueiro, Nuno Freire Dias, Oporto.—Pharmaceutical preparations. 200
30. Serzedelo & Co., Lisbon.—Chemicals. 200
31. Silva, Silverio Augusto Pereira da, & Francisco Antonio, Marques de Moura, Aveiro.—Salt. 200
32. Schurmann, Adolpho, Lisbon.—Patent medicines 200
33. Torlades, O’Neill, Setubal.—Salt. 200
35. Alcacer do Sal, Viscount d’, Alcacer do Sal.—Salt. 200
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38. Navarro & Co., Beja.—Soap. 201
39. Tenorio, Francisco Domingues.—Soap. 201
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42. Esmoriz, Manuel Ferreira, Oporto.—Soaps. 201
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202 Guillerme, Maria, Castro Verde.—Coarse blankets.

203 Simaes, Rosa Clara, Aveiro.—Blanket.

204 Pignatelli, Jose da Cunha, Guarda.—Blanket.

205 Piteira, Filipe, Serpa.—Blankets and mantilla.

208 Department of Public Works, Lisbon.—Blankets.

207 Guerra, Joaquim Baptista da Silva, Oporto.—Poplins.

208 Campos, Mello, & Co., Covilha.—Kerseymeres.

209 Costa, Clemente Joaquim da, Ponta Delgada.—Mixed fabrics of linen and wool.

210 Albuquerque, Caetano de A., Porel, Delgada.—Counterpane of linen and wool.

211 Abreu & Lima, Jose A., Ponta Delgada.—Table cloth of linen and wool.

212 Santos, Ascencio Jose dos, Valenca.—Combined woolen fabrics.

213 Pacheco, J. V., Ponta Delgada.—Combined woolen fabrics, for blankets and wearing apparel.

214 Almeida & Silva, Jose Soares da, Oporto.—Mats.

215 Fernandes, Manuel, Coimbra.—Goat's hair cloth.

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216 Sonto, Antonio Manuel Granzo, Nova Vises.—Silk cocoons.

217 Vasconcellas, Jacintha P., Villa Nova de Lencara, Oporto.—Raw silk.

218 Silva, Antonio Jose de Lansa & Valongo, Oporto.—Silk cocoons.

219 Patricio, Francisco Antonio, Guarda.—Silk cocoons.

220 Queiroz, Jose de Sequeira Pinto, S. Sebastianio du Duque, Viana do Castelo.—Silk.

221 Reis, Jose Antonio, Moncorvo, Braganca.—Raw silk.

222 Pereira, Antonio de la Velha, Braganca.

223 Vasconcellas, Joao da Camara Seure Hormeira, Funchal, Madeira.

224 National Silk Spinning & Weaving Manufactory, Lisbon.

225 Brandao, Jose Marcal, Oporto.—Twisted sewing-silk.

226 Silva, Antonio J. P. da, & Alves.—Twisted sewing-silks.
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245  
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246  
c Gold tmsue.  
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232 Ramos & Ramires, Lisbon. —  
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233 Pimentel & Queiroz, Oporto.  
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satins.  
245  
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247

234 Moreira, Verdeiras de Manuel  
Costa, Oporto.  
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245  
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235 Pousaca, Manuel da Motta, Oporto.  
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236 Avaluo, Antonio J. B. de., Braga.  
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237 Guerra, Joaquim Baptista da Silva,  
Oporto.  
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246  
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246  
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239 Manuel, Joaquim de Luna & F.,  
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247

240 Silva, Manuel Jose Francisco da,  
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247  
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240 Motta, Augusto Antonio da,  
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240 Nogueira, Francisco Jose, Oporto.  
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248  
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241a Serrana, Florenca, Aveiro. —  
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250

241d Resendes, Francisco de, Ponta  
Delgada.—Colored petticoat.  
250

242 Rego, A. P., Lisbon.—Clothing.  
250

243 Paixao, Antonio Augusto da, Jr.,  
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250

244 Goncalves, Manuel Joao, Castro  
Verde.—Woolen girdle.  
250

245 Brites, Rose e M. G. do S., Ovar.  
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250  
b Lace, crochet.  
252  
c Artificial flowers, representation of Cal-  
vary, in pasteboard.  
254

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a Lace skirt, jacket, and sash.  
250  
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251  
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252  
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247 Vianna, Antonio Martius, Oporto.  
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251

248 Valencia, Domingo Fernandes,  
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251

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—Peasant gaiters.  
251

250 Silva, Antonio Moreira, Oliveira  
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251

251 Silva, Miguel Manuela, Vianna  
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251

252 Santo Thirso, Antonio dos Reis,  
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251

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251

254 Soares, Jose Nogueira, Penafl.—  
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255 Silva, Julio Pereira, Penafl.—  
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251

257 Salga, Maria da, Ponta Delgada.—  
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258 Serra, Felippe Jose, Lisbon.—Boots  
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259 Silva, Bernardino Antunes, Lis-  
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260 Ramalho, Jose da Cunha, Ponta  
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251

261 Goncalves, Joao, Almodovar.  
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251

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263 Sequeira, Francisco Pinto, Oporto.  
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251

265 Paiva, Manuel J. de, Braga.—Boots  
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251

266 Pereira, Luiz Maria, Oporto. —  
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251

267 Roxo, Viuva de A., Roxo, Lisbon.  
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251

268 Pereira Bros., Ponta Delgada. —  
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251

269 Paula, Antonio Jose, Barcellos. —  
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251

270 Oporto Glove Manufacturing Co.,  
Oporto.—Gloves.  
251

271 Lima, Carvalho, Fayal.—Straw  
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251

272 Maria & Silvia, F., & Goncalves,  
Oporto.—Hats.  
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273 Gomez & Sons, Lisbon. —Boots  
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251

274 House of Correction, Lisbon. —  
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| 96 | Tahir, Ousta, Piseren, Monastir.—  
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147 Salih, Tripoli.—Cotton tissue.
148 Tanach, Yanina.—Cotton fabric.
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150 Seid Cherif, Aleppo.—Cotton tissues.
151 Razakoula, Aleppo.—Embroidered cotton fabric.
152 Pirik Oglo, Pedros, Aleppo.—Cotton tissues.
153 Oun edji, Osman, Castamouni.—Duck.
154 Bolad, Nicolas, Damascus.—Cotton fabric.
155 Nersesse, Marchach, Aleppo.
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160 Mahmoud, Effendi, Damascus.—Cotton fabric.
161 Mahmoud Cozzi, Tripoli, Tripoli.—Cotton tissue.
162 Mitchez, Yanina.—Cotton foulards.
163 Kesban, Madame, Koniah.—Cotton yarn.
164 Kaisparezko & Co., Aleppo.—Cotton fabrics.
165 Koussou Kirkor, Aintab, Aleppo.
   a Sheetings.
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166 Ibrahim, Miss, Dardanelles.—Cotton fabric.
167 Ibrahim Agha, Canea, Crete.—Cotton shirting.
168 Ilias Hatti, Aleppo.—Silk and cotton tissues.
169 Ibrahim, Cyprus.
   a Cotton fabrics.
   b Handkerchief and napkin stuff, counterpane, sheet, and table cloth.
170 Iskildijan, Canea, Crete.
   a Cotton fabrics and thread.
   b Linen napkins.
171 Mansour, Hadji, Tripoli, Tripoli.—Cotton coverlet.
172 Aghop, Hodja, Adrianople.—Cotton cord.
DEPT. II.—MANUFACTURES.

Woven Goods.

173. Ilia, Hodja, Aleppo.  
   a Embroidered cotton fabrics.  
   b Colored cotton fabric.  


175. Hassan, Ousta, Angora.—Cotton thread.  

176. Hassan Ali, Houdehida, Yiemen.—Cotton fabrics; curtains.  

177. Hassan Chaban, Houdehida, Yiemen.—Cotton fabrics.  

   a Embroidered cotton fabric, tissues.  
   b Silver-embroidered table cloth.  


   a Cotton threads and fabrics.  
   b Calicoes.  
   c Linen cloths and duck, towels, etc.  

   b Unbleached linen.  

   a Cotton tissues.  
   b Linen, coverlets, etc.  

188. Gasko, Gaspard, Aleppo.—Cotton fabric.  

189. Eminé, Koniah.—Shirting.  

190. Esme, Ani, Koniah.  
   a Sheeting.  
   b Linen textile.  

191. Tédié Factory, Damascus.—Cotton yarn.  

192. David Ilia, Yanina.—Cotton thread, twist, and cord.  

193. Chicho Zeko, Makrincha, Yanina.  
   -Quilts.  

194. Bassardji Maktés, Ourpha, Aleppo.  
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   -Spun cotton.  


199. Abadji Molaghe, Aintab, Aleppo.  
   -Divan stuff.  

200. Antoli, Miss Maida, Dardanelles.  
   -Spun cotton.  

201. Aiché, Koniah.—Shirting.  


203. Allahjadji Alop, Aleppo.—Cotton tissue.  

204. Atidgé, Madame, Koniah.—Cotton cloth.  

205. Astardji Narseés, Aintab, Aleppo.  
   -Cotton fabrics.  

   a Cotton thread.  
   b Linen.  

207. Papazaki, Manoli, Candia, Crete.—Counterpane.  

208. Iskilechina, Crete, Crete.—Striped ticking.  

209. Abdul Hahat, Mosul, Bagdad.  
   a Cotonade.  
   b Towels, bathing linen, and handkerchiefs.  


211. Kachpi, Zoubid, Yiemen.—Printed calicoes.  

212. Hana Meti, Mosul, Bagdad.—Printed calico.  

213. Hartin, Adana, Adana.—Printed calico.  


216. Chaban Hussein, Zoubid, Yiemen.  
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218. Garabet, Tokat, Sivas.—Printed calico.  

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220. Ahmed Ou Sta, Castamouni.—Printed calico.  

221. Aghop, Sivas, Sivas.—Printed calicoes.  

   a Printed calicoes.  
   b Bathing linen and napkins.  

223. Abdoula Keiré, Zoubid, Yiemen.  
   a Calico.  
   b Handkerchief.  

224. Youssuf, Mosul, Bagdad.—Bathing linen.  

225. Youssouf Gunki, Diarbekir.—Linen cloth.  

226. Yasmadji, Mehemed, Tefrik, Constantino.  
   -Fabric for counterpanes and pillows.  

227. Wakinji, Yanina.—Linen cloth.  

228. Vidal, J., Constantino.  
   -Linen.  

229. Thomas, Diarbekir.—Bathing linen.  


231. Ohan, Diarbekir.—Thread.  

232. Musulmé, Madame, Koniah.—Table cloth.  

233. Marquar, Trebizond.—Napkins and bathing apron.  

234. Mourouk, Oglou Ohanés, Brousse.  
   -Towels, napkins, bathing linen, etc.  

235. Mehemed Essendi, Denizli, Aydin.  
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236. Mehemed Essendi, Smyrna.  
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427 Nessibo, Madame, Ichkodra, Monastir.
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b Figured silk fabrics.  
c Silk goods.  
d Silk cord.  

451 Mourad Agha, Bousse.  
a Silk fabrics, foulards.  
b Silk gauges.  

452 Moustapha Effendi, Bousse.—Organzine.  

453 Mourouk Oglou Ohanés, Bousse.  
a Silk foulards.  
b Silk gauges.  

454 Mikali, Redjani, Yanina.—Silk fabrics.  

457 Kirkor, Mamour, Diarbeikr.—Silk fabrics.  

458 Mallah Ahmed, Malech, Salonica.—Silk fabrics.  

459 Metrouge, Berat, Yanina.—Silk tissue.  

460 Kendi Oglou Tranpitchi, Adrianople.  

—Silk fabrics.  

461 Talep, Hadji, Bousse.  
a Silk fabrics, satin, etc.  
b Gauzes.  

463 Ibrahimia, Cyprus.  
a Silk fabric and mixed cotton and silk fabric.  
b Silk handkerchiefs.  

464 Youssouf, Hodja, Aleppo.—Silk and silver foulards.  

465 Aghop, Hodja, Adrianople.  
a Organzine.  
b Ribbons.  
c Cord.  

466 Thomas, Hodja, Diarbeikr.—Silk fabric.  

467 Thomas, Hadji, Malatia, Diarbeikr.—Silk fabrics and foulards.  

468 Heleni, Berat, Yanina.  
a Silk fabric.  
b Silk gauze.  

469 Hassan Ali, Houchedida, Yiemans.  
a Silk and cotton fabrics.  
b Silk pillow case.  

470 Hakim Bros., Aleppo.  
a Silk and cotton mixed pigue, silk fabrics, etc.  
b Silk handkerchiefs and tissue.  

471 Gasko, Gaspard, Aleppo.—Cotton and silk mixed fabric.  

472 Vassili, Piaz, Adana.—Silk cloth.  

473 Gascandil, Trebizond.  
a Silk tissue and coverlet.  
b Silk belt.  

474 Aleppo, Government of.—Silk crapes.  

475 Amassia, Government of, Sivas.  
Silk fabrics for shirts and bed coverings.  

476 Gergi Melouk, Damascus.  
a Silk fabric.  
b Silk coverlet.  

477 Beyroot, Government of, Syria.  
a Silk fabrics, organzine, etc.  
b Silk laces, belts.  
c Ribbons.  
d Silk embroideries.  

478 Karkali, Dimitri, Yanina.—Silk fabrics.  

479 Eminé, Trebizond.  
a Tissue for shifting.  
b Silk belt.  

480 Deli Mourad, Diarbeikr.  
a Silk fabric.  
b Silk prayer carpet.  

481 Chichou Zeka, Volonia, Yanina.—Silk fabric.  

482 Constanti Giorki, Berat, Yanina.—Silk fabrics.  

483 Birkor, Trebizond.—Colored tissues.  

484 Bezzar Effendi, Diarbeikr.—Silk fabrics.  

485 Atanach, Mfes, Dardanelles.—Silk sheet.  

486 Ahmed Effendi, Mamour, Diarbeikr.—Silk fabric.  

487 Abir Tarip, Aleppo.—Silk fabric.  

488 Abbas Riza, Damascus.—Silk fabric.  

489 Alli Fakildin, Damascus.—Silk fabric.  

490 Abdul Hamid, Damascus.—Silk foulard.  

491 Anastasi, Yanina.—Silk fabric.  

492 Anastasi, Yanina.—Silk shirting.  

493 Ana, Yanina, Bosnia.—Silk and cotton fabric.  

494 Neffi, Madama, Ichkohra, Monsabir.  
Embroidered foulards.  
b Silk coverlet.  

494a Elias Hatti, Hadji, Aleppo.—Upholstery satins.  

495 Mariang, Constanti, Namik.—Silk counterpane.  

496 Mehemed Emin, Constanti, Namik.—Upholstering fabrics.  

497 Matie, Lady, Adrianople.—Figured silk fabric.  

498 Ludovic & Vallaure, Constanti, Namik.—Upholstery and divan fabrics.  

499 Kadir Oglou Abdul Kader, Said Ilia, Koniah.—Divan cover.  

500 Gueudjehan, Ohannes, Constanti, Namik.—Silk fabrics, taffeta, moreen, etc.  

501 Constanti, Government of.—Silk curtain fabrics.  

502 Sagoundjaki, Leferaki, Canea, Crete.—Silk gauze.  

503 Seid Alli, Damascus.—Silk goods.  

504 Thomas, Diarbeikr.  
a Silk belt.  
b Silk ribbons.  

505 Taquou, Madame, Adrianople.—Gauze.  

506 Regnier, Yanina.—Gauze.  

507 Rechid Effendi, Damascus.—Silk lace.  

508 Omeraki, Ibrahimia, Canea, Crete.—Silk gauze.  

509 Neffisé, Madame, Tripoli, Syria.—Silk shirts.  

510 Nasimi Effendi, Madame, Candia, Crete.—Silk gauze.  

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Silk Goods, Clothing.

511 Nacou Milktelete, Aleppo.—Silk and cotton and silk tissues.

512 Monnouk Ozlou, Brousse.—Silk fabric and aprons.

513 Munière, Brousse.—Silk lace.

514 Milaki, Nicolaki, Melle, Canea, Crete.—Silk gauze.

515 Maroli, Kara Yanapola, Canea, Crete.—Silk crape.

516 Marouli, Madame Giorgui Sefaka-naki, Candia, Crete.—Silk gauze.

517 Meuresurle Fathma, Candia, Crete.—Gauze.

518 Marie, Yanina.—Silk gauze.

519 Moussa Chauouch, Oglou Ibrahim, Canea, Crete.—Gauzes.

520 Ismaïl Agha, Hadj Brousse.—Silk counterpanes.

521 Istiphanidja, Candia, Crete.—Silk gauze.

522 Kamil, Tripoli, Syria.—Embroidered gauze foulard and silk pillow cases.

523 Mahmoud Deguiz, Hadji, Tripoli, Tripoli.—Silk coverlets.

524 Ismaïl Agha, Hadj, Candia, Crete.—Silk gauze.

525 Mikali, Hadji, Tripoli, Syria.—Silk coverlets.

527 Gotha, Tripoli, Tripoli.—Silk shirts.

528 Kara-Hissar, Government of, Sivass.—Silk belt.

529 Pêcher, Government of, Monastir.—Silk caps.

530 Emzia, Ibrichindji Nicoloi, Mme., Candia, Crete.—Gauze.

531 Dervich Oglou Kokas, Brousse.—Silk gauzes, silk burnous, scarf and belt.

532 Cazas Abdoullah, Damascos.
   a Silk belts.
   b Silk cords, etc.  

533 Cazas Ahmed, Damascos.—Silk crochet belt.

534 Ana, Madam, Mosoul, Bagdad.—Silk lace.

535 Cazas Said, Tripoli, Syria.—Silk belts and suspenders.

536 Assi bi, Madame, Koniah.—Silk lace.

537 Avadiz, Miss, Dardanelles.—Silk lace.

537a Makboubi, Trebizond.—Silk towels and shirtings.

538 Isaac Effendi, Bello, Castamouni.—Silver ribbon.

539 Selim, Mosoul, Bagdad.—Turban cord.

540 Sali Kamber, Piseren, Monastir.—Gold and silver filigree cord.

541 Adrissi Agha, Hadji, Bonandji, Adrianople.—Cord.

Clothing, Jewelry, Ornaments; Traveling Equipments, etc.

542 Zoardji Gocha, Yanina.—Goat-hair shepherd's vest.

543 Yani, Smyrna.—Men's suit.

544 Zahardji Gotcha, Yanina.—Vests.

545 Yani, Hadji, Berat, Yanina.
   a Vests.
   b Gaiters.

546 Yani, Forol, Trebizond.
   a Woolen hose.
   b Woolen gloves.

547 Vely Bey, Sivas, Sivas.—Woolen socks.

548 Seid Hassan, Mosul, Bagdad.—Turkish garment.

549 Siméon, Trebizond.—Ladies' trowsers, jacket.

550 Seid Cherif, Aleppo.—Cotton belts.

551 Seid Abdul Hamid, Damascos.
   a Cotton scarf.
   b Embroidered cap and slippers.
   c Tobacco pouch.

552 Raphaelian, Gabriel, Constantinople.
   a Collars and cuffs.
   b Crochet caps, slippers.
   c Crochet fichu, curtains, etc.

553 Rinko, Perindi, Yanina.—Ladies' hose.

554 Pallassé, Madame, Trebizond.—Gown.

555 Rina, Yanina.—Chemise, embroidered with gold.

556 Ousta Bachou, Forol, Trebizond.—Woolen hose.

557 Ousta Yano, Bonandji, Adrianople.—Woolen hose.

558 Ousta Yani, Miss, Bonandji, Adrianople.—Men's woolen hose.

559 Nogho, Uskup, Monastir.—Woolen apron and stockings.

560 Moustapha Agha, Damascus.—Woolen garment.

561 Moustapha, Miss, Balekole, Dardanelles.—Bridal trousseau.

562 Moussa Chauouch Oglou Ibrahim, Canea, Crete.
   a Silk embroidered shirt, etc.
   b Tobacco pouch.

563 Mahmoud Agha Djiri, Damascos.—Turkish garments.

564 Mehemed Abdul Hamid, Houdheida, Yâmen.—Drawers.

565 Mehemed Ousta, Koniah.—Goat-hair jacket.

566 Mikahil Seboul, Damascus.—Turkish garments.

567 Lambrom, Prasine, Yanina.—Chemise.

568 Mer Allah, Zoubid, Yâmen.—Percal shirt.

569 Mitscheré, Marie, Yanina.—Men's and women's hose.

570 Mikahil Agha, Adrianople.—Jackets.

571 Karabet, Yangre, Castamouni.—Cloak belt.

572 Kurschu Casmad, Diarbekir.—Wolf-skin jacket.

573 Isaac, Mosoul, Bagdad.—Turkish garment.

574 Ibrahim Agha, Brousse.—Bathing suit, woolen burnous.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
576 Osman, Hadji, Koniah.—Turkish woolen belt. 250
577 Hadji, Trebizond.—Ladies' trousers, vest. 250
577 Ahmed, Hadji, Aleppo.—Turkish belt. 250
578 Hakim Bros., Hadji, Aleppo.—Silk, eburneaus, and other garments. 250
579 Mikabili, Hadji, Adrianople.—Woolen garments. 250
580 Osman, Hadji, Suleimaneyah, Bagdad.—Shepherd's cloak. 250
581 Hassan, Cyprus.—Silk underskirt. 250
582 Hussien Chaban, Zouibia, Ziemen.—Cotton jacket, Turkish belt. 250
583 Hassan Agha, Trebizond.—Turkish trousers and vest. 250
584 Hassan Effendi, Ketchettissar, Castamouni.—Woolen belts. 250
585 Haler Oglou Hassan, Kara Baitar.—Woolen hose. 250
586 Haler Oglou Hassan, Koniah.—Woolen hose. 250
587 Haidar, Mosul, Bagdad.—Turkish garment. 250
588 Haldo, Bagdad.—Turkish garment. 250
589 Haladj Oumlia, Sophia, Danube.
   a Turkish belts. 250
   b Woolen gloves, mittens. 251
   c Necktie, etc. 254
590 Helene, Miss, Bonjandi, Adrianople.—Waterproof cloak. 250
591 Asco, Giorgio, Yanina.—Vest. 250
592 Heleni, Permidji, Yanina.
   a Ladies' hose. 250
   b Gold embroidered fichu. 252
593 Gorki, Miss, Bonjandi, Adrianople.—Woolen hose. 250
594 Damascus, Government of, Syria.—Woolen hose. 250
595 Bourd, Government of, Bagdad.—Stockings. 250
596 Ohannes Agha, Angora.
   a Woolen and cotton hose. 250
   b Head-dress ornament, belt. 254
597 Menetek, Government of, Bagdad.—Turkish garment. 250
593 Kara Hissar, Government of, Sivas.—Belts. 250
599 Semaré, Government of, Bagdad.—Vests, Turkish garments. 250
600 Nedjep, Government of, Bagdad.—Turkish garments. 250
601 Van, Government of, Erzeroum.—Woolen belt. 250
601 d Uskup, Government of, Monastir.—Woolen stockings. 250
602 Ezinchian, Government of, Erzeroum.—Turkish belt, woolen trousers. 250
603 Piseren, Government of, Monastir.—Turkish belt, lisle thread hose. 250
604 Gotha, Tripoli, Tripoli.
   a Embroidered silk vest. 250
   b Woman's hat. 251
605 Fatma, Madame, Koniah.
   a Woolen hose. 250
   b Purse. 254
606 Elvadj Youssouf, Diarbekir.—Vest. 250
607 Erza Yaco, Yanina.—Albanian skirt. 250
608 Eminé, Trebizond.—Silk shirt. 250
609 Dipton Noutoukджi, Damascus.—Woolen belt. 250
610 Delepné, Koniah.—Woolen stockings. 250
611 Despot, Yanina.—Women's hose. 250
612 Delal Mehemed, Diarbekir.—Cloak. 250
613 Dervichian, Smyrna.
   a Shirt. 250
   b Embroidered belt, silk lace. 254
   c Ladies' cuffs and collars, necktie and cushion. 254
614 Casas David Ilias, Permidji, Yanina.
   a Housery. 250
   b Cotton cap. 254
   c Cotton ribbons, buttons. 252
   d Purse, garters. 254
615 Christo, Daughter of, Bonjandi, Adrianople.—Waterproof. 250
616 Christo, Bonjandi, Adrianople.—Turkish garments. 250
617 Casas Said, Tripoli, Syria.—Belt. 250
618 Cheik Moussa, Mardin, Diarbeckir.—Arabian garment. 250
619 Constantin, Miss, Stankeny, Dardanelles.—Socks. 250
620 Chavirdi Hadji, Ourpha, Aleppo.—Vests. 250
621 Balthazar, Miss, Dardanelles.—Cotton chemises. 250
622 Bagdad, Government of.
   a Turkish garments, embroidered belt. 250
   b Boots and shoes. 254
   c Silver tobacco-box, pipes, Narghiles, pipe-bowls, combs, pouches, etc. 254
623 Abdul Kader Ousta, Koniah.—Embroidered jacket. 250
624 Abdourahman, Erzeroum.—Sheepskin jacket. 250
625 Moustapha, Abadji, Bigha, Aleppo.—Vest. 250
626 Ismail, Abadji, Aintab, Aleppo.—Vest. 250
627 Abas Ousta, Piseren, Monastir.—Velvet jacket and vest. 250
628 Anastassi, Heleni, Yanina.—Chemise. 250
629 Alexia, Miss, Bonjandi, Adrianople.—Men's woolen hose. 250
630 Aiché, Koniah.—Shirt. 250
631 Antaki, Gorki, Aleppo.—Belt. 250
632 Ali, Diarbeckir.—Vest. 250
633 Astor, Aleppo.—Woolen socks. 250
634 Atidjé, Madame, Eski-Kariel, Koniah.—Woolen hose. 250
635 Astajdi Ogou Narcisse, Aleppo.—Turkish belt. 250
636 Zorié, wife of Ahmed, Yanina.—White cap. 251
637 Zahardji Nocha, Yanina.—Woolen gaiters. 251
638 Zekiyet, Madame, Koniah.—White cap. 251
639 Stéphani, Dardanelles.—Boots and shoes. 250

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
CLOTHING, NEEDLE WORK, FANCY ARTICLES.

649 Rahari, Mosul, Bagdad.—Morocco boots.

651 Mahmoud Agha, Damascus.—Morocco boots.

652 Ferdouss, Mehemed, Tripoli, Tripoli.—Morocco slippers.

653 Ouflfouss, Mehemed, Tripoli, Tripoli.—Ladies' boots.

654 Mehemed, Ali, Damascus.—Boots and shoes.

655 Mehemed, Houdzehida, Yiemen.—Leather clogs.

656 Mehemed Mousseri, Zoubid, Yiemen.

657 Mahmoud, Tahid, Hidjaz.—Embroidered cap.

658 Mehemed, Mosul, Bagdad.—Morocco boots.

659 Mahmoud, Aintab.—Turkish shoes.

660 Mehemed Ali, Mosul, Bagdad.—Morocco boots.

661 Ludovic & Vallauri, Constantinople.

662 Moustapha, Hadji, Constantinople.—Embroidered velvet slippers.

663 Mahmood, Hadji, March, Aleppo.—Men's boots.

664 Isaac, Aintab.—Red shoes.

665 Hassan Reiss, Rhodes.—Wooden shoes.

666 Hassan Reiss, Dardanelles.—Wooden shoes.

667 Hassan Sali, Damascus.—Wooden and mother-of-pearl clogs.

668 Hamid Moustapha, Bosnia.—Ladies' boots and shoes; wooden clogs, etc.

669 Mosul, Government of, Bagdad.—Rhinoceros hide boots.

670 Constantineople, Government of.

671 Abdourahman, Tahid, Hidjaz.—Women's boots and shoes.

672 Abdul Keri, Mecca.—Boots and shoes; embroidered cap.

673 Abdoullah Arouniyè, Koudheida, Yiemen.—Leather clogs.

674 Ali bin Chaban, Tripoli, Tripoli.—Morocco boots and shoes.

675 Ali Bachakar, Tripoli, Tripoli.—Clogs.

676 Ali Nazif, Tripoli, Tripoli.—Morocco boots.

677 Ali bin Nazif, Tripoli, Tripoli.—Boots and shoes.

678 Anatach, Miss, Dardanelles.

679 Agnph, Smyrna.

680 Zozie, Yanina.—Silk lace.

682 Ziamani, daughter of Nicoli, Canea, Crete.—Crochet pillow case.

683 Jidal, J. M., Constantinople.—Oriental embroidery.

684 Vaassiliki, Madame, Constantinople.—Laces.

685 Trotonianasoroponali, Catrihini, Canea, Crete.—Crochet counterpane.

686 Topnha, Koniah.—Crochet lace and pillow case.

687 Tchiko, Yanina.—Lace.

688 Salii Djestine, Mecca.—Trimmings for clothing.

689 Stacoupoli, Madame Heleni, Canea, Crete.—Divan cover.

690 Rokopolani, Heleni, Canea, Crete.—Crochet table cloth.

691 Rechid Effendi, Damascus.—Crocitl coverlet, etc.

692 Perezchipolani, Krisi, Canea, Crete.—Crochet sofa cover.

693 Papaoupoli, Annetta, Canea, Crete.—Table cloth.

694 Osman Effendi, Salonica.—Lace trimmings, silver lace, thread, etc.

695 Pessioso, Redjani, Yanina.—Laces.

696 Osman, Effendi, Brousse.—Embroidered handkerchief.

697 Nefassé, Madame, Ichkedra, Mostar.—Embroidered napkins.

698 Nikogos, Koniah.—Crochet cuffs.

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<td>Mahkia, Government of, Crete.—Vegetable pitch, resin.</td>
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<td>Yidis-Ili, Government of, Sivas.—White pitch.</td>
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<td>Messine, Government of, Adana.—Yellow pitch.</td>
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<td>Volonia, Government of, Yanina.—Pitch.</td>
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<td>Akhati, Gorki, Aleppo.—Apricot tree gum.</td>
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<td>Toutous, Government of, Sivas.—Vegetable gum.</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
### Arboriculture, Pomology, Agricultural Products

**1011 Samos, Government of.**
- *Resin.*
- *Carob bean.*
- *Brown seed.*

**1012 Central Drug-store, della Sudda's.**
- *Saframony resin.*

**1013 Yconomides, Antonio, Canea, Crete.**
- *Mastic.*

**1014 Agha, Ahmed, Agha, Alada, Koniah.**
- *Resin.*

**1015 Ahmed, Agha, Koniah, Koniah.**
- *Vegetable and purified pitch.*

**1016 Mehemed Galz Effendi, Damascus.**
- *Marshmallow.*

**1018 Theophani, Nicoforaki, Canea, Crete.**
- *Sweet almonds; seeds.*

**1019 Stiraki, Marinaki, Canea, Crete.**
- *Sweet almonds.*

**1020 Over, Agha, Malalio, Diarbekir.**
- *Pistachio-nuts.*

**1021 Latzindiki, Nicolo, Canea, Crete.**
- *Sweet almonds.*

**1022 Missa Yan, Diarbekir.**
- *Yellow seeds.*

**1023 Moustapha, Bandjak, Adana.**
- *Palma-christi seed.*

**1025 Mehemed Rechio, Diarbekir.**
- *Batone, species of pistachio-nuts.*

**1027 Karabet, Kangre, Castamouni.**
- *Yellow seeds.*

**1028 Latzindiki, Hadji Yorghi, Canea, Crete.**
- *Sweet almonds.*

**1029 Ali Bekir, Hadji, Sarret, Diarbekir.**
- *Batone, species of pistachio-nuts; hazel-nuts.*

**1030 Aleppo, Government of.**
- *Yellow Avignon seed.*

**1031 Esine, Government of Dardanelles.**
- *Gall-nuts.*

**1032 Fokat, Government of Sivas.**
- *Avignon seed.*

**1033 Hauran, Government of Syria.**
- *Asphodel seed.*

**1034 Chagir, Agha, Canea, Crete.**
- *Sweet almonds.*

**1035 Bolesse, Diarbekir.**
- *Yellow seeds.*

**1036 Ali Ani, Sulle, Koniah.**
- *Yellow seed.*

**1037 Ali Baba, Aleppo.**
- *Pine seeds.*

### Pomology

**1038 Ali Bekir, Hadji, Sarret, Diarbekir.**
- *Crab apples.*

**1039 Carnic Ali Agha, Kangre, Castamouni.**
- *Corinth grapes.*

**1041 Seid, Hadji, Koniah, Koniah.**
- *Corinth grapes.*

**1042 Over Agha, Malalio, Diarbekir.**
- *Grapes.*

**1043 Abdouliah, Aleppo.**
- *Almonds.*

**1044 Abdourahman, Aleppo.**
- *Hazel and pistachio nuts.*

**1045 Austagan, Adrianople.**
- *Gombo fruit.*

**1046 Djemal Ali, Sarret, Diarbekir.**
- *Dried figs.*

**1046a Yanacoli, Canea, Crete.**
- *Sweet almonds.*

**1047 Amassia, Government of Sivas.**
- *Nuts.*

**1048 Retimo, Government of Crete.**
- *Salted olives.*

**1049 Cattari Giorki, Yanina, Yanina.**
- *Olives.*

**1050 Tschataldja, Government of Yanina.**
- *Green olives.*

**1051 Ichel, Government of Adana.**
- *Olives.*

**1052 Medina, Government of Hijiaz.**
- *Dates.*

**1053 Samos, Government of.**
- *Olives, almonds, and raisins.*

**1054 Preveze, Government of Yanina.**
- *Lembras, a sort of lemon.*

**1055 Churade, Hadji Ali, Tripoli, Tripoli.**
- *Raisins.*

**1056 Kemer Kirkor, Mamor, Diarbekir.**
- *Dried almonds.*

**1057 Youssouf, Aleppo.**
- *Jujube.*

**1058 Chaouch, Moustapha, Ayvdadik, Dardanelles.**
- *Olives.*

**1059 Mehemed Effendi, Dardanelles.**
- *Almonds and nuts.*

**1060 Djudic, Mehemed, Tripoli, Tripoli.**
- *Dates.*

**1061 Petro, Bérat, Yanina.**
- *Almonds and nuts.*

**1062 Seid Hussa, Mardin, Diarbekir.**
- *Mahaleb.*

**1063 Salomon, Salonica.**
- *Olives.*

**1064 Smyrna, Government of Aydin.**
- *Almonds, olives.*

### Agricultural Products

**1065 Topchin Mulasin, Koniah, Koniah.**
- *Oats.*

**1066 Toran Costa, Philippopolis, Adriano.**
- *Wheat, rye, maize, barley, rice, and millet.*

**1067 Youssouf, Diarbekir.**
- *Gray peas.*

**1068 Abdi Agha, Prevèze, Yanina.**
- *Oats.*

**1069 Abd el Kader Kourou Atechè, Adana.**
- *Sesame.*

**1070 Abdourahman, Aleppo.**
- *White sorghum.*

**1071 Ahmed, Tchataldja, Yanina.**
- *Barley.*

**1072 Banouch Agha, Perimidé, Yanina.**
- *Wheat.*

**1073 Christo, Yanina, Yanina.**
- *Wheat, barley, rye, oats, maize, and millet.*

**1074 Christo, Volonia, Yanina.**
- *Barley.*

**1075 Christo, Prévèze, Yanina.**
- *Barley.*

### Note

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
1076 Ahmed, Chasouch, Cus-Kuri, Dardanelles.—Oats. 620
1077 Dibra Gaza, Aleppo.  
   a Rice. 620  
   b Aspenie and liquorice root. 622
1078 Emin Agha, Constantinople.  
   a Wheat, maize, oats, sesame, millet, spelt, etc. 620  
   b Lentils, vetch, and grach. 621  
   c Flaxseed. 624
1079 Perssouz, Adana, Adana.—Wheat. 620
1080 Fedaloli, Nazif Agha, Candia, Crete.—Barley. 620
1081 Giorki, Antaki, Aleppo.—Sesame. 620
1082 Giorki, Volonia, Yanina.  
   a Rice. 620  
   b Kidney beans. 621
1083 Aydin, Government of.  
   a Wheat, barley. 620  
   b Liquorice root. 622
1084 Berat, Government of, Yannina.  
   a Maize. 620  
   b Tobacco. 623
1085 Cherishor, Government of, Bagdad.—Rice. 620
1086 Damascus, Government of, Syria.  
   a Wheat, maize, barley, white sorghum, etc. 620  
   b Vetch and gray peas. 621  
   c Anise and coriander seed. 623  
   d Barley root, fennel, and hemp seed. 624
1087 Diarbekir, Government of.—Wheat. 620
1088 Erzeroum, Government of.  
   a Wheat, rye, and barley. 620  
   b Flaxseed. 624
1089 Houran, Government of, Syria.—Sesame. 620
1090 Kara-Hissar, Government of, Siros.  
   a Wheat and barley. 620  
   b Gray peas, kidney beans, lentils. 621
1091 Kerbella, Government of, Bagdad.  
   a Rice, millet, sesame, barley, wheat, white sorghum. 620  
   b Lentils, beans, masch (vegetable). 621  
   c Dolique seed. 624
1092 Medina, Government of, Hiidjaz.—Wheat and barley. 620
1093 Mentehek, Government of, Bagdad.  
   a Wheat, millet, and rice. 620  
   b Beans, macli. 621  
   c Dolique seed. 624
1094 Mosul, Government of, Bagdad.  
   a Maize. 620  
   b Peas. 621  
   c Coriander. 623  
   d Flaxseed. 624
1095 Serfché, Government of, Monastir.—Wheat, rye, barley, and maize. 620
1096 Smyrna, Government of, Aydin.  
   a Wheat, maize, ervier, millet, sesame, white sorghum. 620  
   b Peas and beans. 621  
   c Fennel, cumin. 624
1097 Suleimaneejah, Government of, Bagdad.  
   a Barley, millet, and rice. 620  
   b Vetch and beans. 621

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Agricultural Products.

1138 Moussa Oglou Veli, Ada, Koniah. —Rye. 620
1139 Moussin Effendi, Koniah, Koniah. —Evrier, a cereal. 620
1140 Moustapha Effendi, Cherkach. Castlemound.—Wheat and barley. 620
1141 Moustapha, Agha, Canea, Crete.—Barley. 620
1142 Nougui Baitimour, Adana, Adana.—Millet. 620
1143 O h a n n e s , Aleppo.—Wheat and barley. 620
1144 Olah Artin, Adana, Adana.—Oats. 620
1145 Oudjou Christo, Yanina, Yanina.—White sorghum. 620
1146 Pachistizzi, Volonia, Yanina.—Maize. 620
1147 Petro, Berat, Yanina.—Rice and oats. 620
1148 Portocalaki, Moustapha Agha, Candia, Crete.—Wheat. 620
1149 Salbé, Diarbeikir.—Rice, hulled and unhulled. 620
1150 Salih, Ikchodra, Monastir. a Barley, rye, oats, wheat, and maize. b Beans. 620 c Flax seed. 624
1151 Salomon, Salonica.—Wheat, rye, oats, barley. 620
1152 Seid Chaban, Zubei, Yumen. a Maize, millet, and red, white, and yellow sorghum. b Lentils. 620 c Dolique and indigo-plant seeds. 624
1153 Seid Mchemed Agha, Angora. a Wheat, barley, etc. b Beans, peas, lentils. c Coriander. 623
1154 Théophani, Nicoforaki, Canea, Crete. a Wheat, barley, Indian corn, oats. b Gray peas, vetch, beans, peas, distaff, celery, millet. c Leaf tobacco, mustard. 623
1155 Houllé, Government of, Bagdad. —Lentils, vetch, and beans. 623
1156 Kara Isalé, Government of, Adana. a Vetch. b Sage. 623
1157 Samos, Government of. a Vetch. b Anise seed. 624
1158 Saroukhian, Government of Aydin. a Lentils. b Madder root. c Mustard seed. 624
1159 Mehemed, Hadji, Diarbeikir. —Roast peas. 623
1160 Isaac, Hodja, Aleppo.—Lentils, peas, and musch. 623
1161 Ismail Agha, Koniah, Koniah. —Vetch. 623
1162 Mehemed Ali Agha, Saradjik, Dardanelles. —Beans, gray peas. 623
1163 Ahmed, Erzeroum.—Lentils, kidney beans, and peas. 623
1164 Aghoba, Kingnessa, Adana.—Lentils. 621
1165 Ali Ousta, Koniah, Koniah.—Kidney beans. 621
1166 Charou Akassi, Diarbeikir.—Lentils. 621
1167 Christo, Palatnos, Yanina.—Beans. 623
1168 Kachomla, Christo, Tdomane, Yanina.—Kidney beans. 621
1169 Diaba, Heudeurlé, Adana.—Kidney beans. 621
1170 Giorki, Aleppo. a Vetch. b Kichené seed. 624
1171 Mehemed Seid, Angora. a Kidney beans. b Cumin. 623
1172 Molah Ahmed, Adana, Adana.—Beans. 621
1173 Sidmaki, Sfakia, Crete.—Dried beans. 621
1174 Fetou, Aleppo.—Kidney beans. 623
1175 Yorghandaki, Sfakia, Crete.—Vetch. 624
1176 Valah, Vandria, Sfakia, Crete.—Lentils. 621
1177 Youssouf Mamor, Diarbeikir.—Kidney beans. 623
1178 Youssouf Manoc, Aleppo.—Beans. 621
1179 Ahkati, Giorki, Aleppo.—Soapwort root. 622
1180 Mostapha, Hadji, Marach, Aleppo.—Scammony. 622
1181 Hazrou, Aleppo.—Coriander seed. 623
1182 Imperial Administration, Constantinople.—Tobacco. 622
1183 Kandi Bros., Erguiré, Yanina.—Snuff. 623
1184 Mehemed, Koniah, Koniah.—Cumin. 623
1185 Nassou Tarrouchian, Ikchodra, Monastir.—Leaf tobacco. 623
1186 Omer Ogiou Kassan, Tchan, Dardanelles.—Leaf tobacco. 623
1187 Rabhanin David, Tripoli, Tripoli.—Cumin. 623
1188 Ramazan, Effendi, Smyrna, Aydin.—Tobacco. 624
1189 Abil, Aleppo.—Snuff. 623
1190 Djourbachi, Antolu, Dardanelles, Dardanelles.—Cumin and anise. 623
1191 Bedros, Antoine, Philadelphia, Pa.—Turkish tobacco. 623
1192 Bekt Bey, Marach, Aleppo.—Scammony root. 623
1193 Costanti, Aydonat, Yanina.—Snuff. 623
1194 Aleppo, Government of.—Tobacco. 623
1195 Amassia, Government of, Sivas.—Tobacco. 623
1196 Kenidje, Government of, Salonica.—Tobacco. 623
1197 Haskanorich Ali, Korimidja, Bosnia.—Tobacco. 623
1198 Manoli Galergui, Papa, Canea, Crete.—Leaf tobacco. 623
1199 Taksim Effendi, Tchataldja, Yanina.—Tobacco. 623
1200 Tokatliou, Trebizond.—Leaf tobacco. 623

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 77-75.
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1191 Yani, Oglou Andin, Angora, Angora.—Tobacco. 623
1192 Youssouf, Chaouch, Nardat, Yanina.—Tobacco. 623
1193 Youssouf, Chaouch, Tchataldja, Yanina.—Tobacco. 623
1194 Manouk, Youssouf, Aleppo.—Tobacco. 623
1195 Kayod, Hussein, Mardin, Diarbekir.—Fennel seed. 624
1196 Moustapha Essendi, Koniah, Koniah.—Hemp seed. 623
1197 Kouyoun Oglou, Andonie.—Seed. 624
1198 Youssouf, Hadji, Diarbekir.—Palma-christi seeds. 624
1199 Kizaki, Government of, Aydin.—Anise seed. 624
1200 Cus-Kuri, Government of, Dardanelles.—Dolique seed. 624
1201 Djebra Gaza, Aleppo.—Fennel seed and cumin. 624
1202 Ali Bin Mehemed, Tripoli, Tripoli.—Lucern seed. 624
1203 Youssouf, Aleppo.—Hemp, palma-christi, melon, and watermelon seeds. 624
1204 Tarai, Djemetre, Bokeva, Monastir.—Flax and hemp seed. 624
1205 Maneza, Government of, Aydin.—Flaxseed. 624
1206 Adana, Government of.—Dolique seed. 624

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1207 Mazloum Aghiah, Constantinople.—Insects. 638

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1208 Ali Zotte, Volonia, Yanina.—Coral. 645

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1209 Lachite, Government of, Crete.—Sponges. 650
1210 Themeli, N., New York, N. Y.—Sponges. 650
1211 Mansour, Hadji, Tripoli, Tripoli.—Sponges. 650
1212 Djedel, Government of, Hidjaz.—Sponges. 650
1213 Gallinos, Rhodes, Dardanelles.—Sponges. 650
1214 Theophani, Nicoforaki, Canea, Crete. a Cheese. 651
b Leather and skins. 652
c Honey. 654
d Dried cherries. 656
1215 Minassian Miguerdjii, Tokat, Sivas.—Cheese. 651
1216 Markora, Salonica.—Cheese. 651
1217 Mikahil Agha, Adrianople.—Lamb skins. 652
1218 Mikaël, Kotchissar, Castamouni.—Beaver skin. 652
1219 Mehemeda, Dardanelles.—Morocco. 652

1220 Starri, Oglou, Kotchissar, Castamouni.—Marten skin. 652
1221 Nichan, Sivas, Sivas.—Skins. 652
1222 Nely, Ali, Marach, Aleppo.—Morocco. 652
1223 Moustapha, Ourpha, Aleppo.—Leather. 652
1224 Moustapha, Erzeroum.—Leather, morocco, etc. 652
1225 Mohadjeri Nahe, Adana, Adana.—Gazelle skin. 652
1226 Abdul Medjid, Vosalomon.—Goat skin. 652
1227 Abdoulah, Aroubhirje, Zoubel.—Leather. 652
1228 Seyfoullah, Roostchok, Danube.—Leather. 652
1229 Sari Faki Moustapha, Marah, Aleppo.—Morocco. 652
1230 Safran Bolu, Zaferemboli, Castamouni.—Morocco. 652
1231 Panoucha, Yanina.—Leather. 652
1232 Osman Agha, Koniah.—Leather. 652
1233 Mehemmed, Ousta, Boschir, Koniah.—Leather. 652
1234 Omer, Ousta, Piseren, Monastir. Morocco. 652
1235 Ophanes Agha, Agha, Angora.—Angora goat skins. 652
1236 Ahmed Agha, Koniah.—Leather and morocco. 652
1237 Yanaki Kalviro, Yanina.—Goat skin. 652
1238 Youssouf, Caraman, Koniah.—Morocco. 652
1239 Vasali Borbo, Yanina.—Morocco. 652
1240 Tosty, Galota, Chio, Dardanelles.—Leather. 652
1241 Chinopii, Thomas, Teralu, Yanina.—Sheep skin. 652
1242 Sirikite, Olan Andia, Angora.—Weasel skin. 652
1243 Sirch, Oglou, Andon, Angora.—Wolf, weasel, and fox skin. 652
1244 Atanach, Dardanelles, Dardanelles.—Sheep skin. 652
1245 Andria, Trebizond.—Grebe skins. 652
1246 Andon, Chio, Dardanelles.—Morocco. 652
1247 Anastach, Kangre, Castamouni.—Goat skin. 652
1248 Ali, Omer, Bigha, Dardanelles.—Deer skin. 652
1249 Ali, Salonica.—Leather. 652
1250 Ali, Mosul, Bagdad.—Beaver, fox, and wolf skin. 652
1251 Ahmed, Ousta, Castamouni, Castamouni.—Angora goat skin. 652
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1253 Cherbedji Mehemed, Marach, Aleppo.—Goat and sheep skin. 652
1254 Moussa Agha, Cheik, Diarbekir.—Goat and sheep skin. 652
1255 Chaban Oglou Mehemed, Koniah, Koniah.—Cat skin. 652

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
**Turkey.**

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<tr>
<td>1305</td>
<td>Ismail, Hadji, Marach, Aleppo.—Leather.</td>
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<tr>
<td>1306</td>
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<td>1307</td>
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<td>1308</td>
<td>Ibrahim, Uskup, Monastir.—Morocco.</td>
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<td>1310</td>
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<tr>
<td>1311</td>
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<td>Masloum Agha, Candia, Crete.—Goat skins and morocco.</td>
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<td>Salomon, Salonica.—Goat and lamb skins.</td>
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<td>1315</td>
<td>Manuk, Hadji, Erzeroum.—Fox skin.</td>
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<td>1316</td>
<td>Ismail Effendi, Hadji, Koniah, Koniah.—Otter skin, etc.</td>
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<td>1317</td>
<td>Ibrahim, Uskup, Monastir.—Leather.</td>
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<td>1318</td>
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</tbody>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Animal and Vegetable Products.

1310 Ana Bini, Tanasse, Sarret, Diarbekir.—Wax. 654
1320 Yeni Ahmed, Chur, Yanina.—Wax. 654
1321 Ahmed Agha, Lapseki, Dardanelles.—Yellow wax. 654
1322 Sahalim Bacbac, Tripoli, Tripol. — Honey. 654
1323 Derbian, Pedro, Sivas, Sivas.—Yellow wax. 654
1324 Ohannes, Son of Varcha, Angora. — Honey. 654
1325 Moussin Effendi, Koniah, Koniah.—Yellow wax. 654
1326 Ahmed, Aintab, Aleppo.—Honey and wax. 654
1327 Samos, Government ot. a Honey. 654 b Wine and brandy. 660
1328 Medina, Government of, Hidjar.—Honey. 654
1329 Cherif Effendi, Trebizond. a Honey. 654 b Gourd, pear, and rose marmalade. 656 c Mulberry vinegar. 654
1330 Arpajdi Mahmoud Agha, Adana, Adana.—Wax. 654
1331 Lefterimo, Aposthol, Tirala, Yanina.—Honey. 654
1332 Andonaki, Angora.—Wax. 654
1333 Pisereken, Government of, Mostar.—Crude wax. 654
1334 Ali Zotte, Golos, Yanina.—Yellow wax. 654
1335 Mahmoud Agha, Adana, Adana.—Honey. 654
1336 Keranche Oglou, Kotchissar, Castamouni.—Wax. 654
1337 Hussein Dedé, Kilid-Bahar, Dardanelles.—Honey. 654
1338 Haktar Mehemed, Aleppo.—Yellow wax. 654
1339 Osman, Hadji, Sarret, Diarbekir.—Honey. 654
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1342 Smyrna, Government of, Aydin. a Honey and wax. 654 b Dried grapes, raisins. 656 c Wine. 660
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1350 Serdar, Hasson Oglou Hussain, Canea, Crete.—White and black raisins. 656
1351 Seid, Mehemed Agha, Angora.—Dried apples, prunes, cherries, apricots. 656
1352 Pembedje, Oglou Moustapha, Mardin, Diarbekir.—Prunes. 656
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1354 Kirkor, Avakir, Diarbekir.—Mulberry paste. 656
1355 Hussein, Gaat, Mardin, Diarbekir.—Prunes. 656
1356 Hashkanorich, Ali, Korimda, Bulgaria.—Prunes. 656
1357 Osman, Hadji, Koniah, Koniah.—Raisins. 656
1358 Ali, Hadji, Aleppo.—Dried prunes, quinces, cherries, and apricots. 656
1359 Zaferampolo, Government of, Castamouni.—Dried prunes. 656
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1386 R a f t o p o u l o s, Nicolas.—Mint, 

1387 Kirkor Effendi, Erzeroum.—Al- 

1388 K a r a b e t, Diarbekir.—Orange, 

1389 Ychrupalaki, Hadji, Nicolas, Ret- 

1390 Gulbing Oglou Kakout, Koniah, 

1391 Salomon, Gumuldjin, Salonica.— 

1392 Retimo, Government of, Crete.— 

1393 M o n a s t r i, Government of. 

1394 Gostcho Djivaré, Prévèze, Yanina. 

1395 Vafiadi Giorki, Salonica.—Wine. 

1396 Distillery of Zahari, P i s e r e n, 

1397 TountchaLitché, Tirnova,Yanina. 

1398 Tomochordo,Piseren,Monastir. 

1399 Tietora, Theodore, Samos.—Mus- 

1400 Théophasaky Ysiako,Canea,Crete. 

1401 Stamadi Marneraki, Lachite, 

1402 Pereno Papa, Adana, Adana.— 

1403 Pelkiaides, John, Samos.—Muscat 

1404 Papaz Oglou, Salonica.—White 

1405 Nicoloreuzzi Bros., Samos.—Mus- 

1406 Yanaki, Nicolas, Ile of Bousdja, 

1407 Manoli Musé, Tirnova, Yanina, 

1408 Direction of the Vineyards Pacha 

1409 Leonisaki, Dimitri, Canea, Crete. 

1410 S a f e j e d a k i, John, Samos.—Alcohol 

1411 Bodou Agha, Diarbekir.—Wine. 

1412 Bano, Adana, Adana.—Wine. 

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1414 Andin Chako, Narda, Yanina.— 

1415 Yussef, Tokat, Sivas.—Rose vine- 

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1417 Yani, Pappa Antoanaki, Lachite, 

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1419 Manoli Prizi, Candia, Crete.— 

1420 Ipsamarki Yani, Ile of Bousdja, 

1421 Mark, G. L., Samos.—Brandy and 

1422 Missir, Joseph, Samos.—Muscat 

1423 Tousseano, Diarbekir. 

1424 Moustapha, Dardanelles.—Coffee 

1425 Ipsamarki Yani, Chio, Dardan- 

1426 Ahmed, Antakia, Aleppo.—Al- 

1427 Therif Oglou Mehemed, Philippo- 

1428 Hetoulat, Diarbekir.—Batom oil. 

Textile Substances of Vegetable or 

1429 Hussein Agha, Adana, Adana.— 

1430 Bekir, Hadji, Adana, Adana.—Cot- 

1431 Uskup, Government of, Monastir. 

1432 Saroukhan, Government of, Ay- 

1433 Mosul, Government of, Bagdad. 

1434 Kerbella, Government of, Bagdad. 

1435 Feulgehete, Government of, Syria. 

1436 Etélp, Government of, Aleppo.— 

1437 Théophani, Nicoforaki, Canea, 

1438 Salomon, Salonica. 

1439 Pano Mamatti, Prévèze, Yanina. 

1440 Moussa, Palatnos, Yanina.—Cot- 

1441 Mardili, Oustidi, Diarbekir.— 

1442 Laz Osman, Kangre, Castamouni. 

1443a Kozon, Andonaki, Angora.—Cot- 

For classes of exhibits, indicated by numbers at end of entries, see Classification op. 27-45.
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<th>Origin</th>
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<td>Cotton</td>
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<td>1444</td>
<td>Ibrahim Essendi, Gueugnek, Castamouni.</td>
<td>Cotton</td>
</tr>
<tr>
<td>1445</td>
<td>Amassia, Government of, Sivas.</td>
<td>Cotton, Indian hemp</td>
</tr>
<tr>
<td>1446</td>
<td>Dimitri, Giorgaki, Prévésé, Yanina.</td>
<td>Cotton</td>
</tr>
<tr>
<td>1447</td>
<td>Dimitri, Constanti, Tirala, Yani.</td>
<td>Cotton</td>
</tr>
<tr>
<td>1448</td>
<td>Cazi, Agha, Caraman, Koniah.</td>
<td>Cotton bolls</td>
</tr>
<tr>
<td>1449</td>
<td>Astadjí, Narcisse, Aleppo.</td>
<td>Cotton</td>
</tr>
<tr>
<td>1450</td>
<td>Djourbachi, Antolu, Maidos, Dar-danelles.</td>
<td>Cotton</td>
</tr>
<tr>
<td>1451</td>
<td>Andon, Constanti, Palatnos, Yanina.</td>
<td>Cotton</td>
</tr>
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<td>1452</td>
<td>Tarako, Uskup, Monastir.</td>
<td>Spun flax</td>
</tr>
<tr>
<td>1453</td>
<td>Mehemed, Marach, Aleppo.</td>
<td>Hemp</td>
</tr>
<tr>
<td>1454</td>
<td>Damascius, Government of, Syria.</td>
<td>Hemp</td>
</tr>
<tr>
<td>1455</td>
<td>Maimoun, Tripoli, Tripoli.</td>
<td>Wool</td>
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<tr>
<td>1456</td>
<td>Kiyork, Delalle Oglou, Esinè, Dardanelles.</td>
<td>Wool</td>
</tr>
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<td>1457</td>
<td>Kirkora, Adana, Adana.</td>
<td>Wool</td>
</tr>
<tr>
<td>1458</td>
<td>Khalil Agha, Ourpha, Aleppo.</td>
<td>Wool</td>
</tr>
<tr>
<td>1459</td>
<td>Hadjí, Koniah, Koniah.</td>
<td>Wool</td>
</tr>
<tr>
<td>1460</td>
<td>Volonia, Government of, Yanina.</td>
<td>Wool</td>
</tr>
<tr>
<td>1461</td>
<td>Suleiman axes, Government of, Bagdad.</td>
<td>Wool, Goat and other hair</td>
</tr>
<tr>
<td>1462</td>
<td>Smyrna, Government of, Aydin.</td>
<td>Wool, Cocoon</td>
</tr>
<tr>
<td>1463</td>
<td>Youssef, Alepo, Aleppo.</td>
<td>Wool</td>
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<tr>
<td>1464</td>
<td>Tigor Ahmed, Kangre, Castamouni.</td>
<td>Wool</td>
</tr>
<tr>
<td>1465</td>
<td>Tefti Oglou Moussa, Koniah, Koniah.</td>
<td>Wool</td>
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<tr>
<td>1466</td>
<td>Starri, Kangre, Castamouni.</td>
<td>Wool</td>
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<td>1467</td>
<td>Selim Koli, Ichkodra, Monastir.</td>
<td>Wool</td>
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<td>1468</td>
<td>Panor Mamatti, Volonia, Yanina.</td>
<td>Wool</td>
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<tr>
<td>1469</td>
<td>Moustapha, Hadjí, Painbé Zadé, Esinè, Dardanelles.</td>
<td>Black wool</td>
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<tr>
<td>1470</td>
<td>Mehemed Agha, Koniah, Koniah.</td>
<td>Wool</td>
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<tr>
<td>1471</td>
<td>Couiyoun Oglou Andon, Angora.</td>
<td>Wool</td>
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<tr>
<td>1472</td>
<td>Chérif Agha, Ezerroum.</td>
<td>Wool</td>
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<tr>
<td>1473</td>
<td>Zadé Moustapha, Cheik, Kangre, Castamouni.</td>
<td>Wool</td>
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<tr>
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<th>Description</th>
<th>Origin</th>
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<tr>
<td>1474</td>
<td>Avadjan, Sivas, Sivas.</td>
<td>Sheep's wool</td>
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<tr>
<td>1475</td>
<td>Arabe Mehemed, Mardin, Diarbe- kir.</td>
<td>Wool</td>
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<tr>
<td>1476</td>
<td>Anagnosti, Pappadlaki, Lachite, Crete.</td>
<td>Wool</td>
</tr>
<tr>
<td>1477</td>
<td>Ahgme Agha, Kangre, Castamouni.</td>
<td>Wool</td>
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<tr>
<td>1478</td>
<td>Kochaf Ajediz, Antakia, Aleppo.</td>
<td>Cocoon</td>
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<td>1479</td>
<td>Karabet, Salonica.</td>
<td>Cocoon</td>
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<td>1480</td>
<td>Ibrahim Essendi, Hadjí, Mihalgazi, Castamouni.</td>
<td>Cocoon</td>
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<td>1481</td>
<td>Samos, Government of.</td>
<td>Yellow and white cocoons</td>
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<td>1482</td>
<td>Berat, Government of, Yanina.</td>
<td>Cocoon</td>
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<td>1483</td>
<td>Estur Oglou Estur, Tias, Adana.</td>
<td>Cocoon</td>
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<td>1484</td>
<td>Banouch, Son, Kiranié, Yanina.</td>
<td>Cocoon</td>
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<tr>
<td>1485</td>
<td>A v r a m, Adrianople.</td>
<td>Japanese cocoon</td>
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<td>1486</td>
<td>Yanaki, Tdomane, Yanina.</td>
<td>Cocoon</td>
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<td>1487</td>
<td>Yanaki, Thomas, Volonia, Yanina.</td>
<td>Cocoon</td>
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<td>1488</td>
<td>Yanak, Arap, Tdomane, Yanina.</td>
<td>Cocoon</td>
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<td>1489</td>
<td>Sukiasian, Adrianople.</td>
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<td>1490</td>
<td>Penno Petcha, Tirala, Yanina.</td>
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<td>1491</td>
<td>Nakach, David, Diarbekir.</td>
<td>Cocoon</td>
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<td>1492</td>
<td>Mihali, Sullé, Koniah.</td>
<td>Cocoon</td>
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<tr>
<td>1493</td>
<td>Makiani, Ipser, Bigha, Dardanelles.</td>
<td>Cocoon</td>
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<td>1494</td>
<td>Anguel, Ichkodra, Monastir.</td>
<td>Cocoon</td>
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<td>1495</td>
<td>Anatassii, Antonafaki, Canea, Crete.</td>
<td>Blue and yellow cocoons</td>
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<td>1497</td>
<td>Mahmoud, Marach, Aleppo.</td>
<td>Goat hair</td>
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<td>Hussein, Hadjí, Koniah, Koniah.</td>
<td>Camel hair</td>
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<td>1499</td>
<td>Mohamed, Hadjí, Koniah, Koniah.</td>
<td>Goat hair</td>
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<td>1500</td>
<td>Ali Essendi, Angora.</td>
<td>Angora goat wool</td>
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**Machines, Implements, and Processes of Manufacture.**

1501 | Christo, Yanina, Yanina. | Harrow |

**Ornamental Trees, Shrubs, and Flowers.**

1502 | Théophani, Nicoforaki, Canea, Crete. | White lupine |
**RUSSIA.**

(South of Nure, Columns 19 to 23.)

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<td>2 Lepeshkin, Nicolas, Moscow.</td>
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<tr>
<td>a Chemical products.</td>
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<tr>
<td>b Dyes, pigments of vegetable and animal origin.</td>
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<td></td>
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<tr>
<td>3 Ooshkoff, Peter, Elabooog, Government of Viatka.—Yellow chrome, blue copperas, and alum.</td>
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<td>4 Poel, Alexander, St. Petersburg.—Oils, volatile extracts from the wild rosemary (sedum pulchrum).</td>
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<td>5 Philosofoff, Basil, &amp; Co., Kineshma, Government of Kostroma.—Chemicals.</td>
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<td>6 Rastergaeff, Gregory, St. Petersburg.—Chemicals.</td>
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<td>7 Mattissen, Nicolas, Moscow.—Potash.</td>
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<td>8 Shipple, Moscow.—Chemicals.</td>
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<td>9 Bett, Theodore, Cronstadt.—Oil, refined lubricating.</td>
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<td>10 Calcined Bone Manufacturing Co., St. Petersburg.—Burnt bone, bone grease, ammoniac, etc.</td>
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<td>11 Calix, John, St. Petersburg.—Oil, lubricating.</td>
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<td>12 Hartman, W., Riga.</td>
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<tr>
<td>a Oils, refined and drying.</td>
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<td>13 Yssakovitch, J. &amp; M., Odessa.—Soap.</td>
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<td>14 Krestovnikoff Bros., Kazan.—Stearine candles and glycerine.</td>
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<td>15 Schmidt, C., Riga.—Oil, refined, lined, oil cakes.</td>
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<td>16 Talhlheim, George, Riga.—Lubricating grease.</td>
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<td>17 Lankovski &amp; Likop, Mitau.—Inks, writing, copying, and fluids.</td>
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<td>21 Wulf, Nicetas, Sokolovo, Government of Tver, District of Staritsa.—Mineral paint, ochre.</td>
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<tr>
<td>24 Serdukoff, Basil, Borovitchi, Government of Novgorod.—Cosmetics.</td>
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<td>25 Schmidt, Frederic, St. Petersburg.—Cosmetic soap.</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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<td>31</td>
<td>874,216</td>
<td>23</td>
<td>967,850</td>
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<td>August 7</td>
<td>855,558</td>
<td>February 5</td>
<td>993,090</td>
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<td>14</td>
<td>873,982</td>
<td>12</td>
<td>1,024,647</td>
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<td>21</td>
<td>880,488</td>
<td>10</td>
<td>1,027,209</td>
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<td>28</td>
<td>870,502</td>
<td>26</td>
<td>1,014,766</td>
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<tr>
<td>September 4</td>
<td>872,211</td>
<td>March 4</td>
<td>1,014,993</td>
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<tr>
<td>11</td>
<td>890,755</td>
<td>11</td>
<td>1,028,951</td>
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Total: 46,799,769

In printing these papers, no less than three million four hundred and twenty-six thousand six hundred and ten (3,426,610) pounds of paper were consumed.

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**ADVERTISING RATES.**

Daily and Sunday, 40 cents a line, ordinary advertising; large type, 80 cents; and preferred positions, 50 cents to $2.50, according to classification.

Weekly, 50 cents a line; no extra charge for large type. Preferred positions, from 75 cents to $2.00.

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Daily (4 pages), by mail, 55¢. a month, or $6.50 a year, postpaid; with Sunday edition, $7.70.

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DEPT. III.—EDUCATION AND SCIENCE.

UNITED STATES.

School Text Books, Furniture, Apparatus.

Educational Systems, Methods, and Libraries.

1. Barnes, A. S., & Co., New York, N. Y.—School books, maps, charts, etc. T 73 to 78. 300

2. New York Institution for the Blind, New York, N. Y.—Maps, mathematical apparatus, books, tablet for tangible writing and musical notation. (South Gallery.) 300


5. Smith, J. L., Map Publisher & Manufacturer, No. 27 South Sixth street, Philadelphia.—Wall maps, pocket maps, atlases, guide books, globes. A large assortment of plain and mounted drawing-paper, all widths and lengths, and prepared to order; map cases and spring map rollers, hold four to sixteen large maps. 1st, for economy of space; 2d, they preserve the maps; 3d, they do not get out of order; 4th, they work easily. See circulars. T 74. 300

6. Shepherd, Henry E., Superintendent of Public Instruction, Baltimore, Md.—Book-case (as prescribed), examination work, drawings, school furniture. (South Gallery.) 300

7. Lloyd, E. Philadelphia, Pa.—Maps. T 78. 300


9. Doyle, Bros., Bangor, Me.—School desk and folding seat. W 53. 300

10. McDermott, Francis, New York, N. Y.—School and library globes, slanted globes. T 73 to 77. 300

11. Mitchell, S. A., Philadelphia, Pa.—Atlases, maps, engravings, etc. T 73. 300

12. Boothby, Chas. W., New Orleans, La.—Bound manuscript and album of drawings. (South Gallery.) 300


For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Photographed blackboard work from La Fayette, Fort Wayne, and Terre Haute schools.

Photographs of prominent educators.

Primary work of Indianapolis and Fort Wayne schools.

Models of Ward and High School buildings at Indianapolis, Fort Wayne, Evansville, Muncie, Terre Haute, and La Fayette.

Model of log school house, the first built in Delaware county, Indiana.

Charts, exhibiting school system and its growth, and the college system of the State.

Banners, exhibiting school system, statistics, distribution of school houses, and the growth of the system in twenty years by mi-decades.

Banners showing Purdue, Asbury, and State Universities, Wabash, Union, Christian, and Eastham Colleges.

Banners showing State and Northern Indiana normal schools, and Indianapolis and Huntington city systems. (South Gallery.)

17 State of Michigan (F. W. Noble, Secretary, Detroit, Mich.)—Michigan school system, its history, statistics, plans, elevations, interior views, and student's work in public, primary, graded, and high schools, universities, and colleges. Rare birds and marine and land animals from museum of Michigan University. (South Gallery.)

18 State of Wisconsin Educational Department (by Edward Searing, Superintendent of Public Instruction).—Students' work, photographs of school buildings, educational map, books, etc. (South Gallery.)

19 Educational Exhibit of Ohio (by Charles S. Smart, State Commissioner of Common Schools).—History of educational effort and progress in Ohio; local histories of colleges, universities, and technical schools; city, town, and village schools, giving rise and development of graded school system, etc.; manuscripts of students' work, including drawing, penmanship, arithmetic, English, German, French, English composition, geography, natural sciences, music, high school branches, etc.; graphic illustrations of school statistics and progress; photographs and lithographs of school and college grounds and buildings; reports of city school systems for year ending 1875, and of State Commissioner of Common Schools from 1837 to 1875 inclusive; catalogues of colleges and technical schools; reports of benevolent institutions; centennial contribution from the pioneer association of Athens county, Ohio. (South Gallery.)

19a University of Nebraska.—Photographs of building, etc. (South Gallery.)

20 State of Rhode Island Board of Education, Providence, R. I. (by T. B. Stockwell, Commissioner of Public Schools).—General history of education in the state; full set of State school reports; common school manual; annual reports for 1875 from the various cities and towns; documents relating to Brown University—history of Rhode Island Institute of Instruction; catalogues of State Normal School and Mowry & Goff's School; set of State and Newport school blanks; file
School Statistics, Students' Work.

of the Rhode Island “Schoolmaster;” statistical chart; school map of State and cities of Providence and Newport; course of study for State Normal School.

Providence public schools—Examinations from grammar schools, high schools, map and free hand drawing, design from that copy, industrial drawings and crayon portraits, Warner’s Commercial College—Drawings and penmanship; written examinations from primary, intermediate, grammar, and high schools, with map and free hand drawing and designs from Newport, Westerly, Woonsocket, Coventry, War-

nington, Richmond, and Smithfield public schools.

Perspective views of new library of Brown University and Woonsocket new high school, with plans and specifications; plans of some of the school buildings in Providence; views of Rhode Island State Normal School (study hall), Friends Boarding School, and intermediate school of Providence; views of school houses of Tiverton, Bristol, Newport, and Woon-

socket.

Class volume of photographs, Brown University, 1876; school furniture from E. M. Thurston, Providence; blackboard from H. H. Burrington, Providence; book holders from J. S. & C. N. Brown, Providence. (South Gallery.) 304

21 State of New Hampshire, Department of Public Instruction (by John W. Simonds, State Superintendent, Franklin, N. H.); Kindergarten school—Specimens of kindergarten work. Public schools—States covered with work of primary pu-

pils; specimens of scholars’ written work, and examinations, compositions, draw-

ings, penmanship; maps and plans; photographs and plans of school buildings and rooms; photographs of school superintendents and teachers; illus-

trated school register; wooden model of school-house.

Academies, seminaries, and high schools—Photographs and plans of build-

ings and rooms; photographs of teachers and students; students’ written work, drawings, etc.

Dartmouth College—Bound catalogues and portfolios of students’ examination pa-

pers, drawings, illustrated programme, map of grounds, portraits of faculty and class of 1876; plans and views of buildings and rooms; relief map of the White Mountain.

State Normal School—Reports; stu-

dents’ written work;

Thayer School of Engineering—Model Pratt truss railroad bridge.

Chandler Scientific School—Drawings, surveying papers, railroad map, models in plaster, examination papers and abstracts; essays.

Agricultural College—Geological map.

State school laws, reports, and regis-
ters; town school reports, history and cat-

alogue of academies, etc.; records of normal schools; Bouton’s provincial papers.

Educational publications; histories of towns; text books used 100 years ago; text books in present use; publications of E. C. Eastman. (South Gallery.) 304

22 State of Connecticut Educational Department (by B. G. Northrop, Secretary, Hattorff, Conn.);—Work by scholars and Chinese students; photographs of school-

houses; works by former members of Yale College. (South Gallery.) 304

23 State of Illinois, Department of Public Instruction (by S. M. Etter, Super-

intendent).—Reports of the department, and history of education in the State.

Public schools—Pupils’ work, school apparatus, drawings, books, maps, etc.

Chicago public schools—Portfolios of examination papers, photographs, draw-

ings, etc.

Colleges and Seminaries—Work of stu-

dents, museums, etc.

Industrial University, Champaign, Ill. —Drawings and charts, containing

work of students.

Illinois Normal Universities—Work of students, museums, etc. (East Gallery.) 304

24 State of Maine, Educational Department (by Warren Johnson, State Super-

intendent, Augusta, Me.).

Kindergarten school, Lewiston; public schools in Portland, Bangor, Bath, Lew-

istown, Augusta, and various other cities and towns; private schools; John-

son Home School for Boys; Abbott School for Boys; St. Catharine’s School for Girls, and others. School furniture from Doyle Bros., Bangor.

Bowdoin College, Colby University, Bates College.

Maine Wesleyan Seminary and Female College, Westbrook Seminary, Watervi-

lle Classical Institute, Maine Central Institute, Hallowell Classical Institute, and others; Western Normal School; Farmington and Eastern Normal School, Castine.

State collection of agriculture and me-

chanical arts. (South Gallery.) 304

25 State of Iowa, Educational Department (by Alonzo Averine, Des Moines).

—Collective exhibit of the public schools of Davenport, Des Moines, Atlantic, Mus-

catine, Ottumwa, Marengo, Boone, Si-

gourney, Winterset, Lyons, Indiana, Wheatland, Clarendon, Friends Academy, Le Grand, and Oscocla, Mt. Pleasant, Jef-

ferson, West Liberty, Mason City, Wilton, Burlington, Sioux City, Denison, Kellogg, and of Oskaloosa, Amity, and Western Colleges, Iowa. Reports, charts, draw-

ings, and examination manuscripts.

Iowa School Furniture Co. —School desks and seats. (South Gallery.) 304

26 State of Missouri, Educational Department (by Win. T. Harris, St. Louis, Mo.).—Volumes of school furniture and photographs of schools. (South Gallery.) 304

26a State of Maryland Educational Ex-

hibit. (T 38 and South Gallery.)

26b State of Tennessee Educational Depart-

ment, collective exhibit.

Toulouse, Leon, State Superintendent of Schools, Nashville, Tenn.—Reports and school banner.

Dean, John R., County Superintendent, Shelbyville, Tenn.—Muscrographs of pupils of the schools, and school banner.

Prensell, H., County Superintendent of Schools, Jonesboro, Tenn.—Photographs of Colored Training School and South North School buildings.

Pickett, A., City Superintendent of Schools, Memphis, Tenn.—Examination manuscripts and principles of instruction; geographical drawings.

Caldwell, S. Y., City Superintendent,
Nashville, Tenn.—Examination manuscripts, drawings, school banner, and annual reports.
Perkins, W. H., Principal Penobscot Graded School, Powell's Station, Tenn.—Examination manuscripts of classes D and C, second grade.
Tennessee Medical Society, Nashville, Tenn.—Transactions of the session 1845.
Lindsay, J. Berrian, Nashville, Tenn.—Life and works of Philip Lindsay.
Giers, C. C., Nashville, Tenn.—Photographs of educators. (South Gallery: 304

17 Commonwealth of Massachusetts, Department of Education and Science.

Drawing and Modeling.—Industrial, mechanical, and free hand, from the public day, evening, and Normal Art School; from the Massachusetts Institute of Technology, the Worcester Free Institute, and Boston Art Academy, nearly one thousand of these exhibits.

The Massachusetts System of Art Instruction for industrial, free hand, mechanical, and other drawing, designs of various kinds, models, and text books for schools and advanced study in drawing, designing, and modeling. Prepared by Butler Smith, published by L. Prang & Co.; exhibited in twenty-eight text books, one hundred and thirty-eight studies, forty-seven models, and fifty-seven casts.

Photographs.—Universities, Colleges, and Technical Schools: Howard University, Bussey Institute, Williams College, Amherst College, Tuft's College, Boston College, College of the Holy Cross, Museum of Comparative Zoology, Massachusetts Institute of Technology, and Worcester Free Institute.

Women's Colleges: Mt. Holyoke, Wellesley, and Smith, Clarke's Articulating School for the Deaf.

Normal Schools: Bridgewater, Framingham, Westfield, Salem, and Worcester (interiors and exteriors).

School houses: Primary, grammar, high, and technical schools of Boston, New Bedford, Greenfield, Salem, and other towns.

Harvard University, represented by photographs, catalogues, and courses of study.

Williams College, by photographs, catalogues, text books, and publications of its presidents and professors.

Amherst College, by photographs, catalogues, text books, history, and student life at Amherst.

Tuft's College, by photographs, text books, and catalogues; from the scientific department, instruments for the projection of Lissajou's curves, and the ophthalmoscope, by Prof. Dolbear.

Boston University, by year-books.

Boston College, by photographs and catalogues.

College of the Holy Cross: Photograph and historical sketch.

Mt. Holyoke Seminary: Photographs, water colors, catalogues, reports, documents, and history, memoir of Miss Lyon, first principal.

Wellesley College: Photographs, water colors, and drawings of buildings and interiors, circulars, pamphlet of history, and sketch.

Smith's College: Photographs, water colors, ground and other plans, history, and pamphlets.

Alumni of Comparative Zoology: Drawings, illustrated catalogues, bulletins, and reports, bust of Prof. Agassiz, contributions to natural history of the United States.

Massachusetts Institute of Technology: Photographs, documents, and students' works, as follows; drawings and original designs in civil and mechanical engineering; mechanization; physical, metallurgical, mining, and surveying apparatus; results of physical experiments; models of engineering structures; silver and lead extracted from the ore; tablet of the metric system; these by graduates in civil, mechanical, and mining engineering, architecture, chemistry, metallurgy, natural history, physics, science, and literature and philosophy; designs for various textile fabrics, oil-cloths, porcelain decorations, etc., by students of the Lowell Free Course of Practical Design.

Worcester Free Institute: Drawings and photographs, plan of study and discipline, students' work exhibited in examination papers, drawings, designs, physical apparatus and models.

Theological Institution, Newton: Photographs, catalogues, etc.

Clarke's Institution for the Deaf: Photographs, history, and system of teaching by articulation and lip-reading, annual reports; system of visible speech, by A. Graham Bell.

Perkin's Institution for the Blind: Specimens of books printed at the asylum; work of pupils; Dr. Howe's reports.

Nathaniel Bowditch: Bust and works.

Horace Mann: Portrait, life, lectures, and reports.

Collective Exhibits: From Boston, New Bedford, and Greenfield, illustrating the system of public instruction in the large and small cities and towns, including text books, reference books, and apparatus: text books used in Tuft's College, Williams, and Amherst, in the public schools of New Bedford, Greenfield; text books used in different cities and towns of the State.

Pupils' Work.—From primary, grammar, and high schools, in two hundred and ninety bound volumes and on seventy-two slates; specimens of sewing from grammar schools, in six portfolios; desk-mat, primary department, Grafton.

Exhibits of Libraries.—Boston Public Library: Seventeen bound volumes, history, catalogue, administration, annual and quarterly reports.

Catalogues and photographs of libraries in Salem, Springfield, Lynn, Concord, and other towns.

Reports.—Complete set of reports of State Board of Education, from 1857 to 1867, bound in twenty-nine volumes.

Complete set of annual school reports for 1875, from eighteen cities and three hundred and twenty-four towns, in twelve volumes.

Annual State Reports for 1876.—Board of Education, Board of State Charities, Board of Health, Bureau of Labor Statistics, Registration of Births and Deaths, Superintendent of Librarian, Board of Agriculture, Treasurer, Adjutant-General, Auditor, Annual Returns of Corporations, Trustees of the Perkins Institution for the Blind, Trustees of the School for Idiotic and Feeble-Minded Children, Commission—
ers of Railroads, Commissioners of Harbors, Commissioners of Insurance, Commissioner- ers of Taxes, Commissioners of Savings Banks, Commissioners of State Prison, Inspectors of State Workhouse, Bridgewater; Inspectors of State Almshouses, Fitchburg; Inspectors of State Primary School, Monson; Inspectors of State Gas: Trustees Industrial School for Girls; Trustees State Re- form School, Westboro; Trustees Lunatic Asylum, Northampton; Trustees Lunatic Asylum, Worcester; Trustees Lunatic Asylum, Danvers; Census of the State for 1855; Acts and Resolutions for 1875; Public Documents, 1862 to 1874; Plymouth Col- ony and Massachusetts Bay Records; De- cisions of Supreme Judicial Courts; Di- rectories, city and county, from Sampson, Daventry & Co., Greenough & Co., D. Dudley & Briggs; Publications and Text books, from Brewer & Tileston, G. & C. Merriam, Thompson, Brown & Co., School of & Molloy, R. S. Draper & Co., W. F. Draper, Grim Bros., Oliver Ditson.

Publications of Societies: Natural His- tory, Numismatic, Historic, Genealogical, Medical, Impartial.

Reports of associations, organizations, towns, public libraries, etc.; Psyche Ad- vertiser of Entomology.


American Academy of Arts and Sci- ences: Proceedings, memoirs, and other works

Essex Institute: Full set of works

American Naturalist, site volumes

Peabody Academy of Science: Two vol- umes; complete set of Asa Gray’s works; scientific, educational, and miscellaneous publications by Massachusetts authors; photographs and engravings of some of the living authors of Massachusetts; a se- ries of astronomical drawings (thirty-four), from the physical observations of L. Trou- veur; Cambridge; illustrated drawings from actual telescopic observations requiring ten years for their preparation, represent- ing most interesting objects in astronomy, as comets, clusters, nebulae, meteors, solar spots and protuberances, collision craters, planets, zodiacal light, aurora borealis, etc.

Reports specially prepared for this exhibit:

American Board of Com- misioners for Foreign Missions; College of the Holy Cross; Boston College, 1874- 1876; Clarke Institution for the Deaf; Mount Holyoke Seminary; Wellesley Col- lege; Smith College; Worcester Free In- stitute; Worcester Academy; Worcester Lyceum; Worcester Public Library; State Normal School, Bridgewater; State Nor- mal School, Westbrook; Publications Wil- liams College, 1793-1876; Public Charities of Massachusetts, 1776-1876; Statistics of Schools, Greenfield; Statistics of High Schools, Pittsfield; Report of Grammar School, Pittsfield; Questions for Written Examinations, Worcester; Worcester Tru- ant School; Worcester Productive Union; Worcester Coop. Musical Association; Worcester Choral Union; Worcester Young Men’s Christian Association; Worcester Home for Aged Females; Worcester Chil- dren’s Friend Society; Massachusetts Temperance Alliance; New England Hospital for Women and Children; Tem- porary Home for Female Prisoners; Home for Little Wanderers; School for Pauper Boys; Industrial School for Girls, Dorchester; Washingtonian Home.

M.A.P.—Educational, representing the universities, colleges, professional and technical institutions, academies, normal, high, grammar, primary, and ungraded schools; public libraries in the State, geological, hypsometric, density of popu- lation, proportion of foreigners to native population, trades and occupations, land under cultivation, wealth, railroads, births, deaths, and marriages; Nantucket his- torical and geographical map; Hoosac tun- nel, large profile, twenty-three feet in length, with fifty-eight photographs; illustrat- ed missionary map of the world, showing every station of the A. B. C. F. M.; globe, by E. C. Fitz.

Architectural Illustrations of Insane Asylums at Danvers, Worcester, and Northampton; New England Hospital for Women and Children, in Boston; Washingtonian Home, at Boston; Reform School for Women, at South Boston; School for Neglected Children, at Deer Island (private); Institution for Feeble Minded Youth, at Barre; Warren Street Chapel, Boston; Abattoir, at Brighton.

Ivory Lances.—Carving of title from Washington’s elm, Cambridge; illus- tration and description of Mastodon gi- ganteus; astronomical lantern, from J. F. Clarke’s system of tachygraphy, H. D. Linsley; specimen penmanship, by K. O. Herline; arithmetical cards, by Misses Faxon & Walcutt; tablet of metric sys- tem, J. P. Putnam, with pamphlet; natu- ral history series and aids to object teach- ing, L. Prang & Co.; case containing two thousand crayons, Parmenter & Walker, Waltham; reversible blackboard, by Zol- linger; writing table, by W. A. Knight; method of teaching music, by Mrs. J. B. Paige and H. M. Tappan; stereoscope and stereoscopic views of public buildings of the United States; insurance table; by Elizur Wright; school furniture, from A. G. Whitcomb and W. O. Haskell & Son; combination desk and organ, George Woods & Co.

Kindergarten: Inventions of children from four to six years of age; material for instruction, by Milton, Bradley, & Co.

Micro-photographs by Dr. E. Cutter. Photographs of cities, libraries, high and other schools.

Exhibit illustrating the interest, prog- ress, and condition, by the Essex Insti- tute, four tables and one hundred and twenty-eight photographs, charts, models, and books, from S. E. Warren.

Society for the “Prevention of Cruelty to Dumb Animals,” with improved meth- ods for their treatment, books, newspaper, tracts, etc.

Photographs of specimens from Brown High School, Newburyport. (East Gal- lery.)

27th State of Minnesota, Educational Department.—Bound volumes of examina- tions, maps, cross sections, etc., from the public schools of St. Paul, L. M. Bur- rington, Superintendent of Public Schools; bound volumes of examination papers, maps, drawings, etc., from the public

For classes of exhibits, indicated by numbers at end of entries see Classification, pp. 27-45.
schools of Minneapolis and Winona, O. V. Tousey, Superintendent; designs and plans for school buildings, exhibited by A. Langdon, Winona. (South Gallery.)

28 State of New Jersey, Department of Public Instruction (by Ellis A. Appar, Trenton, N. J.).—Work by school children, viz.: maps drawn from memory; mathematical operations; analysis and parsing; compositions; spelling; primary and miscellaneous works; artistic drawing in crayon, Indian ink, and lead pencil; mineral and natural history collections; mechanical contrivances; photographic views, exterior and interior of school-houses, and decennial exhibit of their improvements, showing condition in 1866 and 1876; kindergarten work; penmanship; history of six in New Jersey works written by alumni of Princeton and Rutgers Colleges, and photographic views of the same. (South Gallery.)

29 State of Pennsylvania.—Educational exhibit shown in Pennsylvania Educational Hall.

29a Peirce's Union Business College.—Exhibit noticed under special buildings. (Pennsylvania Educational Hall.)


32a Merriam, G. & C., Springfield, Mass.—Copies of Dr. Noah Webster's works. T 73 to 78.


33a Methodist Book Concern, New York, N.Y.—Miscellaneous books, Bibles, and hymn-books, Sunday-school libraries, teachers' helps. T 76.

34 Burley, S. W., Philadelphia, Pa.—Historical, descriptive, and statistical books. T 73.

34a Marshall, B. F. Jr., Mobile, Ala.—The accountant's value mecum. T 73 to 78.


35a Clark & Maynard, New York, N.Y.—Educational, Masonic, and miscellaneous works. T 73 to 78.

36 Presbyterian Board of Publication, Philadelphia, Pa.—Theological, practical, and Sabbath-school books and periodicals. T 74.

36a Miller, James, New York, N.Y.—Books. T 77.

37 Kohler, Ignatius, Philadelphia, Pa.—Publisher of German family bibles, theological, classical, and miscellaneous works, viz., Schiller's Works, German, two editions, two volumes, and twelve volumes; Schiller's Works, English, complete in two volumes; Schiller's Poems, German-English, on opposite pages; German-English dictionaries, etc., etc. German classical, theological, and miscellaneous works. T 73 to 78.

37a George Bros., Boston, Mass.—Educational and other works. T 77.


38a Peters, J. L., New York, N.Y.—Musical magazines, sheet music, etc. T 73 to 78.


39a Hoyt, Henry, Boston, Mass.—Books. T 77.

40 Calmann, Chas., Philadelphia.—Book of business firms in the United States. T 73.

40a McLoughlin Bros., New York, N.Y.—Toy books, games, etc. T 73 to 78.

41 Wilson, Blakeman, Taylor, & Co., New York, N.Y.—School and college text-books; Spenserian system of penmanship. T 77.

41a Estes & Lauriat, Boston, Mass.—Books. T 77.

42 Graham, Andrew J., New York, N.Y.—Phonographic works. T 73 to 76.

42a Blodget, Lorin, Philadelphia, Pa.—Meteorological works and charts. T 73.


43a Cook, E. A., & Co., Chicago, Ill.—Expositions of Freemasonry, etc. T 73 to 77.


45 National Temperance Society, New York, N.Y.—Temperance books, tracts, pamphlets, papers, diagrams, etc. T 76.

45a Harding, W.W., Philadelphia, Pa.—Bible Testaments, and photograph albums. T 73.


46a Sherwood, George, & Co., Chicago, Ill.—Educational books. T 73 to 78.


For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
Books, Publications.


48 Swasey, J. N., Yonkers, N. Y.—Iconographic chart. T 52. 306

49 Kelly, Thomas, New York, N. Y.—Catholic prayer books and Bibles. T 77. 306

49 Atwood, John M., Philadelphia, Pa.—Map of North America. T 73. 306

50 Sheldon & Co., New York, N. Y.—School and college text-books; theological, religious, miscellaneous, and juvenile books; "Galaxy" magazine. T 77. 306


51 Townsend, G. W., Philadelphia, Pa.—Napoleon question slips, for cultivating habits of study, intended for educational use, and the greatest good to the greatest number. For sale by Claxton, Remsen & Hasselfinger, Philadelphia, Pa., in packages, fifty cents and one dollar. T 73. 306


52 Virtue & Yorston, New York, N. Y.—

a Books, bound and in parts. 424

b Steel engraving. 424


53 United States Publishing Co., New York, N. Y.—Our First Hundred Years, and other books. T 73. 306

54 Orange Judd Co., New York, N. Y.—"American Agriculturist" and rural books. T 73. 306

55 American Sunday-School Union, Philadelphia, Pa.—Evangelical publications for Sunday-schools and families. T 73. 306

55 Goodrich, D. W., New York, N. Y.—Books and calendars. T 73. 306


57 Gebbie & Barrie, Philadelphia, Pa.—Fine art publications. N 71. 306

58 Roberts, Rev. H. Floy, Williamsburgh, N. Y.—Manuscript interlinear New Testament; the original Greek text, verbally translated, compared with our English version. T 73. 306

59 Asher & Adams, New York, N. Y.—Pictorial album, atlases, maps, and specimens of printing. T 73. 306

60 American Bible Society, New York.—Bibles in ancient and modern languages and various bindings. T 75. 306


62 Griffiths, John W., New York, N. Y.—Works on ship building. T 76. 306

62 Michels, Ivan C., New York, N. Y.—Book containing the Lord's Prayer in five hundred languages: work of great research, comprising the labor of twenty-three years. T 75. 306


66 Rice, D., & Co., Philadelphia, Pa.—McKenney's Indian Tribes of North America, one hundred and twenty illustrations (government edition), folio, three volumes; Michaux & Nutall's Sylva, two hundred and seventy-seven illustrations, five volumes; National Portrait Gallery of Distinguished Americans, one hundred and fifty illustrations, three volumes. T 76. 306

67 Brewer & Tileston, Boston, Mass.—Worcester's dictionaries, arithmetics, histories. T 76. 306

68 University Publishing Co., New York, N. Y.—School books; American geographies and wall maps; Venable's mathematics; Holmes's readers, United States history and grammar; Gilder-lee's Latin books; Carter's general history, etc. T 77. 306

69 Houghton, H. O., & Co., Riverside Press, Cambridge, Mass.; Hurd & Houghton, New York, N. Y.—Specimens of fine book printing; selected from their own publications and books printed for others; among them, Lord Bacon's Works, five copies only, printed on India paper; Notes on Columbus; and the Bibliotheca Americana, being the catalogue of the library of the late John Carter Brown of Providence. Also framed specimens of plain and colored lithographic printing, designed and printed at the Riverside Press, among them Longfellow's portrait, drawn by Baker, issued only with the Atlantic Monthly. T 73. (On the Pavilion of the American Book Trade Association.) 306

70 Masonic Publishing Co., New York, N. Y.—Masonic books and publications. T 73. 306

71 Wells, S. R., & Co., New York, N. Y.—Phenological books and specimens, including busts and paintings, miscellaneous publications. T 77. 306

72 Scribner, Armstrong & Co., New York, N. Y.—Books, maps, etc. T 77. 306

73 American Tract Society, New York, N. Y.—Books, tracts, periodicals, wood engravings, teachers' Bibles, etc. T 76. 306

74 Sabin, J., & Sons, New York, N. Y.—Dictionary of books relating to America. T 73. 306

75 Leypoldt, F., New York, N. Y.—Publishers' Weekly, Trade List Annual, and other trade publications. T 75. 306

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp 77-745.
Books, Publications, Archaeological Collections.

76 Kehoe, Lawrence, The Catholic Publication Society, New York, N. Y.—Catholic books of history, devotion, controversy, and general literature. T 77. 306

77 Lindsay & Blakiston, Philadelphia, Pa.—Medical, dental, and scientific books; physicians’ visiting list. T 73. 306

78 Kay & Bro., Philadelphia, Pa.—American and English law books. T 74. 306

79 Lee & Shepard, Boston, Mass.—Books. T 73 to 78. 306

80 Osgood, James R., & Co., Boston, Mass.—Books. T 73 to 78. 306

82 Seventh Day Adventist Publishing Association, Battle Creek, Mich.—Periodicals, books, and tracts. T 73. 306

83 Knapp, Albert E., Poultney, Vt.—Pictorial family Bible and continuous genealogical family record, for photographs and autographs of heads of families for successive generations. T 73. 306


85 Miller’s Bible & Publishing House, Philadelphia, Pa.—Bound Bibles and other books. T 73. 306

86 Dick & Fitzgerald, New York, N. Y.—Dick’s Encyclopedia, books of popular information, etc. T 77. 306


88 American Baptist Publication Society, Philadelphia, Pa.—Books and periodicals. T 76. 306

89 Allen, Lane & Scott & Jas. W. Laboucheb, publishers, Philadelphia, Pa.—An elegant illustrated quarto, entitled “A Century After,” picturesque glimpses of Philadelphia and Pennsylvania, including the mountains, the Wissahickon, the cities and landscapes of the State, and the Centennial Buildings. T 73 to 78. 306

90 Gill, Wm. F., & Co., Boston, Mass.—Monument device of books, in the form of Bunker Hill monument. T 74. 306

Institutions and Organizations.

91 Burleigh, J. E., Philadelphia, Pa.—Indian relics, illustrating the pre-historic age of the western continent. T 57. 312

91a Allen, Geo. W., St. Louis, Mo.—Archaeological specimens from the ancient mounds of Missouri. T 63. 312

91b Sloan, W. B., Port Clinton, O.— Flint and stone implements and ornaments. V 63. 312

91c Read, A. N., Norwalk, O.—Stone implements. V 63. 312

91d Cutler, C., Hudson, O.—Flint, stone, and iron implements. V 63. 312

91e Kelley, Gustavus, Kelley’s Island, O.—Flint and stone implements and ornaments. V 63. 312

91f Paul, Daniel, Martinsburg, O.—Flint and stone implements. V 63. 312

91g Fireland Historical Society, Norwalk, O.—Stone and flint implements and ornaments, pottery, etc. V 63. 312

91h Agricultural College of Ohio, Columbus, O.—Copper and stone implements, etc. V 63. 312

91i Archaeological Society of Ohio, Columbus, O.—Map showing the location of ancient earthworks in the State. V 63. 312

91j Western Reserve College, Hudson, O.—Copper implements, stone pipes, hammers, etc. V 63. 312

91k Force, W. F., Cincinnati, O.—Copper implements of the mound builders. V 63. 312

91l Neff, Peter, Gambier, O.— Implements of stone and flint. V 63. 312

91m Buchtel College, Akron, O.—Stone and flint ornaments and implements. V 61. 312

91n Mt. Union College, Alliance, O.— Flint implements and weapons, pesticides, and mortars, slingstones, pipes. V 61. 312

91o Matson, John S. B., Shelby, O.— Mound implements, ornaments, etc. V 63. 312

91p Whittlesey, Charles, O.—Archaeological collection. V 61. 312

91q Gabriel, Peter J., Perry, O.— Implements, ornaments, and utensils used by the Passamaquoddy Indians; weapons, costumes, house implements, and books. P. 65. 312

91r Kenney, T. Mc., Portsmouth, O.— Stone relics, hammers, rollers, pesticides, chisels, plates, pendants and other ornaments. V 63. 312

91s Henderson, J. P., Newville, O.— Stone, flint, and copper implements and ornaments. V 63. 312

91t Judge, J. F., Cincinnati, O.—Stone and flint implements and ornaments. V 63. 312

91u Morgan, M. C., Urbana, O.—Stone and flint implements. V 63. 312

91v Bartlett, C. L., Ravenna, O.—Stone and flint implements and ornaments. V 63. 312

91w Munday, Gilbert, Montezuma, O.— Stone implements. V 63. 312

91x Ashtabula County Historical Society, Ashtabula, O.—Stone and flint implements and ornaments. V 63. 312

91y Pect, S. D., Ashtabula, O.—Flint and stone implements and ornaments. V 63. 312

92a Beard, John, Attica, O.—Flint and stone implements and ornaments. V 63. 312

92b Bennett, H., Putnam, O.—Stone and flint implements and ornaments. V 63. 312

92c Hawkins, A. W., Twinsburg, O.—Stone and flint implements and ornaments. V 63. 312

92d Schroyer, J. C., Cincinnati, O.—Stone and flint implements and ornaments. V 63. 312

92e Byrnes, L. M., Cincinnati, O.—Stone and flint implements and ornaments. V 63. 312

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
Archaeological Collections, Scientific Instruments.

92a Cleneay, Thomas, Cincinnati, Ohio.—Stone implements and pottery. V 63. 312
92b Dique, Florien, Cincinnati, Ohio.—Flint, stone, shell, and bone implements and ornaments. V 63. 312
92c Mercer, R. W., Cincinnati, Ohio.—Pottery from mounds of Ohio. V 63. 312
92d Hill, H. H., Cincinnati, Ohio.—Flint, stone, bone, and copper implements and ornaments, pottery, etc. V 63. 312
92e Hosca, L. M., Cincinnati, Ohio.—Flint and stone implements and ornaments, pottery, etc. V 63. 312
92f Simerell, C. B., Cincinnati, Ohio.—Flint, stone, shell, and bone implements and ornaments. V 63. 312
92g Hawley, R. E., Cleveland, Ohio.—Flint and stone implements and ornaments. V 63. 312
92h Freeman, L. R., Cincinnati, Ohio.—Pottery, stone, and flint implements and ornaments. V 63. 312
92i Johnson, J. M., Mt. Union, Ohio.—Stone implements and ornaments. V 63. 312
92j Larkins, John F., West Mansfield, Ohio.—Stone implements. V 63. 312
92k Smucker, Isaac, Newark, Ohio.—Flint and stone implements and ornaments, casts and photographs. V 63. 312
92l Chase, G. W., Newark, Ohio.—Photographs and drawings of mounds, stone images and implements. V 63. 312
92m Zane, Carbon, Mifflin, Stone and flint implements. V 63. 312
93 State Archaeological Association of Ohio.—Relics of pre-historic races and Indians of Ohio. V 63. 312
93a Dickeson, M. W., Philadelphia, Pa.—Mound relics. T 68. 312
93b Western Reserve Historical Society, Cleveland, Ohio.—Relics of Indians and pre-historic races of Ohio. V 61. 312
93c Anderson, Marshall, Circleville, Ohio.—Flint and stone implements, etc. V 63. 312

Scientific and Philosophical Instruments and Methods.

94 Kuebler, Wm., Philadelphia, Pa.—Surveyors' and engineers' instruments; mining transit. N 60. 320
94b Wilder, Charles, Peterborough, N. H.—Thermometers and portable barometers. N 78. 320
95 Kuhnel, Paul, New York, N. Y.—Terrestrial and celestial planisphere globe. N 56. 320
96 Ritchie, E. S., & Sons, Boston, Mass.—Philosophical and nautical instruments. N 57. 320
96b Bianck, G., New York, N. Y.—Parallel rule. N 54. 320
97 Keuffel & Esser, New York, N. Y.—Drawing instruments, models, and machinery for scientific schools. N 57. 320
98 Rogers, Wm. A., Assistant, Harvard College Observatory, Cambridge, Mass.—Automatic machines for ruling microscopic lines on glass or metals; for grinding and polishing ruling diamonds; for polishing parallel surfaces on glass; for dividing any unit into equal parts; microscopes, specimens of diamond and etched rulings on glass, and water motor. N 55. 320
98a Allen, Horatio, South Orange, N. J.—Astronomical instruments. Y 76. 320
99 Clum, H. A., Elmira, New York.—Cylindrical and electrograph or storm writer for predicting storms. N 60. 320
99a Leete, Isaac P., Branford, Conn.—Atomizer and vaporizer. N 70. 320
100 Muller's Sons, Nicholas, New York, N. Y.—Thermometers. Y 76. 320
101 Benjamin, E. B., New York, N. Y.—Chemical glass and porcelain wares; rare chemical and assaying implements; tools for blowing; students' sets; Geissler tubes and physical apparatus. N 55. 320
103 Curley, W. & L. E., Troy, N. Y.—Civil engineers' land surveyors', and mining engineers' instruments and apparatus. N 56. 320
104 Lowe, N. M., Boston, Mass.—Terrestrial orrery; graphic hygrometer. N 55. 320
105 Prentice, James, New York, N. Y.—Engineers' and surveyors' instruments. N 58. 320
106 Heller & Brightley, Philadelphia, Pa.—Surveying, engineering, mathematical, optical, and astronomical instruments. N 59. 320
107 Alteneder, Theodore, Philadelphia, Pa.—Joint draughting instruments, protractors, triangles, and drawing scales. N 58. 320
108 Fauth, C., & Co., Washington, D. C.—Astronomic, geodetic, and scientific instruments; equatorial- universal alt-azimuth, theodolites, levels, etc. N 57. 320
109 Tarr, Henry S., & Son, Philadelphia, Pa.—Dry level; plumb and level combined. N 57. 320
110 Bahmann Bros., New York, N. Y.—Hydrometers, thermometers, and chemical glass instruments. N 58. 320
111 Schlatterbeck, A. S., Portland, Me.—Thermometer. N 57. 320
112 Tagliabue, Giuseppe, New York, N. Y.—Recording barometer, thermometer, and rain gauge; pyrometers, milk tester, hydrometers. N 58. 320
113 Kroedel, Franz, New York, N. Y.—Chromatic for surveying. (West Gallery.) 320
114 Knox & Shaw, Philadelphia, Pa.—N 57. 320
a Engineering instruments. 320
b Telegraph instruments. 320
115 Young's, Wm. J., Sons, Philadelphia, Pa.—N 59. 320
a Astronomical circle, equatorial sextant, transits. 320
b Telescopes. 324
116 Riggs & Bro., Philadelphia, Pa.—N 33. 320
a Ships' binnacles and logs. 320
b Watchmen's clocks, balance springs for chronometers and watches. 323
117 Queen, Jas. W., & Co., Philadelphia, Pa.—N 58. 320
a Mathematical and drawing instruments and accessories for students and professional men. 320
b Microscopes. 324

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Scientific and Philosophical Instruments.

   a Ships’ logs, register fastened to taffrail; rotator attached and tossed astern. 320
   b Marine chronometers, entirely American manufacture, with auxiliary compensating
      watchmakers’ portable transit instruments, for obtaining correct time. 323
tern.

   a Philosophical instruments, mandrel-drawn tubes. 320
   b Green-house syringes; portable fire engine and garden pump. 720

120 Watts & Co., Baltimore, Md.—N 61.
   a Scientific apparatus. 320
   b Electrical apparatus. 325
   c Telegraph apparatus. 325

121 Stewart, A., Philadelphia, Pa.—Fare controller and indicator; mechanical instruments. N 56. 321

121a Pottin Register Manufacturing Co., Philadelphia, Pa.—Registers for cars, fenders, billiards, and money drawers. P 57. 323

122 Darling, Brown, & Sharpe, Providence, R. I.—Rules, try squares, wire gauges, and tools for accurate measurements. P 70. 323


125 Weaver, Henry M., Mansfield, O.—Automatic balance scales. N 56. 323

126 Juvet, L. P., Glen’s Falls, N. Y.—Time globe. N 55. 323


127a Hietel Bros., Philadelphia, Pa.—Spring lever for watch escapement. N 58. 323

128 Elgin National Watch Co., Elgin, Ill.—Watch movements and materials. P 67. 323

128a Galena Oil Works (limited), Franklin, Pa.—Oil well clock. P 47. 323

129 Seth Thomas Clock Co., Thomaston, Conn.—Clocks. N 65. 323

130 Hagstoz & Thorpe, Philadelphia, Pa.—Stiffened gold watch cases. P 43. 323

131 American Watch Co., Waltham, Mass.— Watches and watch movements, gold and silver watch cases, watch materials. P 57. 323

132 Mehr, Geo., 1918 Hutchinson street, Philadelphia, Pa.—Patent sun dials made of marble, showing time of day, and distance of nineteen cities from Philadelphia. (Outside.) 323

133 Ithaca Calendar Clock Co., Ithaca, N. Y.—Perpetual calendar clock. N 66. 323

135 Teske, Charles, Saratoga Springs, N. Y.—Watch regulator. N 56. 323

136 Ansonia Brass & Copper Co., Ansonia, Conn.—Brass and nickel movement clocks. N 57. 323

137 Speller, Louis H., Doylestown, Pa.—Regulator, with new mode of hanging the pendulum, and anchor pin escapement. N 55. 323

138 Empire City Watch Co., Jersey City, N. J.—Watches, watch movements, and watch materials. N 55. 323

139 Fasoldt, Charles, Albany, N. Y.—Astronomical tower clock. N 56. 323

140 Elson, Julius, Boston, Mass.—Safety attachments and regulators for watches. N 56. 323

141 Lapp, Ferd., Detroit, Mich.—Carved black walnut clock case. N 56. 323

142 Fortenbach & Sons, Carlstadt, N. J.—Silver watch cases. N 55. 323

143 Paulus, E., Philadelphia, Pa.—Watches and clocks. N 55. 323

144 Hummel, Alois, Baltimore, Md.—Musical clock. N 66. 323

145 Robbins, Clark & Biddle, Philadelphia, Pa.—Watches, clocks. N 43. 323

146 Gropengiesser, Jno. L., Philadelphia, Pa.—Astronomical clock. N 56. 323

148 E. N. Welch Manufacturing Co., Forestville, Conn.—Clocks. N 65. 323

149 C. P. Even Clock Co., New Haven, Conn.—Clocks. N 65. 323

150 Imhäuser & Co., New York, N. Y.—Watchman’s time detector. This watch clock, which is fastened at the watchman’s belt, is supplied with twelve keys. In making his rounds, the watchman inserts the keys in the watch, which will perfectly show his movements. N 56. 323

151 Bacon, B. H., Philadelphia, Pa.—Lunar clock. N 56. 323


153 Pequignot, C. & A., Philadelphia, Pa.—Watches and watch cases. N 63. 323


157 Hill, J. W., Waterville, Kansas.—Clock that will run 100 years without winding, with a new escapement. With this escapement clocks can be made that will run the longest time, and with least machinery, and be perfectly accurate. (Kansas Building.) 323

158 Wilson, T. A., & Co., Reading, Pa.—Steel spectacle and eyeglass frames; lenses for optical purposes. N 58. 324

158a Black, L., & Co., Detroit, Mich.—Spectacles and eye glasses. N 64. 324

159 Zentmayer, Joseph, Philadelphia, Pa.—Microscopes and accessories. N 58. 324

159a Beatty, George D., Baltimore, Md.—Microscopical slides, showing vegetable tissue. I 50. 324

160 Bausch & Lomb Optical Co., Rochester, N. Y.—Optical instruments, N 55. 324

161 Wales, W., Fort Lee, N. J.—Microscope object glasses, with back for photographing; photomicrographs. N 58. 324

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 46.
162 Weiskopf, E., New York, N. Y.— Lenses for solar printing, lenses for magic lanterns, lenses and fayngoscopes and optical microscopes; mirrors for eye, hand and throat; instruments for dentists, and microscopes. N. 57. 324


164 Edgerton, N. H., Philadelphia, Pa.—Philosophical instruments, stepping-stones and slides; self-condensing gas cylinders. N. 58. 324

165 Diamond, J., Pittsburgh, Pa.—Spectacles and eyeglasses; Russian relay. N. 56. 324

166 Miller Bros., New York, N. Y.—Microscope and specimens. P. 47. 324

167 American Optical Co., Southbridge, Mass.—Spectacles and eyeglasses. N. N. 324

168 Yale Lock Manufacturing Co., Stamford, Conn.—Anodes for nickel-plating. P. 72. 325

169 Bryan, Jas. C., Philadelphia, Pa.— Magnetic and magnetico-electrical lightning rods. N. 63. 325

169 Gardiner, Samuel, Washington, D. C.—Electrical gas lighting apparatus. T. 64. 325


170a Garratt, Alfred, Boston, Mass.—Electric disc. N. 55. 325

171 Kidder, Jerome, New York, N. Y.—Electro-medical apparatus. A gold medal of progress was awarded to Mr. Kidder at the fair of the American Institute, in the fall of 1875, for the "best electro-magnetic machine." For illustrated catalogue, address Dr. Jerome Kidder, southeast corner of 17th street and 4th avenue, New York. N. 56. 325

172 Patrick & Carter, Philadelphia, Pa.—Telegraph sounders, learners' apparatus, hotel annunciators, Philadelphia relays, electric bells, and burglar alarms. N. 64. 325

173 Fleming & Talbot, Philadelphia, Pa.—Electrical instruments and batteries for physicians and surgeons. N. 63. 325

175 Cornish, Thos. E., Philadelphia, Pa.—Electric burglar alarm, annunciators, bell calls, clocks, batteries, gongs, wire, etc. N. 64. 325

177 Munson, David, Indianapolis, Ind.—Lightning rods. N. 59. 325

178 Western Electric Manufacturing Co., Chicago, Ill.—Electrical apparatus, electro-physical, medical, and harmonic instruments, annunciators, railway signals, etc. N. 60. 325


180 Brittian, R. J., Hedenberg Works, Newark, N. J.—Electro-medical instruments. N. 65. 325


181a Buckman, Ira, Brooklyn, N. Y.— Annunciators. N. 68. 325

182 Galvano-Paradie Manufacturing Co., New York, N. Y.—Electrical instruments for medicinal use. N. 57. 325

183 Lauert & Decker, Cleveland, O.—N. 60. Indicating annunciators and burglar alarm. 325

183a Alphabetical telegraph instruments. 325

184 McCormick, James, Philadelphia, Pa.—Burglar alarm and door fastener. Il. 72. 325

185 National Fire Alarm Telegraph Co., Richmond, Ind.—System of fire alarm and police telegraph. N. 65. 326

186 Holmes Burglar Alarm Telegraph Co., New York, N. Y.—Bank vault and safe protector, burglar alarm telegraph, electric bell and house annunciator, electric bells. N. 64. 326

187 Brooks, David, Philadelphia, Pa.—Underground cables for telegraph lines. (Nave.) 326

188 Edison, Thos. A., Newark, N. J.—Roman letter, etheric, domestic, automatic, and quadruplex telegraph; electro-micrograph, doubler, and electric pen. N. 63. 326

188a Cleveland Lightning Rod Co., Garrettsville, O.—Lightning rods, vans, and ornaments. (Ohio Building.) 326

189 Dowden, Geo., A., Newark, N. J.—Burglar alarm and automatic annunciator. N. 65. 326

189a American District Telegraph Co., Philadelphia, Pa.—Telegraph signal boxes. (Nave.) 326

190 Henry, D. F., Chief Engineer Waterworks, Detroit, Mich.—Model of subaqueous tunnel; telegraph current meter; flexible jointed water pipe. P. 65. 326

190a Gamewell, John N., New York, N. Y.—Burglar alarm telegraph signal boxes. (Nave.) 326

191 Rice, Jas. D., Philadelphia, Pa.—Lightning rods and points. N. 66. 326

191a Gray & Barton Western Electric Telegraph Co., Chicago, Ill.—Printing telegraph instrument. (Nave.) 326

192 Atlantic & Pacific Telegraph Co., Philadelphia, Pa.—Automatic and duplex telegraphic apparatus. (Nave.) 326

193 Philips, Eugene F., Providence, R. I.—Patent flexible gas-tight tubing; patent insulated telegraphic wires. N. 51. 326

193a Philips, W. J., Philadelphia, Pa.—Printing telegraph instruments. (Nave.) 326

194 Vigneron, Charles, Providence, R. I.—Piano insulator. N. 58. 326

194a Lockwood, Brooks, & Co., Boston, Mass.—Computing telegraph. P. 47. 326

195 Welch & Andrews, Boston, Mass.—Multiflex printing and dial telegraph instruments; watchman's time recorders. N. 61. 326

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
195a Gray, Elisha, Chicago, Ill.—Electro-harmonic telegraph. (Vnr.) 326
196 Watkins, Wm. B., New York, N. Y.—Automatic fire and burglar telegraph and fire extinguisher; electric thermostats, fire signal boxes, duplex telegraph. N. 59.
196a Bell, A. Graham, Boston, Mass.—Electro-harmonic telegraph. N. 64. 326
197 Western Union Telegraph Co., New York, N. Y.—Telegraphic apparatus. N. 63. 326
197a Frost & Hanline, Philadelphia, Pa.—Automatic thermostat for fire alarm telegraph. (Vnr.) 326
198 Day, Austin G., office, 120 Broadway, New York, N. Y.—Kerite insulated telegraph wire and cables; Kerite battery cups; electrical battery. Manufacturer of Kerite insulated telegraph wire and cables. Do not require protection from long exposure in hot climates in the air, earth, or water, or from the corrosive action of acids, alkalies, oils, or gases. Can be kept on storage for a long term of years without deterioration. N. 66. 327
199 White, Samuel S., Philadelphia, Pa.—Electro-harmonic telegraph. N. 65. 326
200 Coston, Wm. F., Philadelphia, Pa.—Application of Coston night signal to the International and N. Y. Yacht Club codes. H. 68. 326
201 Colton, Martha J., Philadelphia, Pa.—Telegraphic night signal for use on land and sea. H. 68. 326
202 Hale, B. S., & Co., Lawrence, Mass.—Electric wire. N. 75. 326
203 Otto, John William, St. Louis, Mo.—Piano. P. 60. 327
203a Siebenhüner, Anton, New York, N. Y.—Violins and bows. P. 64. 327
204 Pfaff, John, Philadelphia, Pa.—Clarinetons, ivory flutes, tail piece for violins, tuning pipe. J. 56. 326
204a Greiner, Geo., Philadelphia, Pa.—Piano. N. 64. 326
206 Pratt, Read, & Co., Deep River, Conn.—Ivory combs, piano forte and organ keys, ivory veneers, and other ivory goods. P. 63. 327
206a Monroe Organ Reed Co., Worcester, Mass.—Organ reeds and organ material. P. 59. 327
207 Burdett Organ Co., Erie, Pa.—Burdett organs. P. 64. 327
207a Boulanger, Louis, St. Louis, Mo.—Violin. T. 60. 327
208 Meyer, Conrad, & Sons, Philadelphia, Pa.—Square piano forte, original iron-plate frame piano, Conrad Meyer inventor, 1833. P. 65. 327
209 Schomaker Piano Co., Philadelphia, Pa.—Square and concert grand, square, and upright pianos. N. 67. 327
210 Hallet, Davis, & Co., Boston, Mass.—Orchestral, concert, and parlor grand, upright, and square grand pianos. N. 61. 327
211 Miller, Henry F., Boston, Mass.—Piano fortés. N. 65. 327
212 Zimmermann, C. F., Philadelphia, Pa.—Musical instruments. N. 63. 327
213 Albert, Chas. F., Philadelphia, Pa.—Violins, Violoncellos, Guitars, and Violons, Stradivarius and Guarnieri violins. P. 62. 327
214 Mason & Hamlin Organ Co., Boston, Mass.—Cabinet organs. P. 66. 327
215 Albert, John, Philadelphia, Pa.—Stradivarius violins made by Albert’s machine. P. 62. 327
216 Seefeldt, Wm. F., Philadelphia, Pa.—Brass and German silver musical instruments. P. 59. 327
218 Estey, J., & Co., Brattleboro’, Vt.—Organs. Call special attention to, 1st, elegance and solidity of their structure; 2d, durability of manufacture throughout; 3d, quality of tone; 4th, number of organs manufactured and sold; 5th, reputation throughout the world, highest endorsement. Manufacturers of keyboard instruments as Rieke, Stein, W. H. Stein, W. H. Stein, Abt, Luca, Joachim, Frey, Kuchen, Czerny, Ole Bull, Saint-Saëns, Tinel, and many others. P. 63. 327
219 Dolge, Alfred, New York, N. Y.—Piano forte and polishing felts; spruce sounding-board material. P. 66. 327
220 Faas, Anthony, Philadelphia, Pa.—Pianos. P. 64. 327
221 Waters, Horace, & Sons, New York, N. Y.—Organs. P. 64. 327
222 Roosevelt, H. F., New York, N. Y.—Organs, hydraulic engines, and other blowing apparatus. (North gallery.) 327
223 Calender, Vaupel, & Co., New York, N. Y.—Piano fortés. P. 64. 327
224 Hazleton Bros., New York, N. Y.—Grand, cabinet grand, upright, and square pianos. N. 64. 327
224a Eisel, M., St. Louis, Mo.—Piano movement. V. 60. 327
225 Albrecht & Co., 610 Arch street, Philadelphia, Pa. (Charles Albrecht, Frederick Riekes, Edmund Wolsiefer, Piano manufacturers of first-class, grand, square, and upright pianos. Prices low, for cash, and five years’ guarantee. P. 68. 327
225a Hamlin, Emmons, Boston, Mass.—Violins. T. 66. 327
226 Woods, Geo., & Co., Cambridgeport, Mass.—Organs. P. 61. 327
227 Gemuner, Geo., Astoria, N. Y.—Stradivarius quartet, one Stradivarius, and one Guarnieri violin. P. 59. 327
228 Dürer, Chas. F., Quakertown, Pa.—Church organ. P. 61. 327
229 Shoninger, B., Organ Co., New Haven, Conn.—Reed organs. Manufacturers of reed organs for churches and families, with all improvements, enclosing a stool, a chime of bells, which make the instrument very complete. N. 68. 327
230 Stejnway & Sons, New York, N. Y.—Orts, upright, and square piano fortés. P. 65. 327
231 Decker Bros., New York, N. Y.—Concert and parlor grand, upright, and square piano fortés. P. 67. 327

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
Musical Instruments.

232 Lehner, Henry G., Philadelphia, Pa.—Improved brass instruments, for bands and orchestras. P 64. 327
233 Goldsmith, Jonas G., New York, N. Y.—Square piano forte. P 64. 327
234 Bacon & Kerr, New York, N. Y.—Square and upright pianos. P 62. 327
235 Neff, James, Philadelphia, Pa.—Quartette of musical stringed instruments. P 64. 327
236 United Piano Makers, Brooklyn, N. Y.—Grand, upright, and square pianos. P 63. 327
237 Hoenpe, C. J., Philadelphia, Pa.—Grand, square, and upright pianos, and parlor organs. P 64. 327
238 Manhattan Piano Forte Co., New York, N. Y.—Piano fortos. This company, composed of practical mechanics, was established 1863. Their pianos are admired by every one for their sweet and powerful tone, as well as the pleasing touch they possess. P 63. 327
239 Emerson Piano Co., Boston, Mass.—Upright and square pianos. P 63. 327
240 Oldendorf, Henry, New York.—N. Y.—Bass and snare drums. P 59. 327
241 Quaker City Organ Co., Philadelphia, Pa.—Cabinet organs. P 63. 327
243 Peloubet, Pelton, & Co., New York, N. Y.—Reed organs. The standard organs here shown are exhibited as specimens of the daily work of the manufacturers. P 65. 327
244 Ivers, W. H., Dedham, Mass.—Piano. P 63. 327
244a Jennison, Wm. A., Camden, Miss.—Violin. P 62. 327
245 Nicholls, Reuben, Philadelphia, Pa.—Church organ, with pneumatic action. Composition, balance swell, crescendo and diminuendo pedals, never before introduced. P 66. 327
246 Lehner, Carl, Boston, Mass.—Cymbals and gongs, Turkish and Chinese combination of metals. P 62. 327
247 Ohio Valley Piano Co., Ripley, Ohio.—Pianos. P 63. 327
249 Robbins & Appleton, New York, N. Y.—Gold and silver watch cases. P 67. 327
250 Hinds & Sons, Newark, N. J.—Piano fortos. N 63. 327
251 Wing, F. L., & Hill, F. M., New York, N. Y.—Dolce piano forte, without strings; organ. T 59. 327
252 McFadden, George, Syracuse, N. Y.—Carnets and trombones. P 63. 327
254 Moeller, A., Hartford, Conn.—Upright piano. P 63. 327
255 Simpson & Co., New York, N. Y.—Square and upright piano fortos. P 64. 327
256 Gemunder, August, New York, N. Y.—Four-stringed double bass. P 59. 327
258 McDonald, Jas., Williamsport, Pa.—Square grand piano forte. P 63. 327
259 Dobson, Mrs. Louisa, New York, N. Y.—Banjo. P 65. 327
260 Haines Bros., New York, N. Y.—Grand, square, and upright piano fortos. P 62. 327
261 Steck, George, & Co., New York, N. Y.—Grand, square, and upright pianos. N 60. 327
262 Hardman, Hugh, New York, N. Y.—Grand, square, and upright piano fortos. N 62. 327
263 Weber, Albert, New York, N. Y.—Concert and parlor grand, upright, and square pianos. N 66. 327
264 Wildman, L. P., Danbury, Conn.—Violins. P 59. 327
266 Knabe, Wm., & Co., Baltimore, Md.—Grand, square, and upright pianos; a combination made by Tschudi & Bridgwood for Chas. Carroll of Carrollton. P 60. 327
267 Berry, James B., Boston, Mass.—Square and grand piano fortos. P 62. 327
268 Stieff, Chas. M., Baltimore, Md.—Grand, square, and upright pianos. N 64. 327
269 New Haven Organ Co., New Haven, Conn.—Organs. P 64. 327
270 Hook, E. & G. G., & Hairston, Boston, Mass.—Grand concert, chapel, and church organs. (East Gallery.)
271 Knauff, Theodore O., Philadelphia, Pa.—Mechanical and pipe organs. (Outside.)
272 Hinzen & Rosen, Louisville, Ky.—Piano. P 64. 327
273 Wessell, Nickel & Gross, New York, N. Y.—Piano. P 64. 327
274 Perry, J. R., Wilkesbarre, Pa.—Organs; testing and toning box for reed organs. P 64. 327
275 Rogers Upright Piano Co., Boston, Mass.—Upright pianos. The mechanical principles employed secure claims for this instrument of the greatest utility and practical importance to musicians and amateurs. P 65. 327
276 Perrot, Auguste, Philadelphia, Pa.—Tonomugme, a portable melodion. P 59. 327
277 Watson, J. Jay, New York, N. Y.—Violin and violin strings. P 59. 327
278 Chickering & Sons, Boston, Mass.—Piano fortos. P 61. 327
279 Veltener, J., & Garber, New York, N. Y.—Orchestra or self-act- ing organ. P 65. 327
280 Mortimer, John R., New York, N. Y.—Pneumatic exhaust palate for organs. P 63. 327
281 Behning & Diehl, New York, N. Y.—Grand square pianos. N 63. 327
282 Benham Organ Co., Indianapolis, Ind.—Cabinet organs. T 62. 327

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Musical Instruments, Engineering Designs.


285 Secor, Jerome B., Bridgeport, Conn.—Automaton singing birds in cages and vases. T 48. 327

286 Kranich & Bach, New York, N. Y.—Grand, upright, and square piano factories, N. 63. 327

287 Clough & Warren Organ Co., Detroit, Mich.—Parlor organ. P 63. 327

288 Missenharter, Chas., New York, N. Y.—Excelsior musical instruments. P 64. 327

289 Kompf, Ph., New York, N. Y.—Military drums, banjos, and tambourines. P 66. 327

290 Lighte & Ernst, New York, N. Y.—Grand square piano factories. P 65. 327

291 Willis, Aug. L., Philadelphia, Pa.—Octave coupler for piano factories. H 71. 327

292 Browne & Buskewell, New York, N. Y.—Grand, upright, and double action harp and music desk. P 63. 327

293 Conn & Dupont, Elkhart, Ind.—Musical instruments for bands; improved mouthpieces for band instruments. P 69. 327

294 Boston Musical Instrument Manufactory, Boston, Mass.—Brass band musical instruments. P 64. 327


296 Taylor & Farley Organ Co., Worcester, Mass.—Cabinet and church reed organs. P 59. 327

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297 Lowthorp, Francis C., Trenton, N. J.—Photographs of iron bridges erected, plans of wrought iron bridge and turn tables. T 67. 330

297a Barnum, Richardson, & Co., Lime Rock, Conn.—Drawings relating to various works. (West Gallery.) 330

298 American Bridge Co., Chicago, Ill.—Model of rigid suspension bridge, details of construction, photographs and drawings. T 67. 330

298a Carroll, Francis, New Orleans, La.—Model of automatic damper for gas furnaces. (West Gallery.) 330

299 Clarke, Reeves, & Co., Phoenixville Bridge Works, Philadelphia, Pa.—Photographs and models of bridges, viaducts, and other iron structures actually executed. (West Gallery.) 330

299a Philadelphia & Reading R. R. Co., Philadelphia, Pa.—Bridge models, etc. V 53. 330

300 Pettit, Henry, & Wilson, Jos. M., Engineers and Architects, Philadelphia, Pa.—The Main Exhibition building, Machinery Hall and adjacent boiler houses for the International Exhibition, 1876. (In Park.) 330

300a Thomas Iron Co., Hokendaqua, Pa.—Drawings relating to iron works. (West Gallery.) 330

301 King Iron Bridge & Manufacturing Co., Cleveland, O.—Wrought iron highway bridge between Horticultural Hall and Art Gallery. 330

301a North Chicago Rolling Mill Co., Chicago, Ill.—Drawings relating to various works. (West Gallery.) 330

302 Pearson, G. W., Ogdensburg, N. Y.—Model of standpipe and turbine wheel. (West Gallery.) 330

303 Pettit, Henry, Philadelphia, Pa.—Drawings relating to iron bridge construction. (West Gallery.) 330

304 Wilson, Jos. M., Philadelphia, Pa.—Bridge and bridge construction. (West Gallery.) 330

305 Centennial Commission of the American Society of Civil Engineers of the United States.—Papers, drawings, photographs, and exhibits of engineering in America. (West Gallery.) 330

306 Chanute, Octave, New York, N. Y.—Engineering exhibits relating to bridges and bridge construction. (West Gallery.) 330

306a Masson, E. H., Boonton, N. J.—Model and drawings relating to various works. (West Gallery.) 330

307 Croes, J. James R., Yonkers, N. Y.—Engineering exhibits relating to water works. (West Gallery.) 330

307a Morris, R. C., Nashville, Tenn.—Photographs of early and late bridges in the Southern States. (West Gallery.) 330

308 Herring, Rudolph, Philadelphia, Pa.—Plans of bridges, with photographs showing progress: section of sewers of Philadelphia. (West Gallery.) 330

308a McDonald, Charles, New York, N. Y.—Drawings relating to electrical engineering. (West Gallery.) 330

309a Pearson, J. B., Philadelphia, Pa.—Drawings relating to various works. (West Gallery.) 330

310 Linville, J. H., Philadelphia, Pa.—Bridges and bridge construction. (West Gallery.) 330

310a Phoenix Iron Co., Philadelphia, Pa.—Drawings relating to various works. (West Gallery.) 330

311 Clark, Reeves, & Co., Philadelphia, Pa.—Bridges and bridge construction. (West Gallery.) 330

311a Johnson, J., La Salle, Ill.—Drawings relating to various works. (West Gallery.) 330

312 Rockwood, Geo. F., New York, N. Y.—Photographs showing successive stages of engineering construction. (West Gallery.) 330

312a Fowler, Charles E., New Haven, Conn.—Plans, sections, and details of the sewerage and drainage system of New Haven, and other public works. (West Gallery.) 330

313 Creszier, D. W. C., Chicago, Ill.—Model of hydrant and stopcock. (West Gallery.) 330

313a Bethlehem Iron Co., Bethlehem, Pa.—Drawings relating to various works. (West Gallery.) 330

For location of objects, indicated by letter and figure, see Key to Notation, p. 25; ground plan, p. 26.
314. Jervis, John B., Rome, N. Y.—Engineering drawings, relating to construction of canals; Carbondale railroad (West Gallery.)

314a Severt, Wm. A., Syracuse, N. Y.—Drawings relating to various works. (West Gallery.)

314b Cox, E. T., Indianapolis, Ind.—Drawings relating to various works. (West Gallery.)

314c Dudley, P. H., Cleveland, Ohio.—Drawings relating to various works. (West Gallery.)

314d Drinker, Henry S., Philadelphia, Pa.—Drawings relative to tunnel excavation and timbering. (West Gallery.)

315. Foster, Wilbur F., Nashville, Tenn.—Model of Howe's bridge. (West Gallery.)

316. Armington, James H., Brooklyn, N. Y.—Exhibit relating to gas engineering. (West Gallery.)

316a Smedley, Samuel L., Philadelphia, Pa.—Drawings of Public Works in the City of Philadelphia. (West Gallery.)

316b Davis, E. T. C., Pottsville, Pa.—Drawings and photographs relating to various works. (West Gallery.)

316c Darrach, S. A., East Orange, N. J.—Drawings relating to the Water Works of New Jersey. (West Gallery.)

316d Canfield, Frederic A., Dover, N. J.—Drawings relating to various works. (West Gallery.)

316e Grant, Wm. A., New York, N. Y.—Topographical map of recent additions to New York City, with proposed street and avenue plans. (West Gallery.)

316f Tarr, H. G. H., Orbesonia, Pa.—Steam plates cast in 1763 and 1792. (West Gallery.)

316g Stanley, L. N., Brooklyn, N. Y.—Improved setting of retorts. (West Gallery.)

318. Ellis, Theo. G., Hartford, Conn.—Engineering exhibit relating to river and harbor improvement. (West Gallery.)

319. McAlpine, Wm. J., Albany, N. Y.—Engineering exhibits relating to canals and inland navigation. (West Gallery.)

320. Bowden, J. H., Wilkesbarre, Pa.—Drawings relating to various works. (West Gallery.)

321. Smith, Wm. Sooy, Maywood, Ill.—Engineering exhibit relating to foundations and masonry. (West Gallery.)

322. Shedd, J. Herbert, Providence, R. I.—Engineering exhibits relating to sewerage and sanitary purposes. (West Gallery.)

323. Briggs, Robert, Philadelphia, Pa.—Illustrations of illustrations and diagrams of ventilating fans. (West Gallery.)

323a Thompson, D. M., Providence, R. I.—Pictures of cotton mill with description. (West Gallery.)

323b Union Iron Co., Buffalo, N. Y.—Model relating to iron works. (West Gallery.)

323c Wren, W. C., Brooklyn, N. Y.—Drawings of gas machinery. (West Gallery.)

323d Withbee, J. F., Port Henry, N. Y.—Drawings and models relating to iron works. (West Gallery.)

323e Oxford Iron Co., Oxford, N. Y.—Drawings and photographs relating to iron works. (West Gallery.)

323f Smith & Sayre, New York, N. Y.—Drawings of exhaust engine, shafting, and other machinery for gas works. (West Gallery.)

323g Paulding, Kemble, & Co., Cold Spring, N. Y.—Drawings relating to iron works. (West Gallery.)

323h Prindle, F. C., Philadelphia, Pa.—Drawings of machinery for burning petroleum gas in cars. (West Gallery.)

323i Patton, J. D., Norristown, Pa.—Drawings of machinery for burning petroleum gas on cars. (West Gallery.)

323j Risdon Iron & Locomotive Works.—Drawings of hydraulic machinery. (West Gallery.)

323k School of Mines of Columbia College, New York, N. Y.—Selected mechanical drawings. (West Gallery.)

323l Glendon Iron Co., Easton, Pa.—Drawings relating to iron works. (West Gallery.)

323m Cambria Iron Co., Johnstown, Pa.—Drawings relating to iron works. (West Gallery.)

323n Birkenbine, H. P. M., Philadelphia, Pa.—Drawings of combined high and low pressure pumping engines, portfolio of details and drawings. (West Gallery.)

323o Hornig, Julius, Chicago, Ill.—Model of improved method of canal boat propulsion, with track and traction chain. (West Gallery.)

323p Shinn, Wm. P., Pittsburgh, Pa.—Engineering exhibit relating to railroads and rolling stock. (West Gallery.)

323q Nichols, H. K., Pottsville, Pa.—Model of rail splice. (West Gallery.)

323r Bishop, D. E., New York, N. Y.—Models of special rail joint. (West Gallery.)


323t Emery, Chas. E., New York, N. Y.—Drawings of marine engines and boilers; connected arch boiler; compound engine for Phoenix Iron Company. (West Gallery.)

323u Gaujot, E., Philadelphia, Pa.—Geological maps, sections, and pamphlets of the State of Michigan. V 67 to 69. (West Gallery.)

323v Hanging Rock Iron Region, Ironstone.—Geological map of the Outcrops of the Hanging Rock iron regions. (Presented by Mr. John Campbell.) T 68. (West Gallery.)

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Engineering Designs, Gymnastic Apparatus, Benevolent Societies.

327 Earnshaw, Henry, Cincinnati, O.—Photographs of parks and cemeteries, water works machinery, reservoirs, and drawing of tunnel. (West Gallery.) 335
328 Cleveland, H. W. S., Chicago, Ill.—Design (adopted) for improvement of South Park, Chicago. (West Gallery.) 335
329 Bowditch, Ernest W., Boston, Mass.—Plans of proposed chair of parks for Boston; a cemetery, and a country estate. (West Gallery.) 335
330 Krause, H., New York, N. Y.—Topographical maps. (West Gallery.) 335
331 Sibeth, Otto, New York, N. Y.—Construction map New York Central Park. (West Gallery.) 335
332 Walling, H. T., Boston, Mass.—Topographical maps and atlases. (West Gallery.) 335
333 Bogart, John, New York, N. Y.—Engineering exhibit relating to park work, surveying, and geodesy. (West Gallery.) 335

Physical, Social, and Moral Condition of Man.

334a Lawrence, John N., New York, N. Y.—Ten pin balls and sample pin. H 70. 340
335 Shibe, J. D., Philadelphia, Pa.—Base balls. B 77. 340
335a Automatic Swing Co., St. Louis, Mo.—Automatic swings. (Outside space.) 340
336 Reach & Johnston, Philadelphia, Pa.—Base balls and sporting goods. B 75. 340
339 Hiester, Chas. Edward, Harrisburg, Pa.—Exercising clubs of adjustable weight. N 50. 340
341 Derrom, Andrew, Passaic, N. J.—Workman’s cottage. (In Park.) 342
342 Kasson, W. M., Department of Public Comfort. (North, South, and West Entrances.) 342
343 Department of Public Comfort. Stationery, newspapers, periodicals, and photographs for sale. H 70 and N 6. 342
344 Rudolph & Walter, Camden, N. J.—Buffet. T 41 to 47. 342
345 Department of Public Comfort.—Café, Leland’s. T 33 to 36. 342

345a Hinvest, Robert, New York, N. Y.—Clamp and band for scouring masonry, hollow brick for ventilation, chimney top. (Outside.) 348
349 Mayer, Moses, New York, N. Y.—Collection of coins. T 72. 344
350 Inventors’ Protective & Benevolent Association of the United States, Pittsburgh, Pa.—Working models of inventions of members of the Association. (West Gallery.) 346
350a American Society for the Prevention of Cruelty to Animals, New York, N. Y.—Deodands, or instruments used in torturing dumb animals, taken from offenders; banners and illustrations. D 79. 346
350b American Missionary Association, New York, N. Y.—Map, showing location of institutions and mission stations in the United States, photographs of buildings, examination papers, catalogues. (South Gallery.) 348
351 Young Men’s Christian Association of North America, Executive Committee, Richard C. Morse, Secretary, New York, N. Y.—Map, pictures, and plans of Association buildings; reports, circulars, and other literature. (South Gallery.) 348
351a Dod, S. B., Hoboken, N. J.—Bust of Col. John Sterns. (West Gallery.) 400
351b Shippen, W. W., Hoboken, N. J.—Portraits of the Messrs. Stevens. (West Gallery.) 410
351b Miller, William J., Philadelphia, Pa.—Engravings on whitening. 421
351d Camp, J. H., Philadelphia, Pa.—Photographs of the drawing of Main Building and Machinery Hall. P 65. 430
351e Sweeney, Thomas S., Cleveland, O.—Transparent photographic views in Ohio. (Vestibule wondrous, Ohio State Building.) 430
352 Heard & Sons, Cleveland, O.—Architectural design of the Ohio State Building. 441
353 Pfeiffer, Carl, New York, N. Y.—Design of New Jersey State Building. 444
354 Schwarzmann, H. J., Philadelphia, Pa.—Designs of Memorial Hall, Horticultural Hall, Judges’ Pavilion, and Women’s Pavilion. 441
355 Busby, Albert G., Philadelphia, Pa.—Valve motor for blowing organ bellows, etc. P 66. 452
356 Stokes & Parrish, Philadelphia, Pa.—Passenger elevator. (S. E. Central Tower.) 563
357 Boston Hydraulic Motor Co., Boston, Mass.—Hydraulic motors for blowing Young & Eacles’ organs in gallery at east end of nave. L 79 and K 79. 563
358 Byrns & Bryan, New York, N. Y.—Ale pump. P 59. 565

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United States.

Railroad Cars, Vessels, Agricultural Products.

359 Pullman’s Palace Car Co., Chicago, Ill.—Gold and silver model of a Pullman palace sleeping car. N 63. 571

360 Woodruff, Jonah, Philadelphia, Pa.—Silver model of sleeping car. N 61. 571

361 Snow, J. H., Bucksport, Me.—Model ship. H 70. 594

362 Neilson, George, Philadelphia, Pa.—Model of the ship “Independence,” of Philadelphia. (Centre Aisle.) 594

   a Specimens of wood growing in New Jersey. T 70. 660
   b Fertilizers and soils. 681


For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Educational Books and Appliances.

16 Palmer, Samuel, London.—Index to the "Times" newspaper, a quarterly publication. 306
16a Warner, Robert, London.—Works on "Select Orchidaceous Plants." 306
17 Loth, John Thomas, Edinburgh.—Educational books and illustrations of the thirty-three degrees of the ancient and accepted Scottish rite. 306
17a Audsley & Bowes, Liverpool.—Works on "Keramic Art in Japan." 306
18 Lockwood, Crosby, & Co., London.—Books, rudimentary, scientific, educational, and classical series. 306
19 Cassell, Petter, & Galpin, London.—Illustrated books, publications, serials; educational books and appliances; electrotypes of engravings on wood. 306
20 Smith, David, Halifax, Yorkshire.—The "Dyer's Instructor." 306
21 Dowson, Sutherland, & Co. (limited), London.—Complete file of "Iron," a weekly newspaper. 306
21a Price & Co., London.—Fac-similes from ancient manuscripts and printed books. 306
22 Potts, Roberts, M.A., Trinity College, Cambridge.—Educational books. 306
23 Murray, Andrew, London.—Illustrations and specimens of galls produced by mites, aphides, flies (cecidomyia), sand-flies, cymbidie. 306
23a Bradbury, Agnew, & Co., London.—Books and engravings. 306
25 Rola, Vincent, Bayswater.—Method for the piano, with diagrams and specimens of music. 306
26 Proprietors of the "Graphic," London.—Process of producing an illustrated newspaper, from the receipt of sketches to the final issue of printed sheets to the public. 306
27 Holdsworth, Edmund William Hunt, London.—Work on deep sea fishing and fishing boats. 306
28 Johnson, J. M., & Sons (limited), London.—Printing in color, show tablets. 306

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

30 Rundell, Joseph Benjamin, South Kensington Museum, London.—Short-hand alphabet; maps, plans, etc., for educational atlas purposes and other purposes; lithographic printing as applied to maps. 336

31 Paul, William, Waltham Cross, Herts.—Works on horticulture. 336

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31a South Kensington Museum.—Objects exhibited by order of the Lords of the Committee of Council on Education. 339

31b Ordnance Survey of the United Kingdom of Great Britain and Ireland.—Ordnance maps. 331

31c Geological Survey of the United Kingdom of Great Britain and Ireland.—Maps. 331

31d Johnson, Edmund, London.—Catalogues and other works having reference to international exhibitions. 332

Scientific and Philosophical Instruments and Methods.

31e Hicks, James Joseph, London.—Meteorological and scientific instruments. 320

32 Siemens, Charles William, London.—Machines. (In Machinery Hall.) 320

32a Clay, Randolph, London. a Instrument for tracing ellipses and other curves. 320

b Model of a deck seat with life-raft and of a boat distinguishing hook. 324

32b Negretti & Zambra, London.—Microscopes, binocular and biconvex apparatus, reflecting telescopes, and photographic lenses. 324

33 Lyon, Washington, London.—Calculating table for rapidly multiplying numbers. 321

33a Zimdars, C. E., London.—Pneumatic signal and communication apparatus; pneumatic railway signals, indicating and registering apparatus. 321

34 Wier, M. A., & Co., London.—Hydro-gyrometer or revolution indicator. 321

35 Morton, George, London.—Chronometer and watch balance springs, wire, and gauge. 323

35a Gibson, William, Belfast.—Waggon. 323

36 Smith, Northwick, London.—Watches and chronometers, cases, dials, and movements. 323

36a Goggin, Jeremiah, Dublin.—Time-pieces. 323

36b Neal, John, London.—Gold and silver watches, chronometers, and time-pieces. 323

37 Sewill, J., Liverpool.—Marine chronometers and watches. 323

38 Mercer, Thomas, London.—Marine chronometers. 323

39 Kullberg, Victor, London.—Marine chronometers, watches, chronographs, repeaters, etc. 323

40 Dent, M. F., London.—Marine chronometers, watches, chronometer clocks, etc. 323

41 Whittaker, Richard, London.—Keyless watches. 323

42 Poole, James, & Co., London.—Marine chronometers and watches. 323

43 Nicole, Nielson, & Co., London.—Watches, chronometers, complicated watches, and chronographs. 323

44 Claxton, Robert, London.—Chronometer jewelings in all stages. 323

45 Frodsham, Charles, & Co., London.—Pyrometers, clocks, and chronometers for astronomical purposes; pocket and marine chronometers. 323

46 Swift, James, London.—Microscopes and apparatus. 324

47 Middleton, Thomas John, London.—Microscopes, dissolving view apparatus, dissolving top for the oxygen hydrogen light, lantern slides, etc. 324

48 Beck, R. & J., London.—Microscopes, telescopes, race glasses, surveying and meteorological instruments and tools. 324

49 Wheeler, Edmund, London.—Specimens for the microscope. 324


51 Ross & Co., London.—Microscopes, monocular and biconvex apparatus, reflecting telescopes, and photographic lenses. 324

52 Crouch, Henry, London.—Microscopes, binocular, and with complete accessories for every class of scientific investigation: cabinets, lamps. 324

52a Rein, Frederick Charles, & Son, London. a Magneto-electric machines. 325

b Acoustic instruments, speaking tubes and trumpets; acoustical contrivances for churches, public buildings, etc.; anti-acoustic protector. 327

53 India-Rubber, Gutta-Percha, and Telegraph Works Co. (Limited), Silvertown, Essex.—Telegraph cables, insulated telegraph wires. 325

54 Mayer & Meltzer, London.—Galvanic batteries. 325

54 Siemens Bros., London.—Cable samples, and gutta-percha as applied to the manufacture of cables. 325

54a Lacey, Richard George, Coast Guard Station, Leigh, Essex. a Alarm signal box for ships. 326

b Fisherman’s block. 347

54b Kimpton, Thomas, London.—Pneumatic sound communicator. 326

54c Telegraph Construction & Maintenance Co. (Limited), London.—Submarine telegraph cables. 326

55 Heaps, John Knowles, Holbeck, Leeds.—Violin and violoncello. 327

56 Smith, George, South Hackney.—Portable finger organ. 327

57 Boosey & Co., London.—Musical wind instruments, percussion instruments for bands. 327

58 Brinsmead, John, & Sons, London.—Grand, semi-grand, upright, and studio pianos; check repeater action for upright and grand pianos. 327

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60 Besson, F., & Co., London.—Brass musical instruments. 327

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VICTORIA.
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Educational Systems, Methods, and Libraries.
1 Educational Department of Victoria, Melbourne.—Photographic views of state schools in Victoria. 300
2 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Portfolios of music by W. H. Glen. 302
3 Victorian Asylum & School for the Blind, Melbourne.—Baskets, perambulators, portmanteaus, trunks, mats, fancy wood-work, etc., made by the pupils. 303
3a Victorian Asylum for Deaf & Dumb.—Photographs. 303
4 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Official records, catalogues, lectures, reports, medical works, school books, sermons, and general literature. 304
5 Ferres, John, Government Printer, Melbourne.—Reports and statistics from the principal government institutions of Melbourne; Victorian newspapers. 305
6 Warrnambool, Borough Council for.—Statistics of the borough. 305

Scientific and Philosophical Instruments and Methods.
7 Commissioners for Victoria, for the Philadelphia Exhibition, Melbourne.—Bell and stand. 327
8 Kilner, Joseph, Richmond.—Piano fortés. 327

Engineering, Architecture, Maps, etc.
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10 Surveyor-General of Victoria, Melbourne.—Maps and plans of the colony of Victoria. 330

Physical, Social, and Moral Condition of Man.
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b Severelands and half-sovereigns from Royal Victorian mint, Melbourne. 344
c Baskets, mats, etc., made at Coranderrk aboriginal mission station; vocabulary of Victorian aboriginal dialects, bluestone tomahawk, photographs of Victorian aborigines. 348
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13 Commercial Bank of Australia, Melbourne.—Bank notes, photographs, and statistics of the bank. 344
14 National Bank of Australasia, Melbourne.—Bank notes and statistics of the bank. 348
15 Penal Department, Inspector-General of Melbourne.—Warden’s uniform, prisoners’ clothing, hats, boots, shoes, mats, etc. 345

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Educational Systems, Methods, and Libraries.
1 Merritt, J. P., St. Catherine’s, Ont.—Metric and chronological tables, chronological of Canada. 300
2 Tennant & McLachlan, Hamilton, Ont.—Penmanship. 300
3 Pearse, James, Chatham, Ont.—Penmanship. 300
4 Browne, James, Toronto, Ont.—Chart stand and illustrator. 300
5 Educational Department, Toronto, Ont.—This is a department of State of the Province of Ontario, constituted by a committee of the Executive Councils, and is presided over by a member thereof, who is directly responsible to the Legislature. Minister of Education, Hon. Adam Crook, LL.D.; Deputy Minister of Education, John George Hodgins, LL.D.; Secretary, Abraham Marling, LL.D. 300
6 Beatty, L. J., Belleville, Ont.—Penmanship. 300

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Educational Appliances, Scientific and Musical Instruments, etc.

7 Hector, Thos., Ottawa, Ont.—Rotary polar map of the world. 300
8 Genest, P. M. A., Quebec, Q.—Map of "La Nouvelle France." 300
9 Tallabury, J. N., Montreal, Q.—Dominion atlas, maps of Ontario and Que- bec. 300
10 May, John P., Canada School Appa- ratus Co., Toronto, Ont.—Chemical laboratories, anatomical models, object- lesson cabinets, etc. 300
12 English, Ch., St. John, N. B.—Composition blackboard. 300
13 Hill, C. P., Halifax, N. S.—Photo- graph Halifax Industrial School. 300
15 McGill University, Montreal, Q.—Calendars, medals, photographs of uni- versities. 301
16 Université Laval, Quebec, Q. 303
17 College Nicolet, Nicolet, Q. 303
18 Maîtrise St. Pierre, Montreal, Q. 303
19 Ecole du Plateau, Montreal, Q. 303
20 College Ste. Hyacinthe, Ste. Hyacinthe, Q. 303
21 Séminaire Ste. Thérèse, Ste. Thé- rése, Q. 303
22 Collège Jolliette, Jolliette, Q. 303
29 Providence, Montreal, Q. 303
30 Bon Pasteur, Montreal, Q. 303
33 Hospital Général, Quebec, Q. 303
34 Hospital Général, Montreal, Q. 303
35 Frères de la Charité, Montreal, Q. 303
36 Hospital du Sacré-Cœur, Montreal, Q. 303
39 Convent de Sillery, Quebec, Q. 303
40 Campbell, James, Toronto, Ont.— Books. 306
41 Weld, W., London, Ont.—Farmer's Advocate. 306
42 Lovell Printing & Publishing Co., Montreal, Q.—School and other books. 306
43 Webster, Geo., Hamilton, Ont.—Bible, printed. 306
44 Shepard, W., Quebec, Q.—Bible (1555). 306
45 MacKinnay, A. & W., & Co., Halif- fax, N. S.—Map of the United States; se- ries of school books. 306

Institutions and Organizations.
46 Bell, Robert, Montreal, Q.—Indian curiosities and manufactures. 312
47 St. Amand, A., Lorette, Q.—Indian curiosities. 312
48 Advisory Board, Victoria, Br. Col.—Indian goods and manufactures. 312

Scientific and Philosophical Instru- ments and Methods.
49 Cornell, S., Widden Stantio, Ont.— Marine compass. 320
50 Meyer, Alerte, F. W., Montreal, Q.— Apparatus for determining inaccurate points. 320
51 Heare & Harrison, Montreal, Q.— Surveying and other instruments. 320
52 Ross, Alex., Montreal, Q.— a. Odonimeter. 320
b Indicating and registering apparatus. 321
53 Landham, F., Ottawa, Ont.—Lum- bermen’s measuring rule. 322
54 Sabis, B., Point Levis, Q.—Sliding foot rule. 322
55 Funk, J. W., Hamilton, Ont.—Universal clock. 323
57 Duquet, C., Quebec, Q.—Watchman detector. 323
58 Lefort & Chapleau, Montreal, Q.— Watchman detector. 323
62 Marrin Bros., Parkhill, Ont.—Par- lor organ. 327
63 Bell, W., & Co., Guelph, Ont.—Cabi- net organs. 327
65 Delamere, J. H., Toronto, Ont.—Organs. 327
66 Mee, C., & Co., Kingston, Ont.—Mel- leodeon, parlor organ, and organ keys. 327
68 Dominion Organ Co., Bowmanville, Ont.—Organs. 327
70 Knott, John, & Son, Hamilton, Ont.— Upright piano. 327
71 Heintzman & Co., Toronto, Ont.— Square piano. 327
72 Kater, Th., Hamilton, Ont.—Pianos, parts of pianos, etc. 327
73 Weber & Co., Kingston, Ont.—Pia- nos. 327
74 Rainer & Son, Guelph, Ont.—Piano. 327
75 Draper, E., London, Ont.—Harmon- istic instructor and musical game. 327
77 Lyonness, T., Quebec, Q.—Violin. 327
79 Sheppard, W. G., Quebec, Q.—Violoncello. 1772. 327
80 New Dominion Organ Co., St. John, N. B.—Cabinet organs. 327
81 Gates, E. E., Halifax, N. S.—Cabi- net organs. 327
82 Brockley & Co., Halifax, N. S.—Upright piano and stool. 327

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84 Cousin, Paul, Quebec, Q.—Map of city of Quebec, etc. 330
86 Trout, W. H., Peterborough, Ont.— Mechanical drawings. 330
87 Johnstone, J., Ottawa, Ont.—Geo- graphical drawing. 335
88 Burpee, M., Upper Sheffield, N. B.— Mechanical drawing. 335
89 Honeyman, Dr., Halifax, N. S.— Geological map of Nova Scotia. 335
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Educational Publications, School Apparatus.

Educational Systems, Methods, and Libraries.

1 Godchaux, Aug., & Co., Paris.—Copy books for schools. 300
   a School furniture. 300
   b School materials. 301
3 Bapterosses, F., Paris.—School materials. 300
4 Desbarolles, Paris.—Works on penmanship. 300
5 Delalain, J., & Son, Paris.—School books in different languages. 300
6 Le Brun, Paris.—Elementary dictionaries. 300
7 Lagout, Nogent-sur Seine (Aube).—School materials. 300
8 Leroy, P., Brides-les-Bains, near Moutiers (Savoý).—Educational system. 300
9 Maitrepière, Paris.—Copy books. 300
10 Raybaud, Draguignan (Var).—Reading method. 300
11 Touron, Emile, Bois de Colombes (Seine).—Geometrical problems. 300
12 Taulard, Principal of Menelou-Salon School, Menelou-Salon (Cher).—Pupils' work. 301
13 Mouret, Paris.—Globe. 301
14 Levesque, Villeneuve St. Denis (Seine and Marne).—Metrical system. 301
15 Eloff & Co., Paris.—Works on natural history; terrestrial globes. 301
16 Level, Paris.—Medical and graphic systems. 301
17 La Cointe, Evreux (Eure).—Arithmetical problems. 302
18 National School of Engineering, Paris.—Documents and reports of the school. 302
19 National School of Mines, Paris.—Documents and reports of the school. 302
20 Méilot, A., Paris.—Music method. 302
21 Dauphin, Lunéville (Meurthe and Moselle).—Printing in relief for the blind. 303
22 Dupont, Paul, Paris.—Works on government and education. 306
23 Duployé Bros., Paris.—System of stenography. 306
24 Dunod, Paris.—Scientific and mechanical works. 306
25 Dumasneuve & Co., Paris.—Books. 306
26 Dumaine, J., Paris.—Military books. 306
27 Ducroq, P., Paris.—Children's books. 306
28 Deucher & Co., Paris.—Works on art and architecture; chromo-lithographs, engravings and photographs. 306
29 Didier & Co., Paris.—Académical books. 306
30 "Gazette des Beaux Arts," Paris.—Specimens of the paper and its engravings. 306
31 Gauthier-Villars, Paris.—Scientific books. 306
32 Furnier, Jouvet, & Co., Paris.—General literature. 306
33 Firmin Didot & Co., Paris.—Illustrated literary works. 306
34 Laboulaye, Ch., Paris.—Dictionary of arts and manufactures, and works concerning industrial art. 306
35 Jouaust, D., Paris.—Literary works. 306
36 Jacquemins, Paris.—Historical costumes. 306
37 Hetzel, J., & Co., Paris.—Books. 306
38 Hennuyer, Paris.—Books. 306
39 Hachette & Co., Paris.—Educational, literary, and illustrated works. 306
40 Guillaumin & Co., Paris.—Works on political economy and finance; "Journal des Economistes." 306
41 Guérin, L., & Co., Paris.—Works on science and art. 306
42 Lemerre, Alphonse, Paris.—Classical work. 306
43 Descartes, A., Paris.—Account books. 306
44 Leroy, André, Angers (Maine and Loire).—Pomological dictionary. 306
45 Leroy, F. N., Paris.—Illustrated historical works. 306
46 Maissoneuve & Co., Paris.—Books. 306
47 Loones, Paris.—History of painters. 306
48 Maison Rustique, Agricultural Library, Paris.—Works on agriculture and horticulture. 306
49 Mariel, H. de, New York.—Work on the commerce and industry of the United States. 306
50 Mame, A., & Son, Tours.—Classical works. 306
51 Masson, G., Paris.—Works on medicine, natural history, etc. 306
52 Morel, Mrs. A., & Co., Paris.—Works on architecture. 306

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

54 Plon & Co., Paris.—Illustrated works on history, jurisprudence, etc. 306
56 Delagrange, Ch., Paris.—Geographical and classical books. 306
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59 Baudry, T., Paris.—Works on engineering, mechanics, mining, metallurgy, and railroads. 306
60 Beckensteimer, Lyons.—Works on electricity. 306
61 Belin, Mrs., Paris.—Classical books; maps in relief. 306
62 Bocquetville, Col., Toulouse.—Report on hydrophobia; physiological reports. 306
63 Boulanger, Mrs., Paris.—Books. 306
64 Calman, Lévy, Paris.—Literature, history, and modern drama. 306
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66 Colin & Co., Paris.—Classical books. 306
68 Rothschild, J., Paris.—Books. 306
69 Rudy, Charles, Paris.—The Chinese mandarin language. 306
70 Staaff, Paris.—Work on military tactics. 306
71 Tanera, Paris.—Topographical maps and plans of battles; military books. 306
72 Thirion, Ch., Paris.—Inventors' and patentees' tablets. 306
73 Central Union of Fine Arts, Paris.—Albums and publications. 306
74 Chervin, Paris.—Method of curing stammering. 306
75 Dron, Paris.—Commercial books. 306
76 City of Paris.—Statistics, regulations, models, programmes, reports, books, and scholars' work of the schools of Paris; report on primary instruction by Mr. Giccard. 306

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77 Department of Public Education, Paris.—Regulations of the French Institute of the College of France, and the National Library; books and catalogues; report on primary education at the Vienna Exposition. 310
78 Chaix, A., & Co., Paris.—Scientific books. 311
79 Industrial School, St. Quentin and Aisne.—Albums, cartoons, etc. 311
80 Elementary Education Society, Paris.—Pupils' works and report. 311
82 City of Paris.—Catalogue of the French section of the London Exhibition. 312
83 Bouvier, A., Paris.—Skeletons of gorillas; catalogue of the birds of Central Africa; map. 312
84 Department of Agriculture & Commerce, Paris.—Prizes awarded to agriculturists by various fairs. 312

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85 Alvergniat Bros., Paris.—Scientific instruments. 320
86 Grivotet L., Paris.—Solar clock. 320
87 Lion & Guichard, Paris.—Barometers, thermometers, and pyrometers. 320
88 Louvet, A., Pont l'Evêque (Calvados).—Support for instruments. 320
89 Optical Society, Paris.—Mathematical instruments. 320
δ Optical instruments. 324
90 Mallog et Co., Paris.—Alcohol tester. 320
91 Naudet & Co., Paris.—Barometers. 320
92 Perreaul, L. G., Paris.—Instruments of precision. 320
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93 Colange, Leo de, Philadelphia.—Automatic indicator. 321
94 Haas, B., jr., & Co., Paris.—Carriage controllers. 321
δ Clocks, watches, musical boxes, and singing birds. 323
95 Nicolas & Chamou, Paris.—Water meters. 321
96 Rigollet, Paris.—Water meter. 321
97 Ruboli, Cesar, Grenoble.—Spigot meter. 321
98 Deschiens, Paris.—Calculating machines. 321
99 Fialont, Mrs., Paris.—Measuring tapes. 322
100 Chambray & Co., Paris.—Scales. 322
101 Delteil, Paris.—Photometer, scales, and pneumatic machines. 322
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103 Paupier, Leonard, Paris.—Scales for railroads. 322
104 Trayvou, B., Paris.—Scales. 322
105 Savary & Rondelin, Paris.—Gold and silver watches. 323
106 Boucher-Gravet, Paris.—Clocks. 323
107 Cressier, E., Besançon.—Watches and clocks. 323
108 Bréguet & Co., Paris.—Chronometers. 323
108a Hangard, Paris.—Springs for watches. 323
109 Farcot, Eugène, Paris.—Clocks. 323
110 Gondy, J. B., & Co., Pontarlier (Doubs).—Watches. 323
111 Malifait, F., & Co., Paris.—Clocks. 323
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114 Rodanet, A. H., Paris.—Marine and pocket chronometers, watches, and chains; clocks, registers. 323
115 Süßfeld, Lorsch, & Co., Paris.—Marble clocks. 323
116 Vignon, A., Paris.—Clocks. 323
117 Lachenal, Favre, & Co., Paris.—Stereoscopes with views on glass. 324
118 Bardou & Sons, Paris.—Optical instruments. 324
119 Darlot, Paris.—Photographic apparatus and photographs. 324
120 Derogy, Paris.—Optical instruments. 324
121 Duboscq, J., Paris.—Optical instruments. 324
122 Feil, Charles, Paris.—Optical goods. 324
123 Henry-Lepaute, Paris.—Lenses for lighthouses. 324
124 Hoel, J., Paris.—Spectacles and eyeglasses. 324
125 Lacombe, Paris.—Opera glasses. 324
126 Nachat, A., Paris.—Microscopes. 324
127 Secrétan, Paris.—Astronomical and scientific instruments. 324
128 Radiguet, Paris.—Mirrors. 324
129 Lemaire, Paris.—Eyeglasses, opera glasses, etc. 324
129 Loiseau, A., Son, Paris.—Electric apparatus. 325
130 Bruguet, Paris.—Models of magneto-electric machines for laboratories. 325
131 Carré, E., Paris.—Pneumatic pumps, electrical machines, and light regulators. 325
132 Janin, Paris.—Magnets. 255
133 Gramme's Magneto-Electric Machine Co., Paris.—Galvanometer-plastic machine, etc. 325
134 Walcker, A. G., Paris.—Pneumatic and telegraph bells applied to the navy and railways. 326
135 Alexandre & Son, Paris.—Church and parlor organs. 327
136 Anget & Dubreuil, Ivy-la-Bataille (Eure).—Wooden musical instruments. 327
137 Beunon, Paris.—Upright piano. 327
138 Baudet, Paris.—Pianos. 327
139 Bontems, B.—Singing and moving birds. 327
140 Brunning, Otto, Paris.—Upright pianos. 327
141 Debain & Co., Paris.—Mechanical pianos. 327
142 Focké & Son, Paris.—Pianos. 327
143 Fortin Bros., Paris.—Felt's for pianos. 327
144 Gavioli, C., jr., Paris.—Pianos and organs; automatic musical instruments. 327
145 Gavioli & Co., Paris.—Organs, pianos, flutes, and band instruments. 327
146 Gehrling, Ch., jr., Paris.—Piano movements. 327
147 Goumas, P., & Co., Paris.—Wind musical instruments and saxophone. 327
148 Koenig, Rudolph, Paris.—Acoustic apparatus. 327
149 Kriegerstein & Co., Paris.—Pianos. 327
150 Lecomte, A., & Co., Paris.—Musical instruments. 327
152 Mcnnessom, Emil, Reims.—Violins, violas, cellos, and double bass. 327
153 Morand & Tourneur, Paris.—Mechanical harmoniums. 327
154 Thibouville, Lamy, Paris.—Musical instruments. 327
155 Zimmermann, Henry, Paris.—Organ pipes. 327

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156 Suez Canal Co., Paris.—Maps and plans of the Suez Canal. 330
157 Caligny, A. de, Versailles.—Report on hydrodynamics. 330
158 Blanchet, A. P., Henrichemont (Cher).—Projected channel through Nicaragua. 330
159 Chanudet, L., Neuilly-sur-Seine.—Model of wooden pavement. 330
160 Le Moulnier, Paris.—Sample of pavement. 330
161 Department of Public Works, Paris. a Roads, bridges, viaducts, dams, hydraulic press, docks, embankments, aqueducts, and reservoirs. 330
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162 Montei & Cassaynes, Paris.—Technical report upon the Suez Canal. 330
163 City of Paris.—Reports of the various departments of the city of Paris, maps, plans, etc.; projected and completed bridges by Mr. Legrand; promenades by Mr. Alphand; architectural reports of public buildings by Messrs. Ballu, Baltard, Duc, Davioud, Magne, and Ferriére; portfolio of engravings of monuments; historical works; plan of Paris by Quesnal; archaeological reports by Vacquer; photographs; reports and plans of the sewers of Paris. 330
164 Edoux, Leon, Paris.—Special system for mountain railways. 330
165 Transatlantic Steamship Co., Paris.—Model of the steamship "Pericle." 334
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167 Pay, de, War Department, Paris.—Relief plans. 335
168 Richard, Paris.—Geographical maps. 335
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171 Thomas, Paris.—Chronometric and cosmographic instruments. 335
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177 Regnier, Paris.—Economical wooden roofing. 342
178 Thirion, Ch., Paris.—Writing tablets. 343
178 Society of Comparative Legislation, Paris.—Legislative works. 345
179 Marbeau, Paris.—Plans, documents, etc., of a foundling hospital. 346
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<td><strong>4 Anton, Ed., Halle-on-Saale.</strong>—Books.</td>
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| **22 Dürr, Alphonse, Leipsic.**—Illustrated books. |
| **23 Engelhorn, I., Stuttgart.**—Illustrated work on Italy, etc. |
| **25 Ernst & Korn, Berlin.**—Plates from architectural works. |
| **26 Eschenbach & Schaefer, Leipsic.**—Lithographs. |
| **27 Fritzsche & Zschiesche, Leipsic.**—Illustrated postage-stamp albums. |
| **28 Hennes, A., Berlin.**—Piano forte method. |
| **31 Fischer, Theodore, Cassel.**—Publications, plates, and maps. |
| **32 Fleischer, Ernst, Leipsic.**—Scientific and school books. |
| **33 Flemming, Carl, Glogau.**—Maps, atlases, books, etc. |
| **34 Flinsch Type Foundry, Frankfort-on-Main.**—Specimens of printing. |
| **35 Friderich, R. L., Elberfeld.**—Publications. |
| **36 Fries, Herrmann, Leipsic.**—Books. |
| **37 Fritzsche, Gustav, Leipsic.**—Books. |
| **38 Furstenau, Oscar, Leipsic.**—Lithographs. |
| **39 Gebhardt, I. M., Leipsic.**—Manuals of arts and sciences, etc. |
| **40 Hauboldt, Otto, Leipsic.**—Publications. |
| **41 Photographic Association, Berlin.**—Picture books. |
| **42 Grunow, F. W., Leipsic.**—Publications. |
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| **44 Glaser, Louis, Leipsic.**—Lithographs in imitation of photography. |
| **45 Grotes, G., Berlin.**—Illustrated classics and photographs. |
| **46 Grumbach, C., Leipsic.**—Illustrated books, pictures, and engravings. |
| **47 Hans, L., Berlin.**—Prints and plates. |
| **48 Hartknoch, Joh. Fr., Leipsic.**—Books. |
| **49 Hartung, H., & Son, Leipsic.**—Books. |
| **50 Haessel, H., Leipsic.**—Dictionaries. |
| **52 Hermann, Bernhard, Leipsic.**—Lexicon of dates. |
| **53 Heymann, Carl, Berlin.**—Books. |
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<td>Geographical Institute, Weimar.—Atlases, maps, and globes.</td>
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<td>Leukart, Breslau.—Medical works.</td>
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<td>Lork, Carl B., Leipsic.—Books.</td>
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<td>78a</td>
<td>Mauke, W., Leipsic.—Housebook.</td>
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<td>Mayer, Edward Heinrich, Cologne.—Books.</td>
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<td>Meinhold, C. C., &amp; Sons, Dresden.—Anatomical atlas.</td>
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<td>82</td>
<td>Meissner &amp; Buch, Leipsic.—Lithographs, etc.</td>
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<td>Naumann, C. G., Leipsic.—Job printing.</td>
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<td>Naumann, Justus, Leipsic.—Biblical pictures.</td>
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<td>Paetel Bros., Berlin.—Books.</td>
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<td>Perthes, Justus, Gotha.—Atlases, etc.</td>
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<td>Röder, C. G., Leipsic.—Prints, etc.</td>
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<td>Rommel, Wilhelm, Frankfurt-on-Main.—Illustrated heraldic works.</td>
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<td>Römmler &amp; Jonas, Dresden.—Prints.</td>
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<td>Schlegel, Ernst, Aschersleben.—Art plates.</td>
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Educational Appliances, Scientific and Musical Instruments, Clocks.

129 Westermann, George, Brunswick. —School books.
130 Wiegandt, Hempel, & Parey, Berlin.—Books on agriculture, etc.
131 Wiegand, George, Leipsic.—Religious books, atlas, etc.
132 Wigand, Otto, Leipsic.—Dictionary, year books.
133 Winter, C. F., Leipsic.—Illustrated works.
134 Wolf, Adolph, Dresden.—Illustrated journals and chronos.
135 Zahn, R. von, Dresden.—Books.
136 Zerbin, Eduard, Darmstadt.—Works on military science.
137 Hermes, Wilhelm, Berlin.—Drawing instructor and studies.
138 Grothe, Hermann, Berlin.—Apparatus for instruction in technical schools.
140 Jeffer, Paul, Berlin.—Books on furnaces, ovens, kilns, etc.
141 Raumer, C. V., Warmbrunn, Silesia.—Instruction book for the manufacture of bricks.
142 Blankenhorn, A., Carlsruhe.
143 Keller, Heinrich, Son, Darmstadt.—Herbarium of forest and field grasses.
144 Schröder, J., Polytechnic Institute, Darmstadt.—Models for teaching purposes, drawing appliances.
145 Lette Association, Commercial and Trades School, Berlin.—Placard relating to the labors of the Association.
146 Stenographical Society of Stoelze, Berlin.—Books, reports, etc.
147 Moeser, W., Berlin.—Sunday literary works.
148 Bavarian Museum of Arts, Nuremberg.—Publications, communications, etc.

Scientific and Philosophical Instruments and Methods.
151 Riefler, Clem., Maria-Rhein, near Kempen.—Mathematical instruments.

COLLECTIVE EXHIBIT OF NUREMBERG MATHMATICIAL INSTRUMENT MANUFACTURERS.
152 Schoenner, Georg, Nuremberg.
153 Bayer, Jean, Nuremberg.
154 Heisinger, Ludwig, Nuremberg.
156 Schlaffer & Budenberg, Buckau.—Water gauges.
157 Sartorius, F., Göttingen.—Analytical scales.

COLLECTIVE EXHIBIT OF THE BLACK FOREST CLOCK MANUFACTURERS.
157 Lenzkirch Joint Stock Co., Lenzkirch.
158 Schwer, Benedict, jr., Triberg.
159 Haas, Ph., & Sons, St. Georgen.
160 Wehrle, Em., & Co., Furtwangen.
161 Kaltenbach, Leo, Furtwangen.
162 Ketterer, B., Sons, Furtwangen.
163 Bob, Lorenz, Furtwangen.
164 Beha, J. Baptist, & Sons, Eisenbach.
165 Weishaupt & Pfeig, Villingen.
166 Weser, Paul, Villingen.
167 Maurer & Höller, Eisenbach.
168 Zimmer, J., Furtwangen.

169 United Clockmakers of Glashütte, Saxony.—Clock parts.
170 Becker, Gustav, Freiburg, Silesia.—Regulators.
171 Felsing, Conrad, Berlin.
172 Haßl & Son, Hoyerswerda, Upper Lusatia.—Steeple clock and bell.
173 Lange, A., & Sons, Glashütte, Saxony.—Watches and watch parts.
174 Voigtländer & Son, Brunswick.—Photographic objectives, opera glasses, field glasses, and telescopes.
175 Hirschmann, W. A., Berlin.—Electrical apparatus for medical use.
176 Joint Stock Co. for Telegraph Supplies, Berlin.—Materials for insulators.

COLLECTIVE EXHIBIT OF MUSICAL INSTRUMENTS AND STRINGS.
176 Pfreitzscher, G. A., Markneukirchen, Saxony.
177 Bauer, Albin, jr., Markneukirchen, Saxony.
178 Paulus & Schuster, Markneukirchen, Saxony.
180 Adler, Richard, Markneukirchen, Saxony.
181 Kämpfle, Gustav, Markneukirchen, Saxony.
184 Paulus, Ernst, Markneukirchen, Saxony.
185 Paulus, August, Markneukirchen, Saxony.

COLLECTIVE EXHIBIT OF MOUTH HARMONICAS.
187 Bilger, Chr., Trossingen.
188 Hohn, Math., Trossingen.
189 Koch, Andreas, Trossingen.
190 Messner & Co., Trossingen.
191 Hotz, Fr., jr., Knittlingen.
192 Jäger, Gottlob, Knittlingen.
193 Jäger, Joshua, Knittlingen.

194 Müller, C. A., Unterwiesenthal.—Guitar strings.
195 Euler, A. A., Frankfort-on-Main.—Clarinets, flutes, etc.
197 Pfaff, F., Kaiserslautern.—Brass and wood instruments.
### Musical Instruments, Statistics, Coins.

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<td>Blüthner, Julius, Leipzig</td>
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<td>Kaps, Ernst, Dresden</td>
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<td>Schiedmayer, J., Stuttgart</td>
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<td>Schwegelen, G., Berlin</td>
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<td>Stahlecker, C. F., Stuttgart</td>
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<td>Walcker, E. F., &amp; Co., Ludwigsburg</td>
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<td>Welte, M., &amp; Sons, Freiburg</td>
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<td>Trayser, Ph. I., &amp; Co., Stuttgart</td>
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<td>Geyer, W. &amp; Ed., Bros., Eisenberg</td>
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<td>Schlessinger &amp; Lummer, Gera</td>
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<td>Pohlmann, Moritz, Nuremberg</td>
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<td>Huber Bros., Pirmasens</td>
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<td>Central Committee of the German Associations for the Aid of Wounded and Sick Soldiers in War, Berlin</td>
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<td>220</td>
<td>Central Committee of the Bavarian Association for nursing and aiding Wounded and Sick Soldiers in time of War</td>
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<td>221</td>
<td>Directors of the Badish National Aiding Association, Karlsruhe</td>
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<td>223</td>
<td>Zuelzer, Dr., Berlin</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45
Educational and Engineering Appliances, Scientific Instruments.

Educational Systems, Methods, and Libraries.

1 Municipality of Vienna.—Photographs of objects pertaining to education.

2 Fuchs, John Bapt., Emmerich, Gaming.—Artistic penmanship.

3 Delhez, Constantine, Vienna.—Gymnastics of the senses.

3 Brunn, Dr., Vienna.—Plaster cast of the human face.

5 Politzer, Adam, Vienna.—Anatomical, pathological preparations of the organs of hearing.

8 Pechar, John, Teplitz, & A. Pez, Vienna.—Statistics of the import, export, and consumption of cotton in Austria in 1871.

9 Lehmann, Adolf, Vienna.—Residence and business directory.

Institutions and Organizations.

11 Schmitt, Hans, Vienna.—Piano study and compositions.

Scientific and Philosophical Instruments and Methods.

13 Kraft, E., & Son, Vienna.—Mathematical instruments.

14 Kreidl, Alois, Prague.—Chemical and physical apparatus for schools.

15 Kreuter, Franz, Brunn.—Tachometer, distance poles, leveling poles.

16 Lenoir & Forster, Vienna.—Chemical, physical, and mineralogical apparatus.

17 Paugger, F., Trieste.—Nautical instruments.

18 Florenz, Joseph, Vienna.—Scales and balances, gold and silver precision balances, balance scales, table balances.

19 Schmidt, John, Vienna.—Measuring and regulating apparatus for petroleum.

22 Richter, C.W., Oedenburg.—Optical instruments, spectacles.

23 Plossl, S., & Co., Vienna.—Mechanical and optical instruments.

24 Kiendl, A., Vienna.—Cherens.

25 Cerveny, V. P., Koniggratz.—Musical instruments of wood and metal.

26 Bohland & Fuchs, Grazlitz.—Metal instruments.

27 Fuchs, Daniel, Vienna.—Metal instruments.

29 Farsky, John F., Pardubitz.—Wind instruments.

31 Lausmann, John W., Linz.—Wood and metal wind instruments.

34 Placht Bros., Vienna.—Musical instruments.

37 Stecher, Karl, Vienna.—Musical wind instruments.

38 The, William, Vienna.—Mouth musical instruments.

40 Kirchner Bros., Vienna.—Guitar and violin strings.

41 Robitsek, H., Vienna.—Mouth musical instruments.

Engineering, Architecture, Maps, etc.

COLLECTIVE EXHIBIT OF ENGINEERING AND ARCHITECTURAL PHOTOGRAPHS, MODELS, DESIGNS, REPORTS, AND PLANS.

42 Vienna Building Association, Vienna.

43 Battig, Anton, Chief Engineer of the State Railroad Co., Vienna.

44 Bayer, Rudolph, Vienna.

45 Bomches, Fred., Trieste.

46 Claus, Heinrich & Gross, Vienna.

47 Fellner, Fred., & Hermann Helmer, Vienna.

47a Friedmann, Alex., Vienna.

48 Doderer, Wilh., Vienna.

49 Danube Regulation Commission, Vienna.

49a Helmer, Hermann, Vienna.

50 Dorfel, Julius, Vienna.

51 Hornig, Dr. Emil J. R., Vienna.

51a Riha, Franz, Vienna.

52 Ferstel, Heinrich Ritter von, Vienna.

53 Plattich, Wilh., & Wilhelm Franz, Vienna.

54 Schmidt, Heinrich, Inspector-General of the State Railroad Co., Vienna.

55 Forster, Emil Ritter von, Vienna.

56 Frauenkel, Wilh., Vienna.

57 Gaertner, Ernst, Vienna.

58 Gross, E., Vienna.

59 Hansen, Theophil Ritter von, Vienna.

60 Hintrager, Moritz, Vienna.

61 Hubek, Peter, Vienna.

62 Holder, Alfred, Vienna.

63 Schmoranz, Franz, Vienna.

64 Klein Bros., Vienna.

65 Klinzinger, Paul, in Belinsona.

66 Delhez, Constantine, Vienna.

67 Lazar, Adolph, Vienna.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp 27-45.
### DEPT. III.—EDUCATION AND SCIENCE.

**Engineering Designs, Commercial and Industrial Statistics.**

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- 96a Frankl, Lewis A., Vienna.—Plans and descriptions of the Institute for the blind in Vienna. 346
- 97 First Ordinary Civil Social Union of the Austro-Hungarian Monarchy, Vienna.—Representation of the activity and development of co-operative union of the Austro-Hungarian monarchy. 347
SWITZERLAND.

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Educational Systems, Methods, and Libraries.

1. Board of Education of the Canton of Appenzell Ausserrhoden.—Laws and regulations, books, maps, and plans. 300

2. Board of Education of the Canton of Basle City.—Annual accounts of the department of public instruction, reports and prospectus of the schools, school-books, plans of the Bernoulliunum, special schools. 300

3. Board of Education of the Canton of Berne.—Obligatory and facultative text books and apparatus used in elementary and higher schools, laws and regulations, reports and plans. 300

4. Board of Education of the Canton of Fribourg.—Laws and regulations, books, maps, and plans. 300

5. Board of Education of the Canton of Neuchâtel.—Obligatory and facultative text books and apparatus used in elementary and higher schools, laws and regulations, reports and plans. 300

6. Board of Education of the Canton of Lucerne.—Laws and regulations, books, maps, and plans. 300

7. Board of Education of the Canton of Neuchâtel.—Laws and regulations, books, maps, and plans. 300

8. Board of Education of the Canton of Solothurn.—Laws and regulations, books, maps, and plans. 300

9. Board of Education of the Canton of Zurich.—Obligatory and facultative series of books and apparatus used in elementary and higher schools, models and maps for instruction in drawing, laws and regulations, reports and plans. 300

10. Kindergarten, St. Gallen.—Collection of works and employment for children; "the education of children according to Fröbel's principles," by J. Wellauer, director of the orphan asylum St. Gallen, 1872, annual reports, statutes, and prospectus. 300

11. Beust, F., Hottingen, near Zurich.—Educational system, constructive method, for children of five to twelve years, text books, maps, models, apparatus, and pupils' work in mathematics, geography, and natural history. 300

12. Zolliker Female Seminary, Romanshorn, Ct. Thurgau.—Publications, manuscripts, album of works executed by pupils. 300

13. Bachmann, Franz., Winikon, Ct. Lucerne.—Intuitive principle of instruction, tables and appliances. 300

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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| 47 | Huber, Jacques, Frauenfeld.—Pedagogical reviews, school books, drawing, musical works, agricultural instruction. | 306 |
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| 50 | Sauerländler, H. R., Aarau, Ct. Aargau.—Manuals for instruction, school books. | 306 |
| 51 | Scheilin & Zollikofer, St. Gallen.—Collection of manuals, books of instruction, maps. | 306 |
| 52 | Shultness, Friedr., Zurich.—Manuals for instruction, school books. | 306 |
| 53 | Sonderegger, Y. Y., St. Gallen.—Manuals for instruction. | 306 |

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| 64 | Society for the Advancement of Natural Philosophy, Berne.—Proceedings 1843-1874. | 311 |
| 65 | Society for the Advancement of Natural Philosophy of the Canton of Graubünden.—Annual reports, statutes, papers on natural sciences. | 311 |
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<td><strong>1 Arens, Antoine, Namur.—School books.</strong></td>
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<tr>
<td><strong>2 Crevcœur, Henri Stanislas Joseph, Orp-le-Grand (Brahan).—Statistical lists for school teachers.</strong></td>
<td>300</td>
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<tr>
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<td>300</td>
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<tr>
<td><strong>4 Belgian Government Educational Department.—Type of school furniture approved by the Belgian government.</strong></td>
<td>300</td>
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<td><strong>5 Happel, J., Antwerp.—Adjustable desk, perambulators.</strong></td>
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<td>300</td>
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<td><strong>8 Lory-Delaet, Pierre, Brussels.—Writing method adopted by the Belgian government.</strong></td>
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<td>300</td>
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<tr>
<td><strong>10 Stebert, Pierre, Tongres, Limbourg.—Essay on education, etc.</strong></td>
<td>300</td>
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<td>300</td>
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<td><strong>12 Claesen, Ch., Liège.—Works on art.</strong></td>
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<td><strong>14 Stroesser, Jean-Pierre, Brussels.—Solids represented in profile by metallic wire.</strong></td>
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<td><strong>19 Callewaert Bros., Brussels.—School books, Callewaert's dictionaries.</strong></td>
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<td><strong>21 De Koninck, Laurence Wm., Liège.—Works on paleontology.</strong></td>
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<td>12 Mulder, L., Arnhem.—Periodicals.</td>
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<td>3 Deutgen, L., Groningen.—Paper blackboard.</td>
<td>14 Teyler's Foundation, Haarlem.—Archives of the Teyler von der Halst Museum.</td>
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<td>4 Artisans' School, Rotterdam.—Drawings and designs.</td>
<td>15 Society for the Promotion of Architecture, Amsterdam.—Works on architecture.</td>
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<td>5 Kolkow, F. J. von, Groningen.—Photographs on glass.</td>
<td>16 Dutch Association for the Encouragement of Industry, Haarlem.—Periodicals published by the Association.</td>
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<td>6 Workmen's Artisans' School, Amsterdam.—Drawings.</td>
<td>18 Krelage, J. H., Amsterdam.—Pamphlets.</td>
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<td>7 Verhaar, A. T., Utrecht.—Plaster casts of cattle that died of murrain in 1865.</td>
<td>19 Dutch Horticultural &amp; Botanical Association, Amsterdam.—Pamphlets.</td>
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<td>8 Workmen's Society, Amsterdam.—Drawings by pupils.</td>
<td>20 Amersfoordt, Mrs. H. M., Badhoeve.—&quot;Oratorio&quot;—&quot;God's Ubiquity.&quot;</td>
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<td>9 Deaf &amp; Dumb Institute, Groningen.—Reports, 1790-1875.</td>
<td>21 Gelder, G. M. van, Schaerbeek.—Piano forte method.</td>
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<td>10 Blind Institute, Amsterdam.—Means of instruction for the blind, and articles made by pupils.</td>
<td>22 North Netherlands Musical &amp; Historical Association, Amsterdam.—Publications.</td>
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<td>11 Serraris, P. A., jr., Geertruidenberg.—Writing apparatus for weak-sighted.</td>
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24 Harting-Bank, H. J., Utrecht.—Scientific instruments. 320

25 Ministry of Finance, Hague.—Scientific instruments. 320

26 Olland, H., Utrecht.—Meteorological instruments. 320

27 Kerbel, G. H., Amsterdam.—Model of a steam engine. 320

28 Weteren, M. van, Haarlem.—Magnets. 320

30 Muller, J. A., Amsterdam.—Water gauge. 321

31 Betou, P. J. in de, Delft.—Instrument measuring 100th part of a millimetre. 321

32 Hoëwii, A. & T., Amsterdam.—Chronometers and astronomical clock work. 323

33 Casseres, A. de, Amsterdam.—Chronometers and astronomical clocks. 323

34 Cuypers, J. F., Hague.—Piano. 327

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35 Ministry of the Interior.—Collection of public works of the Netherlands. 330

36 Amsterdam Canal Co., Amsterdam.—Chart of the channel to the North Sea. 330

37 Chambers of Commerce & Industry, Middleburg & Flushing.—Relief chart of harbor. 330

38 Polytechnic School, Delft.—Models of lock gates. 330

39 Morre, G. J., Delft.—Drawings. 330

40 Simon, M., Flushing.—Copper model of lock gates. 330

41 Stang, T., Hague.—Drawings of aqueduct. 330

42 Dutch Railroad Co., Amsterdam.—Model of railroad bridge, and drawings. 332

43 Nierstrasz, N. H., Bois-le-Duc.—Plans and drawings. 332

44 Zimmerman, G. P. H., Gouda.—Chart of Suriname river. 335

Physical, Social, and Moral Condition of Man.

45 Boer, F. N., Rotterdam.—Model of cheap boarding-house. 342

46 Tjeenk Willink, W. E. J. Zwolle.—Drawings and statues of Workmen's Association. 347

47 Association for Improvement of Workmen's Buildings, Leuwarden.—Drawings and statues. 347

48 Association for Improvement of Workmen's Buildings, Hague.—Model of lodgings for workmen. 352

50 Help Yourself Association, Leuwarden.—Statutes, plans, etc. 342

51 Beneficial Association.—Models, drawings, writings, and photographs. 346

52 Gori, M. W. C., Amsterdam.—Work on hospitals. 346

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54 Haverkamp, Begemann E., Helmond.—Gutter bore machines. 551

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55 Rennes, D. W. van, Utrecht.—Sewing machine. 551

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56 Prakke, J. E. & H., Eibergen.—Leather straps; belting. 553

57 Naeff, G. & M., Lochem.—Leather straps; belting. 553

Hydraulic and Pneumatic Apparatus.

58 Rennes, D. W. van, Utrecht.—Machine for moving liquids by heat. 556

59 Rietshoten, van, & Houvens, Rotterdam.—Model of engine for deepening rivers, etc. 553

60 Bikkers & Son, Rotterdam.—Fire extinguishers. 554

61 Burger, H., Deventer.—Velocipedes. 571

62 Heshuisen, W. F., Sandpoort.—Railroad switch. 572

63 Bens, A., Deventer.—Coffee and bean mills. 589

For classes of exhibits, indicated by numbers at end of entries, see Classificati m, pp 27-45.
SWEDEN.

(North of Nave, Columns 6 to 11.)

Educational Publications and Appliances.

Educational Systems, Methods, and Libraries.

1 Abrahamsson, Aug., Näss, Floda.—Work by pupils of Näss School of Home Industry for Boys and Girls. 300
2 Alard, A. F., Simtuna.—Musical staff table. 300
2a Anderson, N. J., Stockholm.—Animals, plants, and minerals. 300
3 Bagge, G. B., Paris, France.—Geographical maps. 300
4 Berggren, A. N., Stockholm.—Method of pennmanship. 300
4a Brunell, J. E., Stockholm.—Penholders. 300
5 Cervin, C. G., Hesselby, Stockholm.—Model of a school-house. 300
6 Glömsta Manufactory, Huddinge.—Universal school form. 300
7 Royal Swedish Commission, Stockholm. a A primary school house, with accessories of furniture, books, maps, and apparatus for instruction. (In the Park, Building No. 107.) 300
b Newspapers at present published in Sweden. 306
8 Erdman, Edward, Stockholm.—Geographical diagrams. 300
8a Lewenhaupt, Count C. M., Classtorpp.—Toys, spilt shavings for mats, etc. 300
9 Lindblad, M. A., Stockholm.—Dried plants and cryptogamous plants. 300
10 Winslow, A. P., Göteborg.—Herbarium for schools. 300
11 Nordlund, K., Gefle.—Apparatus for instruction in arithmetic. 300
11a Technical Elementary Schools (collective exhibit).—Work of pupils. 300
11b Hennings, R. T., Orebro.—Methods and means of instruction. 300
11c Svensson, A., Stockholm.—Stuffed mammals, birds, and fishes. 300
11d Wiman & Co., Stockholm.—School stoves. 300
11e Zanders, H., Nowkoping.—Drawings of gymnastical apparatus. 300
14 Fries, Th. M., Stockholm.—Spitzenberg herbarium. 301
15 Ramsay, Ebba, Mrs., Göteborg.—Drawings of Spitzenberg plants. 301
16 Windruyva, Sven, Stockholm.—Scandinavian herbarium. 301
16a Vrana National High School, Vrana.—Samples of pupils' work. 301
17 Alnarp Agricultural Institute, Alnarp.—Maps and drawings of the farm buildings of the agricultural high school, photographs of its domestic animals, and a collection of plants grown on the farm of the school; works by pupils. 302
19 Royal War Department, Stockholm.—Works and drawings by pupils at the military school of Carlberg and military high school of Marieberg. 302
26 Staaf, P. O., Stockholm.—Agricultural and sylvicultural text books. 302
27 Wulff, H. A., Applemer, Kalmar.—Scheme of the agricultural school, drawings of farm buildings and implements, with specimens of soil and agricultural products. 302
28 Borg, O. E., Manilla, Stockholm.—Combined apparatus for speaking and hearing, for half deaf and dumb; symbolic vocabulary, used for the instruction of deaf and dumb. 303
29 Holm, F. J. W., Stockholm.—Model of the gymnastic hall at the institute for deaf and dumb of Manilla, in Stockholm. 304
30 Working Home for the Blind, Stockholm.—Basket work by blind pupils. 303
31 Public Institute for the Deaf, Dumb, & Blind, Stockholm.—Pupils' works. 303
32 Olsson, Magnus (blind, deaf, & dumb), Malung, Lima.—Willow furniture. 303
33 Klemmings Antiquarian Stock Co., Stockholm.—Books printed in Sweden in the 16th, 17th, and 18th centuries, with accounts of the earliest Swedish settlements in America. 306
33a Brunius, A. W., Stockholm.—Books. 306
33b Royal Statistical Central Bureau, Stockholm.—Statistical diagrams. 306
33c Sidenbladh, Elias, Stockholm.—Statistical accounts of Sweden. 306
34 Central Printing Stock Co., Stockholm.—Typographical productions. 306
35 Gumaelius Arvid, Orebro.—The newspaper "Allehanda för Folket." 306
36 Key, Axel, Stockholm.—Anatomical treatise, periodical papers upon medicine and popular science. 306
38 Key, A. & Retelius G., Stockholm.—Studies in anatomy; periodical devoted to popular science. 306

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Institutions and Organizations.

39 Hammer's Museum, Stockholm.—Photographs, catalogues, etc. 312
40 Royal Economical Society, Lulea.—Laplanders' costumes and utensils. 312
40 Schlyter, G. R., Stockholm.—Roman costumes. 312
40 Nordensköld, A. E., Stockholm.—Meteorite from Greenland. 312

Scientific and Philosophical Instruments and Methods.

41 Royal Agricultural Society of the Lan of Göteborg & Bohus.—Apparatus for deep-sea soundings and marine evaporimeters. 320
42 Sundberg, J. W. L., Stockholm.—Copper vessels for preserving zoological specimens; zoological sieves. 320
43 Leja, Joseph, Stockholm.—Thermometer. 320
44 Lindahl, Jus., Lund.—Apparatus for deep-sea soundings and dredgings. 320
45 Ljungström, J. P., Stockholm.—Geodetic and surveying instruments. 320
47 Rosse, J. L., Upsala.—Magnet and needle-compasses for mines. 320
48 Theorell, A. G., & Sörensen, P., Stockholm.—Meteorograph. 340
49 Wiberg, Martin, Stockholm.
   a "Build-dog apparatus" for deep-sea soundings. 320
   b Logarithmetrical tables, calculated and printed by a counting machine; controlling apparatus for railway trains. 321
50 Brechner, E. F. A., Stockholm.—Railway ticket registering apparatus, paging machine, etc. 321
54 Pettersson, C. J., Carlshamn.—Calculating machine. 321
55 Linderoth, G. W., Stockholm.—Clocks. 323
57 Unge, V. T., Stockholm.—Apparatus for measuring distances for military purposes. 323

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

58 Öster, Baron C. G. von, Stockholm.—Signal lantern. 324
59 Kuntze & Co., Stockholm.—Air telegraphs. 326
61 Ahlberg & Ohlsson, Stockholm.—Wind instrument of metal. 327
63 Lundholm, C. A. V., Stockholm.—School organs and harmoniums. 327
64 Malmåsö, J. G., Göteborg.—Pins. 327

Engineering, Architecture, Maps, etc.

66 Norrman, C. G. V., Stockholm.—Model of a pontoon bridge. 333
67 Bagge, G. P., Paris, France.—Geographical maps. 335
68 Erdmann, Edward, Stockholm.—Geological maps and models. 335
69 Royal Swedish Staff General, Stockholm.—Topographical maps. 335
69c Nordensköld, A. E., Stockholm.—Maps. 335
69b Roth, M., Stockholm.—Geographical maps. 335
69c Sahlbom, W., Stockholm.—Maps. 335
73 Economic Survey of Sweden, Stockholm.—Economical and agronomical maps. 335
74 Geological Survey of Sweden, Stockholm.—Geological maps, collections of minerals, rocks, and soils. 335

Physical, Social, and Moral Condition of Man.

74a Zander, G., Stockholm.—Apparatus for mechanical gymnastics. 340
75 Royal Swedish Commission, Stockholm.—Collection of current coins and bank notes in Sweden. 344
75a Lindhen, H. A. W., Stockholm.—Letter box. 345

Other educational exhibits from Sweden are installed in the Swedish School House, No. 107, and are enumerated on page 302.
NORWAY.

(North of Nave, Columns 4 to 7.)

Educational Books and Appliances, Scientific Instruments, Statistics.

Educational Systems, Methods, and Libraries.

1 Bergen Common School Board, Bergen.—Collection of materials for a free school. 300
2 Sandberg, Andreas, Christiania.—Models of handwriting. 300
3 Boeck, W., & Danielsen, D. C., Christiania and Bergen.—Treatises on skin diseases and elephantiasis. 360
4 Bentzen, B. M., Christiania.—Books and other specimens of printing. 306
5 Norwegian Association of Tourists, Christiania.—Books, maps, photographs, etc. 306
6 Jensen, H. J., Christiania.—"The Illustrated News," and other illustrated works. 306

Scientific and Philosophical Instruments and Methods.

7 Wedel-Jarlsberg, Ferd., Commodore of the Norwegian Navy, Christiania.
   a Patent control compasses, log machine. 320
   b System of night signals. 326
8 Petersson, A. J., Christiania.—Calculating machine. 321
9 Mostue, Thv., & Co., Christiania.—Scales. 322
13 Aarestrup, J., Bergen.—Piano. 327

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

14 Brantzeg, P., Christiania.—Pianos. 327

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16 The Director of the Public Roads of Norway, Christiania.—Maps, drawings, books. 330
18 Geographical Institute of Norway, Director of, Christiania.—Maps and topographical sections. 335
20 Collett, Robert, Assistant of the Zoological Museum, Christiania.—Zoo-geographical map of Norway, containing a complete list of the vertebrate animals of the country. 335
21 Schubeler, F. C., Professor of Botany at the University of Christiania.
   a Botanical-geographical map of Norway. 335
   b Plants of Norway. 704
21a Pettersen, Karl, Tromsø.—Geological map with descriptions. 335

Physical, Social, and Moral Condition of Man.

22 Statistical Bureau, Christiania.
   —Collection of official statistical publications relating to Norway; collection of cartographical representations. 345
23 Hagen, J., Christiania.—Leather and skins. 659
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(North of Nave, Columns 1 to 5.)

Educational Systems, Methods, and Libraries.

1 Angelini, Prof. Rodolfo, Rome.—Specimens of penmanship. 300
2 Mainieri, Carlo, Milan.—Geographical map in relief. 300
3 Ben, Michelangelo, Verona.—Mathematical maps. 300
4 Villa, Cav. Prof. Ignazio, Milan.—Geographical maps. 300
5 Palizzolo Gravina, Baron Vincent, Palermo.—Scientific books. 301
6 Filopanti, Dr. Prof. Quirico, Bologna.—Book on philosophy. 301
7 D’Italo, Enrico F. T., Milan.—Map of the world in the form of a globe, and objects for the study of geography and other sciences. 301
8 Giordano, Prof. Scipione, Turin.—Materia medica. 302
9 Perelli, Prof. Luigi, Milan.—Album, with specimens of stenography. 302
10 Viganò, Francesco, Milan.—Scientific books. 302
11 Claus, Cav. Prof. Niccolo, Milan.—Didactic and philosophical treatises. 302
12 Volante, Alessandro, Turin.—Pamphlet on mechanics. 302
13 Strazza, Giannina, widow Lucca, Milan.—Collection of music. 302
14 Tito di G., Ricordi, Milan.—Collection of music. 302
15 Bratti, Seiatiilli, & Co., Florence.—Collection of music. 302
16 Crotta, Giannina, Milan.—Album of music. 302
17 C. Cam. Theophilus, Florence.—School books. 306
18 Brigola, Gaetano, Milan.—Scientific and miscellaneous books. 306
19 Maino, Antonio, Fiacenza.—Books and maps. 306
20 Morandi, Feliesta, Milan.—Educational books. 306
21 Maltese, Dr. Felice, Vittorio, Sicily.—Book on philosophy. 306
22 Guida, Prof. Francesco, Naples.—Book on night signals. 306
23 Beccari, Gualberta Alaide, Bologna.—Newspaper, “La Donna.” 306
24 Barra, Prof. Luigi, Ottajano, Naples.—Didactic book. 306

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

25 Gargiulo, Francesco, Naples.—Descriptive book. 306
26 Gravina, Domenico, Palermo.—Illustrated books. 306

Institutions and Organizations.

27 Director of the Anatomical & pathological Museum of Florence.—Microscopic, normal, and pathological anatomical preparations. 312
28 Scaravignia, Torquato, Gualdo Tadino, Umbria.—Album and pictures. 312

Scientific and Philosophical Instruments and Methods.

29 Sollima, Giacomo, Messina.—Mill scales. 322
29a Gasparini, Giacomo, Rome.—Meter for measuring grain. 322
30 Villa, Cav. Prof. Ignazio, Milan.—Universal clock. 323
32 Gennari, Cav. Dr. Enrico, Milan.—Optical instruments. 324
33 Ponti, Carlo, Venice,—Camaziale and megalithoscope (optical instruments). 324
34 Figatner, Enrico, Milan.—Electric batteries. 325
35 Gerosa, Edoardo & Emilio, Milan.—Telegraphic instrument. 326
36 De Lorenzi, Cav. G. Battia, Venice.—Violine, Stradivarius style. 327
37 Bedini, Giuseppe & Sons, Venice.—Harmonic strings. 327
38 Venturini, Luigi, Padua.—Harmonic strings. 327
39 Giuliano, Ditta, Naples.—Cylindrical piano. 327

Engineering, Architecture, Maps, etc.

40 Linari, Eng. Antonio, Rome.—Plan for a tunnel. 339

Physical, Social, and Moral Condition of Man.

41 Aquadro, Paolo, Turin.—Postal box. 345
42 Aurineta, Cav. Marco Aurelio, Naples.—New system of disinfection. 346
# BRAZIL.

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<td>11 Faculty of Medicine, S. Salvador da Bahia.—Collection of theses on medical subjects. 302</td>
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<td>13 Imperial Institute for Blind Boys &amp; Girls, Rio de Janeiro.—Apparatus used in teaching; books, geometrical figures, musical compositions; specimens of needle work. 303</td>
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<td>14 Home Department, Rio de Janeiro.—Educational reports, laws, regulations, statistics, and catalogues. 304</td>
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<td>15 Gaveao, Coronel J. M., &amp; Paes de Barros, San Paulo.—Newspapers. 306</td>
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<td>23 Roxo, Monteiro, &amp; Lemos, Rio de Janeiro.—&quot;Direito Mercantil.&quot; 306</td>
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| 28 Brant, J. Ferreira d'A., Minas Geraes.—Collection of insects. 312 |
| 29 Napoleao, Narciso & Arthur, Rio de Janeiro.—Music printing and engraving. 313 |
| 30 Santos, o Quintino dos, Rio de Janeiro.—Musical compositions. 313 |
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| 40 Army Arsenal of Rio Grande do Sul.—Metal meridian. 320 |
| 41 Saldanha, Luiz de, Brazilian Navy.—Nautical repeating compass. 320 |
| 41a Pinheiro, A. Pereira, Brazilian Navy.—Sandigraph or automatic deep-sea sounding apparatus. 320 |
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
BRAZIL.

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43 General Commission from Rio de Janeiro.—Piano; large guitar (viola), and small guitars (machetes). 327

44 Lins, Lamenha, Sancta Candida.—Guitars 327

45 Couceiro, J. do Santos, Rio de Janeiro.—Violin and bow. 327

46 General Commission for Brazil.—Piano. 327

Engineering, Architecture, Charts, Maps, and Graphic Representations.

47 The Board of Directors of the “Pedro II. Dock Works” Co.—Drawings showing the “Pedro II. Dock Works” at Rio de Janeiro, and samples of the wood employed in the works, submarine constructions, wharves, and ware- houses. 339

48 Reboucas, André & Castro, Borja, Rio de Janeiro.—Photographs of custom-house dock works, plans containing details of work, etc. 239

49 Public Works Office, Rio de Janeiro.—Project to improve the harbors of Brazil, by Sir John Hawkshaw. 339

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51 Hydrographic Department, Rio de Janeiro.
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52 Speir, W., Province of San Paulo.—Drawings of the railroad from Santos to Jundiahy, San Paulo. 332

53 Fox, Engineer, Province of San Paulo.—Plans and drawings. 337

54 Public Works Office, Rio de Janeiro.
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55 Penna, Ferreira, S. Pedro du Sul.—Plans, estimates, and reports on the projected railway from Porto Alegre to Uruguay. 332

56 Loyd, Engineer, Rio de Janeiro.—Project of a railway to the Province of Matto Grosso, with plans, estimates, etc. 332

57 Bulhones, Engineer, Rio de Janeiro—Railway plans, illustrations, estimates, etc. 339

58 Coutinho, Silva, Rio de Janeiro.—Project to lengthen the railway line to the Province of Pernambuco, with plans, etc. 332

59 Garceix, Prof.—Geological map of the province of Minas-Geraes. 335

60 Commission-General for the National Exhibitions.—Maps of the Province of São Paulo; elements for the organization of a physical chart of Brazil, by Homen de Mello. 335

61 Mendes, C., Rio de Janeiro.—Atlas of the Brazilian empire. 335

62 Rohan, General de Beaurepaire, Rio de Janeiro.—General chart of the Brazilian empire. 335

Physical, Social, and Moral Condition of Man.

63 National Mint, Rio de Janeiro.—Collection of medals stamped by the mint; collection of Brazilian coins. 344

64 Suplter, J. F., Province of Paraná.—Collection of medals obtained by galvano-plastic method, galvano-plastic pile. 344

(For Naval Engineering, see Machinery Hall.)
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(South of Nave, Columns 2 to 5.)

Books, Maps, Statistics.

Educational Systems, Methods, and Libraries.

1 Gonzalez, Meliton, Province of Entre-Ríos.—Map of the province. 300
2 Chapeaurouge, C. de, Province of Santa Fé.—Map of the province. 300
3 Grousae, Paul, Province of Tucumen.—Map of the province. 300
4 Monguillot, E., Province of Buenos Ayres.—Sheet music. 302
5 Scapatura, A., Province of Buenos Ayres.—Sheet music. 302
6 Vorge, Faustino, Province of Buenos Ayres.—Statistical register of the province. 305
7 Rossell, Peter, Province of Buenos Ayres.—Periodical—"Correo Argentino." 306
8 Bridma, Martin, Province of Buenos Ayres.—Books of typographical samples. 306

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.

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10 Navarro, Samuel, Province of Buenos Ayres.—Work on immigration. 306
11 Navarro, Mardogueo, Province of Buenos Ayres.—Statistics of the epidemic of 1871. 306
12 Zuiny, Antonio, Province of Buenos Ayres.—Books. 306
13 Espineyro, Mariano T., Province of Buenos Ayres.—"The Judicial Periodical." 306
14 Chucu, Manuel C., Province of Buenos Ayres.—Books. 306
15 Ledesmo, Justiniano A., Province of Buenos Ayres.—Books. 306
16 Minister of the Interior.—"Memoirs of the Governor of Chaco." 306
17 Gelderen, A. van, Province of Buenos Ayres.—Encyclopedia. 306
18 Argentine Rural Society.—Annals of the Society; official bulletin of the National Exhibition of Córdoba. 306

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[The exhibit of Spain in the Department of Education and Science is installed in the Spanish Pavilion, and catalogued in Part III., pages 132 to 141.]
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2 Perry, Gerardo A., Lisbon.—Atlas with statistics of Portugal and colonies. 305
3 Association for the Encouragement of Manufacturers, Lisbon.—A frame with diplomas, statues and elementary books. 306
4 Direction of the Public Works of Mondego, Figueira.—"Memoir on the River Mondego." "Catalogue of Plants in the Forest of Choufual." 306

5 Ferraz, José L. M., Ega.—Work on pharmacy. 306
6 Infante Dom Luiz Observatory, Lisbon.—Scientific publications. 306
7 Magalhaes & Moniz, Oporto.—Text books and other works. 306
8 Mengo, Francisco da Silva, Oporto.—Books. 306
9 Nepomuceno, Manuel, Oporto.—Books. 306
10 Silva, Joaquim Possidonio Narciso da, Lisbon.—Memoirs on archaeological and architectural subjects. 306
11 National Printing Office, Lisbon.—Printed works. 306
12 Portuguese Civil Engineers’ Society, Lisbon.—Copies of the "Revista d’Obras Publicas e minas." 306
13 Sarmento, Anselmo Evaristo de Moraes, Oporto.—Copies of the "Actualidade" Journal. 306
14 Department of Finance, Lisbon.—Commercial statistics of Portugal. 306
14a Queiroz, G. J. de, Lisbon.—Commercial statistics of Portugal, graphically arranged. 306
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ANNEX TO MAIN BUILDING.

No. 106.—ANNEX TO MAIN BUILDING. (CARRIAGE ANNEX.)

Architect, H. J. SCHWARZMANN.

(SIZE, 346 x 231.)

This structure is built of corrugated iron, wood, and glass; a one-story building, with sky-lights, situated on Avenue of the Republic, immediately north of the Main Building, and east of the Department of Public Comfort.

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ANNEX.
Heaters, Ranges, Household Utensils.


15a Open Stove Ventilating Co., New York, N. Y.—Open grate, close stove, and warm air furnace combined

15 Monitor Oil Stove Co., Cleveland, Ohio.—Cook stove.

16 Henis, Chas. F., Philadelphia, Pa.—Porous tile for stoves.

16a Leibrandt & McDowell Stove Co., Philadelphia, Pa.—Stoves, etc.


19 Bentley, Jeffrey O., Philadelphia, Pa.—Hollow metallic steam-radiating base-board ware for heating rooms.

19a Langstrath, Thomas, Philadelphia, Pa.—Furnaces.

20 Dripps, Isaac, Philadelphia, Pa.—Safety ventilating heaters for railroad passenger cars.


22 Perkins & McFarland, Philadelphia, Pa.—Heaters and ranges.

23 Reynolds, J., & Son, Philadelphia, Pa.—Wood and coal furnaces, cooking range.

25 Morris & Haines, Philadelphia, Pa.—Heaters and range.

27 Hayes, Couter & Co., Philadelphia, Pa.—Hot-air furnace, cooking range.

28 Grossius, John, Cincinnati, O.—Stove for school-houses, etc.

29 Barry & Lane, New York, N. Y.—Oven range and cast-iron setting.


31 Nixon, George, & Son, Philadelphia, Pa.—Hotel range and boiler.

32 Bartlett, Job, & Sons, Philadelphia, Pa.—Furnaces, kitcheners, low grates.

33 Gale, D. A. T., Syracuse, N. Y.—Metallic bed bottom.

33a Weare Bros. & Co., Cincinnati, O.—Stove.

34 Barstow Stove Co., Providence, R. I., New York, N. Y., and Boston, Mass.—Stoves, ranges, furnaces, heaters, hollow ware, etc. Awarded Grand Medal of Merit at Vienna Exposition, 1873.

35 Hopkin, William, Jr., Philadelphia, Pa.—Furnace, range, and boiler.


39 Tuttle & Bailey Manufacturing Co., New York, N. Y.—Hot-air registers, ventilators, ornamental screens for steam coils, etc.

40 Resor, Wm., & Co., Cincinnati, O.—Cooking stoves.

41 Caldwell & Mather, Philadelphia, Pa.—Cooking ranges and heating furnaces.


43 McCoy & Roberts, Philadelphia, Pa.—Portable hot-air furnaces.

44 Barker, Geo. R., Philadelphia, Pa.—Combined heating and ventilating range apparatus and double register.

45 Gold's Heater Co., 47 Cliff street, New York, N. Y.—Heaters. Constructed on the principle of extensive radiating surfaces, which has the effect of reducing the temperature, so as not to injure the quality of the air warmed. Produces same result as made by steam or hot water—a pure and healthful atmosphere.


47 Rathbone, Sard & Co., Albany, N. Y.—Stoves and ranges for coal or wood.

48 Abendroth Bros., New York, N. Y.—Stoves, ranges, plumbers' ironware, vases, fountains, hot-house and stable fittings.

50 Giles, H. G., & Son, Troy, N. Y.—Portable furnace and range, and parlor stoves.

51 Myers, George, Philadelphia, Pa.—Bath boilers and tanks.

52 Whitehead, Thomas J., South Paris, Me.—Combined cooking stove and hot-air furnace.


54 National Stove Works, New York, N. Y.—Heaters and ranges.

55 Doyle, William, Albany, N. Y.—Stoves, furnaces, and ranges.

56 Comstock, Castle, & Co., Quincy, Ill.—Heating stoves.

57 Keystone Hardware manufacturing Co., Reading, Pa. a Hot-air registers, and ventilators.


59 Johnson, Black, & Co., Erie, Pa.—Stoves, furnaces, and heaters.

60 Mitchell, Stevenson, & Co., Pitts- burg, Pa.—Stoves.

61 Hessenbruch, Theophilus, Philadelphia, Pa.—Combination damper and ventilator.

62 Michigan Stove Co., Detroit, Mich.—Stoves, hollow ware, stove furniture, etc. Manufacturers of cooking, parlor, and heating stoves, from a mixture of Lake Superior and other first-class brands of iron. Our motto; "Everything made first-class, and to sell at reasonable prices."

63 Lesley, Alex. M., New York, N. Y. a Gothic furnaces.

64 March, Brownback & Co., Lime- rick Station P. O., Pa.—Heaters, ranges, and hollow ware.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
65 Boyd, David, New York, N. Y.—Flue radiator, flute and diaphragm attachment. 222
66 New Haven Steam-Heating Co., New Haven, Conn.—Radiators and screens for low-pressure steam-heating. 222
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69 Duparquet, L. F., & Huot, New York, N. Y.a Ranges, broilers. b Coffee and tea urns, cooking utensils. 224
71 Shepherd, Chas. H., Philadelphia, Pa.—Refuse of cork prepared for kindling fires. 222
72 Belson, R. W., Philadelphia, Pa.—Warm-air furnace. 222
73 Williams & Co., Nashua, N. H.—Stoves, washtubs, sinks, griddles, etc., of Francetown soapstone. 222
76 Ferris, Geo. H., New York, N. Y.—Domestic boiler, coffee still. 222
77 Gardner, M. W., Green Island, N. Y.—Combination knobs for stoves, ranges, etc. 222
78 Birkey, John Q., & Co., Philadelphia, Pa.—Gas heaters. 222
80 Masser, H. B., Sunbury, Pa.—Coffee roaster. 222
81 Garrison, W. S., Volga City, Iowa.—Tubular heating stove. This stove will warm from five to twenty rooms without extra fuel. Send for engraving and circular to Tubular Stove Co., Clear Lake, Iowa. 222
82 Magee Furnace Co., Boston, Mass.—Furnace, ranges, parlor stoves. Magee's Standard Hot-air furnace, tested with a patent non-conducting material. Same furnace for sheet iron casing. Same furnace for setting in masonry. The radiators of these furnaces are manufactured of heavy plate iron, and all warranted gas-proof and tight. Their durability, economy, and successful operation have been fully demonstrated, and are guaranteed. Three samples of Magee's Standard Portable Ranges. Magee's Standard Brick Range (also exhibited in operation at the New England log cabin). Two samples of Magee's Standard Parlor Stove. Two samples of Standard Portable Low Down Grate. Magee's Standard Hall Stove. Magee's Standard Dining-Room Heater. Magee's Standard Cook Stove. Magee's Advance Cook Stoves. Magee's goods are eminently popular wherever used, and are warranted in every particular by the manufacturers. 222
83 Read, Josiah M., Boston, Mass.—Cooking range, stove dampers, lifter, and broilers. 222
83a Croll, Benj. P., 639 Arch street, Philadelphia, Pa.—Rhind's Patent Safety Lamp. Rhind's Patent Kerosene Safety Lamp has been placed upon the market, and the public is invited to test it. Its qualities are: First, it extinguishes itself when overburned; second, it extinguishes itself when dropped from the hand; it cannot be filled when lighted, and can be carried about at pleasure. It is so con- structed that blowing down the chimney or turning down the wick to extinguish the light is unnecessary. The New York board of underwriters have endorsed and recommended its use. Sample price, $1.25, sent free upon receipt of P. O. order. Merchants supplied at reasonable prices. 222
83b Beam, A. F., Philadelphia, Pa.—Oil tanks and cans. 224
84 Barrows, Savory & Co., Philadelphia, Pa.—Hollow ware, irons, porcelain, refrigerator, etc. 224
84a Dunglison, Richard J., Philadelphia, Pa.—Corn grater. 224
85 Farson, E. S., & Co., Philadelphia, Pa.—Refrigerators and coolers. 224
85a Reidle, E. G., & Co., Philadelphia, Pa.—Steamless tin boxes. 224
86 Gravenstine, John, Philadelphia, Pa.—Sideboard, refrigerator, and water-cooler combined. 224
86a Perkins, Eliab, Sterling, Ill.a Refrigerator. b Shutter. 227
87 Sogg, C. W., Carbondale, Pa.—a Fry-pan and vegetable turner and slicer. b Folding adjustable ironing table and skirt-board. 225
88 Lacy, Walter, Milwaukee, Wis.—Stainless steel cooking shell. 224
90 Kimball, Wm. S., Philadelphia, Pa.—Refrigerator, filler, and cooler. 224
91 Parker, Chas., Meriden, Conn.—Gas mill. 224
92 Berney, Alfred, Boston, Mass.—Teakettle, boiler, and seamer; dry, wet, and weighing measure combined; coffee cone. 224
94 Keller Manufacturing Co., Harrisburg, Pa.—Graduated quart measure. 224
95 Hess, Abram, Philadelphia, Pa.—Cooking apparatus. 224
97 Shepard, Sidney & Co., Buffalo, N. Y.—Japanned and stamped tinware, coal vases, stove boxes, ice cream freezers, spice cellars, etc. 224
98 Stites & Co., Cincinnati, O.—Iron measures, buckets, and paint pails. 224
99 Broch, Isidor, Philadelphia, Pa.—Water filter. 224
100 Acquackaunauk Manufacturing Co., Passaic, N. J.—House furnishing woodenware; stepladders, hat racks, knifewords, etc. 224
101 Rohrer, Jeremiah, Lancaster, Pa.—Refrigerator and water cooler combined. 224
101a Beach, E. R., New York, N. Y.—Match safe base for lamps. 224
103 Ford, F. G., Philadelphia, Pa.—Fires and ash pails and sieves combined; toys. 224
105 Polhemus, J. H., New York, N. Y.—Refrigerating cupboard, upright and chest refrigerator. 224
106 Newark Tea Tray Co., Newark, N. J.—Tea trays, children's trays, stove plates, dustpans, and brushes. 224
107 Dowst, Frank, Manchester, N. H.—Refrigerator. 224

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
ANNEX.

Household Utensils.


110 Olmsted, s., jr., Galesburg, Ill.—Stirrer, collar, and strainer combined.


112 Consolidated Fruit Jar Co., New Brunswick, N. J.—Fruit in Mason's glass jars. Manufacturers of Mason's fruit jars, oilers, can screws, and sheet metal wares.


113 Schneider, J., & Co., Portland, Conn.—Stamped and japanned ware; house furnishing goods.

114 Cull, Henry, Philadelphia, Pa.—Combination sink and dish cupboard and toilet stand; kitchen and dining room furniture.

115 Missouri Valley Novelty Works, St. Joseph, Mo.—Combination kitchen safe. A money saving, labor saving, household convenience. With this safe a person need not move one step in making bread, cakes, or pastry, for all the necessary machinery and ingredients are centered within reach.

116 Simes & Tate, Philadelphia, Pa.—Water filter.

117 Randle, Wm. H., Baltimore, Md.—Water coolers and refrigerators.

120 Shaw, Charles A., 110 Tremont street, Boston, Mass.—Spice box.


124 Union Manufacturing Co., Toledo, O.—Washboards, churns, lawn hose carts, kitchen woodenware.

125 Vignal, Carl, New York, N. Y.—Ice cream refrigerator.

127 Schaum, John P., Lancaster, Pa.—Copper kettles and copper ware.

128 St. Louis Stamping Co., St. Louis, Mo.—Granite iron cooking and household utensils.

130 Bollenbacher, Geo. W., Bloomington, Ind.—Kneading table, with flour and meal chest combined.


133 McDonald, T. E., New Brunswick, N. J.—Washing machine and wringer.

134 Moore, Henry, & Son, Philadelphia, Pa.—Washing machine.

134a Caldwell, M. A., North East, Pa.—Combination brush and rollers for washboard.

135 Dugdale, Jas. K., White Waters, Ind.—Clothes wringers and washers, garden cultivators.

135a Gilbert, A. C., Philadelphia, Pa.—Ironing board.

136 American Machine Co., 430 Walnut street, Philadelphia, Pa.—Crowns clothes wringers, frames of galvanized malleable iron, self-adjusting, pressure released from rolls, automatically, when out of use; efficient, practical, and durable. "Crown Fluters and Star Fluters," latest improved construction, celebrated for variety and perfection of work and ease of operation.

137 Challenge Manufacturing Co., 507 North street, Philadelphia, Pa.—Proprietor and manufacturers of Mrs. Potts's patent cold-handle sad irons, polishing, laundry, and tailors' irons.

138 Van, Aremas B., & Cheney, Henry O., Hopkins, Mass.—Washer and wringer combined.


140 Applegate, Robert O., Philadelphia, Pa.—Ironing table.

141 Duncan, W. A., Syracuse, N. Y.—Washing machine.

142 Worden, A. E., Smyrna, Del.—Washing machines.

143 Colby Wringer Co., Waterbury, Vt.—Clothes wringer, little washer.

144 Bless & Drake, Newark, N. J.—Self-heating smoothing irons, tailors' geese, sad, laundry, and polishing irons.

146 Calver, Dr. G. W. H., Columbus, N. J.—Household ironing machine, heated by gas or cook stoves. Patent for sale.


149 Jennings, A. W., Bedford, O.—Clothes washers.

150 Gove, John C., Cleveland, O.—Fruit and provision preserving house, washing machine, adjustable index writer.


154 Lamb, Geo. D., New Haven, Conn.—Little washer, iron holder.


157 Myers, A. G., New York, N. Y.—Water closets and plumbers' material.

157a Eisenmann, E., New York, N. Y.—Back and head support for the bath tub.

158 Blessing, C. A., 44 North Fifth street, Philadelphia, Pa., dealer in bath tubs, copper boilers, and plumbers' copper and cabinet ware in general.—Bath tubs, washstand, bidet.

158a Johnson & Sherman, Philadelphia, Pa.—Washstand.


159a Pease, Charles A., Boston, Mass.—Washstand.

160 Wakefield Earth Closet Co., New York, N. Y.—Earth closets, combined commode and slop pan.

161 Carrigan, Peter, Philadelphia, Pa.—Tinned and nickel-plated copper bath tubs, bidet, footbath, pantry and bar sinks, drier, and liquor cooler.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 37-45.
162 Weaver & Pennock, Philadelphia, Pa.—Marble lavatory. 226
162a Landis, S. M., Philadelphia, Pa.—Turkish bath. 226
163 Vinton, C., Hartford, Conn.—Babies’ bathtub, sitz bath. 226
164 Bacharach, M., New York, N. Y.—Street urinal. 226
165 Travis, Jos. L., Philadelphia, Pa.—Water closets, brass and plated work for plumbers and steam fitters. 226
166 Steeger, Henry, New York, N. Y.—Copper boilers, bathtubs, etc. 226
166a Barth, Gottlieb M., Philadelphia, Pa.—Improvement in window frames. 227
166b Ballentine, G. H., Philadelphia, Pa.—Cottage. 227
166c Ross, William J., West Boylston, Mass.—House building improvements, etc. 227
166d Perry, Jos. R., Wilkesbarre, Pa.—Wooden house. 227
166e Patterson, J. E., & Co., Pittston, Pa.—Doors, shutters, newel posts, etc. 227
166f Winans, Geo. G., Scranton, Pa.—Wainscoting. 227
166g Wilson, Jas. G., New York, N. Y.—Rolling wood shutters and venetian blinds. 227
166h Wright, Spencer A., Philadelphia, Pa.—Dust trap for ventilating bulk windows. 227
166i Comstock, C. C., Grand Rapids, Mich.—Doors, blinds, mouldings, etc. 227
166j Wilt, A., & Son, Philadelphia, Pa.—Sash, blinds, doors, mouldings, etc. 227
166k Huginin Manufacturing Co., New York, N. Y.—Automatic window supports. 227
166l Bradford, H., Philadelphia, Pa.—Window fastener. This is the only window fastener that locks automatically at any point, by side pressure, without destroying the frame. For sale by H. Bradford, room 26, Merchants’ Exchange, corner Third and Walnut streets, Philadelphia. 227
166m Champion Fence Co., Kenton, O.—Iron fencing. 227
166n Manly, M. M., & Son, Philadelphia, Pa.—Iron railing, wirework, etc. 227
166o Clark & Co., New York, N. Y.—Brass and iron store fronts and self-closing shutters. 227
166p Lake Champlain Manufacturing Co., Ticonderoga, N. Y.—Doors, etc. 227
166q Ford, W. A., Greensburg, Ill.—Window fastener. 227
166r Hayes, Geo. S., New York, N. Y.—Roofing. 227
166s Dayton, G. E., New York, N. Y.—Iron gutters, sashes, etc. 227
166t Crowell, S., Philadelphia, Pa.—Iron fence. 227
166u Hough & Co., Indianapolis, Ind.—Cast iron griffins. 227
166v Darby, E., & Son, Philadelphia, Pa.—Wire work. 227
166w Lynex, Richard, Philadelphia, Pa.—Wire work. 227
167a New York Slate Roofing Co. (limited), New York, N. Y.—Paints and roofing materials. 227
167b Garry Iron Roofing Co., Cleveland, O.—Roofing, window shutters, etc. 227
167c Augustine & Stuart, Philadelphia, Pa.—Metallic roofing and spouting. 227
167d Belts’ Roofing Co., Cincinnati, O.— 227
167f Fairbanks, A. G., Manchester, N. H.—Soapstone roofing. 227
167g Kessent, Jas. W., New York, N. Y.—Fireproof appliance for the security of buildings. 227
167h Swift, Charles N., New York, N. Y.—Adjustable ventilators. 227
167i Bates, J. C., Philadelphia, Pa.—Ventilating apparatus. 227
167k Bracher, T. W., New York, N. Y.—Ventilators. 227
167l Wallace, S. J, K e o k u k, 1a.—Fire-proof floors and roofs. 227
167m Penn Roofing Co., Philadelphia, Pa.—Roofing felt, etc. 227
167n Humboldt Iron Works, New York, N. Y.—Illuminating tiles. 227

Clothing, Jewelry, and Ornaments; Traveling Equipments.

167o Watts, Ethelber, Philadelphia, Pa.—Portable bath trunk. 255

Medicine, Surgery, Prothesis.

167p Crandall, Chas. J., New York, N. Y.—Crutches. 276

Hardware, Edge Tools, Cutlery, and Metallic Products.

167q Wickersham & Bro., Philadelphia, Pa.—Brass and gold pipe, etc. 283
167r Eckel, Herman, Cincinnati, O.—Enamelled iron hollow ware. 283
167s Musgrove & Son, New York, N. Y.—Fancy articles for tin wedding presents, tin, japanned and copper ware. 283
167t Lalance & Grosjean Manufacturing Co., New York, N. Y.—Granite ware, etc. 283
168 Rowland, William, & Harvey, Philadelphia, Pa.—Carriage, locomotive, and car springs; tire, sheet, cast, machinery, and blister steel. Re-rolled Norway iron, rolled and slit Norway nail rods. 284
168a Mott, J. L., Iron Works, New York, N. Y.—Plumbers’ cast iron ware, plain, galvanized, and enamelled. 284
169 Burwell, William, & Bro., Philadelphia, Pa.—Carriage mountings in silver, orichide, and gold plated. 284
169a Anderson, W. W., Philadelphia, Pa.—Models for carriage shocke. 284

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Hardware, Parts of Carriages.

171 Hoopes, Bro., & Darlington, West Chester, Pa., & at 27 James street, London, England.—Vehicle wheels of hickory and oak, fine quality and workmanship, thoroughly seasoned. Particular attention given to special styles for builders of private coaches; also Douthwaite patent wheels with wood hub and iron flanges, spokes secured in hub by wedges, and warranted not to become loose in service. Wheel material and shafts of all kinds to order. 284

172 Topliff & Ely; Elyria, O.—Tubular bow, shaft, and pole sockets for carriages; side-spring equalizers. 284

173 Kent, D. H., & Co., Wilmington, Del.—Iron hardware and coach material. 284

174 Benezet & Co., Philadelphia, Pa.—Carriage and wagon springs. 284

175 Dann, Bros., & Co., New Haven, Conn.—Carriage woodwork. 284

176 Shields, Thomas, Philadelphia, Pa.—Carriage bolts and clips, nuts, washers, etc. 284

177 Kunzig, Christian, Philadelphia, Pa.—Gold and silver carriage mountings. 284

178 Metal Stamping Co., New York, N. Y.—Carriage curtain loops and buckles, knob fasteners, etc. 284

179 Brown, S. N., & Co., Dayton, O.—Sulky, buggy, and coach wheels, hubs, spokes, bows, shafts, poles, and yokes. 284

180 Dexter Spring Co., Hulton, Pa.—Vehicle springs. 284

181 Seidler, Fred., Mechanicburg, Pa.—Spokes, felloes, hubs, shafts, poles, bows, wheels. 284

182 Sheldon & Co., Auburn, N. Y.—Carriage and wagon axles. 284

183 McKnight & Rohrer, Charlestown, W. Va.—Carriage rims; axe, pick, sledge, hammer, and hatchet handles. 284

184 Advena & Heald, Philadelphia, Pa.—Carriage and wagon axles;sted boxes. 284

185 Shields, Wm., Philadelphia, Pa.—Carriage bolts. 284

186 Cowles, C., & Co., New Haven, Conn.—Carriage trimmings and hardware. 284

187 New Haven Wheel Co., New Haven, Conn.—Wheels for vehicles. All the usual styles and qualities of unpatented wheels. Original manufacturers of the celebrated "Sarven" patent wheel. 284

188 Davis, John G., & Son, Philadelphia, Pa.—Spokes, hubs, rims, wheels, and plow handles. 284

189 Sandusky Wheel Co., Sandusky, O.—Carriage woodwork. 284

190 Woolworth, James, Sandusky, O.—Coach handles. 284

191 Smith, H. D., & Co., Plantsville, Conn.—Carriage and coachmakers' forged hardware. 284

192 Urmsrn, John, Rahway, N. J.—Hubs. 284

193 Crane, Samuel O., Newark, N. J.—Carriage wheels. 284

194 Jones, Phineas, & Co., Newark, N. J.—Coach and carriage wheels, spokes, hubs, rims, etc. 284

195 Kilburn, Isaac B., Newark, N. J.—Bent carriage woodwork and materials. 284

196 Smith, Alfred E., Brownville, N. Y.—Carriage axles. 284

197 Searls, Anson, Newark, N. J.—Carriage specialties. Whip sockets adapted to all kinds of carriages, with improved fasteners; style, finish, and durability. The "Centennial" top props for carriages, perfectly; any joint will fit; no rattle, and no nuts lost. 284

198 Union County Manufacturing Co., Elizabeth, N. J.—Wheels and wheel stock. 284

199 Skelly, Thomas, Philadelphia, Pa.—Carriage bolts, axle clips, nuts, etc. 284

200 Lockwood, C. N., & Co., Newark, N. J.—Carriage lamps and plated carriage ware. 284

201 Silas, Rogers, & Co., Sanfordville, N. Y.—Carriage and truck axles. 284

202 Springer, Morley, & Gause, Wilmington, Del.—Coach and carriage wheels, hubs, spokes, and felloes. 284

203 Baker & Co., Waller, O.—Wheels, hubs, spokes, felloes, gearing, wood in rough, etc. 284

204 Sippel, Chr., Newark, N. J.—Fancy turning for carriage trimmings. 284

205 Rubber Step Manufacturing Co., Boston, Mass.—Carriage steps, etc. 284

206 Dalzell, D., & Sons, South Egremont, Mass.—Carriage axles, axle boxes. 284

207 Seward, M., & Son, New Haven, Conn.—Carriage hardware. 284

208 Sammes, J. B., & Co., New York, N. Y.—Hubs. 284

209 Olds, N. G., & Sons, Fort Wayne, Ind.—Wheels, hubs, buggy seats, and plow handles. 284

210 Leippe, Jacob A., Anchor Bending Works, Lancaster, Pa.—Shafts and rims. 284

211 Wrigglesworth, W. J., Darlington, Wis.—Wheels for carriages, buggies, wagons, etc. 284

212 Logansport Manufacturing Co., Logansport, Ind.—Wagon and carriage spokes, bent felloes, shafts, and soles. 284

213 Cunningham, Ports, & Co., Postoria, Pa.—Spokes, felloes, neck yokes, whiffletrees, pick and hammer handles, etc. 284

214 Strathorn, Pierson, & Co., Toughkenamon, Pa.—Carriage wheels. 284

215 Lebzelter, Philip, Lancaster, Pa.—Spokes, felloes, shafts. 284

216 Paine Bros., New York, N. Y.—Hickory and ash handles, carriage and wagon woodwork, hardwood lumber. 284

217 Stockton Spoke Works (W. V. Case, Bro., & Co.), Stockton, N. J.—Spokes, whiffletrees, neck yokes, handles, and carriage woodwork. 284

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Wooden and Basket Ware, Carriages.

216 Woodburn Sarven Wheel Co., Indianapolis, Ind.—Sarven and common hub wheels. Manufacturers of the celebrated "Sarven Patent Wheel," used for all kinds of vehicles; also, common wood hub wheels. Send for our Price List.

217 Frohock, Wm. Thompson, Philadelphia, Pa.—Suspension steel buggy wheels, nickel-plated spoked, etc.

218 Hayden & Smith, Auburn, N. Y.—Saddlery, and carriage hardware; finished forgings for carriages; slot fifth wheels; Saunders' patent shaft shackles, patent iron-clad hames, Scotch hames, Concord hames, Kinne's patent trace buckles; all wrought, guaranteed, Braddooin bits.


219a Welsh & Lea, Philadelphia, Pa.—Carriage and tire bolts, nuts, axle clips, etc.

220 Gould, C. H., Philadelphia, Pa.—Rubber steps, etc.


220d Meinecke, Adolph, Milwaukee, Wis.—Ladies' baskets and willow ware.

220r French Paper Ware Co., Springfield, N. J.—Pails, tubs, etc.

221 Tower, Wm. F., & Bro., Hinsdale, Mass.—Ash baskets, for use in mills.


225 Eberhardt, F., Philadelphia, Pa.—Baskets, cradles, workstands, etc.


227 Crane Bros., Westfield, Mass.—Paper baskets, buckets, cans, etc.

228 Hoppard & Smith, Athol, Mass.—Match sticks.

Carriages, Vehicles, and Accessories.


233 McCluer & Kendall, Wilmington, Del.—Phaetons, rockaway, family, park, and seaside carriages.


235 Jacobs, S. W., & Son, Philadelphia, Pa.—Pleasure carriages.

236 Childs, Geo. K., Philadelphia, Pa.—Shifting top buggy, track sulky.

237 Lane, D. M., & Son, Philadelphia, Pa.—Extension top bret, phaeton, falling top buggy.

238 Haskell Bros., Philadelphia, Pa.—Road top wagon.


239a Wood Bros., New York, N. Y.—Brooklyn, vis-a-vis, top wagon, landau, T and dog cart.

240a Hill, J. W. R., Brentwood, N. Y.—Carriage, with pedal driving attachment.

241 Stone & Kaighn, Philadelphia, Pa.—Doll carriage, boys' wagon, and wheelbarrow.

242 Caffrey, Chas. S., Camden, N. J.—Skeleton sulky, shifting top buggy, phaetons.

243a Oppenheim, Fred., San Francisco, Cal.—Buggies.

243b Townsend, Chas. T., New Haven, Conn.—Phaeton and wagon bodies.


245a Doland & Scherb, San Francisco, Cal.—Light carriages.

245b Stivers, Rufus M., New York, N. Y.—Pleasure carriages or buggies.

246a Bailey & Wilson, Oxford, Pa.—Trotting wagon.

246b Studebaker Bros. Manufacturing Co., South Bend, Ind.—Top buggy.

247 Hefield & Jackson, Rahway, N. J.—Light pleasure carriages.

248a Cowallader, Fitz Gibbon, & Co., Trenton, N. J.—Road wagon, top buggy.

249a Rech, Jacob, Philadelphia, Pa.—Phaetons, top buggy, Jenny Lind.

249b Scranton, L. S., Grand Rapids, Mich.—Track sulky, buggy.

250a Clymer, F. T., Wilmington, Del.—Phaeton, phaeton, and buggy body.

251 Colyer, J., & Co., Newark, N. J.—Westchester, rockaway, top buggy, road wagon.

252 Crosby, Gilsinger, & Co., Ron- dout, N. Y.

252a Light carriages.

252b Velocipede.

253a Randall, Jas. V., Newtown, Pa.—Extension phaetons.

253b Guthrie, Jones, & Co., Wilmington, Del.—Buggies.

254a Cunningham, James & Son, Rochester, N. Y.

254a Laundus, landaulet, top buggy.

254b Heiland.

255a Gosling, J. W., Cincinnati, O.—Brett carriage, top buggies, side bar wagon.
250 Renick, Curtis, & Co., Greenastle, Ind.—Combined carriage and buggy; combined carriage and buggy bodies. 292

251 Wright, W. H., & Co., Wilmington, Del.—Double jump seat carriage. 292

252 Mellinger Jump Seat Co., Harrisburg, Pa.—Jump-seat carriage. 292

253 Hall, James, & Son, Boston, Mass.—Berlin coach; top and shifting top buggies. 292

254 Enders, J., & Co., Louisville, Ky.—Top buggy with side bar attachment. 292

255 Sargent & Ham, Boston, Mass.—Extension top park phaeton. 292

256 Scovill, S. S., & Co., Coldwater, Mich.—Box buggy and track sulkies. 292

257 McDermott, John, & Bros., Washington, D. C.—Shifting top buggy. 292

258 Green, John, Wilmington, Del.—Jump seat and doctors' rockaways. 292

259 McLear, Alfred, West Chester, Pa.—Shifting carriage and shifting top buggy. 292

260 Gilman, F. C., Montpelier, Vt.—Track sulky, open wagon. 292

261 Rodgers, S. C., Philadelphia, Pa.—Shifting top, side bar wagon; one-man wagon. 292

262 Behlen, Charles, Cincinnati, O.—
    a Barouche, physician's phaeton. 292
    b Hearse. 292

264 Tonsend, Chaas: T., New Haven, Conn.—Phaeton, road wagon, and willow shell bodies. 292

265 Killam, H., & Co., New Haven, Conn.—Plasure carriages. 292

266 Manville, B., & Co., New Haven, Conn.—Rockaways, cabriolet, Tcart. 292

267 Hub Publishing Co., New York, N. Y.—Hand drawings of carriages. 292

268 Grube, Chaas., New York, N. Y.—Park phaeton, top buggy. 292

269 Good, James, & Co., Albany, N. Y.—
    a Drawing-room coach, buggy. 292
    b Sleights, cutter. 295

270 Stone, Frank P., Chicago, Ill.—Porter buggy. 292

271 Pray Bros., Boston, Mass.—Godard buggy, track sulky. 292

272 Packard, C. F., & Co., West Farmington, Me.—Side spring platform wagon, and track wagon. Given first mention and silver medal at the Maine State Fair, 1874. 292

273 Sargent, William P., & Co., Boston, Mass.—
    a Buggies, carriages. 292
    b Sleights. 295

274 Smith, J. T., & Co., Boston, Mass.—Top buggies. 292

275 Durham & Wooster, New Haven, Conn.—Landauet coupled, London phaeton. 292


277 St. James, C., Pittsfield, Mass.—Single carriage, thill and pole. 292

278 Jones, Phineas, & Co., Newark, N. J.—Track sulky. 292

280 Tibbals, Lewis P., New York, N. Y.—Baby carriage. 293

281 Tabb, Downing & Co., Concord, N. H.—Concord coaches. 293

281a Dare, C. W. F., New York, N. Y.—Child's carriage. 293

282 Conover, J. A., & Son, New York, N. Y.—Spring leaping-horses, baby carriage. 293

283 Oppenheimer, Solomon, Newark, N. Y.—Improvement in children's carriages. 293

283a Yost, T. A., Philadelphia, Pa.—Children's carriages and velocipedes. 293

284— Wentworth, Chas. H., Eddystone, Pa.—Child's folding carriage. 293

285 Richardson, McKee & Co., Boston, Mass.—Child's carriage. 293

285a Montpelier Manufacturing Co., Montpelier, Vt.—Children's carriages. 293

285b Jury, F. Hermann, New York, N. Y.—Child's folding carriage. 293

286 McIntire, J. Frank, Boston, Mass.—Children's carriages. 293

287 Cole & Ballard, Newark, N. J.—Baby carriages, velocipede, sled, and wagon. 293

288 Newgton & Shelton Carriage Co., Birmingham, Conn.—Children's carriages. 293

289 Steiner, Geo. P., Baltimore, Md.—Children's convertible sleeping coaches and walking and nursery chair autovehicle. 293

290 Fraley, G. W., & Co., Philadelphia, Pa.—Baby's canopy-top coach, velocipede. 293

291 Crandall & Co., New York, N. Y.—Children's carriage. 293

292 McIntire, Samuel, New York, N. Y.—Baby carriages. 293

293 Crandall, J. A., Brooklyn, N. Y.—Child's carriage and carriage combined, play goods, etc. 293

294 Youle, William, Norwalk, Conn.—Hearse. 293

295 Paris Hill Manufacturing Co., Paris Hill, Me.—Children's carriages and sleds. 293

296 Hunt, Wm., Camden, N. J.—Passenger vehicles. 293

297 Pickering, Thos. R., Portland, Conn.—Velocipede. 293

298 Smith, John, & Son, South Gray, Me.—Sleigh. 295

298a Mayer, John W., Rondout, N. Y.—Albany cutter. 295

299 Smith, Hugh, Gray, Me.—Double and single sleighs. 295

299a Wagner, Geo. W., Roxborough, Pa.—Sleigh. 295

300 Russell, Joseph, cor. Congress & Oak streets, Portland, Me.—Fine carriages and sleighs. 295

300a Dann Bros. & Co., New Haven, Conn.—Carriage wood work, bodies, seat backs, gearings, bows, shafts, etc. 296

300b Hill, J. R., & Co., Concord, N. H.—Harness. 296

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
Scientific Instruments, Railway Cars and Appliances.

301 Pennsylvania Working Home for Blind Men, Philadelphia, Pa.—Harness. 296
301a Phillips, Samuel R., Philadelphia, Pa.—Four-in-hand harness on wooden horses. 296
301b White Manufacturing Co., Bridgeport, Conn.—Carriage trimmings and lamps. 296
303 Baldwin, Jos., & Co., Newark, N. J.—Saddlery hardware, hand forged and malleable; bits. 296
304 Hayden & Smith, Auburn, N. Y.—Hames and trimmings for harness. 296

Institutions and Organizations.
304a Barry, Peter, New York, N. Y.—The arms of the Revolutionary patriots. 312

Scientific and Philosophical Instruments and Methods.
304b Keller Manufacturing Co., Harrisburg, Pa.—Graduated measure. 322
304c Fournier, Stanislas, New Orleans, La.—Tell-tale clock and starter. 322

Physical, Social, and Moral Condition of Man.
304d Curtis, Albert W., Williamsport, Pa.—Centennial swing. 340

Motors and Apparatus for the Generation and Transmission of Power.
304e Miller, Joseph A., Providence, R. I.—Models for locomotive boilers. 550

Hydraulic and Pneumatic Apparatus, Pumping, Hoisting, and Lifting.
304f Miller, A. R., & Son, Attica, N. Y.—Automatic carriage jack. 563
304g Miller, Joseph A., Providence, R. I.—Hose carriage. 564

Railway Plant, Rolling Stock, and Apparatus.
305 Jackson & Sharp Co., Wilmington, Del.—Ordinary and narrow gauge passenger cars. 571
306 Harlan & Hollingsworth Co., Wilmington, Del.—Parlor car, narrow gauge passenger car. 571
306a Clark, Geo. P., Boston, Mass.—Combined locomotive, baggage, and passenger car. 571
307 Hanse, John A., Philadelphia, Pa.—Model freight car, hose shield, floor and door clamps, ratchet drills. 571
308 Pullman's Palace Car Co., Chicago, Ill.—Drawing-room car, hotel car. 571
311 Hedden, James, Philadelphia, Pa.—Car model, showing improvement in bumper springs, platform and draw heads. 571

312 Ustick, Stephen, Philadelphia, Pa.—Car model, showing improved coupling and journal lubricators. 571
313 Stephenson, John, & Co., New York, N. Y.—One and two horse street cars. 571
314 Towle Manufacturing Co., New York, N. Y.—Bell punches and fare registers. 571
314a Crosby & Hecker, Rondout, N. Y.—Car coupler. 571
314b Russell, H. G., Lincoln, Ill.—Car coupler. 572
314c World's Champion Car Coupler Co., Tiffin, O.—Car coupler. 572

315 Darling, Samuel, Providence, R. I.—Improved ventilating car window. Manufacturer of a great variety of new patent inkstands, on new principles, being so arranged that the writer can regulate, with great accuracy, the quantity of ink to be taken upon the pen. They are made in styles and at prices to suit all classes of writers. One (non-spilling) is especially adapted for home use. Pen-cleaners, on a new principle, an indispensable article. A new glass for church windows, which will keep out the sun, and let in more light than any before produced. A standard medicine-dropper, by which medicine can be dropped with facility in drops of the exact standard size. 573
316a Hindman, Thos., Pittsburg, Pa.—Whiffletree and shaft-coupling. 573
316b Blaisdell, Geo. P., North Easton, Mass.—Self-lubricating carriage axles. 573
316c Locke, John, Philadelphia, Pa.—Hubs for wheels. 573
316d Hunter, G. W., Philadelphia, Pa.—Railroad tie lifter. 573
317 Morgan, Richard Price, Jr., Bloomington, Ill.—Elevated railway for cities, adopted by the Rapid Transit Commission of New York, Oct. 4, 1875. This structure is designed to sustain a double track steam railway, over the centre of streets, at such height as not to interfere with their ordinary traffic. The transverse supports which carry the longitudinal trusses, which directly uphold the tracks, spring from the sidewalks, opposite each other, near the curb, meeting over the centre of the street, forming an effective pointed gothic arch. 577
317a Crozier, H. P., Brooklyn, N. Y.—Horse car starter. (Outside.) 577
318 Jones, J. M., & Co., West Troy, N. Y.—Street and excursion street cars. 577
319 Williams, R. L., Middle Granville, N. Y.—Self-coupler for cars. 577
320 Schopp, Phil. J., Louisville, Ky.—Pneumatic screw ventilator. 577
321 Crocker, L. O., East Braintree, Mass.—Conductors' railway ticket punches. 577
322 Stewart, S. N., Philadelphia, Pa.—Model of an ice boat. 594

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
ANNEX.

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GREAT BRITAIN.

323 McNaught & Smith, London.—Landau, barouche, coupé, and brougham.

324 Peters & Sons, London.—Park and road drags, landau, broughams, phaetons, and Whitechapel cart.

325 Hooper & Co., London.—Four-in-hand drags, phaetons, barouche, brougham, and landau.

326 Thorn, C., Norwich.—Phaetons, brougham, gig, charabanc, shooting cart, landau, and wagonette.

327 Roberts, John, Manchester.—Pony phaeton.

328 Mulliner, Henry, Leamington.—Brougham, Whitechapel cart, landau, and dog-cart phaeton.


330 Thompson, Chas., London.—Child’s perambulator.

330 Haynes & Jeffries, Coventry.—Bicycles.

330 Roberts, C. D., Coventry.—Bicycles.

NEW SOUTH WALES.

331 Robertson, John, Sydney.—Concord buggy with canoe front; wood work and iron work entirely of New South Wales material.

CANADA.

332 Legaie, J. B., Quebec.—Cariole.

333 Ashley, Chas., Foxboro'.—Phaeton.

334 Knox & Wrothwell, Goderich.—Buggy.

335 De Wolfe, J. M., Halifax.—Phaetons.

336 Ledoux, B., Montreal.

337 Kew, Wm., & Son, Beamsville.

338 Wood & Lyons, Brantford.

339 Conboy, Daniel, Uxbridge.—Adjustable-back sleigh.

340 Dick & Kirschten, Offenbach-on-Main.—Axles, springs, fifth wheels, etc.

341 Armbruster, S., Vienna.

342 Locati, Alessandro, Torino.—Street cars.

343 Schmidt, Edward, St. Petersburg.—Spring tester.

344 Nellis, Charles, St. Petersburg.—Victoria.

345 Wemick, Joseph, Warsaw.—Drosky.

346 Arbatsky, Nicholas, Moscow.

347 Zimmerman, Roman, Moscow.—Saddlery and harnesses.

348 Elevin, Michael, Moscow.—Harnesses.

349 Brandstetler, Frederick, Warsaw.—Harnesses.

350 Shishkin, Stephen, Moscow.—Harnesses.

351 Koorikoff, P., St. Petersburg.—Harnesses.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 27-45.
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1876
Official Catalogue.

PART II.
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DEPARTMENT IV.—ART.

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N. B.—The Art exhibit of the following countries is installed, wholly or in part, in the Main Building and catalogued in Part I., viz.: Great Britain, New South Wales, Queensland, Victoria, South Australia, New Zealand, Cape of Good Hope, France, Germany, Austria, Denmark.

The Spanish Government Building contains additional works of art.

The Women’s Pavilion contains works of art from the following countries (Official Catalogue, Part III.), viz.: United States, Great Britain, Canada, France, Italy, Sweden, Norway.

(8)
No. 101. ART GALLERY.

Size 365 by 210 feet.

Contractor, R. J. Dobbins.

Iron work furnished by Edgemoor Iron Co., Pencoyd Rolling Mills, Kittredge Cornice Co.


Memorial Hall, built at a cost of $1,500,000, by the State of Pennsylvania and City of Philadelphia, is placed at the disposal of the Centennial Commission, to be used during the Exhibition as an Art Gallery, after which it is designed to make it the receptacle of an Industrial Art Museum, similar to the South Kensington Museum, at London. The design is modern renaissance, and the structure is fire-proof. It covers an acre and a half, and is 365 feet long, 210 feet wide, and 59 feet high, over a basement 12 feet high. A dome, rising 150 feet above the ground, surmounts the centre, capped by a colossal ball, from which rises the figure of Columbia. The main front of this building looks southward, displaying a main entrance in the centre consisting of three arched doorways, a pavilion on each end, and two arcades connecting the pavilions with the centre. The entrance is 70 feet wide, to which there is a rise of 13 steps. Each of the doorways is 40 feet high and 15 feet wide, opening into a hall. In each pavilion there is a window 12½ feet by 34 feet, eight in all, which will be used for the display of stained glass, glass paintings, etc. The arcades designed to screen the long walls of the galleries each consist of five groined arches, and form promenades looking outward over the grounds and inward over open gardens extending back to the main wall of the building. These garden-plots are each 90 feet by 36 feet, ornamented in the centre with fountains, and intended to display statuary. The rear or north front of the building is of the same general character as the main front, but, in place of the arcade, has a series of arched windows, twelve in number, with the entrance in the centre. Between the pavilions is the grand balcony, a promenade 275 feet long and 45 feet wide, elevated 40 feet above the ground, and overlooking to the northward the grounds of the Park. On each front of the buildings the entrances open into halls, 82 feet long, 60 feet wide, and 53 feet high. These, in turn, open into the centre hall, 83 feet square, the ceiling rising over it 80 feet in height. From the east and west sides of this central hall extend the galleries, each 98 feet long, 48 feet wide, and 35 feet high. These galleries have temporary divisions for the better display of paintings, and, with the central hall, form a grand hall 287 feet long and 83 feet wide, capable of comfortably accommodating 8000 persons. From the galleries
doorways open into two smaller galleries, 89 feet long and 28 feet wide. These open north and south into apartments connecting with the pavilion rooms, and forming two side-galleries 210 feet long. Along the whole length of the north side of the main galleries and central hall extends a corridor 14 feet wide, opening on its north line into a series of rooms, twenty-three in number, designed for studios and smaller exhibition rooms. All the galleries and the central hall are lighted from above; the pavilions and studios from the sides. The pavilions and central hall are designed especially for the exhibition of sculpture. This building gives 75,000 square feet of wall space for painting, and 20,000 square feet of floor space for statues, etc. The skylights throughout are double, the upper being of clear glass and the under of ground-glass.

The erection of the building was begun July 4, 1874, and finished March 1, 1876.

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No. 102. ANNEX TO ART GALLERY.

Great as is the space afforded in the Memorial Hall, the applications from American and foreign artists proved so greatly in excess of its capacity as to require the erection of a much more spacious building. This, though only of brick, harmonizes architecturally with the Memorial Hall, and is to be permanent. It stands just in the rear of the original Art Gallery. It affords 60,000 square feet of wall space available for paintings, and contains 30 galleries, each 40 feet square, besides 4 galleries, each 100 feet long by 54 feet wide, and two transverse central corridors, 20 feet wide.
MEMORIAL HALL.—Ground Plan.

A. Italy.
B. United States, Gt. Britain, Germany, France, Italy.
C. United States.
D. Great Britain.
E. France.
F. Germany.
G. Austria.
H. Spain and Sweden.
I. France.

J. Germany.
K. United States, Norway.
L. Great Britain.
M. Russia.
N. Italy.
O. Belgium.
P. Great Britain.
Q. Great Britain.
R. Great Britain.
S. Great Britain.

T. Great Britain.
U. Italy.
V. Italy.
W. Italy.
X. United States.
Y. United States, (Great Britain.
Z. United States, (Germany and France.

ART GALLERY ANNEX.—Ground Plan.

1. Italy.
2. Italy.
3. Italy.
4. Italy.
5. Netherlands.
6. United States.
8. Denmark.
10. Argentine Republic.
11. Chili.
12. Mexico.
15. United States.

16. United States.
17. Italy.
18. United States.
19. Italy.
20. United States.
22. United States.
23. Belgium.
24. United States.
25. Spain.
27. Portugal.
28. United States.

29. Portugal.
30. Brazil.
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32. France.
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CLASS 402.—Medals, pressed and engraved; electrotype copies of medals.
CLASS 403.—Hammered and wrought work—repoussé and rehaussé work, embossed and engraved relief work.
CLASS 404.—Cameos, intaglios, engraved stones, dies, seals, etc.
CLASS 405.—Carvings in wood, ivory, and metal.

PAINTING.

CLASS 410.—Paintings in oil on canvas, panels, etc.
CLASS 411.—Water color pictures; aquarelles, miniatures, etc.
CLASS 412.—Frescoes, cartoons for frescoes, etc.
CLASS 413.—Painting with vitrifiable colors. Pictures on porcelain, enamel, and metal.

ENGRAVING AND LITHOGRAPHY.

CLASS 420.—Drawings with pen, pencil, or crayons.
CLASS 421.—Line engravings from steel, copper, or stone.
CLASS 422.—Wood engravings.
CLASS 423.—Lithographs, zincographs, etc.
CLASS 424.—Chromo-lithographs.

PHOTOGRAPHY.

CLASS 430.—Photographs on paper, metal, glass, wood, fabrics, or enamel surfaces.
CLASS 431.—Prints from photo-relief plates, carbon prints, etc.
CLASS 432.—Photo-lithographs, etc.
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INDUSTRIAL AND ARCHITECTURAL DESIGNS, MODELS, AND DECORATIONS.

CLASS 440.—Industrial designs.
CLASS 441.—Architectural designs; studies and fragments, representations and projects of edifices; restorations from ruins and from documents.
CLASS 442.—Decoration of interiors of buildings.
CLASS 443.—Artistic hardware and trimmings, artistic castings, forged metal work for decoration, etc.

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[Works of Art marked with an asterisk (*) are for sale.  Information may be obtained at the Art Bureau, Memorial Hall.]

(Memorial Hall, Central Gallery, West.)

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<td>248</td>
<td>Heade, M. J., New York</td>
<td>*Off the California Coast</td>
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<td>Moran, Peter, Philadelphia</td>
<td>Return of the Herd</td>
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<td>Sonntag, W. L., New York</td>
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<td>Bridgeman, F. A., New York</td>
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<td>Schussele, C., Philadelphia</td>
<td>The Iron-Worker</td>
<td>Mrs. Joseph Harrison</td>
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<td>253</td>
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<td>Moonlight in New York Bay</td>
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<td>254</td>
<td>Hicks, Thos., New York</td>
<td>Portrait—Dr. Gray</td>
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<td>Elliott, C. L. (deceased), New York</td>
<td>Portrait—Dr. Cheesman</td>
<td>New York Hospital</td>
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<td>Weber, Philip, Philadelphia</td>
<td>*Twilight</td>
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<td>Henry, E. L., New York</td>
<td>Old Clock on the Stairs</td>
<td>R. Gordon</td>
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<td>Johnson, Eastman, New York</td>
<td>*Milton and his Daughters</td>
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<td>Sartain, Emily, Philadelphia</td>
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<td>Irving, J. B., New York</td>
<td>Cardinal Welsey and his Friends</td>
<td>P. Van Volkenburg</td>
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<td>Haseltine, W. S., Philadelphia</td>
<td>*Ruins of Roman Theatre, Sicily</td>
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<td>Lambdin, G. C.</td>
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<td>Homer, Winslow</td>
<td>The American Type</td>
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<td>Thompson, A.</td>
<td>Virginia in the Olden Time</td>
<td>D. H. McAlphine</td>
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<td>Markham, C. C.</td>
<td>My Grandmother (93 years old)</td>
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<td>La Farge, J.</td>
<td>Wreath of Flowers</td>
<td>G. V. Hecker</td>
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(Annex, Gallery No. 16.)

**AMERICAN SOCIETY OF PAINTERS IN WATER COLORS, OF NEW YORK.**

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<td>271</td>
<td>Hennessey, W. J.</td>
<td>The By-Path</td>
<td>Mrs. Charles Post</td>
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<td>An Old Song</td>
<td>Mrs. C. P. Hemenway</td>
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<td>273</td>
<td>Scott, Wm.</td>
<td>*Margaretta B. Moore</td>
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<td>274</td>
<td>Fenn, Harry</td>
<td>Old Convent Gate, St. Augustine, Florida</td>
<td>Joseph Wilde</td>
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<td>275</td>
<td>Burling, Gilbert</td>
<td>*Study of Owl and Ducks</td>
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<td>276</td>
<td>Tiffany, Louis C.</td>
<td>The Old and New Mosques, Ali</td>
<td>J. Holme Maghee</td>
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<td>Hassimin and Sultan El Carmel, Cairo</td>
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<td>Tiffany, Louis C.</td>
<td>Lazy Life in the East—Gate of the</td>
<td>John Taylor Johnston</td>
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<td>Sub-Treasury, Tangiers</td>
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<td>278</td>
<td>Falconer, J. M.</td>
<td>*No. 78, Cross Street, Boston</td>
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<td>Smillie, James D.</td>
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<td>J. T. Smith</td>
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<td>Magrath, William</td>
<td>An Irish Thatched Cottage</td>
<td>Charles S. Smith</td>
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<td>282</td>
<td>Perry, E. Wood.</td>
<td>*Anne Hathaway’s Kitchen</td>
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<td>283</td>
<td>Colman, Samuel</td>
<td>Mosque of Sidi Hallui, Tlemcen</td>
<td>J. Jacob Astor</td>
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<td>De Golier, Miss.</td>
<td>Purple Iris</td>
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<td>Boughton, George</td>
<td>Normandy Girl caught in a Shower</td>
<td>Robert L. Stuart</td>
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<td>Eaton, J. O.</td>
<td>Out of Mischief</td>
<td>E. M. Clark</td>
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<td>Bryan H. Smith</td>
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<td>Falconer, J. M.</td>
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<td>121 South Second Street</td>
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<td>Baldwin, A. H.</td>
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<td>293</td>
<td>Colman, Samuel</td>
<td>Corpus Christi Day, Seville, Spain</td>
<td>John Sherwood</td>
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<td>Hart, William</td>
<td>Mount Madison, N.H.</td>
<td>Nicholas Saltus</td>
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<td>Satterlee, Walter</td>
<td>*One Hundred Years Ago.</td>
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<td>296</td>
<td>Farrer, Henry</td>
<td>*Windy Day on Long Island</td>
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<td>297</td>
<td>Jones, Alfred</td>
<td>Feeding Dolly</td>
<td>Jas. D. Smillie</td>
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<td>Richards, William T.</td>
<td>Old Trees at Atlantic City</td>
<td>Geo. Whitney</td>
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<td>McDonald, Margaret, New York,</td>
<td>*Head of a Shepherd Dog.</td>
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<td>310</td>
<td>Thomas, Mrs., New York,</td>
<td>Phlox and Larkspur.</td>
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<td>Thomas, Mrs., New York,</td>
<td>Flowering Almond.</td>
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<td>Mrs. Horace Waters.</td>
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<td>*Dolly's Breakfast.</td>
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<td>McDonald, Margaret, New York,</td>
<td>Primroses.</td>
<td>Townsend Cox.</td>
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<td>Smith, F. Hopkinson, New York,</td>
<td>*&quot;In the Darkling Wood.&quot;</td>
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<td>329</td>
<td>Fenn, Harry, New York,</td>
<td>Old Fireplace of the Author of &quot;Home, Sweet Home.&quot;</td>
<td>Samuel Wilde.</td>
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<td>Fruit.</td>
<td>J. O. Thurston.</td>
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<td>Colman, Samuel, New York</td>
<td>Arch of Constantine, Rome</td>
<td>Artist.</td>
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<td>357</td>
<td>Bellows, A. F., New York</td>
<td>Study of a Head.</td>
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<td>Study, Sentinel Rock, Yosemite Valley</td>
<td>James Smillie.</td>
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<td>Falconer, John M., Brooklyn</td>
<td>*No. 15 Chatham Street, New York</td>
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<td>365</td>
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<td>*Quilting.</td>
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<td>Bridges, Fidelia, Brooklyn</td>
<td>*Corner of a Rye-Field.</td>
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<td>Smith, Henry P., New York</td>
<td>Sultry Morning on Long Island Sound.</td>
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<td>369</td>
<td>Hill, John W., New York</td>
<td>Study of Quail.</td>
<td>Miss E. Ripley.</td>
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<td>Miss Schuyler.</td>
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<td>F. H. Smith.</td>
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<td>Samuel Wilde.</td>
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<td>376</td>
<td>Moran, Thomas, Newark, N.J.</td>
<td>*Hot Springs of the Yellowstone, Wyoming Territory.</td>
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<td>377</td>
<td>Tiffany, Louis C., New York</td>
<td>Street Scene in Cairo, Egypt.</td>
<td>George D. Morgan.</td>
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<td>George Whitney.</td>
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<td>382</td>
<td>Darley, F. O. C., New York</td>
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<td>394</td>
<td>Hill, John W., New York</td>
<td>Landscape.</td>
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(Annex, Gallery No. 6.)

**OIL PAINTINGS.**

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<td><em>Old Mill.</em></td>
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<td><em>The Old Oaken Bucket.</em></td>
<td>Jane M. Hodges.</td>
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<td>Shattuck, A. D., New York</td>
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<td>Hamilton, H., Buffalo</td>
<td>The Valley of Fountains.</td>
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<td>Lo! the Poor Indian.</td>
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<td>Johnson, Frost, New York</td>
<td>Good Weight.</td>
<td>G. W. Hollis.</td>
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<td>MacKnight, Mrs. S. R., New York</td>
<td><em>&quot;When the Cat's away,&quot; etc.</em></td>
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<td>Ogilvie, Clinton, New York</td>
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<td>R. M. Olyphant.</td>
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<td>Chas. Tracey.</td>
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<td>Chimborazo</td>
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<td>Mrs. W. J. Hays.</td>
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<td>F. Carpenter.</td>
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<td>The Critical Moment</td>
<td>W. C. Prime, LL.D.</td>
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<td>De Haas, M. F. H., New York</td>
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<td>Lilies</td>
<td>Alex. Warner.</td>
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<td>Coleman, C. C., Rome</td>
<td>The Troubadour</td>
<td>Mrs. W. Wilkeson.</td>
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(Annex, Gallery No. 6.)

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<td>452</td>
<td>Gifford, Miss I. G., Syracuse, New York</td>
<td>*Bust of Rev. S. J. May</td>
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<td>Pardessus, E. V., Brooklyn</td>
<td>Bust of Hon. E. B. Washburne</td>
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(Annex, Gallery No. 14.)

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<td>*Late Afternoon near Albany</td>
<td>Dr. S. L. Close.</td>
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<td>Lake George</td>
<td>Winthrop B. Smith.</td>
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<td>Whittredge, W., New York</td>
<td>The Pilgrims of St. Roche</td>
<td>S. A. Foot.</td>
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<td>Woods of Ashokan</td>
<td>R. Butler.</td>
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<td>Johnson, Eastman, New York</td>
<td>Bo-peep</td>
<td>Wm. A. Hamilton.</td>
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<td>Twilight on the Western Plains</td>
<td>J. S. Shultz.</td>
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<td>Weir, J. F., New Haven</td>
<td>Lago Maggiore</td>
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<td>Rocky Mountains, from the Platte River.</td>
<td>Century Club.</td>
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<td>Mignot, L. R. (deceased), New York</td>
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<td>Century Club.</td>
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<td>California Fish.</td>
<td>A. Bierstadt.</td>
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<td>Weir, R. W., West Point</td>
<td>Taking the Veil.</td>
<td>A. C. Alden.</td>
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**SCULPTURE.**

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<td>Ives, C. B., Rome,</td>
<td>Nursing the Infant Bacchus.</td>
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**ARCHITECTURAL DESIGNS.**

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<td>728</td>
<td>Schwarzmann, H. J., &amp; Kafka, H., Philadelphia,</td>
<td>Interior of Judges' Hall.</td>
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<td>730</td>
<td>Schwarzmann, H. J., &amp; Kafka, H., Philadelphia,</td>
<td>Judges' Hall.</td>
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<td>731</td>
<td>Schwarzmann, H. J., &amp; Kafka, H., Philadelphia,</td>
<td>Horticultural Hall.</td>
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<td>732</td>
<td>Schwarzmann, H. J., &amp; Kafka, H., Philadelphia,</td>
<td>Interior of Horticultural Hall.</td>
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<td>734</td>
<td>Schwarzmann, H. J., &amp; Kafka, H., Philadelphia,</td>
<td>Memorial Hall.</td>
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<td>735</td>
<td>Schwarzmann, H. J., &amp; Kafka, H., Philadelphia,</td>
<td>Competitive design, Vienna Exhibition.</td>
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UNITED STATES.

NO.  ARCHITECT.  TITLE.

738  Schwarzmänner, H. J., & Kafka, H.,  Memorial Hall.
     Philadelphia,

739  Schwarzmänner, H. J., & Kafka, H.,  Memorial Hall.
     Philadelphia,

740  Schwarzmänner, H. J., & Kafka, H.,  Interior of Memorial Hall.
     Philadelphia,

741  Schwarzmänner, H. J., & Kafka, H.,  Original building with alteration.
     Philadelphia,

742  Schwarzmänner, H. J., & Kafka, H.,  Original design for the International Exhibition, 1876.
     Philadelphia,

743  Schwarzmänner, H. J., & Kafka, H.,  Judges’ Hall.
     Philadelphia,

744  Schwarzmänner, H. J., & Kafka, H.,  Board of Finance Building.
     Philadelphia,

745  Schwarzmänner, H. J., & Kafka, H.,  Centennial Bank.
     Philadelphia,

     Philadelphia,

747  Schwarzmänner, H. J., & Kafka, H.,  Residence in Munich.
     Philadelphia,

748  Schwarzmänner, H. J., & Kafka, H.,  Designs for villas.
     Philadelphia,

749  Schwarzmänner, H. J., & Kafka, H.,  Dining-room decorations.
     Philadelphia,

750  Schwarzmänner, H. J., & Kafka, H.,  Dining-room decorations.
     Philadelphia,

     Philadelphia,

752  Howe, Frank M.,  House in Cambridge.

753  Fehmer, Carl, Boston,  Howe Building, Boston.

754  Richards, Henry,  House at Beverly Farms, Mass.

755  Richards, Henry,  Homœopathic Hospital.

756  Hartwell, Swasey & Co., Boston,  Design for proposed Central Church, Fall River.

757  Cummings & Sears,  Montgomery Building.

758  Cabot & Chándler, Boston,  Soldiers’ monument at Brookline, Mass.

759  Howe, F. M.,  Proposed City Hall, Providence, R.I.

760  Whitney, L. W., Boston,  Residence on Fairfield Street, Boston.

761  Whitney, L. W., Boston,  Residence on Boylston Street, Boston.

762  Fehmer, Carl, Boston,  Building for the Simmons Estate, Boston.

763  Hartwell, Swasey & Co., Boston,  Dexter Building, Pawtucket, R.I.

764  Luce, Clarence S., Boston,  Monument at Brookline, Mass.

765  Richards, Henry, Boston,  Proposed High School, Providence, R.I.

766  Longfellow, W. P. P., Boston,  Design for a house.


768  Newcomb, L., & Son,  Library.

769  Earle & Fuller, Boston,  Buildings at Worcester, Mass.

770  Earle & Fuller, Boston,  Dining-room.

771  Earle & Fuller, Boston,  All Saints’ Church, Worcester.

772  Longfellow, W. P. P.,  Hall in Fiskdale.

773  Longfellow, W. P. P.,  Town library.

(Annex, Gallery No. 12.)

LOAN COLLECTION OF OIL PAINTINGS.

NO.  ARTIST.  TITLE.  OWNER.


777  Cabanel, Alex.,  Francesca di Rimini.  Mrs. A. E. Kidd.
     Paris,


<table>
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<th>NO.</th>
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<tbody>
<tr>
<td>781</td>
<td>Makart, Hans, Vienna</td>
<td>Abundance of the Sea</td>
<td>A. &amp; C. Kaufmann</td>
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<tr>
<td>782</td>
<td>Schidone</td>
<td>Charity</td>
<td>Estate of Dr. Chapman</td>
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<tr>
<td>783</td>
<td>Navelot, Victor, (deceased)</td>
<td>Cavalry Charge</td>
<td>Dr. George Reuling</td>
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<tr>
<td>784</td>
<td>Robert, Leopold, (deceased)</td>
<td>Pilgrims on their Way to Rome</td>
<td>Miss S. L. Guerber</td>
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<tr>
<td>785</td>
<td>Vernet, Jos. (attributed to)</td>
<td>Landscape</td>
<td>E. S. Conner</td>
</tr>
<tr>
<td>786</td>
<td>(Unknown), (attributed to)</td>
<td>Old Woman’s Head</td>
<td>F. L. Robbins</td>
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<tr>
<td>787</td>
<td>Murillo, St. Francis in his Cell</td>
<td>E. S. Conner</td>
<td></td>
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<tr>
<td>788</td>
<td>Muraton, A., Paris, (attributed to)</td>
<td>The Devotee</td>
<td>L. Rabillon</td>
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<tr>
<td>789</td>
<td>Wolf, G.,</td>
<td>Portia</td>
<td>Dr. George Reuling</td>
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<tr>
<td>790</td>
<td>Dubufe, E., and Bonheur, Rosa, Paris</td>
<td>Autumn. (Figure by Dubufe, sheep by Rosa Bonheur.)</td>
<td>Dr. George Reuling</td>
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<tr>
<td>791</td>
<td>Brion, G., Paris,</td>
<td>Bridal Procession in Alsace</td>
<td>M. Knoedler &amp; Co</td>
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<td>792</td>
<td>Max, Gabriel, Munich,</td>
<td>The Anatomist</td>
<td>Demas Barnes</td>
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<tr>
<td>793</td>
<td>Sain, E. A., France</td>
<td>Italian Girl</td>
<td>Theo. Lyman</td>
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<tr>
<td>794</td>
<td>Van Schendel, P., Brussels</td>
<td>The Annunciation</td>
<td>Demas Barnes</td>
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<td>795</td>
<td>Nicoll, E., London,</td>
<td>Paying the Rent</td>
<td>F. O. Day</td>
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<td>796</td>
<td>Saltau, L., Paris,</td>
<td>Consolation</td>
<td>Mrs. E. V. Machette</td>
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<td>797</td>
<td>Volk, Douglas, Chicago,</td>
<td>In Brittany</td>
<td>Artist</td>
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<td>798</td>
<td>Verboeckhoven, E., Brussels</td>
<td>Driving Home the Sheep</td>
<td>W. J. Bates</td>
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<td>Knauth, Oscar, Munich,</td>
<td>Still Life</td>
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<td>800</td>
<td>Pauwels, F., Weimar,</td>
<td>The New Republic</td>
<td>W. S. Stewart</td>
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<td>801</td>
<td>Duval, V., Paris,</td>
<td>Gallery of Apollo, Louvre</td>
<td>T. C. A. Dexter</td>
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<td>802</td>
<td>Nys, P. (deceased), Brussels</td>
<td>Dutch Interior</td>
<td>E. V. Machette</td>
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<td>803</td>
<td>Dürrer, Albert</td>
<td>St. Jerome</td>
<td>Mrs. L. G. Franklin</td>
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<tr>
<td>803a</td>
<td>Del Sarto, Andrea,</td>
<td>St Andrew bearing his Cross</td>
<td>Artist</td>
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<tr>
<td>804</td>
<td>De Haas, J. H. L., Brussels</td>
<td>Christ stilling the Tempest</td>
<td>Dr. George Reuling</td>
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<tr>
<td>805</td>
<td>Seitz, Prof. Otto, Munich,</td>
<td>Faun and Nymph</td>
<td>A. Reitlinger</td>
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<td>806</td>
<td>Makart, Hans, Vienna,</td>
<td>Abundance of the Earth</td>
<td>A. Reitlinger</td>
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<td>806a</td>
<td>Porporati (deceased),</td>
<td>Adoration of the Magi</td>
<td>A. Reitlinger</td>
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<tr>
<td>807</td>
<td>Courbet, Gustave, Paris</td>
<td>The Huntsman</td>
<td>A. Reitlinger</td>
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<td>808</td>
<td>Courbet, Gustave, Paris,</td>
<td>Castle of Chillon, Lake Leman (1)</td>
<td>A. Reitlinger</td>
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<tr>
<td>809</td>
<td>Courbet, Gustave, Paris</td>
<td>Castle of Chillon, Lake Leman (2)</td>
<td>A. Reitlinger</td>
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<td>810</td>
<td>Courbet, Gustave, Paris</td>
<td>The Bather</td>
<td>A. Reitlinger</td>
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<td>811</td>
<td>Wouvermans (attributed to)</td>
<td>War Scene</td>
<td>E. S. Conner</td>
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<tr>
<td>812</td>
<td>Maccari, C., Rome</td>
<td>Fond Memories</td>
<td>J. Raymond Claghorn</td>
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<tr>
<td>813</td>
<td>Maccari, C., Rome</td>
<td>Music hath Charms</td>
<td>J. Raymond Claghorn</td>
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<td>814</td>
<td>Ortmans, Miss F. A., Paris</td>
<td>An Opening in the Forest of Fontainebleau</td>
<td>John Welsh</td>
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<td>815</td>
<td>West, Benjamin (deceased),</td>
<td>Moses Striking the Rock</td>
<td>Dr. H. Billings</td>
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(Appendix, Gallery No. 12.)

**SCULPTURE.**

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<tr>
<td>816</td>
<td>Gould, T. R., Florence</td>
<td>The West Wind</td>
<td>Demas Barnes</td>
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<td>817</td>
<td>Gould, M. S., Florence,</td>
<td>Water Babies</td>
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<tr>
<td>819</td>
<td>Gould, T. R., Florence,</td>
<td>The Lily</td>
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*(Annex, Gallery No. 10.)*

**OIL PAINTINGS.**

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<th>OWNER</th>
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<tr>
<td>820</td>
<td>Mayer, F. B., Baltimore,</td>
<td>The Continents</td>
<td>Artist</td>
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<td>821</td>
<td>Darrah, Mrs. S. T., Boston,</td>
<td><em>Sunset</em></td>
<td>Artist</td>
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<td>822</td>
<td>Healy, G. P. A., Chicago,</td>
<td>Portrait—Hon. E. B. Washburne</td>
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<td>823</td>
<td>Birch, Thos. (deceased),</td>
<td>Marine</td>
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<td>824</td>
<td>Tompkins, Clementina, Paris,</td>
<td><em>The Little Musician</em></td>
<td>Artist</td>
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<td>825</td>
<td>Seitz, Otto, Munich,</td>
<td><em>Neptune's Bridal (Loan Collection)</em></td>
<td>Myers &amp; Hedian</td>
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<td>826</td>
<td>Tilton, J. R., Rome,</td>
<td><em>The Lagoons of Venice</em></td>
<td>Artist</td>
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<td>827</td>
<td>Tompkins, Clementina, Paris,</td>
<td><em>An Artistic Début</em></td>
<td>Artist</td>
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<td>828</td>
<td>Coleman, C. C., Rome,</td>
<td>Nuremberg Towers—fifteenth century</td>
<td>H. Sampson</td>
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<td>829</td>
<td>Graham, W., Venice,</td>
<td><em>Angle Column of Ducal Palace, Venice</em></td>
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<td>830</td>
<td>Gregory, J. Elliot, Paris,</td>
<td>Portrait</td>
<td>Dr. J. S. Delavan</td>
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<td>831</td>
<td>Bloomer, H. B., Paris,</td>
<td>El Dorado</td>
<td>Artist</td>
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<td>832</td>
<td>Chase, W. M., Munich,</td>
<td>&quot;Keying up&quot;—The Court Jester</td>
<td>S. M. Dodd</td>
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<td>833</td>
<td>Inman, H. (deceased),</td>
<td>Portrait—Bishop R. C. Moore</td>
<td>Trinity Chapel, N.Y.</td>
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<td>Portrait—Lord Lyons</td>
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<td>Du Bois, C. E., Paris,</td>
<td><em>Palisades, Hudson River</em></td>
<td>Artist</td>
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<td>836</td>
<td>Bierstadt, A., New York,</td>
<td>Yosemite Valley</td>
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<td>837</td>
<td>Coleman, C. C., Rome,</td>
<td>The Young Monk</td>
<td>J. H. Coleman</td>
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<td>838</td>
<td>Sully, Thos. (deceased),</td>
<td>Portrait—Mrs. T. Sully</td>
<td>Miss Sully</td>
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<td>839</td>
<td>Benson, Eugene, Rome,</td>
<td><em>Interior of St. Mark's, Venice</em></td>
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<td>840</td>
<td>Healy, G. P. A., Chicago,</td>
<td>Portrait—Ex-President Thiers</td>
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<td>841</td>
<td>Brown, H. B.,</td>
<td>The East Highlands</td>
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<td>842</td>
<td>Vedder, Elihu, Rome,</td>
<td>The Greek Actor's Daughter</td>
<td>H. Sampson</td>
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<td>843</td>
<td>Robinson, Thos., Boston,</td>
<td>Bull's head</td>
<td>H. C. Angell</td>
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<td>844</td>
<td>Parker, S. H., New York,</td>
<td>Portrait—Mrs. H. W. Hills</td>
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<td>845</td>
<td>Lang, Louis, New York,</td>
<td>Landing of the Market-Boat at Capri</td>
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<td>846</td>
<td>Spencer, Mrs. Lily M., Newark, N.J.,</td>
<td><em>Earth, Air, and Water</em></td>
<td>Artist</td>
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<td>847</td>
<td>West, P. B., Cleveland,</td>
<td>Still Life—game</td>
<td>Mrs. M. L. Dickinson</td>
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<td>848</td>
<td>Andrews, E. F., Paris,</td>
<td>Portrait</td>
<td>Dr. S. H. Linn</td>
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<td>849</td>
<td>Thouron, H., Philadelphia,</td>
<td>Charlotte Corday—The Eve of her Execution</td>
<td>Artist</td>
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<td>850</td>
<td>Tait, J. R., Cincinnati,</td>
<td>Summer.</td>
<td>Artist.</td>
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<td>855</td>
<td>Meeks, Eugene, Florence,</td>
<td>Little Nell and her Grandfather.</td>
<td>Artist.</td>
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<td>858</td>
<td>Tait, J. R., Cincinnati,</td>
<td>Autumn.</td>
<td>Artist.</td>
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<td>862</td>
<td>Shirlaw, Walter, Munich,</td>
<td>Toning the Bell.</td>
<td>J. F. Gookins.</td>
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<td>866</td>
<td>Willard, A. M., Cleveland,</td>
<td>Yankee Doodle.</td>
<td>Artist.</td>
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(Annex, Gallery No. 10.)

### SCULPTURE.

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<td>874</td>
<td>Ezekiel, M., Rome,</td>
<td>Infant Mercury.</td>
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(Annex, Gallery No. 28.)

### OIL PAINTINGS.

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<td>878</td>
<td>Staigg, R. M., Boston,</td>
<td>*Cornice Road, Italy.</td>
<td>Artist.</td>
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<td>OWNER.</td>
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<td>881</td>
<td>Staigg, R. M., Boston</td>
<td>*Empty Nest.</td>
<td>Artist.</td>
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<td>883</td>
<td>Millet, F. D., Boston</td>
<td>*In the Bay of Naples.</td>
<td>Artist.</td>
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<tr>
<td>884</td>
<td>Millet, F. D., Boston</td>
<td>Lady in Costume of 1740.</td>
<td>Mrs. E. S. Keith.</td>
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<td>887</td>
<td>De Blois, F. B., Boston</td>
<td>October in Canada.</td>
<td>T. F. Brooke.</td>
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<td>890</td>
<td>Tuckerman, S. S., Boston</td>
<td>*Beach at Hastings.</td>
<td>Artist.</td>
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<td>892</td>
<td>Champney, Benjamin, Boston</td>
<td>*Artists' Brook, North Conway, N. H.</td>
<td>Artist.</td>
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<td>893</td>
<td>Elwell, D. J., Boston</td>
<td>*Downs near Ostend.</td>
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<td>896</td>
<td>Porter, B. C., Boston</td>
<td>Portrait.</td>
<td>Artist.</td>
</tr>
<tr>
<td>897</td>
<td>Brackett, W. M., Boston</td>
<td>*The Rise.</td>
<td>Artist.</td>
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<td>898</td>
<td>Brackett, W. M., Boston</td>
<td>*The Leap.</td>
<td>Artist.</td>
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<td>899</td>
<td>Brackett, W. M., Boston</td>
<td>*The Last Struggle.</td>
<td>Artist.</td>
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<td>900</td>
<td>Brackett, W. M., Boston</td>
<td>*Landed.</td>
<td>Artist.</td>
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<td>901</td>
<td>Key, J. R., Boston</td>
<td>The Golden Gate, San Francisco.</td>
<td>Artist.</td>
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<td>902</td>
<td>Hinckley, T. H., Boston</td>
<td>*End of the Chase.</td>
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<td>Freeman, J. E., Boston</td>
<td>Study for an Angel.</td>
<td>C. C. Perkins.</td>
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<td>Porter, B. C., Boston</td>
<td>The Hour-Glass.</td>
<td>Artist.</td>
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<td>905</td>
<td>Cole, J. Foxcroft, Boston</td>
<td>*Coast Scene in Normandy.</td>
<td>Artist.</td>
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<td>906</td>
<td>Elwell, D. J., Boston</td>
<td>Port of Antwerp.</td>
<td>S. E. Sawyer.</td>
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<td>909</td>
<td>Gay, Walter, Boston</td>
<td>*Fall Flowers.</td>
<td>Artist.</td>
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<td>911</td>
<td>Baker, Miss M. K., Boston</td>
<td>*Azaleas.</td>
<td>Artist.</td>
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<td>913</td>
<td>Ames, Jos., Boston</td>
<td>Portrait—President Felton.</td>
<td>Harvard University.</td>
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<td>914</td>
<td>Staigg, R. M., Boston</td>
<td>Portrait.</td>
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<td>915</td>
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<tr>
<td>917</td>
<td>Jarvis, Melicent, Boston</td>
<td>Portrait</td>
<td>Artist.</td>
</tr>
<tr>
<td>919</td>
<td>Staigg, R. M., Boston</td>
<td>Portrait</td>
<td>Artist.</td>
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<tr>
<td>921</td>
<td>Hale, Ellen D., Boston</td>
<td>Boy Reading</td>
<td>Mrs. E. E. Hale.</td>
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<tr>
<td>922</td>
<td>Robinson, T., Boston</td>
<td>Dog’s head</td>
<td>J. H. Wright.</td>
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<tr>
<td>923</td>
<td>Hunt, W. M., Boston</td>
<td>The Boot-Black</td>
<td>William Appleton.</td>
</tr>
<tr>
<td>924</td>
<td>Robinson, T., Boston</td>
<td>Sheep in Pasture</td>
<td>B. S. Meulon &amp; Co.</td>
</tr>
<tr>
<td>926</td>
<td>Brown, G. L., Boston</td>
<td>*Sunset—Genoa</td>
<td>Artist.</td>
</tr>
<tr>
<td>928</td>
<td>Champney, Benjamin, Boston</td>
<td>*At Glenora, N.Y.</td>
<td>Artist.</td>
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<tr>
<td>929</td>
<td>Billings, E. T., Boston</td>
<td>Wheelwright Shop</td>
<td>Artist.</td>
</tr>
<tr>
<td>931</td>
<td>Stuart, Gilbert (deceased), Boston</td>
<td>Portrait—Fisher Ames.</td>
<td>Harvard University.</td>
</tr>
<tr>
<td>932</td>
<td>Stuart, Gilbert (deceased), Boston</td>
<td>Portrait—Judge Story.</td>
<td>Harvard University.</td>
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<tr>
<td>933</td>
<td>Stuart, Gilbert (deceased), Boston</td>
<td>Portrait—Bishop Chevenix.</td>
<td>Mrs. H. Greenough.</td>
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<tr>
<td>936</td>
<td>Champney, J. W., Boston</td>
<td>“Speak, Sir!”</td>
<td>Artist.</td>
</tr>
<tr>
<td>937</td>
<td>Champney, Benjamin, Boston</td>
<td>*Old Willows at Manchester, Mass.</td>
<td>Artist.</td>
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<tr>
<td>938</td>
<td>Darrah, Mrs. S. T., Boston</td>
<td>*Lake Champlain</td>
<td>Artist.</td>
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<tr>
<td>940</td>
<td>Stuart, Gilbert (deceased), Boston</td>
<td>Portrait—Mrs. E. C. Cushing.</td>
<td>Mrs. L. L. Chickering.</td>
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<tr>
<td>942</td>
<td>Petersen, J. E. C., Boston</td>
<td>Collision at Sea</td>
<td>Manufacturers’ Insurance Company.</td>
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(Annex, Gallery No. 28.)

**SCULPTURE.**

<table>
<thead>
<tr>
<th>NO.</th>
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<td>948</td>
<td>Kendricks, D. T.,</td>
<td><em>Foggy Day at the Beach.</em></td>
<td>Artist.</td>
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<tr>
<td>949</td>
<td>De Blois, F. B.,</td>
<td>Boston, Lincoln, Italy.</td>
<td>Artist.</td>
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<tr>
<td>952</td>
<td>Martin, Miss L. E.</td>
<td>Boston, Flowers (panel).</td>
<td>Mrs. Martin.</td>
</tr>
<tr>
<td>953</td>
<td>Champney, J. W.,</td>
<td>Boston, Grandma's Pet.</td>
<td>T. Wigglesworth</td>
</tr>
<tr>
<td>954</td>
<td>Martin, Miss L. E.</td>
<td>Boston, Flowers (panel).</td>
<td>Mrs. Martin.</td>
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<tr>
<td>955</td>
<td>Jarvis, Melicent</td>
<td>Boston, Jeannette in her Studio.</td>
<td>Artist.</td>
</tr>
<tr>
<td>956</td>
<td>Snowe, Francis,</td>
<td>Boston, A Cloudy Day.</td>
<td>G. H. Chickering</td>
</tr>
<tr>
<td>957</td>
<td>Robinson, T.,</td>
<td>Boston, <em>An Old Team.</em></td>
<td>Artist.</td>
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<tr>
<td>960</td>
<td>Holmes, P. H.,</td>
<td>Gardiner, Me., The Adirondacks from Vermont.</td>
<td>Arti   st.</td>
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<tr>
<td>969</td>
<td>Weber, Carl, Phil-</td>
<td>adelphia, <em>Reichenbach Falls, Switzerland.</em></td>
<td>Artist.</td>
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<tr>
<td>971</td>
<td>Fowler, T. T.,</td>
<td>Philadelphia, Work for the Day is Over.</td>
<td>Artist.</td>
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<tr>
<td>972</td>
<td>Raupp, Carl,</td>
<td><em>Approaching Storm.</em></td>
<td>Dr. George Reuling.</td>
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<tr>
<td>975</td>
<td>Smith, Miss Mary,</td>
<td>Jenkintown, Pa., Cluck and Chickens.</td>
<td></td>
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<tr>
<td>975a</td>
<td>Wilson, Oregon (de-</td>
<td>ceased), <em>Woman's Devotion.</em></td>
<td>Dr. W. A. Wilson.</td>
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<tr>
<td>978</td>
<td>Guthers, Carl, St.</td>
<td>Louis, Awakening Spring.</td>
<td>Artist.</td>
</tr>
<tr>
<td>979</td>
<td>Birch, Thomas (de-</td>
<td>ceased), Perry's Victory on Lake Erie.</td>
<td>Thomas Birch.</td>
</tr>
</tbody>
</table>
IV.—ART.

980 John C. M., Pittsburgh,

To Tubal-Cain came many a one,
And each one prayed
For a strong steel blade.

981 Noble, T. S., Cincinnati,
The Tramp.

982 Boyle, F. T. L., Brooklyn,
The Prayer of Judith.

983 Bartlett, Jennie M., Minneapolis,
Callas and Amaryllis (two panels).

{Annex, Gallery No. 42.}

SCULPTURE.

983a Calverly, C., N. Y.,
Bronze bust of John Brown.

984 Richards, D., Chicago,
Satisfaction.

985 Fillans, Miss W., Wisconsin,
Portrait bust.

986 Richards, D., Chicago,
Disgust.

987 Whitney, Annie,
The Model.

987a Kretschman, E. A., Philadelphia,
The "Continental" Soldier and two portrait bronze medallions.

{Annex, Gallery No. 40.}

OIL PAINTINGS.

988 Volkmar, Chas., Jr., Baltimore,
The Passing Shower (near Vichy, France).

989 Rothermel, P. F., Philadelphia,
Macbeth meditating the Murder of Duncan.

990 Coleman, C. C., Rome,
Interior of St. Mark's, Venice.

991 Healy, G. P. A., Chicago,
Portrait—Princess of Roumania.

992 Lea, Anna M., Philadelphia,
Portrait.

993 Furness, W. H., Jr. (deceased),
Portrait.

994 Morrell, Mrs. I., Robinson, Paris,
Washington Welcoming the Proviso-Train.

995 Winters, Miss Anna, Philadelphia,
Daisies.

996 Galvan, Mrs. S. M., Philadelphia,
Roses.

997 Willcox, W. H., Philadelphia,
One Hundred Years Ago.

998 Spencer, Mrs. Lily M., Newark, N. J.,
"Will you have some fruit?"

999 Galvan, Mrs. S. M., Philadelphia,
Roses.

1000 Shaw, Annie C., Chicago,
An Illinois Prairie.

1001 Gunison, Miss M. D., New York,
Portrait—Captain J. W. Gunison.

1002 Lambdin, J. R., Philadelphia,
Portrait—Bishop Alonzo Potter.

1003 Hill, Thomas, San Francisco,
Home of the Eagle.

1004 Julio, E. B. D., New Orleans,
Gathering the Sugar-Cane.

1005 Bierstadt, A., New York,
Mt. Hood, Oregon.
<table>
<thead>
<tr>
<th>No.</th>
<th>Artist</th>
<th>Title</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1006</td>
<td>Guthers, Carl, St. Louis</td>
<td>&quot;Ecce Homo.&quot;</td>
<td></td>
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<tr>
<td>1007</td>
<td>Waugh, S. B., Philadelphia</td>
<td>Portrait</td>
<td></td>
</tr>
<tr>
<td>1008</td>
<td>Wilson, Oregon, (deceased)</td>
<td>Portrait</td>
<td>Dr. Wilson</td>
</tr>
<tr>
<td>1009</td>
<td>Kaufmann, Theodore, Washington,</td>
<td>Admiral Farragut</td>
<td></td>
</tr>
<tr>
<td>1010</td>
<td>Rothermel, P. F., Philadelphia, *Hypatia, the Neo-Platonic Philosopher, stripped and torn to pieces by the Christian mob of Alexandria.</td>
<td>Artist.</td>
<td></td>
</tr>
<tr>
<td>1011</td>
<td>Furness, W. H., Jr. (deceased),</td>
<td>Portrait</td>
<td>H. H. Furness</td>
</tr>
<tr>
<td>1012</td>
<td>Coleman, C. C., Rome</td>
<td>Venice</td>
<td>Mrs. W. Wilkeson</td>
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<tr>
<td>1014</td>
<td>Peale, Rembrandt (deceased),</td>
<td>Portrait of the artist.</td>
<td>Mrs. R. Peale</td>
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<tr>
<td>1015</td>
<td>Stanley, D. M., Detroit</td>
<td>The Indian Signal</td>
<td>Artist.</td>
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<tr>
<td>1017</td>
<td>Elkins, H. R., Chicago</td>
<td>Shasta, an extinct volcano of North California.</td>
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<td>1018</td>
<td>Sword, J. B., Philadelphia</td>
<td>Trenton Falls, N.Y.</td>
<td>Artist.</td>
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<tr>
<td>1021</td>
<td>Smith, T. Henry, Philadelphia</td>
<td>Mind and Matter.</td>
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<tr>
<td>1022</td>
<td>Audubon, J. J. (deceased), *Covey of Blackcock.</td>
<td>Edward Harris.</td>
<td></td>
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<tr>
<td>1025</td>
<td>Smith, Xanthus, Jenkintown, Pa., The Kearsarge and Alabama.</td>
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<tr>
<td>1026</td>
<td>Eberhardt, W., Boston</td>
<td>Portrait—Rear-Admiral Winslow, former Commander of the Kearsarge.</td>
<td>Citizens of Boston, who intend to present it to Memorial Hall.</td>
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<tr>
<td>1027</td>
<td>Wild, H., Boston</td>
<td>El Majo de Granada</td>
<td>H. H. Furness</td>
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*(Annex, Gallery No. 40.)*

<table>
<thead>
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<th>No.</th>
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<th>Owner</th>
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<tr>
<td>1028</td>
<td>Mundhenk, A., Cincinnati</td>
<td>&quot;Auld Lang Syne.&quot;</td>
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### OIL PAINTINGS.

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<th>No.</th>
<th>Artist.</th>
<th>Title.</th>
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<tr>
<td>1034</td>
<td>Ropes, Joseph, Philadelphia</td>
<td>Tivoli</td>
<td>Artist.</td>
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<td>1035</td>
<td>Stewart, J. L., Philadelphia</td>
<td>Marie</td>
<td>W. S. Stewart.</td>
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<tr>
<td>1036</td>
<td>Healy, G. P. A., Chicago</td>
<td>Portrait</td>
<td></td>
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<tr>
<td>1037</td>
<td>Schussele, C., Philadelphia</td>
<td>Zeisberger preaching to the Indians</td>
<td>J. Jordan.</td>
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<tr>
<td>1038</td>
<td>Trotter, N. H., Philadelphia</td>
<td>*Wounded Buffaloes pursued by Prairie Wolves</td>
<td>Artist.</td>
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<tr>
<td>1039</td>
<td>Moran, Thos., Newark, N.J.</td>
<td>&quot;Fiercely the red sun descending burned his way along the heavens.&quot;</td>
<td>Artist.</td>
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<tr>
<td>1040</td>
<td>Haseltine, W. S., Rome</td>
<td>Natural Arch at Capri</td>
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<td>1041</td>
<td>Briscoe, F. D., Philadelphia</td>
<td>Wreckers</td>
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<td>1043</td>
<td>Gardner, Miss E. J., Paris</td>
<td>The Fortune-Teller</td>
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<tr>
<td>1043/a</td>
<td>King, Geo. W., Philadelphia</td>
<td>View in the Tyrol</td>
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<tr>
<td>1044</td>
<td>Lambdin, G. C., Philadelphia</td>
<td>On a Summer Sea</td>
<td>Artist.</td>
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<td>1045</td>
<td>Leland, Henry, Boston</td>
<td>Portrait</td>
<td>C. M. Leland.</td>
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<tr>
<td>1046</td>
<td>Harrison, Henry, Jersey City</td>
<td>Portrait</td>
<td>Miss Belle Dodd.</td>
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<tr>
<td>1050</td>
<td>Eakins, Thos., Philadelphia</td>
<td>Portrait</td>
<td>Artist.</td>
</tr>
<tr>
<td>1051</td>
<td>Leland, Henry, Boston</td>
<td>Portrait</td>
<td>C. M. Leland.</td>
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<tr>
<td>1053</td>
<td>Craig, Thos. B., Philadelphia</td>
<td>Indian Summer.</td>
<td>Artist.</td>
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<td>1054</td>
<td>Rothermel, P. F., Philadelphia</td>
<td>The Virtuoso.</td>
<td>Artist.</td>
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<td>1056</td>
<td>Coleman, C. C., Rome</td>
<td>The Troubadour.</td>
<td>Henry Sampson.</td>
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<td>1060</td>
<td>Randle, Fred., Flowers, Philadelphia</td>
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<td>1062</td>
<td>Heaton, A. G., Philadelphia</td>
<td>Washington as Ambassador at Fort Duquesne.</td>
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<td>1063</td>
<td>Kunath, Oscar, Munich</td>
<td>&quot;He won't bite.&quot;</td>
<td>Artist.</td>
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<tr>
<td>1064</td>
<td>Kunath, Oscar, Munich</td>
<td>Portrait</td>
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<td>TITLE.</td>
<td>OWNER.</td>
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<td>1065</td>
<td>Richards, F. De B., Philadelphia,</td>
<td>Campagna di Roma.</td>
<td>Artist.</td>
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<td>1067</td>
<td>Waugh, S. B., Philadelphia,</td>
<td>Portrait</td>
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<td>1069</td>
<td>Bonfield, W. V., Philadelphia,</td>
<td>Drifting Snow.</td>
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<td>1072</td>
<td>Moran, Peter, Philadelphia,</td>
<td>Settled Rain.</td>
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<tr>
<td>1074</td>
<td>Paule, Rembrandt (deceased),</td>
<td>Washington; from life.</td>
<td>Chas. P. Herring.</td>
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<td>1077</td>
<td>Smith, Russell, Jenkintown, Pa.,</td>
<td>Mount Vernon in 1836.</td>
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<td>1080</td>
<td>Smith, Russell, Jenkintown, Pa.,</td>
<td>Cave at Chelten Hills.</td>
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<td>1086</td>
<td>Volk, Douglas, Chicago,</td>
<td>Vanity.</td>
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**SCULPTURE.**

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<td>1087</td>
<td>Rogers, Randolph, Rome,</td>
<td>Atala.</td>
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<td>1089</td>
<td>Richards, D., Chicago,</td>
<td>Il Penseroso.</td>
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<td>1090</td>
<td>Reniers, P. C., Pittsburgh,</td>
<td>Bust—Col. T. A. Scott.</td>
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<td>1092</td>
<td>Richards, D., Chicago,</td>
<td>Portrait bust.</td>
<td>Mrs. Laird Colyer.</td>
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*(Annex, Gallery No. 44.)*

**OIL PAINTINGS.**

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<td>Reynolds, Sir Joshua (deceased),</td>
<td>Portrait—Mr. Groves.</td>
<td>Mrs. A. S. Hughes.</td>
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<tr>
<td>1096</td>
<td>Wertmuller (deceased),</td>
<td>Portrait of Washington; from life.</td>
<td>S. Wagner.</td>
</tr>
<tr>
<td>1098</td>
<td>Kneller, Sir Godfrey (deceased),</td>
<td>Portrait—Lord Baltimore; presented to the City of Annapolis by Queen Anne.</td>
<td>Titian R. Peale.</td>
</tr>
<tr>
<td>1099</td>
<td>Plantou, Mrs. (deceased),</td>
<td>Triumph of America, or the Treaty of Ghent.</td>
<td>Miss Plantou.</td>
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<td>1102</td>
<td>(Unknown.)</td>
<td>Portrait—Alexander Hamilton.</td>
<td>E. Newland.</td>
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<td>1103</td>
<td>Tenney, U. D., New Haven, Conn.,</td>
<td>Portrait—General Stark.</td>
<td>City of Manchester, N.H.</td>
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(Annex, Gallery No. 44).

**WATER COLORS, DRAWINGS, ETC.**

<table>
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<th>Owner.</th>
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<tbody>
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<td>1104</td>
<td>Herrick, H. W.,</td>
<td>Grave of General Stark (water color).</td>
<td>City of Manchester, N.H.</td>
</tr>
<tr>
<td>1105</td>
<td>Herrick, H. W.,</td>
<td>General Stark at Bunker Hill (water color).</td>
<td>City of Manchester, N.H.</td>
</tr>
<tr>
<td>1106</td>
<td>Herrick, H. W.,</td>
<td>General Stark's Last Charge at Bennington (water color).</td>
<td>City of Manchester, N.H.</td>
</tr>
<tr>
<td>1107</td>
<td>Herrick, H. W.,</td>
<td>General Stark as Trapper, captured by the Indians (water color).</td>
<td>City of Manchester, N.H.</td>
</tr>
<tr>
<td>1108</td>
<td>Herrick, H. W.,</td>
<td>General Stark at Trenton (water color).</td>
<td>City of Manchester, N.H.</td>
</tr>
<tr>
<td>1109</td>
<td>McMurtrie, Miss L. C., Boston,</td>
<td>Geraniums (water color).</td>
<td>H. McMurtrie.</td>
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<tr>
<td>1112</td>
<td>Bartlett, G. H.,</td>
<td>Oak leaf (drawing).</td>
<td>Artist.</td>
</tr>
<tr>
<td>1115</td>
<td>Bliss, Lucia S.,</td>
<td>Double Poppies.</td>
<td>Artist.</td>
</tr>
<tr>
<td>1119</td>
<td>McMurtrie, Miss L. C., Boston,</td>
<td>Rhododendrons.</td>
<td>Artist.</td>
</tr>
<tr>
<td>1120</td>
<td>Robbins, Ella, Boston,</td>
<td>*Vase of Flowers.</td>
<td>Artist.</td>
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<tr>
<td>1127</td>
<td>Brückner, Henry,</td>
<td>Commemorative Allegory (etching).</td>
<td>Henry Schile.</td>
</tr>
<tr>
<td>1128</td>
<td>Steinhaus, William, New York,</td>
<td>Vienna Exhibition. (Two drawings.)</td>
<td>Henry Schile.</td>
</tr>
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<th>Title.</th>
<th>Owner.</th>
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<tr>
<td>1127</td>
<td>Brückner, Henry,</td>
<td>Commemorative Allegory (etching).</td>
<td>Henry Schile.</td>
</tr>
<tr>
<td>1128</td>
<td>Steinhaus, William, New York,</td>
<td>Vienna Exhibition. (Two drawings.)</td>
<td>Henry Schile.</td>
</tr>
</tbody>
</table>
Title.

1129 Alexander, Fanny, Boston, September (pen drawing). Caroline Brewer.
1130 Bartlett, G. H., Boston, Details from Andernach Church Door. Artist.
1132 Galindo, R. E., Arabesque design. Ion Perdiosaris.
1133 Hyatt, Mrs. Delia, Boston, Stork Tower in Rentlingen (water color). Mrs. A. Hyatt.
1137 Sterling, Mrs. C. H., Oak leaves (water color). Artist.
1150 Field, R. (deceased), Thomas Jefferson—water color sketch from life, in the first year of his Presidency. T. J. Miles.
1154 Miller, E. F., Columbus, O., Landscape (water color).
1156 Darrah, Mrs. S. T., Boston, *After the Storm (water color). Artist.
1157 Miller, E. F., Columbus, O., Winter (water color).
1161 Hurtel, P., Sketch (water color). Artist.
1162 Adams, Miss E., Boston, Study of a Head (water color). Artist.
### OIL PAINTINGS.

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST</th>
<th>TITLE</th>
<th>OWNER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1166</td>
<td>Dunlap, William (deceased)</td>
<td></td>
<td>New York Hospital.</td>
</tr>
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</table>

### SCULPTURE.

<table>
<thead>
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<th>NO.</th>
<th>ARTIST</th>
<th>TITLE</th>
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</thead>
<tbody>
<tr>
<td>1172</td>
<td>Broome, Isaac, Pittsburgh</td>
<td>Base-Ball Players (Parian).</td>
<td>Ott &amp; Brewer.</td>
</tr>
<tr>
<td>1174</td>
<td>Park, R. H., Florence</td>
<td>*Summer.</td>
<td>Artist.</td>
</tr>
<tr>
<td>1175</td>
<td>Park, R. H., Florence</td>
<td>*Purity.</td>
<td>Artist.</td>
</tr>
<tr>
<td>1183a</td>
<td>Rush (deceased),</td>
<td>Bust of Washington (clay model from life).</td>
<td>Alfred Young.</td>
</tr>
<tr>
<td>1183b</td>
<td>McDonald, W.,</td>
<td>Bust of Washington.</td>
<td>Artist.</td>
</tr>
<tr>
<td>1183c</td>
<td>Este, Mary Goddard, Cincinnati,</td>
<td>Iolanthe, King René's blind daughter.</td>
<td>Artist.</td>
</tr>
</tbody>
</table>

(Memorial Hall, Grand Central Hall, Gallery B.)

### SCULPTURE.

<p>| NO.  | ARTIST   | TITLE       | OWNER |</p>
<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST</th>
<th>TITLE</th>
<th>OWNER</th>
</tr>
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<tbody>
<tr>
<td>1186</td>
<td>Turner, W. G.</td>
<td>*Fisherman's Daughter.</td>
<td>Artist</td>
</tr>
<tr>
<td>1187</td>
<td>Connelly, P. F.</td>
<td>*Horse's head.</td>
<td>Artist</td>
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<tr>
<td>1188</td>
<td>Haseltine, J. H.</td>
<td>*Fortune.</td>
<td>Artist</td>
</tr>
<tr>
<td>1189</td>
<td>Connelly, P. F.</td>
<td>*Queen Philippa.</td>
<td>Artist</td>
</tr>
<tr>
<td>1190</td>
<td>Connelly, P. F.</td>
<td>Theis thinking how she may regain the</td>
<td>New York Museum.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>birthright of her son Achilles.</td>
<td></td>
</tr>
<tr>
<td>1191</td>
<td>Connelly, P. F.</td>
<td>*Lady Clare.</td>
<td>Artist</td>
</tr>
<tr>
<td>1192</td>
<td>Powers, Preston</td>
<td>*Bust of Charles Sumner.</td>
<td>Artist</td>
</tr>
<tr>
<td>1193</td>
<td>Connelly, P. F.</td>
<td>*Helen of Troy.</td>
<td>Artist</td>
</tr>
<tr>
<td>1194</td>
<td>Connelly, P. F.</td>
<td>*Diana Transforming Actæon.</td>
<td>Artist</td>
</tr>
<tr>
<td>1195</td>
<td>Connelly, P. F.</td>
<td>*The Thread of Life.</td>
<td>Artist</td>
</tr>
<tr>
<td>1196</td>
<td>Connelly, P. F.</td>
<td>*Viola.</td>
<td>Artist</td>
</tr>
<tr>
<td>1197</td>
<td>Lawlor, John</td>
<td>*The Emigrant.</td>
<td>Artist</td>
</tr>
<tr>
<td>1198</td>
<td>Haseltine, J. H.</td>
<td>*Spring Flowers.</td>
<td>Artist</td>
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<tr>
<td>1199</td>
<td>Haseltine, J. H.</td>
<td>*Lucretia.</td>
<td>Artist</td>
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<tr>
<td>1200</td>
<td>Haseltine, J. H.</td>
<td>*Captivey.</td>
<td>Artist</td>
</tr>
<tr>
<td>1201</td>
<td>Foley, Miss M.</td>
<td>*Cleopatra.</td>
<td>Artist</td>
</tr>
<tr>
<td>1202</td>
<td>Turner, W. G.</td>
<td>*Transition.</td>
<td>Artist</td>
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<tr>
<td>1203</td>
<td>Haseltine, J. H.</td>
<td>*Cleopatra.</td>
<td>Artist</td>
</tr>
<tr>
<td>1204</td>
<td>Handley, M.</td>
<td>America Honoring her Fallen Brave.</td>
<td>Artist</td>
</tr>
<tr>
<td>1205</td>
<td>Stone, Horatio</td>
<td>Bronze vase.</td>
<td>J. C. Hoadley.</td>
</tr>
<tr>
<td>1206</td>
<td>Story, W. W.,</td>
<td>*Beethoven.</td>
<td>Artist</td>
</tr>
<tr>
<td>1207</td>
<td>Handley, M.</td>
<td>*Spring Crowning herself with Flowers.</td>
<td>Artist</td>
</tr>
<tr>
<td>1208</td>
<td>Handley, M.</td>
<td>*Giotto.</td>
<td>Artist</td>
</tr>
<tr>
<td>1209</td>
<td>Handley, M.</td>
<td>*Autumn Flowers.</td>
<td>Artist</td>
</tr>
<tr>
<td>1210</td>
<td>Haseltine, J. H.</td>
<td>Duke of Leuchtenberg (equestrian</td>
<td>G. H. Schneider</td>
</tr>
<tr>
<td></td>
<td></td>
<td>statuette).</td>
<td></td>
</tr>
<tr>
<td>1211</td>
<td>Haseltine, J. H.</td>
<td>*Lucia di Lammermoor.</td>
<td>Artist</td>
</tr>
<tr>
<td>1212</td>
<td>Park, R. H.,</td>
<td>The Mechanic—bronze portrait</td>
<td></td>
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<tr>
<td></td>
<td>Florence,</td>
<td>statue.</td>
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<tr>
<td>1213</td>
<td>Palmer, E. D.</td>
<td>Bronze statue of Robert Livingston.</td>
<td></td>
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<tr>
<td>1214</td>
<td>Stone, Horatio</td>
<td>Two bronze vases.</td>
<td>J. C. Hoadley.</td>
</tr>
<tr>
<td>1215</td>
<td>Bailly, J. A.,</td>
<td>Equestrian statue of Antonio Guam-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Philadelphia,</td>
<td>man Blanco, President of Venezuela.</td>
<td></td>
</tr>
<tr>
<td>1218</td>
<td>Ream, Vinnie</td>
<td>*Spirit of the Carnival</td>
<td>Artist</td>
</tr>
<tr>
<td>1219</td>
<td>Mills, Theodore</td>
<td>Eve.</td>
<td></td>
</tr>
<tr>
<td>1220</td>
<td>Ream, Vinnie</td>
<td>*The West.</td>
<td>Artist</td>
</tr>
<tr>
<td>NO.</td>
<td>ARTIST</td>
<td>TITLE</td>
<td>OWNER</td>
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<tr>
<td>1221</td>
<td>Smith, R. C.</td>
<td>Bust of President J. M. Sturtevant, of Illinois College.</td>
<td></td>
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<tr>
<td>1222</td>
<td>Ream, Vinnie</td>
<td>Washington, Miriam.</td>
<td></td>
</tr>
<tr>
<td>1223</td>
<td>Rogers, Randolph, Rome</td>
<td>Nydia, the Blind Girl of Pompeii.</td>
<td>James Douglas.</td>
</tr>
<tr>
<td>1224</td>
<td>Ream, Vinnie</td>
<td>Washington, Bust of Senator Morrell.</td>
<td></td>
</tr>
<tr>
<td>1227</td>
<td>Connelly, P. F., Florence,</td>
<td>St. Martin Dividing his Cloak.</td>
<td>Mrs. B. Lawrence.</td>
</tr>
<tr>
<td>1227a</td>
<td>Fettweis, C. L., Jr., Cincinnati</td>
<td>*Cast Away.</td>
<td>Artist.</td>
</tr>
</tbody>
</table>

(Memorial Hall, Grand Central Hall, Gallery B.)

### OIL PAINTINGS.

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1228</td>
<td>Van Reuth, E., Baltimore</td>
<td>*Homage of America to the Spirit of her Institutions.</td>
<td>Artist.</td>
</tr>
<tr>
<td>1228a</td>
<td>Stuart, Gilbert</td>
<td>The original portrait, from life, of Washington, painted in 1796. The only picture from life by Stuart, except the unfinished portrait in the Boston Athenaeum.</td>
<td>J. Delaware Lewis.</td>
</tr>
</tbody>
</table>

(Memorial Hall, Grand Central Hall, Gallery B.)

### ARCHITECTURAL MOSAICS.

<table>
<thead>
<tr>
<th>NO.</th>
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<th>TITLE</th>
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</thead>
<tbody>
<tr>
<td>1229</td>
<td>Leonardi, Valewski, Rubicondi, Italy,</td>
<td>Memorial Altar.</td>
<td>Ordered for St. Clement's Church, Philadelphia.</td>
</tr>
</tbody>
</table>

(Memorial Hall, Gallery K.)

### SCULPTURE.

<table>
<thead>
<tr>
<th>NO.</th>
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<th>OWNER</th>
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</thead>
<tbody>
<tr>
<td>1230</td>
<td>Calverley,</td>
<td>Bas-relief likeness of Peter Cooper.</td>
<td></td>
</tr>
<tr>
<td>1231</td>
<td>Lewis, Miss Edmonia,</td>
<td>*Death of Cleopatra.</td>
<td>Artist.</td>
</tr>
<tr>
<td>1233</td>
<td>Fillans, Miss W., Philadelphia,</td>
<td>Medallion portrait.</td>
<td></td>
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<tr>
<td>1234</td>
<td>Foley, Miss M., Rome,</td>
<td>Two medallions of Mary and William Howitt.</td>
<td>Artist.</td>
</tr>
<tr>
<td>1239</td>
<td>Graef, Jos., New York,</td>
<td>Model of a monument to Dr. Wales.</td>
<td></td>
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<tr>
<td>1244</td>
<td>Foley, Miss M., Rome,</td>
<td>Medallion—Mrs. T. B. Read.</td>
<td></td>
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<tr>
<td>1244a</td>
<td>Ream, Vinnie, Washington,</td>
<td>Bust of a child.</td>
<td></td>
</tr>
</tbody>
</table>
UNITED STATES.

NO.     ARTIST.     TITLE.     OWNER.
1248d  Kappler, Tobias, New Haven, Conn., Medallion—Professor Agassiz.
1250    Benton, J. Dean, Philadelphia, Metal model of Independence Hall. E. C. Knight.

STAINED GLASS.

NO.     EXHIBITOR.     TITLE.
1250b  Slack, S., & Co., Glass Stainers, Orange, N.J., Specimens of figure subjects and arabesque designs. This firm has an exhibition in Memorial Hall some fine specimens of their work in antique and rolled cathedral glass, an article used extensively by them in the production of their principal work, such as figure, symbolic, heraldic, and decorated windows, for both ecclesiastical and domestic purposes.
1250c  West, Samuel, Boston, Specimens of figure subjects and arabesque designs.

(West Arcade, on Façade of Memorial Hall.)

SCULPTURE.

NO.     EXHIBITOR.     TITLE.
1252    Eyre, M. Dickerson, Florence, *Rebecca.
1254    Eyre, M. Dickerson, Florence, *Ruth.
1255    Eyre, M. Dickerson, Florence, *Juno.
1256c  Seelig, M. J., & Co., Williamsburg, N.Y.,

(East Arcade, on Façade of Memorial Hall.)

SCULPTURE.

NO.     EXHIBITOR.     TITLE.
1257    Eyre, M. Dickerson, Florence, *Psyche.
1258    Eyre, M. Dickerson, Florence, *Bust of Michael Angelo.
1259    Eyre, M. Dickerson, Florence, *Vulcan.
1260    Eyre, M. Dickerson, Florence, *Bust of Dante.
1261    Eyre, M. Dickerson, Florence, *Autumn.
1262    Eyre, M. Dickerson, Florence, *Spring.
1263    Eyre, M. Dickerson, Florence, *Hebe.
### DRAWINGS, ETCHINGS, ETC.

<table>
<thead>
<tr>
<th>NO.</th>
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</thead>
<tbody>
<tr>
<td>1265</td>
<td>Martin, Mrs. L. E., Boston</td>
<td>*Sweet Home (porcelain painting).</td>
<td>Artist.</td>
</tr>
<tr>
<td>1266</td>
<td>Martin, Mrs. L. E., Boston</td>
<td>*Flowers (porcelain painting).</td>
<td>Artist.</td>
</tr>
<tr>
<td>1268</td>
<td>Reich, Jos., Boston</td>
<td>Portrait (charcoal).</td>
<td>Artist.</td>
</tr>
<tr>
<td>1270</td>
<td>Fabronius, D. C., Boston</td>
<td>Portrait (crayon).</td>
<td>Artist.</td>
</tr>
<tr>
<td>1271</td>
<td>Alexander, Miss F., Boston</td>
<td>A Prayer.</td>
<td>G. W. Wales.</td>
</tr>
<tr>
<td>1272</td>
<td>Moran, Thomas, Newark, N. J.</td>
<td>*Hiawatha and the Serpent.</td>
<td>Artist.</td>
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<tr>
<td>1273</td>
<td>Moran, Thomas, Newark, N. J.</td>
<td>*Hiawatha and Nokomis.</td>
<td>Artist.</td>
</tr>
<tr>
<td>1274</td>
<td>Moran, Thomas, Newark, N. J.</td>
<td>*Death of Kwasind.</td>
<td>Artist.</td>
</tr>
<tr>
<td>1275</td>
<td>Moran, Thomas, Newark, N. J.</td>
<td>*Hiawatha's Fasting.</td>
<td>Artist.</td>
</tr>
<tr>
<td>1276</td>
<td>Moran, Thomas, Newark, N. J.</td>
<td>*Hiawatha's Childhood.</td>
<td>Artist.</td>
</tr>
<tr>
<td>1277</td>
<td>Darley, F. O. C., Claymont, Del.</td>
<td>A Merciful Man is Merciful to his Beast.</td>
<td>Artist.</td>
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<tr>
<td>1279</td>
<td>Stokcs, John</td>
<td>Dead Blue Jay.</td>
<td>Artist.</td>
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<tr>
<td>1283</td>
<td>Reed, J. C., Philadelphia</td>
<td>Portrait of a lady (crayon).</td>
<td>Artist.</td>
</tr>
<tr>
<td>1284</td>
<td>Ellis, J. C., Philadelphia</td>
<td>Portrait of a little girl (crayon).</td>
<td>Artist.</td>
</tr>
<tr>
<td>1287</td>
<td>Swain,</td>
<td>Portrait of child (crayon).</td>
<td>Artist.</td>
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### OIL PAINTINGS.

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</thead>
<tbody>
<tr>
<td>1288</td>
<td>Schwörer, A., Munich</td>
<td>*A Surprise.</td>
<td>Stroefer &amp; Kirchner.</td>
</tr>
<tr>
<td>1289</td>
<td>Wagner, A., Munich</td>
<td>*Chariot-Race.</td>
<td>Stroefer &amp; Kirchner.</td>
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<tr>
<td>1290</td>
<td>Mayer, A. L., Munich</td>
<td>*Marguerite.</td>
<td>Stroefer &amp; Kirchner.</td>
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<tr>
<td>1291</td>
<td>Kayser, E., Munich</td>
<td>*The Convalescent.</td>
<td>Stroefer &amp; Kirchner.</td>
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<tr>
<td>1292</td>
<td>Epp, R., Munich</td>
<td>*The Young Mother.</td>
<td>Stroefer &amp; Kirchner.</td>
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<tr>
<td>1293</td>
<td>Koeckert, F., Munich</td>
<td>*Autumn.</td>
<td>Stroefer &amp; Kirchner.</td>
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</tbody>
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UNITED STATES.

55

NO.  ARTIST.  TITLE.  OWNER.

CRAYONS.

NO.  ARTIST.  TITLE.  OWNER.
1300  Kurtz, W., New York,  Six crayon portraits.  Artist.

ART APPLIED.

(Memorial Hall, Gallery Y.)

NO.  EXHIBITOR.  SUBJECT.
1301  Stroofer & Kirchner, New York,  Eleven engravings illustrating Faust and Mar-  Fine Art Books.
1303  Speroni, J. L., New York,  Engravings on silver.
1304  Zoellner, L., New York,  Cameos.
1305  Paquet, A. C., Philadelphia,  Medals.
1307  Overbaugh, A. W., New York,  Engraving on metal.
1308  Lebrethon, Jules, New York,  Cameos and medallions.

(Memorial Hall, Gallery X.)

NO.  EXHIBITOR.  SUBJECT.
1311  Bonet, Louis, New York,  Cameos.
1312  Hirrlinger, C. W., New York,  Enamels and enamel paintings.
1313  Barber, W. & C., Philadelphia,  Medals.
1314  Mitchell, Henry, Boston,  Two frames of specimens of stone gems and im-  pressions of seals.
1315  Rowe, George A., 1037 Walnut Street, Philadelphia,  Three frames of specimens of engraving on  precious stones and impressions of seals.

(Memorial Hall, Second Story, Corridor.)

NO.  EXHIBITOR.  SUBJECT.
1316  Bencke & Scott, New York,  "One Hundred Years Ago"—chromo-lithograph.  Centennial Memorial.
1317  Witteman Bros., New York,  Frame composed of fifteen thousand pieces of  wood, constructed without nail, screw, or glue.

(Memorial Hall, Second Story, Room No. 1.)

NO.  EXHIBITOR.  SUBJECT.
1320  Goth, Anthony, Bethlehem, Pa.,  Oil-painted washable wall paper. Specimens of  wall and ceiling decoration.
1321  Rumbold, George W., New York,  Imitations of marbles (wall paper).
1322  Hazzard, R. T., Philadelphia,  Specimens of wall and ceiling decorations in paper  and frescoed panels.
1325  Lange & Bros., St. Louis,  Inlaid show-case composed of one hundred and  twenty thousand pieces of wood.
DEPT. IV.—ART.

(Memorial Hall, Second Story, Room No. 2.)

<table>
<thead>
<tr>
<th>NO.</th>
<th>EXHIBITOR</th>
<th>SUBJECT</th>
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</thead>
<tbody>
<tr>
<td>1326</td>
<td>Hopson, Wm., Everett, Mass.,</td>
<td>Painted imitations of woods, and two table-tops, imitations of inlaid marbles.</td>
</tr>
<tr>
<td>1327</td>
<td>McGregor, G. S., Cleveland, O.,</td>
<td>Specimens of oak, walnut, and rosewood graining.</td>
</tr>
<tr>
<td>1329</td>
<td>Gruger, Pearson E., Lancaster, Pa.,</td>
<td>Monumental engraving on marble.</td>
</tr>
<tr>
<td>1330</td>
<td>Foerster, Edmund, &amp; Co., New York,</td>
<td>Breakwater at Calais, and other specimens of chromo-lithography.</td>
</tr>
<tr>
<td>1331</td>
<td>Colton, Zahm, &amp; Roberts, New York,</td>
<td>Beatrice Cenci, and other specimens of chromo-lithography.</td>
</tr>
<tr>
<td>1331a</td>
<td>Hollerbach &amp; Dieffenbach, New York,</td>
<td>Frames and specimens of mouldings.</td>
</tr>
<tr>
<td>1332</td>
<td>Frickenhaus, Otto, New York,</td>
<td>Designs for crochet and embroidery.</td>
</tr>
<tr>
<td>1333</td>
<td>Beeler, J. C., New York,</td>
<td>Ornamental painting on glass.</td>
</tr>
<tr>
<td>1334</td>
<td>Beeler, J. C., New York,</td>
<td>Pastel drawing of an Indian’s head.</td>
</tr>
<tr>
<td>1335</td>
<td>Hoevel, Ferd., St. Louis,</td>
<td>Flowers—painting on glass.</td>
</tr>
</tbody>
</table>

(Memorial Hall, Second Story, Room No. 3.)

<table>
<thead>
<tr>
<th>NO.</th>
<th>EXHIBITOR</th>
<th>SUBJECT</th>
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</thead>
<tbody>
<tr>
<td>1337</td>
<td>Demorest, W. J., New York,</td>
<td>Old Oaken Bucket, and other specimens of chromo-lithography, and one frame of wood engravings engraved by Redman &amp; Kenney.</td>
</tr>
<tr>
<td>1340</td>
<td>Hunter, Thos., Philadelphia,</td>
<td>Tegner’s Drapa, and other specimens of chromo-lithography.</td>
</tr>
<tr>
<td>1341</td>
<td>Hoover, Jos., Philadelphia, Pa.,</td>
<td>The Changed Cross, and other specimens of chromo-lithography, with two of the original oil paintings. Chromos and oil paintings framed. Publisher of fine chromos, wholesale lowest rates. Office and salesroom, 1129 Chestnut Street; factory, south-west corner of Thirteenth and Buttonwood Streets.</td>
</tr>
</tbody>
</table>

(Memorial Hall, Second Story, Room No. 4.)

<table>
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<th>NO.</th>
<th>EXHIBITOR</th>
<th>SUBJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344</td>
<td>Vandusen, R., Weedsport, New York,</td>
<td>Four frames of lithographs (animals).</td>
</tr>
<tr>
<td>1345</td>
<td>Dwyer, Edward, Philadelphia,</td>
<td>Painting and inlaid mother-of-pearl on glass—Moonlight.</td>
</tr>
<tr>
<td>1347</td>
<td>Palm, Chas., &amp; Co., New York,</td>
<td>Specimens of C. Schuessler’s patent transfer ornaments on glass.</td>
</tr>
<tr>
<td>1350</td>
<td>Meyer, James, Jr., New York,</td>
<td>Penmanship and pen drawings.</td>
</tr>
<tr>
<td>1351</td>
<td>Barlow, Joel H., Hudson City, N.J.,</td>
<td>Penmanship and pen drawing.</td>
</tr>
<tr>
<td>1352</td>
<td>Brückner, H., New York,</td>
<td>Roger Williams’s Reception by the Indians (drawing).</td>
</tr>
<tr>
<td>1353</td>
<td>Brückner, H., New York,</td>
<td>Discovery of the Hudson River (drawing).</td>
</tr>
<tr>
<td>1355</td>
<td>Schmidt, Geo. S., Saratoga, N.Y.,</td>
<td>Silhouettes.</td>
</tr>
<tr>
<td>1356</td>
<td>North, Miss R. M., Philadelphia,</td>
<td>Bouquet drawn on silk.</td>
</tr>
</tbody>
</table>
1360 Pierce's Business College, 39 South Tenth Street, Philadelphia, Pa., Thomas May Pierce, M.A. Principal and Proprietor, Rev. John Thompson, Business Manager, residence 2002 Brandywine Street,

EXHIBITOR.

1357 Frost, Philadelphia,
1358 Stehlin, Joseph, New York,
1359 Smith, G. B., Jersey City,

NO. SUBJECT.

EXHIBITOR.

1361 Centennial Commission, Competitive designs of the Centennial Buildings.

STAINED GLASS.

1365 Mittermaier, Max, Brooklyn, Christ amid the Doctors.
1366 West, Samuel, Boston, Saint Paul.

SUBJECT.

*Ancient altar carvings.

Specimens of penmanship and pen drawing. Brief description of the objects on exhibition in Pennsylvania Educational Hall. I. Penmanship.—(a.) Seven (7) sets of resolutions engrossed by order of the Philadelphia Board of Public Education at different times during the past five years, and borrowed from the owners for the purpose of showing the high order of talent employed by the College. (b.) The improvement in writing of fourteen hundred (1400) pupils of the College, showing the success of the penman as a teacher. (c.) A "reward of merit" engrossed by the penman, the like of which is given once a month to the pupil who makes the most improvement in writing during the month. (d.) A large piece of "Specimens of Spencerian Penmanship," and a set of resolutions, complimentary of the Principal, written by the penman, and a "deceiving picture" made with pen, brush, and pencil by the professor of drawing, each illustrating the power and ability of the executor. (e.) A piece of ornamental penmanship with a bouquet in the centre drawn with the pen, which with the drawings in the work done for the Board of Education, show the penman's skill in pen-drawing. II. Book-keeping.—(a.) A case of samples of Merchandise used by the pupils of the College in the transaction of business among themselves in the Actual Business Department, thus furnishing each pupil with an original and independent set of transactions for his books. (b.) Samples of College Currency used in the payment of bills, together with copies of the various business papers used by the students. III. Course of instruction.—(a.) A small piece of lettering naming the subjects taught. (b.) A Diploma setting forth the subjects of examination for graduation. IV. Objects of the Institution and Classes who patronize it.—A large piece of penmanship setting forth the same in detail. Particular merit which the Exhibitor claims for his Exhibit.—I. The highest order of talent in the penman in all the departments of work done with the pen. II. Superior plans for the improvement of the writing of pupils, in addition to the excellence of the teacher. III. Ingenious and successful plans for teaching Book-keeping and imparting a sound, practical, and economical preparation of young men for business life.

(Memorial Hall, Second Story, Room No. 5.)

(Annex, Gallery No. 1.)
## ENGRAVINGS AND LITHOGRAPHS.

*(Annex, Gallery No. 18.)*

<table>
<thead>
<tr>
<th>NO.</th>
<th>EXHIBITOR</th>
<th>SUBJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1368</td>
<td>Nichols, H. H., Washington,</td>
<td>Frame of surgical engravings on wood; frame of zoological engravings on wood.</td>
</tr>
<tr>
<td>1369</td>
<td>Mayer, Charles, Jersey City,</td>
<td>Frame of engravings on wood.</td>
</tr>
<tr>
<td>1370</td>
<td>Harley, J. S., New York,</td>
<td>Nine frames of engravings on wood (pictorial).</td>
</tr>
<tr>
<td>1371</td>
<td>Smart, T. L. &amp; R. M., New York,</td>
<td>Frame of engravings on wood (mechanical).</td>
</tr>
<tr>
<td>1372</td>
<td>Muller, R. A., Brooklyn,</td>
<td>Frame of engravings on wood (pictorial).</td>
</tr>
<tr>
<td>1373</td>
<td>Redman &amp; Kenney, New York,</td>
<td>Specimens of engravings on wood.</td>
</tr>
<tr>
<td>1374</td>
<td>Faas, Frederick, Philadelphia,</td>
<td>Specimens of engravings on wood.</td>
</tr>
<tr>
<td>1375</td>
<td>Scattergood &amp; Hammar, Philadelphia,</td>
<td>Engravings on wood (machinery).</td>
</tr>
<tr>
<td>1376</td>
<td>Breuker &amp; Kessler, Philadelphia,</td>
<td>Commercial lithographic engraving.</td>
</tr>
<tr>
<td>1377</td>
<td>Leonhardt, Theodore, &amp; Son, Philadelphia,</td>
<td>Commercial lithographic engraving.</td>
</tr>
<tr>
<td>1378</td>
<td>Gay, George, Philadelphia,</td>
<td>Decorated china and glass.</td>
</tr>
<tr>
<td>1379</td>
<td>Steele Bros., Philadelphia,</td>
<td>American decorated china and engraved glass.</td>
</tr>
</tbody>
</table>

*(Annex, Gallery No. 20.)*

<table>
<thead>
<tr>
<th>NO.</th>
<th>EXHIBITOR</th>
<th>SUBJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1382</td>
<td>Lauderdale, James W., Philadelphia,</td>
<td>Four frames of engravings on wood, and illustrated books.</td>
</tr>
<tr>
<td>1383</td>
<td>Thompson, J. C., Providence,</td>
<td>Two frames of engravings on wood.</td>
</tr>
<tr>
<td>1384</td>
<td>Lehman &amp; Bolton, Philadelphia,</td>
<td>Commercial lithographic engraving.</td>
</tr>
<tr>
<td>1386</td>
<td>Haas, Augustus, New York,</td>
<td>Electrotype reproductions of medals and bas reliefs.</td>
</tr>
</tbody>
</table>

*(Annex, Gallery No. 22.)*

<table>
<thead>
<tr>
<th>NO.</th>
<th>EXHIBITOR</th>
<th>SUBJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1387</td>
<td>Sartain, John, Philadelphia,</td>
<td>Engravings on steel: The Iron-Worker; Christ Rejected; American Inventors; County Election; Zeilsberger preaching to the Indians; two portraits.</td>
</tr>
<tr>
<td>1388</td>
<td>Sartain, Samuel, Philadelphia,</td>
<td>Engravings on steel: One of the Chosen; Evangeline; Clear the Track; two frames of portraits.</td>
</tr>
<tr>
<td>1389</td>
<td>Hollyer, Samuel, Guttenberg, N.Y.,</td>
<td>Engravings on steel: Flaw in the Title; Charles Dickens; frame of portraits.</td>
</tr>
<tr>
<td>1390</td>
<td>Perine, George E., New York,</td>
<td>Engravings on steel: Mother of the Lord; Better Land; Star-Spangled Banner; seventeen frames of portraits and book illustrations. Picture engraving on steel executed in all its branches. Portraits a specialty. Fine work in all styles at reasonable prices.</td>
</tr>
<tr>
<td>1391</td>
<td>McRae, J. C., New York,</td>
<td>Engravings on steel: The Day we Celebrate; First in Peace; Raising of the Liberty-Pole.</td>
</tr>
<tr>
<td>1393</td>
<td>Pease, J. Ives, Canaan, Conn.,</td>
<td><em>Engraving on steel: Old 76 and Young 48; frame of bank-note vignettes.</em></td>
</tr>
</tbody>
</table>
### UNITED STATES.

<table>
<thead>
<tr>
<th>NO.</th>
<th>EXHIBITOR</th>
<th>SUBJECT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1396</td>
<td>Kelly, Thomas, New York</td>
<td>Two English engravings, after American artists: Rock of Ages; Mercy’s Dream.</td>
</tr>
<tr>
<td>1397</td>
<td>Durand, A. B., New York</td>
<td>Engravings on steel; Musidora; Ariadne; Declaration of Independence; frame of portraits.</td>
</tr>
<tr>
<td>1398</td>
<td>Volkmar, Charles, Baltimore,</td>
<td>Etchings on copper; two frames of landscapes.</td>
</tr>
<tr>
<td>1399</td>
<td>Brown, G. L., Boston,</td>
<td>Etchings on copper; frame of landscapes.</td>
</tr>
<tr>
<td>1400</td>
<td>Moran, Peter, Philadelphia,</td>
<td>Etchings on copper; five frames of animal subjects.</td>
</tr>
<tr>
<td>1401</td>
<td>Ferris, S. J., Philadelphia,</td>
<td>Etchings on glass and copper; two portraits of Fortuny.</td>
</tr>
<tr>
<td>1402</td>
<td>Hollyer, Samuel, Guttenberg, N.Y.</td>
<td>Engraving on steel: Autumn.</td>
</tr>
<tr>
<td>1405</td>
<td>Whitechurch, R. (deceased),</td>
<td>Engraving on steel: Capture of the Serapis.</td>
</tr>
<tr>
<td>1406</td>
<td>Lang, George S., Philadelphia,</td>
<td>Engravings on copper: Landing of Columbus; Washington crossing the Delaware.</td>
</tr>
<tr>
<td>1408</td>
<td>Knoedler, M., &amp; Co., New York,</td>
<td>English engravings after American artists: Return of the Mayflower: The Two Farewells; Out All Night; Niagara Falls; Woodland Vows; Too Near the War-Path.</td>
</tr>
<tr>
<td>1409</td>
<td>Lewis, Miss Edmonia, Rome</td>
<td>*Asleep (group in marble); Hiawatha’s Marriage; Old Arrow Maker and his Daughter (group in marble); terra-cotta of Longfellow, Sumner, and John Brown.</td>
</tr>
<tr>
<td>1410</td>
<td>Rogers, John, New York</td>
<td>Twenty-nine groups of busts for house and lawn.</td>
</tr>
</tbody>
</table>

### SCULPTURE.

<table>
<thead>
<tr>
<th>NO.</th>
<th>EXHIBITOR</th>
<th>SUBJECT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1411</td>
<td>National Bank Note Company, New York</td>
<td>Specimens of bank-note engraving.</td>
</tr>
<tr>
<td>1412</td>
<td>American Bank Note Company, New York</td>
<td>Specimens of bank-note engraving.</td>
</tr>
<tr>
<td>1413</td>
<td>Continental Bank Note Company, New York</td>
<td>Specimens of bank-note engraving.</td>
</tr>
<tr>
<td>1414</td>
<td>Heath &amp; McKendrick, Philadelphia</td>
<td>Plaster figures and ornaments, and Scagliola pedestals.</td>
</tr>
<tr>
<td>1415</td>
<td>Rulon, S. A., Philadelphia</td>
<td>*Ancient Hindoo idol.</td>
</tr>
<tr>
<td>1416</td>
<td>Faser, C., Philadelphia</td>
<td>Architectural gilt frame.</td>
</tr>
<tr>
<td>1418</td>
<td>Pope, A., Jr., Boston</td>
<td>*Painted wood carving—Game.</td>
</tr>
<tr>
<td>1419</td>
<td>Fick, Frederick, Philadelphia,</td>
<td>Marble monumental bas-relief.</td>
</tr>
<tr>
<td>1420</td>
<td>French, Wm. H., Philadelphia,</td>
<td>Plaster ornaments for interior decoration.</td>
</tr>
<tr>
<td>1421</td>
<td>Fisher, Mrs. J Francis, Florence</td>
<td>Mosaic table.</td>
</tr>
<tr>
<td>1422</td>
<td>Snowdon, T. W.,</td>
<td>Wood carvings of chamois.</td>
</tr>
<tr>
<td>1423</td>
<td>Wieschahn, F.W.H., St. Louis,</td>
<td>Penmanship and pen drawings.</td>
</tr>
<tr>
<td>1424</td>
<td>Giddings, Thomas, Williamsport, Pa.,</td>
<td>Centennial frame carved by hand.</td>
</tr>
</tbody>
</table>

### Annex, Gallery No. 24.

<table>
<thead>
<tr>
<th>NO.</th>
<th>EXHIBITOR</th>
<th>SUBJECT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1425</td>
<td>Worthington Sons, North Amherst, Ohio</td>
<td>Sandstone pedestal, from their quarries; presented to Memorial Hall.</td>
</tr>
<tr>
<td>1426</td>
<td>Sheldon &amp; Slason, West Rutland, Vt.,</td>
<td>Marble pedestal, from their quarries; presented to Memorial Hall.</td>
</tr>
</tbody>
</table>
GREAT BRITAIN.

(Memorial Hall, Galleries B, D, P, Q, R, S, T, Z.)

[The initials appended to the names of artists in the following pages signify as follows: P.R.A., President, R.A., Academician, A.R.A., Associate, and A.E., Associate Engraver of the Royal Academy of Arts, England; P.R.S.A., President, R.S.A., Member of the Royal Scottish Academy.]

When not otherwise stated, the artist is also the contributor.]

SCULPTURE.

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3a</td>
<td>Bell, John, London,</td>
<td>Colossal group of &quot;America,&quot; from the original marble at the Albert Memorial, reproduced in terra-cotta by Messrs. H. Doulton &amp; Co.</td>
</tr>
<tr>
<td>4</td>
<td>Chantrey, Sir Fran. Legatt, R.A. (deceased),</td>
<td>Bust of the late Benjamin West, P.R.A. Lent by the Royal Academy, London.</td>
</tr>
<tr>
<td>5a</td>
<td>Doulton, Henry, &amp; Co.,</td>
<td>Terra-cotta reproduction of colossal group &quot;America.&quot;</td>
</tr>
<tr>
<td>6a</td>
<td>Gower, Lord Ronald Leveson, Londer,</td>
<td>No. 1. Marie Antoinette, when Dauphiness, hunting at Fontainebleau, 1773. No. 2. Marie Antoinette on her Way to Execution, 16th October, 1793. No. 3. &quot;It is Finished.&quot;</td>
</tr>
<tr>
<td>8</td>
<td>Joy, A. Bruce, London,</td>
<td>Bust of a girl.</td>
</tr>
<tr>
<td>9</td>
<td>Joy, A. Bruce, London,</td>
<td>Bust of Napoleon III.</td>
</tr>
<tr>
<td>10</td>
<td>Joy, A. Bruce, London,</td>
<td>Medallions.</td>
</tr>
<tr>
<td>12</td>
<td>Doolin, Walter, Dublin,</td>
<td>Two Celtic crosses, carved after the ancient Irish crosses in limestone. Exhibited in the grounds.</td>
</tr>
</tbody>
</table>

OIL PAINTINGS.

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Anthony, Mark, Hampstead,</td>
<td>Sunset after a Storm. Lent by Thomas Winter, Esq.</td>
</tr>
<tr>
<td>7</td>
<td>Barry, James, R.A. (deceased),</td>
<td>The Temptation in Paradise. Lent by the Society of Arts, London.</td>
</tr>
<tr>
<td>NO.</td>
<td>ARTIST</td>
<td>TITLE</td>
</tr>
<tr>
<td>-----</td>
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</tr>
<tr>
<td>9</td>
<td>Brett, John, London,</td>
<td>Morning among the Granite Boulders. Lent by Mrs. McEwen.</td>
</tr>
<tr>
<td>29</td>
<td>Creswick, Thomas, R.A. (deceased),</td>
<td>Landscape. Lent by the Royal Academy, London.</td>
</tr>
<tr>
<td>30</td>
<td>Crofts, E., Dusseldorf,</td>
<td>Ligny. Lent by W. Howe, Esq.</td>
</tr>
<tr>
<td>32</td>
<td>Crowe, Eyre, London,</td>
<td>Goldsmith's Mourners. (See J. Forster's &quot;Life of Oliver Goldsmith,&quot;.)</td>
</tr>
<tr>
<td>41</td>
<td>Etty, William, R.A. (deceased),</td>
<td>God's Acre. Lent by George Fox, Esq.</td>
</tr>
<tr>
<td>42</td>
<td>Faed, Thomas, R.A., Chigwell,</td>
<td>Baith Faidher and Mither. Lent by H. W. F. Bolckow, Esq., M.P.</td>
</tr>
<tr>
<td>50</td>
<td>Fuseli, Henry, R.A. (deceased),</td>
<td></td>
</tr>
<tr>
<td>NO.</td>
<td>ARTIST.</td>
<td>TITLE.</td>
</tr>
<tr>
<td>-----</td>
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</tr>
<tr>
<td>52</td>
<td>Gilbert, Sir John, A.R.A., Blackheath</td>
<td>The First Prince of Wales. Lent by Edwin Lawrence, Esq.</td>
</tr>
<tr>
<td>55</td>
<td>Girardot, E. G., London</td>
<td>Herr Carl Deichmann, violinist and composer.</td>
</tr>
<tr>
<td>56</td>
<td>Goodall, Frederick, R.A., Harrow Weald</td>
<td>Cairo Fruit-Girl. Lent by Messrs. Pilgeram &amp; Lefèvre.</td>
</tr>
<tr>
<td>57</td>
<td>Graham, Peter, London</td>
<td>On the Way to the Cattle Tryst. Lent by Thomas Jessop, Esq., J.P.</td>
</tr>
<tr>
<td>58</td>
<td>Graham, Peter, London</td>
<td>Wind. Lent by A. Brogden, Esq., M.P.</td>
</tr>
<tr>
<td>59</td>
<td>Grant, Sir Francis, P.R.A., London</td>
<td>The late Viscount Hardinge, Governor-General of India, returning from the Battle of Ferozeshah. The background represents the captured camp and village of Ferozeshah. Lent by Viscount Hardinge.</td>
</tr>
<tr>
<td>60</td>
<td>Grant, Sir Francis, P.R.A., London</td>
<td>Portrait of Mrs. Markham.</td>
</tr>
<tr>
<td>61</td>
<td>Grant, Sir Francis, P.R.A., London</td>
<td>Portrait of Earl Russell, K.G. Lent by Earl Russell, K.G.</td>
</tr>
<tr>
<td>63</td>
<td>Hayter, Sir George</td>
<td>Portrait of Her Majesty in Coronation Robes. Lent by Her Majesty the Queen.</td>
</tr>
<tr>
<td>64</td>
<td>Herdman, R., R.S.A., Edinburgh</td>
<td>Portrait of Thomas Carlyle (replica).</td>
</tr>
<tr>
<td>65</td>
<td>Hering, G. E., London</td>
<td>A Riff in the Gloom, Glen Sannox. Lent by John Pender, Esq., M.P.</td>
</tr>
<tr>
<td>66</td>
<td>Hicks, G. E., London</td>
<td>Will he do it?</td>
</tr>
<tr>
<td>70</td>
<td>Holl, F., London</td>
<td>&quot;The Lord gave, the Lord hath taken away; blessed be the name of the Lord.&quot; Lent by F. C. Pawle, Esq.</td>
</tr>
<tr>
<td>72</td>
<td>Hook, James Clarke, R.A., Farnham</td>
<td>Lost and Found. Lent by J. Penn, Esq.</td>
</tr>
<tr>
<td>76</td>
<td>Hughes, Arthur, London</td>
<td>Portrait of the artist.</td>
</tr>
<tr>
<td>78</td>
<td>Hunter, Colin, London</td>
<td>The Last of the Spanish Armada.</td>
</tr>
<tr>
<td>82</td>
<td>Jopling, Mrs. Louise, London</td>
<td>First Steps. Lent by Edward G. Barr, Esq.</td>
</tr>
<tr>
<td>83</td>
<td>King, Haynes, London</td>
<td>Newport Bay, Pembroke-shire.</td>
</tr>
<tr>
<td>84</td>
<td>Knight, C. P., Clifton, Bristol</td>
<td>The Unwelcome Guest. Lent by G. E. Lance, Esq.</td>
</tr>
<tr>
<td>85</td>
<td>Lance, George (deceased)</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>ARTIST</td>
<td>TITLE</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>91</td>
<td>Laurence, S., London,</td>
<td>Portrait of Robert Browning, the poet.</td>
</tr>
<tr>
<td>92</td>
<td>Lawrence, Sir Thomas, P.R.A. (deceased)</td>
<td>Portrait of the first Lord Ashburton. Lent by Lady Louisa Ashburton.</td>
</tr>
<tr>
<td>103</td>
<td>Lewis, John Frederick, R.A., Walton-on-Thames,</td>
<td>The Prayer of Faith healeth the Sick. Lent by J. Wardell, Esq.</td>
</tr>
<tr>
<td>106</td>
<td>Maclaren, W., Capri, near Naples,</td>
<td>A Game of Knucklebones.</td>
</tr>
<tr>
<td>109</td>
<td>MacWhirter, J., London,</td>
<td>Out in the Cold. Lent by Captain Hill.</td>
</tr>
<tr>
<td>111</td>
<td>MacWhirter, J., London,</td>
<td>Valley of Slaughter. Lent by George Fox, Esq.</td>
</tr>
<tr>
<td>114</td>
<td>Mason, George, A.R.A. (deceased),</td>
<td>Wind on the Wolds. Lent by Fred'k Leighton, Esq., R.A.</td>
</tr>
<tr>
<td>117</td>
<td>Moore, Henry, London,</td>
<td>Storm coming on at Sunset—Coast of North Wales. Lent by E. Bollans, Esq.</td>
</tr>
<tr>
<td>120</td>
<td>Mutrie, Miss M. D., London,</td>
<td>Abelard. Lent by the Royal Academy, London.</td>
</tr>
<tr>
<td>121</td>
<td>Newton, Gilbert Stewart, R.A. (deceased),</td>
<td>The Marriage of the Young Prince Richard, Duke of York, second son of King Edward the Fourth, with Anne, daughter of the Duke of Norfolk, May 15th, 1478. Lent by Her Majesty the Queen.</td>
</tr>
<tr>
<td>125</td>
<td>Orchardson, W. Q., A.R.A., London,</td>
<td></td>
</tr>
<tr>
<td>126</td>
<td>Orchardson, W. Q., A.R.A., London,</td>
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<td>130</td>
<td>Paton, W. H., R.S.A., Edinburgh,</td>
<td>A Dell without a Name. Lent by Alex. S. Stevenson, Esq.</td>
</tr>
<tr>
<td>134</td>
<td>Pettie, John, R.A., London,</td>
<td>Smuggler and Exciseman—Tussle for the Key. Lent by W. P. Frith, Esq., R.A.</td>
</tr>
<tr>
<td>148</td>
<td>Reynolds, Sir Joshua, P.R.A. (deceased),</td>
<td>Portrait of the artist. Lent by the Royal Academy, London.</td>
</tr>
<tr>
<td>149</td>
<td>Richmond, W. B., London,</td>
<td>Prometheus Bound.</td>
</tr>
<tr>
<td>150</td>
<td>Rigaud, John Francis, R.A. (deceased),</td>
<td>Samson and Delilah. Lent by the Royal Academy, London.</td>
</tr>
<tr>
<td>151</td>
<td>Rivière, B., London,</td>
<td>Circe and the Companions of Ulysses. Lent by J. K. Cross, Esq., M.P.</td>
</tr>
<tr>
<td>154</td>
<td>Sant, James, R.A., London,</td>
<td>&quot;Sometimes with most intensity gazing, I seem to see thought folded over thought.&quot; Lent by Mrs. Lancaster.</td>
</tr>
<tr>
<td>159</td>
<td>Starr, Miss Louisa,</td>
<td>Imogen. Lent by H. C. Howells, Esq., of New York.</td>
</tr>
<tr>
<td>163</td>
<td>Stuart, Gilbert (deceased),</td>
<td>Portrait of Washington. Lent by J. Delaware Lewis, Esq.</td>
</tr>
</tbody>
</table>
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<table>
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<tr>
<th>NO.</th>
<th>ARTIST.</th>
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<tbody>
<tr>
<td>167</td>
<td>Topham, F. W. W., London,</td>
<td>The Fall of Rienzi, the last Roman Tribune. Lent by the Corporation of Liverpool.</td>
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<tr>
<td>171</td>
<td>Walton, F., Dorking,</td>
<td>Crossways Farm, near Dorking. “One of the olden time.”</td>
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<tr>
<td>175</td>
<td>Ward, Mrs. Henrietta, London,</td>
<td>A Scene from the Childhood of the Old Pretender.</td>
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<td>176</td>
<td>Ward, James, R.A. (deceased),</td>
<td>An Arab Horse. Lent by Charles J. Freake, Esq.</td>
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<td>184</td>
<td>West, Benjamin, P.R.A. (deceased),</td>
<td>The Death of General Wolfe. Lent by Her Majesty the Queen.</td>
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<tr>
<td>185</td>
<td>West, Benjamin, P.R.A. (deceased),</td>
<td>Christ Blessing Little Children. Lent by the Royal Academy, London.</td>
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<tr>
<td>186</td>
<td>Wilkie, Sir David, R.A. (deceased),</td>
<td>Reading the Gazette. Lent by Joseph Fenton, Esq.</td>
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<tr>
<td>187</td>
<td>Wilkie, Sir David, R.A. (deceased),</td>
<td>Boys Digging for a Rat. Lent by the Royal Academy, London.</td>
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WATER COLOR PAINTINGS.

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<tr>
<td>3</td>
<td>Brierly, O. W., London,</td>
<td>Blake going on board the “Resolution” off Dover to take command of the Fleet fitted out against the Dutch, June, 1652. Lent by Messrs. Vokins.</td>
</tr>
<tr>
<td>5</td>
<td>Callow, W., London,</td>
<td>Menagio on the Lake of Como.</td>
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<tr>
<td>6</td>
<td>Cattermole, George (deceased),</td>
<td>The Death of Duncan. Lent by George Giles, Esq.</td>
</tr>
<tr>
<td>7</td>
<td>Cox, David, Jr., London,</td>
<td>Donne Castle. Lent by F. A. Argles, Esq.</td>
</tr>
<tr>
<td>8</td>
<td>Cox, David, Jr., London,</td>
<td>Mountain Solitude. Lent by Captain Baldwin.</td>
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<td>14.</td>
<td>Gilbert, Sir John, A.R.A., Blackheath Road,</td>
<td>41</td>
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<td>19.</td>
<td>Haghe, Louis, London,</td>
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<td>29.</td>
<td>Knight, J., London,</td>
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<td>34.</td>
<td>Naftel, P. J., London,</td>
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<td>Smallfield, F., London,</td>
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### GREAT BRITAIN.

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<td>52</td>
<td>Topham, F. W., London</td>
<td>Listening to her Lover's Letter. Lent by R. M. Knowles, Esq.</td>
</tr>
</tbody>
</table>

### DRAWINGS WITH PEN, PENCIL, OR CRAYONS.

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### ENGRAVINGS.

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<tr>
<td>7</td>
<td>Cope, C. W., R.A., London</td>
<td>“The Life School of the Royal Academy.”</td>
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<tr>
<td>9</td>
<td>Edwards, Edwin, London</td>
<td>Proofs of work on “Old Inns.”</td>
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<tr>
<td>10</td>
<td>Edwards, Edwin, London</td>
<td>Martlesham Lion Inn and Sign.</td>
</tr>
<tr>
<td>13</td>
<td>Etching Club</td>
<td>Etchings by members. Lent by Samuel Redgrave, Esq.</td>
</tr>
<tr>
<td>22</td>
<td>Lewis, Charles G., London</td>
<td>The Horse Fair (after Rosa Bonheur).</td>
</tr>
<tr>
<td>24</td>
<td>Lewis, Charles G., London</td>
<td>Bouricairos crossing the Pyrenees (after Rosa Bonheur).</td>
</tr>
<tr>
<td>26</td>
<td>Parkes, R. B., Hornsey</td>
<td>Mrs. Abington as Miss Prue (after Sir J. Reynolds, P.R.A.).</td>
</tr>
<tr>
<td>29a</td>
<td>Quick, W. M. R., London</td>
<td>Specimens of engravings on wood.</td>
</tr>
<tr>
<td>34</td>
<td>Ridgway, W., London</td>
<td>A Triumphal Procession (after T. Géraud).</td>
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<td>Saddler, J., London,</td>
<td>St. Michael's Mount, Cornwall (after Birket Foster).</td>
</tr>
<tr>
<td>37</td>
<td>Saddler, J., London,</td>
<td>Going to the Christening (after A. Bellowes).</td>
</tr>
<tr>
<td>40</td>
<td>Sharpe, C. W., Maidenhead,</td>
<td>Play scene in Hamlet (after D. Maclise, R.A.).</td>
</tr>
<tr>
<td>41</td>
<td>Sharpe, C. W., Maidenhead,</td>
<td>Here Nelson fell (after D. Maclise).</td>
</tr>
<tr>
<td>42</td>
<td>Slocombe, C. P., Islington,</td>
<td>King Arthur's Castle, Tintagel, Cornwall.</td>
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<td>43</td>
<td>Slocombe, C. P., Islington,</td>
<td>Stonehenge.</td>
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<tr>
<td>44</td>
<td>Slocombe, C. P., Islington,</td>
<td>Beach at Rottingdean, Sussex—chalk cliffs and boulders.</td>
</tr>
<tr>
<td>46</td>
<td>Stacpoole, F., London,</td>
<td>Ought and Carry One (after Miss A. Havers).</td>
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<td>47</td>
<td>Swain, Joseph, London,</td>
<td>Pictures from &quot;Punch.&quot;</td>
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<tr>
<td>50</td>
<td>Tayler, Frederick, London,</td>
<td>The &quot;Songs of Shakespeare.&quot;</td>
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<td>51</td>
<td>Tayler, Frederick, London,</td>
<td>Good-Night.</td>
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<td>Thomas, Percy, London,</td>
<td>Miss Isabel Bateman.</td>
</tr>
<tr>
<td>54</td>
<td>Thomas, Percy, London,</td>
<td>Jochebed, mother of Moses (after Fred'k Goodall, R.A.).</td>
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<tr>
<td>57</td>
<td>Tomkins, Charles A., London,</td>
<td>Three sets of wood engravings, portraits.</td>
</tr>
<tr>
<td>58</td>
<td>Uhrlich, H. S., Chiselhurst,</td>
<td>Earl of Harewood and Hounds (after Sir F. Grant, P.R.A.).</td>
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<tr>
<td>63</td>
<td>Willmore, A., London,</td>
<td></td>
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</table>
**CANADA.**

[Works of Art marked with an asterisk (*) are for sale. Information may be obtained at the office of the Canadian Commission, Main Building.]

*(Annex, Gallery No. 26.)*

**OIL PAINTINGS.**

<table>
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<tr>
<th>NO.</th>
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<tr>
<td>1</td>
<td>Cresswell, W. N.</td>
<td>Sheep</td>
<td>Dr. John Salter</td>
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<tr>
<td>2</td>
<td>Kane, Paul</td>
<td>Chief of Prairie Tribes.</td>
<td>Hon. G. W. Allen</td>
</tr>
<tr>
<td>4</td>
<td>Day, F.</td>
<td>Landscape</td>
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<tr>
<td>5</td>
<td>Verner, P. A.,</td>
<td>Winesshiek</td>
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<tr>
<td>6</td>
<td>Cresswell, W. N.</td>
<td>In the Eastern Townships.</td>
<td>Dr. John Salter</td>
</tr>
<tr>
<td>7</td>
<td>Perré, H.</td>
<td><em>Autumn</em></td>
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</tr>
<tr>
<td>8</td>
<td>Verner, F. A.,</td>
<td><em>Hudson Bay Officials leaving Brule Portage, on Rainy Lake (early morning)</em></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Kreighoff</td>
<td>Winter in Lower Canada</td>
<td>Mrs. Frothingham</td>
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<td>Cresswell, W. N.</td>
<td>Pastoral</td>
<td>Dr. John Salter</td>
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<td>11</td>
<td>Verner, F. A.,</td>
<td><em>Wa-pa-sto-ka</em></td>
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<td>12</td>
<td>Jacobi</td>
<td>Morning Mist on the Ottawa.</td>
<td>A. Gilmore, Esq.</td>
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<td>13</td>
<td>Forbes, J. C.,</td>
<td>Foundering of the Hibernia in Mid-Ocean</td>
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<td>Verner, F. A.,</td>
<td><em>Storm on Lake Ontario</em></td>
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<td>Forbes, J. C.,</td>
<td>Beware</td>
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<td>Hancock, H.</td>
<td><em>At Dundas, Ontario</em></td>
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<td>Jacobi</td>
<td>Mountains on the Ottawa.</td>
<td>A. Gilmore, Esq.</td>
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<td>Landscape</td>
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<td>A Whisky Ring</td>
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<td><em>Summer</em></td>
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<td><em>Indian Summer, Parry Sound</em></td>
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<td>24</td>
<td>Sandham, H.</td>
<td>On the river Godbout</td>
<td>A. Gilmore, Esq.</td>
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<td>Edson, A.,</td>
<td>The Owl’s Head, Eastern Township</td>
<td>H. McMahon, Esq.</td>
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<td>28</td>
<td>Verner, F. A.,</td>
<td><em>Ne-bah-quah-ous</em></td>
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<td>Still Life</td>
<td>Warren Rock, Esq.</td>
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<td>Rest</td>
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<td>Lords of the Forest</td>
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<td>O’Brien</td>
<td>Crossing the Ice</td>
<td>E. Carter, Esq.</td>
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<td>37</td>
<td>Fowler, D.</td>
<td>Lilacs</td>
<td>C. S. Gzowski, Esq.</td>
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<td>A. Leask</td>
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<td>Point des Monts.</td>
<td>H. Langley, Esq.</td>
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<td>Old Well in the Woods.</td>
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<td>I. T. Rolph, Esq.</td>
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<td>A Trout Brook.</td>
<td>A. I. Pell, Esq.</td>
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<td>J. M. T. Burnside, Esq.</td>
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<td>Way,</td>
<td>Pumpkin Harvest.</td>
<td>D. A. Crane, Esq.</td>
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<td>Morning after the Fishing.</td>
<td>F. Kershaw, Esq.</td>
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<td>Sunset.</td>
<td>C. A. Drummond, Esq.</td>
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<td>A Woodland Stream.</td>
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<td>Trespassers.</td>
<td>A. I. Pen, Esq.</td>
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<td>Edson,</td>
<td>Reapers.</td>
<td>T. A. Crane, Esq.</td>
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<td>Twilight.</td>
<td>C. S. Gzowski, Esq.</td>
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<td>E. Carter, Esq.</td>
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<td>Flowers.</td>
<td>H. Hancock, Esq.</td>
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<td>J. A. Fraser, Esq.</td>
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<td>Major Walker</td>
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<tr>
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<td>Sketch.</td>
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"What Olivia really felt gave me some uneasiness. In this struggle between prudence and passion, her vivacity quite forsook her, and every opportunity for solitude was sought."
FRANCE.

(Memorial Hall, Central Gallery East, North Side.)

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<td>Blanc, C. L., Paris,</td>
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(Memorial Hall, Gallery E.)

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| 119 | Colzmann, M., Paris, | (Memorial Hall, Gallery Z.)

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<td>Louis Boulhlet (marble).</td>
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</tbody>
</table>

**OIL PAINTINGS.**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>157</td>
<td>Muraton, A., Paris</td>
<td>A Monk.</td>
</tr>
<tr>
<td>158</td>
<td>Revel, C., Paris</td>
<td>The Miser.</td>
</tr>
<tr>
<td>159</td>
<td>Beliard, E., Paris</td>
<td>Banks of the River Oise (Winter).</td>
</tr>
<tr>
<td>160</td>
<td>Oudinot, A., Paris</td>
<td>Low Tide at Villeville.</td>
</tr>
<tr>
<td>161</td>
<td>Notermann, Z., Paris</td>
<td>Auction Sale.</td>
</tr>
<tr>
<td>163</td>
<td>Salies-Wagner, Miss A., Nimes</td>
<td>The Little Fisher.</td>
</tr>
<tr>
<td>164</td>
<td>Montfallet, A., Paris</td>
<td>Summer Amusements near Versailles.</td>
</tr>
<tr>
<td>165</td>
<td>Hirsch, A., Paris</td>
<td>The Model.</td>
</tr>
<tr>
<td>166</td>
<td>Collette, A., Paris</td>
<td>A French Peasant Girl.</td>
</tr>
<tr>
<td>167</td>
<td>Munier, E., Paris</td>
<td>Refreshment.</td>
</tr>
<tr>
<td>168</td>
<td>Leleux, Armand, Paris</td>
<td>At the Fountain.</td>
</tr>
<tr>
<td>169</td>
<td>Selim, Mrs. H., Paris</td>
<td>Divine Love.</td>
</tr>
</tbody>
</table>

*(Memorial Hall, Gallery I.)*

**OIL PAINTINGS.**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST</th>
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</tr>
</thead>
<tbody>
<tr>
<td>170</td>
<td>Gide, T., Paris</td>
<td>An After-Dinner Nap.</td>
</tr>
<tr>
<td>171</td>
<td>Yvon, A., Paris</td>
<td>Napoleon the First.</td>
</tr>
<tr>
<td>172</td>
<td>Duverger, Th. E., Ecouen,</td>
<td>End of the Harvest.</td>
</tr>
<tr>
<td>173</td>
<td>Bruelle, Gaston, Paris</td>
<td>Fishing-Boats.</td>
</tr>
<tr>
<td>174</td>
<td>Cabuzel, A. H., Paris</td>
<td>A Visit to the Louvre.</td>
</tr>
<tr>
<td>175</td>
<td>Daubigny, K. P., Paris</td>
<td>Valley of Pourville (Normandy).</td>
</tr>
<tr>
<td>177</td>
<td>Busson, Ch., Montoire</td>
<td>Before the Rain.</td>
</tr>
<tr>
<td>178</td>
<td>Hillemacker, Ernest, Paris</td>
<td>Napoleon I., with Goethe and Wieland.</td>
</tr>
<tr>
<td>179</td>
<td>Curzon, A. de, Paris</td>
<td>View at Fort Napoleon.</td>
</tr>
<tr>
<td>180</td>
<td>Brissot de Warville, Saturnin, Compiègne</td>
<td>Sheep-Pen.</td>
</tr>
<tr>
<td>181</td>
<td>Dumaresque, A., Paris</td>
<td>Surrender of Yorktown.</td>
</tr>
<tr>
<td>182</td>
<td>Legat, L., Paris</td>
<td>An Old Water-Mill.</td>
</tr>
<tr>
<td>183</td>
<td>Veron, A. R., Paris</td>
<td>Banks of the River Seine.</td>
</tr>
<tr>
<td>184</td>
<td>Leleux, A., Paris</td>
<td>The First Theft.</td>
</tr>
<tr>
<td>186</td>
<td>Richner, L. P. R., Paris</td>
<td>Reminiscence of Raincy.</td>
</tr>
<tr>
<td>187</td>
<td>Clément, H., Paris</td>
<td>A Fellah Girl (Egypt).</td>
</tr>
<tr>
<td>188</td>
<td>Vuagnat, F., Paris</td>
<td>Landscape with Cattle.</td>
</tr>
<tr>
<td>189</td>
<td>Doshayes, Ch., Paris</td>
<td>In the Forest.</td>
</tr>
<tr>
<td>190</td>
<td>Jacomin, H., Paris</td>
<td>Check-mate.</td>
</tr>
<tr>
<td>191</td>
<td>Bellange, Eug., Paris</td>
<td>Evening after the Battle.</td>
</tr>
<tr>
<td>No.</td>
<td>Artist.</td>
<td>Title.</td>
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<tr>
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<tr>
<td>192</td>
<td>Rapin, A., Paris,</td>
<td>Morning—Valley of Bonnevoux.</td>
</tr>
<tr>
<td>195</td>
<td>Bar, Alexandre de, Paris,</td>
<td>View at Boulak.</td>
</tr>
<tr>
<td>196</td>
<td>Lebel, E., Paris,</td>
<td>View in Italy.</td>
</tr>
<tr>
<td>197</td>
<td>Bertheley, E., Paris,</td>
<td>Fishing-Boats going to Sea.</td>
</tr>
<tr>
<td>199</td>
<td>Renie, Jean Emile, Passy,</td>
<td>Interior of the Bas-Breaux.</td>
</tr>
<tr>
<td>200</td>
<td>Baron, Stephane, Paris,</td>
<td>Faust and Margaret.</td>
</tr>
</tbody>
</table>

**SCULPTURE AND PORCELAIN.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist.</th>
<th>Title.</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Sévres Porcelain Manufactory,</td>
<td>Vase.</td>
</tr>
<tr>
<td>205</td>
<td>Sévres Porcelain Manufactory,</td>
<td>Vase.</td>
</tr>
<tr>
<td>206</td>
<td>Vasselot, A. de, Paris,</td>
<td>Chloe (bronze).</td>
</tr>
<tr>
<td>207</td>
<td>Sévres Porcelain Manufactory,</td>
<td>Two vases.</td>
</tr>
<tr>
<td>208</td>
<td>Sévres Porcelain Manufactory,</td>
<td>Vase.</td>
</tr>
<tr>
<td>209</td>
<td>Cordier, Ch., Paris,</td>
<td>Christopher Columbus (bronze).</td>
</tr>
<tr>
<td>210</td>
<td>Sévres Porcelain Manufactory,</td>
<td>Vase.</td>
</tr>
<tr>
<td>211</td>
<td>Marcellin, E., Paris,</td>
<td>Venus nursing Cupid (bronze).</td>
</tr>
<tr>
<td>212</td>
<td>Sévres Porcelain Manufactory,</td>
<td>Vase.</td>
</tr>
<tr>
<td>216</td>
<td>Itasse, A., Paris,</td>
<td>Sleeping Cupid (marble).</td>
</tr>
<tr>
<td>218</td>
<td>Itasse, A., Paris,</td>
<td>Cupid Ready (marble).</td>
</tr>
<tr>
<td>221</td>
<td>Itasse, A., Paris,</td>
<td>Day and Night (marble).</td>
</tr>
<tr>
<td>222</td>
<td>Lanson, E., Paris,</td>
<td>Bust (marble).</td>
</tr>
<tr>
<td>228</td>
<td>Itasse, A., Paris,</td>
<td>Boy and Bird (marble).</td>
</tr>
<tr>
<td>230</td>
<td>Galineau, J. A. de, Stockholm,</td>
<td>Queen Mab (marble).</td>
</tr>
</tbody>
</table>

(Memorial Hall, Grand Central Hall, Gallery B.)

**SCULPTURE AND PORCELAIN.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist.</th>
<th>Title.</th>
</tr>
</thead>
<tbody>
<tr>
<td>231</td>
<td>Crauk, Gustave, Paris,</td>
<td>MacMahon (bronze).</td>
</tr>
<tr>
<td>232</td>
<td>Sévres Porcelain Manufactory,</td>
<td>Two vases (porcelain).</td>
</tr>
<tr>
<td>233</td>
<td>Sévres Porcelain Manufactory,</td>
<td>Two vases (porcelain).</td>
</tr>
<tr>
<td>234</td>
<td>Cordier, Charles, Paris,</td>
<td>Starting for Cythera (painting on porcelain).</td>
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</table>

(Annex, Gallery No. 32.)

**OIL PAINTINGS.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist.</th>
<th>Title.</th>
</tr>
</thead>
<tbody>
<tr>
<td>235</td>
<td>Kienlin, Jules, Paris,</td>
<td>Louis XIII. and Anne of Austria.</td>
</tr>
<tr>
<td>236</td>
<td>Clairval, Mrs. M. T., Paris,</td>
<td>France in Mourning for Alsace and Lorraine.</td>
</tr>
</tbody>
</table>
### FRANCE.

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>244</td>
<td>Renié, J. E., Passy,</td>
<td>Forest of Fontainebleau.</td>
</tr>
<tr>
<td>245</td>
<td>Bonnefoy, H., Paris,</td>
<td>Thistles.</td>
</tr>
<tr>
<td>246</td>
<td>Allemand, G., Lyons,</td>
<td>A Young Girl with Fruit.</td>
</tr>
<tr>
<td>247</td>
<td>Sebron, H., Paris,</td>
<td>Niagara Falls (Winter).</td>
</tr>
<tr>
<td>249</td>
<td>Chagot, E., Paris,</td>
<td>Wreck of a Sloop.</td>
</tr>
<tr>
<td>251</td>
<td>Berchère, N., Paris,</td>
<td>Gale on the Nile during the Flood.</td>
</tr>
<tr>
<td>254</td>
<td>Salanson, Miss E., Paris,</td>
<td>Rest.</td>
</tr>
<tr>
<td>257</td>
<td>Laurent, Henri, Paris,</td>
<td>Feeding the Sheep.</td>
</tr>
<tr>
<td>260</td>
<td>Villa, E., Paris,</td>
<td>The Vegetable-Stand.</td>
</tr>
<tr>
<td>264</td>
<td>Masson, Miss A., Paris,</td>
<td>Flowers.</td>
</tr>
<tr>
<td>265</td>
<td>Valadon, J. E., Paris,</td>
<td>The Neighbor's Cat.</td>
</tr>
<tr>
<td>266</td>
<td>Veron, A. R., Paris,</td>
<td>Park at Senlis.</td>
</tr>
<tr>
<td>269</td>
<td>Biliard, E., Paris,</td>
<td>Interior of a Studio.</td>
</tr>
<tr>
<td>271</td>
<td>Grandschamp, Pinel de, Paris</td>
<td>Oriental Fantasy.</td>
</tr>
<tr>
<td>272</td>
<td>Salles, Juies, Nimes,</td>
<td>A Young Girl of Procida.</td>
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</table>

### SCULPTURE.

<table>
<thead>
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<th>NO.</th>
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<th>TITLE.</th>
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<tbody>
<tr>
<td>276</td>
<td>Lecointe, Paris,</td>
<td>Good-Bye (bronze).</td>
</tr>
<tr>
<td>278</td>
<td>Doublemard, A., Paris,</td>
<td>Bacchus's Education (bronze).</td>
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</table>

(Annex, Gallery No. 38.)

### OIL PAINTINGS.

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<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
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</thead>
<tbody>
<tr>
<td>281</td>
<td>Martin, Ernest, Paris,</td>
<td>French Soldiers at the Foot of Mont Valérien</td>
</tr>
<tr>
<td>282</td>
<td>Baux, Miss, Paris,</td>
<td>Salonican Woman.</td>
</tr>
<tr>
<td>284</td>
<td>Jaquard, Claudius, Paris,</td>
<td>Prisoners redeemed at Morocco.</td>
</tr>
<tr>
<td>286</td>
<td>Landelle, Charles, Paris,</td>
<td>A Young Gipsy Girl.</td>
</tr>
<tr>
<td>287</td>
<td>Bar, Alexandre de, Paris,</td>
<td>Interior of a Forest.</td>
</tr>
<tr>
<td>288</td>
<td>Herst, A., Paris,</td>
<td>Spring.</td>
</tr>
<tr>
<td>289</td>
<td>Cherez, L.,</td>
<td>The Cours Venéon (Dauphiné).</td>
</tr>
<tr>
<td>290</td>
<td>Mathieu, O., Paris,</td>
<td>The Vanquished.</td>
</tr>
<tr>
<td>NO.</td>
<td>ARTIST.</td>
<td>TITLE.</td>
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<tr>
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<tr>
<td>295</td>
<td>Rivey, A., Paris,</td>
<td>Young Girl (time of Louis XIII.).</td>
</tr>
<tr>
<td>296</td>
<td>Kock, Miss Eliza, Paris,</td>
<td>&quot;You can't have any.&quot;</td>
</tr>
<tr>
<td>299</td>
<td>Berchère, N., Paris,</td>
<td>After the Simeon.</td>
</tr>
<tr>
<td>300</td>
<td>Laporte, Emile, Paris,</td>
<td>Gathering Grapes.</td>
</tr>
<tr>
<td>301</td>
<td>Maillart, D., Paris,</td>
<td>A Young Italian Girl and Mandolin.</td>
</tr>
<tr>
<td>304</td>
<td>Laporte, Emile, Paris,</td>
<td>Harvest Scene.</td>
</tr>
<tr>
<td>306</td>
<td>Merry, B., Bougival,</td>
<td>&quot;Don't touch.&quot;</td>
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</table>

**SCULPTURE.**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>310</td>
<td>Mène, P. J., Paris,</td>
<td>A Falconer on Horseback (bronze).</td>
</tr>
</tbody>
</table>

(Annex, Gallery No. 37.)

**OIL PAINTINGS.**

<table>
<thead>
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<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
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</thead>
<tbody>
<tr>
<td>314</td>
<td>Callias, H., Paris,</td>
<td>A Concert (period of Charles the Bold).</td>
</tr>
<tr>
<td>315</td>
<td>Doux, Mrs. Lucile, Paris,</td>
<td>Revery.</td>
</tr>
<tr>
<td>316</td>
<td>Ferry, G., Paris,</td>
<td>Worship of Bacchus.</td>
</tr>
<tr>
<td>317</td>
<td>Breton, Emile, Pas-de-Calais,</td>
<td>The Canal of Courrières.</td>
</tr>
<tr>
<td>318</td>
<td>Trouillebert, ———, Paris,</td>
<td>A Young Girl at the Fountain.</td>
</tr>
<tr>
<td>322</td>
<td>Dubos, Miss A., Paris,</td>
<td>The Barber’s Daughter.</td>
</tr>
<tr>
<td>324</td>
<td>Gudin, Théodore, Chateau de la Barre,</td>
<td>Escape of a Christian Slave.</td>
</tr>
<tr>
<td>325</td>
<td>Camorré, Léon, Lille,</td>
<td>Cassandra.</td>
</tr>
<tr>
<td>327</td>
<td>Valandon, I., Paris,</td>
<td>Motherly Apprenticeship.</td>
</tr>
<tr>
<td>328</td>
<td>Ferry, Miss L., Paris,</td>
<td>Roses and Fruit.</td>
</tr>
<tr>
<td>330</td>
<td>Deshayes, Ch., Paris,</td>
<td>Cattle in Pasture.</td>
</tr>
<tr>
<td>331</td>
<td>Cabaillot, Lasalle, Paris,</td>
<td>Sculptors’ Hall in the Exhibition of 1872.</td>
</tr>
<tr>
<td>334</td>
<td>Durst, Aug., Puteaux,</td>
<td>Evening in the Kitchen.</td>
</tr>
<tr>
<td>335</td>
<td>Vely, A., Paris,</td>
<td>A Lady with a Guitar.</td>
</tr>
<tr>
<td>336</td>
<td>Landelle, Ch., Paris,</td>
<td>A Samaritan Woman.</td>
</tr>
</tbody>
</table>

**SCULPTURE.**

<table>
<thead>
<tr>
<th>NO.</th>
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<th>TITLE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>338</td>
<td>Cain, A., Paris,</td>
<td>Cock Fight (bronze).</td>
</tr>
<tr>
<td>339</td>
<td>Mène, P. J., Paris,</td>
<td>Scottish Hunting Scene (bronze).</td>
</tr>
</tbody>
</table>
FRANCE.

ARTIST.
341 Méne, P. J., Paris, Hunter and Dogs (bronze).

(Annex, Gallery No. 35.)

OIL PAINTINGS.

ARTIST.
343 Cassinelli, H., Nice, Decatur leaving the harbor of Tripoli, February, 1804, after having set fire to the Frigate Philadelphia.
344 Laguillermie, F., Paris, Crossing the Run.
349 Zier, Edouard, Paris, Julia.
350 Mallet, Joseph, Paris, Boats on the Rhone.
351 Daubigny, Karl, Paris, Shipping Oysters at Cancale.
353 Breton, Emile, Pas-de-Calais, A Village in Winter.
354 Bar, Alexandre de, Paris, The Death of Virginia.
356 Poncelet, B., Paris, Sully, of the Théâtre Français, in the part of "Orestes."
358 Barras, Felix, Paris, "My Husband is on the Sea."
359 Princezseau, R., Paris, Horses frightened by the Railway Train.
362 Ségé, A., Paris, Fountain at Nantois.
363 Durst, A., Puteaux, Evening Landscape.
364 Jundt, G., Paris, Coast Scene.

SCULPTURE.

ARTIST.
367 Gobineau, de, Stockholm, Valkyria after the Victory (marble).
368 Cordier, Charles, Paris, Fellah Girl (bronze).
369 Bertaux, Miss Leon, Paris, Ideal bust (marble).

(Assign, Galleries Nos. 34, 36, 45.)

WATER COLORS, ENGRAVINGS, ETC.

ARTIST.
371 Lalande, Maxime, Paris, Crayon drawing.
372 Dumas, Em., Paris, Flowers (water color).
373 Herst, A., Paris, Pines in Provence (water color).
374 Mermet, C., Paris, Butterflies (water color).
375 Courdouan, V., Toulon, Valley in the Ardennes Mountains (crayon).
376 Cassagne, A., Paris, View in a Forest (water color).
377 Courdouan, V., Toulon, Moustier Ste. Marie (pastel).
378 Félon, Joseph, Paris, Massacre of the Innocents (India ink).
379 Lestang, Parade de, Paris, Autumn Flowers (water color).
382 Félon, Joseph, Paris, Engravings.
<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>385</td>
<td>Brunet, Debaines A., Paris,</td>
<td>Three etchings, after Turner.</td>
</tr>
<tr>
<td>390</td>
<td>Gaillard, S., Paris,</td>
<td>Portrait of Pius IX.</td>
</tr>
<tr>
<td>391</td>
<td>Brunet, Debaines A., Paris,</td>
<td>Six etchings.</td>
</tr>
<tr>
<td>392</td>
<td>Bichot, Felix, Paris,</td>
<td>Japanese objects of art (etching).</td>
</tr>
<tr>
<td>395</td>
<td>Thomas, Emile, Paris,</td>
<td>Marshal Prim (wood engraving).</td>
</tr>
<tr>
<td>396</td>
<td>Levasseur, J. C., Paris,</td>
<td>Miracle of the Loaves and Fishes, after Murillo.</td>
</tr>
<tr>
<td>399</td>
<td>Rajon, P. A., Paris,</td>
<td>&quot;Don’t cry.&quot;</td>
</tr>
<tr>
<td>400</td>
<td>Lévy, Gustave, Paris,</td>
<td>La belle Jardinière.</td>
</tr>
<tr>
<td>401</td>
<td>Dubouchet, H., Auteuil,</td>
<td>Charon (engraving).</td>
</tr>
<tr>
<td>404</td>
<td>Lalanne, M., Paris,</td>
<td>View of the Pont de la Concorde, Paris (engraving).</td>
</tr>
<tr>
<td>405</td>
<td>Flameng, Leopold, Paris,</td>
<td>Three etchings.</td>
</tr>
<tr>
<td>406</td>
<td>Thomas, E., Paris,</td>
<td>Mater Dolorosa (engraving).</td>
</tr>
<tr>
<td>408</td>
<td>Poncet, J. B., Paris,</td>
<td>Moses before the Burning Bush.</td>
</tr>
<tr>
<td>413</td>
<td>Poncet, J. B., Paris,</td>
<td>Jesus bearing the Cross (engraving).</td>
</tr>
<tr>
<td>415</td>
<td>Varin, Eugéne, Paris,</td>
<td>Spring (engraving).</td>
</tr>
<tr>
<td>416</td>
<td>Hildebrand, H., Paris,</td>
<td>Fifteen engravings.</td>
</tr>
<tr>
<td>418</td>
<td>Robert, Jules, Paris,</td>
<td>Three portraits (engraving).</td>
</tr>
<tr>
<td>419</td>
<td>Potemont, M., Paris,</td>
<td>La Merveilleuse.</td>
</tr>
<tr>
<td>420</td>
<td>Béllet, J. J., Paris,</td>
<td>Don Quixote and Sancho Panza (crayon).</td>
</tr>
<tr>
<td>421</td>
<td>Poncet, J. B., Paris,</td>
<td>Jesus riding into Jerusalem.</td>
</tr>
<tr>
<td>422</td>
<td>Lamotte, A., Chaville,</td>
<td>The One-Year Volunteer (engraving).</td>
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<td>Lalanne, M., Paris,</td>
<td>Twelve etchings, representing the interior of Victor Hugo's house.</td>
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<td>Thomas, E., Paris,</td>
<td>Turtle Fight (engraving).</td>
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<td>Jaquemart, J., Paris,</td>
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<td>Chartrousse, E., Paris,</td>
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<td>Barrias, L. E., Paris,</td>
<td>Spinning-Girl of Megara (silver bronze).</td>
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<td>Cain, A., Paris,</td>
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[Information regarding works for sale will be given at the desk in Gallery F, Memorial Hall.]

(Memorial Hall, Central Gallery, East.)

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<td>Pixis, Theodore, Munich</td>
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<td>Farbarius, F. W., Düsseldorf</td>
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<td>Hahn, J., Munich,</td>
<td>Moonlight Landscape (Sternberg Lake).</td>
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<td>Jungheim, C., Düsseldorf,</td>
<td>The Gosan Lake, with the Dachstein, in the Austrian Salt Regions.</td>
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<td>Begas, O., Berlin,</td>
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<td>Willich, C., Munich,</td>
<td>Girl from the Sabine Mountains.</td>
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<td>Deutsch, R. von, Berlin,</td>
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<td>113</td>
<td>Boser, F., Düsseldorf,</td>
<td>Early Affliction.</td>
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<td>114</td>
<td>Eckenbrecher, Th. v., Munich,</td>
<td>Picnic in Asia Minor.</td>
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<td>115</td>
<td>Becker, O., Berlin,</td>
<td>Before the Christening.</td>
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<td>116</td>
<td>Hacker, H., Munich,</td>
<td>König Lake, from the Kessel-Alp.</td>
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<td>Hacker, H., Munich,</td>
<td>Lake of the Four Cantons at Brunnen.</td>
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<td>Grund, J., Baden-Baden,</td>
<td>Diana and Endymion.</td>
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<td>119</td>
<td>Lasch, C., Düsseldorf,</td>
<td>The Orphans.</td>
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<td>121</td>
<td>Amberg, W., Berlin,</td>
<td>Ophelia.</td>
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<td>122</td>
<td>Sturm, F., Berlin,</td>
<td>A Storm.</td>
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<td>Sturm, F., Berlin,</td>
<td>Pilot-Boat.</td>
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<td>124</td>
<td>Faber du Faur, Otto von, Munich,</td>
<td>Departure of Frederick V. from Prague after the Battle of the White Hills.</td>
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<td>125</td>
<td>Schrader, Jul., Berlin,</td>
<td>Queen Elizabeth signing the Death-Warrant of Mary Queen of Scots.</td>
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<td>126</td>
<td>Schwarz, A.,</td>
<td>Broken Flowers.</td>
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<td>127</td>
<td>Molnar, J., Pesth,</td>
<td>Misty Veil.</td>
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<td>128</td>
<td>Starkenborghk, J. N. T. von, Düsseldorf,</td>
<td>Harvest in Holland.</td>
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<td>129</td>
<td>Dietrich, A., Dresden,</td>
<td>Faust and Marguerite (Prison Scene).</td>
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<td>130</td>
<td>Wider, W., Berlin,</td>
<td>Return from Skating.</td>
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<td>Rückart, F., Hamburg,</td>
<td>After the Chase.</td>
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<td>132</td>
<td>Grund, J., Baden-Baden,</td>
<td>Queen Esther.</td>
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<td>Heck, R., Stuttgart,</td>
<td>Natural Arch at Capri.</td>
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<td>Braun, L., Munich,</td>
<td>Capitulation of Sedan.</td>
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<td>135</td>
<td>Harach, Count von, Berlin,</td>
<td>Luther Intercepted.</td>
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<td>136</td>
<td>Plockhorst, Prof., Berlin,</td>
<td>Christ appearing to Mary Magdalene.</td>
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<td>137</td>
<td>Folingsby, G. F., Munich,</td>
<td>Lady Jane Grey’s Triumph over Bishop Gardiner.</td>
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<td>139</td>
<td>Lutteroth, A., Berlin,</td>
<td>Bismarck on his Estates in Lauenburg.</td>
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<td>140</td>
<td>Behmer, H., Weimar,</td>
<td>Girl with Wild Roses.</td>
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<td>141</td>
<td>Weber, F., Munich,</td>
<td>View near Munich.</td>
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<td>142</td>
<td>Mayer, T., Munich,</td>
<td>Statue of Cincinnatus.</td>
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<tr>
<td>143</td>
<td>Hearth, S. D., Munich,</td>
<td>Evening in the Woods.</td>
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(Memorial Hall, Gallery F.)

SCULPTURE.

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
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<tr>
<td>146</td>
<td>Schulz, M., Berlin,</td>
<td>Love conquers Strength.</td>
</tr>
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<td>147</td>
<td>Reusch, F., Berlin,</td>
<td>Group for fountain (bronze).</td>
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(Memorial Hall, Gallery J.)

SCULPTURE.

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<th>ARTIST.</th>
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<tr>
<td>148</td>
<td>Herter, E., Berlin,</td>
<td>Orestes (bronze).</td>
</tr>
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<td>149</td>
<td>Herter, E., Berlin,</td>
<td>Antigone (bronze).</td>
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<td>ARTIST.</td>
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<td>----------------------------------------------------------</td>
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<tr>
<td>150</td>
<td>Silbernagel, C.</td>
<td>Statuette of Prince Bismarck (bronze).</td>
</tr>
<tr>
<td>151</td>
<td>Brunow, L., Berlin</td>
<td>Statue of Count Moltke (bronze).</td>
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<td>152</td>
<td>Andressen, E., Dresden</td>
<td>Boy and Frog (group).</td>
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<td>153</td>
<td>Brunow, L., Berlin</td>
<td>Marble bust of Count Moltke.</td>
</tr>
<tr>
<td>155</td>
<td>Ezekiel, M., Rome</td>
<td>Relief in plaster.</td>
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<td>155a</td>
<td>Toberenz, R., Berlin</td>
<td>Ideal bust (marble).</td>
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</table>

**GALVANOPLASTY.**

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<thead>
<tr>
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<tbody>
<tr>
<td>156</td>
<td>Bavarian Museum of Art, Nuremberg</td>
<td>Galvanoplastic representations of ancient art, especially of gold and silver.</td>
</tr>
</tbody>
</table>

**WATER COLORS.**

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<tbody>
<tr>
<td>157</td>
<td>Meyerheim, P., Berlin</td>
<td>Rhenish Landscape.</td>
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<td>158</td>
<td>Meyerheim, P., Berlin</td>
<td>French Village</td>
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<td>161</td>
<td>Meyerheim, P., Berlin</td>
<td>At the Brook.</td>
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<td>162</td>
<td>Meyerheim, P., Berlin</td>
<td>Twilight.</td>
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<td>163</td>
<td>Spangenberg, L., Berlin</td>
<td>Glacier in Engadin.</td>
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<td>164</td>
<td>Spangenberg, L., Berlin</td>
<td>Capuchin Cloister near Salzburg.</td>
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<td>165</td>
<td>Spangenberg, L., Berlin</td>
<td>Mount Pilatus, on the Lake of the Four Cantons.</td>
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<tr>
<td>166</td>
<td>Lage, Julia von der, Berlin</td>
<td>Flowers.</td>
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<td>167</td>
<td>Skarbina, F.</td>
<td>Alpine Hospitality.</td>
</tr>
<tr>
<td>168</td>
<td>Friedrich, C. F., Dresden</td>
<td>Thirteen water colors.</td>
</tr>
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</table>

**PORCELAIN PAINTINGS.**

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<tbody>
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<td>169</td>
<td>Ens &amp; Greiner, Lauscha</td>
<td>Porcelain paintings.</td>
</tr>
<tr>
<td>170</td>
<td>Deininger, C. H., Munich</td>
<td>Portrait of a lady.</td>
</tr>
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</table>

**ENGRAVINGS.**

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<tr>
<td>171</td>
<td>Dinger, F., Coblenz</td>
<td>Cinderella.</td>
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<td>172</td>
<td>Bartelhess, N., Düsseldorf</td>
<td>In a House of Mourning—copper engraving after Vautier.</td>
</tr>
<tr>
<td>173</td>
<td>Krausse, A., Leipsic</td>
<td>Engravings.</td>
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<td>174</td>
<td>Duncker, A., Berlin</td>
<td>Engravings.</td>
</tr>
<tr>
<td>175</td>
<td>Gräf, C., Dresden</td>
<td>Thirty-six engravings.</td>
</tr>
<tr>
<td>176</td>
<td>Boehm, Hannah, Berlin</td>
<td>Silhouettes.</td>
</tr>
</tbody>
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**PHOTOGRAPHS.**

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<th>ARTIST.</th>
<th>TITLE.</th>
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<tbody>
<tr>
<td>177</td>
<td>Berlin Photograph Co., Stroefer &amp; Kirchner, New York, Agents</td>
<td>Madonna San Sisto, after Raphael; Angels, after Raphael; St. Sixtus, after Raphael; St. Barbara, after Raphael; Morning Prayer, after Rosenthal; Elaine, after Rosenthal; Marie Stuart, after Neal; The Broken Pitcher, after Greuze.</td>
</tr>
</tbody>
</table>

**CHROMO-LITHOGRAPHS.**

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<tbody>
<tr>
<td>178</td>
<td>Zettler, F. X., Munich</td>
<td>Four frames containing chromo-lithographs.</td>
</tr>
<tr>
<td>179</td>
<td>Duncker, A., Berlin</td>
<td>Chromo-lithographs.</td>
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</tbody>
</table>
STAINED GLASS.

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<td>180</td>
<td>Zettler, F. X., Munich</td>
<td>Stained glass window, Christian church.</td>
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<tr>
<td>181</td>
<td>Zettler, F. X., Munich</td>
<td>Stained glass window, Mohammedan temple.</td>
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<tr>
<td>182</td>
<td>Zettler, F. X., Munich</td>
<td>Stained glass window, Persian temple</td>
</tr>
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MEDALS.

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<td>183</td>
<td>Jungfer, A., Berlin</td>
<td>Collection of coins and medals,</td>
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MINERALOGY.

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<tr>
<td>184</td>
<td>Jungfer, A., Berlin</td>
<td>Pieces of amber, inclosing antediluvian insects, —ants, flies, gnats, sugar-mites, moths, scarabaei, spiders, etc. (Memorial Hall, Gallery B.)</td>
</tr>
</tbody>
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STATUARY.

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<tr>
<td>185</td>
<td>Manger, H., Berlin</td>
<td>Colossal statue of Prince Bismarck (bronze).</td>
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AUSTRIA.

[Works of Art marked with an asterisk (*) are for sale. Information may be obtained at the Austrian office, in Gallery G, Memorial Hall.]

(Memorial Hall, Galleries G and Z.)

**OIL PAINTINGS.**

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<td>1</td>
<td>Makart, Hans, Vienna,</td>
<td>*Venice paying Homage to Caterina Cornaro.</td>
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<td>2</td>
<td>Engl, Hugh, Lienz,</td>
<td>*Still Life—game.</td>
</tr>
<tr>
<td>3</td>
<td>Russ, Robert, Vienna,</td>
<td>*Mill near Mals, South Tyrol.</td>
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<tr>
<td>5</td>
<td>Brunner, Joseph, Vienna,</td>
<td>*Landscape.</td>
</tr>
<tr>
<td>8</td>
<td>Amerling, Fred., Vienna,</td>
<td>*Ideal female.</td>
</tr>
<tr>
<td>9</td>
<td>Schödl, Max, Vienna,</td>
<td>*Still Life.</td>
</tr>
<tr>
<td>10</td>
<td>Schödl, Max, Vienna,</td>
<td>*Still Life.</td>
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<tr>
<td>11</td>
<td>Friedländer, Fred., Vienna,</td>
<td>*Tasting the Wine.</td>
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<td>12</td>
<td>Canon, John, Vienna,</td>
<td>*Girl with Fruit.</td>
</tr>
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<td>14</td>
<td>Ruben, Francis Leo, Vienna,</td>
<td>*Roman Woman selling Pomegranates.</td>
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<tr>
<td>19</td>
<td>Hoegel, Minna, Vienna,</td>
<td>*Still Life—game.</td>
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<tr>
<td>20</td>
<td>Lichtenfels, Edward, Chevalier, Vienna,</td>
<td>*Castle Court.</td>
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<td>23</td>
<td>Schaeffer, Augustus, Vienna,</td>
<td>&quot;At the Sea&quot; (desolate beach).</td>
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<td>25</td>
<td>Bühlmayer, Conrade, Vienna,</td>
<td>*Landscape, with animals.</td>
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<td>29</td>
<td>Ribarz, Ralph, Vienna,</td>
<td>*Cow and Sheep.</td>
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<td>Gross, Augustus, Vienna,</td>
<td>Villa d’Este, at Tivoli, near Rome.</td>
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<td>32</td>
<td>Berres, Joseph von, Vienna,</td>
<td>*Caravan in the Caucasus.</td>
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<td>Schilcher, Fred., Vienna,</td>
<td>*Bas-relief.</td>
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<td>Ribarz, Ralph, Vienna,</td>
<td>*View in Venice.</td>
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<td>Schilcher, Fred., Vienna,</td>
<td>*An Interior.</td>
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<td>38</td>
<td>Lafite, Ernest, Vienna,</td>
<td>*Peasant Woman of Upper Austria.</td>
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<td>Halauska, Lewis, Vienna,</td>
<td>*Village Road.</td>
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<td>Lafite, Ernest, Vienna,</td>
<td>*Girl of Upper Austria.</td>
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<td>41</td>
<td>Berres, Joseph von, Vienna,</td>
<td>*Children’s Tenderness.</td>
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<td>Russ, Francis, Vienna,</td>
<td>*Girl and Cat.</td>
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<td>43</td>
<td>Stocker, Francis, Vienna,</td>
<td>*Overwhelmed with Grief.</td>
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<td>Schilcher, Fred., Vienna,</td>
<td>*Bas-relief.</td>
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AUSTRIA.

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<td>Blas, Charles, Vienna,</td>
<td>*Centaur carrying off a Nymph.</td>
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<td>Oeconomus, A., Vienna,</td>
<td>Portrait of the artist.</td>
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<td>Ribarz, Ralph, Vienna,</td>
<td>*Fish-Market at Chioggia.</td>
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<td>52</td>
<td>Pausinger, Francis von, Munich,</td>
<td>*A Chamois killed by a Fall.</td>
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<td>54</td>
<td>George-Mayer, Augustus, Vienna,</td>
<td>*A Study (female head).</td>
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<td>Hoffmann, Joseph, Vienna,</td>
<td>*Ideal landscape.</td>
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<td>56</td>
<td>Fux, Joseph, Vienna,</td>
<td><strong>“Sans-Souci”</strong> (strolling minstrel).</td>
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<td>57</td>
<td>Penther, Daniel, Vienna,</td>
<td>*Portrait (Schopenhauer).</td>
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<td>58</td>
<td>Lichtenfels, Edward, Chevalier, Vienna,</td>
<td>*Village Road in Upper Austria.</td>
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<td>60</td>
<td>Schoenauer, Rosa, Vienna,</td>
<td>*A Neapolitan.</td>
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<td>63</td>
<td>Russ, Francis, Vienna,</td>
<td>*Life in a Castle (Middle Ages).</td>
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<td>Lichtenfels, Edward, Chevalier, Vienna,</td>
<td>*Copper-Mines of Agordo.</td>
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<td>66</td>
<td>Geyling, Ralph, Vienna,</td>
<td>*Garden Scene (Jesuit College).</td>
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<td>67</td>
<td>Parmentier, Mary von, Vienna,</td>
<td>*Village Scenery in the Tyrol.</td>
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<td>69</td>
<td>Probst, Charles, Vienna,</td>
<td>*The Lake of Constance seen from the Gebharts Mountains, Tyrol, at the beginning of a storm called “Föhnwind.” *A Study (female head).</td>
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<td>70</td>
<td>Obermüller, Adolphus, Vienna,</td>
<td>*Distrustful.</td>
</tr>
<tr>
<td>74</td>
<td>Schönreither, George, Vienna,</td>
<td>*The Vogelweidehof, near Botzen, South Tyrol, birthplace of Walter von der Vogelweide, the greatest lyric poet of the Germans in the Middle Ages.</td>
</tr>
<tr>
<td>75</td>
<td>Mayer, Louis, Vienna,</td>
<td>*The Vogelweidehof, near Botzen, South Tyrol, birthplace of Walter von der Vogelweide, the greatest lyric poet of the Germans in the Middle Ages.</td>
</tr>
<tr>
<td>76</td>
<td>Seelos, Godfrey, Vienna,</td>
<td>*The Vogelweidehof, near Botzen, South Tyrol, birthplace of Walter von der Vogelweide, the greatest lyric poet of the Germans in the Middle Ages.</td>
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<tr>
<td>77</td>
<td>Amerling, Fred., Vienna,</td>
<td>*Counsellor of the Middle Ages.</td>
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<td>78</td>
<td>Geving, Ralph, Vienna,</td>
<td>*Roman Pomagnrate-Seller.</td>
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<td>79</td>
<td>Grabowski, Andrew, Lemberg,</td>
<td>Portrait.</td>
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<td>81</td>
<td>Ruben, Francis Leo, Vienna,</td>
<td>*Exhibiting a Foa (England.)</td>
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<td>82</td>
<td>Berres, Joseph von, Vienna,</td>
<td>*Ox-Team.</td>
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<td>83</td>
<td>Ribarz, Ralph, Vienna,</td>
<td>*The Leopoldstein Lake in Styria.</td>
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<td>84</td>
<td>Fritsch, Melchior, Vienna,</td>
<td>*An Interior at Hallstätt, in Upper Austria.</td>
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<tr>
<td>85</td>
<td>Schrödl, Anthony, Vienna,</td>
<td>*A Study (boy).</td>
</tr>
<tr>
<td>87</td>
<td>Müller, Charles Leopold, Vienna,</td>
<td>*A Study (female head).</td>
</tr>
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<td>91</td>
<td>Schrödl, Anthony, Vienna,</td>
<td>*The Grandmother’s Tales.</td>
</tr>
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<td>Reichert, Charles, Vienna,</td>
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<td>Reichert, Charles, Vienna,</td>
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<td>97</td>
<td>Hansch, Anthony, Salzburg</td>
<td>ART.</td>
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<td>Schams, Francis, Vienna</td>
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<td>Graf, Lewis, Vienna</td>
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<td>Haanen, Remi van, Vienna</td>
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<td>102</td>
<td>Graf, Lewis, Vienna</td>
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<td>103</td>
<td>Parmentier, Louisa von, Vienna</td>
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<td>105</td>
<td>Blaas, Charles, Vienna</td>
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<td>106</td>
<td>Parmentier, Mary von, Vienna</td>
<td>ART.</td>
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<tr>
<td>107</td>
<td>Friedländer, Camilla, Vienna</td>
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<tr>
<td>108</td>
<td>Parmentier, Mary von, Vienna</td>
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</tr>
<tr>
<td>109</td>
<td>Schönn, Aloysisius, Vienna</td>
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<td>110</td>
<td>Stainer-Knittl, Anne, Innsbruck</td>
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<td>111</td>
<td>Friedländer, Fred., Vienna</td>
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<tr>
<td>112</td>
<td>Huber, Ralph, Vienna</td>
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<td>113</td>
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<td>114</td>
<td>Rumpiler, Francis, Vienna</td>
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<td>115</td>
<td>Friedländer, Camilla, Vienna</td>
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<td>116</td>
<td>Russ, Robertus, Vienna</td>
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<td>117</td>
<td>Canon, John, Vienna</td>
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<td>118</td>
<td>Fritsch, Melchior, Vienna</td>
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<tr>
<td>119</td>
<td>Nemes-Ransonnet, Eliza, Countess, Vienna</td>
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<tr>
<td>120</td>
<td>Hlavacek, Anthony, Vienna</td>
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<tr>
<td>121</td>
<td>Wertheimer, Gustavus, Vienna</td>
<td>ART.</td>
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<th>NO.</th>
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<tbody>
<tr>
<td>122</td>
<td>Zumbuschen, Caspar, Vienna</td>
<td>ART.</td>
<td>His Majesty the Emperor of Austria (marble bust).</td>
</tr>
<tr>
<td>123</td>
<td>Gliber, James, Vienna</td>
<td>ART.</td>
<td>*A Study (marble head).</td>
</tr>
<tr>
<td>124</td>
<td>Pilz, Vincenz, Vienna</td>
<td>ART.</td>
<td>A Portrait (plaster bust).</td>
</tr>
<tr>
<td>125</td>
<td>Costenoble, Charles, Vienna</td>
<td>ART.</td>
<td>*Charles V. (marble bust).</td>
</tr>
<tr>
<td>127</td>
<td>Wagner, Anthony, Vienna</td>
<td>ART.</td>
<td>*Michael Angelo (bronze statue).</td>
</tr>
<tr>
<td>128</td>
<td>Gliber, James, Vienna</td>
<td>ART.</td>
<td>*Madonna (wood).</td>
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### WATER COLORS.

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<tbody>
<tr>
<td>129</td>
<td>Tepa, Francis, Lemberg</td>
<td>ART.</td>
<td>*The Polish Cavalry Captain Jastrzebic.</td>
</tr>
<tr>
<td>130</td>
<td>Tepa, Francis, Lemberg</td>
<td>ART.</td>
<td>*A Portrait.</td>
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<tr>
<td>131</td>
<td>Alt, Francis, Vienna</td>
<td>ART.</td>
<td>*The Landing at Lucerne.</td>
</tr>
<tr>
<td>132</td>
<td>Alt, Francis, Vienna</td>
<td>ART.</td>
<td>*The Ancient Fish-Market in Rome.</td>
</tr>
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<td>133</td>
<td>Alt, Francis, Vienna</td>
<td>ART.</td>
<td>*Interior of the Cathedral, Milan.</td>
</tr>
<tr>
<td>134</td>
<td>Alt, Francis, Vienna</td>
<td>ART.</td>
<td>*The Cursalon in the Stadt Park, Vienna.</td>
</tr>
<tr>
<td>135</td>
<td>Stöckler, Emanuel, Vienna</td>
<td>ART.</td>
<td>*Girl at the Window.</td>
</tr>
<tr>
<td>136</td>
<td>Stöckler, Emanuel, Vienna</td>
<td>ART.</td>
<td>*Campanile of San Marco, Venice.</td>
</tr>
<tr>
<td>137</td>
<td>Stöckler, Emanuel, Vienna</td>
<td>ART.</td>
<td>*Fishmonger in Venice.</td>
</tr>
<tr>
<td>138</td>
<td>Stöckler, Emanuel, Vienna</td>
<td>ART.</td>
<td>*The Grand Canal, Venice.</td>
</tr>
<tr>
<td>139</td>
<td>Hoffmann, Joseph, Vienna</td>
<td>ART.</td>
<td>*View in the Herrengarten, Darmstadt.</td>
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<tr>
<td>140</td>
<td>Hoffmann, Joseph, Vienna</td>
<td>ART.</td>
<td>*“The Beautiful Chestnut-Tree,” Theaterhof, Darmstadt.</td>
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<tr>
<td>141</td>
<td>Hoffmann, Joseph, Vienna</td>
<td>ART.</td>
<td>*Oberwesel on the Rhine.</td>
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<tr>
<td>142</td>
<td>Alt, Ralph, Vienna</td>
<td>ART.</td>
<td>*Cathedral in Orvieto.</td>
</tr>
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<td>143</td>
<td>Alt, Ralph, Vienna</td>
<td>ART.</td>
<td>*Arch of Constantine, Rome.</td>
</tr>
<tr>
<td>144</td>
<td>Pilner, Francis, Vienna</td>
<td>ART.</td>
<td>*Tambourine-Girl, Molo di Gaetà, near Naples.</td>
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<tr>
<td>145</td>
<td>Pilner, Francis, Vienna</td>
<td>ART.</td>
<td>*Punished Fickleness.</td>
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<tr>
<td>146</td>
<td>Tepa, Francis, Lemberg</td>
<td>ART.</td>
<td>*A Peasant of Zolkiew, Galicia.</td>
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<tr>
<td>147</td>
<td>Tepa, Francis, Lemberg</td>
<td>ART.</td>
<td>*Peasant Woman of Truskaviec, Galicia.</td>
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<td>148</td>
<td>Tepa, Francis, Lemberg</td>
<td>ART.</td>
<td>*The Polish General Josef Zaluski.</td>
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<td>149</td>
<td>Tepa, Francis, Lemberg,</td>
<td>*A Study (boy).</td>
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<tr>
<td>151</td>
<td>Pönninger, Miss C., Vienna,</td>
<td>*Still Life (a duck, in water colors).</td>
<td></td>
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<tr>
<td>152</td>
<td>Pönninger, Miss C., Vienna,</td>
<td>*Flowers (water colors).</td>
<td></td>
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<tr>
<td>153</td>
<td>Pönninger, Miss C., Vienna,</td>
<td>*Flowers (water colors).</td>
<td></td>
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<tr>
<td>154</td>
<td>Schuster, Miss Adele, Vienna,</td>
<td>*Alpine Flowers (oil painting).</td>
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<tr>
<td>155</td>
<td>Schuster, Miss Adele, Vienna,</td>
<td>*The Four Seasons (oil painting).</td>
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<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
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<tr>
<td>156</td>
<td>Unger, W., Vienna,</td>
<td>*Marine view (after Van der Capellen).</td>
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<tr>
<td>157</td>
<td>Unger, W., Vienna,</td>
<td>*Portrait (after Velazquez).</td>
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<td>158</td>
<td>Unger, W., Vienna,</td>
<td>*Portrait (after Palma Vecchio).</td>
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<td>159</td>
<td>Unger, W., Vienna,</td>
<td>*Landscape (after Hobbema).</td>
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<td>160</td>
<td>Unger, W., Vienna,</td>
<td>*Jacob's Blessing (after Govaers Flink).</td>
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<td>161</td>
<td>Unger, W., Vienna,</td>
<td>*Catharine Cornaro (after Hans Makart).</td>
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<tr>
<td>162</td>
<td>Unger, W., Vienna,</td>
<td>*Katharina Formann (after Rubens).</td>
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<tr>
<td>164</td>
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<td>*Catharine Cornaro.</td>
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<td>Angeli, Henry von, Vienna,</td>
<td>Portrait.</td>
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<td>166</td>
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<td>Portrait.</td>
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MEDALS.

*(Memorial Hall, Gallery O.)*

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BELGIUM.

[Information regarding the sale of Works of Art can be obtained at the office of the Belgian Commission, Main Building.]

(Annex, Gallery No. 33.)

**OIL PAINTINGS.**

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<tr>
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<tbody>
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<td>1</td>
<td>Portaels, Jean, Brussels,</td>
<td>Morning.</td>
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<tr>
<td>2</td>
<td>De Biseau, Aristide, Brussels,</td>
<td>The River Semoy (Ardennes).</td>
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<tr>
<td>3</td>
<td>Gerboux, Auguste Charles, Mons,</td>
<td>The Mill of Lens, near Mons.</td>
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<tr>
<td>4</td>
<td>Roffaen, François, Brussels,</td>
<td>Morning, Lake Koenigssee (Bavaria).</td>
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<tr>
<td>6</td>
<td>De Schamphleer, Edmond, Brussels,</td>
<td>Nymwegen, on the River Wahal, Netherlands.</td>
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<tr>
<td>7</td>
<td>Musin, François, Brussels,</td>
<td>Harbor of Rotterdam in Rainy Weather.</td>
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<tr>
<td>8</td>
<td>Huygens, François Joseph, Brussels,</td>
<td>Bouquet of Thorn-Blossoms.</td>
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<tr>
<td>10</td>
<td>Soubre, Charles, Liège,</td>
<td>Insurrection of St. Martin (history of Liège).</td>
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<td>11</td>
<td>Coosemans, Joseph Theodore, Brussels,</td>
<td>Sunset.</td>
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<td>12</td>
<td>Barnaba, Louis, Brussels,</td>
<td>Coast of France.</td>
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<td>14</td>
<td>Dauriac, Henry, Arlon,</td>
<td>Madonna.</td>
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<td>15</td>
<td>De Keyser, Nicaise, Antwerp,</td>
<td>Rebecca.</td>
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<td>16</td>
<td>Verhas, Jean, Brussels,</td>
<td>Sea- Shore at Blankenberghze.</td>
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<td>17</td>
<td>De Bylandt, Count Alfred, Brussels,</td>
<td>Mountain View in Switzerland.</td>
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<td>18</td>
<td>Langlet, Mrs. Caroline, Brussels,</td>
<td>Lighting Candles to the Holy Mother—Italian woman.</td>
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<td>19</td>
<td>Cardon, Charles Léon, Brussels,</td>
<td>The Smoking-Room.</td>
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<td>20</td>
<td>Robbe, Henry, Brussels,</td>
<td>The Destroyer.</td>
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<td>21</td>
<td>De Meester, Raymond, Brussels,</td>
<td>Landscape.</td>
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<td>22</td>
<td>Wagner, Jules, Antwerp,</td>
<td>Griseldis.</td>
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<td>24</td>
<td>Verhoeven-Ball, Antwerp,</td>
<td>Preparing the Christmas Plum-Pudding.</td>
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<td>25</td>
<td>Kuhnlen, Victor, Brussels,</td>
<td>Steen Street in Antwerp.</td>
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<td>27</td>
<td>De Prater, Edmond, Brussels,</td>
<td>Stop !</td>
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<tr>
<td>29</td>
<td>Tschaggeny, Charles, Brussels,</td>
<td>Flemish Stallion.</td>
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<td>30</td>
<td>Van Keirsblick, Jules, Brussels,</td>
<td>Crime and Superstition.</td>
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<td>31</td>
<td>Steens, Edmond, Brussels,</td>
<td>Poultry.</td>
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<td>32</td>
<td>Unterberger, F. R., Brussels,</td>
<td>Posilippo, near Naples.</td>
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<td>Roosenboom, Albert, Brussels,</td>
<td>Motherly Love.</td>
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<td>34</td>
<td>Robbe, Henry, Brussels,</td>
<td>Flowers and Fruit.</td>
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<td>35</td>
<td>Cogen, Felix, Brussels,</td>
<td>Fisherwoman of the Zuyder-Zee, Netherlands.</td>
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<td>36</td>
<td>Keelhoff, François, Brussels,</td>
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<td>38</td>
<td>De St. Cyr, Georges, Brussels,</td>
<td>Sentinel at the Entrance of the Harem.</td>
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<tr>
<td>41</td>
<td>Dandoy, Armand, Namur,</td>
<td>The Banks of the River Meuse.</td>
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<tr>
<td>43</td>
<td>Tschagggeny, Charles, Brussels,</td>
<td>Fire in the Stable.</td>
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<tr>
<td>42a</td>
<td>Vincotte, Thomas, Brussels,</td>
<td>The Female Captive (bronze statue).</td>
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**OIL PAINTINGS.**

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<td>Van den Broeck, Miss Clemence, Brussels,</td>
<td>Flemish House in A.D. 1600.</td>
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<td>Berlin, Jean Joseph, Brussels,</td>
<td>A Confidential Talk.</td>
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<td>Madiol, Adrien Jean, Brussels,</td>
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<td>De Beughem, Count Charles, Brussels,</td>
<td>Landscape near Wiesbaden, Germany.</td>
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<td>De Schampheleer, Edmond, Brussels,</td>
<td>River Moerdyk, Netherlands.</td>
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<td>Raoux, Albert, Brussels,</td>
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<td>51</td>
<td>Sodar, Franz, Dinant,</td>
<td>Reminiscence of Rome.</td>
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<td>Bellemans, Joseph, Antwerp,</td>
<td>Ariosto at the Fountain.</td>
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<td>Col, David, Antwerp,</td>
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<td>Dekeghel, Jules, Ghent,</td>
<td>Pouting.</td>
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<td>56</td>
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<td>Asselbergs, Alphonse, Brussels,</td>
<td>Landscape at Mount-Eagle.</td>
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<td>Stallaert, Joseph, Brussels,</td>
<td>Palm Sunday (Albano costume, Italy).</td>
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<td>Van Lit, Joseph, Antwerp,</td>
<td>The Last at Church.</td>
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<td>63</td>
<td>Starck, Jules, Brussels,</td>
<td>Louis XIV. visits young Malandry, the Dead Defender of Montmédy.</td>
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<td>64</td>
<td>De Keyser, Albert, Antwerp,</td>
<td>Harbor of Antwerp.</td>
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<td>66</td>
<td>Pauwels, Ferdinand, Antwerp,</td>
<td>Fire in the Village of Ruhla, Germany.</td>
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<td>67</td>
<td>Nisen, Felix, Liége,</td>
<td>Fancý head.</td>
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<td>68</td>
<td>Carlier, Modeste, Brussels,</td>
<td>Peasant Girl in the Woods.</td>
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<td>69</td>
<td>De Vigne, Miss Malvina, Ghent,</td>
<td>Azaleas.</td>
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<td>70</td>
<td>De Burbure, L., Brussels,</td>
<td>Harbor of Boulogne, France.</td>
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<td>71</td>
<td>Beernaert, Miss Euphrosyne, Brussels,</td>
<td>Banks of the River Scheldt, near Antwerp.</td>
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<td>72</td>
<td>Robert, Alexander, Brussels,</td>
<td>Three Friends.</td>
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<td>De Schampheleer, Edmond, Brussels,</td>
<td>Domburg Banks, Island of Walcheren, Netherlands.</td>
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<tr>
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<td>De Loose, Basile, Brussels,</td>
<td>Fair in a Flemish Village.</td>
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<td>75</td>
<td>Van Luppen, G. Joseph, Antwerp,</td>
<td>Before the Thunder Storm—View in Flanders.</td>
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<td>76</td>
<td>Mellery, Xavier, Brussels,</td>
<td>Young Girl from the Environs of Rome.</td>
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<td>78</td>
<td>Beernaert, Miss Euphrosyne, Brussels,</td>
<td>View of Domburg, Island of Walcheren, Netherlands.</td>
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<td>79</td>
<td>De Vigne, Miss Emma, Ghent,</td>
<td>Lilacs.</td>
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<td>80</td>
<td>Génisson, Georges, Namur,</td>
<td>Old Hermitage of St. Hubert, Namur.</td>
</tr>
<tr>
<td>81</td>
<td>De Loose, Basile, Brussels,</td>
<td>The School.</td>
</tr>
<tr>
<td>82</td>
<td>Asselbergs, Alphonse, Brussels,</td>
<td>Harvest on the River Meuse.</td>
</tr>
<tr>
<td>83</td>
<td>Carabain, Jacques François, Brussels,</td>
<td>Church of St. Fermo, Verona, Italy.</td>
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<tr>
<td>84</td>
<td>De Biseau, Aristide, Brussels,</td>
<td>Reminiscence of the Ardennes Mountains—War.</td>
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<tr>
<td>85</td>
<td>Smits, Eugène, Brussels,</td>
<td>Mill on the River Scheldt.</td>
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<tr>
<td>86</td>
<td>Rosseels, Jacques, Antwerp,</td>
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</tbody>
</table>
DEPT. IV.—ART.

|| NO. | ARTIST. | TITLE. |
|---|---|---|
| 87 | Meerts, Franz, Brussels, | Saturday in the Monastery. |
| 88 | Van Seben, Henry, Brussels, | The Dead Bird—winter landscape. |
| 89 | Portaels, Jean, Brussels, | Deception. |
| 90 | Huygens, François Joseph, Brussels, | Hazels and Roses. |
| 91 | Meerts, Franz, Brussels, | Announcement of Marriage. |
| 92 | De Baerdemaeker, Felix, Ghent, | View from the Highway Anthée, Harvest Time. |
| 94 | Bouvier, A., Brussels, | The Coast of Bretagne, France. |
| 95 | Lampe, Louis, Brussels, | The Little Sleeper. |
| 96 | Carabain, Jacques François, Brussels, | St. Peter and St. Paul’s Church, Antwerp. |
| 97 | Goemans, Gustave, Melle, near Ghent, | Banks of the River Meuse, near Yvoir. |
| 99 | De Beugham, Count Charles, Brussels, | Kreuznach, on the Rhine, Prussia. |
| 100 | Guffens, Godfrey, Brussels, | The Crucifixion. |
| 103 | Smits, Eugène, Brussels, | Rosetta. |
| 104 | De Franchimont, Mrs. Emile, Brussels, | Fruit. |
| 105 | Wagner, Jules, Antwerp, | Girl tending Geese. |
| 106 | De Keyser, Nicaise, Antwerp, | Dante and the Young Girls of Florence. |
| 107 | Van Luppen, G. Joseph, Antwerp, | Morning—View near Dinant. |
| 109 | Keymeulen, Emile, Brussels, | Landscape in Provence, France. |
| 110 | Gérard, Theodore, Brussels, | An Inn in Württemberg, Germany. |
| 111 | Wagner, Jules, Antwerp, | Dangerous Medium. |
| 112 | Langlet, Mrs. Caroline, Brussels, | In Prison as a Vagabond. |

(Annex, Gallery No. 39.)

STATUARY.

|| NO. | ARTIST. | TITLE. |
|---|---|---|
| 112a | Laumans, Jean André, Brussels, | The Exercise (bronze statue). |

(Annex, Gallery No. 41.)

OIL PAINTINGS.

<p>|| NO. | ARTIST. | TITLE. |
|---|---|---|
| 113 | Platteel, Jean David, Brussels, | The Broken Sledge—Zealand, Netherlands. |
| 114 | Carabain, Jacques François, Brussels, | Sotto Riva Street in Verona, Italy. |
| 115 | De Simpel, Bruno Alphonse, Brussels, | Location in France (Pas-de-Calais) where the Channel Tunnel is to be commenced. |
| 116 | Maswiens, Joseph, Louvain, | Church Interior in the Abbey of Everbode, Brabant. |
| 117 | Robert, Alexander, Brussels, | Discontent in the Harem. |
| 118 | Fourmois, Theodore, Brussels (deceased), | The Mill in the Campine. |
| 119 | Sodar, Franz, Dinant, | Destruction of the Home by Fire. |
| 120 | Barnaba, Louis, Brussels, | Boats ashore on the Coast of France. |
| 121 | Dillens, Adolphe, Brussels, | Fair in Zuid-Beveland, Zealand—“The Youths’ Day.” |
| 122 | Jacobs, Jacob, Antwerp, | Falls in Norway. |
| 123 | Guffens, Godfrey, Brussels, | Episode of the destruction of Pompeii. |
| 125 | Van Keirsbilck, Jules, Brussels, | Desdemona. |
| 126 | Plumot, André, Antwerp, | On the Road to Market. |
| 127 | Bouvier, A., Brussels, | Coast of Flanders (Sunrise). |
| 128 | Houzé, Florentin, Brussels, | An Italian Shepherd Family. |
| 129 | De Meester, Raymond, Brussels, | View at Onglia, near the Cornice, Italy. |</p>
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<td>131</td>
<td>Madiol, Adrien Jean</td>
<td>Hesitation.</td>
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<td>Sebes, Pieter Willem</td>
<td>An Interior at Hindelopen, Province of Friesland, Netherlands.</td>
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<td>Bossuet, François Antoine</td>
<td>Rome—View from the River Tiber, the Fort and the Bridge of St. Angelo, and St. Peter’s Cathedral.</td>
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<td>135</td>
<td>Stellaert, Joseph</td>
<td>The Cellar of Diomede—scene at the destruction of Pompeii.</td>
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<td>136</td>
<td>Mols, Robert</td>
<td>View at Saxenhausen, near Frankfort-on-the-Main, Germany.</td>
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<td>137</td>
<td>Keymeulen, Emile</td>
<td>After the Hurricane.</td>
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<td>138</td>
<td>Van Keirsbilck, Jules</td>
<td>The Duet.</td>
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<td>139</td>
<td>Gerard, Theodore</td>
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<td>140</td>
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<td>Fassin, Adolphe</td>
<td>The Neapolitan Water-Seller (galvanoplastic statue).</td>
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<td>Bouré, Antoine Félix, Brussels,</td>
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<td>178</td>
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<td>Brunin, Charles, Mons,</td>
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<td>Comein, Polydore, Brussels,</td>
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<td>De Groot, Guillaume, Brussels,</td>
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<td>De Woelmont, Gustave, Baron,</td>
<td>Bust of Miss De W. (marble).</td>
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<td>Fassin, Adolphe, Brussels,</td>
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<td>Fassin, Adolphe, Brussels,</td>
<td>Napoli (marble).</td>
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<td>The First Child (marble).</td>
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<td>190</td>
<td>Fraikin, Charles Auguste, Brus-</td>
<td>The Drone Bee (marble).</td>
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<td>Russian Peasant Woman (marble).</td>
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<td>Lefever, Edmond Florimond, Brus-</td>
<td>Piccolo (terra-cotta).</td>
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<td>194</td>
<td>Lefever, Edmond Florimond, Brus-</td>
<td>Piccola (terra-cotta).</td>
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<td>195</td>
<td>Lefever, Edmond Florimond, Brus-</td>
<td>Summer (terra-cotta).</td>
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<td>196</td>
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<td>Remembrance (terra-cotta).</td>
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<td>Alsacian Woman.</td>
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<td>Large Grapes.</td>
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<td>204</td>
<td>Rodin, Auguste, Brussels,</td>
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### MEDALS.

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<td>Wiener, Charles, Brussels,</td>
<td>Frame with the following medals:</td>
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<td></td>
<td>1. The Orange Society medals.</td>
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<td></td>
<td></td>
<td>3. The Cathedral in Seville, interior and exterior.</td>
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<td></td>
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<td>5. The Cathedral of Belem (Portugal).</td>
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<td>7. The King of Holland.</td>
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<td></td>
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<td>8. Medallion of Jenner.</td>
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<td></td>
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<td>10. A. Rodenbach.</td>
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<tr>
<td></td>
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<td>11. Two medallions—awarded by the Society of the &quot;Seine-Inferieure.&quot;</td>
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<td>13. Two medallions—The Exhibition in Oporto, Portugal.</td>
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<td>14. Award from the Lisbon Academy of Fine Arts.</td>
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<td>15. The Prison in Arlon.</td>
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<td></td>
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<td>16. Anthony Van Dyck.</td>
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<td></td>
<td></td>
<td>17. Benjamin Rumford.</td>
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<td>18. Queen Victoria.</td>
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<tr>
<td></td>
<td></td>
<td>20. A &quot;5000 réis&quot; silver piece, Portuguese money.</td>
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<td>22. Sir Moses and Lady Montefiore.</td>
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### BELGIUM.

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<td>National Bank in Brussels.</td>
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<td>Cardinal Sterckx.</td>
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<td>Cardinal Dechamps.</td>
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<td>Dish, style of Louis XV.</td>
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</tr>
<tr>
<td>256</td>
<td>Tourteau, Edward, Brussels</td>
<td>The Elopeement.</td>
</tr>
<tr>
<td>257</td>
<td>Tourteau, Edward, Brussels</td>
<td>The Thinker.</td>
</tr>
<tr>
<td>258</td>
<td>Tourteau, Edward, Brussels</td>
<td>The Dreamer.</td>
</tr>
<tr>
<td>259</td>
<td>Tourteau, Edward, Brussels</td>
<td>Boy's head.</td>
</tr>
<tr>
<td>260</td>
<td>Tourteau, Edward, Brussels</td>
<td>Girl's head.</td>
</tr>
<tr>
<td>261</td>
<td>Tourteau, Edward, Brussels</td>
<td>The Rat-Catcher.</td>
</tr>
<tr>
<td>262</td>
<td>Tourteau, Edward, Brussels</td>
<td>A Man's head.</td>
</tr>
<tr>
<td>263</td>
<td>Tourteau, Edward, Brussels</td>
<td>A Woman's head.</td>
</tr>
<tr>
<td>264</td>
<td>Tourteau, Edward, Brussels</td>
<td>Love is Conqueror.</td>
</tr>
<tr>
<td>265</td>
<td>Tourteau, Edward, Brussels</td>
<td>The Broken Pitcher.</td>
</tr>
<tr>
<td>266</td>
<td>Tourteau, Edward, Brussels</td>
<td>A Gothic Triptych.</td>
</tr>
<tr>
<td>267</td>
<td>Tourteau, Edward, Brussels</td>
<td>Child's head.</td>
</tr>
<tr>
<td>268</td>
<td>Tourteau, Edward, Brussels</td>
<td>Boy's head.</td>
</tr>
<tr>
<td>269</td>
<td>Tourteau, Edward, Brussels</td>
<td>Girl's head.</td>
</tr>
<tr>
<td>270</td>
<td>Volkaerts, François Xavier, Brussels</td>
<td>Cupids.</td>
</tr>
<tr>
<td>271</td>
<td>Volkaerts, François Xavier, Brussels</td>
<td>Ducks.</td>
</tr>
<tr>
<td>272</td>
<td>Volkaerts, François Xavier, Brussels</td>
<td>Venus and Cupid.</td>
</tr>
</tbody>
</table>

### PHOTOGRAPHS.

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>273</td>
<td>Royal Belgian Society for Photog-</td>
<td>Album of photographs (after the Belgian painter</td>
</tr>
<tr>
<td></td>
<td>raphy,</td>
<td>Wiertz, deceased)</td>
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</tbody>
</table>

### ARCHITECTURAL DRAWING.

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist</th>
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</thead>
<tbody>
<tr>
<td>274</td>
<td>De Curte, Louis, Brussels</td>
<td>Plans for a cathedral in the Gothic style of the thirteenth century.</td>
</tr>
</tbody>
</table>

*(Annex, Gallery No. 23.)*

### DRAWINGS.

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist</th>
<th>Title</th>
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</table>

### ENGRAVINGS.

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<thead>
<tr>
<th>No.</th>
<th>Artist</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>276</td>
<td>Biot, Gustave, Brussels</td>
<td>The Triumph of Galatea (after Raphael).</td>
</tr>
<tr>
<td>277</td>
<td>Biot, Gustave, Brussels</td>
<td>Portrait.</td>
</tr>
<tr>
<td>278</td>
<td>Biot, Gustave, Brussels</td>
<td>Portrait of the Emperor of Austria.</td>
</tr>
<tr>
<td>279</td>
<td>Danse, Auguste, Mons</td>
<td>The Sorceress.</td>
</tr>
<tr>
<td>280</td>
<td>Danse, Auguste, Mons</td>
<td>The Last Moments of Charles V.</td>
</tr>
<tr>
<td>281</td>
<td>Danse, Auguste, Mons</td>
<td>The Wedding.</td>
</tr>
<tr>
<td>282</td>
<td>Danse, Auguste, Mons</td>
<td>The Martyrdom of Saint Peter.</td>
</tr>
<tr>
<td>283</td>
<td>Danse, Auguste, Mons</td>
<td>The Virgin on Calvary.</td>
</tr>
<tr>
<td>NO.</td>
<td>ARTIST.</td>
<td>TITLE.</td>
</tr>
<tr>
<td>-----</td>
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<td>-------</td>
</tr>
<tr>
<td>285</td>
<td>D'Inghuem, Le Bailly, Brussels,</td>
<td>Frame containing etchings.</td>
</tr>
<tr>
<td>286</td>
<td>D'Inghuem, Le Bailly, Brussels,</td>
<td>Frame containing etchings.</td>
</tr>
</tbody>
</table>

**OIL PAINTING.**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>287</td>
<td>Wittkamp, John Bernard, Antwerp,</td>
<td>Cruelty of Adolph towards his father, Duc de Guelders (Motley's History of the Netherlands).</td>
</tr>
</tbody>
</table>

**WATER COLORS.**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>288</td>
<td>Beeckman, Marie Ferdinand de, Brussels,</td>
<td>View at Tervueren, Belgium.</td>
</tr>
<tr>
<td>289</td>
<td>Beeckman, Marie Ferdinand de, Brussels,</td>
<td>View in the Forest of Fontainebleau.</td>
</tr>
<tr>
<td>290</td>
<td>Robinson, John, Brussels,</td>
<td>“She is a winsome wee thing.” —(Burns.)</td>
</tr>
</tbody>
</table>
### DEPT. IV.—ART.

**NETHERLANDS.**

[Works of Art marked with an asterisk (*) are for sale. Information may be obtained at the office of the Netherlands Commission, in Annex, Gallery 13.]

*(Annex, Gallery No. 15.)*

#### OIL PAINTINGS.

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Van Lockhorst, D., Utrecht,</td>
<td><em>Field of Heather near Epa</em></td>
</tr>
<tr>
<td>2</td>
<td>Heemskerk, Van Beest E. v., the Hague,</td>
<td><em>Storm near Dover</em></td>
</tr>
<tr>
<td>3</td>
<td>Taanman, J., Amsterdam,</td>
<td><em>Flower-Girl</em></td>
</tr>
<tr>
<td>4</td>
<td>Koekkoek, H., Amsterdam,</td>
<td><em>Beach on the French Coast</em></td>
</tr>
<tr>
<td>5</td>
<td>Koekkoek, H., Jr., London,</td>
<td><em>Stormy Weather at Sea</em></td>
</tr>
<tr>
<td>6</td>
<td>Israels, J., the Hague,</td>
<td>The Card-Players</td>
</tr>
<tr>
<td>7</td>
<td>Egenberger, J. H., Groningen,</td>
<td><em>Rain and Sunshine</em></td>
</tr>
<tr>
<td>8</td>
<td>Van Deventer, J. F., the Hague,</td>
<td><em>Holland Landscape</em></td>
</tr>
<tr>
<td>9</td>
<td>Gruijter, W., Jr., Amsterdam,</td>
<td><em>Dutch Fishermen caught in a Rain-Storm</em></td>
</tr>
<tr>
<td>10</td>
<td>Kate, J. Mari H. Ten, the Hague,</td>
<td><em>Good Friends</em></td>
</tr>
<tr>
<td>11</td>
<td>Mesdag, van Houten, Mrs., the Hague,</td>
<td><em>In the Downs</em></td>
</tr>
<tr>
<td>12</td>
<td>Stroebel, J. A. B., the Hague,</td>
<td><em>The Deacons of the Silversmiths’ Guild conferring a Freeman’s Certificate—seventeenth century</em></td>
</tr>
<tr>
<td>13</td>
<td>Eerelman, J., Brussels,</td>
<td><em>A Directress of the Orphan Asylum at Groningen—about the beginning of this century</em></td>
</tr>
<tr>
<td>14</td>
<td>Bilders, J. W., Amsterdam,</td>
<td><em>Landscape near Vorden</em></td>
</tr>
<tr>
<td>15</td>
<td>Cunaeus, C., Amsterdam,</td>
<td><em>In Summer</em></td>
</tr>
<tr>
<td>16</td>
<td>Bishoff, C., the Hague,</td>
<td><em>Dieuwke</em></td>
</tr>
<tr>
<td>17</td>
<td>Kool, S., Amsterdam,</td>
<td><em>Saturday Afternoon in Friesland</em></td>
</tr>
<tr>
<td>18</td>
<td>Stortenbeker, P., the Hague,</td>
<td><em>Landscape with Cattle</em></td>
</tr>
<tr>
<td>19</td>
<td>Canta, J. A., Rotterdam,</td>
<td><em>Summer in the Fields</em></td>
</tr>
<tr>
<td>20</td>
<td>Bosboom, J., the Hague,</td>
<td>Church at Treves</td>
</tr>
<tr>
<td>21</td>
<td>Hanrath, Th.,</td>
<td><em>A Connoisseur</em></td>
</tr>
<tr>
<td>22</td>
<td>Haanen, Adrian, Mrs., Oosterbeek,</td>
<td><em>Flowers</em></td>
</tr>
<tr>
<td>23</td>
<td>Mesdag, H. W., the Hague,</td>
<td><em>Storm on the North Sea</em></td>
</tr>
<tr>
<td>24</td>
<td>Martens, W. J., Rome,</td>
<td><em>Vestibule of St. Mark in Venice</em></td>
</tr>
<tr>
<td>25</td>
<td>Rust, J. A., Amsterdam,</td>
<td><em>View of Amsterdam—sixteenth century</em></td>
</tr>
<tr>
<td>26</td>
<td>Oppenoor, W. J., Antwerp,</td>
<td><em>A Pool at Lent—Evening</em></td>
</tr>
<tr>
<td>27</td>
<td>Apol, L., the Hague,</td>
<td><em>Early Morning</em></td>
</tr>
<tr>
<td>28</td>
<td>Valkenburg, H., Amsterdam,</td>
<td><em>Domestic Happiness</em></td>
</tr>
<tr>
<td>29</td>
<td>Koster, E., and Savry, H., Haarlem,</td>
<td><em>River View near Dordrecht</em></td>
</tr>
<tr>
<td>30</td>
<td>Cunaeus, C., Amsterdam,</td>
<td><em>Annexation</em></td>
</tr>
<tr>
<td>31</td>
<td>Postma, G., Haarlem,</td>
<td><em>The Barber of Seville</em></td>
</tr>
<tr>
<td>32</td>
<td>Huybers, J. D., Zwolle,</td>
<td><em>Four Weeks after St. John’s Day</em></td>
</tr>
<tr>
<td>33</td>
<td>Vos, M., Miss, Oosterbeek,</td>
<td><em>Still Life</em></td>
</tr>
<tr>
<td>34</td>
<td>Soeterick, Th., Utrecht,</td>
<td><em>Solitude</em></td>
</tr>
<tr>
<td>35</td>
<td>Lingeman, L., Baarn,</td>
<td><em>Trial of a Prisoner of War</em></td>
</tr>
<tr>
<td>36</td>
<td>Van Hove, J. H., the Hague,</td>
<td><em>Good Tidings</em></td>
</tr>
<tr>
<td>37</td>
<td>Scholten, J. H., Haarlem,</td>
<td>Sunday Morning</td>
</tr>
<tr>
<td>38</td>
<td>Savrij, H., Haarlem,</td>
<td><em>Pastoral Scene near Haarlem</em></td>
</tr>
<tr>
<td>39</td>
<td>Roehussen, Ch., Rotterdam,</td>
<td><em>Cheese-Market in North Holland</em></td>
</tr>
<tr>
<td>40</td>
<td>Cunaeus, C., Amsterdam,</td>
<td><em>In Winter</em></td>
</tr>
<tr>
<td>41</td>
<td>Heemskerk, Van Beest E. v., the Hague,</td>
<td>Off the Island of Texel</td>
</tr>
<tr>
<td>42</td>
<td>Roth, G. A., Amsterdam,</td>
<td><em>Mill at Vorden</em></td>
</tr>
</tbody>
</table>
NETHERLANDS.

NO.  ARTIST.                              TITLE.
43 Verveer, S. L. (deceased), Village of Scheveningen.
44 Seggern, F. van, Amsterdam, *Evening near Calmpthout.
45 Masurel, J. E., Amsterdam, *Recreation.
46 Kate, H. F. C. Ten, the Hague, *A Morning Concert.
47 Hazeu, A. C., Haarlem, *Landscape in Gelderland.

(Annex, Gallery No. 5.)

OIL PAINTINGS.

NO.  ARTIST.                              TITLE.
49 Hilverdink, Johan, Amsterdam, *Landscape on the Mediterrenean Coast.
50 Vermeer, Elchonan, the Hague, *The Widow.
51 Vester, W., Heemstede, *Landscape in Holland.
52 Nakken, W. C., the Hague, Packhorses in the Woods of St. Gatlen, Normandy.
54 Bisschop, C., the Hague, At Church.
55 Koekkoek, W., the Hague, *Scene in Kuienburg.
56 Ronner, Mrs. Henriette, née Knip, *Hare in his Covert.
               Brussels,
59 Greive, J. C., Jr., Amsterdam, *The Dock at Amsterdam.
60 Israels, J., the Hague, In the Grain-Field.
61 Roelofs, W., Brussels, Landscape.
               the Hague,
64 Sande Backhuijzen, Mrs. G. J. v. d., the Hague,
65 Tom, J. B., the Hague, Heath with Sheep.
67 Israels, J., the Hague, After the Storm.
68 Gempt, B. te, Amsterdam, Dog.
69 Trigt, H. A. van, Hilversum, *Norwegian Women bringing Children to be Baptized, and being welcomed by the Clergyman.

70 Maris, Willem, the Hague, *The First Lesson in Swimming.
71 Verschuur, W., Jr., Amsterdam, *Horse in the Stable.
74 Verschuur, W., Jr., Amsterdam, *Dog.
75 Weissenbruch, Jan, the Hague, Leerdam.
76 Vos, Miss M., Oosterbeek, *Still Life.
77 Schenkel, J. J., Amsterdam, *St. Nicholas Church at Amsterdam.
80 Koster, E., Haarlem, *On the Beach.
81 Windt, P. P., the Hague, *Tough Beans.
82 Heerebaarth, G., Amsterdam, *Suburbs of a Dutch City.
83 Sande Backhuijzen, Mrs. G. J. v. d., the Hague,
85 Borselen, I. W. van, the Hague, A Holland Landscape.
87 Testas, W. de Famars, Brussels, *A Barber’s Shop at Cairo.
88 Mesdag, H. H., the Hague, *Evening on the Beach.
89 Sadee, Th., the Hague, The Potato-Gatherers.
90 Ronner, Mrs. Henriette, Brussels, *The Last Hope.
93 Kruseman, Elten van, New York, *Holland Landscape.
## DEPT. IV.—ART.

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>96</td>
<td>Lingeman, L., Baarn,</td>
<td>A Conference.</td>
</tr>
<tr>
<td>97</td>
<td>Gempt, B. te, Amsterdam,</td>
<td>Three Dogs.</td>
</tr>
<tr>
<td>98</td>
<td>Greive, J. C., Jr., Amsterdam,</td>
<td>*The River Y, near Amsterdam.</td>
</tr>
<tr>
<td>99</td>
<td>Steffellaar, J., Amsterdam,</td>
<td>*In the Church Kitchen.</td>
</tr>
<tr>
<td>100</td>
<td>Kate, J. Mari H. Ten, the Hague,</td>
<td>*On the Beach.</td>
</tr>
<tr>
<td>101</td>
<td>Boks, M., the Hague,</td>
<td>*Landscape.</td>
</tr>
<tr>
<td>102</td>
<td>Taanman, J., Amsterdam,</td>
<td>*Sheriff’s Hall in the old Town Hall at Kampen—with figures from the sixteenth century.</td>
</tr>
<tr>
<td>103</td>
<td>Craeyvanger, R., Amsterdam,</td>
<td>*The First Pair of Spectacles.</td>
</tr>
<tr>
<td>104</td>
<td>Roelofs, W., the Hague,</td>
<td>*A Thunder-Storm.</td>
</tr>
<tr>
<td>106</td>
<td>Gempt, B. te, Amsterdam,</td>
<td>*The Cat Pretending to have been Hanged (after La Fontaine).</td>
</tr>
<tr>
<td>108</td>
<td>Apol, L., the Hague,</td>
<td>In the River.</td>
</tr>
<tr>
<td>109</td>
<td>Mauve, A., the Hague,</td>
<td>*Hauling up the Fishing-Boat.</td>
</tr>
<tr>
<td>111</td>
<td>Bosboom, J., the Hague,</td>
<td>*The New Church at Amsterdam.</td>
</tr>
<tr>
<td>112</td>
<td>Mesdag, H. W., the Hague,</td>
<td>*Winter near the Hague.</td>
</tr>
<tr>
<td>113</td>
<td>Vogel, J. G., the Hague,</td>
<td>*Holland Landscape.</td>
</tr>
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(Annex, Gallery No. 13.)

### OIL PAINTINGS.

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
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<tbody>
<tr>
<td>114</td>
<td>Riegen, N., Amsterdam,</td>
<td>A Calm.</td>
</tr>
<tr>
<td>115</td>
<td>Heijl, M., Amsterdam,</td>
<td>*Evening.</td>
</tr>
<tr>
<td>119</td>
<td>Altmann, S., Amsterdam,</td>
<td>*The Young Bull (after Potter).</td>
</tr>
<tr>
<td>120</td>
<td>Seggern, P. van,</td>
<td>*Landscape in Norway.</td>
</tr>
<tr>
<td>126</td>
<td>Nakken, W. C., the Hague,</td>
<td>*Haymaking—Normandy.</td>
</tr>
<tr>
<td>129</td>
<td>Deventer, J. F. van, the Hague,</td>
<td>*Holland Landscape and Cattle.</td>
</tr>
<tr>
<td>131</td>
<td>Ebersbach, J. E., Amsterdam,</td>
<td>*Recreation.</td>
</tr>
<tr>
<td>136</td>
<td>Stroebel, J. A. B., the Hague,</td>
<td>*Dutch Interior.</td>
</tr>
<tr>
<td>137</td>
<td>Rochussen, Ch., Rotterdam,</td>
<td>*A Picnic.</td>
</tr>
<tr>
<td>138</td>
<td>Rochussen, Ch., Rotterdam,</td>
<td>Near Scheveningen.</td>
</tr>
<tr>
<td>139</td>
<td>Rolofes, W., Brussels,</td>
<td>Landscape.</td>
</tr>
<tr>
<td>140</td>
<td>Kate, H. F. C. Ten, the Hague,</td>
<td>*Gamblers—seventeenth century.</td>
</tr>
<tr>
<td>141</td>
<td>Deventer, W. A., the Hague,</td>
<td>Near Scheveningen.</td>
</tr>
<tr>
<td>142</td>
<td>Rochussen, Ch., Rotterdam,</td>
<td>Landscape.</td>
</tr>
<tr>
<td>143</td>
<td>Rochussen, Ch., Rotterdam,</td>
<td>*A Moonlight Excursion.</td>
</tr>
<tr>
<td>144</td>
<td>Bilders, J. W., Amsterdam,</td>
<td>*Reconnoitring.</td>
</tr>
<tr>
<td>145</td>
<td>Destrée, J. J., the Hague,</td>
<td>Landscape.</td>
</tr>
<tr>
<td>146</td>
<td>Heemskerck, Van Beest E. v., the Hague,</td>
<td>*Dutch Meadow.</td>
</tr>
</tbody>
</table>

*Arrival in the Harbor.*
NETHERLANDS.

NO.  ARTIST.  TITLE.
147  Reijntjes, H. E., Amsterdam,  *Sixty-five by Forty.
148  Bosboom, J., the Hague,  Dutch Church.
149  Constant Rebecque, W. C. de, Loosduinen,  Harbor of Moerdyk.
150  Kellen, David v. d., Amsterdam,  No Bad News.
151  Joosten, D. J. H., Haarlem,  Fruit.
152  Essen, J. C. van, Amsterdam,  A Moment's Rest.
153  Bocks, M., the Hague,  Landscape.
154  Riegen, N., Amsterdam,  Coast Scene in France.
155  Altmann, S., Amsterdam,  Jan Steen in his Studio.
156  Altmann, S., Amsterdam,  The Masters of the Kloveniersguild (after F. Hals, 1633).
157  Altmann, S., Amsterdam,  Masters of the Drapers (after Rembrandt).
158  Altmann, S., Amsterdam,  Banquet of the Civil Guard (after Van der Helst).
160  Eversen, A., Amsterdam,  Street Scene in Winter.

(Annex, Gallery No. 23.)

ENGRAVINGS, PHOTOGRAPHS, CARVINGS.

NO.  ARTIST.  TITLE.
161  Sluijter, H. Dzn, Amsterdam,  Fourteen engravings, representing Dutch paintings.
162  Cuypers & Stolzenberg, Sculptors, Roermond,  a The Crucifixion.
       b The Holy Virgin.
       c St. Joris.

(Annex, Gallery No. 21.)

NO.  ARTIST.  TITLE.
163  Wollrabe, H. W., the Hague,  Collection of photographs, eight in number.
164  De Jong, G., Groningen,  Three photographs.
165  Tresling & Co., Amsterdam,  Sixteen chromo-lithographs.
166  Molkenboer, W. B. G., Leeuwarden,  Two architectural compositions.
167  Kolkow, F. J. von, Groningen,  Microscopic photographs on glass.
168  Bauer, C. W., Middelburg,  Five photographs.

STATUARY.

NO.  ARTIST.  TITLE.
169  Goossens & Son, Bosch,  Saul on the Road to Damascus (terra-cotta).
DENMARK.

[Works of Art marked with an asterisk (*) are for sale. Information may be obtained at the office of the Danish Commissioner, Main Building.]

(Annex, Gallery No. 7.)

**OIL PAINTINGS.**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Andersen, A., Copenhagen,</td>
<td>*Winter Landscape.</td>
</tr>
<tr>
<td>2</td>
<td>Andersen, A., Copenhagen,</td>
<td>*Afternoon in a Danish Beech Forest.</td>
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<td>4</td>
<td>Eckardt, C., Copenhagen,</td>
<td>*The Coast of Spalato, Dalmatia.</td>
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<td>5</td>
<td>Hammer, H. J., Copenhagen,</td>
<td>*By the Fountain in Ariccia, Italy.</td>
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<td>6</td>
<td>Hammer, W., Copenhagen,</td>
<td>Fruit under an Apple-Tree.</td>
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<td>Hammer, W., Copenhagen,</td>
<td>*Garden Fruit in a Basket.</td>
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<td>8</td>
<td>Melby, W., Copenhagen,</td>
<td>*Midsummer Night, Iceland, Stormy Weather.</td>
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<td>9</td>
<td>Mackeprang, A., Copenhagen,</td>
<td>*Fox in the Chicken-Yard.</td>
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<td>*Fox and its Young.</td>
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<tr>
<td>11</td>
<td>Rasmussen, J. E. C., Copenhagen,</td>
<td>*Discovery of America in the Year 1000.</td>
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<tr>
<td>12</td>
<td>Rasmussen, J. E. C., Copenhagen,</td>
<td>*Greenlanders on a Journey.</td>
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<td>13</td>
<td>Rasmussen, J. E. C., Copenhagen,</td>
<td>*Danish Fjord.</td>
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<td>14</td>
<td>Schovelin, A., Copenhagen,</td>
<td>*Ruins of Heidelberg.</td>
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<td>15</td>
<td>Sørensen, C. F., Copenhagen,</td>
<td>*Sunset on the Atlantic—An Old Frigate in a Gale.</td>
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SWEDEN.

[Works of Art marked with an asterisk (*) are for sale. Information may be obtained at the office of the Swedish Commission, Memorial Hall.]

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<td>Bergman, Miss Elizabeth, Stockholm,</td>
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<td>Dietrichson, Mrs. M., Christiania,</td>
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<td>Fagerlin, F. I., Stockholm,</td>
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<td>Fagerlin, F. I., Stockholm,</td>
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<td>*In a Stockholm Suburb.</td>
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<td>*Returning at Noon.</td>
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<td>*Autumn Day at Djurgarden, near Stockholm.</td>
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<td>Hermelin, O., Baron, Stockholm,</td>
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<td>Löfgren, Miss Clara, Stockholm,</td>
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<td>Lännroth, Fr., Boras,</td>
<td>*Norwegian Horses.</td>
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<td>*Dalecarlians put to Flight by a Fire in the Forest.</td>
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<td>49a</td>
<td>Nordgren, Axel, Düsseldorf,</td>
<td>*View from the Promontory of Kullen in Skane.</td>
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<td>Nordgren, Axel, Düsseldorf,</td>
<td>*Coast Scenery.</td>
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<td>Nordlander, Miss Anna, Stockholm,</td>
<td>*The Favorite Toilet.</td>
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<td>*View of Stockholm</td>
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SWEDEN.

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53  Post, Miss Christine, Stockholm,  The Five Foolish Virgins at the Locked Door.
54  Ribbing, Miss S., London, *Young Girl with Grapes.
60  Rydberg, C. F., Stockholm, Spring Landscape.
61  Salmond, Hugo, Stockholm, Landscape in Bleking.
63  Salmond, Geskel, Stockholm, Maid with an Open Letter.
64  Salmond, Geskel, Stockholm, *At the Letter-Box.
67  Sidwall, Miss Amanda, Paris, *Landscape with Cattle.
69  Svenson, F., Stockholm, *In the Spring.
70  Södergren, Miss Sofia, Paris, *H M. Frigate "Vanadies."
71  Törna, O., Düsseldorf, *French Coast Landscape.
75  Wahlquist, E., Sigtuna, Moonlight Landscape.
77  Wahlquist, E., Sigtuna, *Cronberg Castle, at the Oeresund.
79  Wallander, W., Stockholm, *Forge in the Forest.
80  Wallander & Torslow, Stockholm, *Shepherds making a Fire.
82  Winge, Mrs. H., Stockholm, *The Salamander.
83  Winge, Mrs. H., Stockholm, *Church at Rättvik, Dalarna.
84  Winge, Mrs. H., Stockholm, *Before Service.
85  Winge, Mrs. H., Stockholm, *Signe burning Herself on witnessing her Lover hanged.
86  Winge, E., Stockholm, *Viking Fleet.
89  Virgin, J. G., Stockholm, *"Of what is she thinking?"

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74  Ahrenberg, J., Stockholm, *City Gate of Rouen.
75  Blackstadius, J. L., Stockholm, *Miller's Cottage at Alwastra.
77  Gardell, Miss Anna, Stockholm, *Views from Skåne.
78  Gardell, Miss Anna, Stockholm, *A Spring Day.
79  Gardell, Miss Anna, Stockholm, *Genre.
83  Larsson, Miss Virginia, Stockholm, *Peasant Girl from Dalarna.
84  Larsson, Miss Virginia, Stockholm, *Swedish Landscape.
NORWAY.

[Works of Art marked with an asterisk (*) are for sale. Information can be obtained at the office of the Norwegian Commission, Main Building.]

(Memorial Hall, Gallery K.)

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<tbody>
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<td>Gude, Hans, Carlsruhe,</td>
<td>*A Fresh Breeze, Norwegian Coast.</td>
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<td>Arbo, P. M., Christiania,</td>
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<td>5</td>
<td>Gude, Hans, Carlsruhe,</td>
<td>*Calm, Christianiafjord.</td>
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<td>9</td>
<td>Thurman, P., Christiania,</td>
<td>*Hardangerfjord.</td>
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<td>11</td>
<td>Munthe, ——, Düsseldorf,</td>
<td>Winter Day in a Forest.</td>
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<tr>
<td>12</td>
<td>Tidemand, A., Düsseldorf,</td>
<td>Peasants in a Wood.</td>
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<td>Gude, Hans, Carlsruhe,</td>
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<td>*Fight at a Christmas Feast.</td>
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<td>22</td>
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<td>*Landscape from Lærdal, Sognesfjord.</td>
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<td>23</td>
<td>Baade, Knud, München,</td>
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<td>24</td>
<td>Nicolaysen, L. W., Christiania,</td>
<td>*Norwegian Landscape, from Lake Bandak, in Telemarken.</td>
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<td>26</td>
<td>Nielsen, Johan, Munich,</td>
<td>*Approaching Thunder-Storm, Lofoten Islands, Norway.</td>
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<td>*Ruth and Boaz.</td>
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<td>*Scenery from Sørfjorden, Hardanger.</td>
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<td>Jacobsen, S., Düsseldorf</td>
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<tr>
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<td>Hanno, W. von, Christiania</td>
<td>*A Street in Brunswick, Germany.</td>
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<td>Bergslien, Christiania</td>
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<td>Bøe, Frantz, Bergen</td>
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<td>Borch, C., Rome</td>
<td>*Evening (marble).</td>
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<td>55</td>
<td>Sinding, Stephan, Christiania</td>
<td>*Hermes (marble).</td>
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<td>56</td>
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<td>*Völund (plaster).</td>
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### ITALY.

*(Annex, Gallery No. 1.)*

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<td>Bazzanti, Peter, &amp; Son, Florence</td>
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<td>The Fisher-Bay.</td>
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<td>A Child’s First Misfortune.</td>
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<td>Ramazzotti, Serafino, Rome</td>
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<tr>
<td>32</td>
<td>Pandiani, Innocente, Milan,</td>
<td>Eagle attacking a Turkey.</td>
</tr>
<tr>
<td>33</td>
<td>Braga, Enrico, Milan</td>
<td>Playing Cat’s Cradle.</td>
</tr>
<tr>
<td>34</td>
<td>Braga, Enrico, Milan</td>
<td>Beating the Rataplan.</td>
</tr>
<tr>
<td>36</td>
<td>Bracony, Guglielmo, Rome</td>
<td>Vanity.</td>
</tr>
<tr>
<td>37</td>
<td>Bergonzoli, Giulio, Milan,</td>
<td>Angelic Love.</td>
</tr>
<tr>
<td>38</td>
<td>Lombardo, Giovanni, Rome,</td>
<td>Hen and Chickens.</td>
</tr>
<tr>
<td>39</td>
<td>Ragusa, Vincenzo,</td>
<td>Young Bacchus.</td>
</tr>
<tr>
<td>40</td>
<td>Maraini, Adelaide, Rome,</td>
<td>Innocence (exhibited in Women’s Pavilion).</td>
</tr>
<tr>
<td>41</td>
<td>Corti, ———, Milan</td>
<td>Lucifer.</td>
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<td>42</td>
<td>Del Panta, Egisto, Florence,</td>
<td>Carnival.</td>
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<td>43</td>
<td>Braga, Enrico, Milan</td>
<td>Cleopatra.</td>
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<td>44</td>
<td>Frilli, Antonio, Florence</td>
<td>Winter.</td>
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<td>45</td>
<td>Pandiani, Costantino, Milan,</td>
<td>Love’s First Whispers.</td>
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<td>46</td>
<td>Frilli, Antonio, Florence,</td>
<td>Spring.</td>
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<td>47</td>
<td>Romanelli, Prof. Pasquale, Florence,</td>
<td>Madonna of San Sisto.</td>
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<td>48</td>
<td>Miglioretti, Milan</td>
<td>Death of Abel.</td>
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<td>49</td>
<td>Lazzerini, Pietro, Florence,</td>
<td>Innocence.</td>
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### ITALY.

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<td>Angelica.</td>
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<td>Pagani, Luigi, Milan,</td>
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<td>52</td>
<td>Pagani, Luigi, Milan,</td>
<td>Lurking Love.</td>
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<td>53</td>
<td>Pagani, Luigi, Milan,</td>
<td>Child’s First Grief.</td>
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<td>54</td>
<td>Pagani, Luigi, Milan,</td>
<td>Luisa San Felice, of Naples.</td>
</tr>
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<td>55</td>
<td>Monari, Alessandro, Ravenna</td>
<td>Raphael of Urbino.</td>
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<td>56</td>
<td>Pessina, Carlo, Milan,</td>
<td>The Bird’s Nest.</td>
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<td>Romanelli, Prof. Pasquale, Florence</td>
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<td>58</td>
<td>Tantardini, Antonio, Milan,</td>
<td>Bathing Girl.</td>
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<tr>
<td>59</td>
<td>Bazzanti, Peter, &amp; Son, Florence,</td>
<td>Vase (in green marble).</td>
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<td>60</td>
<td>Becucci Brothers, Florence,</td>
<td>Boy with a Dove.</td>
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<td>61</td>
<td>Ragusa, Vincenzo, Milan,</td>
<td>Emancipation.</td>
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<td>62</td>
<td>Pandiani, Giovanni, Rome,</td>
<td>Caprice (bust).</td>
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<td>63</td>
<td>Struzza, Giovanni, Milan,</td>
<td>Alessandro Manzoni (bronze).</td>
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<td>64</td>
<td>Frilli, Antonio, Florence,</td>
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<td>65</td>
<td>Cambi, Ulisse, Florence,</td>
<td>Moses trampling on the Crown of Pharaoh.</td>
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<td>Martegani, Alessandro, Milan,</td>
<td>Garibaldi (bust).</td>
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<td>67</td>
<td>Luccardi, Prof., Milan,</td>
<td>Innocent Contrast.</td>
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<td>68</td>
<td>Biella, Angelo, Milan,</td>
<td>Woman of Pompeii.</td>
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<td>69</td>
<td>Funefo, Pietro, Milan,</td>
<td>Maternal Hope.</td>
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<td>70</td>
<td>Argenti, Antonio, Milan,</td>
<td>Modesty (bust).</td>
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<td>71</td>
<td>Veneroni, Rome,</td>
<td>The Prayer (bust).</td>
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<td>72</td>
<td>Becucci Brothers, Florence,</td>
<td>Girl and Dog.</td>
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<tr>
<td>73</td>
<td>Frilli, Antonio, Florence,</td>
<td>Tazza (in green marble).</td>
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<td>74</td>
<td>Saul, Giorgio, Florence,</td>
<td>The Last Farewell to her Native Land.</td>
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<td>75</td>
<td>Motelli, Metello, Milan,</td>
<td>An Awkward Surprise.</td>
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<tr>
<td>76</td>
<td>Bazzanti, Peter, &amp; Son, Florence,</td>
<td>Washington and his Hatchet.</td>
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<td>77</td>
<td>Bazzanti, Peter, &amp; Son, Florence,</td>
<td>Franklin and his Whistle.</td>
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<td>78</td>
<td>Bottinelli, Cesare, Milan,</td>
<td>Beatrice Cenci.</td>
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<td>80</td>
<td>Porcina, Antonio, Florence,</td>
<td>Innocence.</td>
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<tr>
<td>87</td>
<td>Peduzzi, Renato, Milan,</td>
<td>Chimney-piece with a Boy representing Silence.</td>
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<tr>
<td>88</td>
<td>Porcina, Antonio, Florence,</td>
<td>Girl and Dog.</td>
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<tr>
<td>89</td>
<td>Metti, Raimondo, Florence,</td>
<td>Bust of Dante’s Beatrice.</td>
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<tr>
<td>90</td>
<td>Dini, Ernesto, Florence,</td>
<td>Effect of the Wind.</td>
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(Annex, Gallery No. 1.)

### OIL PAINTINGS.

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<th>ARTIST.</th>
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<td>91</td>
<td>Tedesco, Prof. Michele, Florence,</td>
<td>The School of Love.</td>
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<td>92</td>
<td>Lodigiani, Scipione, Milan,</td>
<td>Galileo before the Tribunal of the Inquisition.</td>
</tr>
<tr>
<td>93</td>
<td>Bigara, C. F., Milan,</td>
<td>The Invention of Engraving.</td>
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<tr>
<td>94</td>
<td>Bisi, Prof. Luigi, Milan,</td>
<td>Interior of St. Mark’s Church, Venice.</td>
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<tr>
<td>95</td>
<td>Gilli, Alberto, Turin,</td>
<td>Arnoldo da Brescia and Pope Adrian IV.</td>
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<tr>
<td>96</td>
<td>Rubio, Prof. Luigi, Florence,</td>
<td>Magdalene.</td>
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<tr>
<td>97</td>
<td>Bisi, Prof. Luigi, Milan,</td>
<td>Landscape.</td>
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<tr>
<td>98</td>
<td>Trenti, Girolamo, Milan,</td>
<td>Inundation of the River Po, Italy.</td>
</tr>
<tr>
<td>99</td>
<td>Romoli, — , Florence,</td>
<td>Copy of Fra Angelico’s Incarnation of the Virgin.</td>
</tr>
<tr>
<td>100</td>
<td>Fumagalli, Michelangelo,</td>
<td>Columbus conducted back to Spain as a Prisoner.</td>
</tr>
<tr>
<td>101</td>
<td>Roi, Pietro, Venice,</td>
<td>Lombardy and Venice, the Two Sister Provinces.</td>
</tr>
<tr>
<td>102</td>
<td>Corni, Cherubino, Bologna,</td>
<td>Lodovico il Moro visits Leonardo da Vinci while building the Canal of Pavia.</td>
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<tr>
<td>103</td>
<td>Giroux, Ernesto, Rome,</td>
<td>A Cup of Tea.</td>
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</table>
MOSAIC TABLES.

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<th>NO.</th>
<th>ARTIST.</th>
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</thead>
<tbody>
<tr>
<td>106</td>
<td>Scappini, Giovanni, Florence,</td>
<td>The Table of Science, and various other tables.</td>
</tr>
<tr>
<td>107</td>
<td>Civita, Angelo, Florence,</td>
<td>Table inlaid in porphyry, and collection of various tables.</td>
</tr>
<tr>
<td>108</td>
<td>Torrini, Giocondo, Florence,</td>
<td>Large round table with bouquet and garland, and various other tables.</td>
</tr>
<tr>
<td>109</td>
<td>Bazzanti, Peter, &amp; Son, Florence,</td>
<td>Two large round tables, rococo style, and collection of various tables.</td>
</tr>
<tr>
<td>110</td>
<td>Boncinelli, Giov., &amp; Co., Florence,</td>
<td>Collection of various mosaic tables.</td>
</tr>
<tr>
<td>111</td>
<td>Betti, Francesco, Florence,</td>
<td>Collection of various tables.</td>
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<tr>
<td>112</td>
<td>Bianchini, Telemaco, Florence,</td>
<td>Collection of mosaic tables.</td>
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<tr>
<td>113</td>
<td>Francolini, Tito, Florence,</td>
<td>Mosaic table with Ganymede and the eagle; collection of mosaic tables.</td>
</tr>
<tr>
<td>114</td>
<td>Montelatici Brothers, Florence,</td>
<td>Collection of various mosaic tables.</td>
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<tr>
<td>115</td>
<td>Montelatici, Giuseppe, Florence,</td>
<td>Collection of mosaic tables.</td>
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<tr>
<td>116</td>
<td>Novello, Luigi, Florence,</td>
<td>Collection of mosaic tables.</td>
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<td>118</td>
<td>Sandrini, Antonio, Florence,</td>
<td>Collection of mosaic tables.</td>
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<tr>
<td>119</td>
<td>Orlandini, Florence,</td>
<td>Collection of mosaic tables.</td>
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<tr>
<td>120</td>
<td>Gherardi, Goffredo, Florence,</td>
<td>Square table—illustration of Michael Angelo.</td>
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<td>121</td>
<td>Brunacci, Pietro, Florence,</td>
<td>Mosaic table.</td>
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<td>122</td>
<td>Falcini, Andrea, Florence,</td>
<td>Mosaic tables.</td>
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<tr>
<td>123</td>
<td>Scarselli, Nicola, Florence,</td>
<td>Collection of mosaic tables.</td>
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<tr>
<td>124</td>
<td>Vichi, Ferdinando, Florence,</td>
<td>Collection of mosaic tables.</td>
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<td>125</td>
<td>Scarselli, Nicola, Florence,</td>
<td>Still Life.</td>
</tr>
<tr>
<td>127</td>
<td>Scarselli, Nicola, Florence,</td>
<td>Still Life.</td>
</tr>
<tr>
<td>128</td>
<td>Francolini, Tito, Florence,</td>
<td>Portrait of President Lincoln.</td>
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<tr>
<td>129</td>
<td>Bianchini, Telemaco, Florence,</td>
<td>Jacob, Rachel, and Laban.</td>
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<tr>
<td>130</td>
<td>Bianchini, Telemaco, Florence,</td>
<td>Cimabue and Giotto, and four medallions.</td>
</tr>
<tr>
<td>131</td>
<td>Bianchini, Telemaco, Florence,</td>
<td>Vase of flowers.</td>
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<td>132</td>
<td>Betti, Telemaco, Florence,</td>
<td>A Bouquet.</td>
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<tr>
<td>133</td>
<td>Betti, Telemaco, Florence,</td>
<td>A Bouquet.</td>
</tr>
<tr>
<td>134</td>
<td>Francolini, Tito, Florence,</td>
<td>A Roman Peasant Woman.</td>
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<td>135</td>
<td>Francolini, Tito, Florence,</td>
<td>Group in the Goldonian Costume.</td>
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<td>136</td>
<td>Francolini, Tito, Florence,</td>
<td>Woman of the Roman Campagna.</td>
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<td>137</td>
<td>Francolini, Tito, Florence,</td>
<td>The Improvisator.</td>
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<td>138</td>
<td>Francolini, Tito, Florence,</td>
<td>A Neapolitan Fisherman playing the Guitar.</td>
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<td>139</td>
<td>Francolini, Tito, Florence,</td>
<td>Fowls.</td>
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<td>142</td>
<td>Boncinelli, Giov., &amp; Co., Florence,</td>
<td>A Page leading the Favorite Horse to his Master.</td>
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<td>143</td>
<td>Boncinelli, Giov., &amp; Co., Florence,</td>
<td>Scene in a Roman Village.</td>
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<td>149</td>
<td>Bazzanti, Peter, &amp; Son, Florence</td>
<td>Still Life</td>
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<td>150</td>
<td>Peduzzi, Renato, Milan,</td>
<td>Roman Costume</td>
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<td>151</td>
<td>Barcaglia, Donato, Milan,</td>
<td>Woman of the Roman Campagna</td>
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<td>Pedera, Raimondo, Milan,</td>
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<td>Peduzzi, Renato, Milan,</td>
<td>Interior of the Bargello, Florence</td>
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<td>Barcaglia, Donato, Milan,</td>
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<td>155</td>
<td>Peduzzi, Renato, Milan,</td>
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<td>156</td>
<td>Caroni, Prof. Emanuele, Florence</td>
<td>L'Africaine</td>
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<td>Guarnieri, Pietro, Milan,</td>
<td>White Rose</td>
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<td>158</td>
<td>Guarnieri, Pietro, Milan,</td>
<td>The Orphan</td>
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<td>159</td>
<td>Cantalamessa, P. Capotti, Rome</td>
<td>Storm</td>
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<td>Cantalamessa, P. Capotti, Rome</td>
<td>The Mirror of Love</td>
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<td>Torelli, Lot, Florence,</td>
<td>Eva St. Clair, “Uncle Tom's Cabin”</td>
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<td>Guarnieri, Pietro, Milan,</td>
<td>Girl at the Bath</td>
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<td>164</td>
<td>Caroni, Prof. Emanuele, Florence</td>
<td>Effects of Cold Water</td>
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<td>165</td>
<td>Barcaglia, Donato, Milan,</td>
<td>Children Blowing Bubbles</td>
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<td>Guarnieri, Pietro, Milan,</td>
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<td>Fantachiotti, Cesare, Florence,</td>
<td>Vanity</td>
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<td>168</td>
<td>Trojani, Giovanni Battista, Florence</td>
<td>Bas-relief in terra-cotta.</td>
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<td>169</td>
<td>Spertini, Giovanni, Milan,</td>
<td>Bas-relief in terra-cotta—The Modern Cain</td>
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<td>Trojani, Giov. Batt., Florence,</td>
<td>Bas-relief in terra-cotta—Michel Angelo in San Miniato</td>
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<td>171</td>
<td>Argenti, Antonio, Milan,</td>
<td>The Prayer</td>
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<td>172</td>
<td>Bottinelli, Antonio, Rome,</td>
<td>Hope (bust)</td>
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<td>173</td>
<td>Bernasconi, Pietro, Milan,</td>
<td>Summer (bust)</td>
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<td>Formis, Achille, Milan,</td>
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<td>Lessi, Luigi, Rome,</td>
<td>The Conspiracy of the Pazzi</td>
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<td>179</td>
<td>Zuccoli, Luigi, Rome,</td>
<td>The Christian Martyrs under Nero</td>
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<td>180</td>
<td>Fattori, Giovanni, Florence,</td>
<td>A Horse-Market</td>
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<td>181</td>
<td>Della Valle, N., Leghorn,</td>
<td>Storm on the Coast</td>
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<td>182</td>
<td>Accarisi, Lodovico, Florence,</td>
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<td>Accarisi, Lodovico, Florence,</td>
<td>Dancing the Tarantella</td>
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<td>Accarisi, Lodovico, Florence,</td>
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<td>Accarisi, Lodovico, Florence,</td>
<td>Playing on the Tambourine</td>
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<td>186</td>
<td>Quériau, Luigi, Messina,</td>
<td>Scene in Sicily</td>
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<td>187</td>
<td>Palazzi, Gaetano, Bologna,</td>
<td>A Refusal</td>
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<td>188</td>
<td>Fontana, Roberto, Milan,</td>
<td>Evocation of Souls, from “Robert le Diable.”</td>
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<tr>
<td>189</td>
<td>Fattori, Giovanni, Florence,</td>
<td>Landscape—At Rest in Summer</td>
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<td>190</td>
<td>Malatesta, Cav. Prof. Narciso, Modena,</td>
<td>Laja, a celebrated Roman artist, painting Julius César as Apollo</td>
</tr>
<tr>
<td>191</td>
<td>Signorini, Telemaco, Florence,</td>
<td>Olive-Gathering in Tuscany</td>
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<td>192</td>
<td>Zuccoli, Prof. Luigi, Rome,</td>
<td>A Poor Man at the Church-Door</td>
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<td>193</td>
<td>Romagnoli, Angelo, Florence,</td>
<td>Meditation</td>
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</tbody>
</table>
No. | Artist. | Title.
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194 | Marchesi, Salvatore, Parma | Interior of the Choir of the Cathedral of Parma.
195 | Cammarano, Michele, Rome | A Grandmother's Admonition.
196 | Zuccoli, Prof. Luigi, Rome | The Hunter's Rest.
197 | Ashton, Federico, Florence | Woods in Autumn.
198 | Solmi, Prof. Valentino, Bologna | Bizantino d'Aria.
199 | Gioli, Francesco, Florence | The Unlucky Number.
200 | Altamura, Prof., Naples | The Bagpipe-Player.
201 | Fattori, Giovanni, Florence | The Escort.
202 | Maldarelli, Federico, Naples | The Reader.
203 | Maldarelli, Federico, Naples | The Assumption.
204 | Fattori, Giovanni, Florence | Returning from a Military Inspection.
205 | Iosio, Prof. Luigi, Rome | Noon in the Roman Campagna.
206 | Bade, Garcia, Rome | A Portrait.
207 | Ridossi, Angelo, Milan | Resting.
208 | Lelli, Giovanni, Milan | View of Lakes Margoza and Maggiore.
209 | Fattori, Giovanni, Florence | The Roman Campagna (Oxen).
210 | Maldarelli, Prof. Federico, Naples | A Flower-Girl of Pompeii.
211 | Gastaldi, Prof. Andrea, Turin | "Beware of a False Step."
212 | De Santis, Guglielmo, Rome | A Veiled Figure.
213 | Pesenti, Domenico, Florence | The Ducal Palace of Venice.
214 | Ribossi, Angelo, Milan | "At work you."
215 | Maldarelli, Prof. Federico, Naples | A Bath in Pompei.
216 | Totti, Prof. Carlo, Milan | The Vintage.
217 | Scifoni, Anatolio, Rome | Preparation for a Feast in Pompeii.
218 | Accarisi, Lodovico, Florence | Sleeping Child and Dog.
219 | Giuli, Prof. Bartolomeo, Milan | An Alpine Sketch.

(Annex, Galleries Nos. 2 and 17.)

**Sculpture.**

No. | Artist. | Title.
--- | --- | ---
220 | Bottinelli, Antonio, Rome | Modesty.
221 | Dini, Ernesto, Florence | Beggar Woman.
222 | Romanelli, Prof. Pasquale, Florence | Franklin and his Whistle.
223 | Zocchi, Prof. Emilio, Florence | Benjamin Franklin in his Youth.
224 | Romanelli, Prof. Pasquale, Florence | Washington and his Hatchet.
226 | Torelli, Lot, Florence | Timidity.
227 | Peduzzi, Renato, Milan | Boy and Basket.
228 | Peduzzi, Renato, Milan | Dancing Faun.
229 | Pandiani, Costantino, Milan | Moses Trampling on the Crown of Pharaoh.
230 | Borghi, Ambrogio, Milan | Carnival.
231 | Pereda, Raimondo, Milan | A Child's Grief.
232 | Barzaghi, Francesco, Milan | A Young Smoker.
233 | Butti, Enrico, Milan | "Once I was rich."
234 | Society of Sculptors, Florence | The Young Soldier.
235 | Society of Sculptors, Florence | A Rose's Perfume.
236 | Ramaschiello, Vincenzo, Rome | Cupid on the Lookout.
237 | Caroni, Prof. Emanuele, Florence | Bust of a Roman Girl.
238 | Society of Sculptors, Florence | Iole and Ruggiero.
239 | Caroni, Prof. Emanuele, Florence | Winter.
240 | Torelli, Lot, Florence | A Good Housekeeper.
241 | Del Panta, Egisto | Goldoni's Boyhood.
242 | Tantardini, Prof. Antonio, Milan | A Wounded Friend.
243 | Malfatti, Andrea, Milan | The Discarded.
244 | Barcaglia, Donato, Milan | The First Friend.
245 | Pereda, Raimondo, Milan | Delight.
### ITALY.

#### OIL PAINTINGS.

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<td>Dancing Bacchante.</td>
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<td>Rossi, Prof. Alessandro, Milan</td>
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<td>Zocchi, Prof. Emilio, Florence</td>
<td>Michael Angelo sculpturing the head of a Faun</td>
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<td>Gori, Lorenzo, Florence</td>
<td>After the Bath.</td>
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<td>Dante and Beatrice—Childhood.</td>
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<td>A Free Church in a Free State.</td>
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<td>Neapolitan Fishermen.</td>
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<td>Trenti, Girolamo, Milan,</td>
<td>Landscape in the Province of Mantua.</td>
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<td>Accarisi, Lodovico, Florence,</td>
<td>A Moorish portrait.</td>
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<td>Busio, Prof. Luigi, Florence,</td>
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<td>304</td>
<td>Picchi, Andrea, Florence,</td>
<td>Ebony frame (style, sixteenth century), with picture.</td>
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<td>Mazza, Salvatore, Milan,</td>
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<td>Trezzeni, Angelo, Milan,</td>
<td>Returning from Church.</td>
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<td>Trenti, Girolamo, Milan,</td>
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<td>Accarisi, Lodovico, Florence,</td>
<td>Milanese portrait.</td>
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<td>Bryner, Giovanni, Florence,</td>
<td>The Staubbach Cascade in Switzerland.</td>
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<td>Michis, Pietro, Milan,</td>
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<td>Solmi, Valentino, Bologna,</td>
<td>Mosque of Soliman, Constantinople.</td>
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<td>Accarisi, Lodovico, Florence,</td>
<td>Girl and Dog.</td>
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<td>Landscape (group of horses.)</td>
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<td>Smargiassi, Giovanni, Naples,</td>
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<td>Barzaghi, Milan,</td>
<td>Phryne before the Judges.</td>
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<td>Cambi, Prof. Ulisse, Florence,</td>
<td>At the Carnival.</td>
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<td>Guarnerio, Pietro, Milan,</td>
<td>Raphael of Urbino in his Youth.</td>
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<td>334</td>
<td>Caroni, Prof. Emanuele, Florence,</td>
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<td>Caroni, Prof. Emanuele, Florence,</td>
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<td>Caroni, Prof. Emanuele, Florence,</td>
<td>A Christmas-Present.</td>
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<td>Caroni, Prof. Emanuele, Florence,</td>
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<td>Recreation at School.</td>
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<td>Barcaglia, Donato, Milan,</td>
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<td>Cambi, Prof. Ulisse, Florence,</td>
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<td>Zocchi, Prof. Emilio, Florence,</td>
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<td>Formis, Cav. Achille, Milan,</td>
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<td>Buoso da Duero, the Betrayer of King Manfred of Sicily, dying from Starvation at the Door of a Convent.</td>
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<td>Picchi, Andrea, Florence,</td>
<td>Four pictures (with ebony frame, inlaid with stones—style sixteenth century).</td>
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<td>Ardi, Bartolomeo, Turin,</td>
<td>The Rest in the Fenestrelles Valley, Piedmont.</td>
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<td>Lelli, Giovanni Battista, Milan,</td>
<td>Fishermen’s Island.</td>
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<td>Canelia, Carlo, Milan,</td>
<td>Piazza San Marco, Venice.</td>
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<td>Burdin, Margherita, Rome,</td>
<td>Still Life.</td>
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<td>Burdin, Margherita, Rome,</td>
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<td>Accarisi, Lodovico, Florence,</td>
<td>Monk and Farmer.</td>
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<td>Sasso, Antonio, &amp; Son, Florence,</td>
<td>Titian’s Flora (copy).</td>
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<td>Sasso, Antonio, &amp; Son, Florence,</td>
<td>Beatrice Cenci.</td>
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<td>370</td>
<td>Sasso, Antonio, &amp; Son, Florence,</td>
<td>Madonna on the Throne (copy).</td>
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<td>Sasso, Antonio, &amp; Son, Florence,</td>
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<td>Sasso, Antonio, &amp; Son, Florence,</td>
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<td>378</td>
<td>Sasso, Antonio, &amp; Son, Florence,</td>
<td>Salvator Rosa’s celebrated marine view (copy).</td>
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<td>Sasso, Antonio, &amp; Son, Florence,</td>
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<td>Romoli, Prof. Luigi, Florence,</td>
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<td>Neapolitan Family.</td>
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<td>388</td>
<td>Accarisi, Lodovico, Florence,</td>
<td>Beatrice Cenci (copy of Guido Reni).</td>
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<td>Catena, Vincenzo,</td>
<td>Portrait of a Cardinal.</td>
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<td>391</td>
<td>Catena, Vincenzo,</td>
<td>A Portrait.</td>
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<td>Sasso, Antonio, &amp; Son, Florence,</td>
<td>Raphael’s Farnarina.</td>
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<td>Volterrano’s Sleeping Cupid.</td>
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<td>Accarisi, Lodovico, Florence,</td>
<td>Vanity (Venetian school).</td>
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<td>Beginning of a Storm.</td>
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<td>Raphael’s Madonna (copy).</td>
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<td>Accarisi, Lodovico, Florence,</td>
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<td>Accarisi, Lodovico, Florence,</td>
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<td>Roman Shepherdess.</td>
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<td>Accarisi, Lodovico, Florence,</td>
<td>Domenichino’s Sibylla.</td>
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<td>Barzaghi, Francesco, Milan,</td>
<td>The First Ride.</td>
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<td>Braga, Enrico, Milan,</td>
<td>A Faun.</td>
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<td>410</td>
<td>Zocchi, W. of Emilio, Florence,</td>
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<td>411</td>
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<td>A Mountebank.</td>
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<td>Pozzi, Egidio, Milan,</td>
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<td>Braga, E., Milan,</td>
<td>Modesty.</td>
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<td>Buzzi Giberto, Cav. Luigi, Milan,</td>
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<td>Buzzi Giberto, Cav. Luigi, Milan,</td>
<td>A Riddle.</td>
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<td>The Florist.</td>
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<td>Venus (bronze).</td>
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<td>The Little Teacher.</td>
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<td>Dal Negro, Pietro, Milan,</td>
<td>Cain and Abel.</td>
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<td>Albacini, Achille, Rome,</td>
<td>Roman Costume.</td>
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<td>Cocchio, Luigi, Milan,</td>
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<td>Braga, E., Milan,</td>
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<td>Zannoni, Cav. Ugo, Milan,</td>
<td>Affection and Envy.</td>
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<td>Gentile, Chieti,</td>
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<td>Zannoni, Cav. Ugo, Milan,</td>
<td>Study and Work.</td>
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<td>Croff, Giuseppe, Milan,</td>
<td>Odalisque.</td>
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<td>Pandiani, Signora Adelaide Maraini, Milan,</td>
<td>Spring. (In the Women's Pavilion.)</td>
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<td>Aruns in the act of shooting the Virgin Camilla. (Virgil, Aeneid, book xi.)</td>
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<td>The Reader.</td>
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<td>Braga, E., Milan,</td>
<td>Bashfulness.</td>
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<td>Buzzi Giberto, Cav. Luigi, Milan,</td>
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<td>Biganzoli, Filippo, Milan,</td>
<td>Alessandro Manzoni (Italian poet and novelist).</td>
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<td>Galli, Rizzardo, Milan,</td>
<td>Resignation.</td>
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<td>Croff, Giuseppe, Milan,</td>
<td>Ernest and Salamace.</td>
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<td>Galli, Rizzardo, Milan,</td>
<td>Youthful Amusement.</td>
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<td>Marai, Luigi, Milan,</td>
<td>A Summer Day.</td>
</tr>
<tr>
<td>448</td>
<td>Biganzoli, Filippo, Milan,</td>
<td>Alexander von Humboldt.</td>
</tr>
<tr>
<td>449</td>
<td>(Unknown),</td>
<td>Garibaldi.</td>
</tr>
<tr>
<td>450</td>
<td>Fumei, Pietro, Milan,</td>
<td>Meditation.</td>
</tr>
<tr>
<td>451</td>
<td>Galli, Rizzardo, Milan,</td>
<td>A Veiled Girl.</td>
</tr>
<tr>
<td>452</td>
<td>Buoninsegna, Milan,</td>
<td>The Slave.</td>
</tr>
<tr>
<td>453</td>
<td>Galli, Rizzardo, Milan,</td>
<td>The Bride.</td>
</tr>
<tr>
<td>454</td>
<td>Salomi, Florence,</td>
<td>The Daughter of Zion Weeping over Jerusalem.</td>
</tr>
<tr>
<td>456</td>
<td>Rosetti, Antonio, Rome,</td>
<td>A Marble Fountain (Bacchus).</td>
</tr>
</tbody>
</table>

(Gallery N.)

**SCULPTURE.**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>458</td>
<td>Bottinelli, Ant., Rome,</td>
<td>Hope.</td>
</tr>
<tr>
<td>459</td>
<td>Matteucci, Luigi, Milan,</td>
<td>Gaping.</td>
</tr>
</tbody>
</table>
ITALY.

NO.  ARTIST.  TITLE.

460  Pessina, Carlo, Messina,  Costume of Marie Stuart.
461  Casetti, Turin,  Devotion.
462  Argenti, Giosuè, Milan,  The Florist.
463  Corbellini, Quintilio, Milan,  Lucio.
464  Zocchi, E., Florence,  Youth of Michael Angelo.
465  Radius, Eugenio, Milan,  Faith
466  Buzzi Giberto, Cav. Luigi, Milan,  Inspiration.
468  Argenti, Giosuè, Milan,  Modesty.
469  Braga, E., Milan,  Wearied with Play.
470  Veneroni, Milan,  Modesty.
471  Braga, E., Milan,  Bashfulness.
472  Trojani, G. B., Milan,  After Recreation.
473  Galli, Rizzardo, Milan,  Columbus.
474  Cambi, Ulisse, Florence,  Eve, with Cain and Abel.
475  Argenti, Giosuè, Milan,  Sleep.
476  Conti, Alessandro, Milan,  Revery.
477  Lucca, Flaminio, Milan,  Modesty.
478  Lucca, Flaminio, Milan,  Candor.
479  Galli, Rizzardo, Milan,  The Little Savoyard.
480  Galli, Rizzardo, Milan,  The Devotee.
481  Calvi, P., Milan,  Michael Angelo.
482  Galli, Rizzardo, Milan,  St. John the Baptist.
483  Galli, Rizzardo, Milan,  Faith.
484  Gallandt, L. A., Rome,  Washington (presented to the Centennial Celebra-
485  Galli, Rizzardo, Milan,  tion of American Independence, by the artist).
486  Spertini, Giovanni, Milan,  Hope.
487  Bieta, Angelo, Milan,  General Garibaldi.
489  Argenti, Antonio, Milan,  Rome.
490  Argenti, Angelo, Milan,  Prayer.
491  Dies, Emilio, Rome,  Devotion.
492  Spertini, Giovanni, Milan,  Innocence.
493  Fessina, Carlo, Milan,  Giuseppe Mazzini.
494  Radius, Eugenio, Milan,  Youth.
495  Pessina, Carlo, Milan,  The afflicted.
496  Tantardini, Prof. Antonio, Milan,  The Prayer.
497  Radius, Eugenio, Milan,  "Ecce Homo."
499  Spertani, Giovanni,  Giuseppe Dassi, Vice-President of the Italian Cen-
500  Brodzki, Rome,  tennial Commission.

MOASAIC WORK.

NO.  ARTIST.  TITLE.

501  Rocchegiani, Rome,  Collection of mosaics.
502  Moglia, Augusto, Rome,  Ruins of the Temple of Paestum, Naples.
503  Moglia, Augusto, Rome,  The same (smaller).
505  Moglia, Augusto, Rome,  The Roman Forum (an antique).
507  Moglia, Augusto, Rome,  Black antique table, inlaid in rococo style, with
nine of the principal views of Rome, the centre piece being a view of the piazza of St. Peter's; 
surrounding this is a circle of four large views, viz.: The Tomb of Cecilia Metella; The Ponte 
Lucano, or Lucan Bridge, on the road to Tivoli; The Forum; and the Colosseum. An outer 
circle consists of four minor views, viz.: Temple of the Sibyl, at Tivoli; Temple of Vesta, at 
Rome; The Pyramid of Caius Cestius, and the Pantheon—the whole forming a work which 
took a premium at Rome in 1870.
THE CASTELLANI ANTIQUITIES.

(Memorial Hall, Gallery U.)

EXHIBITOR.
Castellani, A., Rome,

TITLE.
Marbles and Bronzes.

OWNER.
A. Castellani.

(Memorial Hall, Gallery V.)

Castellani, A., Rome,

Majolica.

A. Castellani.

(Memorial Hall, Gallery W.)

Castellani, A., Rome,

Personal Ornaments.

A. Castellani.

COLLECTION LOANED BY POPE PIUS IX.

(Memorial Hall, Gallery IC.)

NO.  ARTIST.  TITLE.  OWNER.
1 (Unknown), Flowers in mosaic. Pope Pius IX.
2 (Unknown), Mosaic of a Madonna after Sasso- Pope Pius IX.
              Ferrato.
3 (Unknown), Mosaic of Raphael's Madonna del Pope Pius IX.
              Seggiola.
4 (Unknown), Tapestry — The Martyrdom of St. Pope Pius IX.
              Agnes.
The Largest Book Store in the United States. Wholesale and Retail.

Visitors to the Exhibition are invited to inspect the Establishment.

PHILADELPHIA DEMOKRAT,
DAILY, WEEKLY, AND SUNDAY,
LARGEST CIRCULATION OF ANY GERMAN PAPER IN PENNSYLVANIA.
PUBLISHED BY
MORWITZ & CO.,
612 and 614 Chestnut Street, Philadelphia.

William Wilkens, H. H. Grane,
LOUIS WILKENS & CO.
Manufacturerers of
Steam Curled Hair
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Corner of Belmont and Fountain Avenues,
NEAR THE LAKE.

FRENCH RESTAURANT,
LES TROIS FRÈRES PROVENCAUX.
The same which had such a great success in the Vienna Exhibition, in 1873.
CH. VERDIER,
of the MAISON DORÉE, of Paris, Proprietor.
Near the Lake, opposite the U. S. Government Building.

JOHN G. MCGEE & CO.,
BELFAST, IRELAND,
INVENTORS AND SOLE MAKERS OF THE
CELEBRATED "ULSTER" COAT
See SHOW CASE, Class 250, E 27.
**THE SUN NEWSPAPER**

Is printed and published every day in the year, at 166, 168, and 170 Nassau Street, New York City. Its regular edition on secular days now (April, 1876) averages about 140,000; its weekly edition over 88,000; and its Sunday issue is nearly 100,000. It thus prints and sells more than a million copies a week, which are read all over the United States. This is a circulation unprecedented in American journalism, and it is constantly on the increase. In proof of this, let the following figures testify. They show the number of copies of The Sun printed every week during the year ending March 11, 1876.

<table>
<thead>
<tr>
<th>WEEK ENDING</th>
<th>COPIES PRINTED</th>
<th>WEEK ENDING</th>
<th>COPIES PRINTED</th>
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<tbody>
<tr>
<td>March</td>
<td></td>
<td>September</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>849,382</td>
<td>18</td>
<td>860,358</td>
</tr>
<tr>
<td>27</td>
<td>845,802</td>
<td>25</td>
<td>858,778</td>
</tr>
<tr>
<td>April</td>
<td></td>
<td>October</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>857,956</td>
<td>2</td>
<td>863,935</td>
</tr>
<tr>
<td>10</td>
<td>863,556</td>
<td>9</td>
<td>870,820</td>
</tr>
<tr>
<td>17</td>
<td>859,076</td>
<td>16</td>
<td>878,082</td>
</tr>
<tr>
<td>24</td>
<td>858,270</td>
<td>23</td>
<td>874,025</td>
</tr>
<tr>
<td>May</td>
<td>869,542</td>
<td>30</td>
<td>876,160</td>
</tr>
<tr>
<td>8</td>
<td>867,550</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>877,450</td>
<td>November</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>874,946</td>
<td>6</td>
<td>908,580</td>
</tr>
<tr>
<td>29</td>
<td>866,276</td>
<td>13</td>
<td>852,372</td>
</tr>
<tr>
<td>June</td>
<td>875,782</td>
<td>20</td>
<td>847,815</td>
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<tr>
<td>12</td>
<td>869,769</td>
<td>27</td>
<td>836,248</td>
</tr>
<tr>
<td>19</td>
<td>880,348</td>
<td>December</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>883,846</td>
<td>4</td>
<td>845,378</td>
</tr>
<tr>
<td>July</td>
<td>898,882</td>
<td>11</td>
<td>1,042,716</td>
</tr>
<tr>
<td>10</td>
<td>867,574</td>
<td>18</td>
<td>956,294</td>
</tr>
<tr>
<td>17</td>
<td>877,400</td>
<td>25</td>
<td>933,864</td>
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<tr>
<td>24</td>
<td>876,282</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>874,216</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>874,216</td>
<td></td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>895,556</td>
<td>February</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>873,982</td>
<td>3</td>
<td>993,030</td>
</tr>
<tr>
<td>21</td>
<td>880,488</td>
<td>12</td>
<td>1,024,647</td>
</tr>
<tr>
<td>28</td>
<td>876,602</td>
<td>19</td>
<td>1,027,203</td>
</tr>
<tr>
<td>September</td>
<td>872,211</td>
<td>26</td>
<td>1,014,766</td>
</tr>
<tr>
<td>11</td>
<td>860,755</td>
<td>30</td>
<td>967,850</td>
</tr>
</tbody>
</table>

In printing these papers, no less than three million four hundred and twenty-six thousand six hundred and ten (3,426,610) pounds of paper were consumed.

**ADVERTISING RATES.**

**DAILY AND SUNDAY,** 40 cents a line, ordinary advertising; large type, 80 cents; and preferred positions, 50 cents to $2.50, according to classification.

**Weekly,** 50 cents a line; no extra charge for large type. Preferred positions, from 75 cents to $2.00.

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**SUNDAY** (8 pages), $1.20 per year, postpaid.

**Weekly** (8 pages), $1.20 per year, postpaid.

Address, THE SUN,
New York.
### SCULPTURE

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bernardelli, Rio de Janeiro</td>
<td>Recollection of the Tribe (plaster)</td>
</tr>
<tr>
<td>2</td>
<td>Chaves, Pinheiro, Rio de Janeiro</td>
<td>The Actor Joao Gaetano as Oscar (plaster)</td>
</tr>
<tr>
<td>3</td>
<td>Bernardelli, Rio de Janeiro</td>
<td>The Indian Peeping (plaster)</td>
</tr>
<tr>
<td>4</td>
<td>Almeida, Reis, Rio de Janeiro</td>
<td>The Crime (plaster)</td>
</tr>
<tr>
<td>5</td>
<td>Almeida, Reis, Rio de Janeiro</td>
<td>The Bishop of Chrysopolis (plaster)</td>
</tr>
</tbody>
</table>

### OIL PAINTINGS

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Lima, Victor Meirelles de, Rio de Janeiro</td>
<td>The Naval Battle of Riachuelo (Paraguayan War)</td>
</tr>
<tr>
<td>7</td>
<td>Lima, Victor Meirelles de, Rio de Janeiro</td>
<td>The Brazilian Iron-clad Fleet passing by Huimaita (Paraguayan War)</td>
</tr>
<tr>
<td>8</td>
<td>Lima, Victor Meirelles de, Rio de Janeiro</td>
<td>The First Mass in Brazil</td>
</tr>
<tr>
<td>9</td>
<td>Figueredo, Pedro Americo de, Rio de Janeiro</td>
<td>Brazilian Army crossing Passo da Patria, led by Marshal Ozario (Paraguayan War)</td>
</tr>
<tr>
<td>10</td>
<td>Figueredo, Pedro Americo de, Rio de Janeiro</td>
<td>Defence of the Island of Cabrita (Paraguayan War)</td>
</tr>
<tr>
<td>11</td>
<td>Henschell, Rio de Janeiro</td>
<td>Portrait of the Emperor of Brazil</td>
</tr>
<tr>
<td>12</td>
<td>De Martino, Rio de Janeiro</td>
<td>Moonlight in the Harbor of Montevideo</td>
</tr>
<tr>
<td>13</td>
<td>(Unknown)</td>
<td>View of St. Peter's Cathedral in Rome Exhibited by the Academy of Fine Arts, Rio de Janeiro</td>
</tr>
<tr>
<td>14</td>
<td>(Unknown)</td>
<td>Charity. Exhibited by the Academy of Fine Arts, Rio de Janeiro</td>
</tr>
<tr>
<td>15</td>
<td>(Unknown)</td>
<td>Sunset on the Sea-Shore. Exhibited by H.R.H. the Count d’Eu</td>
</tr>
</tbody>
</table>

### WATER COLORS

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Pacheco, I. Insley, Rio de Janeiro</td>
<td>Three paintings, representing views of the interior of Brazil</td>
</tr>
<tr>
<td>17</td>
<td>Pacheco, I. Insley, Rio de Janeiro</td>
<td>Aquarelles, representing views of the interior of Brazil</td>
</tr>
<tr>
<td>18</td>
<td>Rocha, Antonio da, Rio de Janeiro</td>
<td>The Holy Mother (after Guido Reni)</td>
</tr>
</tbody>
</table>

### LITHOGRAPHS, CRAYONS, ETC.

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Almeida, Marianno de, Rio de Janeiro</td>
<td>Sketches with pen and ink</td>
</tr>
<tr>
<td>20</td>
<td>Pacheco, I. Insley, Rio de Janeiro</td>
<td>Two landscapes (crayons)</td>
</tr>
<tr>
<td>21</td>
<td>Leutzinger &amp; Sons, Rio de Janeiro</td>
<td>Photo-lithographs, representing panoramas of the Bay of Rio de Janeiro</td>
</tr>
<tr>
<td>22</td>
<td>Damasceno, J. dos Passos, Rio de Janeiro</td>
<td>Pen-and-ink drawing—Don Pedro II</td>
</tr>
</tbody>
</table>
ARGENTINE REPUBLIC.

(Annex, Gallery No. 27.)

[Works of Art marked with an asterisk (*) are for sale. For information apply at the Office of the Argentine Republic, Main Building.]

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Petrazzini, Buenos Ayres,</td>
<td>*Fruit.</td>
</tr>
<tr>
<td>2</td>
<td>Gattinoni, Carlos, Buenos Ayres,</td>
<td>*Child’s Head.</td>
</tr>
<tr>
<td>3</td>
<td>Gattinoni, Carlos, Buenos Ayres,</td>
<td>*Old Man’s Head.</td>
</tr>
<tr>
<td>4</td>
<td>Marroig, G., Entre Rios,</td>
<td>*At the Fountain.</td>
</tr>
<tr>
<td>7</td>
<td>Boneo, M. L., Buenos Ayres,</td>
<td>Native Scene.</td>
</tr>
<tr>
<td>8</td>
<td>Diaz, Josefa, Santa Fé,</td>
<td>*The Chaco Indian.</td>
</tr>
<tr>
<td>9</td>
<td>Charton, E., Buenos Ayres,</td>
<td>Valparaiso, Chili.</td>
</tr>
<tr>
<td>10</td>
<td>Gattinoni, Carlos, Buenos Ayres,</td>
<td>*Rustic Court.</td>
</tr>
<tr>
<td>12</td>
<td>Charton, E., Buenos Ayres,</td>
<td>Chilian Farmer.</td>
</tr>
<tr>
<td>13</td>
<td>Diaz, Josefa, Santa Fé,</td>
<td>*Fruit.</td>
</tr>
<tr>
<td>14</td>
<td>Charton, E., Buenos Ayres,</td>
<td>View of Santiago, Chili.</td>
</tr>
<tr>
<td>15</td>
<td>Boneo, M. L., Buenos Ayres,</td>
<td>Native Scene.</td>
</tr>
<tr>
<td>20</td>
<td>Chiama, Epaminonda, Buenos Ayres,</td>
<td>*At the Camp Store.</td>
</tr>
<tr>
<td>21</td>
<td>Charton, E., Buenos Ayres,</td>
<td>City and Harbor of Panama</td>
</tr>
<tr>
<td>22</td>
<td>Charton, E., Buenos Ayres,</td>
<td>General View of Guayaquil.</td>
</tr>
<tr>
<td>23</td>
<td>Boneo, M. L., Buenos Ayres,</td>
<td>Native Scene.</td>
</tr>
<tr>
<td>24</td>
<td>Castillo, B. del, Buenos Ayres,</td>
<td>*Fruit and Flowers.</td>
</tr>
<tr>
<td>26</td>
<td>Boneo, M. L., Buenos Ayres,</td>
<td>Native Scene.</td>
</tr>
<tr>
<td>29</td>
<td>Charton, E., Buenos Ayres,</td>
<td>Public Square in Córdoba.</td>
</tr>
<tr>
<td>30</td>
<td>Muratory, José, Buenos Ayres,</td>
<td>Naval Battle.</td>
</tr>
<tr>
<td>31</td>
<td>Muratory, José, Buenos Ayres,</td>
<td>Naval Battle.</td>
</tr>
<tr>
<td>32</td>
<td>Muratory, José, Buenos Ayres,</td>
<td>Naval Battle.</td>
</tr>
<tr>
<td>33</td>
<td>Muratory, José, Buenos Ayres,</td>
<td>Naval Battle.</td>
</tr>
<tr>
<td>34</td>
<td>Calzadilla, S., Santiago,</td>
<td>*The Washerwoman going to her Work.</td>
</tr>
</tbody>
</table>
**MEXICO.**

[Information concerning the sale of Works of Art may be obtained at the office of the Mexican Commission, Main Building.]

*(Annex, Gallery No. 9.)*

**OIL PAINTINGS.**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
<th>OWNER.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sagredo, Ramon,</td>
<td>The Castle of Emaus.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>2</td>
<td>Hernandez, Ignacio,</td>
<td>Portrait of Mina, one of the heroes of Mexican Independence.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>5</td>
<td>Ramirez, Joaquin,</td>
<td>Noah’s Ark.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>7</td>
<td>Velasco, José María,</td>
<td>The Valley of Mexico.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>8</td>
<td>Figueroa, Gregorio,</td>
<td>The Death of Abel.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>9</td>
<td>Velasco, José Maria,</td>
<td>Wood of Chapultepec.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>10</td>
<td>Jimenez, José,</td>
<td>Interior of the Convent of Loreto, City of Mexico.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>12</td>
<td>Flores, Rafael,</td>
<td>Dante.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>17</td>
<td>Cordero, Juan,</td>
<td>Columbus before the Court of Ferdinand and Isabella.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>19</td>
<td>Manchola, Juan,</td>
<td>Saint Peter Restoring a Child.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>20</td>
<td>Obregon, José,</td>
<td>Giotto and Cimabue.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>21</td>
<td>Clavé, Pelegrín,</td>
<td>Isabel of Portugal.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>22</td>
<td>Cordero, Juan,</td>
<td>The Family of the Artist Cordero.</td>
<td>Artist.</td>
</tr>
<tr>
<td>23</td>
<td>Gutierrez, Felipe,</td>
<td>Saint Sebastian.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>27</td>
<td>Ferrando, Salvador,</td>
<td>Jacob Anointing a Rock.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>30</td>
<td>Escudero y Espronceda,</td>
<td>Portrait of Benito Juarez, late President of Mexico.</td>
<td>Artist.</td>
</tr>
<tr>
<td>46</td>
<td>Castro, José Antonio,</td>
<td>Spain (allegorical painting).</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>47</td>
<td>Paez, José,</td>
<td>Saint Rosalia.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>NO.</td>
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<tr>
<td>51</td>
<td>Rodriguez, Juarez Juan</td>
<td>San Juan de Dios — seventeenth century.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>54</td>
<td>Ibarra, José</td>
<td>Scenes in the Life of the Virgin Mary — seventeenth century.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>56</td>
<td>Vega, Joaquin de la</td>
<td>Portrait — Professor Carcianio — seventeenth century.</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>57</td>
<td>Alcibar, José</td>
<td>Portrait — Don Manuel Justo Bolea Sanchez</td>
<td>The National Academy.</td>
</tr>
</tbody>
</table>

**STATUARY.**

<table>
<thead>
<tr>
<th>NO.</th>
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</thead>
<tbody>
<tr>
<td>58</td>
<td>Damaine</td>
<td>The Orphans (plaster).</td>
<td>The National Academy.</td>
</tr>
<tr>
<td>60</td>
<td>Guerra, Gabriel</td>
<td>A Fisherman (plaster).</td>
<td>The National Academy.</td>
</tr>
</tbody>
</table>

*(Annex, Gallery No. 29;)*

**OIL PAINTINGS.**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
<th>OWNER.</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>Rebull, Santiago</td>
<td>Abraham</td>
<td>The National Academy Artist.</td>
</tr>
<tr>
<td>33</td>
<td>De Mayora, Mrs. Guadalupe C.</td>
<td>The Prayer.</td>
<td>Artist.</td>
</tr>
<tr>
<td>34</td>
<td>De Mayora, Mrs. Guadalupe C.</td>
<td>Savoyard Beggar-Boy.</td>
<td>Artist.</td>
</tr>
<tr>
<td>35</td>
<td>De Mayora, Mrs. Guadalupe C.</td>
<td>Fruit.</td>
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</tr>
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<td>36</td>
<td>De Mayora, Mrs. Guadalupe C.</td>
<td>Fruit.</td>
<td>Artist.</td>
</tr>
<tr>
<td>37</td>
<td>De Mayora, Mrs. Guadalupe C.</td>
<td>A Page.</td>
<td>Artist.</td>
</tr>
<tr>
<td>38</td>
<td>De Mayora, Mrs. Guadalupe C.</td>
<td>The Madonna (after Murillo).</td>
<td>Artist.</td>
</tr>
<tr>
<td>40</td>
<td>Morlete, Patricio Jose</td>
<td>San Luis Gonzaga</td>
<td>The National Academy.</td>
</tr>
</tbody>
</table>
The celebrity attained by the scenic and historic attractions along the Main Line and various branches of this Railroad, has led to the publication, by the Company, of a volume entitled

THE PENNSYLVANIA RAILROAD, HISTORICAL AND DESCRIPTIVE,

Embracing Historical, Descriptive, and Statistical Notices of Cities, Towns, Villages, Stations, Industries, and objects of Interest on its various Lines in Pennsylvania and New Jersey.

This book contains two Steel-plate Portraits and one hundred and nine Wood Engravings, executed in the highest style from original designs by eminent artists.

The design of the work is to faithfully portray the origin, progress, and present condition of the PENNSYLVANIA RAILROAD, and to give such information of a historical, personal, and statistical character as will interest travelers and the general public.

The book contains three hundred pages, is printed in large, clear type, on heavy, tinted paper, and will compare favorably with any emanation from the American press. It is now for sale on all trains and at all principal ticket stations on the Pennsylvania Railroad and Branches, and at the book stores of J. B. LIPPINCOTT & Co. and PORTER & COATES, Philadelphia.

VISITORS TO THE CENTENNIAL EXHIBITION

Will find this volume an interesting and valuable souvenir of Philadelphia and the great route connecting the East and West, as every station between, and including, New York and Pittsburg is illustrated and described in it.
THE
American Newspaper Union.
A. J. Aikens, President.

New York Newspaper Union,
148 and 150 Worth St., New York. 315 Newspapers, $3.00 per line, per week.

Chicago Newspaper Union,
114 Monroe St., Chicago. 350 " $3.50 " "

Milwaukee Newspaper Union,
365 East Water St., Milwaukee. 120 " $1.25 " "

Aikens Newspaper Union,
143 Race St., Cincinnati. 200 " $2.00 " "

Southern Newspaper Union,
277 Second St., Memphis, Tenn. 145 " $1.50 " "

St. Paul Newspaper Union,
17 Wabashaw St., St. Paul, Minn. 73 " $ .75 " "

THE ORIGIN OF CO-OPERATIVE NEWSPAPER ADVERTISING.

Co-operative newspaper printing, as now practised, originated in Wisconsin twelve years ago. It is termed co-operative for the reason that one side of each of the newspapers is printed at a central office, and the paper sent in its half-printed state to the home office, where it is completed with editorials, local news, and other matter prepared by the editor or publisher. In December, 1846, the idea of co-operation, with advertisements, occurred to Mr. Aikens, while yet serving his time as an apprentice, in printing the message of President Polk on one side of a country newspaper of New England at Boston, and the other half being printed at the local office.

Mr. A. J. Aikens, a practical printer and business man, conceived the idea of reducing the cost of ready-printed paper, as it is now termed, to country publishers, by making an agreement with them to use a certain space in each of their papers for advertisements that he might procure. This plan of co-operation he put into practice twelve years ago, at the office of Cramer, Aikens & Cramer, Milwaukee. It at once became successful, leading to the establishment of co-operative newspaper printing-offices in Chicago, New York, St. Louis, Cincinnati, Memphis, St. Paul, and other places. There are now over two thousand newspapers printed upon the co-operative plan in the United States and Canadas, and the number is constantly increasing, it having more than doubled in the last five years. The enterprise is no longer an experiment, but an established success, and the system is one yielding manifold advantages to advertisers as well as to local publishers.

The American Newspaper Union

Is essentially national. The papers represented in it are located in all the States of the Union and in nearly five hundred county seats. They circulate over the whole area of the country from Maine to Colorado, distributing at least one hundred copies every year to each square mile of the settled portions of the United States.

Although, as a whole, the Union List is national, covering all sections, it is so made up of different members as to be susceptible of easy division into sections—East, Middle, West, South. The distribution of the papers is as follows:

<table>
<thead>
<tr>
<th>State</th>
<th>Papers</th>
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<tbody>
<tr>
<td>New England</td>
<td>78</td>
</tr>
<tr>
<td>New York</td>
<td>101</td>
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<tr>
<td>New Jersey</td>
<td>27</td>
</tr>
<tr>
<td>Pennsylvania</td>
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<td>Virginia</td>
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<td>No. and So. Carolinas</td>
<td>24</td>
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<tr>
<td>Ohio</td>
<td>122</td>
</tr>
<tr>
<td>Indiana</td>
<td>81</td>
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<tr>
<td>Illinois</td>
<td>117</td>
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<td>Michigan</td>
<td>86</td>
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<td>Wisconsin</td>
<td>98</td>
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<td>Tennessee</td>
<td>29</td>
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<tr>
<td>Kentucky</td>
<td>29</td>
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<td>Minnesota</td>
<td>79</td>
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<td>Iowa</td>
<td>85</td>
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<tr>
<td>Nebraska</td>
<td>15</td>
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<td>Missouri</td>
<td>17</td>
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<td>Georgia</td>
<td>10</td>
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<tr>
<td>Alabama</td>
<td>32</td>
</tr>
<tr>
<td>Louisiana</td>
<td>11</td>
</tr>
<tr>
<td>Mississippi</td>
<td>29</td>
</tr>
<tr>
<td>Other States</td>
<td>46</td>
</tr>
</tbody>
</table>

AGGREGATE CIRCULATION.

The circulation of these papers is large and constantly increasing. It is larger than the circulation of any other lists or combinations of country papers in the United States—the last aggregate weekly circulation being seven hundred thousand seven hundred and thirty copies (700,730).

SEND TO EITHER OFFICE FOR A CIRCULAR.
SPAIN.

[For information regarding the sale of Works of Art, apply at the office of the Spanish Commission, Main Building.]

(Memorial Hall, Gallery H.)

**SCULPTURE.**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST</th>
<th>TITLE</th>
<th>OWNER</th>
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</thead>
<tbody>
<tr>
<td>36</td>
<td>Nobas, Rosendo,</td>
<td>The Wounded Bull-Fighter (plaster)</td>
<td>Artist</td>
</tr>
<tr>
<td></td>
<td>Barcelona,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Talarn, Domingo,</td>
<td>Massacre of the Innocents (terracotta)</td>
<td>Artist</td>
</tr>
<tr>
<td></td>
<td>Barcelona,</td>
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(Memorial Hall, Gallery H.)

**OIL PAINTINGS.**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>28</td>
<td>Miravent y Gatell,</td>
<td>Flowers</td>
<td>Artist</td>
</tr>
<tr>
<td></td>
<td>Jose, Barcelona,</td>
<td></td>
<td></td>
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<tr>
<td>40c</td>
<td>Agrassot, I.,</td>
<td>The Two Friends</td>
<td>Museum of Fine Arts, Madrid.</td>
</tr>
<tr>
<td>40d</td>
<td>Maureta, G.,</td>
<td>Torquato Tasso retiring to the Monastery of San Onofre.</td>
<td>Museum of Fine Arts, Madrid.</td>
</tr>
<tr>
<td>40g</td>
<td>Puebla, D.,</td>
<td>The Landing of Columbus</td>
<td>Museum of Fine Arts, Madrid.</td>
</tr>
<tr>
<td>40h</td>
<td>Domingo, F.,</td>
<td>A Duel in the Seventeenth Century</td>
<td>Museum of Fine Arts, Madrid.</td>
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<tr>
<td>40i</td>
<td>Cano, E.,</td>
<td>Christopher Columbus in the Monastery of La Rabida.</td>
<td>Museum of Fine Arts, Madrid.</td>
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<tr>
<td>40j</td>
<td>Castellano, M.,</td>
<td>Death of the Count of Villamediana</td>
<td>Museum of Fine Arts, Madrid.</td>
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<tr>
<td>40k</td>
<td>Vera, A.,</td>
<td>Burial of San Lorenzo at Rome</td>
<td>Museum of Fine Arts, Madrid.</td>
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<tr>
<td>40l</td>
<td>Casado, I.,</td>
<td>Last Moments of Don Fernando IV,</td>
<td>Museum of Fine Arts, Madrid.</td>
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<tr>
<td></td>
<td></td>
<td>el Emplazado</td>
<td></td>
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<tr>
<td>40n</td>
<td>Mercadé, B.,</td>
<td>Translation of Saint Francis of Assisi</td>
<td>Museum of Fine Arts, Madrid.</td>
</tr>
<tr>
<td>41a</td>
<td>Hæes, D. Carlos,</td>
<td>Suburbs of Madrid</td>
<td>Artist</td>
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<tr>
<td></td>
<td>Madrid,</td>
<td></td>
<td></td>
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<tr>
<td>41b</td>
<td>Hæes, D. Carlos,</td>
<td>Reminiscences of the Pyrenees.</td>
<td>Moreno y Galindo, Tomas, Madrid.</td>
</tr>
<tr>
<td></td>
<td>Madrid,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42a</td>
<td>Morales, Divino,</td>
<td>The Nazarena</td>
<td>Moreno y Galindo, Tomas, Madrid.</td>
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<tr>
<td></td>
<td>Madrid,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42b</td>
<td>(Unknown),</td>
<td>Saint Bruno</td>
<td>Moreno y Galindo, Tomas, Madrid.</td>
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<tr>
<td></td>
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<tr>
<td>42c</td>
<td>Cano, Alonzo,</td>
<td>The Trinity</td>
<td>Moreno y Galindo, Tomas, Madrid.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42d</td>
<td>Murillo, Bartolomé</td>
<td>Christ</td>
<td>Moreno y Galindo, Tomas, Madrid.</td>
</tr>
<tr>
<td></td>
<td>Esteban,</td>
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<tr>
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<td>TITLE.</td>
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<td>43e</td>
<td>Morales, Divino,</td>
<td>Madonna and Child.</td>
<td>Moreno y Galindo, Tomas, Madrid.</td>
</tr>
<tr>
<td>43e</td>
<td>(Unknown),</td>
<td>Triptych on Wood.</td>
<td>Moreno y Galindo, Tomas, Madrid.</td>
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<tr>
<td>44a</td>
<td>Gonzalvo, Perez Pablo, Madrid,</td>
<td>La Sea, Cathedral of Saragossa.</td>
<td>Artist.</td>
</tr>
<tr>
<td>44a</td>
<td>Gonzalvo, Perez Pablo, Madrid,</td>
<td>Chapel and Mausoleum of King Fermin and Queen Isabella, called &quot;the Catholic,&quot; in the Cathedral of Granada.</td>
<td>Artist.</td>
</tr>
<tr>
<td>44a</td>
<td>Gonzalvo, Perez Pablo, Madrid,</td>
<td>Chapel in the Cathedral of Avila.</td>
<td>Artist.</td>
</tr>
<tr>
<td>44a</td>
<td>Gonzalvo, Perez Pablo, Madrid,</td>
<td>Sacristy in the Cathedral of Avila.</td>
<td>Artist.</td>
</tr>
<tr>
<td>44a</td>
<td>Gonzalvo, Perez Pablo, Madrid,</td>
<td>Basilica of San Vicente at Avila.</td>
<td>Artist.</td>
</tr>
<tr>
<td>46</td>
<td>Ruiz de Valdivia, Nicolas, Madrid,</td>
<td>Aragonese Serenade.</td>
<td>Artist.</td>
</tr>
<tr>
<td>49a</td>
<td>Méïda, Enrique, Madrid,</td>
<td>Hall in Godoy's Palace.</td>
<td>Artist.</td>
</tr>
<tr>
<td>50a</td>
<td>(Unknown),</td>
<td>The Holy Mother and Child (on wood—fifteenth century).</td>
<td>Monreal y Garcia, Agustin, Madrid.</td>
</tr>
<tr>
<td>52</td>
<td>Llanos y Keats, Juan, Madrid,</td>
<td>Throne Room in the Royal Palace, Madrid.</td>
<td>Artist.</td>
</tr>
<tr>
<td>54c</td>
<td>Jover, Francisco, Madrid,</td>
<td>A Capuchin Monk before the Roman Conclave.</td>
<td>Artist.</td>
</tr>
<tr>
<td>59</td>
<td>Piñera, Juan de, Seville,</td>
<td>Andalusian Girl with Fan and Mantilla.</td>
<td>Artist.</td>
</tr>
<tr>
<td>62a</td>
<td>Alvarez y Espino, Gonzalez, Seville,</td>
<td>An Annual Fair attended only by Men.</td>
<td>Artist.</td>
</tr>
<tr>
<td>64</td>
<td>Cabral y Vejarian, Manuel, Seville,</td>
<td>A Water-Seller of the Alameda, in Seville.</td>
<td>Artist.</td>
</tr>
<tr>
<td>204</td>
<td>Velazquez,</td>
<td>Portrait.</td>
<td>Mazuel, Countess Antonia du.</td>
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</tbody>
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**(Annex, Gallery No. 31.**

<table>
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<th>OWNER.</th>
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<tr>
<td>1</td>
<td>Suñol, G.,</td>
<td>Dante (bronze).</td>
<td>Provincial Deputation of Barcelona.</td>
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<tr>
<td>2a</td>
<td>Magin Fita y Rovira, Barcelona,</td>
<td>A Valencian Woman (terra-cotta).</td>
<td>Artist.</td>
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<tr>
<td>3a</td>
<td>Nobas, Rosendo, Barcelona,</td>
<td>Portrait of M. Fortuny (plaster).</td>
<td>Artist.</td>
</tr>
<tr>
<td>3c</td>
<td>Nobas, Rosendo, Barcelona,</td>
<td>Miguel de Cervantes (plaster).</td>
<td>Artist.</td>
</tr>
<tr>
<td>4a</td>
<td>Pagés y Casamitjana, Eduardo, Barcelona,</td>
<td>A Fashionable Lady (marble).</td>
<td>Artist.</td>
</tr>
<tr>
<td>4b</td>
<td>Pagés y Casamitjana, Eduardo, Barcelona,</td>
<td>Catalanians (five statues).</td>
<td>Artist.</td>
</tr>
<tr>
<td>NO.</td>
<td>ARTIST.</td>
<td>TITLE.</td>
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<tr>
<td>5</td>
<td>Pagés y Serratosa, Francisco, Barcelona</td>
<td>Romans (two statuettes, terra-cotta).</td>
<td>Artist.</td>
</tr>
<tr>
<td>6</td>
<td>Elías y Mascaró, Ramon, Barcelona</td>
<td>Last Moments of Lincoln.</td>
<td>Artist.</td>
</tr>
<tr>
<td>7</td>
<td>Roca, hermanos, Barcelona</td>
<td>Bronze bust.</td>
<td>Artist.</td>
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<tr>
<td>10</td>
<td>Fuentes, Xavier, Madrid</td>
<td>Four cups, old Roman epoch; five cups, eighteenth century; three statuettes in clay; a pitcher and a plate.</td>
<td>Artist.</td>
</tr>
<tr>
<td>12a</td>
<td>Peñas y Leon, Antonio de las, Seville</td>
<td>A Bull-Fighter (terra-cotta).</td>
<td>Artist.</td>
</tr>
<tr>
<td>14a</td>
<td>Santigosa, Francisco, Valencia</td>
<td>Tragedy (plaster).</td>
<td>Artist.</td>
</tr>
<tr>
<td>23</td>
<td>Subirat, Ramon, Madrid</td>
<td>Christ (wood, life size).</td>
<td>Artist.</td>
</tr>
<tr>
<td>26</td>
<td>Albazzi, José, Havana, Cuba</td>
<td>Christopher Columbus (bas-relief).</td>
<td>Artist.</td>
</tr>
</tbody>
</table>

(Annex, Gallery No. 31)

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST.</th>
<th>TITLE.</th>
<th>OWNER.</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>Benavent, Cayetano, Barcelona</td>
<td>Moonlight on the Sea.</td>
<td>Artist.</td>
</tr>
<tr>
<td>28a</td>
<td>Miravent y Gatell, José, Barcelona</td>
<td>Grapes.</td>
<td>Artist.</td>
</tr>
<tr>
<td>28b</td>
<td>Miravent y Gatell, José, Barcelona</td>
<td>Grapes.</td>
<td>Artist.</td>
</tr>
<tr>
<td>28c</td>
<td>Miravent y Gatell, José, Barcelona</td>
<td>Grapes.</td>
<td>Artist.</td>
</tr>
<tr>
<td>29a</td>
<td>Rabada y Valle, Juan, Barcelona</td>
<td>Banks of the River Ter.</td>
<td>Artist.</td>
</tr>
<tr>
<td>29b</td>
<td>Rabada y Valle, Juan, Barcelona</td>
<td>Banks of the River Llobregat.</td>
<td>Artist.</td>
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<tr>
<td>30a</td>
<td>Arrau, Viuda de, Barcelona</td>
<td>Fruits.</td>
<td>Artist.</td>
</tr>
<tr>
<td>30b</td>
<td>Arrau, Viuda de, Barcelona</td>
<td>Fruits.</td>
<td>Artist.</td>
</tr>
<tr>
<td>30c</td>
<td>Arrau, Viuda de, Barcelona</td>
<td>Fruits.</td>
<td>Artist.</td>
</tr>
<tr>
<td>30d</td>
<td>Arrau, Viuda de, Barcelona</td>
<td>Fruits.</td>
<td>Artist.</td>
</tr>
<tr>
<td>30e</td>
<td>Arrau, Viuda de, Barcelona</td>
<td>Fruits.</td>
<td>Artist.</td>
</tr>
<tr>
<td>30f</td>
<td>Arrau, Viuda de, Barcelona</td>
<td>Fruits.</td>
<td>Artist.</td>
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<td>Artist.</td>
<td>Title.</td>
<td>Owner.</td>
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<td>-----</td>
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<td>--------</td>
</tr>
<tr>
<td>33a</td>
<td>Moragas y Valero, Manuel, Barcelona.</td>
<td>Fortune and the Boy.</td>
<td>Artist.</td>
</tr>
<tr>
<td>33b</td>
<td>Moragas y Valero, Manuel, Barcelona.</td>
<td>The Topers.</td>
<td>Artist.</td>
</tr>
<tr>
<td>33c</td>
<td>Moragas y Valero, Manuel, Barcelona.</td>
<td>The Librarian.</td>
<td>Artist.</td>
</tr>
<tr>
<td>34</td>
<td>Urgell, Modesto, Barcelona.</td>
<td>The Village Grave-Yard.</td>
<td>Artist.</td>
</tr>
<tr>
<td>36a</td>
<td>Damis y Cortés, Joaquin, Cadiz.</td>
<td>Flowers.</td>
<td>Artist.</td>
</tr>
<tr>
<td>36b</td>
<td>Damis y Cortés, Joaquin, Cadiz.</td>
<td>Andalusian Customs.</td>
<td>Artist.</td>
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<tr>
<td>38</td>
<td>Wade, Carlos, Cadiz.</td>
<td>Andalusian Customs.</td>
<td>Artist.</td>
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<tr>
<td>39a</td>
<td>Villamil, Leopoldo, Lugo.</td>
<td>Dead Hare.</td>
<td>Artist.</td>
</tr>
<tr>
<td>43a</td>
<td>Lucas, E.,</td>
<td>Marina.</td>
<td>Lopez Martinez, Miguel, Madrid.</td>
</tr>
<tr>
<td>43b</td>
<td>Lucas, E.,</td>
<td>Romera.</td>
<td>Lopez Martinez, Miguel, Madrid.</td>
</tr>
<tr>
<td>43c</td>
<td>Lucas, E.,</td>
<td>Civil War.</td>
<td>Lopez Martinez, Miguel, Madrid.</td>
</tr>
<tr>
<td>43d</td>
<td>Lucas, E.,</td>
<td>A Sermon.</td>
<td>Lopez Martinez, Miguel, Madrid.</td>
</tr>
<tr>
<td>43g</td>
<td>Lucas, E.,</td>
<td>Saint John (child).</td>
<td>Lopez Martinez, Miguel, Madrid.</td>
</tr>
<tr>
<td>43h</td>
<td>Lucas, E.,</td>
<td>Holy Family.</td>
<td>Lopez Martinez, Miguel, Madrid.</td>
</tr>
<tr>
<td>44f</td>
<td>Gonzalvo, Perez Pablo, Madrid.</td>
<td>Basilica of San Vicente, in Avila.</td>
<td>Artist.</td>
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<tr>
<td>50c</td>
<td>Zurbaran, F.,</td>
<td>Madonna and Sleeping Child.</td>
<td>Monreal y Garcia, Agustin, Madrid.</td>
</tr>
<tr>
<td>50d</td>
<td>De Blas del Prado,</td>
<td>Saint Francis of Assisi in Meditation.</td>
<td>Monreal y Garcia, Agustin, Madrid.</td>
</tr>
<tr>
<td>50e</td>
<td>(Unknown),</td>
<td>The Visitation of the Virgin (on wood, fifteenth century).</td>
<td>Monreal y Garcia, Agustin, Madrid.</td>
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<tr>
<td>NO.</td>
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<tr>
<td>54a</td>
<td>Jover, Francisco, Madrid</td>
<td>Faun playing a Flute.</td>
<td>Artist.</td>
</tr>
<tr>
<td>54b</td>
<td>Jover, Francisco, Madrid</td>
<td>Pompeian Woman at the Bath.</td>
<td>Artist.</td>
</tr>
<tr>
<td>55a</td>
<td>Aragonés, Señorita Joaquina, Malaga</td>
<td>Two figures.</td>
<td>Artist.</td>
</tr>
<tr>
<td>55b</td>
<td>Aragonés, Señorita Joaquina, Malaga</td>
<td>Grapes and Flowers.</td>
<td>Artist.</td>
</tr>
<tr>
<td>55c</td>
<td>Aragonés, Señorita Joaquina, Malaga</td>
<td>Fish.</td>
<td>Artist.</td>
</tr>
<tr>
<td>56a</td>
<td>Niculoso, Francisco</td>
<td>Reproduction of oil painting from the centre and chief wall in the chapel of Ferdinand and Isabella &quot;the Catholic,&quot; in the Alcázar at Seville. Painted on enameled bricks.</td>
<td>Academy of Fine Arts, Seville.</td>
</tr>
<tr>
<td>56c</td>
<td>Niculoso, Francisco</td>
<td>Two Holy Bishops.</td>
<td>Academy of Fine Arts, Seville.</td>
</tr>
<tr>
<td>56d</td>
<td>Niculoso, Francisco</td>
<td>Front of the Convent of Santa Paula at Seville, epoch of the two Catho- lic Regents.</td>
<td>Academy of Fine Arts, Seville.</td>
</tr>
<tr>
<td>57</td>
<td>Cortés y Cordero, Eduardo, Seville</td>
<td>The Secret.</td>
<td>Artist.</td>
</tr>
<tr>
<td>58a</td>
<td>Valera, José Díaz, Seville</td>
<td>Venus.</td>
<td>Ortiz y Campos, José, Seville.</td>
</tr>
<tr>
<td>58b</td>
<td>Ortiz, José, Seville</td>
<td>A Capuchin Monk.</td>
<td>Ortiz y Campos, José, Seville.</td>
</tr>
<tr>
<td>58c</td>
<td>Ortiz, José, Seville</td>
<td>Type from the Seventeenth Century.</td>
<td>Ortiz y Campos, José, Seville.</td>
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<tr>
<td>59a</td>
<td>Piñera, Juan, Seville</td>
<td>Gypsy playing on a Paadereta.</td>
<td>Artist.</td>
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<tr>
<td>59b</td>
<td>Piñera, Juan, Seville</td>
<td>Flowers.</td>
<td>Artist.</td>
</tr>
<tr>
<td>60c</td>
<td>Eder, Federico, Seville</td>
<td>A Spanish Calesa.</td>
<td>Artist.</td>
</tr>
<tr>
<td>60d</td>
<td>Eder, Federico, Seville</td>
<td>Fascination.</td>
<td>Artist.</td>
</tr>
<tr>
<td>63</td>
<td>Diez, Joaquim, Seville</td>
<td>Bulls in the Fields.</td>
<td>Artist.</td>
</tr>
<tr>
<td>No.</td>
<td>Artist</td>
<td>Title</td>
<td>Owner</td>
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<tr>
<td>67</td>
<td>Argumosa, José, Havana,</td>
<td>Collection of pictures.</td>
<td>Artist.</td>
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</tbody>
</table>

**(Annex, Gallery No. 31.)**

**WATER COLORS AND CRAYON.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist</th>
<th>Title</th>
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<tbody>
<tr>
<td>69</td>
<td>Sanchez, Pedro, Cadiz,</td>
<td>Four water colors.</td>
<td>Artist.</td>
</tr>
<tr>
<td>74</td>
<td>Lopez Valdemoro, Ortiz de Lazcano, Señorita Ines,</td>
<td>Crayon drawings.</td>
<td>Artist.</td>
</tr>
</tbody>
</table>

**OIL PAINTINGS.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist</th>
<th>Title</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>201a</td>
<td>(Unknown),</td>
<td>Saint Jerome.</td>
<td>Ochoa, Bernardino, Madrid.</td>
</tr>
<tr>
<td>201b</td>
<td>(Unknown),</td>
<td>Holy Family.</td>
<td>Ochoa, Bernardino, Madrid.</td>
</tr>
<tr>
<td>201c</td>
<td>(Unknown),</td>
<td>Virgin and Child.</td>
<td>Ochoa, Bernardino, Madrid.</td>
</tr>
<tr>
<td>201d,e</td>
<td>(Unknown),</td>
<td>Two vases with flowers.</td>
<td>Ochoa, Bernardino, Madrid.</td>
</tr>
<tr>
<td>201f,g</td>
<td>(Unknown),</td>
<td>The Combat.</td>
<td>Ochoa, Bernardino, Madrid.</td>
</tr>
<tr>
<td>201h,i</td>
<td>(Unknown),</td>
<td>Still Life.</td>
<td>Ochoa, Bernardino, Madrid.</td>
</tr>
<tr>
<td>201j</td>
<td>(Unknown),</td>
<td>Picnic.</td>
<td>Ochoa, Bernardino, Madrid.</td>
</tr>
<tr>
<td>201l</td>
<td>(Unknown),</td>
<td>Pasturing Bulls.</td>
<td>Ochoa, Bernardino, Madrid.</td>
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<tr>
<td>201m</td>
<td>(Unknown),</td>
<td>A Bull's head.</td>
<td>Ochoa, Bernardino, Madrid.</td>
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<tr>
<td>203</td>
<td>Ortiz, D. J. de, New York,</td>
<td>Portrait of the celebrated explorer Stanley.</td>
<td>Artist.</td>
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</tbody>
</table>

**SCULPTURE.**

<table>
<thead>
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<th>No.</th>
<th>Artist</th>
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</thead>
<tbody>
<tr>
<td>251</td>
<td>Tampinco, Isabella, Manila,</td>
<td>A bas-relief (wood).</td>
<td>Artist.</td>
</tr>
</tbody>
</table>

**OIL PAINTINGS.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Artist</th>
<th>Title</th>
<th>Owner</th>
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</thead>
<tbody>
<tr>
<td>255</td>
<td>Resurecsion, Felix,</td>
<td>Woman selling Plants called &quot;Lanzones.&quot;</td>
<td>Academy of Fine Arts, Manila.</td>
</tr>
<tr>
<td>256</td>
<td>Resurecsion, Felix,</td>
<td>Fisherman at Sacag.</td>
<td>Academy of Fine Arts, Manila.</td>
</tr>
<tr>
<td>257</td>
<td>Zaragosa, Miguel,</td>
<td>Laundry.</td>
<td>Academy of Fine Arts, Manila.</td>
</tr>
<tr>
<td>258</td>
<td>Zaragosa, Miguel,</td>
<td>Old Policeman.</td>
<td>Academy of Fine Arts, Manila.</td>
</tr>
<tr>
<td>266</td>
<td>Flores, Simon, Manila,</td>
<td>A Village in the Province of Pampanga.</td>
<td>Artist.</td>
</tr>
</tbody>
</table>
### SPAIN.

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST</th>
<th>TITLE</th>
<th>OWNER</th>
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</thead>
<tbody>
<tr>
<td>267-68</td>
<td>(Unknown)</td>
<td>Two oil paintings.</td>
<td>St. Thomas College, Manila.</td>
</tr>
<tr>
<td>269</td>
<td>(Unknown)</td>
<td>Oil painting.</td>
<td>St. Thomas Museum, Manila.</td>
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</table>

### MOSAICS.

<table>
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<th>NO.</th>
<th>ARTIST</th>
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</thead>
<tbody>
<tr>
<td>124</td>
<td>Rodriguez, Desiderio, Cienfuegos, Cuba</td>
<td>Mosaic table.</td>
<td>Artist</td>
</tr>
</tbody>
</table>

(Spanish Government Pavilion.)

### COLLECTIVE EXHIBIT.

<table>
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<tbody>
<tr>
<td>9</td>
<td>Duque, Eugenio, Madrid</td>
<td>Photographs of statues.</td>
<td>Artist</td>
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<tr>
<td>68</td>
<td>Bibiloni, José, Barcelona</td>
<td>India-ink drawings.</td>
<td>Artist</td>
</tr>
<tr>
<td>69</td>
<td>Pupils of the Provincial Academy of Fine Arts, Barcelona</td>
<td>Drawings.</td>
<td>Provincial Academy of Fine Arts.</td>
</tr>
<tr>
<td>72</td>
<td>(Unknown)</td>
<td>Calligraphs.</td>
<td>Provincial Deputation, Cadiz.</td>
</tr>
<tr>
<td>73</td>
<td>Gonzales y Montblanc, Modeste, Barcelona</td>
<td>Lithographs.</td>
<td>Artist</td>
</tr>
<tr>
<td>75</td>
<td>Aramburu, Ricardo, Seville</td>
<td>Crayon drawings.</td>
<td>Artist</td>
</tr>
<tr>
<td>76</td>
<td>Reynoso, Emilio, Havana</td>
<td>Calligraphs.</td>
<td>Artist</td>
</tr>
<tr>
<td>77</td>
<td>Gelabert y Hermano, R., Barcelona</td>
<td>Engravings.</td>
<td>Artist</td>
</tr>
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<td>78</td>
<td>Lemus, Eugenio, Madrid</td>
<td>Danae (copper engraving).</td>
<td>Artist</td>
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<tr>
<td>79</td>
<td>Maura, Bartolomé, Madrid</td>
<td>Surrender of Breda.</td>
<td>Artist</td>
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<td>80</td>
<td>Martinez, Espinosa, Juan, Madrid</td>
<td>Etchings.</td>
<td>Artist</td>
</tr>
<tr>
<td>81</td>
<td>Salcedo, Pedro, Morata, Province of Madrid</td>
<td>Plan of the Escorial Royal Monastery, near Madrid.</td>
<td>Artist</td>
</tr>
<tr>
<td>82</td>
<td>Aranz, José, Havana</td>
<td>Stone engravings.</td>
<td>Artist</td>
</tr>
<tr>
<td>83</td>
<td>Vidal y Roger, Andres, Barcelona</td>
<td>Printed and engraved music.</td>
<td>Artist</td>
</tr>
<tr>
<td>84</td>
<td>Calografia Nacional, Madrid</td>
<td>Lithographs.</td>
<td>Artist</td>
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<tr>
<td>85</td>
<td>Sola y Roca, Ramon, Barcelona</td>
<td>Lithographs.</td>
<td>Artist</td>
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<td>86</td>
<td>Mencha y Rodriguez, Faustino, Logroño</td>
<td>Lithographs.</td>
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<td>87</td>
<td>Carderera y Solano, Valentin, Madrid</td>
<td>Iconography.</td>
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<td>88</td>
<td>Fortanet, E.,</td>
<td>Books.</td>
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<td>90</td>
<td>Ariza y Campano, José, Seville</td>
<td>Typographs.</td>
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<td>91</td>
<td>Mateu, José Maria, Madrid</td>
<td>Chromo-lithographs.</td>
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<td>92</td>
<td>Arnanz, José, Havana,</td>
<td>Chromo-lithographs.</td>
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<td>94</td>
<td>Nobas, Narciso, Barcelona,</td>
<td>Photographs.</td>
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<td>95</td>
<td>Moragas, Manuel Garcia, Province of Barcelona,</td>
<td>Photographs.</td>
<td>Artist.</td>
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<td>96</td>
<td>Casiñol de Leopoldo, Xeres de la Frontera,</td>
<td>Helio-chromo.</td>
<td>Artist.</td>
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<td>Rodriguez Cortes, Cesar,</td>
<td>Photographs of engravings.</td>
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<td>100</td>
<td>Spreafico, José, Malaga,</td>
<td>Album, with views of the Monastery La Rabida and the Port of Paíos.</td>
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<td>101</td>
<td>Alviac y Ca., Madrid,</td>
<td>Photographs.</td>
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<td>103</td>
<td>Laurent, I., y Ca., Madrid,</td>
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<td>104</td>
<td>Diaz, Otero, Eudardo, Madrid,</td>
<td>Photographs.</td>
<td>Artist.</td>
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<td>106</td>
<td>Instituto de Segunda Enseñanza, Madrid,</td>
<td>Photographs.</td>
<td>Artist.</td>
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<td>107</td>
<td>Sebastiá Vila, Pedro, Seville,</td>
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<td>109</td>
<td>Sociedad Económica de Amigos del Pais, Seville,</td>
<td>Photographs.</td>
<td>Artist.</td>
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<td>110</td>
<td>Arce, Innocencio, Barcelona,</td>
<td>Photo-lithographs.</td>
<td>Artist.</td>
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<td>111</td>
<td>Almela y Vinet, Francisco, Seville,</td>
<td>Photographs.</td>
<td>Artist.</td>
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<tr>
<td>114</td>
<td>Guastavin, Rafael, Barcelona,</td>
<td>Architectural monuments.</td>
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<tr>
<td>120</td>
<td>Marín Baldo, José, Madrid,</td>
<td>Photographs of architectural monuments.</td>
<td>Artist.</td>
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<td>122</td>
<td>Benito, Santiago de, Escorial, Province of Madrid,</td>
<td>Locks.</td>
<td>Artist.</td>
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<td>123</td>
<td>Bustamente y Gallo, Madrid,</td>
<td>Mosaic in wood.</td>
<td>Artist.</td>
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<td>125</td>
<td>Fernandez Cuevas, Pascual, Bribiesca, Province of Burgos</td>
<td>Three pictures of artificial birds.</td>
<td>Artist.</td>
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<td>126</td>
<td>Ruiz, Manuel, Cadiz</td>
<td>Hair-work.</td>
<td>Artist.</td>
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<tr>
<td>126</td>
<td>Ruiz, Manuel, Cadiz</td>
<td>Wafer-work.</td>
<td>Artist.</td>
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<tr>
<td>128</td>
<td>Lozano y Villarreal, Mateo, Madrid</td>
<td>Albums.</td>
<td>Artist.</td>
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<td>129</td>
<td>Serrano y Arenas, Havana</td>
<td>Silk embroideries.</td>
<td>Artist.</td>
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<td>130</td>
<td>Comacho de Diaz, Soledad, Havana</td>
<td>Work made with scissors.</td>
<td>Artist.</td>
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<td>271</td>
<td>Museo de San Tomas, Manilla, Havana</td>
<td>Flowers made of leaves of camote-cahoy.</td>
<td>Artist.</td>
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<tr>
<td>272</td>
<td>Casas, Jose, Havana</td>
<td>Hair-work.</td>
<td>Artist.</td>
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<tr>
<td>273</td>
<td>Orteils, Carlos, Havana</td>
<td>Hair-work.</td>
<td>Artist.</td>
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</tbody>
</table>
**RUSSIA.**

*(Memorial Hall, Gallery M.)*

**OIL PAINTINGS.**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST</th>
<th>TITLE</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Aivazowsky, John, Theodosia, Crimea</td>
<td>Storm on the Black Sea, near the Crimean coast.</td>
</tr>
<tr>
<td>2</td>
<td>Aivazowsky, John, Theodosia, Crimea</td>
<td>View of Constantinople, from the European shore.</td>
</tr>
<tr>
<td>3</td>
<td>Aivazowsky, John, Theodosia, Crimea</td>
<td>Tartar Women in the Crimea.</td>
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<tr>
<td>4</td>
<td>Aivazowsky, John, Theodosia, Crimea</td>
<td>After the Storm (Sunset).</td>
</tr>
<tr>
<td>5</td>
<td>Aivazowsky, John, Theodosia, Crimea</td>
<td>Storm in the North Sea.</td>
</tr>
<tr>
<td>6</td>
<td>Aivazowsky, John, Theodosia, Crimea</td>
<td>The Rising Moon, Black Sea.</td>
</tr>
<tr>
<td>7</td>
<td>Aivazowsky, John, Theodosia, Crimea</td>
<td>Shower in the Crimean Mountains.</td>
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<tr>
<td>8</td>
<td>Bogoliuboff, Alexis, Paris</td>
<td>Ice-Drift on the Neva.</td>
</tr>
<tr>
<td>9</td>
<td>Bogoliuboff, Alexis, Paris</td>
<td>Landscape.</td>
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<tr>
<td>10</td>
<td>Bronnikoff, Theodore, Rome</td>
<td>Roman Thermal.</td>
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<td>11</td>
<td>Frentz, Rodolphus, St. Petersburg</td>
<td>The Hunter.</td>
</tr>
<tr>
<td>12</td>
<td>Gerson, Wojciech, Warsaw</td>
<td>The Morning Mist.</td>
</tr>
<tr>
<td>13</td>
<td>Gerson, Wojciech, Warsaw</td>
<td>Summer Rain.</td>
</tr>
<tr>
<td>14</td>
<td>Gerson, Wojciech, Warsaw</td>
<td>Knights of the Teutonic Order in Poland, in the Fourteenth Century.</td>
</tr>
<tr>
<td>15</td>
<td>Groozinsky, Peter, St. Petersburg</td>
<td>Russian Team.</td>
</tr>
<tr>
<td>16</td>
<td>Horavsky, Apollinarius, St. Petersburg</td>
<td>Caucasian Landscape—View of the River Arva.</td>
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<tr>
<td>17</td>
<td>Jooravleff, F., St. Petersburg</td>
<td>The Step-Mother.</td>
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<td>18</td>
<td>Jooravleff, F., St. Petersburg</td>
<td>The Chimney-Sweeper.</td>
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<td>19</td>
<td>Klodt, Baron Michael, St. Petersburg</td>
<td>Birch Forest.</td>
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<tr>
<td>20</td>
<td>Klodt, Baron Michael, St. Petersburg</td>
<td>Landscape.</td>
</tr>
<tr>
<td>21</td>
<td>Klodt, Baron Michael, St. Petersburg</td>
<td>Landscape.</td>
</tr>
<tr>
<td>22</td>
<td>Korzoochin, Alexis, St. Petersburg</td>
<td>Sunday Tea-Party.</td>
</tr>
<tr>
<td>23</td>
<td>Korzoochin, Alexis, St. Petersburg</td>
<td>Scene in the Wood.</td>
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<tr>
<td>24</td>
<td>Kostrzewski, Francis, Warsaw</td>
<td>Hunting in Winter.</td>
</tr>
<tr>
<td>25</td>
<td>Malyschef, ——, Sergievski-Possad</td>
<td>Icons (painted images).</td>
</tr>
<tr>
<td>26</td>
<td>Miller, Charles, Warsaw</td>
<td>Hamlet.</td>
</tr>
<tr>
<td>27</td>
<td>Miller, Charles, Warsaw</td>
<td>An Italian Woman.</td>
</tr>
<tr>
<td>28</td>
<td>Naoomof, Alexis, St. Petersburg</td>
<td>A Smoky Cottage.</td>
</tr>
<tr>
<td>29</td>
<td>Naoomof, Alexis, St. Petersburg</td>
<td>Shepherd Boy.</td>
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<td>30</td>
<td>Naoomof, Alexis, St. Petersburg</td>
<td>Orphan Girl.</td>
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<tr>
<td>31</td>
<td>Lemoch, Charles, St. Petersburg</td>
<td>Orphan Girl.</td>
</tr>
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<td>32</td>
<td>Lemoch, Charles, St. Petersburg</td>
<td>Peasant Girl Feeding Poultry.</td>
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<td>33</td>
<td>Lemoch, Charles, St. Petersburg</td>
<td>Peasant Girl Making her Toilet.</td>
</tr>
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<td>34</td>
<td>Semiradsky, Henry, Rome</td>
<td>The Amulet-Seller.</td>
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<td>35</td>
<td>Sokoloff, Peter, St. Petersburg</td>
<td>Russian Team.</td>
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<td>36</td>
<td>Zagorsky, Nicolas, St. Petersburg</td>
<td>Family Scene.</td>
</tr>
<tr>
<td>37</td>
<td>Gerimski, Alexander, Warsaw</td>
<td>A Tavern.</td>
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<tr>
<td>37a</td>
<td>Gerimski, Alexander, Warsaw</td>
<td>A Game at Morro.</td>
</tr>
</tbody>
</table>
### RUSSIA.

**NO.** | **ARTIST.** | **TITLE.**
---|---|---
38 | Skirmunt, Simon de, Brindisi, Italy | A Festival in the Palazzo Colonna, Rome (sixteenth century).  
39 | Skirmunt, Simon de, Brindisi, Italy | A Member of the Council of Ten, Venice.  
40 | Skirmunt, Simon de, Brindisi, Italy | Reflection.  
41 | Verestchaghin, Peter, Sestrotezk, near St. Petersburg | Winter Palace Square.  
42 | Verestchaghin, Peter, Sestrotezk, near St. Petersburg | The Alexander Column (Winter Palace Square).  
43 | Sverchkoff, Nicolas, Zarskoe-Selo, near St. Petersburg | Carnival Week in the Country.  
44 | Silvanovitch, Nicolas, St. Petersburg | The Prisoner.  
45 | Becker, Adolph, St. Petersburg | The New-Born.  
46 | Lindholm, B. A., St. Petersburg | A Steamer in Floating Ice.  
47 | Munsterhelm, Magnus, St. Petersburg | Landscape.  
48 | Lagorio, Lewis, St. Petersburg | The Kishaoor Valley, Caucasus.  
49 | Lagorio, Lewis, St. Petersburg | Along the Road from Tiflis to Akhaltzik.  
50 | Skirmund, S. A., St. Petersburg | A Family Party on the Balcony.  
51 | Clever, Julius, St. Petersburg | The First Snow on a Ploughed Field.  
52 | Orlofsky, Wladimir, St. Petersburg | Fishermen.  
53 | Tomashefsky-Bontcha, Julius, St. Petersburg | Scene in Molière’s “Tartuffe.”  
54 | Pleshanoff, Paul, St. Petersburg | An Italian.  
55 | Eckhorst, B., St. Petersburg | Landscape.  
56 | Eckhorst, B., St. Petersburg | Landscape.  
57 | Karpooff, ———, St. Petersburg | Young Girl Sleeping.  
58 | Krassofsky, Nicolas, St. Petersburg | Study—a horse.  
59 | Krassofsky, Nicolas, St. Petersburg | Study—a horse.  
60 | Titoff, Andrew, Rasto, Yaroslav | Enamelled images (icons).  
61 | Marozoff, A. B., Moscow | Portrait of the Emperor of Russia, and images.  
62 | Racotchi, Sidorsky & Co. | Images (icons).  
63 | Salabanoff, D. A., Nijni-Novgorod | Painted images (imitations of ancient icons).  

### STATUARY.

**NO.** | **ARTIST.** | **TITLE.**
---|---|---
64 | Ryger, Theodore, Warsaw | Bust of Washington (marble).  
65 | Ryger, Theodore, Warsaw | Bust of Dr. Levitænx (plaster of Paris).  
66 | Zengler, F., Warsaw | The Mother’s First Joy.  
67 | Zengler, F., Warsaw | Bashfulness.  
68 | Zengler, F., Warsaw | Sophia (Mickiewicz’s poem).  
69 | Goojoff, Nicolas, Borovichi, Novgorod | Painted figures in terra-cotta, representing national subjects.  
70 | Ryger, Theodore, Warsaw | Madonna and child Jesus (marble bas-relief).  
71 | Zengler, F., Warsaw | The poet Mickiewicz (bas-relief in marble).  

### WOOD CARVINGS.

**NO.** | **ARTIST.** | **TITLE.**
---|---|---
74 | Bauman, Augustus, Moscow | Images carved in wood.  
75 | Decamilly, St. Petersburg | Ornamental carvings.  
78 | Tzyroolnikoff, P., Sergieevsky-Possad, near Moscow | Images carved in wood.  
79 | Kroostasheff, T. S., Sergieevsky-Possad, near Moscow | Images carved in wood.  
80 | Kooznetzoff, ———, St. Petersburg | Child’s head carved in wood.  
81 | Riabinin, ———, St. Petersburg | Portrait.
IVORY CARVINGS.

<table>
<thead>
<tr>
<th>NO.</th>
<th>ARTIST</th>
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<tbody>
<tr>
<td>82</td>
<td>Alexieff, A., Vologda</td>
<td>Carving in ivory.</td>
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</table>

WATER COLORS.

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<td>Sokoloff, Peter, St. Petersburg</td>
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<td>84</td>
<td>Kostrzewsky, Francis, Warsaw</td>
<td>The Dear Friend.</td>
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(Memorial Hall, Gallery M)

OIL PAINTINGS.

<table>
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<td>Bogatsky</td>
<td>Portrait of Prince Gortchakoff.</td>
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<td>86</td>
<td>Groozintsky, F., St. Petersburg</td>
<td>Welcome Home to the Bride.</td>
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<td>87</td>
<td>Groozintsky, F., St. Petersburg</td>
<td>Gypsy Festivities.</td>
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<td>88</td>
<td>Jooravleff, F., St. Petersburg</td>
<td>Dinner after a Funeral.</td>
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<tr>
<td>89</td>
<td>Jooravleff, F., St. Petersburg</td>
<td>Take me Down.</td>
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<tr>
<td>90</td>
<td>Jooravleff, F., St. Petersburg</td>
<td>Blessing the Bride before Marriage; a Russian Custom.</td>
</tr>
<tr>
<td>91</td>
<td>Naoomof, A., St. Petersburg</td>
<td>Fair in Tiflis, Caucasus.</td>
</tr>
</tbody>
</table>

Other Russian Art Exhibits are installed in the Main Building, and enumerated in that volume of the Catalogue.
HEALTH! BEAUTY!!

Strong, Pure, and Rich Blood, Increase of Flesh and Weight, Clear Skin, and Beautiful Complexion secured to all through

DR. RADWAY'S SARSAPARILLIAN RESOLVENT

Every drop of the Sarsaparillian Resolvent communicates through the Blood, Sweat, Urine, and other fluids and juices of the system the vigor of life, for it repairs the wastes of the body with new and sound material. Scrofula, Consumption, Glandular Disease, Ulcers in the Throat, Mouth, Tumors, Nodes in the Glands and other parts of the system, Sore Eyes, Strumous Discharge from the Ears, and the worst forms of Skin Diseases, Eruptions, Fever Sores, Scald Head, Ring Worm, Salt Rheum, Erysipelus, Acne, Black Spots, Worms in the Flesh, Tumors, and all Weakening and Painful Discharges and Night Sweats are within the curative range of this wonder of Modern Chemistry, and a few days' use will prove to any person using it for either of these forms of disease, its potent power to cure them. If the patient, daily becoming reduced by the wastes and decomposition that are continually progressing, succeeds in arresting these wastes, and repairs the same with new material, made from healthy blood, and this the Sarsaparillian will and does secure, a cure is certain; for, when once this remedy commences its work of purification and succeeds in eliminating the loss of wastes, its repairs will be rapid, and every day the patient will feel himself growing better and stronger, the food digesting better, appetite improving, and flesh and weight increasing. Not only does the SARSAPARILLIAN RESOLVENT excel all known remedial agents in the cure of Chronic, Scrofulous, Constitutional, and Skin Diseases, but it is the only positive cure for Kidney, Bladder, and Urinary Diseases, Gravel, Diabetes, Dropsy, Stoppage of Water, Inconvenience of Urine, Bright's Disease, Albuminuria, and in all cases where there are brick dust deposits, or the water is thick, cloudy, mixed with substance like the white of an egg, or threads like white silk, or there is a morbid, dark, bilious appearance, and white bonedust deposits, and when there is a pricking, burning sensation when passing water, and pain in the Small of the Back along the Loins.

Tumor of 12 years' growth cured by Radway's Resolvent.

DR. RADWAY: I have had Ovarian Tumor in the ovaries and bowels. All the doctors said "there was no hope for it." I tried everything that was recommended, but nothing helped me. I saw your Resolvent, and thought I would try it, but had no faith in it, because I had suffered for TWELVE YEARS. I took six bottles of the Resolvent, one box of Radway's Pills, and used two bottles of your READY RELIEF, and there is not a sign of a tumor to be seen or felt, and I feel BETTER, SMARTER, and happier than I have for twelve years. The worst tumor was in the left side of the bowels, over the groin. I write this to you for the benefit of others. You can publish if you choose.

BEVERLY, Mass., July 16th, 1869.

HANNAH P. KNAPP.

R. R. R.

RADWAY'S READY RELIEF

Cures the worst pains in from one to twenty minutes. Not one hour after reading this advertisement need any one suffer with pain. Radway's Ready Relief is a cure for every pain. It was the first and is THE ONLY PAIN REMEDY that instantly stops the most excruciating pains, always Inflammations, and cures Congestions, whether of the Lungs, Stomach, Bowels, or other glands or organs, by one application, in from one to twenty minutes. No matter how violent or excruciating the pain the Rheumatic, Bedridden, Infirm, Crippled, Nervous, Neuralgic, or prostrated with disease may suffer.

RADWAY'S READY RELIEF

Will afford instant ease. Inflammation of the Kidneys, Inflammation of the Bladder, Inflammation of the Bowels, Congestion of the Lungs, Sore Throat, Difficult Breathing, Palpitation of the Heart, Hysteric, Croup, Diphtheria, Catarrh, Influenza, Headache, Toothache, Neuralgia, Rheumatism, Cold Chills, Ague Chills. The application of the READY RELIEF to the part or parts where the pain or difficulty exists will afford ease and comfort. Twenty drops in a half tumbler of water will, in a few moments, cure Cramps, Spasms, Sour Stomach, Heartburn, Sick Headache, Diarrhea, Dysentery, Colic, Wind in the Bowels, and all Internal Pains. Travelers should always carry a bottle of RADWAY'S RELIEF with them. A few drops in water will prevent sickness or pains from change of water. It is better than French Bitter or Bitters as a stimulant.

FEVER AND AGUE.

FEVER AND AGUE cured for FIFTY CENTS. There is not a remedial agent in this world that will cure Fever and Ague and all other Malarious, Bilious, Scarlet, Typhoid, Yellow, and other Fevers (aided by RADWAY'S PILLS) as quick as RADWAY'S READY RELIEF. Fifty cents per bottle.

DR. RADWAY'S PILLS,

Perfectly tasteless, elegantly coated, for the cure of all Disorders of the Stomach, Liver, Bowels, Kidneys, Bladder, Nervous Diseases, Headache, Constipation, Costiveness, Indigestion, Dyspepsia, Blistiness, Bilious Fever, Inflammation of the Bowels, Piles, and all Derangements of the Internal Viscera. Warranted to effect a Positive Cure. RADWAY'S PILLS will free the system from all the above-named disorders. Price, 25 cents per box.

Read FALSE AND TRUE. Send one letter stamp to RADWAY & Co., No. 32 Warren Street, New York. Information worth thousands will be sent you.
PHOTOGRAPHY.

No. 104.—PHOTORGAPHIC EXHIBITION BUILDING.

Architect, H. J. SCHWARZMANN.—Size, 242 by 77 feet.

Situated on the Avenue of the Republic, north of the Main Building, and east of Memorial Hall. It is a one-story building, containing a single large chamber, with screens projecting from the side walls and forming alcoves for exhibition purposes.

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<thead>
<tr>
<th>NO.</th>
<th>ARTIST</th>
<th>TITLE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
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<td>1</td>
<td>Kurtz, W., New York</td>
<td>Photographs, in pastel, oil, and crayon.</td>
<td>Screen 1, W.</td>
</tr>
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<td>3</td>
<td>Wenderoth &amp; Co., Philadelphia</td>
<td>Plain and colored photographs.</td>
<td>Screen 1, E.</td>
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<tr>
<td>4</td>
<td>Brady, W. B., Washington</td>
<td>Photographs, plain and India ink.</td>
<td>Alcove 2, wall.</td>
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<td>5</td>
<td>Alman &amp; Co., New York</td>
<td>Photographs, plain and colored, in pastel, oil, and India ink.</td>
<td>Screen 2, W.</td>
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<tr>
<td>7</td>
<td>Burrell, D. T., Brockton, Mass.</td>
<td>Plain photographs.</td>
<td>Screen 2, S.</td>
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<td>9</td>
<td>Robbins, F., Oil City, Pa.</td>
<td>Photographer's dark tent.</td>
<td>Alcove 15, S.E.</td>
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<tr>
<td>10</td>
<td>Hazzard, W. B., Philadelphia</td>
<td>Shade rollers.</td>
<td>Alcove 1.</td>
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<td>12</td>
<td>Bierstadt, Ch., Niagara Falls, N.Y.</td>
<td>Stereoscopic views.</td>
<td>Screen 2, E.</td>
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<tr>
<td>13</td>
<td>Delamater, R. S., Hartford, Conn.</td>
<td>Photographs, collections of.</td>
<td>Screen 3, W.</td>
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<tr>
<td>14</td>
<td>Waller &amp; Schrader, Brooklyn, N.Y.</td>
<td>Photographic views.</td>
<td>Screen 3, W.</td>
</tr>
<tr>
<td>15</td>
<td>Cremer, James, Philadelphia</td>
<td>Improved metallic graphoscopes.</td>
<td>Main avenue.</td>
</tr>
<tr>
<td>16</td>
<td>Watkins, E. C., San Francisco</td>
<td>Photographic views, California.</td>
<td>Screen 3, E.</td>
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<tr>
<td>17</td>
<td>Cox, W. A., Baltimore</td>
<td>Porcelain miniatures.</td>
<td>Screen 4, W.</td>
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<td>18</td>
<td>Edgar, Lydia, Philadelphia</td>
<td>Photographs in crayon.</td>
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<td>19</td>
<td>Weston, N., San Francisco</td>
<td>Photographs, enameled.</td>
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<td>21</td>
<td>Reilly, J. J., San Francisco</td>
<td>Stereoscopic views, Yosemite Valley.</td>
<td>Screen 4, W.</td>
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<tr>
<td>22</td>
<td>Berkun, O., Philadelphia</td>
<td>Pyro-photographs, on porcelain.</td>
<td>Wall, alcove 3.</td>
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<tr>
<td>23</td>
<td>American Photo-Relief Printing Company, Philadelphia</td>
<td>Stereographs on glass, for magic lantern, by Woodbury process.</td>
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<tr>
<td>24</td>
<td>Bradley &amp; Rulofson, San Francisco</td>
<td>Photographs, plain, in pastel, and crayon.</td>
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<td>No.</td>
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<tr>
<td>25</td>
<td>Melander &amp; Brother, Chicago,</td>
<td>Stereoscopic groups.</td>
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<tr>
<td>26</td>
<td>Newell, R., &amp; Son, Philadelphia,</td>
<td>Photographic views.</td>
<td>Screen 5, W.</td>
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<td>27</td>
<td>Tyson, I. G., Philadelphia,</td>
<td>Photograph in crayon.</td>
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<tr>
<td>28</td>
<td>Kiloltz, B., Chicago,</td>
<td>Plain photographs.</td>
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<td>29</td>
<td>Sweeney, T.T., Cleveland,</td>
<td>Photographic views.</td>
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<td>Thorn, G. W., New York,</td>
<td>Photographic views.</td>
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<td>Anderson, D. H., Richmond,</td>
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<td>Chase, W. M., Baltimore,</td>
<td>Stereoscopic views.</td>
<td>Screen 6, W.</td>
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<td>Hardy, A. N., Boston,</td>
<td>Photographic portraits.</td>
<td>Screen 6, W.</td>
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<td>Taylor, W., Curtis, Philadelphia,</td>
<td>Photographs, plain and colored, porcelain miniatures.</td>
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<td>Burnisher for photographs.</td>
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<td>41</td>
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<td>Photographs, single and in groups.</td>
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<td>Marcy, L. J., Philadelphia,</td>
<td>Improved oil and lime-light lanterns.</td>
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<td>Photographs in crayon, and chromo &quot;Yankee Doodle.&quot;</td>
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<td>Kent, J. H., Rochester, N.Y.,</td>
<td>Large photographic portraits, direct from life.</td>
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<td>Root, M. A., Philadelphia,</td>
<td>Illustrations of photography from August, 1839, to May, 1876.</td>
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<td>Passe-partouts and velvet cases.</td>
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<td>Butterfield, D. W., Boston,</td>
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<td>Clemens, J. R., Philadelphia,</td>
<td>Sample prints on his albumen and on plain paper.</td>
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<td>Fitzgibbon, J. H., St. Louis,</td>
<td>Collection of daguerreotypes, twenty-five years old.</td>
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<td>Collection of character photographs representing the Seven Ages of Man, laughing and crying babies, and large photograph portraits.</td>
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<td>Photographs, single figures and compositions, in size from 17 by 20 plate to 11 by 14; imperial, boudoir, and promenade portraits.</td>
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<td>LOCATION.</td>
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<td>58</td>
<td>Broadbent &amp; Philip,</td>
<td>Photographs, plain, crayon, and water color.</td>
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<td>lips, Philadelphia,</td>
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<td>59</td>
<td>Root, Samuel, Dubuque, Iowa,</td>
<td>Photographs.</td>
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<td>Enlarged photographs in permanent pigments.</td>
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<td>Zimmerman, T., St. Paul, Minn.,</td>
<td>Portraits of Indians, and views of Minnesota scenery.</td>
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<td>75</td>
<td>Schwind &amp; Kreuger, New York,</td>
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No. 110.—CENTENNIAL PHOTOGRAPHIC ASSOCIATION BUILDING,

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 150 feet by 30 feet.

The Photographic Association have erected a one-story frame building, located north of the Main Exhibition Building, on the east side of Belmont Avenue. It contains one room for the exhibition of photographs, and three rooms for photographers, for working purposes.
OUT-DOOR WORKS OF ART.

WINGED HORSES.

 Owned by the FAIRMOUNT PARK COMMISSION.

In front of Memorial Hall are situated two bronze groups, each representing the mythological winged horse Pegasus; by the side of the one stands a figure emblematic of Music, and by the other a figure representing History. They were cast in Vienna, and purchased by the Park Commission.

No. 12.—BARTHOLDI'S FOUNTAIN.

Architect, A. BARTHOLDI, of Paris.—Size, basin, 26 feet in diameter; height, 30 feet; statue, 11 feet.

Situated in the Esplanade, in front of the main entrance to the grounds; constructed of iron, bronzed, and was cast in Paris by A. Durenne. In the centre of the basin is erected a triangular pedestal, on the faces of which are aquatic monsters, and fishes spouting water. Upon the pedestal are three female Caryatides, supporting a basin thirteen feet in diameter, which receives the water from an upper basin upheld by three infant Tritons; the whole surmounted by a Mural Crown, through which the water flows. An illuminating apparatus is attached, in order to combine the effects of light and water. This fountain is intended to embody an allegorical representation of the elements Water and Light.

No. 13.—CATHOLIC TOTAL ABSTINENCE FOUNTAIN.

Architect, HERMAN KIRN, Philadelphia.

Situated at the junction of Fountain Avenue and the Avenue of the Republic, at the northwestern corner of Machinery Hall. In design it is a circular platform, with four arms projecting at right angles, terminating in four smaller circular platforms. From the centre of the large circle rises a marble rockwork, sixteen feet high, with a diameter of eighteen feet at base, on which stands a statue of Moses smiting the rock. The water descends from numerous fissures into a basin forty feet in diameter. On each of the circular platforms is a drinking-fountain, twelve feet in height and eight feet eight inches in diameter, surrounded with statues, nine feet high. These represent Father Mathew, Charles Carroll, Archbishop John Carroll, and Commodore John Barry. It has been erected by contributions made by the numerous societies forming the Catholic Total Abstinence Union of America.

No. 24.—THE AMERICAN SOLDIER.

Exhibitors, NEW ENGLAND GRANITE COMPANY, Hartford, Conn.

A granite statue, designed for the Antietam Soldiers' Monument; is twenty-one feet six inches high, exclusive of the pedestal, and weighs thirty tons; it represents a soldier in the United States uniform, standing at rest, and is located in front of the north-central entrance of the Main Building, and opposite Memorial Hall,
No. 29*.—RUSTIC MONUMENT.
Exhibitors, New England Granite Company, Hartford, Conn.
A granite column, entwined with polished ivy, and surmounted by a cross; is situated southeast of Machinery Hall.

No. 29b.—MONUMENT.
Exhibitors, New England Granite Company, Hartford, Conn.
A small polished granite monument, surmounted by an urn; is located in front of the Board of Finance Office.

No. 29c.—GOTHIC MEMORIAL.
Exhibitors, New England Granite Company, Hartford, Conn.
Made of Westerly granite, thirteen feet high, surmounted by a cross; is placed between the Bartholdi Fountain and the Board of Finance Office.

No. 29d.—MEMORIAL.
Exhibitors, New England Granite Company, Hartford, Conn.
Built of granite, with polished tracery; is located southeast of Machinery Hall.

No. 29e.—POLISHED SCOTCH GRANITE MONUMENT.
Exhibitors, New England Granite Company, Hartford, Conn.
Is seventeen feet high, surmounted by a circular dome, and placed between the Bartholdi Fountain and Machinery Hall.

No. 29f.—GOTHIC COLUMN AND PEDESTAL.
Exhibitors, New England Granite Company, Hartford, Conn.
Granite work, with richly ornamented capitals, surmounted by a spire; is located in front of the Board of Finance Office.

No. 29g.—THE MINUTE-MAN OF '76.
Exhibitors, New England Granite Company, Hartford, Conn.
A marble statue, life size, on a pedestal seven feet high; situated southeast of Machinery Hall.

No. 29h.—GOTHIC FOUNTAIN.
Exhibitors, New England Granite Company, Hartford, Conn.
Built of granite, seventeen feet high, surmounted by a cross, with four columns representing angels, with polished traceries; is located between the Board of Finance Office and Machinery Hall.

No. 29i.—CANOPY MONUMENT.
Exhibitors, New England Granite Company, Hartford, Conn.
Is built of granite, forty feet high, crowned with a spire and cross; within is seated a figure representing Memory; is situated southeast of Machinery Hall, between it and the Board of Finance Office.
No. 294.—CORINTHIAN MONUMENT.

Exhibitors, New England Granite Company, Hartford, Conn.

Is located between Machinery Hall and the Board of Finance Office, southwest of the Bartholdi Fountain; is constructed of granite, forty-six feet high, and crowned with a statue of Hope.

No. 50.—WASHINGTON.

Exhibitor, M. Dickerson Eyre, Florence, Italy.

This statue is designed after Leutze's painting of "Washington Crossing the Delaware." It is of marble, heroic in size, being twelve feet high, and standing on a pedestal built of wood and Portland cement. It is situated south of, and directly in front of Judges' Hall.

No. 52½.—THE HOWE MONUMENT.

A bronze statue, life size, on a sandstone pedestal, erected by the Howe Sewing Machine Company to the memory of the late Elias Howe; situated near the western end of the lake.

No. 80.—CHRISTOPHER COLUMBUS MONUMENT.

A brown-stone statue of the discoverer; is located on the corner of Belmont and Fountain Avenues.

No. 81.—DRINKING-FOUNTAIN.

Exhibitors, Singer & Talcott.

Constructed of limestone, with four pillars, square top, surmounted by an acorn; is situated on Fountain Avenue, between the Pennsylvania State Building and the Tunisian Café.

No. 91.—BISHOP RICHARD ALLEN'S MONUMENT.

Size, base, 6 feet by 6 feet; height, 16 feet.


No. 145.—THE NAVY.


Larkin G. Mead, Sculptor.

A bronze group, for the Lincoln Monument, Springfield, Illinois; located in front of Memorial Hall.

No. 146.—THE DEAD LIONESS.

Owned by the Fairmount Park Commission.

A bronze group, cast by F. v. Müller, Munich; modeled by Prof. Wolf, Berlin; is situated between Memorial Hall and Photographic Hall.
No. 180.—THE MOTT FOUNTAIN.


Constructed of iron, forty-five feet in diameter, and twenty-six feet high, with four figures at the base; the top is surmounted by "Venus rising from the Sea;" is situated east of Horticultural Hall.
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BUILDING No. 41,
OCCUPIED JOINTLY BY THE
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 AND
S. M. Pettengill & Co., Newspaper Advertising Agents,
South of East End of Machinery Hall.

Advertisements taken at this office for the Official Catalogue and all newspapers of the
United States and Canadas. The principal papers of the country kept on file for inspection and
use of exhibitors and visitors generally.
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Office of the Company on Exhibition Grounds, Building No. 41, South of East end of Machinery Hall.
INTernational Exhibition.
1876
Official Catalogue.

PART III.
Machinery Hall, Annexes, and Special Buildings.

DEPARTMENT V.—Machinery.

REvised Edition.

PHILADELPHIA:
Published for the Centennial Catalogue Company
By JOHN R. NAGLE AND COMPANY.
1876.
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</table>

* Railway plant, cars, etc., are largely exhibited in the Annex (No. 106) to the Main Building, Catalogue, Part I., page 374.

Note.—The Machinery of the following countries is installed wholly or in part in the Main Building, and catalogued in Part I., viz.:

<table>
<thead>
<tr>
<th>NATIONS</th>
<th>Page</th>
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<tbody>
<tr>
<td>New South Wales</td>
<td>246</td>
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<tr>
<td>Victoria</td>
<td>162</td>
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<td>Bermuda</td>
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<td>Gold Coast</td>
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<td>Queensland</td>
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<td>Tasmania</td>
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<td>India</td>
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<td>Norway</td>
<td>239</td>
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<td>Hawaii</td>
<td>251</td>
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<tr>
<td>Chili</td>
<td>262</td>
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<tr>
<td>Mexico</td>
<td>267</td>
</tr>
</tbody>
</table>
No. 20. MACHINERY HALL.

Size, 360 by 1402 feet; annex, 208 by 210 feet.

Engineers and Architects, HENRY PETTIT, JOSEPH M. WILSON, Philadelphia.

Contractor, PHILIP QUIGLEY, Wilmington, Del.

Wrought and cast iron furnished by PUSEY, JONES, & Co., Wilmington, Del.

MACHINERY HALL is located west of the intersection of Belmont and Elm avenues, at a distance of 542 feet from the west front of the Main Exhibition Building, and 274 feet from the north side of Elm avenue. The north front of the building is upon the same line as that of the Main Exhibition Building, thus presenting a frontage of 3824 feet from the east to the west ends of the exhibition buildings upon the principle avenue within the grounds.

The principal portion of the structure is one story in height, showing the main cornice upon the outside at 40 feet from the ground, the interior height to the top of the ventilators in the avenues being 70 feet, and in the aisles 40 feet. To break the long lines upon the exterior, projections have been introduced upon the four sides, and the main entrances finished with facades, extending to 78 feet in height. The east entrance forms the principal approach from street-cars, from the Main Exhibition Building, and from the Pennsylvania Railroad depot. Along the south side are the boiler houses and other buildings for special kinds of machinery. The west entrance affords the most direct communication with George’s Hill, which point affords the best view of the entire exhibition grounds.

The arrangement of the ground plan shows two main avenues 90 feet wide by 1360 feet long, with a central aisle between, and an aisle on either side. Each aisle is 60 feet in width; the two avenues and three aisles making the total width of 360 feet. At the centre of the building is a transept of 90 feet in width, which at the south end is prolonged beyond the Main Hall. This transept, beginning at 36 feet from the Main Hall and extending 268 feet, is flanked on either side by aisles of 60 feet in width, and forms the annex for hydraulic machines. The promenades in the avenues are 15 feet in width, in the transept 25 feet, and in the aisles 10 feet. All other walks extending across the building are 10 feet in width, and lead at either end to exit doors.

The foundations consist of piers of masonry. The superstructure consists of solid timber columns supporting roof trusses, constructed with straight wooden principals and wrought iron ties and struts. As a general rule, the columns are placed lengthwise of the building, at the uniform distance apart of 16 feet. The columns are 40 feet high to the heel block of the 90 feet span roof trusses over the avenues, and they support the heel of the 60 feet spans over the aisles at the height of 20 feet. The outer walls are built of masonry to a height of five feet, and above that are composed of glazed sash placed between the columns. Portions of the sash are movable (9)
for ventilation. Louvre ventilators are introduced in continuous lengths over both the avenues and the aisles. The building is lit entirely by side light.

The motive power is furnished by a Corliss engine of 1400 horse power. There are eight main lines of shafting, extending almost the entire length of the structure, and countershafts are introduced into the aisles where needed. The hangers are attached at the height of 20 feet from the floor.

The annex for hydraulic machines contains a tank 60 feet by 160 feet, with depth of water of 10 feet. In this hydraulic machinery is exhibited in full operation. At the south end of this tank is a waterfall 35 feet high by 40 feet wide, supplied from the tank by the pumps upon exhibition.

The contract in the erection of Machinery Hall was made January 27th, 1875, and the building was begun forthwith, and finished October 1st, 1875. The cost was $542,300. The exhibition area covers about 14 acres.

KEY TO THE NOTATION.

The location of objects in the Machinery Building is shown by a letter and figure, indicating the nearest column of the building. The letters—A, B, C, to F—designate the successive ranges of columns, proceeding northward from the southern wall across the width of the building; the figures, the number of the column in each range, counting westwardly from the eastern wall, the entire length of the building, from 1 to 88. Thus C 5 is the column in the third range from the south, and the fifth from the eastern end of the building. The northwesternmost column is F 88.

The class of the classification (see page 13) to which each exhibit belongs is indicated by the small figures at the end of the line.
MACHINERY HALL.

Scale, 320 ft. to 1 in.

A United States.
B Austria.
C German Empire.
D Canada.
E France.
F Spain.
G Great Britain.
H Belgium.
J Sweden.
K Denmark.
L Italy.

P Brazil.
Q Russia.
R Switzerland.
S Restaurants, etc.
T Ladies' Waiting-room.
U Tank.

1. English Boiler-house.
2. Corliss Boiler-house.
5. Shoe and Leather Shop.

Length, 1402 ft. Width, 360 ft. Height of Avenues, 70 ft. Height of Aisles, 40 ft.
<table>
<thead>
<tr>
<th>LOCATION</th>
<th>DEPARTMENTS</th>
<th>CLASSES</th>
<th>GROUPS</th>
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</thead>
<tbody>
<tr>
<td>MAIN BUILDING</td>
<td>I. Mining and Metallurgy</td>
<td>100–109</td>
<td>Minerals, Ores, Stone, Mining Products.</td>
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<td></td>
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<td>110–119</td>
<td>Metallurgical Products.</td>
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<td>120–129</td>
<td>Mining Engineering.</td>
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<td>II. Manufactures</td>
<td>200–205</td>
<td>Chemical Manufactures.</td>
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<td>206–216</td>
<td>Ceramics, Pottery, Porcelain, Glass, etc.</td>
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<td>217–227</td>
<td>Furniture, etc.</td>
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<td>228–234</td>
<td>Yarns and Woven Goods of Vegetable or Mineral Materials.</td>
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<td>235–241</td>
<td>Woven and Felted Goods of Wool, etc.</td>
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<td>242–249</td>
<td>Silk and Silk Fabrics.</td>
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<td>250–257</td>
<td>Clothing, Jewelry, etc.</td>
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<td>265–271</td>
<td>Weapons, etc.</td>
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<td>272–279</td>
<td>Medicine, Surgery, Prosthesis.</td>
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<td>280–284</td>
<td>Hardware, Edge Tools, Cutlery, and Metallic Products.</td>
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<td>292–296</td>
<td>Carriages, Vehicles, and Accessories.</td>
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<td>310–319</td>
<td>Institutions and Organizations.</td>
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<td>330–339</td>
<td>Engineering, Architecture, Maps, etc.</td>
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<td>340–349</td>
<td>Physical, Social, and Moral Condition of Man.</td>
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<tr>
<td>ART GALLERY</td>
<td>IV. Art.</td>
<td>400–409</td>
<td>Sculpture.</td>
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<td>410–419</td>
<td>Painting.</td>
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<td>420–429</td>
<td>Engraving and Lithography.</td>
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<td>430–439</td>
<td>Photography.</td>
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<td>440–449</td>
<td>Industrial and Architectural Designs, etc.</td>
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<td>450–459</td>
<td>Ceramic Decorations, Mosaics, etc.</td>
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<tr>
<td>MACHINERY BUILDING</td>
<td>V. Machinery.</td>
<td>500–599</td>
<td>Machines, Tools, etc., of Mining, Chemistry, etc.</td>
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<td>520–529</td>
<td>Machines and Implements of Spinning, Weaving, etc.</td>
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<td>530–539</td>
<td>Machines, etc., used in Sewing, Making Clothing, etc.</td>
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<td>540–549</td>
<td>Machines for Printing, Making Books, Paper Working, etc.</td>
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<td>550–559</td>
<td>Motors, Power Generators, etc.</td>
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<td>560–569</td>
<td>Hydraulic and Pneumatic Apparatus.</td>
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<td>570–579</td>
<td>Railway Plant, Rolling Stock, etc.</td>
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<td>580–589</td>
<td>Machinery used in Preparing Agricultural Products.</td>
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<td>590–599</td>
<td>Aerial, Pneumatic, and Water Transportation.</td>
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<tr>
<td>AGRICULTURAL BUILDING</td>
<td>VI. Agriculture.</td>
<td>600–609</td>
<td>Machinery, and Apparatus, especially adapted to the requirements of the Exhibition.</td>
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<td>610–619</td>
<td>Arboriculture and Forest Products.</td>
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<td>620–629</td>
<td>Pomology.</td>
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<td>630–639</td>
<td>Agricultural Products.</td>
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<td>640–649</td>
<td>Land Animals.</td>
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<td>650–662</td>
<td>Marine Animals, Fish Culture, and Apparatus.</td>
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<td>665–669</td>
<td>Textile Substances of Vegetable or Animal origin.</td>
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<td>670–679</td>
<td>Animal and Vegetable Products.</td>
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<td>680–689</td>
<td>Machines, Implements, and Processes of Manufacture.</td>
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<td>690–699</td>
<td>Agricultural Engineering and Administration.</td>
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<tr>
<td>HORTICULTURAL BUILDING</td>
<td>VII. Horticulture.</td>
<td>700–709</td>
<td>Ornamental Trees, Shrubs, and Flowers.</td>
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<td>710–719</td>
<td>Hot Houses, Conservatories, Graperties.</td>
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<td>720–729</td>
<td>Garden Tools, Accessories of Gardening,</td>
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<td>730–739</td>
<td>Garden Designing, Construction, and Management.</td>
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CLASSIFICATION.

DEPARTMENT V.—Machinery.

MACHINES, TOOLS, AND APPARATUS OF MINING, METALLURGY, CHEMISTRY, AND THE EXTRACTIVE ARTS.

CLASS 500.—Rock drilling.

Class 501.—Well and shaft boring.

Class 502.—Machines, apparatus, and implements for coal cutting.

class 503.—Hoisting machinery and accessories.

Class 504.—Pumping, draining, and ventilating.

Class 505.—Crushing, grinding, sorting, and dressing. Breakers, stamps, mills, pans, screens, sieves, jigs, concentrators.

Class 506.—Furnaces, smelting apparatus, and accessories.

Class 507.—Machinery used in Bessemer process.


Class 509.—Gas machinery and apparatus.

MACHINES AND TOOLS FOR WORKING METAL, WOOD, AND STONE.

Class 510.—Planing, sawing, veneering, grooving, mortising, tonguing, cutting, moulding, stamping, carving, and cask-making machines, etc., cork-cutting machines.

Class 511.—Direct acting steam sawing machines, with gang saws. Bark mills.

Class 512.—Rolling mills, bloom squeezers, blowing fans. Rivet, nail, bolt, and tack making machinery.

Class 513.—Furnaces and apparatus for casting metals, with specimens of work.

Class 514.—Steam, trip, and other hammers, with specimens of work, anvils, forges, bellows.

Class 515.—Planing, drilling, slotting, turning, shaping, punching, stamping, cutting, and coining machines. Wheel cutting and dividing machines, emery wheels, drills, taps, gauges, dies, etc. Grindstones.

Class 516.—Stone-sawing and planing machines, dressing, shaping, and polishing, sand blasts, Tilghman's machines, glass-grinding machines, etc.

Class 517.—Brick, pottery, and tile machines. Machines for making artificial stone.

Class 518.—Furnaces, moulds, blowpipes, etc., for making glass and glassware.

Class 519.—Tools, implements, etc., for working metal, wood, and stone.

MACHINES AND IMPLEMENTS OP SPINNING, WEAVING, FELTING, AND PAPER MAKING.

Class 520.—Machines for the manufacture of silk goods.

Class 521.—Machines for the manufacture of cotton goods.

Class 522.—Machines for the manufacture of woolen goods, carpets, and tapestry.

Class 523.—Machines for the manufacture of linen goods.
CLASS 524.—Machines for the manufacture of rope and twine, and miscellaneous fibrous materials.

CLASS 525.—Machines for the manufacture of paper and felting.

CLASS 526.—Machines for the manufacture of india-rubber goods.

CLASS 527.—Machines for the manufacture of mixed fabrics.

CLASS 528.—Machines for the manufacture of wire cloth.

MACHINES, APPARATUS, AND IMPLEMENTS USED IN SEWING AND MAKING CLOTHING AND ORNAMENTAL OBJECTS.

CLASS 530.—Machines used in the manufacture of lace, floor-cloths, fancy embroidery, hair, ribbons, etc.

CLASS 531.—Sewing and knitting machines, clothes, corset, hat, and bonnet making machines.

CLASS 532.—Machines for preparing and working leather.

CLASS 533.—Machines for making boots and shoes.

CLASS 534.—Machines for ironing, drying, scouring, and cleaning.

CLASS 535.—Machines for making clocks and watches.

CLASS 536.—Machines for making jewelry.

CLASS 537.—Machines for making buttons, pins, needles, etc.

CLASS 538.—Pipes for smoking.

MACHINES AND APPARATUS FOR TYPESETTING, PRINTING, STAMPING, EMBOS-SING, AND FOR MAKING BOOKS, AND PAPER WORKING.

CLASS 540.—Printing, stamping, embossing, and lithographing presses.

CLASS 541.—Typesetting machines, apparatus of stereotyping.

CLASS 542.—Types and typesetting machines. Type-writing machines.

CLASS 543.—Printers’ furniture.

CLASS 544.—Bookbinding machines.

CLASS 545.—Paper-folding machines.

CLASS 546.—Paper and card cutting machines, paper box machines.

CLASS 547.—Envelope machines.

MOTORS AND APPARATUS FOR THE GENERATION AND TRANSMISSION OF POWER.

CLASS 550.—Boilers and all steam or gas generating apparatus for motive purposes.

CLASS 551.—Water-wheels, water engines, hydraulic rams, windmills.

CLASS 552.—Steam, air, or gas engines, electro-magnetic engines.

CLASS 553.—Apparatus for the transmission of power, shafting, belting, cables, transmission of power by compressed air, etc., gearing, cables.

CLASS 554.—Screw propellers, wheels for the propulsions of vessels, and other motors.

CLASS 555.— Implements and apparatus used in connection with motors, steam gauges, manometers, etc. Anti-friction metals.

HYDRAULIC AND PNEUMATIC APPARATUS, PUMPING, HOISTING, AND LIFTING.

CLASS 560.—Pumps and apparatus for lifting and moving liquids.

CLASS 561.—Pumps and apparatus for moving and compressing air or gas.

CLASS 562.—Pumps and blowing engines, blowers and ventilating apparatus.

CLASS 563.—Hydraulic jacks, presses, elevators, lifts, meters, cranes.

CLASS 564.—Fire engines, hand, steam, or chemical, and fire extinguishing apparatus, hose, ladders, and fire-escapes, etc.

CLASS 565.—Beer engines, soda-water machines, bottling apparatus, corking machines.

CLASS 566.—Stop valves, cocks, pipes, etc.

CLASS 567.—Diving apparatus and machinery.

CLASS 568.—Ice machines.

RAILWAY PLANT, ROLLING STOCK, AND APPARATUS.

CLASS 570.—Locomotives, models, drawings, plans, etc.

CLASS 571.—Carriages, wagons, trucks, cars, etc. Scales.
CLASSIFICATION.

CLASS 572.—Brakes, buffers, couplings, and snow-plows.
CLASS 573.—Wheels, tires, axles, bearings, springs, etc.
CLASS 574.—Permanent ways, ties, chairs, switches, etc.
CLASS 575.—Station arrangements, signals, water-crane, turn-tables.
CLASS 576.—Miscellaneous locomotive attachments.
CLASS 577.—Street railways and cars.

MACHINES USED IN PREPARING AGRICULTURAL PRODUCTS.

CLASS 580.—Flour mills.
CLASS 581.—Sugar refining machines.
CLASS 582.—Confectioners' machinery.
CLASS 583.—Oil-making machinery.
CLASS 584.—Tobacco manufacturing machines.
CLASS 585.—Mills for spices, coffee, etc.
CLASS 586.—Machines for preparing fancy goods.
CLASS 587.—Machines for preparing malt and spirituous liquors.

AERIAL, PNEUMATIC, AND WATER TRANSPORTATION.

CLASS 590.—Suspended cable railways.
CLASS 591.—Transporting cables.
CLASS 592.—Balloons, flying machines, etc.
CLASS 593.—Pneumatic railways, pneumatic dispatch.
CLASS 594.—Boats and sailing vessels. Sailing vessels used in commerce. Sailing vessels used in war. Yachts and pleasure boats. Rowing boats of all kinds. Life boats and salvage apparatus, with life rafts, belts, etc. Submarine armor, diving bells, etc. Ice boats. Models and drawings.
CLASS 595.—Steamships, steamboats, and all vessels propelled by steam.
CLASS 596.—Vessels for carrying telegraph cables and railway trains, also coal barges, water boats, and dredging machines, screw and floating docks, and for other special purposes.
CLASS 597.—Steam capstans, windlass, deck-winch, and steering apparatus, fans.

MACHINERY AND APPARATUS ESPECIALLY ADAPTED TO THE REQUIREMENTS OF THE EXHIBITION.

Boilers, engines, cranes, pumps, etc.
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NOTICE TO COTTON AND WOOLEN MANUFACTURERS.

THE BRIDESBURG MANUFACTURING COMPANY
Offices, 65 and 67 North Front Street, Philadelphia,
IS THOROUGHLY REORGANIZED.

It builds none but the best machinery. It builds machinery strictly to specifications. It puts any of its machinery in on competition. It furnishes machinery in contract time, under forfeiture. It furnishes repairs promptly and at moderate prices. It can build ten Looms a day. It can build ten Spinning Frames a week. It can build five sets of Cards in a fortnight. It can build five self-acting Mules in a month. It can build Hand Mules, Cotton Cards, Twisters, Drawing Frames, Railway Heads, Pickers, Feeders, Renovators, Bobbin Winders, Beaming Machines, Warping Mills, Spreaderes, Reels, &c., in any quantity required. It asks no pay until efficiency is demonstrated. It quotes low prices, and uniform to all.

David S. Brown, Pres't.
Benj. Chew, Treas.

Jan. P. Michellon, Sec'y,
Wm. Sexton, Sup't.

GLoucester Iron Works.
Gloucester City, New Jersey.

Cast Iron Gas & Water Pipes, Stop Valves, Fire Hydrants, Gas Holders, &c.
Office, Philadelphia, No. 6 North Seventh St.
Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.

1 Waring Rock Drill Co., New York, N. Y.—Mining, quarrying, and tunneling drills. A 54. 500

2 Pennsylvania Diamond Drill Co., Pottsville, Pa.—Prospecting drill, quarry drill, and samples of cores, continuous cylindrical sections of rock and mineral strata, bored out to any depth, and furnished: therefore, is a perfectly reliable method of proving mineral lands. Artesian wells bored of any size and depth. A 55. 500

2a Beamis Darfer & Eby, Campbeltown, Pa.—Rock-drilling machine. (Annex 2.) 500

2b Union Rock Drill Co., New York, N. Y.—Rock drills. A 60. 500

2c American Diamond Rock Boring Co., Providence, R. I.—Diamond-pointed rock drills. A 54. 500

3 Gardiner Drill Co., New York, N. Y.—Rock-drilling machines and appliances for operating in mines and quarries. A 55. 500

4 Weaver, W., Phoenixville, Pa.—The Victor rock drill. Two men with this machine will do the work of six by hand. It drills holes from half an inch to six inches in diameter to any depth and at any angle required. Price for machine driven by hand, $850; by steam, $750. A 55. 500

5 Ingersoll Rock Drill Co., New York, N. Y.—Steam or compressed air rock-drilling machine. A 60-61. 500

6 Bolles, J. N., Baltimore, Md.—Machine for boring artesian wells, in operation. (Outside of building.) 501

6a Mowbray, George M., North Adams, Mass.—Electric batteries and exploders. A 59. 501

6b Randolph, Theodore F., Morrissetown, N. J.—Ditcher and excavator. C 77. 501

6c Roberts, E. A. L., Titusville, Pa.—Oil well torpedo. C 78. 501

6d Robinson, John E., Boston, Mass.—Sand and air chamber and artesian well. (Annex 3.) 501

7 Bolles, Jesse N., Baltimore, Md.—Boring machinery for artesian wells. A 56. 501

8 Melvin & McMorris, Philadelphia, Pa.—Artesian well, drilling and pumping. (Outside of building.) 501

9 Pierce, Charles D., Peru, La Salle Co., Ill.—Well boring and prospecting machine. One man and horse can bore 20 feet per hour. Bores any size or depth. Boulders, hard-pan, and quicksand easily handled. Has an established reputation in every State and Territory. $25 per day is made with one machine. Agents wanted in every county, also in foreign countries. Illustrated catalogue sent free on application. Address as above. (Outside of building.) 501

10 Monitor Coal Cutter Co., Brazil, Ind.—Compressed air coal-cutting machine. A 58. 502

11 Hunt, Cha. W., New York, N. Y.—Machinery for unloading vessels and soring cargoes. A 56. 503

12 Sternbergh, James Hervey, Reading, Pa.—Surface emery-grinding machine. B 37. 505

13 Blake Crusher Co., New Haven, Conn.—Machine for crushing ores, stones, etc. Extensively used for breaking stone for MacAdam roads, ballasting railroads, and for concrete. In mining operations, for the rapid and economical crushing of ores of all kinds, it has a world-wide reputation. A 58 and A 63. 505

14 Fulton Foundry Co., Cleveland, O.—Turn-table. A 58-59. 505

14a Krom, S. R., New York, N. Y.—Ore and laboratory separator; ore crushers. A 60. 505


15a Mineral mill. 505

15b Paint mills, paint mixer. 505

16 Coxe Bros. & Co., Jeedo, Pa.—Working model of coal breaker. A 63. 505

17 Baugh & Sons, Philadelphia, Pa.—Mills for crushing and grinding minerals, bones, etc. A 61-62. 505

18 State of Nevada, Gold Hill, Nevada.—Quartz mill. (South of Machinery Hall.) 505

19 Poole & Hunt, Baltimore, Md.—Fertilizer and paint mixer. C 79. 505

20 Bradford, H., Philadelphia, Pa.—Coal and ore separator. This machine separates all solid substances that differ in specific gravity, and from the smallest particles to four inches in size. For sale by H. Bradford, room 26, Merchants’ Exchange, corner Third and Walnut streets, Philadelphia. A 73. 505

21 Albright & Stroh, Mauch Chunk, Pa.—Coal jig for separating slate from coal, etc. E 19. 505

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
DEPT. V.—MACHINERY.

Mining, Chemical, Gas Machinery.

22 Ball, Edwin P., Chicopee, Mass.—Steam stamping machine for crushing ores of various kinds. A 57.

23 Bowron, William M., Philadelphia, Pa.—Waste house, fire grates, blast furnace, hot blast stoves. A 57. 506

24 Koenigsberg, J., Lock Haven, Pa.—Model of coke oven and discharging machine. A 57. 506

25 W. C., P. L., Lebanon, Pa.—Charging apparatus for blast furnace, blast furnace fixtures. B 69. 506

26 Edgemoor Iron Co., Edgemoor, Del.—Rotary puddler, hydraulic forged eye-bars, wrought and cast iron work for Main Exhibition building. C 22. 506

26a Caldwell & Mather, Philadelphia, Pa.—Meltling furnace. (Annex 1.) 506

26b Manes, James, sr., New Haven, Conn.—Revolving globe furnace for smelting gold and silver ores, etc. A 57-58. 506


27 Tully, John W., Industrial Paint. Varnish, and Filler Works, Twentieth and Parrish streets, Philadelphia, Pa.—Paints and varnishes, scraper filling, Belgian varnish filler, American paint filling, Koman filler, iron priming and finishing paint, lubricating paste, wood filling, and French washing blue. A 67. 508

28 Bryan & Snyder, Philadelphia, Pa.—Manufacture of silver-plated ware. A 66. 508

29a Zindgraf & Hohenadel, 215 Race streets, Philadelphia, Pa.—Machine for grinding and mixing paint. Manufacturers of machinery for grinding and mixing paint. Also mills for grinding drugs, spices, etc. Our mills are made with an improved stand for adjusting upper stone. A 66. 508

29b Fichtenberg, Werner, New York, N. Y.—Insect powder, exterminating powders and papers, powder bellows, bird houses. A 66. 508

31 Reeves, John W., Philadelphia, Pa.—Soap cutting machine. A 67. 508

31a Condit, Hanson, & Van Winkle, Newark, N. J.—Electro-plating machine, Condit, Hanson & Van Winkle, 236 Market street, corner Mulberry, Newark, N. J., exhibit the "Weston-Dynamo Electric Machine," doing electro, nickel, silver, gold, and copper plating. The machine is simple, easy to manage, requiring scarcely any attention. It is strong, durable, compact, reliable, powerful, and requires but little force to run it. It is a self-regulator, automatically adjusting the current to the amount of work done. From the great force obtained from a small amount of material, and the simplicity of its construction, the machines are sold at very low prices, $75 and upwards. The conversion of motion into electricity and its use for the electro-deposition of the metals is of great importance, as it not only avoids the use of expensive materials and the deleterious and corrosive fumes produced by batteries, but saves a great deal of time, and the current is more uniform than can be obtained by the use of batteries. B 73. 508

32 King, Wm. H., Philadelphia, Pa.—Soap press. A 66. 508

33 Hagner Drug Milling Co., Philadelphia, Pa.—Double run flaxseed chasing mill. A 508

34 Mosser, W. F., & Co., Allentown, Pa.—Bark mill, with independent grinding segments. A 48 and Pump annex. 506

35 Carr Calvin, & Co., Cleveland, O.—Galvanized iron circular cornice machinery. Owners of all circular machine and nearly all the brake and folding machine patents. A 65. 508

35a Averill Chemical Paint Co., New York, N. Y.—Paint, all colors, ready for use. (Outside of building.) 506


36 Wallace & Sons, Ansonia, Conn.—Magneto-electric machines, for deposition of metal and for electric light, proprietors of brass and copper rolling mills, Ansonia, Conn., office and warehouse 89 Chambers and 71 Readie streets, New York. Manufacturers of brass, rolled and in sheets, copper rivets and bars, brass and copper tubing, brass and copper wire, brass door rail, brass and iron jack chains, stair rods, copper tacks and nails, braziers, bolt and sheathing copper, etc., keystone burners and trimmings. Price lists, with discount, furnished on application. A 67. 508


36b Gilbert & Barker Manufacturing Co., Springfield, Mass.—Gas machine. A 77. 509

36c Eichholt, John H., Greenpoint, L. I., N. Y.—Gas generator. A 67. 509

36d Patton, J. Desha, Norristown, Pa.—Cylinder, governor, etc. C 27. 5-9

36e McIlhenny, George A., Washington, D. C.—Door for gas retorts. C 27. 5-9

36f Hickman, Towsley, & Swan, St. Louis, Mo.—Gas utilizing for manufacturing illuminating gas. A 65.

36g Thomsen, Alexander, Worcester, Mass.—Governor for gas. C 27. 5-9

36h Day, George H., Haverhill, Mass.—Line hurdles and screens. C 27. 5-9

36i Goodwin, Wm. W., & Co., 1016 Filbert street, Philadelphia, Pa.—Gas meters of all descriptions, station meters, standard cubic foot measures and provers, photometers of all kinds, candle scales, pressure registers and gauges, pressure and vacuum registers, apparatus for determination of sulphur and ammonia in coal gas, density and specific gravity apparatus, etc. A 85. 509

36j Walker, James H., Milwaukee, Wis.—Model of gas works. C 27. 5-9

36k Towsley, L. D., Cincinnati, O.—Gas utilizing for manufacturing illuminating gas, and for saving one-half the coal-gas of cities. It is automatic, safe, durable, simple, and cheap. A 65.


36m Harris, Griffin, & Co., Philadelphia, Pa.—Gas meters, registers, gauges, photo- meters, provers, pumps, exhaust governors. A 78.
Gas Machines, Wood-working Machinery.

41 Mervine, Samuel P., jr., Philadelphia, Pa.—Gas regulator. A 73. 509

41 Automatic Gas Governor Co. of the U. S., Philadelphia, Pa.—Automatic gas governor. A 73. 509

41 Rand, A. W., Philadelphia, Pa.—Gas machine. A 71. 509

42 Rex & Bockius, Philadelphia, Pa.—Illuminating gas generator. C 69. 509

43 Excelsior Gas Machine Co., South Norwalk, Conn.—Gas machines. A 75. 509

44 Improved Steiner Gas Machine Co., Philadelphia, Pa.—Portable gas machines. A 75. 509

45 Walworth Manufacturing Co., Boston, Mass.—Gas machines for lighting country residences, public buildings, etc. A 76, E 75, and B 41. 509

46 Imperial Manufacturing Co., New York, N. Y.—Gas machines. A 73. 509

47 Tiffany, J. C., Boston, Mass.—Oil gas generator, dry gasometer, process for reclaiming naphtha in gas conduits, platinum appliance for combustion of coal in furnaces. (Outside of building.) 509

48 Vasquez, Chas. L., Philadelphia, Pa.—Automatic gas machine. A 73. 509

49 Starr, Jesse W., & Son, Camden, N. J.—Gas works, pipe. (Outside of building.) 509

50 Novelty Gas Machine Co., Baltimore, Md.—Carburetted gas machine. A 73 and outside of building. 509

51 Gruber, John P., Jersey City, N. J.—Gas works. A 52. 509

52 Bean, Joseph H., Cincinnati, O.—Automatic gas machine for residences, churches, etc. A 72. 509

53 American Meter Co., New York and Philadelphia.—Standard provers, meters, pressure registers, gauges, exhaust govern- ors, bar and jet manometers; also all other apparatus generally. A 69. 509

54 Burr, William H., Philadelphia, Pa.—Apparatus for making hydro-carbon gas. A 68. 509

55 Excelsior Gas Machine Co., South Norwalk, Conn.—Retort gas machine. A 75 and outside of building. 509

56 Daschbach, E. J., Pittsburg, Pa.—Gas machine, with automatic carbureter. A 72. 509

57 Ramsey, Robert H., Pottsville, Pa.—Bituminous coal gas machine, adapted to private residences, stores, and manufactories. Furnishes coal gas of largely increased illuminating power, at less than one dollar per thousand feet. Indorsed by insurance underwriters. A 72. 509

57a Rowland, T. F., Greenpoint, N. Y.—Specimens of forgings; model of steam stoker. A 65 and D 31. 510

58 Riehle Bros., Philadelphia, Pa.—Mortising machines. E 54. 510

59 Douglass Manufacturing Co., Seymour, Conn.—Mechanics' edge tools and boring implements. A 47. 510

60 Lane & Bodley, Cincinnati, O.—Stroke power mortisers. A 50 and saw-mill. 510

60a Gerlach, Peter, & Co., Cleveland, O.—Stone-saving machine. A 54. 510

60b Andrews, E., Williamsport, Pa.— Saw-sharpening, cross-cut saw handles, saws, gang-saw, hooks and stirrups, etc. B 78. 510

60c Palmer, Samuel R., Belfast, Me.—Stave-jointing machine. A 28. 510

60d Atkins, E. C., & Co., Indianapolis, Ind.—Saws. B 5 and A 5. 510

60e Knowlton, John L., Sharon Hill, Pa.—Saws, saw-sharpening and planer knife, and Bands, non-machines. A 1 and B 1, and saw-mill. 510

60f Strang's Cylinder Saw & Machine Co., Taunton, Mass.—Cylinder-saw stave machine; foot lathe. B 74. 510

60g Curtis & Co., St. Louis, Mo.—Slotted circular saw. B 79. 510

60h Ames & Frost, Chicago, Ill.—Devil's tooth machine. B 61. 510

61 Norris, W. R., Fort Ann, N. Y.—Diagonal planing and polishing machine. B 60. 510


64 Trump Bros., Wilmington, Del.—Foot-power scroll saws. B 57. 510


65a Dowling, T. W., Detroit, Mich.—Scroll saw. B 61. 510

65b Barnes, W. F. & John, Rockford, Ill.—Scroll and circular saws; lathes. B 57. 510

65c Russell, S. J., Chicago, Ill.—Wood lathes. B 56. 510

65d Providence Saw Works, Providence, R. I.—Jig-sawing machines. B 56. 510


67 First & Pryibil, New York, N. Y.—Re-slitting band saw, carving machine, saws, planers, etc., for wood working. B 43. 510

68 Disston, Henry, & Sons, Philadelphia, Pa.—Saws and saw tools, trowels, carpenter's tools, files, knives, bitting, sheet steel. B 41-46. 510

68a Baxter, C. M., Lebanon, N. H.—Band saws; planer. B 64. 510

68b Forster, Benjamin, Salem, Oregon.—Wood auger. D 68. 510

69 Walker Bros., Philadelphia, Pa.—Wood working machinery. B 53. 510

a No. 1 Scroll sawing machine, even tension spring, adjustable fastenings for saw blades and combined belt shifter and brake.

b No. 1 Scroll sawing machine, spring, even tension, combined clamp fastening for saw blades; lower guides have parallel adjustment and the dust from saw is
Wood-working Machinery.

blown away from the slides by a fan blower attached.

c. Power-feed panel raiser, for panels of any width or raise or thickness; has upright spindles and heads, swing table and, adjustable guards.


74 Moseley, Jerome S., Syracuse, N. Y. — Scroll saw machine, boring machine. In all of the wood-sawing machines on exhibition, the great principles involved in their mechanical construction are the many devices for starting, stopping, and controlling its speed without taking the attention of the operators from the work. The manner of holding the saw, and the manner of giving the saws more or less "rake or feed," have been the difficult problems to solve. Moseley's Patent Engine Scroll Sawing Machine, with its improved apparatus, can be run at a speed from 800 to 1100 revolutions per minute, and will saw the lightest venerated wood, such as piano or melodeon wood, and is capable of running saws from one-sixteenth of an inch wide to any width that can be practically used in a scroll saw machine. The blower and self-adjusting blowpipe is a new feature, which adds greatly to the convenience of running and working this machine. It is attached in a simple manner to the upright shaft in which the saws are worked, and serves every purpose of blowing the finely sawdust away from the work all sawdust that accumulates. The machine is admirably adapted for all kinds of scroll sawing, from the lightest to the heaviest, and does the work well. This machine recently received the first prize medal at the fair of the New York State Agricultural Society, held at Utica in the fall of 1870; also at Elmira, 1872; also at Albany, 1872; and at Rochester, 1874; also received a medal of special award at the Fair of the American Institute, held at New York city in 1872; and the first prize medal at the International Exhibition, Buffalo, N. Y., 1872. B 63.


76 Battle Creek Machinery Co., Battle Creek, Mich. — Carving, paneling, variety moulding, and dovetailing machines; moulders' solid steel cutters. B 55.

77 Lane Manufacturing Co., Montpelier, Vt. — Portable single circular saw mill, designed for common use as a portable saw mill, and also intended for use in fixed establishments of ordinary capacity. Sawyers set the feed, both receded, and when desired, advanced, by power; dogging devices especially adapted, for 'live' or 'through-and-through' sawing, and for holding frozen logs. Gauge roll (Fairbank's patent) in front of saw; tapering devices, elevated scale or blade. Over 2000 of these mills (Lane's patent) in use. Heavy double circular saw mill, intended for first-class establishments of the largest capacity: 72 inch circular saw and to inch upper saw, feed and jiggling back works, driven from either front or back side of frame; saw-guide quickly removable; uprights advanced by both forward and backward motions of lever; outer ridges on patented; rolled-steel headblocks; improved dogs catch under and upper sides of logs, and swing away from saw when released; up-tricks of feed or advanced by power. Saw Mill Building; inch tractory bed or roll-feed planing machine; heavy matching, or tongueing and grooving machine; light matching, or tongueing and grooving machine.


79 Haines, James, Belfast, Me. — Machine for jointing staves. B 77.


81 Boynton, Eben B., New York, N. Y. — Saws, frames, sets, files, handles, etc. B 49.

79 Chase Turbine Manufacturing Co., Orange, Mass. (Saw Mill annex.)

a. Machine for sawing staves, spool stock, box boards, etc.

b. Lever set and circular saw mill.

80 Beach, Henry Lloyd, Montrose, Pa. — Scroll sawing machines. There is no class of machinery on exhibition that attracts greater attention than the scroll sawing machines. Among the number that possess merits as to their mechanism are the two manufactured by Henry L. Beach, of Montrose, Pa. The No. 2, which is mostly of wrought iron, insuring great strength and durability, is especially noticeable; instead of the ordinary pulley, a large iron pulley, a large iron shaft carries a friction pulley, by which the saw is made to start and stop instantly without shifting the belt—a great saving of time on inside work. Both the Nos. 1 and 2 are provided with saw clamps, and very powerful and elastic spring, which give an even tension on the saw of from 10 to 75 lbs. No. 1 has a tilting table, which for pattern work is indispensable, and is used almost daily in any shop. Both the machines have air pumps, steel bearing for each saw, and are adaptable in every part to take up all lost tension. A 29.

81 Fay, J. A., & Co., Cincinnati, O. — Patent wood-cutting machinery. In the choice of machinery it is an object to select the best adapted to the work to be done; that a machine may be fast or powerful, it must be so constructed as not likely to get out of order. In the display in Machinery Hall, section 8, columns 61, 62, and 63, J. A. Fay & Co. of Cincinnati, have several varieties of improved wood-cutting machines they manufacture, and the additions added to them during the past five years, it is claimed that the new features introduced place their machines for location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.
in the front rank. The high reputation and character of this firm throughout this country and Europe, may be attributable—
1st, to the high character, and excellence of their wood-working machines; and, to the improve-
ments made upon them from year to year, increasing their labor-saving features; 2d, extensive facilities and abundant cap-
ital for manufacturing. Of the different machines for planing, match, band sawing, boring, variety wood workers, com-
bination edging and ripping-saw tables, carving, band re-sawing, and other such operations, wheels, felloes, spokes, and agricultural imple-
ments, allusion here can only be made to the more important ones. The No. 2 patent variety wood-worker is pec-
cular and simple in its mechanical con-
struction, and has capacity for great range and variety of work, being con-
structed in a substantial manner, and possesses many labor-saving qualities. Their patent band saw with elastic wheels embraces many new and valuable labor-saving features by which the break-
age of saws is prevented. Their new cylindrical sand and paneling machine is adapted to meet the demands for an effective ma-
cine at low cost, and is adapted for any designs of panels in fine furniture, piano, and organ manufactures. The combina-
tion planing and ripping-saw table is split wholly of metal, and is quite novel, hav-
ing a rising and falling saw, hand and power feed, and with a parallel movement of the fence for rapid and accurate work. It is also provided with planed iron table, and is in all respects admirably adapted for the purposes designed. The large six-roll double cylinder patent planing and matching machine is of wide scope, to be perfect in all of its appointments. It is strong and powerful. It embraces many new and valuable improvements de-
signated for the saving of labor, time, and lumber, and increasing the quantity of production. The patent band re-sawing machine embodies several novel fea-
tures which have attracted much attention from visitors, not only in this country, but of Europe. It is simple, powerful, has a large range and capacity for work. The manner of connecting the two wheels with an outside, showing connection, the automatic friction feed, re-
volving frictionless guides, the perfect ease of adjustment, and ready manipulations by the operator, with many others which might be added, make it a very interesting exhibit for those interested in the reduction of lumber. B 62. 

82 Clark Thread Co., Newark, N. J.—Self-acting spool-winding machine, spool-
turning machine. C 33, and A 34. (See also Exhibit in Main Building, C 33.)

83 Holmes, E. B., Buffalo, N.Y.—Ma-
chines for making keys, barrels, staves, and hooks. B 50-52.


85 S. A. Woods Machine Co., Boston, Mass.—Planing, matching, moulding, sur-
facing, and other wood-working machinery. B 54.

86 Patterson, C. R., Pittston, Pa.—Pressure blocks independent, showing con-
struction and same applied to J. C. Fay’s planer. B 61.


88 Richards, London, & Kelley, Phila-

89 Burt, C. S. & S., Dunleith, Ill.—Ma-
chines for sawing shingles, barrel-heads, etc. B 54.

90 Blaisdell, J. H., & Co., Philadel-
phia, Pa.—Wood-working machinery. B 75-76.


92 Bentel, M garged & Co., Hamil-
ton, O.—Universal wood-working ma-
chines. Planing and matching, jointing, band and scroll saws, boring and shaping machines. Bentel, M garged & Co. have on exhibition twelve different machines, each of them presenting new features, which are improvements, and add greatly to their value and usefulness, and are all fitted with novel mechanical and construc-
tional features; the patent universal wood-workers for planing out of wind, jointing, squaring, smoothing, beveling, cornering, chamfering, tapering, mitreing, rabbing, tenoning, halving, paneling, tonguing, grooving, halfing, matching, rolling-joints, gaining, plowing, serpentine and waved moulding, fluting, beading, ripping, splitting, cross-cut saw-
ing, straight, circular, oval, and elliptical machines, etc. The patent band-sawing machine is, in its construc-
tion and improvements, new and highly valuable. This is a patent machine, the improvements on which are entirely new features. The mechanical cause of the breakage of band-saw blades unre-
cedentedly and successfully removed. The buckling, friction, heating, and crystalliza-
tion of the saw-blades entirely overcome. Instantaneous starting and stopping of the motion of the saw-blade. The patent scroll saw machine with uniform tension is certain at all points of the stroke. The Hamilton patent surface planer for planing out of wind, jointing, squaring, smoothing, beveling, cornering, chamfering, mitreing, and tapering, is furnished with patent triangular shear-knife, cutter-heel, andpiercing planes both smoothly and accurately. Sec. B 7, columns 51-52 and 53.

93 Ross, E. W., & Co., Fulton, N. Y.—
Iron framed foot jointer for barrel staves. F 64, and outside.

94 Seymour & Whitlock, Newark, N. J.—Sash dovetailing, mitre, wiring, boring, mortising machines, and sewing machine motors. A 39.


96 Baggs, J. T., Bridgeport, O.—Saw-
ing and grooving machinery. B 60.

97 Rogers, C. B., & Co., Norwich, Conn.—Wood-working machinery. B 75-
76.


99 Greenlee, Bro., & Co., Chicago, Ill.—Sash, blind, and door clamping ma-
chines; sash, door and blind finishing and mortising machine. A 30.


For classes of exhibits, indicated by numbers at end of entries, see Classification PP 15-18.
DEPT. V. MACHINERY.

Wood and Metal-working Machinery.


102 Goodall, Braun, & Waters, Philadelphia, Pa.—Panel planer, planer and macher, surfacer and macher, hand saw. B 77-78.


108 Gleason, John, Philadelphia, Pa.—Spoke and handle turning lathe, etc. B 64.

109 Babbitt, F. S., Taunton, Mass.—Combination foot lathe. B 64.

110 Howard Manufacturing Co., Easton, Pa.—Mitring machines, easily adjustable in all the different parts, cuts all angles, used by cabinet makers, carpenters, picture frame makers, car builders, etc. A 29.


113 Benson, A. M., Cleveland, O.—Stave machinery dresser and jointer. A 29.


115 Hart, Roswell, Rochester, N. Y.—Machines for making half-round hoops for barrels, etc. B 46.

116 Pope Manufacturing Co., Boston, Mass.—Lathe scroll saw. Acme lathe $1.00; scroll saw, $1.00 and $2.00; daring machine, $18.00. C 44.

117 Buck, Martin, Lebanon, N. H.—Single, double, and triple tenoning machines, blind mortising and boring machine, slat planer, wedge and pin machine, hand saws, etc. B 64.

118 Bustin, Robert, St. Johns, N. B.—Fire escape. Bustin's portable fire escape is one of the many new inventions that deserve special notice for its simplicity, cheapness, durability, and almost certain security to life. It is simple in its construction, easily adjusted, and can be carried in a small valise, thus insuring the traveler that, no matter how high in a hotel, he can in a moment rescue his own life and if he has others in the room in the same perilous situation, save them at the same time. It can be used in many ways, as it is so ingeniously made that it is always ready for use. There is no machinery connected with it. It cannot get out of order. In case the lower part of the building is so enveloped in flames as to render a direct descent impossible, the parties can make a descent across the street. It is now on exhibition at the north end of Machinery Hall, where practical illustrations of its workings can be seen. The fire escapes, all complete, cost from $10.00 to $15.00. In every case you can save your apparatus.

119 Lane & Bodley, Cincinnati, O.—Stanhope portable circular saw mill. (A go, Saw mills.)


121 Harbert & Raymond, Philadelphia, Pa.—Portable saw mill. (Saw mills) 511.


123 Scholfield, Socrates, Providence, R. I.—Logging saw. (Saw mill, B 12.)


126 Stearns Manufacturing Co., Erie, Pa.—Circular saw mill, double edge engine, log jacker, log turner, steam engine. (Saw mill, A 3, B 3.)


128 Flint, C. M., Fitzburgh, Mass.—Saw mill. B 13. (Saw mill.)

129 Noyes, Frank G., Clinton, Iowa.—Gang edger with four circular saws. B 12. (Saw mills.)


128 Middleton, John W., Philadelphia, Pa.—Cast and wrought iron, and steel ready for the planer. C 77.


130 Midvale Steel Works, Philadelphia, Pa.—Bar steel, steel forgings and castings. C 73. (See also classification 573.)
In 131 Dick, C. J. A., Philadelphia, Pa., Phosphor Bronze Smelting Works, 2038 Washington avenue. — Phosphor bronze ingots, axle bearings, castings, bells, wire, sheets, tubes, etc. A 64, 421.

132 Eames, Charles J., New York. N. Y. — Petroleum iron boiler plates, forge blooms, billets, jack plates, horseshoes, etc. (Annex 1) 513.


133 Reed, S. G., Boston, Mass. — Apparatus for heating locomotive and carriage tires with gas; portable gas attachment for lighting streets. E 69. 13

134 Malleable Iron Fittings Co., Crawford, Conn. — Malleable iron steam and gas fittings and castings. A 4. 13


135 Harris, Samuel, Springfield, Mass. — Sifting machines. (Adjoining Annex 2) 513

136 Keystone Portable Forge Co., 120 Exchange Place, Philadelphia, Pa. — Portable forgings and pressure and exhaust blowers; forgés, portable or stationary, for hand or power, forty-seven styles and sizes, for every class of work from lightest to heaviest, and patented and sold in all leading countries. English, French, and Belgian patents for sale. Also blowers for every purpose requiring either pressure or exhaust; all shown in operation. (Annex No. 1, Machinery Hall) 513.


140 Merrill, Chas., & Sons, New York, N. Y. — Drop hammer, parallel sizes, differential blocks. C 4 and Annex 2. 514

141 Hammond, H., & Co., Hartford, Conn. — Cast steel hammer, anvils, and drop forgings. A 41. 514

142 Metz, George W., & Sons, Philadelphia, Pa. — Bellows. (Annex) 514

143 Bayliis, John, New York, N. Y. — Hot blast water tuyere and forge, blacksmiths’ bellows, portable forge and bellows. (Annex 1) 514

144 Bradley Manufacturing Co., Syracuse, N. Y. — Cushionedelve hammers. 514

145 Tubular Barrow & Truck Manufacturing Co., New York, N. Y. — Self-aligning steam hammer. (Annex 1) 514

146 Empire Portable Forge Co., Troy, N. Y. — Portable fan-blowing forges. (Annex 1) 514

147 Bullock, T. H., & Co., Cleveland, O. — Blacksmiths’, moulders’, hand, and cooper’s bellows. (Annex 1) 514

148 Hull & Belden Co., Danbury, Conn. — Power forging hammer, samples of drop forgings. U 72. 514

149 Mason, John L., Camden, N. J. — Tire shrinker, blacksmiths’ tuyere and pinch bar. (Annex 1) 514

149 Schierloh, H., Jersey City, N. J. — Heat welding compound, with samples of iron and steel welded. (Annex 1) 514


a Drop hammers. 514
b Sheet metal presses. 514

d Pusey, Jones, & Co., Wilmington, Del. — D 33.
a Riveting machine. 514
b Sheet iron cleaner. 514


151 Mitchell, J. E., Philadelphia, Pa. — Founded, 1860. — Column of 38 varieties of grindstones; two thousand tons in stock of seven sizes of machinists’ grindstones in iron boxes. Send for descriptive pamphlet. B 28 and 29. 515

152 Sternbergh, J. H., Reading, Pa. — Surface-grinding machine, bolts, nuts, washers, rivets, wood screws, etc. B 37. 515


156 Laurence, Benjamin, Lowell, Mass. — Index and plain milling machine. B 29. 515


158 Galligher, Bernard, Lynn, Mass. — Emery grinder; drills. C 39-40. 515


160 Stevens, W. X., East Brookfield, Mass. — Centre cutting shears for iron, to cut old steamboat shafts, rails, chain links, bolts, angle and merchant iron, cold; power unlimited. B 34. 515


158 Brown & Sharpe Manufacturing Co., Providence, R. I. — Machinery and tools. Manufacturers of universal and plain milling machines, grining, screw, and tapping machines, screw finishing and

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
polishing machines, reeds, sorters, scales, and testers for roving and yarn, for cotton and woolen manufacturers' use, patent cutters for gear wheels, and for taps, beiners, twist drills, irregularly formed sewing machine and gun parts, milling and screw slotting cutters. B 38. 515

Lobdell Car Wheel Co., Wilmington, Del.—Solid die rivet machine. B 65. 515

Richards, I. P., Providence, R. I.—Punches for metal. A 42. 515

Hendey Machine Co., Walthamville, Conn.—Planer and shaper. D 35. 515

Howard, William H., Philadelphia, Pa.—Loom frame with automatic let-offs. B 31. 515

Cosmopolitan Emery Wheel Co., Philadelphia, Pa.—Emery wheels for grinding saws, tools, etc. (Annex 1.) 515

American Saw Co., Trenton, N. J.—B 33.
   a Movable tooth circular, perforated, and solid saws.
   b Eccentric-geard power punching and shearing machines. 510

Cornell University Machine Shop, Ithaca, N. Y.—Foot lathe, magnetoelectrical machine, measuring machine, tools, and gauges. B 68. 515


Smith, Oberlin, & Bro., Bridgeport, N. J.—Upright or inclined foot and power presses, for cutting or drawing tinware, and can makers' tools, pipe tools, special drills, etc. C 27. 515


George & Du Laney, New York, N. Y.—Screw machinery. C 55 and B 29. 515

Clough & Williamson, Newark, N. J.—Wire cork-screws and handles; machine for manufacturing same. B 38. 515

Edwards, E. B., Columbus, Pa.—Axle rolls. B 40. 515


Merriman, A. H., West Meriden, Conn.—Power punching press. B 29. 515

Jones, Lameon, & Co., Windsor, Vt.—Engine lathes, screw machines, gang drills, etc. B 36. 515

   a Steam hammers. 514
   b Machine tools, punching and shearing machines. 515

Washburn Machine Shop, Worcesters Free Institute, Department Mechanical Engineering, Worcester, Mass.—Lathes with hardened steel bearings; grinding machines and drawing stands. C 38. 515

Spiral Elliptic Spring Works, Cincinnati, O.—Machinery for making upholstery springs. E 70. 515


Schon, Mathias, Englishtown, N. J.—Tire upsetting machine. (Annex.) 515


a Vitrified Wheel and Emery Co., Ashland, Mass.—Emery and emery wheels. (Annex.) 515


c Broadbooks & Co., Batavia, N. Y.—Folding chairs. C 43. 515

d Howard Iron Works, Buffalo, N. Y.—Propeller wheel. C 29-30. 515

e Dudgeon, Richard, New York, N. Y.—Punches. C 27. 515

f Temple, Edward B., Philadelphia, Pa.—Planing machine for metals, etc. B 28. 515

g Old Colony Rivet Works, New York, N. Y.—Iron planers, shears, cutters, punches, drilling machines, rivets, etc. B 28. 515

h Clark, John A., Newark, N. J.—Drip pan for kerosene and other liquids. C 30. 515

Miller's Falls Co., Miller's Falls, Mass.—A 40.
   a Scroll saw. 510
   b Iron cutter, drilling machines. 515
   c Vises. 519

Putnam Machine Co., Fitchburg, Mass.—Machinists' tools, steam engines, Woodworth planers, water wheels, shafting, mill work, etc. C 28. 515

   a Engine lathe. 515
   b Glassware grinding machine. 516

American Watch Tool Co., Waldum, Mass.—Lathes for watchmakers' use, and bench lathes for machinists. F 38-40. 515

Coe, C. W., Fenton, Mich.—Hand power drill press and screw cutter. B 515

Young, William, Easton, Pa.—Young's patent water and gas main tapping machine. With this apparatus the main pipe is drilled and tapped, the service pipe screwed in, and connection made in one operation, without shutting off the water or changing tools. (Pump annex 7-5.) 514

E. Horton & Son Co., Windsor Locks, Conn.—Lathe and car-wheel chucks. B 30. 515

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 21.
Metal and Stone-working Machinery.

184 Oneida Steam-Engine & Foundry Co., Oneida, N. Y.—Westcott's combination lathe chucks, works universally and independently, holds objects twenty-five per cent. larger than diameter of chuck, jaws, all reversible. Little Giant drill chucks holds from 0 to 1 inch. B 30.  515

185 Whiton, David E., West Stafford, Conn.—Gear-cutting machines, machines for centering iron, lathe chucks, drill chucks, etc. C 31.  515


187 Bliss & Williams, Brooklyn, N. Y.—Presses for making tinware and articles of sheet metals. C 30.  515

188 Chase, Pliny E., Newark, N. J.—Back-greasers, screw-cutting, conical-bearing foot lathes, slide rests, and fittings. B 37.  515

189 Northampton Emery Wheel Co., Leeds, Mass.—Solid emery wheels, and machinery for showing uses. B 37, and Annex 1.  515

190 Prouty, A. B., Worcester, Mass.—Chucks and jaws for iron planers. D 39.  515

191 Racine Hardware Manufacturing Co., Racine, Wis.—Jeweler's and dentist's polishing and turning lathes, power wheels, engraving blocks, and other tools. C 41.  515

192 Newbold, Richard S., & Son, Norristown, Pa.—Rotary sheet for sheet and plate iron. B 33.  515

193 Watson, James, Philadelphia, Pa.—Non-changeable gap lathe. C 31.  515

194 Mitchell, J. H., Philadelphia, Pa.—Grindstone boxes. B 80.  515


196 Pratt & Whitney, Hartford, Conn.—Machinists' tools; gun and sewing machine machinery; drop forging, threading, boring bars, nuts, and pipe. C 23-26, and Annex 1.  515

197 Kennedy, De Lancy, New York, N. Y.—Shearing, punching, gripping, and pressng tools and machinery; spiral punch and die. B 37.  515

198 Cummings, Geo. L., New York, N. Y.—Grindstone frames. B 34.  515


200 Dorrirt, Constant, 337 S. Seventh street, Philadelphia, Pa.—Foot lathe, with slide rest; fine tool maker, and fine work of precision of all kinds. C 34.  515

201 Celluloid Emery Wheel Co., Newark, N. J.—Grinding and polishing wheels, made of emery or corundum, cemented into a mass with the new and remarkable material, celluloid. These wheels are all that can be required, as to strength and cutting qualities; they are perfectly even and homogeneous, and will not glaze under any circumstances. They may be used either wet or dry, as they never soften in water, oil, or any other lubricant. (Annex 1.)  515


203 Scofield, Charles, Vineland, N. J.—Steam for strengthening shafting in position. C 34.  515

204 Cox & Sons, Bridgeton, N. J.—Steam and gas-fitters' tools, supplies, etc. C 32.  515

205 Hamlin, G. A., Philadelphia, Pa.—Machinery for refitting valves. C 35.  515

206 Merritt, Daniel S., Bay City, Mich.—Machine for cutting heavy iron bars and plates, punch for all kinds of metal. B 36.  515

207 Fitchburg Machine Co., Fitchburg, Mass.—Engine lathes, drills, planer, and shaping machine. C 38.  515

208 Ames Manufacturing Co., Chicopee, Mass.—Engine lathes, planer, drill, edging machine, die-sinking machine. C 38 to 40.  515

209 Putnam & Estey, Fitchburg, Mass.—Emery wheels. (Annex 1, 32.)  515


209 Reynolds, D. M., Port Deposit, Md.—Machine for cleaning and polishing sheet iron. C 36.  515

209 Cleveland Patent Manufacturing Co., Cleveland, O.—Bolt and pipe cutters; cutter heads. B 29.  515

209 Gray, J. Hammond, Philadelphia, Pa.—Screw machinery, for turning and threading screws, etc. B 27.  515

210 Hilles & Jones, Wilmington, Del.—Radial drills and slotting machine. B 37.  515

211 Hardy Machine Co., Biddeford, Me.—Hardy's improved traverse emery wheel card-grinders, for truing and grinding perfectly the teeth of cotton and wool cards. We warrant the "Hardy" card grinder, cloth-shear grinder, and planer knife grinder. B 35.  515


212 Rogers, William A., Cambridge, Mass.—Automatic machine for grinding parallel surfaces on glass, etc. C 46.  510

212 Branch, Crookes, & Co., St. Louis, Mo.—Diamond circular saws and machinery for sawing stone. (Saw mill.)  516

212 Steam Stone Cutter Co., Rutland, Vt.—Stone channeling or quarrying machines; block of machine-cut marble. (Annex 2.)  516

212 Emerson Stone Saw Co., Pittsburgh, Pa.—Diamond circular stone saw and machine. This machine, doing regular work, cuts in ordinary sandstone one hundred and fifty square feet per hour (counting both sides of the cut), and other stone in proportion, according to the

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
DEPT. V.—MACHINERY.

Stone, Brick, Glass-working Machinery.

relative hardness, leaving the stone perfectly in line, beautifully finished, ready to be placed into buildings, etc. This is more than can be accomplished by one hundred men in the same space of time, and at an expense not exceeding the cost of sharpening and wear of tools necessary to do the same amount of work. The highest honor (a gold medal) was awarded to this saw at the Cincinnati Exposition of 1875. (Annex 2.)

217 Batley, John, & Co., Philadelphia, Pa.—Shaping machine, for mouliding, paneling, or carving on marble, etc. (Annex 2.)

218 Davis & Richmond, Detroit, Mich.—Hand machine for cutting and punching slate. (Annex 2.)

219 Ryan, James M., Cincinnati, O.—Silver-plated lathe, show cases, and process of cutting glass. D 38. 516

220 Ross, Thos., Rutland, Vt.—Stone-sawing machine. (Annex 2.)

221 Young, Hugh, New York, N. Y.—Rough-rolling diamond stone-sawing machines. (Saw mill.)

222 Union Stone Co., Boston, Mass.—Solid emery wheels and machinery for grinding and polishing. Emery wheels, from one-inch to six feet in diameter, and grinders for mounting them. Special machines for jointing plows, beveling boiler plates, gumming saws, etc. Patent automatic knife grinder, a decided success, for grinding planing machines, bookbinders', curriers', and long knives and shears of all kinds. Grinders' and polishers' supplies. B 37, and Annex 1.

223 Carnell, F. L. & D. R., 1844 Germantown avenue, Philadelphia, Pa.—Fire and red brick presses; working model of "Peerless" brick machine. The above firm manufacture brick machinery of every description, of which they have a fine illustrated catalogue, which will be mailed to any person sending them their address. (Annex 1 and 3.)

224 a Aiken, Henry, Philadelphia, Pa.—Hydrostatic machine; stone-separating and clay-tempering machinery. (Annex 3.)


224 c Maas, Albert W. M., Meridian, Miss.—Model and drawing of perpetual burning brick-kiln. (Annex 3.)

224 d Whiteford, John, Detroit, Mich.—Brick-moulding off-bearing, and yard-leveling machine. (Outside of building.)

224 e Miller, Samuel P., & Son, Philadelphia, Pa.—Hand brick pressing machines. (Annex 3.)

224 f Wyatt, Charles B., Somerville, Mass.—Grate, bevel knife, and spring pressure for brickmakers' use. (Annex 3.)

224 g Newkumet, Adam, Philadelphia, Pa.—Crucible and pottery ware machines, drying apparatus for glass-house pots, retorts, etc. (Annex 3.)


226 Carnell, Geo., Philadelphia, Pa.—Brick press and pug mill. (Annex 3.)

227 Morand, Augustus, Philadelphia, Pa.—Brick-making machine. (Annex 3.)

228 Garretson, I. H., Keokuk, Iowa.—Brick-moulding machine, ring fence. (Annex 3.)

229 Excelsior Brick & Stone Co., Philadelphia, Pa.—Model of brick machine, samples of brick and stone. (Annex 3.)


232 Hotchkiss, James, Springfield, O.—Brick machine. (Outside of building.)

233 Gregg, Issac, jr., & Co., Philadelphia, Pa.—Steam brick machine, one faced front brick. (Annex 3.)

234 Hazlehurst, Samuel, St. Louis, Mo.—Hand brick moulds. (Annex 3.)

235 Hoyt, Andrew J., Philadelphia, Pa.—Impact brick machine; steam hammer. (Annex 3.)

236 Gregg, Wm. L., Philadelphia, Pa.—Triple pressure brick machine for making and also re-pressing all kinds of brick; ceramic gas-kiln, for drying and burning red brick, fire brick, terra-cotta, china, lime, pottery, and drain pipe. (Annex 3.)


238 a Stacy, George, New York, N. Y.—Fastening for stonecutters' use, etc. (Annex 3.)

238 b Williams, S., & Son, Philadelphia, Pa.—Brickmakers' implements. (Annex 3.)

240 Stockwell, J. W., Portland, Me.—Cement pipe machinery, concrete mixing, sewer pipe tamper, moulds for drain pipe, samples of work. A 55.

241 Martin, Henry, Lancaster, Pa.—Self-feeding brick machine. (Annex 3.)


243 Hamilton, S. M., Baltimore, Md.—Perpetual brick kiln. (Annex 3.)

244 Mathieu, Charles, Colosse, N. Y.—Glass steam-engine, glass-blowing, knitting, spinning, and forming fancy glass ornaments. E 74.


For location of objects, indicated by letter and figure, see Key to Notes, p. 10; ground plan, p. 11.
Glasses and Metal-Working Machinery and Tools.

247 Brooke, Homer, New York, N. Y.—Glass manufacturers' moulds and presses, for making bottles, jars, lamps, lantern globes, and for all kinds of pressed and blown glass; also private moulds for patent medicine bottles. E 75. 518

248 Chase, B. F., E. Stroudsburg, Pa.—Blown-blowing machines. E 74. 519

249 Steele Bros, 209 South Eleventh street, below Walnut, Philadelphia, Pa.—Glass engraver at work. Decorated china and enameled glass. Dinner, dessert, and tea sets decorated, to order, in any color or design. Monograms, crests, initials engraved on glass. E 75. 518

249 Bevington & Winters, Philadelphia, Pa.—Glass furnace; china furnace; printing press and mineral cases, belonging to the art of porcelain printing. (An-

250 McCaffrey & Bro., Philadelphia, Pa.—Hand-cut files and rasps. A 41. 519

251 Krumhaar, Alexander, Philadelphia, Pa.—Hand-cut files and rasps. A 43. 519

252 Barnett, G. H., Philadelphia, Pa.—Files and rasps. A 39-40. 519


253 Knight, Edward H., Philadelphia, Pa.—Monkey wrench. A 41. 519


254 Hoopes & Townsend, Philadelphia, Pa.—Bolts, cold-punched nuts, washers, chain links, wood screws, rivets. C 32. 519


256 Billings & Spencer Co., Hartford, Conn.—Drop forgings for guns, pistols, sewing machines, and machinery generally; screw plates and dies, Packer ratchet drills, Barbick pipe wrenches, clamp, die, and common lathe dies, marlingspikes, and calker’s tools. B 40. 519

257 Brainard Milling Machine Co., Boston—Standard universal, and plain milling machines, for working metals in all shapes, cutting key seats, spur and bevel gears, twist drills, fluting taps and reamers, and making tools of all kinds. Are universally used in American establishments. C 38-40.

258 Bedell, Otis T., New York, N. Y.—Screw wrench. B 40. 519

259 Monk, Chas., Brooklyn, N. Y.—Iron moulders’ steel-finishing tools. B 40. 519

260 Silver & Deming Manufacturing Co., Salem, O.—Blacksmith’s post and table drills. F 54. 519

261 Morse Twist Drill & Machine Co., New Bedford, Mass.—Patent increase twist drills, beach chucking machines, relieved taps, screw plates, tap wrenches, adjustable dies, solid and split dies; pipe, solid, and shell reamers, adjustable and centre drill chucks, milling cutters, drill grinding machines, special tools. All tools to standard gauges. B 40. 519

262 Plumb, Burdick, & Barnard, Buffalo, N. Y.—Bolt-forging machines, with forge. (An-

263 Clark Bros. & Co., Milldale, Conn.—Boils, rivets, nuts, washers, etc. B 41. 519

264 Parker, Chas., Meriden, Conn.—Vises. B 41. 519


266 Western File Co. (limited), Bennington, Vt.—Files, finished, ground, and forged; file stock. C 54. 519

267 Haase, John A., Philadelphia, Pa.—Floor and door clamps, ratchet drills. B 41. 519

268 Simonds Manufacturing Co., Fitchburg, Mass.—Knives and sickles for mowers and reapers, planing machine knives, circular saws. B 41. 519


268b Bailey Wringer Machine Co., New York, N. Y.—Adjustable parallel vises. A 42. 519

268c Barnett, Oscar, Newark, N. J.—Malleable and gray iron castings, brass foundry flasks, etc. B 41. 519

268d Russell, Wm. C., New York, N. Y.—Adjustable wrench. J 73. 519

268e Cleveland Screw & Tape Co., Elyria, O.—Milled set and cap screws, taps and nuts. B 43. 519

269 Rutschmann Bros., Philadelphia, Pa.—Self-feeding hand drill. B 29. 519


271 Russell, Burdsall, & Ward, Port Chester, N. Y.—Bolts for manufacturers’ use. A 40. 519

272 Clark Bros., Philadelphia, Pa.—Eccentric or cam rivet pipe tongs. B 40. 519

273 Pool, A. Alex., & Co., Newark, N. J.—Steel arbors for machinists and jewelers. B 40. 519

274 Wood, Geo. W., Philadelphia, Pa.—Self-adjusting flooring clamp and lifting jack. A 41. 519

275 Orum, Morris L., Philadelphia, Pa.—Flexible mandrels for bending metal pipes. B 40. 519

276 Eaton, Cole, & Burnham Co., New York, N. Y.—Brass and iron goods for steam, water, and gas; cast iron radiators, tools, etc. B 41. 519

277 Shaw, Thomas, Philadelphia, Pa.—Lathe tools. D 69. 519

278 Nicholson File Co., Providence, R. I.—Files, finished, ground, and forged; file stock. C 54. 519

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 14-15.
DEPT. V.—MACHINERY.

Metal-Working Tools, Silk and Cotton-Working Machinery.

279 American File Co., Pawtucket, R. I.—Files, file-testing machine. C 34. 579

280 Hey, Henry T., Philadelphia, Pa.—Measuring gauge. A 41. 579

281 Spiral Tubing Co., Boston, Mass.—Machine for making spiral seam pipe. B 34. 579


284 Wyman, J. Dana, Boston, Mass.—Self-heating soldering iron. B 49. 519

285 Backus, Q. S., Winchendon, Mass.—Bit braces, ratchet braces, tack hammers, etc. A 40. 519

286 Johnson, Wm., Lambertville, N. J.—Universal lathe chuck. C 77. 519


288 Knowles & Bro., Worcester, Mass.—D 51. 520

a Looms for silk dress goods, ribbons, webbings, etc. 520

b Looms for plain and fancy woven goods. 522

290 Wrigley, John, Paterson, N. J.—Jacquard loom, changeable for power or hand. D 31. 520


292 Nonotuck Silk Co., Florence, Mass.—Machinery for throwing and finishing organzine, sewing silk, twist, and embroidery; machine for printing spools. D 41. 520

293 Holland Manufacturing Co., Willimantic, Conn.—Machines for winding, measuring, and testing the strength of sewing-silk and other threads. D 34. 520

294 Lawson, Peter, Lowell, Mass.—Drawing or roving can. B 58. 520


294 Davis, Caleb S., Philadelphia, Pa.—Cotton goodsfinisher. D 46. 520

295 Avery, John G., Worcester, Mass.—Thread, twine, and cord machinery. D 54. 520

298 Butterworth, H. W., & Sons, Philadelphia, Pa.—Drying machines for muslin, prints, tickings, etc.; dyeing and sizing machines, calenders and finishing machinery of all kinds. Tinned sheet iron cotton cans, etc. D 44 to 48. 520

299 Willimantic Linen Co., Hartford, Conn.—Spool cotton thread-winding and ticking machines; ring spinning frame, C 58, 53. 521

300 Clark Thread Co., Newark, N. J.—Self-acting spool-winding machine; show case. C 33 and A 34. 521


302 Kitson Machine Co., Lowell Mass.—a Cotton openers and lappers. 521

b Shoddy pickers and rag distrusters. 522

c Leather needle-pointed card clothing, for carding hemp, flax, jute, and tow. C 4, 33, 34, 35. 527


305 Gibbs Loom Harness & Reed Co., Clinton, Mass.—Loom harness and reeds used for weaving. C 50. 521

306 Fales, Jenks, & Son, Pawtucket, R. I.—Combined fly frame and speeder, ring spinner frame. D 34-35. 527

306 Saco Water Power Machine Shop, Biddeford, Me.—Cotton machinery. C 35-37. 521


305 Patent Forged Steel Spring Ring Co., Worcester, Mass.—Steel springs. C 34. 521


305 Hurtle & Thompson, New York, N. Y.—Wire heddles, fly frame and speeder, ring spinner frame. D 34-35. 527

306 Rockville Traverse Card Grinding Co., Rockville, Conn.—Traverse grinder for woolen and cotton cards and shears. C 59. 521

307 Fowle, J. Morton, & Co., Wilmington, Del.—C 60. 521

a Glazing cylinder for finishing cotton goods. 521

b Chilled roll calenders, for paper-makers' use, ground chilled. 525

308 Hope & Co., Providence, R. I.—Pantograph engraving machine for calico-printers' plates. C 47. 521

309 Ingersoll & Balston, Greenpoint, N. Y.—Hand-power hay and cotton press. C 45. 521

310 Butler, Brown, & Co., Providence, R. I.—Ring travelers and belt hooks. C 34. 521

311 Ross, L. E., Providence, R. I.—Spring shuttle motion for looms, independent of speed; loom with motion attached. D 35. 526

312 Palmer European Patent Tentering & Finishing Machine Co., Norwich, Conn.—Machinery for stretching, tentering, and drying woven fabrics, laces, etc. C 59. 521

*313 Providence Machine Co., Providence, R. I.—Roving machine, carding and spinning frame, built by Samuel Slater in 1790. D 36. 521

314 Hill, James, Providence, R. I.—Tin clipper, tin clipper can. D 35. 526

315 Wood, Thomas, 2106 Wood street, Philadelphia, Pa.—"Star loom" single box, five leaf; three box loom, 12 harness; four box loom-sliding cans; bobbin-winding machine; new style beaming machine; power hoisting machine; patent friction pulley; shafting, couplings, and pulleys; adjustable self-oiling hangers; self-oiling pillow blocks. C 54. 521

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 21.
The Acme Patent Pipe Cutter.

Is adapted to widely varying classes of work, and will be found to operate equally well on

Wrought Iron Gas and Steam Pipes, Boiler Tubes, Oil-Well Tubes, Round Iron, Bolts, Shafting, Brass and Copper Pipes, etc.

It is as claimed an actual cutter, and does not depend on force of pressure to indent the pipe until it can be broken off; but cuts out a regular chip precisely similar to the action of a lathe tool, leaving the end of pipe perfectly square and true, entirely devoid of any burring inside or outside, and ready for the die without being touched with a file.

The knives are of such simple construction that any blacksmith can replace them. This will often be found an advantage by mechanics working at a distance from their shops.

The knife may be ground on any ordinary grindstone, and so be kept constantly in good order.

For Descriptive Price Lists, address

PANCOAST & MAULE,
PHILADELPHIA, PA., U. S. A.
Prichett, Baugh & Co.,

HIDE

AND

LEATHER DEALERS,

NO. 127 AND 129 SOUTH SECOND

AND

133 GOTHIC STREETS,

PHILADELPHIA.

SAMUEL BAUGH.
WM. C. PRICHETT.

LOUIS D. BAUGH.
JAMES C. PRICHETT.

RUE'S LITTLE GIANT INJECTOR,

THE GREAT BOILER FEEDER.

BEST IN THE WORLD.

IN USE ON 120 RAILROADS—SEND FOR CIRCULAR.

RUE MANUFACTURING CO.,

523 CHERRY STREET,

PHILADELPHIA.
Cotton, Woolen, Paper-working Machinery.


315b. Wolfsend, Shore & Co., Cardington, Pa.—Narrow loom. D 45. 521

316 Eaton & Ayer, Nashua, N. H.—Bobbins, spools, shuttles, sketters, etc. for spinning and weaving textiles. C 60. 521

317 Leonard & Silliman, Bridgeport, Conn.—Mill spindle with driven, step and points. E 56. 521


319 Foss & Pevey, Lowell, Mass.—Under-draft cotton card. C 38. 521

320 Cleveland Machine Works, Worcester, Mass.—Double-acting gig. D 47. 521

320a: Corner & Cooper, Lowell, Mass.—Cotton stamps for cotton and woolen mills. D 90. 521

321 Howard, George C., 13½ South Eighteenth st., Philadelphia, Pa.—Folding, rolling, and measuring, strengthening, shearing, and brushing machines, for carpets or cloths. B 31. 522

322 Avery, John G., Worcester, Mass.—Continuous wool spinner. D 53. 522

323 Lyall, J. & W., New York, N. Y.—Positive motion looms, weaving various fabrics. C 46 and 49. 522


325 Furbush, M. A., & Son, Philadelphia, Pa.—Carding machines, self-acting spinning mule. D 52. 522

326 New England Co.: Rockville, Conn.—Spooler, warp dresser, red, beamer. D 46. 522

327 Thames River Worsted Co., Norwich, Conn.—Spinning frame with ring and transverse bar. D 48. 522

328 Parks & Woolson Machine Co., Springfield, Vt.—Cloth-sharpening machine, cloth-bushing machine, etc. Manufacturers of cloth finishing machinery, consisting of improved shearing machines for shearing all kinds of broad and narrow woolen goods, carpet rags, shawls, etc.; also, double-acting brushing machine and teasling gills, etc., etc. D 60. 522

329 Naylor & Jeffries, Philadelphia, Pa.—Carpet rag looper; adjustable clamp. D 50. 522

330 Hodes, Thomas, Philadelphia, Pa.—Yarn beam. D 49. 522

330½ James, B., Worcester, Mass.—Leather head spools for silk, wool, and cotton manufacturers' use. D 50. 522

332 Dienelt & Eisenhardt, Philadelphia, Pa.—Carpet loom, bobbin-winder, and Jacquard machines. C 55. 522

330 Short, James, New Brunswick, N. J.—Positive motion loom for all kinds of carpets. This motion is a differential duplex motion, and is a mechanical motion not before known; all dead centres are obviated by the method of this motion; in looms twenty-five per cent. less power is required and a speed of twenty per cent. increase is gained. The motion is adaptable to all kinds of looms. D 47. 522

331 Crab, William, Newark, N. J.; branded, Twenty-sixth and Filbert streets, Philadelphia, Pa.—Hackles, wood and leather card clothing, wool combs, picker teeth, comb pins. Manufacturer of wood and leather card clothing, hackles, picker teeth, wool combs, and all kinds of hackle, gill comb and card pins, and general mill furnishing. C 58. 522

332 Butterworth, James, & Son, Philadelphia, Pa.—Rag, waste, and shoddy pick off. D 58. 522

333 Dornan Bros. & Co., Philadelphia, Pa.—Power loom for weaving without shuttles. Dispensing with complicated "box or shuttle motion," and thereby making great saving in waste. Having almost unlimited capacity for shading colors into the fabric, by means of mails, controlled by the Jacquard machine, cheapness and simplicity of construction, diminished expense in running machines, and lessened wear and tear, also saving in cost of production, inasmuch as two or more looms can be run by one attendant; lessened service required from loom keeper, and consequent reduction in expense of production, by reason of fixer giving attention to double the quantity of shuttle looms now in use. Cone bobbin-winder.—Winding of great fineness, can be adjusted to wind bobbin from one and a half to eight inches in diameter, having a compensating traveling rod and friction barrels, operating so as to give equal tension on the yarn at all times. Power loom shuttles.—So constructed that the bobbin is prevented from flying up and tearing the warp whilst in operation. Carpet fabric, original design. D 46. 522

334 Silcott, Millikan, & Gold, Washington C. H., O.—Cloth-measuring and rolling machine. D 52. 522

335 Hillman, Lewis, Philadelphia, Pa.—Automatic measuring machine. D 43. 522

337 Draper, George, & Son, Hopedale, Mass.—Spinning frame, spooler, warper, and creel; twister, spinning rings. C 51. 522


340 Atlas Manufacturing Co., Newark, N. J.—Burr pickers, to extract foreign substances from wool; single and double burr machine. C 34, 35. 522

341 Crab, William, Newark, N. J.—Rope-makers' pins, gills. C 63. 524

342 Kuh, Sol., Grand Junction, Iowa.—Straw-twister, etc. C 63. 524


344 Lobdell Car Wheel Co., Wilmington, Del.—Chilled-iron callender rolls for paper. E 65. 525

345 Holyoke Machine Co., Holyoke, Mass.—Web callender; beating-rag engine. D 74. 525

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
Paper-working, Clothing-making, Sewing Machines.

346 Entrekin, William G., Philadelphia, Pa.—Enameler for furnishing photographs, paper, etc. C 41.


347a Pusey, Jones, & Co., Wilmington, Del.—Wire guides for paper machinery. D 33.


348h Robinson, L. W., Champaign, Ill.—Treadle for sewing and other machines. F 77.

350 National Suspender Co., New York, N. Y.—Loom for manufacturing suspenders; process of sewing suspenders with the name in; samples of work. C 67-69.


354 Johnson, Clark, & Co., Boston, Mass.—Sewing machines. Home, Shuttle, National, and Union sewing machines are furnished for domestic or export trade, at very low prices. The "Home" runs with treadle only; the others by hand or treadle. C 59.


357 Wensley, James, Philadelphia, Pa.—Improvement in butt-hole sewing machines; samples of work. C 64.

358 Lamb Knitting Machine Manufacturing Co., Chicopee Falls, Mass.—C 64.

359 Howe Machine Co., Bridgeport, Conn.—Sewing machines and attachments; samples of work. C 52.


363 Billings & Spencer Co., Hartford, Conn.—Sewing machine shuttles, drop-forged and cold-pressed, from bar steel. B 40.


365 Warth, Albin, Stapleton, N. Y.—Cutting machines for clothing, notching implement for patterns, folding machine. C 70.


369h Robinson, L. W., Champaign, Ill.—Treadle for sewing and other machines. F 77.

370 National Suspender Co., New York, N. Y.—Loom for manufacturing suspenders; process of sewing suspenders with the name in; samples of work. C 67-69.


374 Johnson, Clark, & Co., Boston, Mass.—Sewing machines. Home, Shuttle, National, and Union sewing machines are furnished for domestic or export trade, at very low prices. The "Home" runs with treadle only; the others by hand or treadle. C 59.

375 Campbell & Clute, Cohoes, N. Y.—Double table knitting machine, yarn winder, turning-off machine. C 64.


377 Yule, George, Newark, N. J.—Wood forming machine, sizing, stiffening, body stretching, etc., for hatters' use. C 67.


379 Wegener, Jeptha, Holtsville, N. Y.—Sewing machines, carriages, and attachments. The great advantages of this machine are its simplicity, general utility, velocity and perfection of work. It is mounted upon a carriage, which is easily turned on or off the wheels by a child, and as is easily moved from room to room as a child's toy. It makes all the stitches of all the other well-known machines, and is easily changed from one stitch to another by the operator; and, by a new feed device, the ordinary fault of failing the under layer in a seam is entirely obviated. The especial excellence and superiority of this machine are shown by even a brief inspection of its work. The Wegener has a manufacturing capital of $2,000,000. C 62.


For location of objects, indicated by letter and figure, see Key to Notation, p. 10: ground plan, p. 11.
Clothing-matching, Sewing, Washing, Machines.

381 Singer Manufacturing Co., Elizabethport, N. J.— Sewing machines, samplers, six-needle knitting machines, and case of machine tools. (Special building.) 531

382 Home Knitter Co., Alliance, O.— One-needle knitter for stockings. C 64. 531

382m Decrow, A. W., Bangor, Me.— Sewing machine treadle. E 63. 531


385 Shutt, Daniel, Philadelphia, Pa.— Machine-needle threaders. C 64. 531

386 Lathrop Anti-frictionate Co., New York, N. Y.— Anti-frictionate sewing machine. D 68. 531

387 Dyson Needle Co., New Britain, Conn.— Spool-stand, and points for knitting machines. C 63. 531

388 Carpenter, Mrs. Mary P., New York, N. Y.— Sewing machine. C 59. 531

389 Haas, Joseph, Philadelphia, Pa.— Ancient knitting machine. C 64. 531

390 Hinkley, Jonas, Norwalk, O.— Carpet and floor sweeper, knitting machines. C 62. 531


393 Taft, J. C., Providence, R. I.— Sewing machines. C 7. 531

394 Hull & Belden Co., Danbury, Conn.— Machine for forming fur hats. C 72, and annex. 531


396 Bickford, Dana, New York, N. Y.— Automatic knitting machines. C 73. 531

397 Willis, Charles E., Oyster Bay, N. Y.— Sewing machine feed. C 65. 531

398 Secor Sewing Machine Co., Bridgeport, Conn.— Family sewing machines. C 59. 531

398a Bole's Universal Feed-machine Co., New York, N. Y.— Sewing machines and attachments. C 42. 531

399 Wardwell Manufacturing Co., St. Louis, Mo.— Family sewing machine. Makes a perfect lock-stitch, direct from two store spools; dispenses with the shuttle, bobbin, and troublesome rewinding of undershader; its needle is self-setting and self-fastening; feeds in any direction; is noiseless, simple, light-running, always in order, and its use saves much valuable time and labor. Ladies should examine it before buying. C 67 and 68. 531

400 National Hat-Pouncing Machine Co., New York, N. Y.— Machinery to shear the surface of fur and wool hats. C 70. 531

401 Eickmeyer Hat-Blocking Machine Co., New York, N. Y.— Machinery to stretch, block, iron, and sew sweaters into fur and wool hats. C 70. 531


403 Fish, Warren L., Newark, N. J.— Sewing machines. C 46. 531

404 McCloskey, John, Brooklyn, N. Y.— Sewing machines. C 59. 531

404a Howley & Franson, Chicago, Ill.— Knitting machines. C 66. 531

404b Weed Sewing Machine Co., Hartford, Conn.— Sewing machines and samples of work. C 45. 531

404c Remington, E., & Sons, Ilion, N. Y.— Sewing machines; samples of work. C 49. 531


404e Pusey, Jones, & Co., Wilmington, Del.— Morocco glazing machine. D 33. 531

405 Oakley & Keating, New York, N. Y.— Washing machine. E 83. 531

406 Buck, Isaiah D., Connoshocken, Pa.— Suction washing machine. E 77. 531

407 Woods, George, & Co., Cambridgeport, Mass.— Drying process. E 78. 531

408 Lewis, Rufus S., New Hampton, N. H.— Ironer and polisher for laundry use. E 77. 531


410 Calkins Champion Washer Co., Chicago, Ill.— Washing machine. E 77. 531

410a Barnard, A. B., West Fitchburg, Mass.— Mangles. E 78. 531

410b Howland, W. Penn, Auburn, N. Y.— Mangles. E 78. 531

410c Short, S., Cincinnati, O.— Mangle and ironer; blanket washing machine. E 77. 531

410d Pratt, Jas. W., Philadelphia, Pa.— Laundry washer. E 78. 531

411 York Manufacturing Co., York, Pa.— Washing machine. D 78. 531

411a Standard Laundry Machinery Co., Boston, Mass.— Washing, starching and wringing machines. E 77. 531

412 Bing, James, Philadelphia, Pa.— Mangle. E 77. 531

413 Walker, W. B., Boston, Mass.— Machine for pressing garments; smoothing-iron and sad-irons. E 79. 531

414 Briggs, Nicholas A., Shaker Village, N. H.— Shaker washing machine. E 79. 531

415 Burt & Putnam, Rockville, Conn.— Washer for scouring cloth. E 76. 531


416 Felder, Charles, New York, N. Y.— Phating, pinking, fluting, and crimping machines. C 62. 531


418 American Watch Tool Co., Waltham, Mass.— Watch lathes and attachments, with all modern improvements, as used in the best American watch factories; model and astronomical instrument mak-
Machines and Apparatus for Type Setting, Printing, Stamping, Embossing, and for Making Books, and Paper Working.

424 Howard, George C., 13 1/2 South Eighteenth street, Philadelphia, Pa.—Plate press for steel, copper, or zinc plate burnishers; power machines, ink, wipe, polish, and print twelve per minute. Screw printing, embossing, punching, and cutting press. Perforating or cutting machines for stamps, checks, sheet metal. Rotary and direct acting, heavy punching, cutting, and bending machines for metal. B 31.


441 Child, C. C., Boston, Mass.—Printing presses. F 32.


453 Loag, Samuel, Philadelphia, Pa.—Designs and specimens of color printing from blocks and plates; plate engraved by acid process. E 70.

454 Howell & Bros., Philadelphia, Pa.—Cutting off and rolling machine, hanging up and hardening machines. F 55-56.

455a Waldrum, J. E., New Brunswick, N. J.—Wall paper printing machine and wood roller. E 80.


456 Mann, Wm. H., Philadelphia, Pa.—Steam paging and numbering machine. E 32.

457 c Pusey, Jones, & Co., Wilmington, Del.—Forming cylinder; calender rolls. D 33. 540
457 d Burgess Proof Press Co., Belfast, Me.—Proof press. F 32. 540
457 e Gally, Merritt, New York, N. Y.—Job printing press; magnetic-mechanical perforator. E 28. 540
458 Glove Manufacturing Co., Palmyra, N. Y.—E 28. 540
458 a Printing presses. 540
458 b Paper cutters. 540
459 Mackellar, Smiths & Jordan, Philadelphia, Pa.—Type founding machinery for casting and finishing types, types and printing materials. E 28, 29–38. 541
460 Armstrong, John M., Philadelphia, Pa.—Electrotyped music plates; books and sheet music. E 40. 541
461 Grant, Geo. B., Boston, Mass.—Calculating machines. E 44. 542
462 Bain, John W., 532 Walnut street, Philadelphia, Pa.—Type-writer; supercedes the pen, faster, more uniform than, a piano; children, blind, and aged, print at once. C. O. D., $125. John W. Rain, general agent (to whom all orders must be sent). E 40. 542
463 Pratt, John, Centre, Ala.—Type-writing machine. E 40. 542
464 Standard Laundry Machinery Co., Boston, Mass.—Telegraph copying machine. E 77. 542
465 Page, Wm. H., & Co., Greenville, Conn.—Aw book type, specimen books of wood type. E 46. 542
466 Bruce’s, Geo. Son, & Co., New York, N. Y.—Book of printing types, and cases of samples of printing types. E 5. 542
467 Hoffman & Hoyt, New York, N. Y.—Copying presses. E 40. 542
468 Westcott, C. J., New York, N. Y.—Machine for casting, dressing, and setting type. E 29. 541
469 Brainard, Charles R., Boston, Mass.—“Bank” and copy distributor for printing office. E 40. 542
473 Standard Machinery Co., Mystic River, Conn.—Steam rounding and backing machine, automatic book trimmer, and paper coverer. E 40. 544
474 Semple, Mary H., Lowell, Mass.—Steam cutter for bookbinders’ use. F 33. 544
475 Wm. F. Murphy’s Sons, Philadelphia, Pa.—F 34–36. a Blank-book manufacturing and printing office. 544
476 b Paper-cutting machine. 546
482 Beck, Charles, Philadelphia, Pa.—Machinery for making paper boxes and cutting paper. D 25. 546
483 Child, C., Boston, Mass.—Paper cutter. F 32. 546
484 Cleveland Paper Box Machine Co., Cleveland, O.— Sole manufacturers of machine for making paper boxes; also, cutting press, nicking machine for blanks, and box knives. This machine glues, folds, makes, and discharges the box, having a capacity of fifteen thousand a day. D 25. 546
487 Boomer & Boschert Press Co., Syracuse, N. Y.— Copying press, paper presses, glue press, leather-binding press, cloth-basting press. Packer’s press for tank refuse—power, three hundred tons; standing and bookbinders’ presses, Nos. 0, 1, 2, and 3—power, 30, 80, 120, and 200 tons. Cloth-basting presses—power, 250 tons. Copying press for banks, freight, and post-offices—power, 20 tons. (For presses for cider or hard, see Agricultural Hall, S and T 12.) E 39. 546
488 a Bass, Joseph P., Bangor, Me.—Burnisher for polishing photographs. B 30. 546
488 b Curtis & Mitchell, Boston, Mass.—Paper cutters, self-working printing presses, card cutters, etc. D 24. 546
490 Packer, Charles W., Philadelphia, Pa.—Machines for cutting card board. D 25. 546

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13–15.
Machinery.

Paper-working Machines, Engines, Boilers, etc.

492 Lockwood, W. E. & E. D., 255 South Third Street, Philadelphia, Pa.—Patent automatic envelope machine, which cuts, folds, gums, and counts 120 envelopes a minute. Automatic self-feeding envelope printing machine; capacity 6,000 an hour. Paper collar machine, which cuts, stamps, button-holes, and finishes 30,000 collars a day. Seed-bag envelope machines; envelope cutting press; small Envelope envelope machine. (Section D 3, post 27, centre aisle.) 547
493 Hoole, John R., New York, N. Y.—Perforating machine for checks, stamps, tickets, etc.; paging and numbering machine, for paging blank books and numbering bank notes, checks, coupons, tickets, etc. F 24–26. 547

Motors and Apparatus for the Generation and Transmission of Power.

495 Williamson Bros., Philadelphia, Pa.—Portable and stationary hoisting engines, with spur and frictional gearing. D 79, and boiler house 4. 550
496 Tupper, Lorenzo B., New York, N. Y.—Furnace grate bars. D 76. 550
497 Connery, James W., Philadelphia, Pa.—Concave cahking for steam boilers, iron ships, and metallic vessels. D 76. 550
499 Frick & Co., Waynesborough, Pa.—Portable farm and stationary engines. D 75, and boiler house 4. 550
500 Bigelow, H. B., & Co., New Haven, Conn.—Combined and independent engines. 550
501 Steam Generator Manufacturing Co. of Pennsylvania, Philadelphia, Pa.—Sectional boiler. (Boiler house 4.) 550
502 American Engine Co., Jersey City, N. J.—Engines and threshers locomotive. D 75. 550
503 Shaw, Thomas, 915 Ridgeavenue, Philadelphia, Pa.—Steam and vacuum gauges, test pumps, air-chamber feeder, hydraulic valves and gauges. Cushion-seated valves, exhaust nozzles, planer bar. Gauge is free of springs, and measures by weight alone; has been adopted by United States government, and principal establishments as standard of pressure. Test pumps are of superior make and finish, adapted to pressure in small quantities, to every pressure desired. Air-chamber feeder, a useful invention; utilizes vibrations of water in pump to supply air-chambers with air. Hydraulic stop-valve; controls the highest pressure without leakage; has threaded seat. Cushion-seated valve: uses face of valve as dash-pot; prevents pounding. Exhaust nozzle absorbs noise of exhaust steam, and arrests sparks in locomotives. Planetary doubles the capacity of iron planers; reaches through work. D 69. 559
504 Reed, John A., New York, N. Y.—Papering corrugated sectional boilers. E 77. 559
505 Steigel, Leopold, Cincinnati, O.—Meat-chopping machines, with engine attachments, horizontal engine. D 78. 559
506 Gent, Samuel S., New York, N. Y.—Shaking grate bars for steam boilers, etc. E 75. 559
507 Harrison Boiler Works, Philadelphia, Pa.—Sectional safety steam boiler. First class bronze medal, London, 1862; first class bronze medal, New York, 1869; gold and silver Rumford medals, Boston, 1874; first class silver medal, Philadelphia 1874. Section D 77, and boiler house No. 4. 559
508 Babcock & Wilcox, New York, N. Y.—Sectional safety steam boiler. (Boiler house 3.) 550
509 Meissner, Julius H., Philadelphia, Pa.—Steam, fans and furnaces. F 76. 559
510 Shore Bros., Philadelphia, Pa.—Boiler feed, bell pumps, steam pump. E 75. 559
511 Houghton, R. J., New York, N. Y.—Boiler and tube compound for removing and preventing scale; specimens of scale. F 76. 559
512 Snyder, Ward B., New York, N. Y.—Steam engine, Snyder's Little Giant steam engine, one-horse power complete, with tubular boiler, $150; two-horse power, $300; three-horse power, $500. Send for circular. Factory, 84 Fulton street, N. Y. B 71. 559
513 Howard Safety Boiler Manufacturing Co., Boston, Mass.—Safety sectional wrought-iron nine-inch tube boiler. (Boiler house 3.) 550
514 Ames Iron Works, Oswego, N. Y.—Horizontal steam engines. B 74, and boiler house. 550
516 Erie City Iron Works, Erie, Pa.—Horizontal tubular boiler, portable engines, farm engine with vertical boiler and horizontal engine. C 76. 550
516 Springfield Iron Works, Springfield, Mo.—Turbin boiler, D 63. 550
517 Ryder Reciprocal Grate Association, Taunton, Mass.—Reciprocal grates, Books on grates, combustion, and results of tests, sent free. D 68. 550
518 Lowe & Watson, Bridgeport, Conn.—Steam boiler. Lowe's patent steam boiler, made entirely of steel plates; proved by eight years' use, under all conditions, to be safe, durable, reliable, and very economical of fuel. Great and uniform steaming capacity. Process of combustion (smokeless with any fuel) obtained in construction and setting. (Boiler house 3.) 550
519 Chalmers Spence Co., Philadelphia, Pa.—Composition boiler and steam pipe covering; tube cleaner. D 78. 550
520 Shuster, John T., Philadelphia, Pa.—Boiler and pipe covering. D 78. 550

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.

525 d Winans, H. N., New York, N. Y. —Boiler powder, compounds and liquids; anti-incrementors; boiler cleaner. D 78.


527 a Hanmore, Jno. W., Newburgh, N. Y. —Comb felting, blast pipes, vacuum pans, etc. B 71.

527 d McConn, John,Philadelphia, Pa. —Radiators, for steam or water, and boiler. E 76.

528 Miller, Charles B., Philadelphia, Pa. —Steam generator. (Boiler house 4.)

529 Farnenich, J., Buffalo, N. Y. —Steam boiler. (Boiler house 4.)

530 Ellis, Charles R., New York, N. Y. —Hot-water apparatus for heating buildings. D 75.


532 American Road Steamer Co., Phila-delphia, Pa.—Road steamer. E 80.

533 Hartford Steam Boiler Inspection & Insurance Co., Hartford, Conn.—Incrustation, scale, and defective iron from steam boilers, fragments of exploded boilers. D 76.

534 Colt’s Patent Fire Arms Manufacturing Co., Hartford, Conn.—Steam engines, steam cylinders in boiler, interchangeable parts. D 74, and boiler house 4, and quarts mild.

535 Sample, McElroy, & Co., Keokuk, Iowa.—Semi-portable steam engine and boiler. This firm makes a specialty of manufacturing these engines, and are prepared to fill orders promptly, if addressed as above. D 77.

536 Payne, B. W., & Sons, Corning, N. Y.—Vertical engines with safety boilers; 3 to 4 horse power; impossible to explode; price, $50, complete, except smoke stack. (Boiler house 4.)

537 Vail, S. S., Keokuk, Iowa.—Reverse steam boiler, with automatic fuel feed. To remove scales, reverse ends. Convenient to clean or repair. Rights for sale. C 77.


540 Peirce Rotary Tubular Boiler Co., New York, N. Y.—Rotary tubular steam boiler. (Boiler house 5.)

541 Smith, Charles D., Boston, Mass.—Steam-tubular boiler, steam boiler furnace and grate bars; glass water gauge. C, and boiler house 3.

542 Gillis & Geoghegan, New York, N. Y.—Boiler feeder and steam trap. (Boiler house 6.)

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13—15.
DEPT. V.—MACHINERY.

Engines, Boilers, Water-Wheels.

543 Harrold, George W., Rochester, N. Y.—Automatic steam trap. D 64. 550

544 Johns, H. W., New York, N. Y.—F 64.  
   a Asbestos roofing, asbestos cement felt, lined hair felt. 298  
   b Asbestos steam packing. 555

545 Skinner & Wood, Erie, Pa.—C 78.  
   a Horizontal return flue boiler; variable grate surface for wood or coal. 550  
   b Portable engine, stop motion governor, self-oiling connecting rod, combined check, stop, and relief valve. 552

545a Starr, William M., Tyler, Texas. —D 78.  
   a Water wheel, car starter, glass cutter, etc. 551  
   b Road engine. 553

   a Injectors. 550  
   b Three cylinder engines. 552  
   c Shafting, hangers, couplings. 553

547 Haworth, James, Philadelphia, Pa.—Turbines, driven by hydrant-water power. D 73. 551

548 Lane Manufacturing Co., Montpelier, Vt.—Monitor turbine water-wheel. Sets in open flume or in a closed curb; perfectly balanced cylindrical gate; water applied upon the entire periphery of wheel. A 43-46. 551

549 Grier, W. W., Hulton, Pa.—Hydraulic ram sentinel. D 79. 551

550 Stout, Mills, & Temple, Dayton, O.—Turbine water-wheels with and without flumes. Thousands of these wheels are in successful operation, driving all kinds of machinery. They have been introduced into nearly every civilized country in the world. They produce a very high percentage of power, are compact and durable. Call at Machinery Hall, and get descriptive catalogue, or address proprietors as above. D 80. 551


552 Dexter Spring Co., Hulton, Pa.—Carriage spring, in connection with fifth wheel. D 79. 551


554 Chase Turbine Manufacturing Co., Orange, Mass.—Turbine wheels. (Pump annex.) 551

555 Wolf, Abraham N., Allentown, Pa.—Turbine water-wheel and flume. (Pump annex.) 551

556 Busby, Albert G., Philadelphia, Pa.—Water motor, from hydrant pressure; model of centripetal railway. D 79. 551


558 Valentine, Wm. J., Fort Edward, N. Y.—Turbines, with and without register gates; hydraulic motor. D 79. 551

559 Wright & Rogers, Minneapolis, Minn.—Stationary, portable, locomotive, and marine steam engine. D 79. 551


561 Wright, James, Minneapolis, Minn.—Cylinder meter motor. D 79. 551

562 Springfield Iron Works, Springfield, Mo.—Turbine wheel. D 80. 551

563 Bing, James, Philadelphia, Pa.—Turbine water-wheel. E 77. 551

564 Poole & Hunt, Baltimore, Md.—Turbine water-wheels and gearing. D 79. 551

565 Cox & Sons, Bridgeton, N. J.—Turbine water-wheels. C 32. 551

566 York Manufacturing Co., York, Pa.—Turbine water-wheels. D 78. 551

567 National Water-Wheel Co., Bristol, Conn.—Turbine water-wheels, D 77. 551

568 Barber & Son, Allentown, Pa.—Globe flume, with turbine wheel. D 77. 551

569 Brown, Son, & Co., Brooklyn, Pa.—Turbine water-wheels. D 78. 551

570 Cope, E. T., & Sons, West Chester, Pa.—Turbine water-wheel, with water-tight gates opening separately. (Pump annex.) 551

571 Bolinger, O. J., York, Pa.—Turbine water-wheel. (Pump annex.) 551

572 Risdon, T. H., & Co.,Mount Holly, N. J.—Turbine water-wheel. Many sizes of this wheel, at tests by different engineers, and under different conditions, have given over 90 per cent. of the power of the water consumed. (Pump annex.) 551

573 Walton, Silas, Moorestown, N. J.—Turbine water-wheel. (Pump annex.) 551


575 Tait, Thomas, Rochester, N. Y.—Water-wheel. The guides form wedge-shaped openings under all degrees, cutting water off at periphery of wheel; counterpoising under any hydrostatic pressure. Surface joints prevent water escapement between curb and wheel. (Pump annex.) 551

576 Knowlton & Dolan, Logansport, Ind.—"Little Giant" turbine water-wheel, noted for economy in the use of water, and durability. (Pump annex.) 551

576a Howobin, W. T., Cohoes, N. Y.—Water-wheel governor; rollers. D 78. 551

576b Burnham, N. F., York, Pa.—Turbine water-wheel. (Pump annex.) 551

576c Capron Water-Wheel Manufacturing Co., Hudson, N. Y.—Water-wheels. D 77. 551


577 Foisom, Andrew, Barrington, R. I.—Wheel constructed to operate in the direction of wind or water. (Pump annex.) 551

578 Peirce, Milton P., Wenonah, N. J.  
   a Water-wheel, C 80. 551  
   b Portable steam engine. D 78. 551

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.
579 Abendroth & Root Manufacturing Co., 56 Liberty street, New York, N. Y.—Wrought iron sectional safety boiler. These boilers were introduced to the public in 1867. There is now over forty-thousand horse-power in use in all parts of the world. (Boiler house 3.)

580 Fields, Wm., Wilmington, Del.—Motor-power model-dumping coal wagon. B 79.

581 Bolles, J. N., Baltimore, Md.—Steam engine. (Outside.)

582 Cobb, Z., & Sons, Wilmington, Del.—Water engine for sewing machines, etc. E 69.


585 Lobdell Car Wheel Co., Wilmington, Del.—Portable steam engine and boiler. E 69.


593 Wardwell, George J., Rutland, Vt.—Stationary and portable valveless steam engines. B 77.


595 Hawley, Henry Q., Albany, N. Y.—C 75.


580 Carlisle, Mason, & Co., Chicago, Ill.—Chain elevating machinery. B 76.

599 Shapley & Wells, Binghamton, N. Y.—Steam engines. D 80, and Boiler house 4.

599a Russell, William D., New York, N. Y.—Engines. (Outside of building.)


599c Baxter Steam Engine Co., New York, N. Y.—Steam engines; in use in Gillinder & Sons' glass-house and in Nevada State building.

599d Wisner & Strong, Pittston, Pa.—Horizontal engine. B 71.

599e Forbes, J. W., Chicago, Ill.—Quartz battery for crushing quartz. A 73.


603 Naylor, Jacob, Philadelphia, Pa.—Engines, horizontal and vertical boiler feed pump, and combined feed pump and heater. D 71-73.


608 Griffith & Wedge, Zanesville, Ohio.—Vertical portable engine, and centrifugal drying machine. C 74 and D 77.

609 Klein, Chas. C., Philadelphia, Pa.—Eccentric piston engine. C 79.


611 Hartford Foundry & Machine Co., Hartford, Conn.—Automatic and variable cut-off non-condensing steam engine. These engines, formerly known as the "Woodruff & Beach" iron works engine, have acquired a very wide reputation on account of their excellent performances. They are a type of steam motor, combining the prime essentials of solidity, durability, and great economy. There are now in daily use over three hundred, practically demonstrating their merits. (Annex 7.)


Engines and Appliances, Belting, Shafting, etc.

6136 Allis, Edward P. & Co., Milwau-
kee, Wis.—Steam engine. (See mill. 410-11.) 552
614 Erie City Iron Works, Erie, Pa.— Stationary engine, horizontal engine. C 76. 552
615 Otis Bros. & Co., 348 Broadway, New York, N. Y.—Furnace engine for hoisting purposes. The balance hoisting engine, is adapted for operating two platforms; store hoisting engines, small size, lifting power and gear combinations, lifting power with screw combinations, for use in factories, mills, etc., and safety platforms for freight purposes, with corner and side upright; tiercing truck for piling up heavy boxes or packages. B 36. 552
616 Bastet Magnetic Engine Co., Philadelphi a, Pa.—Magnetic engines for sewing machines, organs, lathes, pumps, etc. B 75. 552
618 Niagara Steam Pump Works, Buffalo, N. Y.—Miniature engine. Direct acting piston, pressure, and fire pump, direct acting blunger mining pump, crank pump and engine; direct acting organ engine; direct acting agitator and oil pump; direct acting blunger on beams in saw mill, looted Centennial Commission. (Pump anntr.) 552
620 Howard, George C., 13 1/2 South Fifteenth street, Philadelphia, Pa.—Patent belt gearing for operating machines of variable speed, sewing machines, etc. B 31. 553
621a Powers, W. P., La Crosse, Wis.—Belting. A and B, See mill. 553
621b Stow & Burnham, 500 North Fifteenth street, Philadelphia, Pa.—Flexible cable for transmitting power in one direction, also tools and machines operated there with; drills workable wherever ratchet drill is used; flue cutter for revolving locomotive flues. D 68. 553
621c Wahl, Albert, Philadelphia, Pa.—Health apparatus; back straightener and chest expander. E 75. 553
622 Eckfeldt & Richie, Philadelphia, Pa.—Oak-tanned leather butts, belting and fire hose. D 65. 553
623 Page Belting Co., Concord, N. H.—Leather belting and lace leather; driving belt (in use). D 64. 553
624 Roebling's Sons, John A., & Co., Trenton, N. J.—Wire rope, rigging, rope fastenings, bridge cables, rods, telegraph wire, etc. C 64. 553
625 Alexander Bros., 410 & 412 North Third street, Philadelphia, Pa.—Oak-tanned leather belting, and frame of specimens; also patent double belt-driving shaft No. 3, the construction of which greatly increases the effectiveness and durability of belts from 16 to 48 inches or wider. Descriptive circulars furnished. D 64. 553
626 Cresson, Geo. V., Philadelphia, Pa.—Pulleys, hangers, couplings, wall boxes, pillow blocks, etc. C 71-73. 553
627 Heim, Anton, New York, N. Y.—Leather belting, hydraulic packing leather, tymanum skins, lace leather, picker leather, elastic pulley; driving belt (in use). D 65. 553
628 Branch, Crookes, & Co., St. Louis, Mo.—Adjustable counter shaft hanger and belt tightener, for intermediate motion with those pulleys. (See mill.) 553
629 Rorer, Thomas L., Philadelphia, Pa.—Combined leather and canvas belting. D 65. 553
630 American Tubular Iron & Steel Association, Philadelphia, Pa.—Tubular iron and steel car axles, shafting, columns, bars. C 70-73. 553
631 Pennsylvania Combined Iron & Steel Association, Philadelphia, Pa.—Combined iron and steel rails, beams, girders, shafting plates, horse shoe and merchant bars. C 70-73. 553
632 Jones & Laughlins, American Iron Works, Pittsburg, Pa.—Bar, sheet, and plate iron, T-trails, shafting, hangers, pulleys, couplings. Manufacturers of harp hoop, sheet, and plate iron; patent cold-rolled shafting; hangers, pulleys, couplings, T-trails, street rails, nails, and spikes. C 69 and 70. 553
633 Schieren, Charles A., New York, N. Y.—Oak-tanned leather belting; double belt (in use). D 64. 553
634 Charlton, John, Philadelphia, Pa.—Internal clamp coupling for shafting, main driving pulley, with internal clamp hub. C 71 and 73. 553
635 Hoyt, J. B., & Co., New York, N. Y.—Oak-tanned sole leather and belting. D 66. 553
636 Royer, H., San Francisco, Cal.—Fulled rawhide, belting, lacing, rope. D 66. 553
638 Pusey, Jones, & Co., Wilmington, Del. C 74. 553
a Expanding pulleys. 553
b Temper cut-offs and governors for steam engines. 555
639 Jewell, P., & Sons, Hartford, Conn.—Leather belting, metallic-tipped belt lacing. D 67. 553
640 Mason, Volney W., & Co., Providence, R. I.—Friction clutches and pulleys, adjustable hangers; also, friction clutch pulleys, driving main lines of shafting in pump annex, and in Machinery Hall adjoining, near Corliss engine. D 66 and Pump anntr. 553
641 Poole & Hunt, Baltimore, Md.—Shafting and apparatus. C 79. 553
641a Eccles, James, Philadelphia, Pa.—Shaft coupling. D 60. 553
642 Gates, Josiah, & Sons, Lowell, Mass.—Leather belting, hose, lacing, and wound apron leather and fire supplies. C 78. 553
643 Burgess & Son, Providence, R. I.—Leather belting, lace leather, picker leather, loom pickers. C 79. 553
644 Cook, A. B., & Co., Erie, Pa.—Adjustable dead pulleys, wooden belt pulleys, and taper sleeve pulleys. D 72. 553

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.
HARRISON
Boiler Works,
2550 Gray's Ferry Road, Phila.
(TAKE PINE ST. CARS.)
The following Medals have been awarded to
this boiler:
By the World's Fair, London, First-class Bronze, 1852.
American Institute Fair, N. Y., " 1869.
Great Gold and Silver Rumford Medals, 1871.
Franklin Institute Exhibition, First-class Silver, 1874.
Descriptive Pamphlets, Drawings, &c. furnished upon application to the Works.
These Boilers may be seen in operation in Boiler-house No. 4 of Machinery Hall.

HASELTINE GALLERIES,
1125 and 1127 Chestnut St., Philadelphia.

W.A. DROWN & CO.
SUPIOR
UMBRELLAS AND
PARASOLS.
Manufactory in Philadelphia.
WAREROOMS:
246 Market Street,
PHILADELPHIA.
498 & 500 Broadway,
NEW YORK.
Baldwin Locomotive Works,
Burnham, Parry, Williams & Co., Philadelphia.

All work
Accurately fitted
To gauges
And
Thoroughly interchangeable

Locomotive Engines,
Adapted to every variety of service, including
Narrow gauge Locomotives, Mine Locomotives, Steam Street Cars,
Etc., Etc.
Works on Broad St., from Pennsylvania Ave. to Spring Garden St.
Motors and Appliances.

645 Fowler, F. G., Bridgeport, Conn.—Steam boiler. B 72. 554
645d Neale & Levy, Philadelphia, Pa.—Hot water heating system. C 77. 554
645d Lane Bros., Millbrook, N. Y.—Motor for driving light machinery. C 77. 554
645e Rhett, Roland, Baltimore, Md.—Spring motor for sewing machines. C 71. 554
645e Harper, William, Jr., Philadelphia, Pa.—Screw propeller. C 76. 554
646 Brown, Edward, Philadelphia, Pa.—Pyrometers for blast furnaces, bakers' ovens, tempering steel, etc.; revolution indicators. D 68. 555
647 Woodruff, Joseph, Rahway, N. J.—Balanced steam damper regulator. D 76. 555
648 Wickersham & Bro., Philadelphia, Pa.—Oil feeder, brass and glass oil cups. D 76. 555
649 Pancoast & Maule, Philadelphia, Pa.—Steam and hot water house heating apparatus, vertical tube radiators, pipe connections. D 75. 559
650 New York Belting & Packing Co., New York, N. Y.—Rubber belting, packing, hose, tubing, car springs, vulcanite eyewheels, etc. D 75. 559
650a Ashcroft, E. H., Boston, Mass.—Steam and vacuum gauges; safety valves; testing machine. D 72-73. 559
650b Allis, E. P., & Co., Milwaukee, Wis.—Boiler feed regulator. (On boiler in Campbell Press Building.)
651 Parshall, C. H., Detroit, Mich.—Lubricator. D 71. 555
652 Belford, H., & Co., Philadelphia, Pa.—Brass and iron valves, cocks, steam gauges, whistles, gongs, steam heating apparatus, etc. D 74. 555
652a Rue Manufacturing Co., Philadelphia, Pa.—Boiler feeders; injectors. (Boiler house 4, and Pump annex, Sec. 4, Col. 13.)
653 Allen's Sons, Josiah J., Philadelphia, Pa.—Anti-lamina, for preventing and removing scale from boilers. D 76. 555
654 Stillwell & Bierce Manufacturing Co., Dayton, O.—Liime extracting heater and filter combined. Removes all impurities from feed-water for steam boilers; indispensable to an economical use of steam. D 80. 555
655 Richards, Jackson, Philadelphia, Pa.—Piston packings. D 69. 555
656 Waters, C., & Co., Boston, Mass.—Steam engine governors. D 74. 555
657 Buffalo Steam Gauge & Lantern Co., Buffalo, N. Y.—D 72. 555
658 Lehman, B. E., Bethlehem, Pa.—Gauges cocks, water gauges, oil cups, gate valves. D 70. 555
659 American Oil Cabinet Co., Boston, Mass.—Safety oil cabinets. D 72. 555
660 Vulcanized Fibre Co., Wilmington, Del.—Fish-bolt and carriage washers. D 65. 555
660e McShane, Henry, & Co., Baltimore, Md.—Bells. (Northeast tower.)
660f Christoffel, T. B., Williamsburg, N. Y.—Tube cleaners and scrapers. D 66. 555
661 Utica Steam Gauge Co., Utica, N. Y.—Gauges, marine clocks, revolution counters, gauge testing apparatus. D 73. 555
662 Cleveland Steam Gauge Co., Cleveland, O.—Gauges, spring balances, test pump and gauge. D 72. 555
663 Aultman, Miller, & Co., Akron, O.—Self-registering dynamometer. D 68. 555
664 Davis & DuBois, Philadelphia, Pa.—Tallow cups for engines, etc. D 68. 555
666 Union Water Meter Co., Worcester, Mass.—Water meters, steam gauge, governor valves, steam and water regulators. D 67. 555
667 Kline, Aaron K., Sommerville, N. J.—Governor for steam engines. D 69. 555
669b Hetzel, Herman V., Philadelphia, Pa.—Speed indicator. B 73. 555
669c Chard & Howe, New York, N. Y.—Lubricating compound and cup. A 47. 555
669d Canfield Manufacturing Co., Philadelphia, Pa.—Steam and hydraulic steam-giving-box packing, self-lubricating hempen fibre, gum core. D 68. 555
669e Haurey, Henry F., Newark, N. J.—Flue and tube brushes. D 69. 555
669f Jenkins, Wm. H., & Co., Philadelphia, Pa.—Boiler feeder, steam trap, damper regulator, low water alarm, safety valve, steam gauges. D 77. 555
670 Bibb, B. C., & Son, Baltimore, Md.—Fireplace heater. D 72. 555
671 Post & Co., Cincinnati, O.—Steam gauges. D 71. 555
672 Greenwich Machine Works, Greenwich, N. Y.—Horseshoe corking vise and bolt heading machine. A 37. 555
673 Tracy, Eliashib, Philadelphia, Pa.—Injector for boilers. D 68. 555
674 Clark, Rufus F., Philadelphia, Pa.—Cylinder oller. E 69. 555
675 Latthrop Anti-friction Co., New York, N. Y.—Carbon composition machinery lubricator. D 68. 555
676 Asbestos Patent Fibre Co. (limited), Philadelphia, Pa.—Utilized fibre, paper, board; steam joints and packing, non-conducting pipe covering. D 69. 555

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
Motors and Appliances. Pumps.

677 Davis, J. B., Hartford, Conn.—Feed water heater and purifier. D 60. 555
678 Jasper, George F., Freeburg, Ill.—Heater and filter. D 78. 555
680 Brown & Fergus, Philadelphia, Pa.—Steam injector for steam boilers. (In building.) D 68. 555
680 Rotative Art Works, Boston, Mass.—Plates and castings of bronze. C 71. 555
680 Jamison, Samuel S., Saltsburg, Pa.—Steam water injector, car replacerr, chimney top. B 64. 555
682 Willoughby, James D., Philadelphia, Pa.—Governor cut-off for steam engines. D 68 and 51, and Tump annex. 555
683 Woodruff, A. H., Lansing, Iowa.—Reverse and expansion gear for locomotives and propeller engines. D 69. 555
685 Newell, Wm. H., Philadelphia, Pa.—Injector valves. (In building.) 555
686 Allen, Stillman B., Boston, Mass.—Governor for steam engines. D 72. 555
686 Pickering, T. R., Portland, Conn.—Steam engine governors. C 74. 555
687 Osgood, Josiah A., Boston, Mass.—Crank pin oiler, metallic spring packing, etc. D 69. 555
689 Edison's Steam Recording Gauge Manufacturing Co., 91 Liberty street, New York, N. Y.—Galvanometers, revolution counters, Sole makers of "Edison's Patent Recording Gauges" for steam or water, with or without the "time" attachment, or the "electrical alarm"; also "revolution counters," and "30-inch gauges." Reliable as "standards of pressure." Send for circulars. D 67. 555
690 Schutte & Goehring, Philadelphia, Pa.—Steam jet machinery, furnace blowers, ventilators, injectors, syphons, gas exhausters, condensers, etc. (Tump annex.) 555
690a Leonard, T. M., New York, N. Y.—Oil cup and dynamometer. B 52. 555
690 Miller, W. P., New York, N. Y.—Lubricant. D 52. 555
690 Pratt & Whitney Co., Hartford, Conn.—Automatic boiler-feeder and return steam trap. (In use in boiler houses.) 555
690 Smith, Levi F., Philadelphia, Pa.—Low water indicators, lubricators, gauge, steam trap, blower, comb-wrench, cacheat, etc. D 78. 555
691 Lonergan & McBride, Philadelphia, Pa.—Oil cups and lubricators. D 66. 555
692 Silver Lake Co., Boston, Mass.—Self-lubricating steam packing. D 68. 555
693 Dart, Edward & Co., New York, N. Y.—Rotary pumps and engines, marine governors, cotton gins, presses, duplex plungers crank steam pump. (Tump annex.) 555
695 Silsby Manufacturing Co., Seneca Falls, N. Y.—Rotary steam pump. This firm also has two rotary steam fire engines and a hose cart on the Exhibition grounds, in charge of the Centennial fire brigade, illustrated and descriptive circulars—English, Spanish, French, and German—may be had on application. A 4. 550
696 Valley Machine Co., Easthampton, Mass.—Bucket-plunger steam pumps. (Tump annex.) 550
697 Kelly, Wm. E., New Brunswick, N. J.—Steam pumps. (Tump annex and Boiler house 3.) 550
698 Aquometer Steam Pump Co., Philadelphia, Pa.—Steam pumps. (Tump annex.) 550
699 Hubbard & Aller, Brooklyn, N. Y.—Steam pumps. (Tump annex.) 550
700a Purvis, Edward, New York, N. Y.—Automatic steam valve. (Tump annex & it.) 550
700b Nichols, Harris & Walker, New London, Conn.—Acid pump and syphon. (Tump annex 2-12.) 550
700c Craig & Brevoort, New York, N. Y.—Condenser for steam pumps, steam engines, etc. (Tump annex 2-12.) 550
700d Hyneman, Isaac, Philadelphia, Pa.—Odorless excavating pump. (Tump annex 1-5.) 550
700e Le Page, W. N., Boston, Mass.—Force pumps. (Tump annex 2-12.) 550
700f Wood, Joseph, Red Bank, N. J.—Steam pump. E 69. 550
700g Hubbard, S. D., Pittsburg, Pa.—Steam pump. (Boiler house 2.) 550
700h Young, William, Easton, Pa.—Young's patent wrought iron, rubber-coated, brass cylinder lift and force pumps for deep wells and cisterns. Being made principally of wrought iron, are strong, light and durable. The cylinder and all the working parts are made of brass, works smooth, very durable, and will not rust the water as iron would. (Tump annex 7-5.) 550
700i Wiswall, H. M., Boston, Mass.—Rotary and oscillating pumps. (Tump annex.) 550
702 Norwalk Iron Works Co., South Norwalk, Conn.—Direct acting non-expansive steam pumps. C 76. 550

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.
Pumps, Compressed-Air Engines.

a Rotary pumps and engine. (Pump annex) 560
b Steam fire engine. (Pump annex) 560

704 Rumsey & Co. (limited), Seneca Falls, N. Y.—Pumps, hydraulic rams. B 45, and Pump annex. 560

705 Carr, Adam, New York, N. Y.—Direct action steam pumps; compound direct action pump; will save sixty per cent of fuel and boilers; positive circulating steam radiators; noiseless friction hoisting engine; condensers for steam engines and pumps. (Pump annex and boiler house 4.) 560

706 Douglas, W. & B., Middletown, Conn.—Pumps, hydraulic rams, pump chain, garden engines, curbs, chain pump fixtures; grindstone frame. (Pump annex.) 560

707 Vail & Wallace, Keokuk, Iowa.—Water elevator. (Pump annex.) 560


709 Hooker, Wm. D., Dedham, Mass.—Direct acting steam pumps. (Pump annex.) 560

710 Chapman, Henry, Philadelphia, Pa.—Centrifugal hydro-extractor, for brewers' grains, etc. Klin model. (Pump annex 15.) 560

710a Waring, J. B., Stamford, Conn.—Steam pump. (Pump annex 12.) 560

710b Toledo Pump Co., Toledo, O.—Wood pumps. (Pump annex 5.) 563

710c Hathorn, Davis, Campbell, & Davis, New York, N. Y.—Pump engine. C 3 and 4, and Pump annex 27. 560

710d Heold, Sisco & Co., Baldwinsville, N. Y.—Steam centrifugal pump and centrifugal pumps driven by belts. (Pump annex.) 560

711 Follensbee, Geo. S., Lewiston, Me.—Double propeller pump. (Pump annex.) 560

712 Grosvenor, J. A., Jersey City, N. J.—Pulsometer steam pump, operated by pressure of steam on surface of water. (Pump annex.) 560

713 Biggs, B. F., & Wells, La Fayette, Ind.—Wooden lifting and suction pump. (Pump annex.) 560

713a Ferrell & Jones, Philadelphia, Pa.—Combined steam pump and engine; centrifugal pump and yoke steam pump. (Pump annex 9.) 560

713b Matthewman & Johnson Pump Co., New Haven, Conn.—Excavating pump with deodorizing apparatus. (Pump annex 12.) 560

713c Blake, George F., Manufacturing Co., Boston, Mass.—Steam pump. (Pump annex 8-p.) 560

713d Eagle Odorless Excavating Co., Philadelphia, Pa.—Odorless excavator. (Pump annex.) 560

713e Roberts, E. A. L., Titusville, Pa.—Sand pump. C 78. 560

713f Crane Bros. Manufacturing Co., Chicago, Ill. (Pump annex 7.)
a Steam elevators and pumps. 560
b Hoisting engines and steam radiators. 563

714 King, Charles W., Boston, Mass.—Force pumps and house pumps with removable cylinders. (Pump annex.) 560

715 White, Clark, & Co., Baldwinsville, N. Y.—Centrifugal pump. (Pump annex.) 560

716 Poole & Hunt, Baltimore, Md.—Rotary water heater and pump. C 79. 560

717 Willoughby, James D., Philadelphia, Pa.—Pulseless pulsometer. D 51 and 68, and Pump annex. 560


719 Gawthrop, A., & Son, Wilmington, Del.—Mass models of hydraulic rams with regulators, in operation. (Pump annex.) 560

720 Huffer, Abraham, Hagerstown, Md.—Automatic steam vacuum pump. (Pump annex.) 560

721 Pease, F. S., Buffalo, N. Y.—Pneumatic pump. (Pump annex.) 560

722 Bagley & Sewall, Watertown, N. Y.—Rotary metal force pump with self-packing joints, without stuffing-boxes or valves; pressure on working parts equalized; absolutely positive in action; volume of discharge proportional to power consumed and speed applied. Specially adapted to use of paper makers, brewers, tanners, etc., and for fire protection. (Pump annex.) 560

724 Niagara Steam Pump Works, Brooklyn, N. Y.—Direct acting steam pump and crank pump. (Pump annex.) 560

725 Hydrostatic & Hydraulic Co., Philadelphia, Pa.—Shaw's compound propeller pumps for quarries, mines, etc. Propeller wheels secured to rotating shaft lifts from one thousand to one hundred thousand gallons per minute any height; has no valves, and is not liable to obstruction. Office, at Shaw's Engineering Depot, Ridge avenue, Philadelphia, Pa. (Pump annex.) 560

726 Conde & Co., Philadelphia, Pa.—Steam pumping engine. (Pump annex.) 560

727 Nye, Gourlay, & Co., Chicago, III.—Steam vacuum pump. (Pump annex.) 560

730 Slough & Mintzer, Philadelphia, Pa.—(Pump annex.)
a Force and bilge hand pumps. 560
b Fire engines. 564

731 Albright & Stroh, Mauch Chunk, Pa.—B 19.
   a Model of duplex steam pump. 560
   b Fire-engines. 560

732 Allison & Bannan, Port Carbon, Pa.—Improved air compressing engines. Correspondence and orders solicited. A 52. 561


732c Union Rock Drill Co., New York,
a Air compressor. 561
b Hose couplings for rock drills. 564

733 Coffin & Woodward, Boston, Mass.—Main and bilge pump for vessels, force pump. D 39. 562

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
Hydraulic and Pneumatic Machines, Elevators.

734 Roots, P. H. & F. M., Connersville, Ind.—Rotary pressure blowers, hand blowers, gas exhausters. Patentees and manufacturers of positive blast rotary blowers, and gas exhausters, adapted to all purposes for which blast or exhaust are required; also of improved Bye passes and gas valves. (Pump annex.) 562

735a Patterson, C. R., Pittston, Pa.—Suction and blast fan. B. 61. 562

736 Gould’s Manufacturing Co., Seneca Falls, N. Y., New York office 15 Park Place.—Iron and brass force and lift pumps, rotary pumps, ship, railroad, mine, and quarry pumps, hydraulic rams, garden and fire engines. A very elaborate exhibit. (Pump annex 8 and 10.) 564

737 Ferris & Miles, Philadelphia, Pa.—Blowing engine, steam hammer, and steam drop. (Annex 1.) 562

738 Wilbraham, T., & Bros., Philadelphia, Pa.—Pressure blowers and steam engines, gas exhausters and steam engines. (Pump annex.) 562

739 Morris Co., I. P., Philadelphia, Pa.—Blowing engine—ten thousand seven hundred and forty cubic feet of air per minute. B. 48. 562


741 Murphy, Francis, Streator, Ill.—Ventilating apparatus for mines, tunnels, steamboats, etc. (Pump annex.) 562

742 Diston, Thomas S., Philadelphia, Pa.—Rotary pressure blower. (Pump annex.) 562

743 Sturtevant, B. F., Boston, Mass.—Pressure and fan blower. Pump annex 10-9. 562

744 Chase, F. D., Boston, Mass.—Patient ventilating ship deck iron, in brass composition, and galvanized iron; intended for vessel decks, steam car roads, etc. Seven sizes; flies, from four to nine inches in diameter. Patented, June 23, 1863, improved 1875. (Pump annex.) 562

745 Hemmer, P. L., Lebanon, Pa.—Blowing engine. B. 60. 562

746 Exeter Machine Works, Boston, Mass.—Pressure blowers, fan blowers, and exhaust fans. (Pump annex.) 562

746a Boston Piston Meter Co., Boston, Mass.—Fluid meter. (Pump annex 2-3.) 563

747 Howard, George C., 13½ South Eighteenth street, Philadelphia, Pa.—Hoisting machine; screw gear runs in a bath of oil; patent stop brake, belt shifter, pulleys self-rolling, on independent bearings, car for any location. Elevators made with a single or double engines. B. 51. 563

748 Gunpowder Pile Driver Co., Philadelphia, Pa.—Pile driver. (Outside of building.) 563

749 Ruoff, William, Philadelphia, Pa.—Double and single-gear jack screws, for moving and raising stone and all heavy weights. (Pump annex.) 563


751 Eccles, James, Philadelphia, Pa.—Quadruple screw-power press, pivot centre for drawbridge, etc. D. 60. 563


751b Pennypacker, Matthias, Philadelphia, Pa.—Hand hoisting machine. (Pump annex 11.) 563

752 Harrison, W. H., Philadelphia, Pa.—Double-acting two-valve pump and hydraulic elevator. (Pump annex.) 563

753 Pneumatic Despatch Co., New York, N. Y.—Pneumatic tube. (Outside of building.) 563

754 Bolen, Crane, & Co., Newark, N. J.—Compound hydraulic press. (Pump annex.) 563


756 Archbold, Samuel, 417 Walnut street, Philadelphia, Pa.—Marsland’s liquid meter, for measuring water and other fluids. Of the turbine wheel form; has only one moving part, besides the register; is not at all affected by sand or silt passing through it; no friction, no wear—hence perfect durability; readily understood and easily operated. Manufactured by the American Meter Co., Philadelphia. (Pump annex.) 563

757 Dudgeon, Richard, New York, N. Y.—Hydraulic jacks, pulleys, and elevators. C. 27. 563

758 Taylor, John F., Charleston, S. C.—Steam and hydraulic cotton press. C. 56. 563

759a Daily & Co., Foxcroft, Me.—Elevator for raising rocks, etc. (Adjacent Annex 3.) 563

759b United States Hoisting & Conveying Co., New York, N. Y.—Automatic machinery for hoisting, conveying, and depositing. (Outside of Machinery Hall.) 563

760 Higgins, H. Van, Chicago, Ill.—Water meter, oscillating piston meter. (Pump annex.) 563

760d Carlile & Elliott, Steubenville, O.—Safety lock for elevators. (Pump annex 1.) 563

761 Guerin, Thomas, San Francisco, Calif.—Instrument for measuring and regulating the flow of water from reservoir or canal. (Pump annex 12-2.) 563

761a Mason, Volney W., & Co., Providence, R. I.—Elevator hoisting machine and safety platform. Also, friction clutch pulleys, driving main line of shafting in pump annex and in Machinery Hall adjoining, near Corliss engine. D. 66, and Pump annex. 563


763 Goldmark, Joseph, New York, N. Y.—Safety elevators for hotels, dwellings, and warehouses, operated by steam, water, or hand power. These elevators are absolutely safe, by virtue of the mechanical principles underlying their construction; they, therefore, require no safety appliances whatsoever, beyond a common break. They are ran in private resi—
Hydraulic Machines, Fire Engines and Appliances.

dences by water pressure, at an expense of less than half a cent for a round trip, and are used by women and children without requiring a special attendant. A 40. 563

763 a Remington, E., & Sons, Ilion, N. Y.—Water meter. (Pump annex 1.) 563

764 Robertson, John, & Co., Brooklyn, N. Y.—Hydraulic pumps, hydraulic presses. (Pump annex.) 563

765 Ross, Thos., Rutland, Vt.—Steam crane. (Annex 2.) 563

766 Randall, Francis M., New York, N. Y.—Automatic steam and vacuum pump. (Pump annex.) 563

766 a Maclay, J. W., New York, N. Y.—Water meter. (Pump annex 1.) 563

766 b Ritter, J. R., Reading, Pa.—Model of hoisting apparatus. (Pump annex.) 563

767 Jones & Holmes, Providence, R. I.—Water elevators for open wells. (Outside of building.) 563

768 Bates, James, Baltimore, Md.—Hand elevator. (Pump annex.) 563

769 Yale Lock Manufacturing Co., Stamford, Conn.—Safety hoisting machinery, friction clutches and brakes, differential pulleys, drilling braces, stud end cutter. C 78. (Outside of building.) 563

770 Foulds, Thomas, jr., Trevorton, Pa.—Water elevator. (Pump annex.) 563

771 Otis Bros. & Co., 348 Broadway, New York, N. Y.—Passenger elevator, including engine, safety drum, etc. Manufacturers of brewery elevators, which are generally in use and with great satisfaction in many of the large breweries throughout the country. Their speciality in this line is the elevators, including independent hoisting engine, safety platform, with galvanized iron work, to prevent rust, with lifting ropes and safety ratchets, etc. B 38. 563

772 Leonard & Silliman, Bridgeport, Conn.—Grain elevator. E 56. 563

774 a Sweetland, I. B., Pontiac, Mich.—a Brick and mortar elevator. (Annex 3.) 563

774 b Self-packing faucet, rubber packing. (Annex 3.) 566


777 a Safety apparatus for hoisting machines. 563

777 b Drop and buck shot, lead and tin-lined lead pipe, tin-lined iron pipe, sheet lead. 566

778 Silsby Manufacturing Co., Seneca Falls, N. Y.—Rotary steam fire engines, horse hose carriage and hand hose reel. Also, in charge of the Centennial Fire Brigade, two rotary steam fire engines and horse hose cart. Illustrated and descriptive circulars, English, Spanish, French, and German, may be had on application. A 6. 564

778 Street, E. A., New York, N. Y.—Portable fire pump. B 45. 564

779 a Halloway, Charles T., Baltimore, Md.—Chemical self-acting fire engine; pump and after fire extinguisher. A 25. 564

779 b Birkinbine, H. P. M., Philadelphia, Pa.—Apparatus for operating hydraulic valves at a distance. B 46. 564

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-15.
Hydraulic and Pneumatic Machines and Appliances.

800 Clapp & Jones Manufacturing Co., Hudson, N. Y.—Piston steam fire engines.  564
801 Button, L., & Son, Waterford, N. Y.—Steam hand and fire engine.  B 42-43.  564
802 Zwietsch, Otto, Milwaukee, Wis. —B 25.  p 564
   a Chemical fire extinguisher.  564
   b Water apparatus, beer preserving, etc.  565
804 Bates, Benjamin, Baltimore, Md.—Copper and silver carbonators, with attachments.  A 20.  565
806 Matthews, John, New York, N. Y.—Apparatus for making, bottling, and dispensing soda-water and aerated beverages.  A 24.  565
807 Puffer, A. D., Boston, Mass.—Beer apparatus, soda, syrup and mineral-water apparatus.  A 22.  565
808 Postens, Edward, Philadelphia, Pa.—Soda water apparatus, generators, furnaces, tumbler washers, etc.  A 19 and B 23.  565
809 Tufts, James W., Boston, Mass.—Soda water apparatus, apparatus, and accessories.  A 25.  565
811 Ferguson, James, & David, Philadelphia, Pa.—Machines for bottling and corking liquors.  A 22.  565
812 Hey, Michael, Philadelphia, Pa.—Beer pump, with bar fixtures, water pressure machine, beer cooler, air bung and regulator. Manufacturer of all kinds of beer pump bar fixtures, patent water pressure machines, patent beer coolers, patent air bung and patent air regulator, and all kinds of beer spigots and coupling, etc.  E 68.  565
814 Morris, Tasker, & Co., Philadelphia, Pa.—Wrought iron tubes, tools, and brass work.  A 70, and C 27.  566
815 Kirk, Geo. R., Philadelphia, Pa.—Patent regulating cylinder lubricator, with gauge showing contents, brass cocks, and valves.  B 19-20.  566
817 Birkinbine, John, Philadelphia, Pa.—Fire hydrant and case.  B 46.  566
818 Powell, Wm., & Co., Cincinnati, O.—Bottle valves and lubricators.  B 22.  566
819 Talley, James, Jr., Kansas City, Mo.—Liquid faucet, automatic bung.  B 29.  566
820 Powell, Wm., & Co., Cincinnati, O.—Regrinding globe valves; automatic lubricators, etc.  B 22.  566
821 Woodruff & Beaumont, Kankakee, City, Ill.—Stop valve.  B 19.  566
822 Flower, James, & Bro., Detroit, Mich.—Stop valve, fire hydrants, machine for squaring nuts, oil cups.  D 20.  566
823 Evans, Dalzell, & Co., Pittsburgh, Pa.—Boiler, oil-well, radiator, artesian and hydraulic tubing; wrought iron pipe, cork sockets, nipples, and fancy designs.  B 25.  566
824 Basshor, Thos. C., & Co., Baltimore, Md.—Automatic relief valve for steam fire engines A 6.  566
828 Bridge water Iron Co., Bridge, Mass.—Forgings, seamless copper and brass tubes, and bolts, chilled soft rolls, spikes, roll plates, metal sheeting, etc.  B 22-23.  566
829 Nuco Tite Tube Works, Co. Boston, Mass.—Iron fowler tubes, iron hydraulic, steam, gas, and sewage pipes, enamelled pipe, injector, E 74, and D 10.  566
827 Crosby Steam Gauge & Valve Co., Boston, Mass.—Steam gauges and safety valves, hydraulic and vacuum gauges, etc.  D 67.  566
829 Shed, J. Herbert, Providence, R. I.—Hydrant box, tamps, stops, gate, cover and valve.  C 27, and Pump annex 4.  566
820 Douglas, W. B., & Biddle, Middletown, Conn.—Pumps, hydraulic rams, garden engines, etc.  (Pump annex.)  566
827 American Tube Works, Boston, Mass.—Brass and copper tubes.  B 20-21.  566
828 Cook & Pulver, New York, N. Y.—Lubricating cups, and lubricating compound.  D 69.  566
829 Pect Valve Co., Boston, Mass.—Brass and iron steam valves.  B 22.  566
830 Merrill & Keijzer, Baltimore, Md.—Gauge cocks for steam boilers.  D 64.  566
831 Wood, R. D., & Co., Philadelphia, Pa.—Fire hydrants, cast iron pipe, Early valves, lamp posts, turbine wheels, duplex turbine. Cast iron pipe for gas and water from one and a half to seventy-two inches diameter. Fire hydrants; Matthew's patent anti-freezing sliding frost case; valve opened by positive motion, without springs, weights, or levers. All working parts removable from ground without dig-

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.
THE SUN NEWSPAPER

Is printed and published every day in the year, at 166, 168, and 170 Nassau Street, New York City. Its regular edition on secular days now (April, 1876) averages about 140,000; its weekly edition over 88,000; and its Sunday issue is nearly 100,000. It thus prints and sells more than a million copies a week, which are read all over the United States. This is a circulation unprecedented in American journalism, and it is constantly on the increase. In proof of this, let the following figures testify. They show the number of copies of THE SUN printed every week during the year ending March 11, 1876.

<table>
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<th>WEEK ENDING</th>
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Total........................................................................46,799,769

In printing these papers, no less than three million four hundred and twenty-six thousand six hundred and ten (3,426,610) pounds of paper were consumed.

ADVERTISING RATES.

DAILY AND SUNDAY, 40 cents a line, ordinary advertising; large type, 80 cents; and preferred positions, 50 cents to $2.50, according to classification.

Weekly, 50 cents a line; no extra charge for large type. Preferred positions, from 75 cents to $2.00.

SUBSCRIPTION RATES.

DAILY (4 pages), by mail, 55c. a month, or $6.50 a year, postpaid; with Sunday edition, $7.70.

SUNDAY (8 pages), $1.20 per year, postpaid.

Weekly (8 pages), $1.20 per year, postpaid.

Address, THE SUN, New York.
# THE American Newspaper Union.

**A. J. AIKENS, President.**

<table>
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<tr>
<th>Newspapers</th>
<th>315 Newspapers, $3.00 per line, per week.</th>
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<tr>
<td>New York Newspaper Union</td>
<td><strong>148</strong> and <strong>150</strong> Worth St., New York.</td>
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<td>Chicago Newspaper Union</td>
<td><strong>114</strong> Monroe St., Chicago.</td>
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<td>Milwaukee Newspaper Union</td>
<td><strong>365</strong> East Water St., Milwaukee.</td>
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<td>Aikens Newspaper Union</td>
<td><strong>143</strong> Race St., Cincinnati.</td>
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<tr>
<td>Southern Newspaper Union</td>
<td><strong>227</strong> Second St., Memphis, Tenn.</td>
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<tr>
<td>St. Paul Newspaper Union</td>
<td><strong>17</strong> Wabashaw St., St. Paul, Minn.</td>
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## THE ORIGIN OF CO-OPERATIVE NEWSPAPER ADVERTISING.

Co-operative newspaper printing, as now practised, originated in Wisconsin twelve years ago. It is termed co-operative for the reason that one side of each of the newspapers is printed at a central office, and the paper sent in its half-printed state to the home office, where it is completed with editorials, local news, and other matter prepared by the editor or publisher. In December, 1836, the idea of co-operation, with advertisements, occurred to Mr. Aikens, while yet serving his time as an apprentice, in printing the message of President Polk on one side of a country newspaper of New England at Boston, and the other half being printed at the local office.

Mr. A. J. Aikens, a practical printer and business man, conceived the idea of reducing the cost of ready-printed paper, as it is now termed, to country publishers, by making an agreement with them to use a certain space in each of their papers for advertisements that he might procure. This plan of co-operation he put into practice twelve years ago, at the office of Cramer, Aikens & Cramer, Milwaukee. It at once became successful, leading to the establishment of co-operative newspaper printing-offices in Chicago, New York, St. Louis, Cincinnati, Memphis, St. Paul, and other places. There are now over two thousand newspapers printed upon the co-operative plan in the United States and Canadas, and the number is constantly increasing, it having more than doubled in the last five years. The enterprise is no longer an experiment, but an established success, and the system is one yielding manifold advantages to advertisers as well as to local publishers.

## The American Newspaper Union

Is essentially national. The papers represented in it are located in all the States of the Union and in nearly five hundred county seats. They circulate over the whole area of the country from Maine to Colorado, distributing at least one hundred copies every year to each square mile of the settled portions of the United States.

Although, as a whole, the Union List is national, covering all sections, it is so made up of different members as to be susceptible of easy division into sections—East, Middle, West, South. The distribution of the papers is as follows:

| New England | 78 | Illinois | 117 | Nebraska | 15 |
| New York | 101 | Michigan | 86 | Missouri | 17 |
| New Jersey | 27 | Wisconsin | 98 | Georgia | 10 |
| Pennsylvania | 65 | Tennessee | 29 | Alabama | 32 |
| Virginia | 24 | Kentucky | 29 | Louisiana | 11 |
| No. and So. Carolina | 24 | Minnesota | 79 | Mississippi | 29 |
| Ohio | 122 | Iowa | 85 | Other States | 46 |
| Indiana | 81 | | | | |

## AGGREGATE CIRCULATION.

The circulation of these papers is large and constantly increasing. It is larger than the circulation of any other lists or combinations of country papers in the United States—the last aggregate weekly circulation being seven hundred thousand seven hundred and thirty copies (700,730).

SEND TO EITHER OFFICE FOR A CIRCULAR.
45

Machinery Fittings, Valves, Tubes, etc., Locomotives.

ging. Valves; Eddy's patent straight way double gated gates, hung on universal joint; perfectly adjustable duplex turbine so arranged as to develop full power from variable quantities of water; lamp posts; turbines; heavy machinery.

B 18, and Pump annex.

832 Roots, P. H. & F. M., Connersville, Ind.—Tuyere irons and fire bed, by pass, gas valves. Patentsees and manufacturers of hand blowers for blacksmithing of all kinds; also, portable forges adapted to every variety of work; also, improved Tuyere iron and fire bed combined. (P.)


834 Cooper, Jones, & Cadbury, Philadelphia, Pa.—Supplies for plumbers, steam fitters, and machinists, etc. B 19.


839 Lunkenheimer, Fred., Cincinnati, O.—Automatic cylinder lubricators and glass oil-cups for steam engines; steam valves, with regrinding device; untrinned brass castings. B 17, 21, and 22.


843 Walworth Manufacturing Co., Boston, Mass.—Steam heating apparatus; steam and gas fitters' tools, etc.; laundry apparatus, etc.; pipe and fittings for steam, gas, and water. A 75, E 73 and B 41.

844 Radde, William, 548 Pearl street, New York, N. Y.—Patent glass-lined iron pipe; keeps water, chemicals, and all liquids perfectly pure; prevents poisoning by metallic water pipes; is a safe pipe for aquaria; resists frost, and gives full satisfaction. Patent underground telegraph system; secretes perfectly reliable telegraphic connections, under all circumstances, and, through life and property, is composed entirely of inorganic substances. Naked copper wires are drawn through very small glass tubes (3 to 18 and upward), which are held in the required position in an iron pipe by paragraph six. Both articles are cheap; need no repairs. B 3-20.

845 Chapman Valve Manufacturing Co., Boston, Mass.—Water, gas, and steam valves, with Babbit metal seats.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
Locomotives, Railway Plant, Scales.

859 Polytechnic College, Philadelphia, Pa.—Working model compressed locomotive with horizontal grip drivers for ascending planes. E 44. 570

859 Robinetz, James F., Petersburg, Va.—Model locomotive. (Empire Transportation Co.'s building.) 570

860 Rowand, John R., Philadelphia, Pa.—Locomotive-power brake. For the safety of life, in collisions, through the crushing of coal, in the ends of the platform of locomotives. F 48. 570


863 Philadelphia & Reading Railroad Co., Philadelphia, Pa.—Locomotive and tender. D 44-47. 570

864 Dickson Manufacturing Co., Scranton, Pa.—Locomotive and mining machinery. E 49-53. 570

865 Pennsylvania Railroad Co., Altoona, Pa.—Locomotive built in 1851, larger and passenger car combined (pole style). (Outside of building.) 570

866 Mason Machine Works, Taunton, Mass.—Narrow-gauge locomotive. (In use on West End Railroad.) 571

866a Johnson, Chas. E., & Co., Lansing, Iowa.—Self-coupling railway car. F 32. 571

866b Lebanon Manufacturing Co., Lebanon, Pa.—Coal cars. (Outdoors, west of Machinery Hall.) 571

867 Richie Bros., Philadelphia, Pa.—Scales, testing machines, beams, rope-twisters, sand-sifters. F 54. 571


869 Brandon Manufacturing Co., Brandon, Vt.—Railroad, merchandise, post-office, and other scales, beams and trucks. E 61-63, and D 8. 571

870 Dell, John C., Philadelphia, Pa.—Scales and weights. D 62. 571

871 Buffalo Scale Co., Buffalo, N. Y.—Platform, counter, and combination beam scales. D 54. 571

872 Crossman, M., Marshall, Ill.—Hand car. (Outside of Machinery Hall.) 571

873 Becker & Sons, 232 E. 128th street, New York, N. Y.—Becker's construction of improved balances and weights of precision for druggists, chemists, assayers, and for all purposes where accuracy is required. D 51. 571

874 Meyers, P., Newark, N. J.—Scales. D 53. 571

875 Hitchcock, S. S., Des Moines, Iowa.—Scales. D 47. 571

877 Gilly, John L., Columbus, O.—Freight cars; car wheels. (West of Machinery Hall.) 571


879 Willoughby, James D., Philadelphia, Pa.—Notifying scales, frictionless scales. D 8 and 54. 571

880 Chatillon, John, & Sons, New York, N. Y.—Spring balances, self-adjusting scales, counter scales, scale beams. D 50. 571

881 Harrisburg Car Manufacturing Co., Harrisburg, Pa.—Eight-wheeled box freight cars. B 7-1, and A 5-9. 571


885 Robidoux, Joseph, & Sons, New York, N. Y.—Scale beams, frames, hooks, etc. D 49. 571

886 Steinway & Sons, New York, N. Y.—Metal frames for pianofortes, pianoforte actions. D 49. 571

887 Automatic Scale Co., Boston, Mass.—Automatic scales. D 51. 571

888 Reinhart, Chas., Brooklyn, N. Y.—Druggists' gold, and diamond scales. D 62. 571

889 Henderson Hydraulical Car Brake Co., Philadelphia, Pa.—Car brake, by steam or hydraulic pressure. D 64-68. 571

889a Singer, Jacob, Harrisburg, Pa.—Automatic car coupler; brakeshoe. E 52. 572

889b Welch, Robert R., Frankford, Pa.—Automatic car coupler. E 74. 572

890 Lahaye, J. J., Reading, Pa.—Model cars with automatic couplings. In successful operation on the Philadelphia & Reading Railroad, by which company it was adopted after more than a year's trial. D 64. 572

891 Barton, C. S., Philadelphia, Pa.—Railway station indicator, operated from engine by compressed air or by hand. D 64. 572


892a Eames Vacuum Brake Co., Water- town, N. Y.—Injector, valve, vacuum, brake, etc. D 69. 572

892b Decrow, A. W., Bangor, Me.—Smoke conductor; railroad concession brake. E 65. 572

894 Klene, Aaron K., Somerville, N. J.—Model of car coupling. D 63. 572

895 Nelson, Nels, Minneapolis, Minn.—Steam and air car brake, car coupler. D 64. 572

896 Bing, James, Philadelphia, Pa.—Brake shoe. E 76-77. 573

897 Westinghouse Air Brake Co., Pittsburgh, Pa.—Automatic brakes, vacuum brakes, air compressors, speed indicators, engine governors, engine. D 67. 573

899 Jobb, Z., & Sons, Wilmington, Del.—Elliptic side springs, for car seats and upholsterers, door springs. E 68. 573

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.
Railway Plant, Wheels, Springs, Trucks, etc.

890 Cayuta Wheel & Foundry Co., Waverly, N. Y.—Chilled wheels for cars and engines; specimens and tests. E 64. 573

900 Loddell Car Wheel Co., Wilmington, Del.—New and old railroad car and wagon tires, castings, etc. E 65. 573

901 Ramapo Wheel & Foundry Co., Ramapo, N. Y.—Railroad car and engine wheels. E 71. 573

902 Culmer Spring Co., Pittsburg, Pa.—Springs for railway purposes; spiral draft, bolster, journal, equalizing bar, tender, brake release, switch, and valve springs. Spiral springs of all descriptions, made to order. E 69. 573

903 Bryant, George B., Pottsville, Pa.—Self-rolling car wheels, loose pulleys, cups, car journals; vehicle and carriage wheel hubs; independent car axles. E 66. 573


925 Multimole Car Axle Co., New York, N. Y.—Railroad car truck, with combined, stationary, and revolving axles, loose, independent wheels, and oscillating boxes. Six sets narrow gauge railroad car trucks, fitted with the Multimole axles and wheels, are in use on the West End Passenger Railway. D 69-70. 573

906 Tryon, Geo. K., Son, & Co., Philadelphia, Pa.—Car and other bearings and articles of phosphor-bronze, composition, Rabbit, and type metal. E 71. 573

907 Davenport, Fairbairn, & Co., Erie, Pa.—Engine and car wheels. E 70. 573

908 Miles, W. A., Copake Iron Works, Copake, N. Y.—Car wheels. E 68. 573

909 Middleton, N. & A., & Co., Philadelphia, Pa.—Railroad car springs with section of trucks. F 66 and 70. 573

910 Barnum Richardson Co., Lime Rock, Conn.—Salisbury iron ore, charcoal pig iron, cast chilled car wheels. E 71. 573


910 National Car Spring Co., New York, N. Y.—Elliptic, spiral, rubber, volute, and rubber center spiral car springs. E 63. 573

911 Standard Steel Works, Philadelphia, Pa.—Crucible steel locomotive and car wheel tires, castings, and forgings. E 72. 573

a Cast steel tires, all sizes and sections; record of trial in hydraulic press of Baldwin locomotive works, April, 1876. 573
b Cast steel axles, guaranteed to stand five blows of seventeen hundred pounds' drop, falling twenty-five feet upon four-inch section, bearings three feet apart; axle reversed between blows. 573
c Smooth, bent, cold. 574
d Rails, twisted, cold. 574
e Solid cast steel forging, diameter thirteen inches; length, twelve feet. Tensile strength per square inch, 83,824 pounds; elastic limit, square inch, 55,950 pounds; elongation under strain, 19.6 per cent. 573
f Solid steel castings; railroad crossing; planed anvil-face, weighing 3280 pounds. 573

8 Miscellaneous ingots. 573
9 Ingots of open-hearth steel, broken, showing solidity and characteristics of same. Elastic limit per square inch, 65,018 pounds; tensile strength, per square inch, 123,220 pounds; elongation under strain, 37.1 per cent.
8 Tool, machinery, and spring steel, all shapes, with fractures and evidences of quality. 573
f Forgings. 574

913 Lang, Wm., Bailey, & Co., New York, N. Y.—Cast steel locomotive tires. 573

914 Whitney, A., & Sons, Philadelphia, Pa.—Car wheels and axles. E 72. 573

915 American Paper Car Wheel Manufacturing Co., Hudson, N. Y.—Coach, truck and car wheels, of paper, steel and iron combined. E 65. 573

916 Washburn Car Wheel Co., Hartford, Conn.—Steel-tired car wheels, cast iron centres. E 70. 573

916 White, Joseph J., Smithville, N. J.—Portable favc-box. D 64. 573

917 Sax & Kear, Pittsont, Pa.—Steel-tired truck and car wheels, with cast iron centres. E 73. 573

918 Harrison, Samuel L., San Francisco, Cal.—Railroad car axle, with independent wheels. E 72. 573

919 Schoem, Wm. H., Wilmington, Del.—Locomotive car, and wagon springs. E 67. 573

a Railway elliptic, volute and spiral springs. 573
b Cast steel nut-lock washers. 574

921 Fields, Wm., Wilmington, Del.—Cast steel rails, made direct from iron ore. E 64. 573

922 McKee, Fuller, & Co., Catasaqua, Pa.—Railroad car wheels. D 65. 573

922 Baltimore Car Wheel Co., Baltimore, Md.—Chilled cast iron engine and car wheels; samples of iron. E 66. 573

922 Atwood Railway Wheel Co., New York, N. Y.—Railway wheels. E 69. 573

922 Veze, Dinsmore, & Co., New York, N. Y.—Elliptic, spiral, rubber, volute and rubber centre spiral car springs. E 68. 573


922 Hopkins, D. A., Jersey City, N. J.—Car journal boxes. E 65. 573

922 Woodbury, James A., Boston, Mass.—Elastic steel tire car wheels. E 70. 573

922 Taylor Iron Works, High Bridge, N. J.—Passenger wheels on axle, narrow gauge wheels, sample wheels and sections; friction cold, etc. E 69. 573

923 Nashua Iron & Steel Co., Nashua, N. H.—Steel plates, tires, axles, shaftings, bars, and forgings; iron axles, bars, plates, car wheels, and forgings. E 66-67. 573

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
923a Eccles, James, Philadelphia, Pa.—Frictionless, journal box for railroad car axles. D 60. 573

923b Columbia Car Spring Co., New York, N. Y.—Spiral and rubber car springs. E 69. 573

923c Jeffries, James, & Sons, Philadelphia, Pa.—Locomotive tender, and elliptic car springs. E 69. 573

924 Hamilton Steel Wheel Co., Philadelphia, Pa.—Car wheels and specimens of metal, process of manufacture. D 68. 573

925 Jersey City Wheel Foundry & Machine Works, Jersey City, N. J.—Elastic steel tired car wheels, chilled car wheels. D 68. 573

925a Potter & Hoffman, Philadelphia, Pa.—Railway construction tools. B 30. 573

925b Union Car Spring Co., Bridgeport, Conn.—Car springs, and steel. E 71. 573

926 Raddin, John, Lynn, Mass.—Elastic car and carriage wheels, automatic brakes, compensating wheels, busters, elastic chains, etc. E 70. 573

927 Fisher & Norris, Trenton, N. J.—"Fisher" patent rail joints for broad and narrow gauge roads. B 6-41, and American. 574

928a Wharton Railroad Switch Co., Philadelphia, Pa.—Railroad switch, steel rail frogs, steel rail crossing. D 71-73. 574

930 Jersey City Iron Works, Jersey City, N. J.—Detachable steel rail frogs and crossings, safety switch stands, car regulators. D 71. 574

931a Cochran, John, New York, N. Y.—Clamps to secure rails to the cross ties. E 48. 574

931b Wood, Joseph, Red Bank, N. J.—Adjustable spring, and stationary frogs. E 69. 574

931c Scheiner, J. H., Philadelphia, Pa.—Drawings, steel springs, for cars and signals. E 71. 574

931d Stimson, Watt J., Troy, N. Y.—Track guard. (Outside of building.) 574

931e Redding, W. E., New York, N. Y.—Railroad switch. (Outside of building.) 574

931f Mansfield Elastic Foge Co., New Haven, Conn.—Railroad frog. E 71. 574

931g Kasson, C. Vallette, Buffalo, N. Y.—Continuous rail, railway frog, and crossing. E 78. 574

931h Seely & Stevens, New York, N. Y.—Pellucidite, architectural wood finish. (Used on all wood work in Machinery Hall.) 574

932 Pennsylvania Steel Co., Harrisburg, Pa.—Bessemer steel ingots, blooms, forgings, and rails, open hearth steel ingots and blooms, safety switch, steel rail crossing and frogs, car replacer. D 29, and E 62. 574

933a Diamond State Iron Co., Wilmington, Del.—Rail-track fasteners and merchant bar iron. Manufacturers of railroad splice bars, all sizes; noted for fit, quality, and finish. Track bolts and spikes of superior iron; extra quality bar and horseshoe iron. E 62. 574

933b Lukens, J. H., Burlington, N. J.—Railway switch stand. D 71. 574

933c Barker, E. W., Portland, Me.—Car coupler. D 79. 574

933d Wood, Joseph, Red Bank, N. J.—Railroad frogs; switch stand. E 69. 574

934 Tuthill, Daniel S., Newburg, N. Y.—Railway tracks—to overcome contraction and expansion. E 72. 574


935 Bean, H. B. F., Pawling, N. Y.—Movable holder and catcher for rail road cars while in motion, draw heads for cars. D 66. 575

936 Rousseau’s Railway Signal Co., New York, N. Y.—Electric railway signals, office indicators, switch locks, circuit closer, etc. D 67. 575

937 Wharton, Wm., jr., Philadelphia, Pa.—D 72. 573

937a Patent Bessemer steel street railway curves; cast iron street railway curves; cast iron street railway switches; cast iron street railway frogs; cast iron street railway crossing. 574

937b Patent cast-iron street railway turntable. 575

938 Spahn, Emil P., Newark, N. J.—Models for automatic railroad crossings, street signals. E 57. 575

939 Ridge, Elmer, Philadelphia, Pa.—Balance folding gates for railway crossings. D 65. 575

939a Lansing, H. S., Philadelphia, Pa.—Railroad crossing safety gate. (Northeast of Machinery Hall.) 575

939b Williams, Joseph S., Philadelphia, Pa.—Railroad switch, track, rails, switches, and crossings, rail supports, and car ventilator. F 72. 575

939c Heywood, C. L., & Co., Boston, Mass.—Railroad bridge guard, for the protection of train men, at bridges over railroads. E 41. 575

939d Hitchcock Lamp Co., Watertown, N. Y.—Lamps for fat oils and kerosene. D 49. 575

939e Post & Co., Cincinnati, O.—Railway passenger-car trimmings, locomotive head lights. D 71. 576

Machines used in preparing Agricultural Products.

940 Deal, M., & Co., Bucyrus, O.—Separator and smutter, brush smutter, warehouse separator, and mill machinery trucks, etc. E 57. 580

941 Bullock, C. K., Philadelphia, Pa.—Flour mill machinery. E 52. 580

942 Huntley, Halcomb, & Hine, Silver Creek, N. Y.—Purifier, bran dusters, bolting cloths. E 47. 580

944 Howes, Babcock, & Co., Silver Creek, N. Y.—Eureka smut and separating machine. Eureka brush polishing machine. The worst samples of smutty and foul wheat can be perfectly cleaned with these two machines. Grain separator, with patent zigzag arrangement for separating oats and all other seeds from wheat. Bolting cloth, elevator buckets, mill stone brush, pick handles. E 49. 582

944a Mungan Bros., Utica, N. Y.—Corn grinding mill, eye spindles, levers, etc. E 64-62. 580

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.
Agricultural Machinery.

545 Cumbie & Donald, New York, N. Y.—Mechanical oven model. E 60.

546 Stangeland, Elias, Rockdale, Minn.—Grain steaming machine. E 69.

547 Teter, W. L., Bristol, Tenn.—Self-regulating silent mill feed. E 63.

548 Noye, John T., & Son, Buffalo, N. Y.—Flour mill models, portable mills, millers' rolls, middlings purifier, bunter. E 47.

549 Gilbert, Calvin, Chambersburg, Pa.—Combined separating and scouring smut machine. E 57.

550 Graham & Beard, Chicago, Ill.—Grain scourer, smutter separator, grader, dustless mill and warehouse separator and grader. E 54.

551 Young, J., & S. Bernheisel, Green Park, Pa.—Flour bolt and middlings purifier combined, with bran separator and duster attached. E 57.

552 Harris, Clinton S., Elizabeth, N. J.—Smut and scouring machine, and scientific separator for cleaning grain. E 58.

553 Richardson, D. M., Detroit, Mich.—Improved patent wheat scourer, polisher, and separator. The principles covered in this machine may be briefly stated as follows, viz: It scour and polishes the wheat thoroughly, without breaking, cutting, scratching, wearing away, or impairing the bran fibre, thereby leaving the bran full strength. When the wheat goes upon the burners, the bran comes off in large flakes or patches, and passes through without pulverizing and mixing with the flour; the blast can be adjusted to secure any desired separation. F 60.


557 Roland, Francis, & Co., Reading, Pa.—Grain decorticator and separator; model of water wheel. E 61.


560 Griscom & Co., Pittsburgh, Pa.—Diamond mill stone dressing machines. (Will do as much work in one hour as can be done in a day with the pick.) Used by best mills. Thirty days' trial allowed. E 52.

561 Harrison, Edward, New Haven, Conn.—Vertical bunt stone mills for grain, minerals, etc., and combined flouring mill and boltor. E 59.

562 Leonard & Silliman, Bridgeport, Conn.—Burr stone flour and grit mills. E 56.


567 Throops Grain Cleaner Co., Aurora, N. Y.—Grain scourer and separator; wheat brushing machine. E 68.


574 Colburn, Levi J., Chicago, Ill.—Confectionery; process of manufacture. F 66.


579 Enterprise Manufacturing Co., Patented Hardware Manufacturers and Iron Founders, American and Dauphin streets, Philadelphia, Pa.—Copper, brass, and nickel, size and spice mills, twenty sizes; measuring faucets, tobacco cutters, cheese knives, sad irons, hang-hole borers, sausage stuffers, fruit and jelly pressers. F 56.


For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
971 Boyd, G., Philadelphia, Pa.—Coffee roaster, coffee cooler. (Ann. x 1.) 585

973 Weikel & Smith Spice Co., Philadelphia, Pa.—Coffee roasting and spice manufacturing. (Ann. x 1.) 585

974 Trumbauer, Henry — Market-street, Philadelphia, Pa.—Coffee mills; manufacturers of scales and balances in use at the U. S. Treasury, and all the U. S. Mints and Assay Offices. F 55. 585


976 Silver & Deming Manufacturing Co., Salem, Ohio.—Meat choppers and meat cutters. F 54. 586

976a Speithman, Geo., Strasburg, Pa.—Meat chopper. F 55. 586


978 Murray Iron Works Co., Burlington, Iowa.—Meat choppers, bird presses, sausage cutters, etc. This exhibit attracts special attention of butchers and sausage makers. The draw-cut movement of the knives (which is that of a knife used by hand), is the peculiar feature which is claimed, distinguishes these machines from all others, and secures to them a clean cut, without noise or pounding and with very little wear of the parts. Some of them have been in constant use for over four years, without repairs of any kind. Their beauty, durability, and smoothness and precision of their work, attracts very general attention from the many who are interested in this kind of machinery, they being the only "draw-cut" machines made. F 62. 586

979 Huber & McCarter, Lancaster, Pa.—Steam meat chopper. E 60. 586


979b Kenyon, J. H., Plainfield, N. J.—Hand and power meat choppers. F 61. 586

979c Nitinger, August, jr., Philadelphia, Pa.—Butchers' and packers' machinery. F 54. 586

980 Sauter, Charles, Reading, Pa.—Malt cleaning machine, cylinder-wheel malt chopper. E 69. 587

981 Reford, J. W., Philadelphia, Pa.—Grain distilling and vapor-rectifying apparatus. F 69. 587

982 Boese, C. & Co., New York, N. Y.—Capping machines, for adjusting metallic capsules on bottles, jars, etc. E 68. 587

Aerial, Pneumatic, and Water Transportation.

982a Sewall, Day, & Co., Boston, Mass.—Shrouding, rope, etc. E 39. 500

983 Hartness, James, Detroit, Mich.—Section balloon, with life-boat attached. D 32. 592

984 Swarzmayer, John, Philadelphia, Pa.—Flying machine model. D 33. 592

985 Page, E. W., New York, N. Y.—Boat oars. D 32. 594

986 Bolles, J. N., Baltimore, Md.—Models for submarine work. A 56, and outside. 594

987 Fields, William, Wilmington, Del.—Models of armor-ship, and field-battery gun. E 64. 594


989a Lyman, William, Middlefield, Conn.—Bow-facing rowing gear. D 31, and on lake. 594

990 Wilen, George C., Philadelphia, Pa.—Small boats. D 32. 594

991 Richards, H. J., West Troy, N. Y.—Ice yachts. D 34. 594

992 Walton, Lewis W., New York, N. Y.—Row-lock for boats. D 35. 594

993 Burr & Co., New York, N. Y.—Tackle blocks, etc. D 34. 594


993b Whistler, Thos., Baltimore, Md.—Non-capizable life boat. D 31. 594


994a Desmond, Timothy, New York, N. Y.—Pair-oared gig. D 36. 594

994b Bird, John, Philadelphia, Pa.—Glass moulding press. (Ann. x 2.) 594


995a Lyman, W., Middlefield, Conn.—Rowing gear. D 31, and on lake. 594


996 Waters, E., & Sons, Troy, N. Y.—Paper boats, barrels, packages, cylinders, etc. D 35-36. 594


998 Von Behren & Shaffer, Stryker, O.—Boat oar, handspike. D 38. 594

999 Smith, D. S., Philadelphia, Pa.—Canoe, "Dolphin," of Queenstown, Md. 594

1000 Jones, John McCa., Philadelphia, Pa.—Boat-detaching apparatus. D 22. 594


1002 Hook, Gilman, West Harwich, Mass.—Tow yacht. D 32. 594


1004 Miles, Geo. W., Philadelphia, Pa.—Single scull shell. D 40. 594

1005 McGilvery, S. W., Belfast, Me.—Model for clipper ship. D 40. 594


1006a Braldee & Co., Philadelphia, Pa.—Cable and rigging chains. D 38. 594

1006b Fearon, Thomas, Yonkers, N. Y.—Shell boats, composite planking. E 40. 594

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.
Boats, Vessels, and Appliances.

1006 Roach, John B., Chester, Pa.—Models of vessels, shaft and foggings. E 40. 594


1006 Englis, John, & Son, Greenpoint, N. Y.—Steamship models. D 34. 594

1006 Flower, Wm., Bangor, Me.—Life saving apparatus, boat lowering, and detaching apparatus, etc. E 35. 594

1006 Goldie, George, Princeton, N. J.—Rowing machine. D 40. 594

1006 Pusey, Jones, & Co., Wilmington, Del.—Photographs and models of steamboats and steamships. C 74. 594

1006 Harrington, Charles B., Bath, Me.—Schooner yacht. D 32. 594

1006 Parcels, Thomas, Philadelphia, Pa.—Full-rigged schooner sailing yacht. D 49. 594

1006 Mallory, W. H., Bridgeport, Conn.—Steam yacht. On Schuylkill river. 594

1006 Cort, Mrs. C. A. van, New York, N. Y.—Torpedo boat. D 31. 594

1006m Francis, Frank, Philadelphia, Pa.—Model of boat. D 36. 594

1006 Johnson, Hilary C., Philadelphia, Pa.—Miniature model of a full rigged ship. D 40. 594

1006 Kahnweiler, David, New York, N. Y.—Cork jacket. D 49. 594

1006 Ormsbee, M., Brooklyn, New York.—Sailor life preservers and collar resuscitators. "The Sclve Life Preserve," which is the result of researches, are used to great advantage in pleasure swimming, and, as a teacher of the novice, learning the art. To skaters they afford comfort, keeping the arms warm and the body harmless from falling; besides saving life should the ice break, preventing cramp in the arms, however cold the weather. Cricketers also wear them. They make excellent pillows for traveling on land, cars, boats, etc. They can be placed side by side for a cushion, and are easily carried in the pocket, and can be put on very quickly. "The Collar Life Preserver" renders persons from drowning afloat also as a cushion for the house, counting-room, or traveling in the cars or boats, and as a cabinet invalid chair cushion. It can be put on instantly for life saving, even by a child two years of age; is used as a seat in the parks to prevent colds and sickness from sitting upon the damp ground. Bathing-house proprietors can be furnished with life preservers at prices that must assure them a handsome income from their sale or rental, with bathing-dresses, and by keeping the Collar Life Preservers always ready, none of their patrons can possibly be drowned, as they can be rescued in less than a minute by any of the assistants. Either of the preservers costs $5; or $4, to hire for a trip to any distance, or elsewhere. For purchases, address Capt. M. Ormsbee, patentee and manufacturer, 52 Willow street, Brooklyn, New York. D 40. 594

10067 Tipton, John, Philadelphia, Pa.—Model of boat. D 36. 594

1006 Rowland, F. T., Greenpoint, N. Y.—Steam launch, metallic life boat. A 65 and D 31. 594

1006 Roach, John, & Son, New York —Models, armor plate, and marine engine work. E 40. 594

1007 United States Bunting Co., Lowell, Mass.—Bunting and flags. F 40. 594

1008 Massachusetts State Commission, Leverett Saltonstall, Commissioner, Tower M. Building, as, Philadelphia, 18 Pemberton Square, Boston, Mass.—Water craft, old and new, and articles which take part in their construction and use,—being an historical exhibit of the growth of the marine interests of Massachusetts, from the earliest periods to the present time. F 38-40. 594

1009 American Life-Saving Suit Co., New York, N. Y.—Life-saving suit for ocean travel, surf belt for river travel. D 15. 594

1010 Wyatt, John L., Yonkers, N. Y.—Full-rigged clipper South Sea whale ship. E 38. 594

1011 Gildersleeve, S., & Sons, Gildersleeve's Landing, Conn.—Working models of wooden, steam, and sail vessels, for profit or freighting business. Largest carrying capacity on light draft with good sailing qualities. D 49. 594


1014 Cannon, John D., New Castle, Del.—Hooped skiff boat, without timbers or knees. D 31-32. 594

1015 Baird & Huston, Philadelphia, Pa.—Steam yacht. D 38-40. 595

1016 Harlan & Hollingsworth Co., Wilmington, Del.—Ships, models, drawings, and plans of vessels and machinery, paintings of ships and steamboats. D 20. 595

1017 Griffiths, John W., New York, N. Y.—Model of ocean steamship; "The Progressive Ship Builder." D 40. 595

1018 Zantinger, Dan'l W., Washington, D. C.—Model and section of steamship, improvement in construction of iron vessels. The above improvement consists in providing small watertight compartments entirely surrounding the hull of the vessel. D 40. 595

1019 Grant, D., Conrad, Houghton, Mich.—Adjustable ice plow and naval ram, or submarine mortar, attached to windlass boat. D 10. 595


1021 Crowell, J. W., & Co., Cambridge, Md.—Models for steam and sail vessels. Builders of all classes of wooden vessels. F 50. Also furnished of best quality of Cape-peak white oak. We invite inquiry as to our facilities. D 40. 595

1022 Thwait, Charles, Astoria, N. Y.—Model of steamship, with working machinery. D 35. 595

1023: Suter, Frederick, Philadelphia, Pa.—Propeller screws, models and drawings of boiler, etc. D 78. 595

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
Vessels and Appliances, Machinery in Use.

1023 American Steamship Co., Philadelphi, Pa.—Models and paintings of the steamers of the company. C 41. 593
1024 American Dredging Co., 10 South Delaware avenue, Philadelphia, Pa.—Improved grapple and dipper dredges, and machinery for river and harbor improvements. E 40. 596
1024 Hawley, Abel, Washington, D. C.—Rotary dredge, E 40. 596
1024 & Eau Claire Lumber Co., Eau Claire, Wis.—Sheer rudder loom and pontoon bridge. (Sawmill.) 596
1025 Cox, Frank, Philadelphia, Pa.—Model for coffee dam for removing propellers from ships. F 39-40. 596
1026 Coffin & Woodward, Boston, Mass.—Capstans, chain-stepper, screw-steer, and rudder-supporter, elastic-traveler, portable winch, windlasses, pumps, etc. Best modern improved articles. D 39. 597
1026 Robinson, R., Philadelphia, Pa.—Simple and compound anchor, with apparatus. D 5. 597
1027 Sickles, F. E., Providence Steam Engine Co., Providence, R. I.—Original models of some of exhibitor's early inventions, now in use in this country and abroad, viz: Trip cut-off, patented in 1845, and improvements thereon patented in 1845; casting steam chest on cylinder, patented in 1845; improvement on working exhaust valves, patented in 1844; first machine made or used to apply power to the rudder of vessels in (operation), application filed in 1849, patented in 1860, etc.; improved compound engine, patented in 1875; also original models of improvement in sinking pneumatic piles; also other original models. D 38. 597
1028 Getchett, John S., Washington, Me.—Capstan, D 40. 597
1029 American Ship Windlass Co., Providence, R. I.—Capstans, windlass models. D 40. 597
1030 Hutchins, T. C., Philadelphia, Pa.—Anchor, D 40. 597
1030 Hamilton, S. M., Baltimore, Md.—Hydraulic cement. (Anex x.) 103
1031 Hampton Emery Co., Chester, Mass.—Emery in grains. B 37. 105
1032 Potts Bros., Pottstown, Pa.—Flanged boiler iron and boiler flue iron. B 24. 111
1032 Potter & Hoffman, Philadelphia, Pa.—Iron and steel; boiler plate; pig and bar iron. B 39. 114
1033 Rittenhouse, E. W., & Bro., Baltimore, Md.—Terra-cotta pipe. (Outside of building.) 266

Machinery and Apparatus Especially Adapted to the Requirements of the Exhibition.

1034 Pease, F. S., Pease, Buffalo, N. Y.—Furnishes all the oil used for the shafting in Machinery Hall. 201
1035 Sellers, Wm., & Co., Philadelphia, Pa.—Electric registers, showing number of admissions at gates throughout the day. 423
1036 Ledgerwood Manufacturing Co., New York, N. Y.—Ash- hoister. 593
1037 American Twist Drill Co., Woonsocket, R. I.—Emery grinding machine, used in the Centennial machine shop. 505
1038 Stillwell & Bierce, Dayton, O.—Heater used in boiler house No. 4. 506
1039 McNeil, George, Philadelphia, Pa.—Heater used in boiler house No. 4. 506
1040 Sellers, Wm., & Co., Philadelphia, Pa.—Lathes, used in the Centennial machine shop. 510
1041 Prentice, A. F., & Co., Worcester, Mass.—Lathe and drill, used in the Centennial machine shop. 520
1042 Fitzhugh Machine Co., Fitzburg, Mass.—Lathe and drill for use in the Centennial machine shop. 510
1043 Smith, H. B., Smithville, N. J.—Full set of wood-working tools for Centennial carpenter shop. 510
1044 Keystone Portable Forge Co., Philadelphia, Pa.—Three 6 power forges 54 inches in diameter, for the Centennial machine shop. 514
1045 Stephens Patent Vise Co., New York, N. Y.—Vises, used in the Centennial machine shop. 514
1046 Fisher & Norris, Trenton, N. J.—Vises and anvils, used in the Centennial machine shop. 514
1047 Mitchell, J. E., Philadelphia, Pa.—40 engine-stones, used in the Centennial machine shop. 515
1048 Andrews, W. D., New York, N. Y.—50 horse power boiler and pumps; boiler for use, and pumps for supplying cataract. 550
1049 Abendroth & Root, New York, N. Y.—100 horse power boiler, supplying steam to steam pumps, etc. 550
1050 Steam Generator Manufacturing Co., Philadelphia, Pa.—100 horse power boiler, supplying steam to steam engines. 550
1051 Babcock & Wilcox, New York, N. Y.—150 horse power boiler, supplying steam to steam pumps, etc. 550
1052 Harrison Boiler Works, Philadelphia, Pa.—100 horse power boiler, supplying steam to steam engine. 550
1053 Exeter Machine Works, Boston, Mass.—7; horse power boiler, supplying steam to steam pumps, etc. 550
1054 Kelly, W. E., New Brunswick, N. J.—50 horse power boiler, supplying steam to steam pumps, etc. 550
1055 Lynde, J. D., Philadelphia, Pa.—50 horse power boiler, supplying steam to steam engines. 550
1056 Miller, Charles B., Philadelphia, Pa.—Boiler, used in boiler house No. 4. 550
1057 Smith, C. D., Boston, Mass.—Boiler, used in boiler house No. 3. 550
1058 Lowe & Watson, Bridgeport, Conn.—Boiler, used in boiler house No. 3. 550

For location of objects, indicated by letter and figure, see Key to Notation, p. 10; ground plan, p. 11.
<table>
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<tr>
<th>Machinery in Use.</th>
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<tbody>
<tr>
<td>1064 Hoadley, J. C., Co., Lawrence, Mass.—30 horse power engine and boiler, for use in Machinery Hall.</td>
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<tr>
<td>1068 Yale Lock Co., Stamford, Conn.—Three pulley blocks, for use in Machinery Hall.</td>
</tr>
<tr>
<td>1069 Fales, George S., Pawtucket, R. I.—One 30 inch double driving belt.</td>
</tr>
<tr>
<td>1072 Heims, Anton, New York, N. Y.—One 30 inch double driving belt.</td>
</tr>
<tr>
<td>1077 Jones &amp; Laughlin, Pittsburg, Pa.—Shafting, pulleys and hangers, for driving Centennial machine shop tools.</td>
</tr>
<tr>
<td>1078 Fitts, B., Worcester, Mass.—Steam whistle, for use during exhibition. and 4.</td>
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<tr>
<td>1079 Woodruff, James, Rahway, N. J.—Dampers, used in boiler houses Nos. 3 and 4.</td>
</tr>
<tr>
<td>1081 Nathan &amp; Dreyfus, New York, N. Y.—Patent oil cups, for one line of shafting.</td>
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<tr>
<td>1082 Lawrence, W. H., Brooklyn, N. Y.—Safety oil cans, used in Machinery Hall.</td>
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<tr>
<td>1083 Barr, Robert J., Philadelphia, Pa.—Elliptic steam trap. For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.</td>
</tr>
</tbody>
</table>
GREAT BRITAIN.

(South of North Avenue, Columns 16 to 17 A to E; also in Pump Annex.)

Metal, Wood, Stone, Cloth, Paper-working Machinery.

Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.

1 Holmes, Joseph E., Payton, Walter, & Taylor, Fenner B., London.  
   a Rock boring machine. 500  
   b Coal and rock cutting machine. 502


3 Hurst, Frederick, & Co., Wakefield. — Coal-cutting machine; ratchet wedge shovell. 502

4 Macdonnell, Martin, London. — Rock and coal perforators; machines for undercutting coal; screw wedge for breaking down coal. 502

5 Hardy Patent Pick Co. (limited), Sheffield. — Implements for coal, ironstone, gold, and silver mining, for quarrying and excavating; cast steel picks. 502

8 Pickering, Jonathan, Globe Works, Stockton-on-Tees. — Pulley blocks, hoists. 503

9 The Dunston Engine Works Co., Gateshead-on-Tyne, Durham. — Stone breaker; combined stone breaker and bone cutter. 505

10 Kimberley, Nathan Gold, London. — Centrifugal pulverizing mills. 505

11 Siemens, Charles William, London. — Models of furnaces for metallurgical operations, glass melting, etc. 506

12 Smith, Dillwyn, Liverpool. — Mechanical stokers and fire bars. 506

13 Sugg, William, Vincent Works, London. — Gas burners; a new illuminating power meter. 509


14 Roberts, William, Bootle, near Liverpool. — Self-acting painting machine for venetian blinds, lathes, hoop iron, etc. 510

15 Massey, B. & S., Openshaw, Manchester.  
   a Circular saw for cutting hot iron and steel. 511  
   b Steam hammers; steam stamps; models of steam hammers; samples of forgings. 514

16 Wright, Peter, & Sons, Constitution Hill Works, Dudley, Worcestershire. — Anvils; vises; tools of various kinds; hammers. 514

17 Brooks & Cooper, Mousehole Forge, Sheffield. — Anvils, vises, hammers, shear steel, etc. 514

17a Fairbairn, Kennedy & Naylor, Leeds. — Quadruple boring machine. 515

18 Reesley & Sons, Abbey Road Boiler Works, Barrow-in-Furness. — Punching, shearing, and angle-cropping machine for iron, steel, or other metals. 515

18a Greenwood & Batley, Albion Works, Leeds. — Bolt forging machines. 515

19 Heap, Joshua, & Co. (limited), Oldham. — Tools and machines, taps, hobs, pipe; bolt-screwing and nut-tapping machines. 515

21 Shearer, Hugh, London. — Machine for dressing stone. 516

22 Lavers, Alfred Hamilton, London. — Testing machine to show strength of cement. 517


23 Fleming, Thomas, & Son, West Grove Mill, Halifax. — Card clothing for carding machines, etc.; needle-point work. 520

24 Ambler, William, Bradford, Yorkshire. — Machine for making paper cup tubes used in spinning; machine for cleaning the teeth of wheel castings. 520

25 Mackenzie, Duncan, London. — Self-acting reader for the Jacquard loom. 520

26 Ingham, John, & Sons, Croft Head Works, Thornton, near Bradford. — Case of shuttles, etc., for weaving; tackling, shuttle piks, stocks, and bowls for weaving. 520

27 Platt Bros., & Co. (limited), Hartford Works, Oldham, Lancashire. — Cotton gin. 521

28 Gadd, Thomas, Manchester. — Printing machine for large size garment rollers, angular engine; combined engraving and punching machine; setting-out table, with micrometer; combined vanishing and ruling machine; machine for setting out; ruling machine, cams, engravers' block, and lathe. 521

29 Lancaster, William, Willow Iron Works, Accrington, Lancashire. — Yarn-sizing dressing machine; self-stepping beaming machines; loom. 521


31 Carter, John, Halifax, Yorkshire. — Spinning frame. 521


32 Coats, J. & P., Ferguslie Thread Works, Paisley. — Spooling machine; thread-winding machine; machine for ticketing. 521

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
GREENWOOD & BATLEY, ALBION WORKS, LEEDS, ENGLAND,

Machinists to the British War Department, the Council of State for India, and all the principal Foreign Governments,

EXHIBIT AT THE INTERNATIONAL EXHIBITION OF 1876,

PATENT BOOT SEWING MACHINE, PATENT BOLT FORGING MACHINE, PATENT PRINTING PRESS, and PATENT MACHINE FOR TIEING IN WARPS, See Catalogue.

MAKERS OF Special Machinery for the manufacture of Guns and Gun Carriages, Small Arms and Ammunition of all descriptions, including Cartridges, Shot and Shell, Fuzes, Rockets. Bullets, Percussion Caps, &c.; also of Gunpowder and Powder Cask Machinery, as well as of all kinds of Machinery used in the production of War Material and Implements.

MAKERS OF Machinery on the latest system for Dressing, Preparing, and Spinning Silk, Silk Waste and China Grass; and of Special and General Tools for Engineering and Railway Work, and Wood-Working Machinery.

Agent for China and Japan—Mr. JAMES DAVIDSON, Shanghae.

SCANLAN, JUNR., & CO., WALSALL, STAFFORDSHIRE, ENGLAND,

Proprietors of the Patterns and Goodwill of Messrs. Best & Co.'s PLUMBING AND ENGINEERING FOUNDRY WORK, from Birmingham (Trade Mark as above).

MANUFACTURERS OF PATENTED NOVELTIES.

IMPORTERS OF SPECIAL AMERICAN TOOLS.


MACHINERY INSPECTED. MANUFACTURED IRON EXPORTED.

IMPORTANT TO CAPITALISTS.

FOR SALE,

THE AMERICAN PATENTRIGHT OF THE AUTOMATIC FIRE EXTINGUISHER & ALARM

A MOST VALUABLE INVENTION— IS ENTIRELY SELF-ACTING.

Sole Patentees 
SANDERSON & PROCTOR, at the EXHIBITION (MACHINERY BUILDING); or SANDERSON & PROCTOR, Electric Engineers and Lightning Conductor Manufacturers, SHORE WORKS, HUDERSFIELD ENGLAND.

Gold Medal, MCKAY'S EQUILIBRIUM DRILL, Paris 1875.

For Boring Tube Plates, Drilling Rivet Holes, and every description of Engine Work with perfect accuracy, without skilled labour. Only requires true centre pop to guide cutters.

MENZIES & BLAGBURN, NEWCASTLE ON-TYNE, ENGLAND.

AMERICAN PATENT FOR SALE.
SAMUEL LAWSON & SONS
LEEDS,
MAKERS OF
MACHINERY FOR PREPARING AND SPINNING FLAX,
TOW, HEMP, AND JUTE.
LOOMS and PREPARING MACHINERY for
FLAX and JUTE WEAVING.
SPECIAL MACHINERY FOR THE MANUFACTURE OF TWINES.
SOLE MAKERS OF
GOOD'S PATENT COMBINED HACKLING and
SPREADING MACHINE,
PATENT AUTOMATIC SPINNING FRAMES,
And other special Machinery for the manufacture of Rope Yarns.

COUNCIL MEDAL, London, 1851.
GRAND MEDAL, Paris, 1867.
PRIZE MEDAL, Moscow, 1872.
DIPLOMA OF HONOUR, Vienna, 1873.

Corner of Belmont and Fountain Avenues,
NEAR THE LAKE.
FRENCH RESTAURANT,
LES TROIS FRÈRES PROVENCAUX.
The same which had such a great success in the Vienna
Exhibition, in 1873.
CH. VERDIER,
of the MAISON DORÉE, of Paris, Proprietor.
Near the Lake, opposite the U. S. Government Building.
55 Wright, William, Vulcan Foundry, Coalhedge.—Hot water boilers for heating dwellings, conservatories, etc. 559
56 Moncrieff, John, North British Glass Works, Perth, Scotland.—Steam boiler water gauge glasses. 555
57 Wier, Marshall Arthur, London.—Pneumatic motor, water meter, hydromyrometer, locomotive speed indicator, pneumatic gyrometer, reciprocating counter. 551
57a Holmes, Joseph E., Payton,Walter, & Taylor, Fenner B., London.—Cylinder engine; revolving steam engine and air compressor. 552
57b Hurd, Frederick, & Co., Wakefield.—High-speed air compressor. 552
57c Smith & Starley, Trafalgar Works, Coventry.—Electric motors. 552
58 Thermoelectric Generator Co. (limited), London.—Thermoelectric batteries worked by gas, charcoal, or coke, in nature approaching the appearance of a gas stove. 552
58a Moyle, Thomas, London.—Small steam engines for tramways, etc. 552
58b King, F. L.—Steam engines. 552
59 Turner, Charles, Southampton.—Couplings for propeller shafts and other purposes. 554
60 Hewitt, William, Bristol.—Model of improved screw propellers; model of an improved principle for driving machinery. 553
60a Brechin loader gun; gun carriage. 266
61 Vansittart, Henrietta, Mrs., Twickenham.—Screw propeller. 554
62 Hicks, James Joseph, London.—Enamel water gauges for steam boilers. 555
63 Moncrieff, John, North British Glass Works, Perth.—Gauge glasses for indicating height of water in steam boilers. 555

Hydraulic and Pneumatic Apparatus, Pumping, Hoisting, and Lifting.

63a Pickering, Jonathan, Globe Works, Stockton-on-Tees.—Steam and water cylinder; steam pump. 560
64 Gwynne, John & Henry, Hammarsmith Iron Works, London.—Model of compound surface-condensing engines with centrifugal pumps made to ¼ scale. 560
64a Haynes, Thomas, & Sons, London.—

Hydraulic and Pneumatic Apparatus, Pumping, Hoisting, and Lifting.

63a Pickering, Jonathan, Globe Works, Stockton-on-Tees.—Steam and water cylinder; steam pump. 560
64 Gwynne, John & Henry, Hammarsmith Iron Works, London.—Model of compound surface-condensing engines with centrifugal pumps made to ¼ scale. 560
64a Haynes, Thomas, & Sons, London.—a Platform pump; garden syringe. 560
6b Water bringer, for overcoming friction caused by drawing water through long lengths of hose; self-acting hose couler. 561
65 Gwynne & Co., London.—Centrifugal pumps and engines. 561
6b Gas exhauster and engine. 561
66 Ellis, William Irlam, Manchester.—Blower or exhauster for air or gas. 561
67 Appleby Bros., London.—Steam cranes. 563
68 Wallace & Tucker, Belfast.—Fire annilator. 564
70 Needham & Kite, Phoenix Iron Works, London.—High pressure filter press. 565

Cloth and Paper-working Machinery, Motors, Pumps.

35 Nussey & Leachman, Leeds.—Hydraulic cloth pressing and finishing machine. 552
36 Lawson, Samuel, & Sons, Hope Foundry, Leeds.—Machinery for carding, preparing, and spinning jute; cop-winding machine. 554
37 Fairbairn, Kennedy, & Naylor, Leeds.—Machinery for preparing and spinning jute, hemp, flax, tow, and similar fibres. Carding engine; drawing, roving, and spinning frames. 554
38 Marshall, T. J., & Co., Campbell Works, Kingsland.—Dandy rolls and wire cloth, for paper making, and pulp streamer. 555

Machines, Apparatus, and Implements used in Sewing and Making Clothing and Ornamental Objects.

39 Gimson & Coltman, Leicester.—Knitting machines; rip top and circular machines. 531
40 Wilson, Newton, & Co., London.—Sewing machines, their appliances and apparatus. 531
41 Kimball & Morton, Glasgow.—Sewing machines; machines for sewing sails and sacks over-edge. 531
42 Sanson, Robert Bell, London.—Spring arm endless band knife; cloth-cutting machine; parallel pressing machine for tailors' use. 531
43 Air Burning Co. (limited), Glasgow.—Ironing table. 534
45 Broadbent, Thomas, Chapel Hill, Huddersfield.—Hydro extractor, for extracting water from wool, cotton, etc. 534


46 Beatty, Francis S., Dublin.—Lithographers' manifold transfer machines, for the reproduction of printed matter of enlarged or reduced dimensions from that of the original. 540
46a Greenwood & Batley, Albion Works, Leeds.—Printing machine. 540
47 Lilly, John, & Co., London.—Perfecting and single cylinder printing presses. 540
49 Shaw, William, London.—Logotypes and cases, shown in operation; printing press. 540

Motors and Apparatus for the Generation and Transmission of Power.

50 Green, Edward, & Son, Manchester.—Fuel economizer for heating the feed water for steam boilers. 550
51 Davey, Paxman, & Co., Colchester, Essex.

52 Galloway, W. J. & Sons, Knott Mill Iron Works, Manchester.—Steel boilers, for use in the British section. 550

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
Railway Plant, Agricultural Machinery, Vessels.

71 Lawrence & Co., London.—Refrig-erators; mashing machines, spargers, etc. 565
72 Dennis, T. H. P., & Co., Anchor Iron Works, Clemsford.—High pressure valves for steam, hot or cold water, or gas. 566

Railway Plant, Rolling Stock, and Apparatus.
73 Welch, Alfred, London.—Railway cattle waggons. 571
74 Williams, Richard Price, London.—Continuous railway crossings; switches for doing away with facing points on railways. 574
75 Brierley, Sons, & Reynolds, London.—Railway signal model of railway junction. 574
76 Seaton, William, London.—Saddle rail and permanent way construction. 574
77 Saxby & Farmer, London.
   a Models of railway switches; junction, with switches and signals. 574
   b Railway signals, and level crossing gates. 575

Machines used in preparing Agricultural Products.
78 Sutcliffe, James S., Bacup, Lancashire.—Middlings flour separator. 580
79 Mirlees, Tait, & Watson, Glasgow.—Machinery in motion, consisting of sugar mills, valveless engine working an air pump for a vacuum pan, and driving centrifugal machines. 581
80 Collier, Luke, Rochdale.—Confectioners' machines. 582
81 Andrew, J. E. H., Stockport.—Machines for spinning tobacco; samples of twist tobacco from Europe. 584

Aerial, Pneumatic, and Water Transportation.
82 Siebe & Gorman, London.—Diving apparatus for two divers; figure of diver in diving suit, with the helmet and speaking apparatus. 594

82a Wallace & Tucker, Belfast.—Model of turret system of life preservation, in case of shipwreck. 594
83 Cruickshank, A. B., Dundee, Scotland.—Self-acting safety cleats for boats and yachts. 594
84 Logan, John Maxwell, Cambridge.—Model of four-oared racing boat, to take to pieces for convenience in traveling. 594
85 Ionian Steamship Co. (limited), Liverpool.—Full rigged model and oil painting of the steamer "City of Berlin." 594
86 Hill & Clark, London.—Boat disengaging hooks. 594
86a Bradford, William Henry, Great Saffhall, near Chester. 594
   a Model of life boats, lateen rig, life or salvage boat. 594
   b Model of a ship's course indicator. 597
87 Clark, Standfield, & Co., London.—Models of floating and gridiron depositing docks. 598
88 Roby, George, Wigan.—Hydro-pneumatic and other vessels for the storage of gunpowder, etc. 596
90 Wood, John William, Harwich, Essex.—Iron self-adjusting shot hole, rivet hole, and leak stopper. 597
91 Martin, Claude, London.—Self-canting anchors; chain cables; model of H. M.'s turret ram "Alexandra." 597
92 Gümpel, Charles Godfrey, London.—Ship's rudder. 597
92a Cooke, Joseph, & Co., Midland Davy Lamp Works, Birmingham.—Miners' safety lamps. 120
92b Bainbridge, Emerson, Duke of Norfolk's Collieries, Sheffield.—Miners' safety lamp. 120
(N.B.—Certain exhibits of machinery from Great Britain are installed in the Main Building, and catalogued in Part I.)

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.

1 Hannahan, Joseph, Ottawa, Ont.—Rock-drilling bits. $500
2 Symonds, W. S., & Co., Halifax, N.S.—Gold quartz crushing machine. $505
3 Freeland, R., Toronto, Ont.—Soap-making machinery. $508


9 Kennedy, W., & Son, Owen Sound, Ont.—Facing and jointing planer. $510
11 Machine Co., Bowmanville, Ont. a. Turning lathe for wood, iron at the same machine, planing and notching machine. $510 b. Metal turning lathe, planing machine. $515

Waterous Engine Works Co., Brantford, Ontario, Canada.—Twenty-five-horsepower portable saw mill; capacity, six to ten thousand feet per day; shipping weight, eight tons. A strictly portable saw mill, practical, efficient, economical, and durable; obtained first medal and diploma at Exposition Santiago Chili, South America, September, 1875. $510

15 Mitchell & Teeple, Harriston, Ont.—Wood-sawing machine. $510
18 McKecknie & Bertram, Dundas, Ont.—Wood-moulding machine. $510
20 Harris, James, & Co., St. John, N. B. a. Shingle machine. $510 b. Register grates. $513
21 Lordly, Howe, & Co., St. John, N. B.—Turning lathe. $510
22 Nelson, Thomas, & Co., Dundas, Ont.—Cast iron water pipe. $513
23 Campbell, George, Toronto, Ont.—Portable saw forges. $514
24 Mitchell, R., & Co., Montreal, Q.—Lead tube bending machine. $515
26 McKecknie & Bertram, Dundas, Ont.—Iron turning lathes, radial drill, slotting and iron shaping machines. $515

Tool Co., Hamilton, Ont.—Engine lathe, bolt cutter, drilling machine, portable radial drill, steam hammer. $515

29 Stephenson, M., Stratford, Ont.—Hand-drilling machine, for drilling both the fish holes in railroad iron at the same time in their exact position and without measuring, effecting a great saving in labor. $515

Smark, J., Brockville, Ont.—Drilling machines. $515

Fisher, J., & Co., Kincardine, Ont.—Clipping boiler plate machine. $515
Mitchell, R., & Co., Montreal, Q.—Lead tube bending machine. $515
Dunn, P., Cote St. Paul, Q.—Wire nail machine. $515
McFarlane, Thum, & Co., Fredericton, N. B.—Vertical power drill. $515
Balmer & Sheppard, Montreal, Q.—Brick machine. $517
Tiffany, Geo. S., London, Ont.—Tile and brick machine. $517


Powers, S. H., Woodstock, N. B.—Self-acting hand loom. $521
Becker, A., Montreal, Q.—Sample of card clothing. $522
Boeck, Chs., Toronto, Ont.—Combining machines for brush makers. $524

Machines, Apparatus, and Implements used in Sewing and Making Clothing and Ornamental Objects.

Wilkie & Osborne, Guelph, Ont.—Sewing machines. $531
Wanzer & Co., Hamilton, Ont.—Sewing machines. $531
St. Amand, O., Quebec, Q.—Sewing machine. $531
Lawlor, J. D., Montreal, Q.—Sewing machines. $531
Williams, C. W., Manufacturing Co., Montreal, Q.—Sewing machines. $531
Harris, Th., Montreal, Q.—Sewing machine needle sharpener. $531
Popham, James & Ebenezer, Montreal, Ca.—Popham steam peg breaker—now being patented both in Canada and the United States—will cut off and entirely remove the peg-ends that have so long troubled manufacturers and dealers in boots and shoes, and leaves the inside of the sole as free from peg-points and nails as the outside. Attached to the machine will be found samples of the work done, a close inspection of which will conclusively demonstrate the reality of the improvement. $533
Clarke, R., St. John, N. B.—Lasts. $533

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-75.
Motors and Apparatus for the Generation and Transmission of Power.

62 Tandy, G. J., Kingston, Ont.—Steam boiler. 550
63 McKay, Adam, Dartmouth, N. S.—Model steam boiler. 550
64 Kennedy, Wm., & Sons, Owen Sound, Ont.—Water-wheel. 551
65 Tuerk, F. W., Berlin, Ont.—Working model water-wheel. 551
66 Barber & Harris, Meaford, Ont.—Water-wheel. 551
67 Goldie & McCulloch, Galt, Ont.  
   a Turbine water-wheel. 551
   b Steam engine. 551
69 Harris, J., & Co., St. John, N. B.—Water-wheel. 551
70 Fleck, A., Ottawa, Ont.—Oscillating steam engine. 551
71 Thomson Williams’ Manufacturing Co., Stratford, Ont.—Stationary engine. 551
72 Martin, Chas., Belleville, Ont.—Vertical steam engine. 551
75 Piper, Thos., Hamilton, Ont.—Model four-cylinder engine. 551
77 Brush, Geo., Eagle Foundry, Montreal, Ca.—Portable steam hoisting engine, for use on wharves, in mines, quarries, coal yards, etc., and erection of buildings; is very compact and easily handled; all levers and working parts being within easy reach of the driver, without moving from his post. 551
83 Fleming, Geo., & Sons, St. John, N. B.—Oscillating engine. 551
85 Smith, J. G., Dartmouth, N. S.—Miniature steam engine. 551
86 Dixon, Smith, & Co., Toronto, Ont.—Belting. 551
87 Sandall, John, Moncton, N. B.—Valve link motion. 553
91 McKewough, J. W., Chatham, Ont.—Brass dome. 555
92 Morrison, James, Toronto, Ont.—Steam, vacuum, hydraulic gauges. 555
93 Piper, Thos., Hamilton, Ont.—Steam boiler detector gauge. 555
94 Myers, S., & Son, St. John, N. B.—Governor. 555

Hydraulic and Pneumatic Apparatus, Pumping, Hoisting, and Lifting.

95 Patrick, Rob., Galt, Ont.—Rotary pump. 560
96 Cox, H. W., Peterborough, Ont.—Rotary force pumps. 560
97 Oakville Manufacturing Co., Oakville, Ont.—John Dyer, Andrew J. Bounsall, and George C. Bounsall, foundry and iron pump manufactory; force, well, and cistern pumps. 560
100 Bowes, E., & Son, Stratford, Ont.—Force pumps. 560
101 Webster, Stephen, St. Catherines, Ont.—Oil-storing tank. 560
102 Smart, J., Brockville, Ont.  
   a Cistern, well, and force pump. 560
   b Jack screws. 560

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
Agricultural Machinery, Boats, Vessels.

place them again. Expense reduced from twelve thousand dollars to one hundred. Correspondence with railroad companies invited. 576

147 Colford, Henry, Halifax, N. S.—Spark arresters for house, factory, and locomotive. 576

148 Machines used in Preparing Agricultural Products.

148 Rochelle, L. N. & A. H., St. Anselme, Ont.—Magnetic separator and dryer. 580

149 Wilson, J. P., Montreal, Q.—Vacuum pan. 581

149 Copping, G. H., Toronto, Ont.—Evaporator and tobacco lump machine. 584

150 Scales, Rob., Toronto, Ont.—Evaporator and tobacco lump machine. 584

151 Adams, J. L., Montreal, Q.—Tobacco cutter. 584

152 Marengo, J. & A., Montreal, Q.—Cigarette machine. 584

153 Aerial, Pneumatic, and Water Transportation.

155 Herald, D., Gore’s Landing, Ont.—Canoes. 594

156 English, W., Peterborough, Ont.—Hunting canoe. 594

157 Power, W., & Co., Kingston, Ont.—Ship models. 594

158 Lapierre, Zephirin, Isle of Orleans, Q.—Sailing boat rigged, rowing boat, winter canoe. 594

159 Baldwin, P., St. Roch, Quebec, Q.—Ship model. 594

160 Dunn & Samson, Levis, Q.—Ship models. 594

161 Rose, N., Levis, Q.—Ship models. 594

162 Dinning, H., Quebec, Q.—Ship models. 594

163 Marquis, F. H., Levis, Q.—Ship models. 594

164 Auger, E., Quebec, Q.—Ship models. 594

165 Cotman, W., Quebec, Q.—Ship models. 594

166 Samson & Co., Quebec, Q.—Ship models. 594

167 Gingras, E., Quebec, Q.—Ship models. 594

168 Oliver, J., Quebec, Q.—Ship models. 594

169 Oliver, F. H., Quebec, Q.—Ship models. 594

170 Quebec Advisory Board, Quebec, Q.—Ship models. 594

171 Sewell, E. W., Levis, Q.—Drawing of steamship for Canadian trade. 594

172 Robitaille, Th., Quebec, Q.—Complete cod-fishing boat; “Micmac” bark canoe. 594

173 Charland, W., Levis, Q.—Ship model. 594

174 Grenier, Frs., Isle of Orleans, Q.—Filot boat. 594

175 Girard, A., Murray Bay, Q.—Poplar canoe. 594

176 Ross, Elizah, Portland, N. B.—Single scull racing boat, spoon-set oars, set single scull oars, set oars, life boat models. 594

177 Barrill, Jos., Yarmouth, N. S.—Ship model, improved gear for reefing sail. 594

178 Moreley, E., Darmouth, N. S.—Ship models. 594

179 Garmount, Wm.—Ship model. 594

180 Dailey, M. E., Ottawa, Ont.—Model ocean ship. 595

181 Merritt, Abel, Chatham, Ont.—Propeller boat. 595

182 Richeieu & Ontario Navigation Co., Montreal, Q.—Steamboat models. 595

183 Wildgoose, F. H., Montreal, Q.—Steamboat model. 595

184 Meyer, F. W. A., Montreal, Q.—Drawing longitudinal section steamboat. 595

185 Brautey, H., Quebec, Q.—Dragging or grappling apparatus. 596

186 Carroll, S., Widden, Ont.—Marine compass, automatic ship trimmer. 597

187 Pitts, D. H., Halifax, Ont.—Ship windlass and cable brake. 597

188 Mosler, Geo. J., Maitland Island, N. B.—Ship wheel. 597

189 Harris, James, & Co., St. John, N. B.—Capstan. 597

190 Pitts, D. H., Halifax, N. S.—Mast hoop clamp, cable brake, metal jib hank. 597

191 Couvrette et Frigon, Montreal, Q.—Stern of ship (model). 597

192 Harris, James, & Co., St. John, N. B.—Ships’ iron knees, straps. 598

193 Coldbrook Rolling Mills Co., St. John, N. B.—Cut and clinch nails, spikes and knees. 598

194 Weddleton, J. B., Yarmouth, Ont.—Head earrings for ships. 598

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
### FRANCE.

(North of Central Aisle, Column 1 to 7.)

**Machinery.**

**Metal, Wood, Stone, Cloth-working Machinery, Motors.**

<table>
<thead>
<tr>
<th>Machines, Tools, and Apparatus of Mining, Metallurgy, Chemistry, and the Extractive Arts.</th>
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<tbody>
<tr>
<td>1 Fleury, Jules Martin, Paris.—Grinding mill.</td>
<td>505</td>
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<tr>
<td>2 David Bros., Charleville (Ardennes).—Portable forges.</td>
<td>506</td>
</tr>
<tr>
<td>3 Perret, Michel, Paris.—Apparatus for combustion.</td>
<td>506</td>
</tr>
<tr>
<td>4 Goyard, F., Paris.—Crucibles and furnaces.</td>
<td>506</td>
</tr>
<tr>
<td>6 Enfer, Ernest, Paris.—Portable forges; forges for the laboratory; gas pressure bellows apparatus; bellows.</td>
<td>506</td>
</tr>
<tr>
<td>7 Chenailier, Paris.—Universal evaporator.</td>
<td>506</td>
</tr>
<tr>
<td>8 Faure &amp; Kessler, Clermont-Ferrand. —Apparatus for the concentration of sulphuric acid.</td>
<td>508</td>
</tr>
<tr>
<td>9 Desmoulis, Quennessens, &amp; Le Brun, Paris.—Platina apparatus.</td>
<td>508</td>
</tr>
<tr>
<td>10 Pelouze, E., &amp; Audouin P., Paris.—Condenser for gas works.</td>
<td>509</td>
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<tr>
<td>11 Lascole, A., Paris.—Gas apparatus.</td>
<td>509</td>
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**Machines and Tools for Working Metal, Wood, and Stone.**

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<tbody>
<tr>
<td>12 Arbey, F., Paris.—Wood-working machinery.</td>
<td>510</td>
</tr>
<tr>
<td>13 Blanche, H., Paris.—Machines and tools.</td>
<td>510</td>
</tr>
<tr>
<td>14 Roux, Edmond, Paris.—Tools of precision.</td>
<td>510</td>
</tr>
<tr>
<td>15 Dugoujon, jr., Paris.—Saws.</td>
<td>510</td>
</tr>
<tr>
<td>17 Limet-Lapareille &amp; Co., Paris.—Files.</td>
<td>515</td>
</tr>
<tr>
<td>18 La Quintinie, A., &amp; Co., Paris.—Machines and tools for goldsmiths; designs of machines for soap, confectionery, and matches.</td>
<td>515</td>
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<tr>
<td>20 Durand, F., &amp; Marais, Paris.—Brick machines.</td>
<td>517</td>
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</tbody>
</table>

**Machines and Apparatus for Type Setting, Printing, Stamping, Embossing, and for Making Books, and Paper Working.**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>28 Legat, D., Paris.—Machine for sewing straw hats.</td>
<td>531</td>
</tr>
<tr>
<td>29 Cornely, E., Paris.—Embroidering machines.</td>
<td>531</td>
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**Machines and Apparatus for Type Setting, Printing, Stamping, Embossing, and for Making Books, and Paper Working.**

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<tbody>
<tr>
<td>30 Coblenz, Paris.—Electrotypes.</td>
<td>541</td>
</tr>
<tr>
<td>31 Derrey, Ch., Paris.—Typography, engraving, and electrotypes.</td>
<td>541</td>
</tr>
<tr>
<td>32 Tucker, Paris.—Types and cuts.</td>
<td>541</td>
</tr>
<tr>
<td>33 Leroy, A., Paris.—Printing materials.</td>
<td>543</td>
</tr>
<tr>
<td>34 Vital, A., Paris.—Rollers for lithographic presses.</td>
<td>543</td>
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**Motors, and Apparatus for the Generation and Transmission of Power.**

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<thead>
<tr>
<th>Motors, and Apparatus for the Generation and Transmission of Power.</th>
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<tbody>
<tr>
<td>35 Leroy, François, Marseilles.—Models of marine boilers.</td>
<td>550</td>
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<tr>
<td>36 Fontaine, Hippolyte, Paris.—Steam engines.</td>
<td>552</td>
</tr>
<tr>
<td>37 Electro-Magnetic Machine Manufacturing Co., Paris.—Gas machines, galvano-plastic machine, machine to transmit power.</td>
<td>553</td>
</tr>
<tr>
<td>38 Mignon &amp; Rouart, Paris.—Noiseless gas motors.</td>
<td>553</td>
</tr>
<tr>
<td>39 Chauveau, Paris.—Steam engines.</td>
<td>553</td>
</tr>
<tr>
<td>40 Breguet, Paris.—Electro-magnetic machines.</td>
<td>553</td>
</tr>
<tr>
<td>41 Roux, Edmond, Paris.—Hermetic claps for oil cups, etc.</td>
<td>553</td>
</tr>
</tbody>
</table>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
Motors, Hydraulic Apparatus, Railway Plant, Agricultural Machinery.

42 Welby, Rouen.—Belting. 553
43 Jacob, Ch. Moisê, Paris.—Oiling cushions. 553
44 Domange, Lemierre, & Co., Paris.—Belting. 553
45 Perreaux, L. G., Paris.—Screw propeller. 554
46 Bourdin, Paris.—Motor for sewing machines. 554
48 Chazabon, Dominique, Paris.—Cocks for steam, water, and gas pumps, and water closets. 555
48 Lion & Guichard, Paris.—Metallic manometer. 555
49 Macabes, Paris.—Automatic feeder. 555
50 Rigolot, Paris.—Cocks for water, steam, and gas. 555
50a Serrin, Paris.—Regulator for electric light. 555
51 Cuau, Paris.—Boiler injector. 555
52 Cour des Roseaux, Asnières, near Paris.—Automatic oil cups for steam machines; fire-proof insulator for steam pipes. 555

Hydraulic and Pneumatic Apparatus, Pumping, Hoisting, and Lifting.

53 Neut, L., & Dumont, L., Paris.—Centrifugal pumps. 560
54 Garlaudat, Paris.—Refrigerating apparatus. 562
55 Enfer, A., jr., Paris.—Portable forges and bellows. 562
56 David Bros., Charleville (Ardenne).—Portable forges. 562
57 Enfer, Ernest, Paris.—Portable forges, bellows, gas apparatus. 562
58 Morane, jr., Paris.—Hydraulic press for candle manufacture. 563
59 Chrétien, J., Paris.—Automatic apparatus for unloading coal. 563
60 Rous, Edmond, Paris.—Pulleys and tackles. 563
61 Mégy, Echeverria, & Bazan, Paris.—Elevators, regulators, etc. 563
62 Gaussart, Epernay (Marne).—Machines for charging wines with gas. 564
63 Constant, Port-a-Binson (Marne).—Wine press. 564
64 Appert-Mandart, Reims (Marne).—Hoeks and claps for champagne. 565
65 Lejeune, Epernay (Marne).—Machine for charging wines with gas. 565
66 Renard, Epernay (Marne).—Wires and strings for champagne. 565
67 Paillet & Co., Epernay (Marne).—Corks. 565
68 Cazaubon, D., Paris.—Soda water machines; siphons. 565
69 Freal, Epernay (Marne).—Bottling machines. 565
70 Gervais, E., Bordeaux.—Bottling machines. 565
71 Guéret Bros., Paris.—Soda water machine. 565
72 Logette, Ay (Marne).—Clasps for bottles and machines for applying. 565
73 Malvine, H., Paris.—Soda water machines, siphons. 565
74 Maurice, Widow & Gueuin, Epernay (Marne).—Bottling machines. 565
75 Michelot, jr., Epernay (Marne).—Stands and cases for wines. 565
76 Thessier, Fevre, Paris.—Table apparatus for Seltzer water. 565
77 Tricourt, A., Reims (Marne).—Wine-making machines. 565
78 Mestre, A. de, Bordeaux.—Bottling machines. 565
79 Mondollet, A., Paris.—Soda water machine, siphons. 565
80 Cicé-Labarre, Reims (Marne).—Bottle cleaners. 565
81 Durafort, Paris.—Soda water machine. 565
82 Fisse-Thirion, & Co., Reims.—Bottling machine. 565
83 Rigolot, Paris.—Cocks for water, steam, and gas. 566
84 Perréaux, L. G., Paris.—Rubber valvules. 566
85 Giffard & Berger, Paris.—Ice machines. 568
86 Carré, E., Paris.—Ice machine. 568

Railway Plant, Rolling Stock, and Apparatus.

87 Edoux, Leon, Paris.—Special system for mountain railroads. 570
88 Joliot, S., Vincennes.—Car brakes. 572
89 Le Bas, Paris.—Automatic clutch. 572
90 Arbel Lucien, Rive-de-Gier (Loire).—Forged iron wheels for locomotives and cars. 573
91 Brunon Bros., Rive-de-Gier (Loire).—Wheels manufactured by hydraulic pressure. 573

Machines used in Preparing Agricultural Products.

92 Aubin & Baron, Paris.—Bolting mill. 580
93 Durrschmidt, Lyons.—Emery millstones. 580
94 Deplanque, Son, sr., Maisons-Alfort (Seine).—Emery millstones. 580
95 Beyer Bros., Paris.—Soap and chocolate machines. 582
96 Herrmann, G., Paris.—Chocolate machines. 582
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-14.
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16 Zimmermann, Jos., Aix-la-Chapelle.—Needles. 530
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30 Gas Motor Factory, Deutz.—Gas motors. 552
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35 Gehreckens, C. Otto, Hamburg.—Stuffing boxes, steam packing. 555
36 Wertheim, Louis, Bornheim, near Frankfort-on-Main.—Steam packing. 555

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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
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Minerals, Ores, Stone, Mining Products.

47 Krupp, Fried., Essen. — Ores and raw products.

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48 Krupp, Fried., Essen. — Samples of fractured iron and steel.

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1 Rosenegger, Josef, Oberalm, near Hallein, Salzburg. — Model of a glass-melting furnace, cylinder furnace.

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<th>Motors, Power Generators, etc.</th>
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7 Taglecht, Karl, Vienna. — Locomotive spark catcher and flue.

Machinery used in Preparing Agricultural Products.

8 Vojtechovsky & Reznicek, Prague. — Machines for candy production.

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(Section 1, Pump Annex.)

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1 Sulzer Bros., Winterthur, Canton Zurich. — Model of a new system of reversing gear for valve engines. 

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2 Swiss Manufacturing Co., Neuhausen, near Schaffhausen. — Model of an apparatus for heating railway carriages. 

Machines pertaining to watchmaking are exhibited in Swiss section, Main Building, and catalogued in that volume.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
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2 Chaudron, Joseph, Brussels.—Apparatus for boring and tubing mining shafts. 501

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5 Souheur, Arnold, Seraing, near Liège.—Safety lamps for coal mines. 502

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10 Béde & Co., Verviers.—Wool cleaning machine. 522

11 Delrez, Félix, Verviers.—Cards. 522

12 Dethiou, Gilles, & Co., Verviers.—Cards. 522

13 Horstmans Bros., Liège.—Cards. 522

14 Martin, Célestin, Verviers.—Looms, mechanical winder, cards. 522

15 Martin, Th. J., Pisseroule-Dison, near Verviers.—Cards. 522

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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
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The Machinery Exhibit of the Netherlands is installed in the Main Building, and catalogued in Part I.

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SPAIN.

[Machinery Hall (Section F.1.)]
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### DEPT. V.—MACHINERY.

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| 13 | Wolf, Morris, St. Petersburg.—Sample book of typographical types. |
| 15 | Lesser, Gustavus, St. Petersburg.—Section of a steam cylinder with steam distributing apparatus. |
| 16 | Steam Engine Works, Port of Cronstadt.—Steam engine and boiler for a barge. |
| 17 | Lilpop, Rau, & Lovenstein, Warsaw.—Portable steam engine, ten horse power. |
| 18a | Imperial Technical School, Moscow.—Model of a steam engine with parallel motion and regulator. |
| 19 | Admiralty Tyova Works, near St. Petersburg.—Chains and moving tackle. |
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| 21 | Hofmark, Bruno, St. Petersburg.—Wire transmission belt. |
| 22 | Milcz, William, Warsaw.—Cordage transmission straps. |
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| 26 | Admiralty Tyova Works, near St. Petersburg.
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|   | b Diving apparatus. |
| 27 | Friedland, Michael, St. Petersburg.—Pumps, rotary system. |
| 28 | Liarsky, Nicolas, Smolensk.—Load roller. |
| 29 | Tretzer, Adolphus, Warsaw.—Fire engine. |
| 30 | Lange & Co., Moscow.—Fire engine hose. |
| 31 | Mick, William, Warsaw.—Fire engine hose. |
| 32 | Hesse, Charles, Riga.—Metal capsules. |
| 34 | Lilpop, Rau, & Loenvenstein, Warsaw.
|   | a Bolts, screws, and other railway and car fittings. |
|   | b Buffer spring and coupling appliance; wheel and spring for railway carriages. |
| 35 | Shiloff, L. P., Moscow.
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|   | b Railway signals. |
| 37 | Pootilof Iron Works Co., St. Petersburg.—Railway ties, axles, and wheels. |
| 38 | Abrookoff Steel Foundry, near St. Petersburg.—Railway wheels, ties, and axles. |
| 39 | Russian Rail Manufacturing Co., Government of Riazan, District of Pronsk.—Railway ties, chairs, nails, bolts and nuts. |
| 41 | Yosefow Sugar Manufacturing Co., Government of Warsaw.—Metallic sugar loaf form. |
| 42 | St. Petersburg River Yacht Club.—Rowing boats. |
| 43 | Alexandroosky, —, St. Petersburg.—Air bags for raising sunken vessels. |
| 45 | Modeling Workshop in the Naval Museum, St. Petersburg.—Models of ships, yachts, and circular iron clads. |
| 46 | Russian Steamboat & Trade Co., Odessa.—Model of steam schooner for the coal trade. |
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-15.
THE PENNSYLVANIA RAILROAD

IS THE

Best Constructed and Best Equipped Railway
on the American Continent.

THE ENTIRE LINE between New York and Pittsburg is laid with a double track of steel rails, weighing sixty-seven pounds to the yard. These rails are secured to oak ties, averaging 2600 to the mile of single track, and are connected between the ties, thus preventing all jarring or jolting.

THE ENTIRE LINE is ballasted with broken stone eighteen inches in depth, securing firmness and freedom from dust.

OVER ONE HUNDRED MILES of third track is laid at suitable intervals, affording facilities for keeping freight and way trains entirely out of the way of Express Trains.

ALL BRIDGES are of iron or stone, and are the most substantial structures of the kind on the continent.

THE BLOCK-SIGNAL SYSTEM, operated by telegraph, extends over the entire line and renders accidents almost impossible.

THE LOCOMOTIVE ENGINES AND PASSENGER CARS run are built according to standards established by the Company, of the very best materials, and are recognized models of efficiency, strength, and comfort.

ALL PASSENGER TRAINS are equipped with the Westinghouse Automatic Vacuum Brake, which has been pronounced by competent authorities in Europe and America the best safeguard ever introduced on railways.

THE HOTELS AND REFRESHMENT FACILITIES on the line are unexcelled.

THE SYSTEM of governing the business of the Company is perfect.

THE COMFORT AND CONVENIENCE of travelers are paramount considerations.

FRANK THOMSON,
General Manager.

D. M. BOYD, Jr.,
General Passenger Agent.
BAEDER, ADAMSON & CO.,
MANUFACTURERS OF
GLUE, SAND PAPER,
GROUND FLINT AND EMERY,
EMERY PAPER AND EMERY CLOTH,
CURLED HAIR AND STUFFING HAIR,
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THE UNITED STATES GOVERNMENT BUILDING.

Scale, 150 ft. to 1 in.

1. Offices.
2. Water-closets.
3. War Department.
4. Navy Department.
5. Post Office.
6. Treasury Department.

7. Agricultural Department.
8. Interior Department.
9. Smithsonian Institution and Food Fisheries.
10. United States Hospital.
11. Tent.
12. Laboratory.

Total Length, 504 ft. Width, 360 ft. Height, 50 ft.
SPECIAL BUILDINGS.

EXHIBITION MADE BY THE UNITED STATES GOVERNMENT.

CONTRIBUTING DEPARTMENTS.

WAR DEPARTMENT.—Hon. J. DONALD CAMERON, Secretary of War.
NAVY DEPARTMENT.—Hon. GEORGE M. ROBESON, Secretary of the Navy.
TREASURY DEPARTMENT.—Hon. LOT M. MORRILL, Secretary of the Treasury.
INTERIOR DEPARTMENT.—Hon. Z. CHANDLER, Secretary of the Interior.
POST-OFFICE DEPARTMENT.—Hon. JAMES M. TYNER, Postmaster-General.
AGRICULTURAL DEPARTMENT.—Hon. FREDERICK WATTS, Commissioner of Agriculture.
SMITHSONIAN INSTITUTION.—Prof. JOSEPH HENRY, Director of Smithsonian Institution.
COMMISSION OF AMERICAN FOOD FISHES.—Prof. S. F. BAIRD, Commissioner.

BOARD ON BEHALF OF U. S. EXECUTIVE DEPARTMENTS AT THE INTERNATIONAL EXHIBITION OF 1876.

Col. S. C. LYFORD, Ordnance Corps, U. S. Army, Chairman of the Board, and Representative of the War Department at the Exhibition.
Rear Admiral THORNTON A. JENKINS, U. S. Navy, Representative of Navy Department.
Hon. R. W. TAYLER, First Comptroller Treasury, Representative of Treasury Department.
Hon. JOHN EATON, Commissioner of Education, Representative of Interior Department.
Dr. C. F. MACDONALD, Superintendent Money Order Bureau, Representative of Post-Office Department.
WILLIAM SAUNDERS, Superintendent Propagating Garden, Representative of Agricultural Department.
Prof. S. F. BAIRD, Assistant Secretary Smithsonian Institution, Representative of Smithsonian Institution, and Commissioner of American Food Fishes.
WM. A. DE CAINDRY, Secretary of the Board.

UNITED STATES GOVERNMENT BUILDINGS.

MAIN BUILDING, No. 51.

Architect, JAMES H. WINDRIM.—Size, Floor Area, 102,840 square feet.

This structure is situated at the intersection of Belmont and Fountain Avenues, is built in the form of a Latin cross, and is of framed white pine, unplaned, with two tiers of windows. It contains for exhibition contributions from the different Executive Departments of the United States Government.
ORDNANCE LABORATORY BUILDING, No. 54.

Architect, Col. T. T. S. Laidley, Ordnance Corps, U. S. A.—Size, 53 feet by 23 feet. This building is located north of Main Building, and is built of wrought iron, rivetted, covered with a light casing of wood. It is designed with the view of preventing the great loss of life that usually results from the demolition of a building of ordinary construction, by the explosion of even a small amount of powder. In the event of an explosion in this building, the roof and sides fall at once, and the iron frame is left standing, in order to shield the inmates from being crushed beneath the ruins. The building, as well as its contents, is on exhibition.

UNITED STATES ARMY POST HOSPITAL, No. 52.

Size, 35 feet by 39 feet, and Addition of 40 feet by 14 feet.

This Hospital is situated north of the Main Building, is two stories in height, and is intended to hold twenty-four beds. It is built of wood, and contains medical appliances of all kinds, including medicines, instruments, hospital stores, clothing, books, and furniture, models of hospitals, cars, boats, ambulances, etc., microscopical and other specimens. The construction of the building and its contents are on exhibition.

TRANSIT OF VENUS BUILDINGS.

This structure is situated southwest of Government Building, consisting of,—
1. Transit House.—Dimensions, 10 feet by 8 feet.
2. Photographic House.—Dimensions, 12 feet by 10 feet.
3. Equatorial House.—Dimensions, 11 feet in diameter.

All the instruments employed in observing and recording the phenomena of the late transit of Venus are so placed on exhibition that the various processes will be exemplified by practical workings.

WAR DEPARTMENT.

SIGNAL SECTION.

The instruments exhibited in the Signal Service Section of the United States Army are all of American manufacture, and only such as have been devised for the signal service of the army by officers or enlisted men of the corps.

METEOROLOGICAL INSTRUMENTS.

The display of self-recording instruments consists of barographs, anemographs, thermographs, rain-gauges, and evaporator. Some of these are worked by electrical batteries, others by mechanical means. Those recording the velocity and direction of the wind, the amount of rainfall and changes of temperature, are connected with their respective wind-cups, wind-vanes, rain-receivers, and thermometers, exposed upon an artificial glass roof, beneath which the recording apparatus is placed, each electrical instrument having its own battery. Artificial currents of air and water are used to obtain uninterrupted working.

UNITED STATES SIGNAL STATION.

This department consists of a model United States signal service station, similar to those established in different sections of the United States. Here are exhibited the meteorological instruments used on station; the manner of taking, recording, and transmitting to the central office at Washington the observations upon which the weather reports, storm warnings, etc., are based; the method of publishing and distributing the predictions forwarded from the office of the Chief Signal Officer of the army, as well as the various means adopted to furnish at the earliest practicable moment all weather information which would be of benefit to commerce and agriculture. Specimens of the publications, charts, and maps of the office of the Chief Signal Officer are also exhibited.

PRINTING DEPARTMENT.

Here are exhibited in detail the printing of "weather maps" and "farmers' bulletins."

FIELD WORK.

This portion of the exhibition comprises a complete United States field-telegraph train, with capacity to erect 50 miles or more of portable telegraph line; portable signal tower 75 feet high, with its wagon; semaphore, signal flags, torches, rockets, bombs, and mortars, colored lights, heliographs (for communicating by means of sun flashing), and international flags, and other apparatus used in communicating with troops in the field or with vessels.
SPECIAL BUILDINGS.

Quartermaster, Medical, Engineer Sections.

MODEL DEPARTMENT.
The model department comprises models of the different instruments used in field signaling, many of the inventions of meteorological instruments and portable instrument shelter, and a new electrical instrument for transmitting by telegraph the isobarometric and isothermal lines of the Signal Service weather maps.

QUARTERMASTER SECTION.

Uniforms.—Revolutionary uniforms, and those of succeeding years; present uniforms of the army.

Camp and Garrison Equipage.—Tents, flags, cooking utensils and tools; field music—drums, bugles, etc.; bunks, blankets, and bedsacks.

Means of Transportation.—Wagon and harness; ambulance and barrows; aparaj; pack saddle; historic wagon; portable and traveling forges.

Machines.—For cutting out clothing; for brass screwing shoes; for testing fabrics.

Farriers' and Saddlers' Tools.

Standard Horse Shoes.

Veterinary Chest.

Kiernan's System of Horse Shoeing.

MEDICAL SECTION.

This display represents the character of the work of the medical staff of the United States army in peace and war. Four classes of objects are exhibited by the objects themselves, by models, or by photographs.

1. Hospitals for Sick and Wounded Soldiers.

   a. Post hospital of 24 beds of full size.

   b. Four full-sized hospital tents, with furniture representing the tent ward which served as the unit of the "tent field hospital" used during the civil war of 1861-65.

   c. Models of the barrack "General Hospitals" used during the war of 1861-65, viz.: a model of the form of barrack ward for 60 beds, on the scale of half an inch to the foot; and four ground-plan models showing combinations of such wards in general hospitals.

2. Medical and Hospital Supplies.

   Samples of articles on the medical supply table of the army; medicines; hospital stores; surgical instruments and dressings; hospital furniture, bedding, clothing, and appliances; books, blank forms for reports, and stationery; medical panniers and medicine wagons, and samples of the artificial arms, legs, trusses, and other apparatus issued by the medical department to disabled soldiers.

3. Transportation of Sick and Wounded.

   Stretchers, litters, and ambulances, full size and models; models of hospital railroad cars, hospital steamboat, and hospital ocean steamship, illustrating mode of transporting sick and wounded during the late war.

4. Treatment of Diseases and Injuries of Soldiers.

   Arm medical museum, represented by medical, surgical, anatomical, and microscopical specimens, photographs of specimens, and catalogue of museum; catalogue of Surgeon-General’s office; photographed title pages of rare books on military medicine and surgery, etc.; medical and surgical publications of Surgeon-General’s office.

   The Post Hospital, for twenty-four beds, constructed from plans approved by the War Department, contains the greater part of the display of the Medical Department, as follows:

   Room 1, 452x2, a ward with twelve beds, furniture, bedding, clothing, etc.

   Room 2 (the other ward, same size), models of hospitals, ambulances, hospital cars, boats, and ships, specimens from museum, etc.

   Room 3, the dispensary, samples of medical supplies.

   Room 4, the office, samples of surgical instruments, medical and surgical books, blankets, etc.

   Room 5, dining room, table ware, mess furniture.

   Room 6, kitchen, cooking apparatus.

   Room 7, office of officer in charge of the display.

   Rooms on second floor, stretchers, litters, medicine chests, and panniers; artificial legs and arms, trusses for rupture, and other apparatus.

   Tent ward, full-sized hospital tents, pitched in the rear of the post hospital.

   Ambulances, medical wagons, and carts, full-sized, parked near the tent ward.

ENGINEER SECTION.

Maps and Drawings.

Map of the United States, showing work done by corps of engineers, 1776-1876.

Drawing of Rock Island bridge.

Map of canal and locks, Des Moines rapid.

Map of Mississippi river, from Le Claire, Iowa, to Rock Island, Illinois.

Drawings of improvements of Mississippi river between mouths of the Illinois and Ohio.

Plans of improvements on Hudson river, near Albany.

Drawing of iron landing pier, Delaware breakwater harbor.

Drawing of foundation of Fort Delaware.

Drawing of dynamometer for determining force required to screw down iron piles of Lewes pier.

Drawing of Delaware breakwater, with details of breakwater and ice barrier.

Map of shore of Delaware harbor, including Cape Henlopen.

Chart of Schuylkill river, from mouth to Chestnut Street bridge, showing improvements made by United States in its navigation from 1870 to 1875.

Drawing of dredge-boat "Henry Burden."

Drawing of mortar mill and concrete mixer.

Map of flood plain of Minnesota and Missis- sippi rivers, showing connection with basin of Red river and Lake Winnipeg.

Drawings of snap boat.

Chart of Galveston entrance.

Detailed drawings and photographs, illustrating experimental works at Galveston entrance.

Chart of Indianola harbor.

Detail drawings of end dock.

Charts of Lake Survey.

Lighthouse drawings, Eleventh district.

Drawing of river and harbor works.

Plans of cribs and pier pile at Chicago.

Maps and hydrographs of Ohio, Mononga- hela, and Great Kanawha rivers.

Drawings of crib work for piers on Lake Ontario.

Special map of region west of Mississippi river.

Special triangulation map of region west of Mississippi river.

Detailed topographical sheets of above re- gion.

Specimen copies of photolithographic atlas,
Engineer, Ordnance Sections.

Sea Coaft Guns.

20 in. Rodman gun, on carriage and chassis, with hydraulic buffer, on platform; implements.

12 in. Thompson b. l. rifle, experimental, under Laidley's gun lift.

6 in. Sutcliffe b. l. rifle, experimental, on carriage and chassis, with Sinclair's friction-brake, mounted on platform; implements.

10 in. Woodbridge gun, experimental; in slings, under Laidley sling cart.

8 in. m. l. converted rifle, experimental, on 10 in. casemate carriage and chassis, with pneumatic buffers, mounted on platform in model of casemate; implements.

Mann's 8 in. b. l. rifle, wrought iron, experimental, mounted on top carriage and chassis.

8 in. siege howitzer, mounted on wooden siege carriage.

Siege Guns.

4.5 in. siege rifle gun, mounted on Benton's experimental iron siege carriage, with limber; implements.

Field Guns.

Light 12 pdr. gun, 4.62 in. wooden carriage, with limber; implements.

Sutcliffe 3.9 in. b. l. rifle, experimental.

Hotchkiss 3.9 in. b. l. rifle, experimental.

Moffat 3.15 in. b. l. rifle, experimental.

Mann's 3 in. b. l. rifle, experimental.

3 in. wrought iron, m. l. rifle, mounted on Benton's experimental iron 12 pdr. field carriage, with limber and caisson; implements; model horse harnessed to limber, with mounted driver.

10 pdr. Parrott rifle, mounted on Watervliet experimental iron field carriage, with limber.

3 in. Whitworth field piece, on carriage.

2.5 in. Woodbridge gun, experimental; fired 1377 times.

Hotchkiss field cannon, experimental.

Rebel b. l. pieces, field and boat, experimental skids.

Lyman's multicharge rifle, cal. 6 in., experimental skids.

Bombard and Wade perforated gun, experimental; used to determine experimentally exterior lines of heavy cannon, by means of pressure at different points of bore.

Mountain howitzer, mounted on carriage.

Mountain howitzer battery, on stands.

Volley and Repeating Guns.

 Gatling gun, short barrel, cal. 45, on cavalry carriage; model horse in harness.

Hotchkiss revolving cannon, on carriage, experimental.

Union repeating (coffee-mill) gun, on carriage, experimental.

Regua battery, on carriage, experimental.

Guthrie & Lee gun, on carriage, experimental.

Vandenburgh volley gun, on carriage, experimental.

Revolutionary Guns.

6 pdr. French guns, bronze, presented by Lafayette; forming enclosure around models of modern gun plant.

12 pdr. siege gun, bronze, mounted on wooden carriage, with limber.

8 ft. howitzer, bronze, mercer.

24 pdr. howitzers, Byer's; cast in Philadelphia.

Anthony Wayne howitzers, intended to be used on horseback; cast in Germantown, Philadelphia, by D. King.

Mortars.

13 in. sea-coast mortars, on bed, with centres, pittles, chassis mounted, on platform; implements.

24 pdr. Coehorn mortars, on beds.

Carriages.

New cavalry forge cart.

Projectiles.

Shot, shells, grape, canister, etc., for various weapons and calibers; smooth-bored and rifled; fired and unfired; hand-grenades,
SPECIAL BUILDINGS.

War and Navy Departments, Ordnance and Appliances.

bombs, rockets, torpedoes, etc. Experimental projectiles from West Point.

Small Arms.

Historical collection of muzzle-loaders, wall-pieces, muskets, musketeons, rifles, pistols, flintlocks, percussion, breech-loaders, fixed and movable chambers, revolvers, tip-up barrels, uccelie guns, cylindered, magazine, chassepot, repeating, coffee-mill, drop-lever, slap-over guns, American and foreign.

Bayonets, blades, knives, swords and scabbards, lances, pikes, halberds, cleaning appliances, etc.

Accoutrement.

Sets of infantry, cavalry, and artillery equipment; cartridge boxes, canteens, metal work on scabbards, etc.; powder horns and flasks, cartridges, and cases of various materials and calibres; primers, locks, fuses; cartridge-making machines.

Models.

Minute man.

Rifle private, full dress, Hall breech-loading rifle, 1818.

Private, mounted rifles, Mexican War, 1845. Infantry private, 1835-1856, regulation equipment.

Cavalry private, 1865, Spencer, Mann's equipment.

Infantry man, full dress, 1876. Infantry man, marching outfit, 1876. Cavalry man, present, full dress, 1876. Light-artillery man, full dress, 1876.

Horse, carved in wood, for cavalry equipment.

Horse, carton pierre, for artillery harness.

Horse, stuffed, for Galting cart.

Rock Island Arsenal, Illinois, in photo-relief.

Hitchcock gun-plant, with gun in sections, with set test specimen Hitchcock gun material, showing tensile and torsional strength; sample forging-disk; Dank's iron bloom; Graf, Bennett & Co., Hitchcock's gun materials; long turnings H.G. material; and thin turnings H.G. material.

Rodman gun-plant, with specimen, showing tensile compression and torsional strength of the American cast-iron used in Rodman gun.

Woodbridge gun, with set specimens, showing tensile strength of Woodbridge gun construction; reed-wire for Woodbridge gun; and half-ring, bronzed, Woodbridge gun.

Cast of bore in gutta-percha of 8 in. m. l. converted rifles, with centres for same on trestles.

Glass-case specimens, containing small models, relics, etc.

Tree, cut in two by musketry at the battle of the Wilderness, Va.

Boards of component parts of small arms, and progressive work on scabbards.

Rodman guns, mounted in barbettes and in cases.

Mortar, mounted on bed with centre pin, chassis.

Table with models, field and siege carriages.

Lead bullets, joined together by collision in mid-air at the battle of Petersburg, Va.

Machines.

Cased: musk; Baxter engines.

Cartridge Machinery.

Portable gas furnace for annealing cartridge shells; double-action press; drawing presses; case and cup anvil trimmers; header; primer; cup venting, and impression machines; bullet, ball-trimming, and greasing, tapering, and loading machines; cup anvil press; rotary fan; packing tables and work boxes.

Gun-making Machinery.

Drop hammer; forge; trimming jumper; barrel-boring lathe, for nut boring and quick boring; barrel-turning lathe; straightening set, punching stand; vises, with machine for bending swivels; trimming press; rifling, brush, and profiling machines; milling and screw machines; clamp milling machine; machine for bending swivels; grind-stones, engine lathe; emery mill grinder; second drilling receiver; first turning stock; lock-bedding with post and spare pulley; air pump and reservoir; bench for assembling guns.

Instruments.

Laidley laboratory, showing principles of construction, and illustrating experiments in ballistics; models pressure; pendulum chronovette; camera lucida for representation with model of Frankford target; Shultz chronoscope, with Russel's interrupter; vignotti machine; Le Boulanger chronograph; Benton thread, and electro-ballistic machines; target for electro-ballistic machines; recoil dynamometer; mercurial densimeter; scales for mercurial densimeter; stereometer; collection of inspecting instruments for cannon and projectiles for 3 in. rifled gun; iron tube for firing through with safety; firing stand.

Miscellaneous.

Boards showing rifle practice.

Publications from ordnance office and artillery school.

Medal, army target practice; stadia, silver (1 cavalry, 1 infantry); telemetres (1 battery, 1 infantry, and 1 field).

Corrugated iron powder barrels; copper powder barrel.

Illustrating progress made by the torpedo school.

ORDNANCE BRANCH.

Rifled and Smooth Bore Guns.—15 in. guns on Ericcison's and Edes's steam carriages.

[These two guns are mounted on a circular platform and inclosed in a wooden turret, representing in size and form a monitor's iron turret.]

Pieces of heavy ordnance, muzzle and breech loading, of antiquated styles and manufacture. Guns from 11 in. to 3 in. calibre, and 100 pds. to 12 pds., variously mounted.

Torpedoes.—Automatic, stationary, and movable; electric batteries, wires, fuses, etc.; illustrating progress made by the torpedo school.

Small Arms.—Muskets, rifle and smooth bore, breech- and muzzle-loading; pistols, swords, cutlasses, Bowie knives, battle axes, tomahawks, boarding helmets, etc.

Ordnance publications.

Samples of gunpowder.

Inspecting instruments for heavy guns; implements for gauging and inspecting shot and shill.

Fuse presses; machines for making percussion caps; metallic cartridges; solid head metallic musket and pistol cartridge now used in the navy, showing the different stages of
manufacture; other musket cartridges and cartridge inventions in possession of the navy. Rifled projectiles for heavy guns; inventions of Dahlgren, Holroyd, Dana, Parrot, Hotchkiss, James, Brooks, and other inventors.

Sub-calibre and elongated projectiles for smooth bore guns; solid shot, shell, incendiary shell, grape, canister, shrapnel, as used at present, and as previously used or proposed. Projectile which have been fired at iron targets; models of projectiles; model gun-cases; war rockets, hand grenades; leather work of navy ordnance; sponges, rammers, and scrapers of different styles and inventions; fuses, cannon primers, and caps, cannon locks, night signals, impressions from guns, vent impressions; gun sights; breech, reinforce, and trunnion.

Figures of sailors, showing the dress and arms at different periods. Miscellaneous articles and naval relics.

NAVIGATION BRANCH.

Navy bunting and navy flags, illustrating the present state of the bunting manufacture in the United States, as shown in the bunting made for the navy and known as "navy bunting," and also the mode of making flags by dyeing in pattern.

Bunting testing machine. Navy sounding machines and auxiliary apparatus, showing the improvements in Sir William Thomson's sounding machine, and the various devices for detecting sinkers, and bringing up specimens of bottom, water, etc. Navy signal apparatus, showing the colored lights (Coston's), with specimens. Navy compasses and compass-testing instruments, showing specimens of the navy compass, azimuth circle, tell-tale, boat, and monitor compasses. Portable compass-testing instrument, with specimens to illustrate development of the liquid compass. Specimens of the old dry or air compass of American makers, illustrating the progress of improvement. Adjustable binnacle.

NAVAL OBSERVATORY.


HYDROGRAPHIC OFFICE.

Nautical charts, books, etc., published by the Hydrographic Office.

NAUTICAL ALMANAC OFFICE.

Publications of the office.

YARDS AND DOCKS BRANCH.


Plans of machinery at Boston navy yard; plans of dry docks at Boston, Mass., and Norfolk, Va.


Models of dry docks at Boston, Mass.; New York, N. Y.; Norfolk, Va., and Mare Island, Cal.

Pyramid of blocks of wood taken from naval vessels.

STEAM ENGINEERING BRANCH.

Machinery of the "Nipsic." The machinery of the various sizes of steam launches.

The engines of the "Epervier."

Part of the original machinery of the torpedo boat "Suyten Duyvel," a steam launch, with the first torpedo machinery used in the United States Navy.

Detail drawings of compound engines. Photographs of machine shops, foundries, etc., showing improved tools used in the manufacture and construction of steam machinery.

Two compound boilers. Baird's distiller, illustrating the method of making fresh water on board ship at sea.

EQUIPMENT AND RECRUITING BRANCH.

Young's ship's galley, with utensils for cooking for 500 men. Hemp, manila, and wire rope; cable, blocks, chain cables, etc.

CONSTRUCTION AND REPAIR BRANCH.


Full-rigged model.

MEDICAL AND SURGICAL BRANCH.

Medicines and Hospital Stores used in the Navy.

Surgical instruments and appliances usually supplied in the service; additional case of surgical instruments occasionally supplied in lieu of the standard operation case.

Cots and stretchers for transportation of wounded in action.

Model of a sick bay: the part of the ship usually allotted for hospital accommodation.

Model of hospital ship.

Fan for ventilating the hold of a ship in hot climates.

Starting funnel arrangement for aerating distilled water.

Set of record and account books for a naval hospital.

Fracture bedstead, for elevating the patient and changing position.

Bed with woven wire mattress.

Photographs and plans of naval hospitals.

PAY, PROVISION, AND CLOTHING BRANCH.

Articles and materials of clothing issued in the navy.

Package, showing the manner of packing clothing for sea.

Navy rations in glass jars, and packages of the same as prepared for sea.

"Small stores," articles for mess use: pans,
spoons, knives, etc., tobacco, soap, needles, thread, and other small articles. Packages of tobacco and soap as packed for sea use.

Paymasters' books and blanks for a ship with complement of 200 men; paymasters' sta-

tionery; stewards' stores, scales, and tools used in issuing provisions. Iron safe; locks used on paymasters' store-

rooms, three in number. Specimen of candles.

TREASURY DEPARTMENT.

(Owing to want of sufficient appropriation by Congress for defraying the expense of the par-

ticipation in the Exhibition by the Treasury Department, no definite arrangements have yet

been made for contributions from it.—March 31, 1870.)

INTERIOR DEPARTMENT.

PATENT OFFICE.

Publications.—Annual reports; official gazettes; indexes to patents, general and yearly; volumes of patents, monthly and weekly; decisions of Commissioner of Patents; mechanical dictionary; official classifications.

Drawings of Models.—Selected series (6,000), intended to serve in the illustration of the Patent Office work, from the classes given below.

Models.—Selected series (9000), intended to serve in the illustration of the Patent Office work, from the following classes: agriculture; harvesters; mills and presses; architecture; civil engineering; railways; navigation; metallurgy; metal working; wood working; steam; hydraulics; pneumatics; mechanical movements; hoisting; horse powers; journals and bearings; vehicles; fire arms; textile; printing and stationery; stone; clay; glass; leather; light; heat; electricity; household chemistry; gas; ice, and fine arts.

Miscellaneous Collections of Interest.—The original Declaration of Independence; Gen. Washington's commission from the Continental Congress; personal effects of Gen. Washington, such as furniture, porcelain, clothing, cane, sword, traveling escritoire, surveying compass, camp equipage, including tent, mess-kit, money-chest, etc.

Weapons of historical interest, such as bayonets from General Braddock's line of march; muskets presented by the Emperor of Morocco to Mr. Jefferson; war saddle of Baron De Kalb; sabres of honor presented to United States officers by sovereigns and beys; model of invention by President Lincoln.

PENSION OFFICE.

Publications.—Annual reports; graphic illustrations; wall maps; wall charts; portfolios of diagrams, etc.; collections of historical interest; selections from the archives of the office relative to the Revolutionary war.

GENERAL LAND OFFICE.

Publications.—Annual reports; digests, and other documents.

Graphic Illustrations.—Maps, charts, and atlas of surveys; miscellaneous collections; instruments and processes employed in the land survey.

INDIAN OFFICE.

Publications.—Reports and other publications.

Illustrations.—Portraits, photographs, maps of reservations, etc.

MODELS.

Models.—Wigwams, communal houses, canoes, etc.

Miscellaneous Collection of Interest.—Costumes, male and female, adult and others; weapons of war and the chase; tents, wigwams, canoes, etc.; domestic utensils; specimens of food; toys, games, and festivals, arts and manufactures of the tribes; ethnological collections, etc.

EDUCATION OFFICE.

Publications by the Office.—Annual and special reports, and circulars of information.

Publications by other Offices or Persons.—Foreign reports on American education; foreign educational reports and documents; treatises on pedagogy; and educational journals.

Graphic Representations.—Wall maps and charts; portfolios of engravings, drawings, and photographs; busts; paintings, and other portraits.

Models of Educational Buildings.—The primitive log school-house; country school-house of to-day; city graded school-house; college buildings; details as to dormitories, ventilative apparatus, school-rooms, etc.; models of adobe and sod school-houses.

Specimens of School Furniture, Apparatus, and text-books.—Historic collection, showing progress in text-books; specimens and models of school desks, seats, black boards, school maps, charts, etc.; specimens of modern statues, globes, natural history cabinets, chemical and philosophical apparatus, chemical appliances, etc.

Miscellaneous Collections of Interest.—Selected volumes of state and city educational reports; catalogues of private schools, academies, seminaries, colleges, and professional schools, selected series; catalogues and reports of orphan, reformatory, and charitable schools for the young, etc.; catalogues and reports of institutions for the deaf mute, blind, etc.; catalogues and reports of libraries; catalogues and reports of museums of art, of science, and of natural history.

These miscellaneous collections, some bound and others in their original condition, will be exhibited as showing specimens of the materials for the study of education, which are published by the systems and corporations themselves.

Volumes of manuscript returns made to the Bureau of Education by educators and school officials of every grade, and used in the preparation of its annual and special reports.

CENSUS OFFICE.

Publications.—Decennial censuses; statistical atlas, 1870.
Graphic Illustrations.—Maps, charts, and diagrams.

Miscellaneous Articles of Interest.—Original schedules of the census of 1790; selected volumes of schedules of subsequent censuses.

**GEORELOGICAL AND GEOGRAPHICAL SURVEY OF THE TERRITORIES.**

1st Division.

Publications.—Reports, bulletins, etc.

Graphic Illustrations.—Topographical and geological atlases; wall maps and charts; panoramic photographs; stereoscopic views; photographic portfolios; photographic transparencies; paintings, landscapes, portraits, etc.

Models and Reliefs.—Topographical and geographical relief maps; relief sections; models of displacement; models of ancient ruined cliff habitations; models of same restored.

Collections of Interest.—Geological and mineralogical cabinets; pottery, costumes, weapons, implements, toys, etc.

2d Division.

Publications.—Reports; bulletins; monographs, etc.

Graphic Illustrations.—Topographical and geological atlases; wall maps and charts; panoramic and stereoscopic views; portfolios, albums, and transparent photographs.

Models and Reliefs.—Topographical and geological relief maps; geological structural sections; models of displacement.

Miscellaneous Collections.—Geological and mineralogical specimens; arms, clothing, etc.

### POST-OFFICE

The exhibition of this Department is classed under the following general heads:

**A MODEL WORKING POST-OFFICE.**

This is a branch office or station of the Philadelphia office, and shows the practical workings of the following divisions of this Department, viz.: Box and general delivery system; system of carrier delivery and collections; registered letter system; money-order system; foreign mail system, etc.

**RAILWAY MAIL SERVICE DIVISION.**

Two railway post-offices or postal cars, equipped with mail-bag catchers, and all other first-class appointments of that service, under charge of railway post-office clerks, by whom the mailing and distribution of outgoing mails is performed. Several models of mail catchers are also exhibited under this head.

Model mail cars, small size, exhibiting the practical working of the mail-bag catcher upon a miniature truck inside the building.

**AGRICULTURAL DEPARTMENT.**

The exhibit from the Agricultural Department embraces as follows:

**BOTANICAL DIVISION.**

A collection of all the timber trees of the United States, in sections, showing interior and exterior surfaces; specimens of flowers, leaves, and fruits; herbarium specimens of grasses and other specialties.

**STATISTICAL DIVISION.**

Large outline maps of the United States, showing forest areas, extent, and value of farming lands, and amount of production, by counties; arrangement of charts and diagrams detailing amount of special products, by sections; statistics of farm animals, and illustrated statistics of industrial education; statistical album of miscellaneous details, with charts, diagrams, etc.

**ENTOMOLOGICAL DIVISION.**

Collections of fruit and vegetable models; birds beneficial and injurious to farmers and orchardists; poultry types, illustrated by stuffed specimens; collection of grains and cereals; collection of textile fibres of the United States, with specimens of their manufacture; specimens of tobacco, from different tobacco-producing sections of the United States; mounted collection of beneficial and injurious insects.

**MICROSCOPICAL DIVISION.**

Series of water-color drawings illustrating typical genera of microscopic fungi; preparations illustrating the characteristics of poisonous and edible mushrooms common to the United States; illustrations displaying the varied character of the starch granules of plants; drawings and illustrations explaining method of distinguishing vegetable and animal fibres, their kind and quality; drawings displaying vegetable and animal cellulose and starches, and illustrating methods of detecting them in organizations.

**CHEMICAL DIVISION.**

**Fertilizers.**—Mineral—including phos-
Horticulture, Animals, Fish, Ethnology.

The Smithsonian Institution makes the following exhibit:

**Publications of the Institution.**
Smithsonian contributions to knowledge; miscellaneous collections; annual reports, and other publications.

Meteorological work of the Institution: Charts showing the mean temperature, rainfall, and barometric pressure of the United States.

International exchanges; statistics of number of correspondents; extent of distribution by exchange.

General condition; financial statement.

**COLLECTION TO ILLUSTRATE THE ANIMAL RESOURCES OF THE UNITED STATES.**

In charge of G. Browne Good.

**Animals Beneficial or Injurious to Man.**
Mammals; birds; reptiles; amphibians; fishes; elasmobranchiates; marsipobranchiates; leptocephalae; insects; arachnids; crustaceans; worms; mollusks; radiates; protozoans and marine products not of animal nature.

**Means of Pursuit and Capture.**
Hand-implements; implements for seizure of objects; missiles; baited hooks; angling tackle; nets, and traps.

**Apparatus for Wholesale Destruction.**
Hunting animals; decoys and disguises; pursuit—its methods and appliances.

**Means of Utilization.**
Preparation and preservation of foods; manufacture of textile fabrics, felts and stuffings; preparation of the skin and its appendages; the hard materials; oils, glues, drugs, perfumes, chemical products, fertilizers and lime; preservation of the animal for scientific uses.

**Animal Products and their Applications.**
Food; clothing; materials employed in the arts and manufactures.

**Protection and Culture of Useful Animals.**
Investigation; protection, and propagation.

**COLLECTION TO ILLUSTRATE THE FISHERY RESOURCES OF THE UNITED STATES.**

This is covered to a considerable extent by the preceding group, in connection with which it is arranged. The special features will embrace the following:

Fishing vessels, boats, etc., life size and models.

The apparatus and dores used in the whale fisheries.

Nets, traps, and pouds.

Hooks, lines, baits, etc.

Tanning materials of the United States: barks, leaves; tanning solutions, with modes of manufacture; dyes of the United States; resins and products of distillation of resinous materials; oils, vegetable, fixed, and others; products of milk, classified according to methods of production.

**HORTICULTURAL DIVISION.**
Specimens of economic and utilizable plants, seeds, and methods of growth, culture, etc., grapes, cotton, tobacco, flax, broom corn, jute, corn, sorghum, yucca fibres, etc.

**SMITHSONIAN INSTITUTION, AND COMMISSION ON AMERICAN FOOD FISHES.**

Casts, photographs, and drawings of fish and other aquatic animals.

Prepared or living specimens of aquatic animals.

Products of the waters.

Economical applications of the above products.

**E.—COLLECTION TO ILLUSTRATE THE ETHNOLOGY OF THE UNITED STATES.**

In charge of Dr. Charles Raw.

(This exhibition is made conjointly with the Indian Bureau of the Interior Department.)

**Objects of Stone.**
Flaked and chipped stone; raw material (pieces of flint, etc.); flakes and cores of flint, obsidian, etc.; rude or unfinished implements; arrow and spear heads; perforators and scrapers; cutting and sawing implements; dagger-shaped implements; leaf-shaped implements; digging implements, and wedge or celt-shaped implements.

Pecked, ground, and polished stone; wedges; celts; chisels; gouges; adzes; grooved axes; hammers; ceremonial weapons; cutting tools; scraper and spade-like implements; pendants and sinkers; discordal stones, etc.; pressed tablets and boat-shaped objects; grinding and polishing stones; stone vessels; mortars; pestles; tubes; pipes; ornaments; and sculptures.

**Objects of Copper.**
Implements and ornaments.

**Objects of Bone.**
Implements, weapons, and ornaments.

**Objects of Shell.**
Utensils, implements, and ornaments.

**Objects of Clay.**
Mound pottery and terra-cottas.

**Objects of Wood.**
Fragmentary objects and carvings of an early date.

**Ethnological Series.**
**Man.**—Skulls, mummies, etc.
Clothing—Alliments (food, mineral and vegetable), drinks, narcotics, and medicines.
Habitations.—Models of houses, tents, etc., and appartences.

**Furniture.**—Cradles, boards, mats, etc.

Vessels and other utensils of household use.—Earthenware; carved horn and wooden ware; stone ware; wicker wok; bladders and boxes.

**Utensils for smoking, etc.**—Pipes; tobacco pouches; snuff apparatus, etc.

Receptacles used as means of transportation.—Pouches, bags, raw-hide cases, burdens, etc.
Clothing—Raw material; complete suits; head, body, hand, leg, and foot clothing; parts of dress.

Personal adornment—Skirt ornamentation; head, neck, breast, body, and limb ornaments; toilet articles.

 Implements of general use of war and the chase, and of special crafts. — Implements for cutting, drilling, etc.; lances, bows and arrows, clubs, tomahawks, etc.; shields, body armor; etc. Implements for fire-making, arrow-making, pottery, for procuring and manufacturing food; agricultural implements; implements used in spinning, weaving, sewing, and embroidery.

Means of locomotion and transportation. — Snow shoes, ice creepers, etc.; balsas, dugouts, bark canoes, hide boats, etc.; saddles, bridles, halters, harness, etc.; sleighs, etc.

Games and pastimes. — Gambling implements; masks, etc., used in dancing; rackets, balls, etc.; toys.

Music. — Drums, rattles, whistle, flutes, etc.

Art. — Pictorial representations and carvings.

Superstition. — Charms, mythological figures, etc.

COLLECTION TO ILLUSTRATE THE MINERAL RESOURCES OF THE UNITED STATES.

In charge of W. P. Blake.

The principal objects of this collection of the useful ores and minerals of the country have been to illustrate: 1st. The nature and varieties of the minerals of the United States; 2d. The geographical distribution and geological associations of the minerals; 3d. The extent to which they have been utilized; 4th. The mechanical, metallurgical, and chemical processes by which they are extracted or converted into useful products; 5th. The inherent and comparative qualities of the extractive products. A portion of the collection is arranged according to the nature of the objects, irrespective of locality, but the bulk of the Exhibition is grouped geographically by States. There is also a section devoted to models and drawings, and one to geological maps and graphic charts. This collection occupies the northeast portion of the Government Building, upon the right of the main aisle.

I. SYSTEMATIC SERIES, GROUPED IRRESPECTIVE OF LOCALITY, IN THE FOLLOWING ORDER:

a. Crystalline minerals, chiefly for scientific and educational purposes.
b. Fuels and petroleum.
c. Ores, metals, and their immediate derivatives.
d. Ornamental stones and gems.
e. Building stones; marbles, etc.
f. Artificial stones; lime; mortars; cement.
g. Geologic fertilizers, dril products, including refractory materials, etc.
h. Pigments; colors; detersgents.
i. Grinding, abrading, and polishing substances.
j. Fertilizing substances.
k. Sulphur, salts, and minerals chiefly used in chemical manufactures.

II. ORES, MINERALS, AND METALLURGICAL PRODUCTS, GROUPED BY STATES.

Maine. — Iron ores, limestone and pig iron; granite for buildings and monuments.

New Hampshire. — Granite and metamorphosed rocks; granite; geological map of the State.

Vermont. — Marble; slate of various colors; roofing slate, etc.; iron ores and limonite; chilling pig iron; spiegeliseen; kaolin and fire brick; used for glass making; copper ores; copper, and metallurgical products; scythe stones.

Massachusetts. — Iron ore, siderite; magnetic iron ore, and steel produced from it; iron and steel wire; emery, massive and associated; corundum, corundophyllite, diasporite, red oxide of titanium, and ilmenite; argenticiferous lead ore, galenite; copper ore; selenite and porphry; porphyry, a series of polished specimens; granite; sand for glass making; glass, cut and pressed; pearl ash and red lead; kaolin; potters' clay, brick clay, etc.; potters' paper and alum clay; marble and limestone; geological map of the State.

Rhode Island. — Granite, for building and monumental purposes; magnetite; anthracite and graphitic coal, in large mass and in lumps.

Connecticut. — Granite and building stone; marble and limestone; serpenite marble; red and white varnish; barytes (sulphate of barytes); kaolin; brick clay, and products; iron ore, limonite, etc.; pig iron; iron ore, spathic and associates; cement steel; mining picks and hammers; copper and alloys, nickel silver, etc.; feldspar, silex, etc., for pottery purposes; geological map of the State.

New York. — Magnetic iron ores, building stones, etc.; fluxes, fuels, and iron; Bessemer steel; hematite, magnetite, etc.; malleable cast iron; puddled iron and muck bar; lime-stone and lime; hydraulic limestone; hydraulic cement, and cement drain-pipe; kaolin, crude and washed; “Incombustible mineral wool,” or nitrous fibre “slag felting;” lead and tin foil; fire clay and fire clay goods, refractory materials, etc.

New Jersey. — Magnetic iron ore; iron ore; massive and granular willemite; zinc ores and franklinite; zinc; spiegel Iron, “franklinite iron;” calamine (siliicate of zinc); potter's earth; sand clay and iron stone china ware; refractory furnace materials, fire brick, etc.; fire-brick clay and fire brick, etc.

Pennsylvania. — Iron ore, flux, and fuel; coal and coke; kaolin; limestone; iron ores, limonite, specular iron, etc.; copper ores, copper and copper products; petroleum and petroleum products; glass, and materials for its manufacture; window glass and materials; pig iron and ores; nickel and cobalt ores and products; cast steel; sheet iron; chromite.

Maryland. — Iron ore, flux, and fuel.

Virginia. — Zinc ores, calamine; lead ores, galena, cerussite, etc.; gyspum; barytes; kaolin; iron ores, magnetite, hematite, limonite, and fossil ore; coal and coke; copper ores; salt brine, fossil salt, and prepared salt; gold-bearing quartz; manganese; granite.

West Virginia. — Bituminous coal; coke; iron ores, black band, brown hematite, and fossil ores.

North Carolina. — Gold and silver ores; copper ores; marble; corundum and the associate minerals; iron ores and iron; muscovite (mica); geological map of North Carolina.

South Carolina. — Phosphatic fossils, mineral fertilizers, etc.; minerals and ores.

Alabama. — Ores and coal; spiegeliseen and ores; geological map of Alabama.
Minerals, Geological Maps and Publications

**Tennessee.**—Iron ores, coal and mineral products; copper pyrites and vein stone; refined copper; geological map of Tennessee.

**Georgia.**—Auriferous gravel; gold-bearing quartz, etc.

**Kentucky.**—A series of specimens illustrating the mineral resources of the State.

**Louisiana.**—Rock salt; sulphur.

**Ohio.**—Open hearth steel; iron ores, flux and fuel; pig iron; potters' clay and pottery; crude and manufactured plaster; building stone.

**Indiana.**—Specimens of block coal, and iron ores; potters' clay; "Indianite."

**Missouri.**—Lead ores, galena, cerussite, etc.; pig lead; zinc ores; barytes, associated with lead ores; marble, limestone, and granite; iron ores, magnetite, specular iron, hematite; pig iron; copper ore; coal and coke; fossil plants, etc.; porphyry.

**Michigan.**—Iron ores, flux, and Bessemer pig iron; specular and magnetic; native copper, crystallized; mass and stamp work, with silver and associate minerals, and in amygdaloid and "ash bed;" building stone; native silver; copper and "copper conglomerate."

**Colorado.**—Gold and silver ores; gold, and ores containing tellurium; silver and copper ore.

**Utah.**—Silver ores.

**Idaho.**—Gold and silver ores.

**Montana.**—Silver ores; argentiferous galena.

**Arizona.**—Copper ores; gold, quartz, and other minerals.

**Nevada.**—Silver and gold ores.

**California.**—Gold and silver ores; auriferous gravel, "cement" with gold; quicksilver ores, cinnabar and native quicksilver; copper ores; tin ores and tin.

**III. MODELS AND DRAWINGS.**

**IV. GEOLOGICAL MAPS AND GRAPHIC CHARTS.**

Geological Map of the United States and Territories.

Geological and other Maps of the State of New Hampshire.

Geological Reports and Publications.
WOMEN'S PAVILION.

Scale, 80 ft. to 1 in.

Section A.—Art, Industrial Art, Education.

" B.—Manufactures, etc.

" C.—Foreign Exhibits—Great Britain, Canada, Brazil, Norway, Sweden, Japan, France, Egypt, Tunis, Italy, Spain, Netherlands.

" D.—Needlework, inventions, patents, etc.

E.—Library.

F.—Benevolent Institutions.

G.—Editorial Office of "The New Century for Women."

H.—Committee Rooms.

I.—Dressing Room.

J.—Kindergarten.

Total Length, 208 ft. Width, 208 ft. Height of Nave, 41 ft. Height of Dome, 67 ft.
No. 153. WOMEN'S PAVILION.

Architect, H. J. SCHWARZMANN.—Size, 26,368 square feet.

This pavilion was erected by money raised through the exertions of the women of the United States, and is devoted exclusively to the results of women's labor. It is built of wood, and is situated on Belmont avenue, adjacent to the Horticultural grounds.

OFFICERS AND MEMBERS OF THE WOMEN'S CENTENNIAL EXECUTIVE COMMITTEE.

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IN THE
CITY OF PHILADELPHIA.

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Fifth, ............................................. Miss Forney.
Sixth, ........................................... Miss Bomeisler.
Seventh, ......................................... Mrs. R. L. Ashhurst.
Eighth, ........................................... Mrs. Tunis.
Ninth, ........................................... Miss Louisa E. Claghorn.
Tenth, ........................................... Miss Magee.
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Twelfth, ......................................... Mrs. William Conn.
Thirteenth, ..................................... Mrs. T. W. Baily.
Fourteenth, ..................................... Mrs. I. Hyneman.
Fifteenth, ....................................... Mrs. A. W. Rand.
Sixteenth, ...................................... Mrs. Dr. Knorr.
Eighteenth ....................................... Mrs. Dr. Claridge.
Nineteenth ....................................... Mrs. T. W. Swain.
Twentieth ......................................... Mrs. Abner Lincoln.
Twenty-first ..................................... Mrs. W. B. Stephens.
Twenty-second .................................. Miss Zell.
Twenty-fourth ................................... Mrs. E. F. Hardie.
Twenty-fifth .................................... Mrs. Robert Kennedy.
Twenty-sixth .................................... Miss Carr.
Twenty-seventh .................................. Mrs. C. McIlvaine.
Twenty-eighth ................................... Mrs. T. J. Davis.
Twenty-ninth .................................... Mrs. W. B. Mann.
Thirty-first ..................................... Mrs. E. H. Ryan.
Furniture, Laundry Appliances, Woven Goods.

Ceramics—Pottery, Porcelain, Glass, etc.
1 Hoopes, Ellen C., Soho Pottery, Pittsburg, Pa.—Ironstone china toilet set. Sec. B. 210

Furniture and Objects of General Use in Construction and in Dwellings.
2 Olson, Christine, Chicago, Ill.—Organ and table made of three thousand pieces of wood. Sec. D. 217
3 Stiles, Mrs. E. W., Philadelphia, Pa.—Combination desk and book paper file. Sec. D. 217
4 Chapman, Miss Laura M., Friendship, N. Y.—Lap table. Sec. D. 217
5 Spofford, Mrs. Jennie H., Philadelphia, Pa.—Mats, supportor, mosquito bar. Sec. D. 217
7 James, Mary L., Cambridge, Mass.—Holly wood chess table. Sec. A. 217
8 Page, Mrs. Elizabeth M., Philadelphia, Pa.—Dirt catcher. Sec. D. 217
9 Steele, Mrs. M. W., Woodbury, N. J.—Toy set, quilt furniture. Sec. B. 217
10 Dickerson, Mrs. Y. G., Belfast, Me.—Embroidered camp chair, foot rest, and sofa pillow. Sec. D. 217
12 Cowen, Mrs. S. J., Hartford, Conn.—Book case. Sec. D. 217
13 Williams, Mrs. G. A., Baltimore, Md.—Leather table with checker board. Sec. D. 217
14 Phillips, Mrs. Richard L., New York, N. Y.—Table painted in water colors. Sec. D. 217
15 Ladd, Miss Gertie, North Hero, Vt.—Student's book-frame. Sec. D. 217
16 Allen, Mary W., Cambridge, Mass.—Chess table, with pen and ink sketches. Sec. D. 217
17 Story, Miss Mary, Cambridge, Mass.—Chess table, with etchings. Sec. D. 247
18 Women’s Executive Committee of Wisconsin.—Easel. Sec. D. 217
19 French, Julie Blanche, Boston, Mass.—Bedstead containing drawers, interior safe, etc. Sec. D. 217
20 Davey, Mrs. Israel, Brandon, Vt.—Sliding stand tops and panels. Sec. A. 217
21 Mitchell, Mrs. Carrie, Normal, Ill.—Combined bureau, table, cupboard, and sink. Sec. D. 217
22 Bulfinch, Miss Ellen S., Cambridge, Mass.—Book rack, with pen and ink etchings. Sec. A. 220
23 Smith, Mrs. O., Chicago, Ill.—Range. Sec. D. 222
24 Sherwood, Amanda S., Philadelphia, Pa.—Griddle greaser. Sec. D. 224
25 Fox, Jane Ann, Stamford, N. Y.—Dish drainer. Sec. D. 224
26 Whitman, Mrs. E. J., Oakland, Cal.—Kettle and pan scraper. An indispensable article for kitchen use. State rights for sale. Sec. D. 224

27 Boynton, Mrs. E. E., Evanston, Ill.—Tea kettle one hundred years old. Sec. D. 224
28 Kelsey, Phoebe M., Philadelphia, Pa.—Meat tenderizer. Sec. D. 224
29 Steiger, Mrs. Hannah, Laurel, Md.—Lock barrel cover. Sec. D. 224
30 Hunkins, Mrs. D. Grace, Allegheny, Pa.—Chaining pin, containing ten articles used in cooking. Sec. D. 224
31 Sterling, Mrs. Charlotte, Gamba, O.—Dish washer. Sec. D. 224
32 Wells, Miss Gloria Anna, Luzerne, Pa.—Dish washer. Sec. D. 224
33 Inesly, Susan V., New York, N. Y.—Reversible sad iron stand. Sec. D. 225
34 Short, Mrs. S., Cincinnati, O.—Blanket washer, mangle, ironer, paint cleaner, and stretcher for drying curtains, etc. Sec. D. 225
35 Ball, Mrs. S. P., Philadelphia, Pa.—Gas smoothing iron. Sec. D. 225
36 Tremer, Miss Marietta, New York, N. Y.—Window-washing machine. Sec. D. 225
37 Colvin, Margaret P., Battle Creek, Mich.—Triumph rotary washing machine, combining three principles: 1st, forcing steam through the goods—a powerful detergent; 2d, revolving in hot suds, with a constant change of position; 3d, the alternate elevation and falling of the goods is equivalent to light pounding. This machine is the successful result of years of experiment by a practical woman, to accomplish the perfect cleansing of all fabrics, from carpets to laces, without rubbing. With this machine, a child of twelve years can do more work, and do it better, than two women by ordinary methods. Sec. D. 226
38 Bancroft, Sarah H., Media, Pa.—Bathing chair. Sec. D. 226
39 Griswold, Mrs. Ellen D., Hagers-town, Md.—Sash fixture. Sec. D. 227
40 Reibert, Babetta, Montgomery, S. C.—Bell pulls. Sec. D. 227
41 Anderson, Miss Ellen D., Frederick, Md.—Shutter fastener. Sec. D. 227

Yarns and Woven Goods of Vegetable or Mineral Materials.
42 Collignon Bros., New York, N. Y.—Cane-seat work, made by women. Sec. D. 229

Woven and Felted Goods of Wool, etc.
43 Wilkinson, Mrs. James A., Providence, R. I.—Yarn from the hair of an Esquimaux dog. Sec. D. 235
44 Bates, Mrs. Edward, Newport, R. I.—Hand spinning and carding of wool and flax. Sec. D. 235
45 Shelpleigh, Mrs. E. B., Philadelphia, Pa.—Hand-made rug. Sec. D. 236
46 Ham, Miss Amanda S., Rochester, N. Y.—Rag rug. Sec. D. 239
47 Wingate, Mrs. J. F., Hampton, N. H.—Rag rugs. Sec. D. 239

Clothing, Jewelry, and Ornaments; Traveling Equipments.
48 Drury, Mrs. L., Springfield, O.—Dress cutting system. Sec. D. 250
Clothing, Embroideries, Laces, Fancy Articles.


50 Union Benevolent Society, Philadelphia, Pa.—Infants' clothing. Sec. D. 250

51 Jones, Mrs. M. A., Philadelphia, Pa.—Children's clothing, dress-cutting system. Sec. D. 250

52 Tardy, Mrs. C., Paterson, N. J.—Infants' excising corset. Sec. D. 250

53 Brosse, Madame S. C., San Francisco, Cal.—Models for self-measurement. Sec. D. 250

54 Keyser, Mrs. E., Philadelphia, Pa.—Misses' clothing and infants' outfits. Sec. D. 250

55 Harman, Mrs. E. F., New York, N. Y.—Dress and pattern designer. Sec. D. 250

56 Cornwell, Mrs. Elmina, Philadelphia, Pa.—Self-fitting chart, and patterns for cutting ladies' and children's clothing. Sec. D. 250

57 Overend, Rebecca C., Fairlee, Md.—Tippet and muff from pod of wild cotton. Sec. B. 250

58 Livingston, L. M., New York.—Garment cutting, tailors' system. Sec. D. 250

59 Flynt, Mrs. Olivia P., Boston, Mass.—Weather protector, linen duster, skirts, and under garments. Sec. D. 250

60 Stearns, Mrs. A. B., Woburn, Mass.—Diagrams for cutting dresses and shirts. Sec. D. 250

62 Dyer, Miss Fannie E., Providence, R. I.—Child's apron. Sec. D. 250

63 Merritt, Mrs. Jane E., Brooklyn, N. Y.—Cape made from the silk of the milk weed pod. Sec. B. 250

64 Gardiner, Miss Mary Jane, Warwick, R. I.—Trimming cutter. Sec. D. 250

65 Blauvelt, Mrs. Mary, New York, N. Y.—Marking and cutting gauge for tailors and dressmakers. Sec. D. 250

66 Kellogg, Mrs. D. G. M., Keokuk, la.—Hosiery. Sec. B. 250

67 Forsyth, Mrs. S. M., Manchester, la.—Hosiery. Sec. B. 250

68 Champney, Mary H., Billerica, Mass.—Stockings knit at ninety-eight years of age. Sec. D. 250

69 Lovering, Mrs. Abigail F., Oxford, Me.—Mittens knit at the age of one hundred years and four months. Sec. D. 250

70 Women's Centennial Committee of Lowell, Mass.—Lowell hosiery. Sec. D. 250

71 Robbins, L. E., Boston, Mass.—Diagram for cutting dresses. Sec. D. 250

72 Employment Society, Providence, R. I.—Sec. D.
   a Infant's shirt, child's skirt, and afghan. 250
   b Embroidered flannel skirt. 252

73 Bonney, Sarah E., Sterling, Mass.—Sec. B.
   a Muff, boa, and cap. 250
   b Feather fans. 254

74 Shaw, Mrs. James, jr., Providence, R. I.—Infant's socks. Sec. D. 251

75 Summer, Mrs. Sallie O., Providence, R. I.—Mittens. Sec. D. 251

76a Conant, Mrs. Orpha, Dwight, Ill.—Hat of common grass, gathered, bleached, and sewed in her eighty-fourth year. Sec. D. 251

76b Todd, Miss Lizzie, Columbus, O.—Embroidery. Sec. D. 250

77 Marsh, Mrs. Charles P., Woodstock, Vt.—Embroidery for camp chair. Sec. D. 252

78 Bach, Jennie & Flora, Philadelphia, Pa.—Embroidered table cover. Sec. D. 252

79 Lucas, Mrs. Mary, Charlotte, N. C.—Lace trimmed and embroidered handkerchief. Sec. D. 252

80 Paul, Mrs. C. F., Saratoga Springs, N. Y.—Honiton collar and lace. Sec. D. 252

81 Beach, Edith, West Hartford, Conn.—Child's rug. Sec. D. 252

82 Brush, Miss Jennie, New York, N. Y.—Embroidered lambrquins. Sec. D. 252

83 Todd, Miss Lizzie, Columbus, O.—Embroidered shawls and sauc. Sec. D. 252

84 Ladies of Immanuel Church, Belknap Falls, Vt.—Needlework. Sec. D. 252

85 St. John's Guild, New Haven, Conn.—Eclesiastical embroidery. Sec. D. 252

86 Burton, Susie, Laurel, Md.—Tapestry picture: Joseph presenting his Father to Pharaoh. Sec. D. 252

87 Jones, Anna S., Worcester, Mass.—Latticed cushion cover. Sec. D. 252

88 Luze, Miss Caroline, Washington, D. C.—Honiton lace. Sec. D. 252

89 Weld, Mrs. William G., Boston, Mass.—Embroidered panels; imitation of antique lace. Sec. D. 252

90 Skuse, M. J. & F. A., Boston, Mass.—Irish point lace. Sec. D. 252

91 Shepherd, Mrs. Emeline, Northampton, Mass.—Embroidered handkerchief. Sec. D. 252

92 Jones, Miss Anna, Worcester, Mass.—Cushion cover. Sec. D. 252

93 Leonard, Miss Louise, New Bedford, Mass.—Lace ends for necktie. Sec. D. 252

94 Fay, Sarah R., Lancaster, Mass.—Embroidered blanket. Sec. D. 252

95 Hathaway, Mrs. Mary, New Bedford, Mass.—Embroidered scarf. Sec. D. 252

96 Nye, Mrs. Clement D., New Bedford, Mass.—Lace necktie. 252

97 Women's Executive Committee of Wisconsin—Seal of Beloit College, embroidered on white satin. Sec. D. 252

98 Brown, Nettie, Keokuk, la.—English point guipure. Sec. D. 252

99 Leigerot, Mrs. Marie, Keokuk, la.—Thread lace. Sec. D. 252

100 Clothier, Miss Minnie J., Nevada, la.—Honiton point. Sec. D. 252

102 Scott, Mrs. John, Keokuk, la.—Guipure barb. Sec. D. 252
Embroideries, Laces, Fancy Articles.

103 Young Ladies’ Society, Grinnell, Pa.—Baby blanket; Bible cushion. Sec. D. 252
104 Little, Miss, Hagerstown, Md.—Old Spanish lace. Sec. D. 252
105 Larkum, Mrs. Edward, Providence, R. I.—Crochet tidy. Sec. D. 252
106 Arnold, Mrs. John H., Pawtucket, R. I.—Pincushion cover and tidies in antique lace. Sec. D. 252
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191 McNair, Linda H., Oakland, Cal.— Book marker, penell holder, and paper cutter combined. Sec. D. 254
192 Jay, Miss Elizabeth C., New York, N. Y.— Postage stamp moistener. Sec. D. 254
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201 Ruth, Mrs. Sarah, Philadelphia, Pa.— Sunshade for horses. Sec. D. 296

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203 Fitts, Ellen E., Boston, Mass.— Geographical globes. Sec. D. 300
204 Covell, Miss Adelia C., New York, N. Y.— Perspective outline models for schools. Sec. D. 300
205 Bradley, Miss Anna J., Boston, Mass.— The thirteen primary forms of crystallization, made of mica. Sec. A. 301
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211 Willard, Mrs. Harriet J., Chicago,
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212 Cowen, Mrs. S. J., Hartford, Conn. —
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213 Larned, Ellen D., Thompson, Conn. —
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214 Caulkins, Frances M., New Lon-
don, Conn.—Histories of Norwich and
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215 Barrett, Elizabeth G. B., New Ha-
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218 Smith, Julia E., Glastenbury, Conn. —
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223 Brotherson, Mrs. H. B. M., Peoria,
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224 Beach, Mrs. John S., New Haven,
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225 James, Mrs. T. P., Cambridge, Mass. —
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227 Janvier, Mary R., Northam, India. —
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231 Women's Centennial Committee of
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234 Whitney, Anne, Belmont, Mass. —
Bronze bust. Sec. A. 400

235 Massachusetts State Normal Art
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flowers in relief, medallion portraits, bas-
relief of antique figure. 400

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238 Perkins, Mrs. E. W., Boston, Mass. —
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239 Wilsey, Mrs. A. W., Syracuse, N.
Y.—Little old folks and chair, cut with a
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240 Hewett, Mrs. Milwaukee, Wis.—
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241 Patterson, Mrs. S. C., Baltimore,
Md.—Wall clock, cut with a penknife:
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242 Cutler, Misses N. M. & M. A.,
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glove box, hanging cross, and frame.
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243 Herrick, Lizzie A., Tilton, N. H. —
Carved Easter eggs. Sec. A. 405

244 Women's State Centennial Com-
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245 Schools of Drawing and Design,
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246 Brainard, Miss M. M., Worcester,
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Thought. 400

248 Banks, Miss Fannie M.—Carved
Estey organ. 405

249 Pitman, Miss Agnes.—Carved
piano. 405

250 Pitman, Mrs. & Miss.—Carved
oak door, ebony inlaid and black walnut
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252 Huston, Mrs. A. B.—Carved dining-
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255 Pitman, Mrs. Agnes.—Carved hanging cabinet, ebony inlaid. 405
256 Tidball, Miss Flora.—Child’s carved bedstead. 405
257 Pitman, Miss Agnes.—Carved chest of drawers, and mantel bracket, ebony inlaid. 405
258 Pack, Miss Mary L.—Carved oak secretary cabinet. 405
259 White, Mrs. A.—Carved dressing bureau. 405
260 Caldwell, Miss Hattie D.—Carved altar cross. 405
261 Johnson, Misses Hattie & Mary.—Carved hanging cabinet, picture frames, wall pocket. 405
262 Cooper, Miss Alice.—Carved “prie-dieu” and stool. 405
263 Jordan, Miss Laura B.—Carved mahogany hanging cabinet. 405
264 Abbott, Mrs. E. F.—Carved dressing stand. 405
265 Rice, Miss Julia H.—Carved parlor table. 405
266 Laws, Miss Lizzie T.—Carved gothic flower stand. 405
267 Gurley, Miss Clara.—Carved writing desk. 405
268 Collard, Miss Helen.—Carved ebony prayer book covers. 405
270 Hirst, Miss Claude R.—Carved parlor casel and jewel casket. 405
271 Banks, Miss Fanny M.—Carved flower stand. 405
272 De Pilgrom, Miss V.—Carved black walnut bedstead. 405
273 Barrett, Mrs. S. M.—Carved chess table and picture frame. 405
274 Pitman, Miss Agnes.—Carved hanging secretary, walnut and ebony. 435
275 White, Mrs. A.—Carved picture frame. 435
276 Collard, Miss Isora.—Carved book racks and casket. 435
278 McDowell, Miss W. H.—Carved gothic stand. 435
279 Huston, Mrs. A. B.—Carved dog kennel frame. 435
280 Dominick, Mrs. G.—Carved cherry wall pocket and casket. 435
281 Tidball, Miss Flora J.—Carved flower stand. 435
282 Collard, Miss Helen.—Carved picture frame. 435
283 Wallingham, Miss N.—Gentleman’s carved dressing stand. 435
284 Collier, Miss Lizzie M.—Carved tea pot rest. 435
285 Hesser, Mrs. C. F.—Carved flower stand. 435
286 Huston, Mrs. A. B.—Carved bread plate. 435
287 Stern, Miss Jessie.—Carved wall pocket and card receiver. 435

288 Donnelly, Miss A.—Carved flower stand and picture frame. 405
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290 Swift, Miss Mary P.—Carved writing desk. 405
291 McCloskey, Miss Lizzie.—Carved wall pocket and photograph frame. 405
292 Collard, Miss H. A.—Carved trellis, picture frame, and flower stand. 405
293 Pitman, Miss A.—Carved fruit plate and card receiver, library stool, lamp stand, and picture frame. 405
294 Dunlap, Miss Sarah.—Carved wall pocket. 405
295 Hollingshead, Miss H.—Carved casket and picture frame. 405
296 Kidd, Mrs. N. R.—Carved flower stand. 405
297 Metcalf, Miss Flora.—Carved shield. 405
298 Newell, Miss Emma.—Carved fruit plate. 405
299 Caldwell, Miss Hattie D.—Carved picture frame. 405
300 Dodd, Mrs. William.—Carved casket. 405
301 Rice, Miss M.—Carved picture frame. 405
302 Menzies, Miss R. N.—Carved corner bracket. 405
303 Brashear, Miss Lillie.—Carved parlor casel. 405
304 Scudder, Miss Tillie.—Carved medicine cupboard. 405
305 Doherty, Miss Clara.—Carved fruit plate. 405
306 Tazzer, Miss Augusta.—Carved rocking chair. 405
307 Moore, Miss A. G.—Carved flower stand. 405
308 Kemper, Mrs. Theodore.—Carved tray. 405
309 Shaler, Miss Minnie.—Carved chess board and picture frame. 405
310 Merrill, Miss Susie.—Carved flower stand and carved and painted bracket. 405
311 Temple, Mrs. O. H.—Carved picture frame and wall bracket. 405
312 Brashear, Miss Lillie.—Carved flower stand. 405
313 Stribley, Miss May.—Carved picture frame and casket. 405
314 Tatum, Miss Lizzie.—Carved flower stand. 405
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316 Barrett, Mrs. S. M.—Silver bronze panels and oil painting. 410
317 Eyring, Miss Claude R.—Oil painting. 410
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321 Force, Mrs. F. H., Cincinnati, O.—Carved black walnut corner cabinet. Sec. A. 405

322 Dodd, Mrs. Wm., Cincinnati, O.—Carved boudoir table and parlor easel. Sec. A. 405

323 Williams, Mrs. E., Cincinnati, O.—Child's carved mahogany bedstead. Sec. A. 405

324 McLaughlin, Miss M. Louise, Cincinnati, O.—Carved hanging cabinet, walnut and ebony, and jardiniere. Sec. A. 405

325 Way, Agnes C., Pittsburg, Pa.—Oil painting. Sec. A. 410

326 Sartain, Emily, Philadelphia, Pa.—Oil paintings. Sec. A. 410

327 Linderman, Mrs. Sophia, Philadelphia, Pa.—Oil paintings: A Turkish Lady; The Laplander's Evening Call; Princess Dornroscen. Sec. A. 410

328 Ferguson, Mrs. Mary L., Philadelphia, Pa.—Oil paintings: Natural Bridge, Virginia; Sunset over the Blue Ridge. Sec. A. 410

329 Natt, Phoebe Davis, Philadelphia, Pa.—Oil painting: "There was an Old Woman who Lived in a Shoe." Sec. A. 410

330 Callier, Alice, Salem, Mass.—Painted panel. Sec. A. 410

331 Taneyhill, Flora, Alliance, O.—Oil painting. Sec. A. 410

332 Gilbert, Lucia M., Pittsford, Vt.—Oil painting on slate: Copy of Gustav Richter's Neapolitan Boy. Sec. A. 410

333 McLaughlin, Miss M. Louise, Cincinnati, O.—Painted slate panels. Sec. A. 410

334 Webster, Mrs. Elizabeth S., Hartford, Conn.—Partridges hanging, and game on table. Sec. A. 410

335 Bell, Lucy A., Exeter, N. H.—Portrait of Governor Bell. Sec. A. 410


337 Stevens, M. Elizabeth, Jamaica, L. I.—Field daisies on red medallion. Sec. A. 410

338 Webster, Mrs. S. A., New York, N. Y.—Panels: Wild Roses and Daisies; Clematis and Woodbine. Sec. A. 410

339 Maxm, Nellie, Plainfield, N. J.—Panel, Daisies. Sec. A. 410

340 Henry, Mrs. Annie M., Boston, Mass.—Oil paintings: Wild Flowers; Horned Owl. Sec. A. 410

341 Field, Miss E. C., New York, N. Y.—Panel: Apple Blossoms. Sec. A. 410

342 Woodward, Laura, New York, N. Y.—Oil painting: Autumn in the Adirondack Mountains. Sec. A. 410

343 Greatorex, Eliza, New York, N. Y.—Oil paintings on panels: The Old Porch; The Old Bloomingdale Church; The Somerindyle House. Sec. A. 410

344 Schmidt, Josephine, Baltimore, Md.—Landscape in oil. Sec. A. 410

345 Culver, Mrs. J. O., Madison, Wis.—Art cabinet, with painted panels and medallion. Sec. A. 410

346 Clarke, Kate W., Hyde Park, III.—Zomona, Mrs. Swisshelm's rustic home; Pine Woods in Autumn. Sec. A. 410

347 Warner, Miss Naidine, New York, N. Y.—Painting: Mackerel. Sec. A. 410


349 Cook, Miss H. M., Providence, R. I.—Painting: Snow Scene. Sec. A. 410

350 Burt, Miss Helen, New York, N. Y.—Oil paintings: Quiet Ruminations. Sec. A. 410

351 Rose, Adelaide, Port Jervis, N. Y.—Oil painting: The Wreath's Daybreak. Sec. A. 410

352 Paul, Miss Kate, Providence, R. I.—By choven and Quartette, copied in oil from an engraving. Sec. A. 410

353 Keep, Mrs. John R., Hartford, Conn.—Painting: Ear of Corn. Sec. A. 410

354 Rafter, Susan L. Johnson, Brooklyn, N. Y.—Painting: Fruit; decorated table top: Wreath of Nasturtiums. Sec. A. 410

355 Fraley, Miss Mollie E., Marshall, Texas.—Oil painting: Flowers. Sec. A. 410

356 Fraley, Miss Mary E., Marshall, Texas.—Oil paintings: Jephtha; The Murder of the Innocents. Sec. A. 410

357 Conant, Miss C. W., New York, N. Y.—Oil painting: The Charity Scholar. Sec. A. 410

358 Twombly, Mrs. John H., Madison, Wis.—Oil painting: The White Mountains, from the Conway valley. Sec. A. 410

359 Talbot, Miss Eleanor W., Providence, R. I.—Oil painting: Children at Play. Sec. A. 410

360 Martin, Mrs. S. L., Rupert, Vt.—Panels, paper weights, rules, etc., painted in oil on slate, and enameled. Sec. A. 410

361 Holbrook, Harriet Jane, New York, N. Y.—Panels: Snowballs; Cactus; fruit piece in oil, and portraits of Lady and Gentleman. Sec. A. 410

362 Hine, Franc E., Saratoga Springs, N. Y.—Flowers on slate panel. Sec. A. 410

363 Donaldson, Lucy, Baltimore, Md.—Panels: Wild Flowers; Roses. Sec. A. 410

364 Williams, Mary E., Salem, Mass.—Oil paintings: Roman Beggar; An Alchemist; Autumn Wild Flowers of New England. Sec. A. 410

365 Anthony, Miss Margaret M., Providence, R. I.—Oil painting: Fruit. Sec. A. 410

366 Studley, Mrs. Thos. E., Providence, R. I.—Child's portrait, in oil. Sec. A. 410

367 Stephens, Miss Maud, New York, N. Y.—Oil paintings: Autumn Leaves; A Picture within a Picture. Sec. A. 410

368 Porter, Miss Rebecca T., New Haven, Conn.—Oil painting: Absorbed. Sec. A. 410

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369 Knowlton, Helen M., Boston, Mass. — Oil painting; Paper Mills at Newton Lower Falls. Sec. A. 410
371 Wadsworth, Miss A. E., Boston, Mass. — Oil painting; Woman Washing. Sec. A. 410
372 Adams, Miss Elizabeth, Boston, Mass. — Oil painting. Sec. A. 410
373 Osborn, Miss H. Frances, Peabody, Mass. — Oil painting on panel; Apple Blossoms. Sec. A. 410
374 Caller, Miss Alice, Salem, Mass. — Oil painting on panel; Violets. Sec. A. 410
375 Lane, Miss S. M., Boston, Mass. — Oil painting; Flowers. Sec. A. 410
376 Graves, Miss L., New Haven, Conn. — Panels in oil; Pond Lilies; Fuchsias. Sec. A. 410
377 Odenheimer, Mrs. B., New York, N.Y. — Oil painting; Guinevere. Sec. A. 410
378 Telles, Sophie M., New York, N.Y. — Portraits of Linda Gilbert and P. T. Quinn. Sec. A. 410
378a Joes, Mrs. Arthur C., Brooklyn, N.Y. — Miniature portraits. Sec. A. 410
379 Boyd, Mrs. Kate, Canastota, N.Y. — Oil paintings; Portland Light, Maine; Old Orchard Beach; Don; Brook Trout. Sec. A. 410
380 Morris, Mary Hay, Baltimore, Md. — Oil paintings; Violin, Music, and Books; Fruit. Sec. A. 410
381 Nicholson, Martha A., Baltimore, Md. — Panels; Autumn Leaves; Bird. Sec. A. 410
382 Herrick, Caroline K., Orange, N.J. — Panel; Fringed Gentians. Sec. A. 410
383 Ricketts, Miss, Baltimore, Md. — Oil painting; White Grapes. Sec. A. 410
384 Pollock, Miss, Baltimore, Md. — Portrait of Samuel M. Janney. Sec. A. 410
385 Kay, Helena de, New York, N.Y. — Oil painting; Withered Golden Rod; panel; Sun Flowers. Sec. A. 410
386 Porter, Mrs. Susan C., Hartford, Conn. — Study of an Italian Girl. Sec. A. 410
387 Monks, Mary E., New York, N.Y. — Oil paintings; Calla Lilies; Water Lilies. Sec. A. 410
388 Farnham, Mrs. Sarah A., Hartford, Conn. — Oil painting; Camp in the Adirondacks. Sec. A. 410
389 Dixon, Maria R., New York, N.Y. — Oil painting; Catch me if you can. Sec. A. 410
390 Ackerman, Mary, Brooklyn, N.Y. — Oil painting; Hagar and Ishmael. Sec. A. 410
391 Palmer, Addie C., Concord, N.H. — Ebony panels; Roses, Azaleas. Sec. A. 410
392 Scott, Mrs. E. M., Chicago, Ill. — Oil painting; Roman Boy; panel; Roses. Sec. A. 410
393 Perry, Laura C., Poultney, Vt. — Slate panels. Sec. A. 410
394 Thomas, Mrs. Annie N., New York, N.Y. — Oil paintings; Morning Glories and Fuchsias. Sec. A. 410
396 Brounscombe, Jennie, New York, N.Y. — Painting; Elsie Venner. Sec. A. 410

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  Water color paintings. Sec. A. 411

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  Water color painting: Peasant’s Head. Sec. A. 411

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  Embroidered and trimmed chemise. 259

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  a Child’s dress. 250
  b Crochet shawl. 252

735 Netto, Maria Pinto, Province of Rio de Janeiro.
  a Robe de chambre, embroidered. 250
  b Linen embroideries. 252

736 Orphans’ School of Sancta Theresa, Rio de Janeiro.
  a Stole for priest. 272
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737 à Matta, Carolina A. da, Rio de Janeiro.—Cushion in tapestry work. 252

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739 Municipal School of St. Sebastiao, Rio de Janeiro.—Tapestry work by pupils. 252

740 Municipal School of St. José.—

741 Leao, Maria de, Province of Paraná.—Interlacing and collar of linen thread. 252

742 Costa, M. E. da, Province of Paraná.—Collar of linen thread. 252

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745 Assumpção, M. M., Province of Paraná.—Crochet handkerchief. 356

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747 Huy, Luiza M., Province of Paraná.—Interlacing in crochet; embroidered handkerchief and towel; lace. 259

748 Municipal School of St. Sebastiao, Rio de Janeiro.—Embroideries. 252

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751 Society Amante da Instrucción, Orphan girls of, Rio de Janeiro.—Embroideries on velvet and silk. 252

752 Misericordia School, Orphan Girls of, Rio de Janeiro.—Embroidered cushions. 252

753 Luz, F. F. da, Province of Paraná.—
  Embroidered slippers. 252

754 Leão, M. M. de, Rio de Janeiro.—Embroideries. 252

755 Chaves, M. G. M., Rio de Janeiro.—Embroidered cushions. 252

756 Boa Viagem, Baronesa da, Rio de Janeiro.—
  Embroidered pillow shams, towels, etc. 253

757 Pirapitinga, Baronesse de, Province of Rio de Janeiro.—
  Embroidered towels and underwear. 252

758 Gama, D. Eulalia de Salvanha da, Rio de Janeiro.—Towels and pillow shams in layninish lace. 252

759 Commission General for the National Exhibitions, Rio de Janeiro.—
  Handkerchiefs in laynish lace, and laces for borders, by women of the province of Rio Grande do Norte; laces, handkerchiefs, pillow shams, shawls, etc., by women of the Provinces of Parahyba, Alagoas, and Goyaz. 252

760 Rosario, G. M. da, Province of Paraná.—Lace made of linen thread. 252

761 Lopez, J. F., Province of Paraná.—
  Embroidered handkerchief. 252

762 Kelim, Clara, Province of Paraná.—
  Embroidered handkerchiefs. 252

763 Aranjo, G. M. d’, Province of Paraná.—
  Embroidered handkerchiefs. 252

764 Leão, A. C. de, Rio de Janeiro.—
  Pillow shams in shiny lace. 254

For location of objects, see ground plan, p. 88.
Embroideries, Laces, Fancy Articles.

<table>
<thead>
<tr>
<th>Province</th>
<th>Object Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alagoás, Province of</td>
<td>Towel for toilet table, in embroidery and sleeve lace.</td>
</tr>
<tr>
<td>Jacobina, Theresa D., Rio de Janeiro</td>
<td>Tapestry work.</td>
</tr>
<tr>
<td>Oliveira, Alzira H. d', Rio de Janeiro</td>
<td>Cushion in embroidery.</td>
</tr>
<tr>
<td>Nunes, Henriqueta M., Rio de Janeiro</td>
<td>Cushion in tapestry work.</td>
</tr>
<tr>
<td>Ferreira, Maria, Province of Ceará</td>
<td>Crochet case.</td>
</tr>
<tr>
<td>Director of the Colony of Paraná</td>
<td>Fringes of linen thread, made by an Indian girl of the colony.</td>
</tr>
<tr>
<td>Alves, M. R., Province of Paraná</td>
<td>Toilet covers.</td>
</tr>
<tr>
<td>Itamaraty, Viscountess de, Rio de Janeiro</td>
<td>Embroidered pin case.</td>
</tr>
<tr>
<td>Silva, M. M., Province of Paraná</td>
<td>Embroidered watch case.</td>
</tr>
<tr>
<td>Faria, Maria D. de, Rio de Janeiro</td>
<td>Cushion of silk remnants.</td>
</tr>
<tr>
<td>Viana, B. R., Province of Paraná</td>
<td>Embroidered watch case.</td>
</tr>
<tr>
<td>Province of Ceará, Ladies of</td>
<td>Feather flowers.</td>
</tr>
<tr>
<td>Province of Bahia, Ladies of</td>
<td>Feather flowers.</td>
</tr>
<tr>
<td>Silveira de Souza, Sisters, Province of Santa Catarina</td>
<td>Artificial flowers of fish scales, egg-skin, sea shells, etc.</td>
</tr>
<tr>
<td>Santa Catarina, Province of</td>
<td>Flowers of fish scales.</td>
</tr>
<tr>
<td>Natté, Mille, Rio de Janeiro</td>
<td>Feather flowers, fans, coiffures, ornaments, etc.; ornaments made of bugs.</td>
</tr>
<tr>
<td>Province of Paraná, Ladies of</td>
<td>Bouquet of fish scale flowers, and stand of alum.</td>
</tr>
<tr>
<td>Commission General for the National Exhibition</td>
<td>Feather flowers, made by the orphans of the school of the Immaculate Conception.</td>
</tr>
<tr>
<td>Convent das Merces, San Paulo</td>
<td>Branch made of the pith of the fig-tree.</td>
</tr>
<tr>
<td>Serzidillo, D. Anna M., Pará</td>
<td>Frame made of cork.</td>
</tr>
<tr>
<td>Lopez, Emilia, Rio de Janeiro</td>
<td>Flower stand of leather.</td>
</tr>
<tr>
<td>Leme, Rosalina Paes, Rio de Janeiro</td>
<td>Leather flowers.</td>
</tr>
</tbody>
</table>

For location of objects, see ground plan, p. 83.
SHOE AND LEATHER BUILDING.—GROUND PLAN.
SHOE AND LEATHER BUILDING. No. 7.

Architect, A. B. Barry.—Size, 314 feet by 160 feet.

The building is constructed of wood, two stories high, and is situated on Elm Avenue, south of Machinery Hall. Its name indicates its purpose.

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KEY TO THE NOTATION.

The location of objects in the Shoe and Leather Building is shown by a letter and two figures, indicating the nearest column of the building. The letter and first figure designate the section of the building, the second figure the column within that section. The system of numbering is shown on the annexed ground plan.

The class of the classification (See Part I., pages 27-45) to which each exhibit belongs is indicated by the small figures at the end of the line.

---

Oils, Leather Dressing.

1 Dodd, A. W., & Co., Gloucester, Mass.—Oils for tanners' use. F 1-3. 202
2 Hyde Bros., & Swift, New York, N. Y.—Tanners' oils. A 2-1. 201
5 Miller, Frank, Son, & Co., New York, N. Y.—F 1-4. 201
6 Shoe blacking, leather dressings, etc. 202
9 Hausler, John, Philadelphia, Pa.—Shoe blacking. F 1-2. 202
10 Fletcher & Dwyer, Lynn, Mass.—Burnishers for finishing edges and heels of boots and shoes. D 1-6. 202
13 Anness, John, Philadelphia, Pa.—Shoe blacking and stove polish. F 1-2. 202
16 Restorff & Bettmann, New York, N. Y.—Leather polish for boots, shoes, traveling bags, etc. B 2-2. 202
17 Sawyer, H., Boston, Mass.—Crystal blue. F 1-3. 202
18 Reed, Geo., & Sons, Boston, Mass.—Dressings, inks, varnishes, and stains for leather. F 1-3. 202
19 Hauthaway, C. L., & Sons, Boston, Mass.—Leather dressings, blackings, stains, and varnishes. These goods are favorably known throughout the United States, Canada, and Europe, and were awarded medals at Boston and Vienna. Visitors at the Shoe and Leather Building will see upon the various exhibits of boots, shoes, harness, and horse collars, specimens of the high finish derived by the use of our dressings, as many of the best goods there are finished with our articles. They are considered indispensable in all manufactories using leather. Our exhibit consists of twenty-one different articles adapted to leather, all of our own invention and production. House established in 1854. F 1-11. 202

For classes of exhibits, numbered at end of entries, see Classification, Part I., pp. 27-45.
<table>
<thead>
<tr>
<th>Boots and Shoes.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12 John Smith, N. M., St. Louis, Mo.—Boots and shoes. C 2-11.</td>
<td></td>
</tr>
<tr>
<td>16 Kees, Chas., Frederick, Md.—Cor-</td>
<td>dovan leather patterns for boots and shoes. D 1-8.</td>
</tr>
<tr>
<td>17 Semenetz, Rudolf, Cleveland, O.—English top boots. D 2-4.</td>
<td></td>
</tr>
<tr>
<td>18 Keene Bros., Lynn, Mass.—Women's, misses', and Children's boots and shoes. D 1-7-8.</td>
<td></td>
</tr>
<tr>
<td>18 Valpey &amp; Anthony, Lynn, Mass.—Women's, misses', and Children's boots and shoes. D 1-7-8.</td>
<td></td>
</tr>
<tr>
<td>18 Bartlett &amp; Doak, Lynn, Mass.—Women's, misses', and Children's boots and shoes. D 1-7-8.</td>
<td></td>
</tr>
<tr>
<td>18 Boynton &amp; Bancroft, Lynn, Mass.—Women's, misses', and Children's shoes. D 1-7-8.</td>
<td></td>
</tr>
<tr>
<td>18 Mower, E. W., &amp; C. F., Lynn, Mass.—Women's, misses', and Children's boots and shoes. D 1-7-8.</td>
<td></td>
</tr>
<tr>
<td>18 Bubier, S. M., &amp; Sons, Lynn, Mass.—Women's, misses', and Children's boots and shoes. D 1-7-8.</td>
<td></td>
</tr>
<tr>
<td>35 Adler &amp; Clement, Baltimore, Md.—Ladies', misses', and Children's shoes, leather tips formed from the sole. D 2-4.</td>
<td></td>
</tr>
<tr>
<td>37 Banister &amp; Tichenor, Newark, N. J.—Men's and boys' boots, shoes, and slippers. Fine First class, hand and machine sewed. Any of the goods on exhibition duplicated on orders. D 2-4.</td>
<td></td>
</tr>
<tr>
<td>38 Canfield, M. B. &amp; I., Newark, N. J.—Gentlemen's boots and shoes. D 2-5.</td>
<td></td>
</tr>
<tr>
<td>39 Miller, McCullogh, &amp; Ober, Newark, N. J.—Gents' boots and shoes. D 2-4.</td>
<td></td>
</tr>
<tr>
<td>45 Moore, Wm. B., Camden, N. J.—Micial tips for shoes, corsets, etc. D 2-2.</td>
<td></td>
</tr>
<tr>
<td>45 Shaw, Chas. A., Boston, Mass.—Improved shoe lasts. D 1-5.</td>
<td></td>
</tr>
<tr>
<td>45 Cooper, R., Ithaca, N. Y.—Centennial shoe. D 1-5.</td>
<td></td>
</tr>
</tbody>
</table>

For location of objects, indicated by letter and figure, see Notation, p. 105; ground plan, p. 103.
## SHOE AND LEATHER BUILDING.

### Boots and Shoes.

| 49 | Kelley & Moore, Philadelphia, Pa.—Ladies' shoes. C 1-12. 251 |
| 50a | Targrett, John, Philadelphia, Pa.—Boots, shoe, and gaiter patterns. C 1-12. 251 |
| 50b | Claffin, Waldo M., Philadelphia, Pa.—Men's and boys' boots and shoes, with Estabrook, Wirs, & Co. screws. C 1-12. 251 |
| 50c | Pratt, Henry J., Abington, Mass.—Last-back fastening. D 1-6. 251 |
| 50d | Butterfield, Wm., & Co., New York, N. Y.—Button fastener, and plate-face hook. D 1-6. 251 |
| 51 | Schmid, Jacob, Philadelphia, Pa.—Ladies' boots and shoes. C 1-12. 251 |
| 52 | Benkert, C., & Son, Philadelphia, Pa.—Gentlemen's boots and shoes. C 1-16. 251 |
| 53 | Zaan, Jacob, & Son, Philadelphia, Pa.—Men's boots and shoes. C 1-13. 251 |
| 54 | Dreisbach, Wm., & Co., Philadelphia, Pa.—Boots and wooden heels. C 1-15. 251 |
| 55 | Heulings, Abram, American Hotel, Chestnut street, opposite Independence Hall, Philadelphia, Pa.—Jee creepers which can be attached to any lady's or gentleman's boot or shoe, and worn under the pant or on icy sidewalks. C 1-15. 251 |
| 56 | Meyer, C. Adolph, Philadelphia, Pa.—French calf boots, shoes, and gaiters. C 1-12. 251 |
| 57 | Helweg & Co., Philadelphia, Pa.—Boots and shoes. C 1-16. 251 |
| 59 | Mayer & Stern, Philadelphia, Pa.—Ladies', children's, and infants' shoes. C 1-12. 251 |
| 60a | Dalsheimer Bros., Philadelphia, Pa.—Ladies', misses', children's, and infants' shoes. C 1-15. 251 |
| 63 | Laird, Schober, & Mitchell, Philadelphia, Pa.—Boots and shoes. C 1-15. 251 |
| 64 | Schiiff, W. L., Philadelphia, Pa.—Children's shoes, and ladies' white kid boots and slippers. C 1-15. 251 |
| 64a | Claffin, Aaron, & Co., New York, N. Y.—Wax, grain, split, kip, and calf boots, brogans, etc. D 1-2. 251 |

For classes of exhibits, numbered at end of entries, see Classification, Part I., pp. 27-45.
Boots, Shoes, Trunks.

79 Emerson's, Thomas, Sons, Boston, Mass.—Men's, boys', and youths' shoes. Manufacturers of hand and machine-fine sewed and nailed work; owners of the patent for the celebrated "Hersome Gaiter." D 1-1.

80 Sears & Warner, Boston, Mass.—Shoe manufacturers' goods, lastings, and sergers. D 1-8.


83 The Moulded Heel Stiffening Co., Lynn, Mass.—Moulded rubber counters for boots and shoes. D 1-7.


83b Emerson, R. W., & Co., Boston, Mass.—Women's, misses', and children's pegged boots and shoes. D 1-1.


83d Shaw, John, 2d, & Bro., Lynn, Mass.—Women's boots and shoes. D 1-7.

84 Tebbetts, Charles B., Lynn, Mass.—Ladies' and gent's boots, shoes, slippers, and fancy ties. D 1-7.


90 Breed, F. W., Lynn, Mass.—Ladies' boots and shoes. D 1-7.

91 Breed, A. F., Lynn, Mass.—Men's, ladies', and misses' boots. D 1-7.


93 Mudge, W. R., Lynn, Mass.—Leather, straw, and pattern boards, paper soles, stiffenings, etc. D 1-6.

94 Sutherland, I. G., Lynn, Mass.—Boot and shoe patterns, and sample boots and shoes. D 1-6.


95a Rogers, Evan T., San José, Cal.—Seamless gaiters and shoes. D 1-5.

95b Boynton & Bancroft, Lynn, Mass.—Shoe soles, sole leather and roundings. D 1-7.


98 How, Moses, Haverhill, Mass.—Ladies' and misses' shoes and slippers. D 1-5.

98a Oliver, Stephen, Jr., Lynn, Mass.—Women's boots and shoes. D 1-7.

98b Morgan & Dore, Lynn, Mass.—Ladies' boots and shoes. D 1-7.


98d Turnbull & Samuels, Philadelphia, Pa.—Composition heel. D 2-5.


99 Goodrich & Whitehouse, Haverhill, Mass.—Misses', children's, and infants' boots and shoes. D 1-6.

100 Goodrich & Porter, Haverhill, Mass.—Ladies' and misses' boots and shoes. D 1-5.

101 How, George C., Haverhill, Mass.—Kid slippers and ties. D 1-6.

102 Gardner Bros., Haverhill, Mass.—Ladies' and misses' boots and shoes. D 1-5.


106b Dohle, Henry, Omaha, Neb.—Boots and shoes. D 2-3.

106c American Wooden Shoe Co., Chicago, Ill.—Wooden shoes and slippers.


106e Foster & Quiggle, Milford, Mass.—Shoes made with Estabrook's clinching screws. E 1-14.

Trunks, Valises, etc.


For location of objects, indicated by letter and figure, see Notation, p. 105; ground plan, p. 103.
Traveling Equipments, Harness, Rubber Goods.

109 Hacker, J. C., & Co., New York, N. Y.—Pocket books, bill books, card and cigar cases, etc. G 2. 255
112 Thorne, John W., New York, N. Y.—Saratoga trunk and trunk clamp. G 2. 255
113 Peddle, T. B., & Co., Newark, N. J.—Trunks, valises, traveling bags, and ladies' satchels. G 2. 255
114 Roemer, William, Newark, N. J.—Trunks, bags, and shawl straps. G 1. 255
115 Rowen, John, Philadelphia, Pa.—Trunks, satchels, and pocketbooks. G 1. 255
117 Crouch & Fitzgerald, New York, N. Y.—Trunks, valises, shawl straps, and leather goods. G 2. 255
118 Simpson, J. F., Philadelphia, Pa.—Trunk closer, lock, strap, and socket. G 1. 255
119 Watt, F. H., Philadelphia, Pa.—Trunks, traveling bags, and lancy leather goods. G 2. 255
117 Unruh, John, & Sons, Philadelphia, Pa.—Leather trunks and valises. G 1. 255

Saddlery, Hardware.

120 Albright, Andrew, Newark, N. J.—Hard-rubber-coated harness and carriage trimmings. D 2-2. 284
121 Celluloïd Harness Trimming Co., Newark, N. J.—Celluloïd martingale rings and harness mountings. D 2-1. 284
122 Osborn, H. E., Newark, N. J.—Saddlers' and harness-makers' tools and machinery. D 2-2. 284
123 Kuenhold, F. B., Newark, N. J.—Saddlery and coach hardware. D 2-2. 284
123 Crane & Co., Newark, N. J.—Flexible rubber bits, wrought hand-forged bits. D 2-2. 284
125 Manning, Robert, Newark, N. J.—Winkers and winker plates. D 2-1. 284
126 Buerman, August, Newark, N. J.—Saddlery and harness hardware, bits, spurs, etc. D 2-1. 284
127 Wiener & Co., Newark, N. J.—Saddlery, hardware, and trimmings. D 2-1. 284
128 Tompkins, Samuel E., & Co., Newark, N. J.—Tompkins' patent gig trees; coach pads and gig saddles; hames, bits, etc.; coach and saddlery hardware in silver, gold, or nickel. D 2-1. 284
129 Waldron, J. V., & Bro., New York, N. Y.—Crests, coats of arms, monograms, bits, bosses, rosettes, etc., for harness. D 2-1. 284
130 Reynolds, Samuel, & Co., Pittsburg, Pa.—Fine XC plate, silver plate, gold and japanned post bits, snaffle, ring bits and stirrups, iron gig and coach hames, all styles buckles, rings, loops, etc.; malleable iron castings for agricultural machinery. D 2-2. 284

Fabrics of Vegetable, Animal, or Mineral Materials.

132 Davidson Rubber Co., 30 Franklin street, Boston, Mass.—Rubber goods, used in druggist, surgical, stationery, and fine rubber work. We use nothing but the finest stock, and make superiority in finish and quality our aim. C 2-8. 285
134 Taylor, W., B. S., 365 Broadway, New York, N. Y.—Gas tight flexible tubing, for portable light and gas stoves, and for barrier cloth for gasometers. C 2-9 and 10. 285
136 National Rubber Co., Providence, R. I.—Rubber boots, shoes, clothing, cloths, stationers' and druggists' articles, mats, belting, hose, cushions, beds, pillows, etc. C 2-9 and 10. 285
138 Vulcanized Fibre Co., Wilmington, Del.—Hard and flexible goods of vulcanized fibre. G 1. 285
139a Star Rubber Co., Trenton, N. J.—India-rubber goods for mechanical purposes. G 1. 285

Carriages, Vehicles, and Accessories.

140 Peters Calhoun Co., Newark, N. J.—Harness, saddles, and bridles. F 1-12. 296

For classes of exhibits, numbered at end of entries, see Classification, Part 1, pp. 27-45.
SPECIAL

Harness, Leather-Working Machinery.

1426. Crittenden, L. S., Cuba, N. Y.—Combination horse blanket and fly pro-
tector. E 1-12. 296
1429. Taylor, Marshall B., Ludlow, Vt.—Whip lashes. E 1-5. 296
143. Haedrick, Henry G., & Sons, Phil-
adelphia, Pa.—Harness and saddlery; preparation for polishing and dressing
harness. E 1-10. 296
1434. Burns & Degnan, St. Louis, Mo.—
Ventilated side saddle. E 1-11. 296
144. Moyer, E. P., & Bros., Philadel-
phia, Pa.—Harness, saddlery, and trunks. E 1-3. 296
145. Hansell, W. S., & Sons, Philadel-
phia, Pa.—Harness and saddlery, and horse clothing. E 1-4. 296
146. Lynch, Anthony, Philadelphia, Pa.—Gold-mounted double and single har-
ness. E 1-10. 296
147. Sallada & Pearson, Philadelphia, Pa.—Ladies' and gentlemen's riding
and driving whips. E 1-13. 296
148. McPadden, Patrick, Philadelphia, Pa.—Single harness and saddlery. F 1-
1. 296
149. Yeager, Daniel A., Media, Pa.—
Double and single harness, riding sadd-
dles and bridles. E 1-2. 296
150. Wilson, R. F., Milton, Pa.—Fly
nets. E 1-4. 296
150/8. Wiggleworth, W. J., Darlington,
Wis.—Horse collar, collar, cap, and pad. E 1. 296
150/9. Phillips, Samuel R., Philadelphia, Pa.—Harness, saddlery, whips, etc. E 1-
2. 296
Bridle winkers. F 1-1. 296
151. Weaver & Bardall, Western Pen-
itentiary, Pittsburg, Pa.—Leather
whips. E 1-13. 296
152. Moseman, C. M., & Bro., New York,
N. Y.—Single and double harness and saddlery. E 1-1 and 9. 296
Single and double harness. E 1-5. 296
154. Moore, Thomas, New York, N. Y.—
Plain and fancy horse collars. E 1-12. 296
155. Manheim, William, New York, N. Y.—Harness loops and back curtain
loops. F 1-2. 296

156. American Whip Co., Westfield,
Mass.—Driving and riding and leather
whips and lashes. F 1-1. 296
157. Wilder, J. Lyman, Hartford, Conn.—Patent leather harness work, rosettes,
etc. E 1-5. 296
158. Hill, James R., & Co., Concord, N. H.—Single and double harness and
collars. "The Concord harness" is
made in all styles and of every descrip-
tion, from the lightest, finest, and most
elegant in use, to the heaviest and strong-
est required for any kind of work. Are
remarkable for style, workmanship,
strength, and durability. Correspondence
solicited. Circulars furnished on applica-
tion. E 1-1 and 9. 296
159. Gale, A. D., Pittsfield, Mass.—
Double coach harness and paper trunk.
E 1-6. 296
160. Motts, George, Washington, D. C.—
Gold mounted huggy harness. E 1-4. 296
161. Lighthouse, J. C., Rochester, N. Y.—
Horse collars and pads. E 1-5. 296
162. Stewart, John P., Rochester, N. Y.—
Carriage and draft horse collars. E 1-
13. 296
162a. Spencer, Robert, Brooklyn, N. Y.—
Saddle cloths. E 1-13. 296

Leather Machinery.

163. Pusey, Jones, & Co., Wilmington, Del.—Tanning apparatus and glazing ma-
cine for morocco factory. E 2-3 and
12. 532
163a. Mitchell, J. E., Philadelphia, Pa.—
Curriers' blocks, clearing and scouring
stones. A 2-2. 532
163b. Smith, Wm. M., Philadelphia, Pa.—
Device for regulating sewing machines.
E 2-2. 532
163c. Stoddard & Fifield, North Brook-
field, Mass.—Skeving machines. F 2-1.
532
163d. Carl, Frederick, Somerville, Mass.—Model of stuffing mill for leather.
E 2-9. 532
163e. Lewis, Rufus E., New Hampton,
F 2-3. 532
163f. Bowser, J. C., Fort Wayne, Ind.—
Stationary engine, boiler, and fixtures.
E 2-1. 532
163g. Newton, E. P., Gloversville, N. Y.—
Glove, mitten, and leather cutting ma-
cines. F 2-4. 532
164. Walters, G. C., Philadelphia, Pa.—
Wet skin sewing machine. E 2-2 and
9. 532
166. Horn, W. H., & Bro., Philadelphia,
Pa.—Tanners', curriers', and shoe-
makers' tools and machinery. D 2-3. 532
167. Osborne, C. S., & Co., 96 Me-
chanic street, Newark, N. J.—Saddlers' and harness makers' tools. Manufac-
turers of saddlers' and harness makers' tools of superior quality and finish.
Established 1826. Send for catalogue.
E 2-4 and 11. 532

For location of objects, indicated by letter and figure, see Notation, p. 105; ground plan, p. 193.
Leather-Working Machinery and Tools.

168 Knox, David, Lynn, Mass.—Pebbling and polishing machine; sole-cutting machine. F 2-4.


168 Sturtevant, Benjamin F., Boston, Mass.—Hot blast apparatus for tanneries and curriers' shops. F 2-1 and 2.


170 Reed, Harvey, Vineland, N. J.—Combination tambour. F 2-5.

171 Lockwood, Frederick A., Fall River, Mass.—Automatic leather-scouring machine. E 2-12.

172 Baker, George W., Wilmington, Del.—Skin-sewing machine. E 2-9 and 2.


176 Thompson & Nowell, Boston, Mass.—New patent bark-cutting and rossing machine. Tanners are respectfully invited to examine the machine and obtain circulars of information. E 2-3.

177 Swain, Fuller, & Co., Lynn, Mass.—Beating-out, moulding, and buffing machines. E 1-6 and 14.

178 Plummer, W. E., Boston, Mass.—Leather, buffing, whitening, and skiving machine; rotary tan press; round reach for leaching bark. E 2-5 and 51.


Shoe Machinery.


180b Morse, Eddy, & Co., Boston, Mass.—Wax thread, tripp sewing, burning, leveling, and sole cutting machines. F 2.

180c Union Edge Setter Co., Lynn, Mass.—Edge burnisher for boots. E 1-5.


181 Tubular Rivet Co., Boston, Mass.—Rivets for boots, shoes, harness, belting, etc. F 2-6.


183 Roney, James B., Philadelphia, Pa.—Shoe trimming and edge setting machine. E 1-10 and 14.


187 McKay Sewing Machine Association, Boston, Mass.—Shoe sewing and riveting machines and outsole tacker. The McKay Sewing Machine is in use for sewing soles to boots and shoes; will sew nine hundred pairs per day; thirty-five million pairs are annually sewed on it in the United States. The riveting machines are for riveting soles to boots and shoes. The rivets are corrugated, automatically cut to the proper length, and firmly clinched on the insole. Three hundred pairs per day can be riveted, either in a channel or on the surface. The outside tackers are for laying out soles. The nails clinch, are thoroughly buried in the insole, and always hold the sole. E 1-15.

188 May, Withey, & Drake, Lynn, Mass.—Shoe drying machine. F 2-6.


191a Saubier, H., & Sons, Newark, N. J.—Saddlers', tanners', and shoemakers' tools. F 1-2.


191c American Cable Screw Wire Co., Boston, Mass.—Screw, cable screw wire, and tacking machines. E 2-60.

191d Sturtevant, B. F., Boston, Mass.—Steam blowers and peg machine. F 2-12.

191e Whittemore, D., Boston, Mass.—Shoe and harness machines. F 1-5, 6, and 10.


Leather-Working Machinery and Tools, Leather.

1927 Kaifer & De Lacy, Trenton, N. J.—Steam burning iron heater. E 2-7. 652


194 Graves, L. S., Rochester, N. Y.—Machines for stripping, splitting, rolling and mounding, and heel pressing. E 2-7 and 14. 533


197 Redifer, S. S., Philadelphia, Pa.—Shoe lasts, patterns for dies. D 2-5. 533

198 Miller, Thomas L., Philadelphia, Pa.—Beveling, channeling, mounding, and sewing machines for shoes. F 1-8. 533

200 Cushman, C. S., Philadelphia, Pa.—Leather and shoe stitching attachment. E 1-12. 533

201 Evans, Thomas R., Philadelphia, Pa.—Boot and shoe tree, lengthener, stretcher, and lasts. D 2-5. 533


203 Graf, Leopold, Newark, N. J.—Shoe burning and polishing machine. F 2-4. 533

203a Tuck, S. V., Brockton, Mass.—Shoe knives and tools. D 2-6. 533

203b Tingley, John, Philadelphia, Pa.—Rotating detachable shoe heel, and machine for attaching. D 1-5. 533

Animal and Vegetable Products.

204 Wedekind, Hallenburg, & Bro., Louisville, Ky.—Oak sole leather. B 2-3 and 10. 652


207 Ohio Falls Oak Leather Co., Louisville, Ky.—Oak harness, bridle, and belting leather. B 2-3 and 10. 652

208 Conrad, Fabel, & Mooney, Louisville, Ky.—Oak sole leather. B 2-3 to 10. 652

209 Schellberg, B. F., Germania P. O., Ala.—Rough leather. A 2-7. 652


212 Hidden, E. S., Milburn, N. J.—Leather boards for shocking insoles and counters by improved process; also, patent excelsior carriage washers from compressed leather fibre. A 2-1. 652

213 Hurkamp, J. G., Fredericksburg, Va.—Virginia sumac. A 2-3. 652

213a Baer, A. P., & Co., Baltimore, Md.—Chestnut oak extract; quercetron and chestnut oak bark. A 1-5. 652

214 Leas & McVitty, Philadelphia, Pa.—Oak sole leather. A 2-6. 652

215 Keen & Coates, Philadelphia, Pa.—Oak-tanned sole leather for finest boots and shoe work. A 2-7. 652

216 Williams', Chas. B., Sons, Philadelphia, Pa.—Oak-tanned slaughter sole leather. A 2-6. 652


218 Shriver, A. K., & Sons, Union Mills, Md.—Oak sole leather. A 2-6. 652

219 Sommerville, Jas. N., Bellefonte, Pa.—Oak sole and belt leather. A 1-6. 652

220 Downing & Price, Wilmington, Del.—Oak sole and belt leather. A 1-6. 652

221 DeLong Bros., Philadelphia, Pa.—Oak rough slaughter leather. A 2-7. 652

222 Spanogle & Pennbaker, Philadelphia, Pa.—Oak sole leather. A 2-6. 652

223 Hibernia Tannery, Blaine, Pa.—Buenos Ayres sole leather. A 2-5 and 6. 652

224 Hench, Geo., Centre, Pa.—Oak sole leather. A 2-5 and 6. 652

225 Hench, A. L., Alum Banks, Pa.—Hemlock sole leather. A 2-5 and 6. 652

226 McNeal & Black, Man's Choice, Pa.—Slaughter sole. A 2-5 and 6. 652

227 Mapleton Tannery, Mapleton, Pa.—Texas sole. A 2-5 and 6. 652

228 Rife, Henry J., Philadelphia, Pa.—Sole and harness leather, and finished calfskins. A 2-5. 652


231 Hoffman, Jacob, Philadelphia, Pa.—Oak sole leather. A 2-5. 652


235 Greenawalt, J. & J. K., Harrisburg, Pa.—Oak sole, harness, wax upper, kip, and calf leather. A 2-6. 652


238 Ray, Daniel P., Tyrone, Pa.—Union crop sole leather. A 2-7. 652

239 Webb, Wm. B., Frankford, Pa.—Leather aprons for worsted machinery, picker, band, and lace leather. A 2-7. 652

For location of objects, indicated by letter and figure, see Notation, p. 105; ground plan, p. 103.
Leather.

240 Bechtel, John A., & Son, Newport, Pa.—Oak sole leather. A 2-6. 652
241 Mosser & Keck, Allentown, Pa.—Union crop back. A 2-7. 652
242 Genseman, Miller, & Co., Pinegrove, Pa.—Oak skin leather. A 2-7. 652
244 Kenner, Henry, Reading, Pa.—Oak rough leather. A 2-7. 652
245 Spaulding, Edward, Boston, Mass.—Hemlock sole leather. A 1-5. 652
247a Faust, Alvin, D., & Son, Upper Dublin, Pa.—Oak sole and rough leather. A 2-7. 652
248 Bare, John, Mt. Union, Pa.—Union crop sole leather. A 2-7. 652
249a Jenkins, Staylor, & Co., Baltimore, Md.—Oak sole leather, from the Baltimore Star, Mt. Vernon, Swift-Run, and Prospect tanneries. A 2. 652
249b Halsey, Saml., & Son, Newark, N.J.—Patent and enameled leather. B 1-5. 652
249c Buck, C., Fleming, Pa.—Oak sole leather. A 2-7. 652
250 Maynard, Ely & Roso, Baltimore, Md.—Calf and kid skins. D 2. 652
250c Frantz, D. & Son, Louisville, Ky.—Oak sole leather. A 2-3. 652
250d Decker, David, Wellsburg, N.Y.—Union back sole leather. A 2-4. 652
251 Palmer & Decker, Elsmira, N.Y.—Union back sole leather. A 2-4. 652
252 Kinley, Adam, Breesport, N.Y.—Union crop sole leather. A 2-5. 652

265 Innes, Adam, Granville Centre, Pa.—Union skin back sole leather. A 2-8. 652
266 Innes, Adam, Grovers, Pa.—Crop sole leather. A 1-8. 652
281 Beach & Dodge, Harrisville, Lewis Co., N.Y.—Hemlock sole leather. A 2-7. 652
282 Prichett & Baugh, Philadelphia, Pa.—Oak sole leather from Strasburg, Path, and Franklin tanneries. A 2-3. 652
288 Thomas Extract Co., Elmina, N.Y.—Sole leather and belting leather, tanned with Thomas’s clarified extract of hemlock bark exclusively, and with other tanning materials, in various percentages. A 2-5. 652

For classes of exhibits, numbered at end of entries, see Classification, Part I., pp. 27-45.
Leather.

275 Lampert, Henry, Rochester, N. Y. —Sole and upper leather. E 2-9. 652
276 Devereaux, A., & Son, Deposit, N. Y.—Hemlock sole leather. A 1-5. 652
277 Spaulding, Edward, Boston, Mass. —Hemlock sole leather. A 1-5. 652
279 Proctor, Thos. E., Boston, Mass.—Hemlock sole leather, curried leather, and splits. A 1-5. 652
281 Jewett & Keating, Buffalo, N. Y.—Hemlock sole leather. A 1-5. 652
288 Nepper, E. D., & Cincinnati, O.—Oak sole leather. A 2-5. 652
289 Elasas & Pritz, Cincinnati, O.—Oak sole leather. A 2-5. 652
290 Ballau, Louis, Cincinnati, O.—Oak sole leather. A 2-5. 652
292 Kessler, Henry, Cincinnati, O.—Oak sole and harness leather. A 2-5. 652
293 Lang & Wanner, Cincinnati, O.—Oak sole and harness leather. A 2-5. 652
294 Barde, Louis C., Cincinnati, O.—Harness leather. B 2-4. 652
295 Lawrence, John H., Cincinnati, O.—Skirting, calf, seating, and bridle leather. B 2-11. 652
298 Lappe & Hax, Pittsburg, Pa.—Oak butts and rough skirting leather. A 2-4. 652

Harness, Kip, and Calf.

299 Groetzinger, A. & J., Alleghany City, Pa.—Oak sole leather. A 2-4. 652
300a Wunderlich, Reinhard, New Albany, Ind.—Harness leather. B 2-3-10. 652
300b Day, Theodore, New Albany, Ind.—Wax leather. B 2-8-10. 652

300c Schuman, John W., Louisville, Ky.—Oak harness leather. B 2-3-10. 652
300d Rockenback, H., New Albany, Ind.—Harness leather. 2-3-10. 652
301 Woelfel, Fred'k, Alleghany City, Pa.—Harness leather. B 2-12. 652
301a Halsey, Samuel, & Son, Newark, N. J.—Patent and enameled leather. B 1-5. 652
301c Wetzel, Albert, New York, N. Y.—Calf, kip, wax upper and split leather. B 2-5. 652
301f Baltimore Calfskin Association, Baltimore, Md.—Leather rough, finished, and in the hair. B 2-6. 652
301h Maynard, Ely, & Rose, Baltimore, Md.—Finished calf and kip skins. B 2-11. 652
303 Holstein, A., Alleghany City, Pa.—Harness leather. B 2-5. 652
304 Lappe & Hax, Alleghany City, Pa.—Harness leather. B 2-5. 652
305 Lappe, J. C., Alleghany City, Pa.—Harness leather. B 2-5. 652
311 Chambers, Edwin, West Chester, Pa.—Finished calfskins. B 2-6. 652
313 Hollinger, Amos, Lancaster, Pa.—Oak harness leather. B 2-14. 652
316 Michel, A. M., New York, N. Y.—Buff, grain, and calf skins; harness leather; boots and shoes. B 2-5. 652
317 Brown, Elijah T., & Co., 82 Gold street, New York, N. Y.—Cromwell's finished calfskins, sold in this market twenty years; have a high reputation in foreign markets. B 2-12. 652

For location of objects, indicated by letter and figure, see Notation, p. 105; ground plan, p. 105.
320 Haubner & Heller, New York, N. Y.—Finished calf and kid skins. A 2-4. 652
321 Thomas Extract Co., Elmira, N. Y.—All kinds of light leather tanned with Thomas's clarified extract of hemlock bark exclusively, and with other tanning materials in various percentages. Thomas's bark granulating mill. B 2-12. 652
325 Butler, Dunn, & Co., Boston, Mass.—Buff leather made from slaughter hides. B 2-1. 652
326 Thompson, B. F., & Co., Boston, Mass.—Buff and split leather; also, intentions of goat, kid, and morocco insides, of grain leather. B 1-1. 652
326a Scofield & Stevenson, New York, N. Y.—Calfskins, harness, wax upper, grain and welt leather. B 2-5. 652
326c Karrer, Joseph & Aaron, Detroit, Mich.—Calf and kid leather. B 2-12. 652
326e Schaff, Wm., & Co., Louisville, Ky.—Harness leather. B 2-3-10. 652
326f England & Bryan, Philadelphia, Pa.—Finished shoes kitting, waxed upper and split leather. A 2-1. 652
327a Stengel, George, Newark, N. J.—Patent leather. B 1. 652
327b Spangole, Samuel, Nashville, Pa.—Rough kid and calf leather. B 2. 652
327c Barth, A., & Co., Louisville, Ky.—Harness, kitting, and wax leather. B 2, 3-10. 652
327d Mooney, W. W. & J. E., Columbus, Ind.—Sole, harness, kitting, and belt leather. B 2, 3-10. 652
327e Guild, Josiah F., Boston, Mass.—Polish grain, imitation goat, buff, and split leather. B 2-9. 652
329 Proctor, Thomas E., Boston, Mass.—Curried leather and splits. B 2-8. 652
331 Zipp, Philip C., Baltimore, Md.—Calf, kid, and grain leather. B 2-6. 652
332 Appold, George, & Sons, Baltimore, Md.—Chestnut, oak-tanned calf skins. B 2-4. 652
333 Sharp, Tudor, & Co., Baltimore, Md.—Oak buff upper leather, and rough kitting. A 2-2. 652
334 Cunningham & Co., Nashville, Tenn.—Oak harness and rough leather. B 2-1. 652
335 Wisconsin Leather Co., Milwaukee, Wis.—Harness, wax upper, and split leather. B 2-5. 652
337 National Leather Co., Detroit, Mich.—Split, lace, and upper leather calfskins and robes. A 2-2. 652

Morocco and Sheep.

342 Rockwell, J. S., & Co., New York, N. Y.—Sheep leather. Manufacturers of colored and russet linings; pebbled sheep in fox, fox; and colored skivers; shoe manufacturers; hatters' skivers; trunk and bag leather and linings; bookbinders' and pocket-book makers' leather of every kind; suspender and organ leather; sumac and alom roans and skivers. This exhibit is entirely of sheep leather. B 1-16. 652
347 Jones, W., & Co., Wilmington, Del.—Morocco leather. B 2-14. 652
349 Libraces, E., & Sons, Baltimore, Md.—Colored roans and linings, buff splits and wax upper. B 1-15. 652
351 Bockius, Geo., Philadelphia, Pa.—Morocco leather. B 1-5, and G 1. 652
353 Schollenberger, Wm., & Sons, Philadelphia, Pa.—Calf, kid, sheep alun, and roan leather; satchels, pocket books, and heavy leather goods. B 1-12. 652

For classes of exhibits, numbered at end of entries, see Classification, Part I., pp. 27-45.
Leather, Saddlery, Furs.

SPECIAL BUILDINGS.

—Morocco leather, sheepskins, and skivers.  652
358 Adams & Keen, Philadelphia, Pa.  
—Morocco and kid leather. B 1-4.  652
359 Bronx Wool & Leather Co., New York, N. Y.  
—Morocco and sheep leather. B 1-15.  652
360 Locher & Atkinson, Baltimore, Md.  
—Morocco. B 1-6.  652
—Kid and goat morocco leather. B 1-6.  652
—Colored sheepskins. B 1-6.  652

GREAT BRITAIN.

West of Centre Aisle, Sect. C., Col. 3 to 4.
1 Brookes, W., & Sons, Walsall, England. —Saddlery.  256
2 Wilson, Walker, & Co., Leeds, England. —Colored skivers, calf, roans, moroccos, and kids, in every style of finish and for all purposes.  652
3 Edinburgh Western Tanning Co., Edinburgh, Scotland. —Hog skins for saddlery.  652

GERMANY.

West of Centre Aisle, Sect. C., Col. 2 to 3.
1 Wolf, S., Mainz. —Shoes.  251
2 Spichars, P. J., Offenbach. —Calf, glove, and French kid.  652
3 Simon, C., & Son, Kirn. —Colored and black moroccos, and calf skins.  652
4 Meyer, E., Berlin. —Colored glove kid.  652
5 Bruning, H. W., Neumunster. —Smooth and grained calf, kid and upper leather.  652
6 Schaller, G., Laher Baden. —Colored and black moroccos.  652
7 Kaumanus, F. H., Ehrenbreitstein, B. A. —Sole leather, rhenish oak slaughter sole.  652

RUSSIA.

West of Centre Aisle, Sect. C., Col. 1 to 3.
1 Bauereifling, Adolphus, Warsaw. —Russian and calf leather.  652
2 Panisheff, John, Mourmshkine, Government of Nijnii Novgorod, district of Makarief. —Sheepskins, dressed and half dressed.  652
3 Alaozroff & Alexandroff, Kazan. —Russian leather.  652
4 Mikhailoff, Alexis, Moscow. —Furs, sable, ermine, Korsard fox, Siberian squirrel.  652
5 Grunwald, Morice, Riga. —Furs, and stuffed fur animals.  652
6 Komarroff, Nicas, Moscow. —Sheep and lamb skins, dressed.  652
7 Solin Bros., Nijni Nnovgorod. —Seal grease.  652
8 Ossipoff, Michael, Kieff. —Tallow.  652
9 Zinovieff, Alexander, St. Petersburg. —Boot legs and vamps.  652
10 Tember, K., & Schwede, L., Warsaw. —Manufactured leather.  652
11 Tchernish, E., Sharshart Village, Government of Perm, district of Ekaterinburg. —Manufactured leather.  652
12 Sorakine, Thilhon, Moscow. —Calf leather.  652
13 Sevebreunikoff, Simon, Mourashkin-agon, Nijni Nnovgorod, district of Makarief. —Horse leather.  652
14 Savin, Theodore, Ostashkoff, Government of Tver. —Russian leather and black boot legs.  652
15 Rene, John, St. Petersburg. —Sole leather, boot legs, and vamps.  652
16 Pervoff, Stephen, Poshekhonz, Government of Faraslow. —Calf leather and boot legs.  652
17 Ostrom Bros., Ueclaborg, Finland. —Sole leather.  652
18 Muller, Edward, St. Petersburg. —Boot legs and vamps.  652
19 Long, Frederick, St. Petersburg. —Calf leather, boot legs, and vamps.  652
20 Koorikoff, P., St. Petersburg. —Leather.  652
21 Hufner, Rudolph, St. Petersburg. —Boot and Russian leather.  652
22 Emelianoff, Alexander, St. Petersburg. —Boot legs.  652
23 Efnoff, St. Petersburg. —Boot legs and vamps.  652
24 Company of the Wladimir Tannery, St. Petersburg. —Sole leather.  652
25 Broonsitzine, Nicolas, & Sons, St. Petersburg. —Sole and boot leather and boot legs.  652
26 Bensenson, John, St. Petersburg. —Boot legs.  652

For location of objects, indicated by letter and figure, see Notation, p. 103; ground plan, p. 105.
DESCRIPTION OF BUILDINGS AND SPECIAL EXHIBITS.

No. 1. MAIN BUILDING.
See Part I., page 23.

No. 2. MACHINERY HALL.

No. 3. STOKES & PARRISH MACHINE SHOP, etc.
Size, 112 feet by 60 feet.
STOKES & PARRISH, Philadelphia.
Constitutes a part of Annex No. 2 to Machinery Hall, and is intended to execute repairs and machine work for the exhibitors. It is located south of Machinery Hall.

No. 4. AMERICAN BOILER HOUSE.
Is situated south of Machinery Hall, near the Hydraulic Annex, and furnishes steam for the American Section.

No. 5. CORLISS BOILER HOUSE.
Architects, PETTIT & WILSON, Philadelphia.—Size, 40 feet by 80 feet.
CORLISS STEAM ENGINE COMPANY, Providence, R. I.
Is built of composite stone and wood, and furnishes steam for the Corliss engine in Machinery Hall from twenty vertical tubular boilers, aggregating 1400 horse-power. It is situated south of Machinery Hall.

No. 6. ENGLISH BOILER HOUSE.
Size, 24 feet by 71 feet.
A composite wood and stone building, furnishing steam to English and other foreign exhibitors in Machinery Hall, and situated to the south of it.

No. 7. SHOE AND LEATHER EXHIBITION BUILDING.
See Part III., page 105.

No. 8. CENTENNIAL BOARD OF FINANCE OFFICE.
Architect, H. J. SCHWARZMANN.—Size, 140 feet by 212 feet.
A one-story frame building, situated on the left hand side of the main entrance to the Exhibition grounds, and occupied by the Board of Finance for the transaction of daily business.

No. 9. U. S. CENTENNIAL COMMISSION OFFICE.
Architect, H. J. SCHWARZMANN.—Size, 192 feet by 140 feet.
Located on the right hand side of the main entrance to the Exhibition grounds. It is built of wood, one story high, and is used as a business office by the Centennial Commission.

No. 10. CENTENNIAL NATIONAL BANK.
Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 72 feet by 40 feet.
E. A. ROLLINS, President.
Situated at the northwest corner of the Main Exhibition Building, and east of the Centennial Commission Office. It is one story high, built of wood, and is the medium for transacting the financial affairs of the Exhibition.
No. 11. WEIMER'S MACHINE WORKS, LEDANON, PA.

This outdoor exhibit is located south of Machinery Hall, between the Shoe and Leather Building, and Stokes & Parrish Machine Shop, and consists of bells, car dumps, carts for coal, iron bars, and steel coil tuyere.

No. 12. DARTHOLDI'S FOUNTAIN.

See Part II., page 146.

Architect, DARTHOLDI, of Paris.—Size, basin, 26 feet in diameter; height, 30 feet, statue, 11 feet.

Situated in the Esplanade in front of the main entrance to the grounds.

No. 13. CATHOLIC TOTAL ABSTINENCE FOUNTAIN.

See Part II., page 146.

Architect, HERMAN KIRN, Philadelphia.

Situated at the junction of Fountain Avenue and the Avenue of the Republic, at the northwestern corner of Machinery Hall. In design it is a circular platform, with four arms projecting at right angles, terminating in four smaller circular platforms. From the centre of the large circle rises a marble rockwork sixteen feet high, with a diameter of eighteen feet at base, on which stands a statue of Moses smiting the rock. The water descends from numerous fissures into a basin forty feet in diameter. On each of the circular platforms is a drinking fountain, twelve feet in height and eight feet eight inches in diameter, surrounded with statues nine feet high, representing Father Mathew, Charles Carroll, Archbishop John Carroll, and Commodore John Barry. It has been erected by contributions made by the numerous societies forming the Catholic Total Abstinence Union of America.

No. 14. FULLER, WARREN, & CO.'S STOVE BUILDING.

Size, 60 feet by 45 feet.

FULLER, WARREN, & CO., New York city, Chicago, Ill., Cleveland, O., and Troy, N.Y. Located at the east end of Machinery Hall, and facing the Fountain of the Catholic Total Abstinence Society. It contains samples of stoves, heaters, and ranges in operation; is built of wood, one story high, surmounted by a cupola.

No. 15. GILLENDER & SONS' GLASSWARE BUILDING.

Architect, JAMES H. WINDRIM.—Size, 60 feet by 90 feet.

GILLENDER & SONS, Philadelphia.

A one-story frame house, situated west of Machinery Hall, on the walk to the Fifty-second Street entrance, where glass in process of manufacture is shown.

No. 16. CAMP OF WEST POINT CADETS.

Located on the eastern slope of George's Hill, at the western end of Fountain Avenue. The tents accommodate 300 cadets, with officers and band.

No. 17. IRON PIPE.

ANDREW O'NEILL, Ansonia, Conn.

This is an outdoor exhibit, situated south of Machinery Hall, and consists of water and gas pipes, showing patent process of jointing.

No. 18. LIBERTY STOVE WORKS.

Architect, C. C. PHILLIPS.—Size, 45 feet by 34 feet.

CHARLES NOBLE & CO., Philadelphia.

A one-story frame building, located west of Machinery Hall, and south of the Catholic Total Abstinence Fountain, on Fountain Avenue; containing different varieties of heaters, stoves, and ranges manufactured by Noble & Co.
No. 19. SAWMILL ANNEX.

Size, 276 feet by 80 feet, and

No. 20. BOILER HOUSE.

Architects, PETTIT & WILSON, Philadelphia.
Size, 48 feet by 30 feet.

UNITED STATES CENTENNIAL COMMISSIONERS.

Exhibit direct-acting steam saw machines and gang saws. Are on Fountain Avenue, west of Machinery Hall, and consist of a one-story frame open building, and a boiler house attached.

No. 21. RAILROAD ENGINE HOUSE.

This building is used for storing and repairing the engines of the Narrow-Gauge Railroad Company, and is located west of Machinery Hall.

No. 22. ST. CECILIAN ORGANS.


This exhibit consists of miniature organs, and some clocks made in 1676, 1776, and 1876. The building is frame, one story high, and in design resembles an organ. It is situated south of Mineral Annex, No. 1, near eastern entrance to Main Building.

No. 23. AUTOMATIC RAILROAD.

Size, 20 feet by 150 feet.

CHARLES W. HUNT, New York.

Illustrations of the mode of unloading vessels by means of a railroad worked by a self-acting apparatus. Is situated west of Machinery Hall.

No. 24. MONUMENT—THE AMERICAN SOLDIER.

NEW ENGLAND CO., Hartford, Conn.

This is a colossal monument situated between the Main Building and Art Gallery, on Avenue of the Republic. It is made of Westerly granite, is 21 feet 6 inches high, weighs 30 tons, and is the largest statue of modern times.

No. 25. GUNPOWDER PILE DRIVER.

Size, 35 feet by 12 feet.

GUNPOWDER PILE-DRIVING CO., Philadelphia.

Is built in the open air to exhibit the operation of pile-driving by means of gunpowder. It is situated southwest of Machinery Hall, between it and the barrier.

No. 26. STARR'S IRON WORKS.

JESSE W. STARR & SON, Camden, N. J.

The space allotted to Messrs. Starr & Son is occupied with gas works, pipes, special castings, stop-valves, lamp-posts, and fire hydrants. It is located southwest of Machinery Hall, close to the barrier.

No. 27. WEST END RAILWAY OFFICE.

This is a two-story frame building, situated west of Machinery Hall and north of Railroad engine house, on line of narrow-gauge road, and designed for the transaction of the Company's business.

No. 28. PNEUMATIC TUBES.

A. BRISBANE.

These tubes are placed on a platform, showing the process of transmitting messages and packages by this method. The exhibit is situated west of the gas machine, near fence on Elm Avenue.
No. 29. EXHIBIT OF NEW ENGLAND GRANITE CO., HARTFORD, CONN.

Situated in front of Board of Finance office, and consists of a Corinthian monument, 46 feet high, crowned with the statue of Hope. A canopy, 40 feet high, surmounted by spire and cross, under canopy a figure indicative of Memory. A Gothic monument with four polished columns at corners of die; a model of statue representing soldier of 1776 (life size); an individual memorial crowned with cross; a Gothic column, surmounted by spire and turrets; a Scotch granite polished monument, 16 feet high, with circular dome terminating in a finial; an individual memorial; a small monument, terminating in an urn; and a rustic monument, with ivy-circled column surmounted with cross.

No. 30. PATENT RAILROAD CROSSING.

This exhibit is located on line of narrow-gauge road near Elm Avenue, and west of Machinery Hall. It is designed to keep dirt from accumulating between the rails and planks of crossing.

No. 31. NEVADA QUARTZ MILL.

Size, 60 feet by 43 feet.

STATE OF NEVADA.

Exhibits the process of manipulating ores and precious metals. It is a one-story frame building, situated south of Machinery Hall.

No. 32. STORE HOUSE.

A one-story brick building, 10 feet by 10, used for the storage of oil for the machinery department. It is between the Nevada quartz mill and the barrier.

No. 33. FRICTION DRUM.

I. S. MUNDY, Newark, N. J.

Situated west of gas machine, near Elm Avenue, and consists of an improved portable friction drum.

No. 34. U. S. HOISTING MACHINE.

Stokes & Parrish.

This exhibit adjoins the machine shop of Stokes & Parrish, south of Machinery Hall, and consists of a derrick with engine and boiler attachment.

No. 35. CHILIAN AMALGAMATING MACHINERY.

COMMISSION FOR CHILI.

Contains working models of amalgamating machinery used in working ores, and has a boiler house with small cylinder boilers. Is situated west of Machinery Hall.

No. 36. CAMPBELL PRINTING PRESS BUILDING.

Architect, ALEXANDER B. BARY.—Size, 88 feet by 144 feet.

CAMPBELL PRINTING PRESS AND MANUFACTURING CO., Brooklyn, N. Y.

The various printing presses manufactured by this company are exhibited in operation; the power is furnished by a thirty (30) horse-power engine and boiler. Specimens of type printing from the date of the invention, and of sunlight printing, are shown, and a complete printing office, of the fashion of 1776, is also in operation.
SPECIAL BUILDINGS.

No. 37. OLD LOCOMOTIVE AND CARS.

EXHIBITED BY PENNSYLVANIA RAILROAD Co.

This exhibit is situated on line of Narrow-Gauge Railroad, west of Machinery Hall, and consists of the engine "John Bull," with tender and two passenger cars, standing upon the rails and stone sleepers of the first piece of track laid for the Camden & Amboy Railroad, in 1831; also, the first iron prow used on ships in crossing the Atlantic Ocean.

No. 38. CAR HOUSE.

Size, 140 feet by 44 feet.

Situated west of Machinery Hall, on line of Narrow-Gauge Railroad; designed for the exhibition of cars.

No. 39. POLICE STATION.

This building is situated southwest of Glass Factory, and is used by the Centennial Guard for quarters, etc.

No. 40. AVERILL CHEMICAL PAINT CO.

Size, 36 feet by 42 feet.

Contains exhibits of the Averill Chemical Paint ready for use, and applied. The building is constructed on the Rogers patent, has no frame work, and is put together with bolts and iron tongues. It is west of the Liberty Stove Works, on Fountain Avenue.

No. 41. OFFICIAL CATALOGUE AND NEWSPAPER ADVERTISING OFFICE.

Size, 20 feet by 30 feet.

CENTENNIAL CATALOGUE COMPANY—S. M. PETTENGILL & Co., New York,
Philadelphia, and Boston.

A one-story building, occupied jointly by the Centennial Catalogue Company, and S. M. Pettengill & Co., Newspaper Advertising Agents. Contains bound volumes and files of the principal newspapers of the country, specimen numbers of old newspapers, photographs of editors and publishers, etc. Situated south of the east end of Machinery Hall.

S. M. Pettengill & Co., established 1849, are agents for all the newspapers of the United States and Canada, which are received and filed at their spacious and conveniently located offices, 32 Park Row, New York; 701 Chestnut Street, Philadelphia; 10 State Street, Boston, and upon the Centennial grounds. They have built up a large business by faithful attention to the interests of their customers, for whom they save time, trouble, and expense. Their long experience and large facilities are put at the service of those who consult them respecting the best methods of advertising.

No. 42. STOKES & PARRISH BOILER HOUSE.

Size, 10 feet by 12 feet.

Contains a boiler and engines; situated east of the southern central entrance of the Main Building.

No. 43. EHRET'S WATER-PROOF ROOFING.


A circular pavilion, showing fire and water-proof roofing. It is located to the east of the central southern entrance of the Main Building.
No. 44. TOMBSTONES.
This exhibit is situated south of the Main Building, near central entrance, and consists of tombstones, inclosed by ornamental iron fence.

No. 45. TERRA-COTTA PIPES.
Exhibited by E. W. Rittenhouse & Bro., Baltimore, Md. Comprises drain pipes of different sizes, elbows, angles, etc. Southwest of Machinery Hall, and adjoining the Gas Machine.

No. 46. MINERAL ANNEX, 1 and 2.
An extension of the Main Building, to the east of its south central entrance. It contains the greater part of the American exhibits in Department I (Mining and Metallurgy), which are catalogued in Part I., pages 47 to 60.

No. 47. FIRE-PROOF VENTILATED BUILDING.
Architect and Builder, Robert Irwest.—Size, 13 feet by 13 feet. This is a one-story building composed of hollow bricks, peculiar in construction. Located south of Main Building and Annex No. 2.

No. 48. HEWITT & BRENNAN'S SWINGS.
These swings are known as aerial chairs, and are operated by means of a treadle with foot-pressure, leaving the hand entirely free. They number six, and are situated on Agricultural Avenue, immediately south of the American Restaurant, and south of Main Building, where the exhibit is known as aerial chairs.

No. 49. ORNAMENTAL STONE WORK.
An exhibit of brown stone, representing a double entrance to dwelling, elaborately carved, with rough dressed trimmings. Located south of St. Cecilian Organ and Main Building Annex No. 1.

No. 51. UNITED STATES GOVERNMENT BUILDING.
See Part III., page 72.

No. 51½. BARTHOLODI ELECTRIC LIGHT.
Is situated immediately west of Cook, Son & Jenkins' Pavilion, on border of lake, and consists of arm of statue to be erected in New York harbor.

No. 52. UNITED STATES ARMY POST HOSPITAL.
See Part III., page 73.

No. 52½. HOWE MONUMENT.
This monument was erected by the Howe Machine Co., to the memory of Elias Howe, Jr., the first inventor of sewing machines in this country. It was designed by Mr. Ellis, and cast by Wood Bros., of Philadelphia, and is situated at the western end of the lake, opposite northern central entrance to Machinery Hall.

No. 53. UNITED STATES HOSPITAL TENT.
See Part III., page 73.

No. 53½. JERUSALEM BAZAAR.
Situated on south side of Fountain Avenue, and due north of Turkish Bazaar. Designed for sale of olive wood.

No. 54. UNITED STATES LABORATORY.
See Part III., page 73.
No. 54½. PHILADELPHIA "TIMES" PAVILION.
A. K. McClure, Editor.
The Centennial business office of the "Times," a daily paper, issued morning and evening, and printed on a Hoe perfecting press in Machinery Hall. It is a one-story frame building, located on Belmont Avenue, opposite and east of the lake.

No. 55. PENNSYLVANIA STATE BUILDING.
Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 97 feet by 55 feet.
A two-story frame building, with a tower, of Gothic style. It faces the lake, between Fountain Avenue and the Avenue of the Republic; contains reception-rooms and offices for the use of the State Commissioners and visitors.

No. 55½. HUNGARIAN WINE PAVILION.
Architect, H. J. SCHWARZMANN.
JACOB KOHN, Manager.
This structure is circular in form, situated on State Avenue, north of the Japanese and Mississippi buildings, and devoted to the sale of Hungarian wines exclusively.

No. 56. OHIO STATE BUILDING.
Architects, HEARD & SONS, Cleveland, O.—Size, 45 feet by 44 feet, and Annex, 60 feet by 40 feet.
A two-story stone pavilion, located at the junction of State and Belmont Avenues. It supplies accommodation for the State Commissioners.

1 Hoffman, A. O., Thompson, Wm., and others, Springfield, O.—Springfield limestone, course No. 10.
2 McNally, Wm. G., Cleveland, O.—Coat of arms of Ohio, carved from Berea stone.
3 Berea Stone Co., Berea, O.—Berea sandstone, course Nos. 1 and 2.
4 Hurst, J. R., Cleveland, O.—Independence sandstone, course No. 4.
5 Ford, O. D., Cleveland, O.—Euclid sandstone, course No. 3.
6 Halderman, L., & Son, Cleveland, O.—Amherst stone, course No. 5 and window No. 4.
7 Wagner, John, Cleveland, O.—Independence sandstone, course No. 6.
8 Amherst Stone Co., Cleveland, O.—Amherst stone, course No. 7.
9 Black River Stone Co., Cleveland, O.—Stone from Grafton, Ohio, course No. 8 and window No. 10.
10 Paul, John, & Co., Massillon, O.—White sandstone from Massillon, Ohio, course No. 9.
11 Wilson & Hughes Stone Co., Cleveland, O.—Amherst stone, course No. 10 and window No. 9, and Independence stone, course No. 13.
12 Clough Stone Co., Amherst, O.—Amherst stone, course No. 11, and one-half front entrance.
13 Worthington & Sons, Amherst, O.—Amherst stone, course No. 12, and one-half front entrance.
14 Ohio Stone Co., Cleveland, O.—Amherst stone, course No. 15.
16 Coshocton Stone Co., Coshocton, O.—Sandstone, course No. 15 and window No. 2.
17 Stitt, Price, & Co., Columbus, O.—Columbus limestone, course No. 16.
18 Finnegans, M., Cincinnati, O.—Cincinnati stone, window No. 3.
19 Finnegan, J. H., Cincinnati, O.—Cincinnati stone, course No. 12.
20 Montgomery, R. M., Youngstown, O.—Sandstone, part of course No. 20.
21 Caldwell & Tod, Youngstown, O.—Stone from Tod quarry, part of course No. 20.
22 Byers & McLhainy, Youngstown, O.—Stone from Youngstown, part of course No. 20.
23 Mauser & Haid, Youngstown, O.—Stone from Youngstown, part of course No. 20.
24 Hamilton, Homer, Youngstown, O.—Stone from Youngstown, part of course No. 20.
26 Stocking, Z. S., Mansfield, O.—Red sandstone from Mansfield, two vestibule windows.
27 Bosler, Marcus, Dayton, O.—Dayton limestone, part of gable end and three windows.
| No. 28 | Huffman, Wm., Dayton, O.—Dayton architectural gable. | Co., Cleveland, O.—Section iron roofing tile. | 227 |
| No. 29 | Diamond Glass Co., Ravenna, O.—Double-thick glass, from ground white sandstone, in windows. | 33 House & Davidson, Cleveland, O.—Pair front doors. | 227 |
| No. 30 | American Inlaid Wood Co., Cleveland, O.—Inlaid wood floor, ladies' parlor. | 34 Champion Fence Co., Kenton, O.—Wrought and malleable iron fence and gate. | 253 |
| No. 31 | Garry Iron Roofing Co., Cleveland, O.—Sections of corrugated iron roof. | 35 Buringer Bros., Dayton, O.—Ohio coat of arms of galvanized iron, in gable. | 291 |
| No. 32 | American Sheet & Boiler Plate | 36 Heard & Sons, Cleveland, O.—Architectural design of building. | 441 |

**No. 56½. CENTENNIAL POLICE STATION.**

This building is situated immediately north of State Avenue and Hungarian Wine Pavilion, and is used as quarters, etc., of Centennial Guards.

**No. 57. INDIANA STATE BUILDING.**

Size, 50 feet by 42 feet.

A two-story frame building, on State Avenue, opposite the United States Government buildings, containing accommodations for the State Commissioners and for visitors from Indiana.

The exhibit consists of a chair made of one hundred different kinds of wood from one county. Specimens of block and coking andannel coal; flag from natural bed of limestone; black walnut; model of Bailey gun, and a painting by Cox, of the Sierra Valley. The walls are occupied with panels, presenting in brief form the growth and industries of representative counties and cities. In the reading-room is a large map showing railroad system, with margin presenting agricultural and manufacturing statistics.

**No. 57½. SPONGE FISHERS OF TURKEY.**

This building contains an exhibit of sponge and fruit, situated on south side of Fountain Avenue, and north of Vermont State building and Turkish Café.

**No. 58. ILLINOIS STATE BUILDING.**

Architects, Wheelock & Thomas.—Size, 60 feet by 40 feet.

Situated on State Avenue, north of the United States Government Buildings; the headquarters of the Illinois Commissioners.

**No. 58½. BETHLEHEM BAZAAR.**

Located on Fountain Avenue, adjoining Jerusalem Bazaar, and intended for sale of olive wood.

**No. 59. WISCONSIN STATE BUILDING.**

Size, 50 feet by 40 feet.

For the accommodation of the State Commissioners. Located on State Avenue, north of the United States Government Exhibition Buildings.

**No. 59½. SCREW FOG-HORN AND BELL.**

Situated at northwest corner of Belmont and State Avenues. Exhibit consists of one caloric engine, which pumps air for fog-horn; tank for air; and stationary engine.

**No. 60. MICHIGAN STATE BUILDING.**

Size, 48 feet by 53 feet.

On State Avenue; built of native woods and stone; interior with raised panel work; marble wainscoting; parquetté floors, all highly finished. Contains reception, Commissioners', dressing, parcel, three reserve rooms, and ladies' parlor.
No. 61. NEW HAMPSHIRE STATE BUILDING.

Size, 30 feet by 40 feet; two projections, 9 feet by 15 feet each.

In the style of an Italian villa, two stories in height, and containing ten rooms, the roof protected by an awning and used for an outlook. This exhibit consists of views of White Mountains scenery, and home of General John Stark, the hero of Bennington.

No. 62. CONNECTICUT STATE BUILDING.

Architect, D. R. Brown, from a design by Donald G. Mitchell.—Size, 30 feet by 40 feet.

This cottage is erected in the old Colonial style, somewhat modified, and is designed for the use of the citizens and exhibitors of the State of Connecticut. It is situated on State Avenue, not far distant from the United States Government Exhibition Buildings. Exhibit consists of the Royal Arms, which, before the revolution, hung above the Speaker’s chair in the House of Representatives, at Hartford, painted in 1724. Rustic chess stand, ham, nutmegs, frames, etc., made from the wood of the Charter Oak. Ancient furniture, clock, tile, settee, etc., etc.

No. 63. MASSACHUSETTS STATE BUILDING.

Size, 85 feet by 56 feet.

Situated on State Avenue, opposite the New York State Building; is built of wood, two stories high, and contains offices and rooms for Commissioners and visitors.

No. 64. DELAWARE STATE BUILDING.

Size, 54 feet by 34 feet.

Built in the Swiss-Gothic style, from native woods of the State. It is occupied by the State Commissioners, the first floor being used for reception-rooms, while the second floor is devoted to business purposes. Situated on State Avenue, north of the British Commission, opposite the New York State Commission.

No. 65. MARYLAND STATE BUILDING.

Size, 92 feet by 60 feet.

For the use of the State Commissioners and visitors. Situated on State Avenue, north of the British Government buildings, and is built of wood, two stories high. This exhibit consists of minerals, woods, building stone, specimens of art by pupils of Maryland Institute and School of Art and Design, portraits of Governors, three engines by Baltimore & Ohio Railroad, models of fish-house and hatching-house.

No. 66. JAPANESE DWELLING.

Architect, Matsuo-Ehe, Tokyo.—Size, 102 feet by 48 feet.

This building, usually called the Japanese Government Building, is intended as a dwelling-house for Japanese workmen. The wood and other articles that enter into its composition, and also the vases and flowers in the surrounding garden, were imported from Japan, and all the work has been done by Japanese artisans. It is situated south of the British buildings.

No. 66. WEST VIRGINIA STATE BUILDING.

Size, 115 feet by 40 feet.

Northwest of the Catholic Total Abstinence Fountain, built of wood, two stories high. Headquarters for State Commissioners and visitors from West Virginia. The exhibit consists of twenty pyramids of coal, mineral waters, ores, agricultural products, oils, tobacco, building stone, veneers, salt, glass, and a memorial shield made of seventy-eight varieties of wood, viz.:
Minerals, Ores, Stone, Mining Products.

1 Central Virginia Copper Mine, Virginia.—Copper ores, iron pyrites, and collection of minerals found on line of Chesapeake & Ohio Railroad. 100

2 Stack, I. L., Virginia.—Hematite ore. 100

3 Lancaster Furnace & Mining Co., Taylor county, West Va.—Carbonate of iron. 100

4 McCrery, W., Raleigh county, West Va.—Hematite ore. 100

5 Harvey, R. T., Putnam county, West Va.—Iron ore. 100

6 Dickinson, H., Pendleton county, West Va.—Hematite ore. 100

7 Miller, George, Pendleton county, West Va.—Hematite ores. 100

8 Boggs, J. C., Pendleton county, West Va.—Hematite ore. 100

9 Davis, Madam, Denza, Pendleton county, West Va.—Hematite ores. 100

10 Garloe, A. E., Marion county, West Va.—Carbonate of iron. 100

11 Brown, T. L., Kanawha county, West Va.—Black band iron ore. 100

12 Hamilton, Jas., Jefferson county, West Va.—Barytes. 100

13 Melville, A. W., Jackson county, West Va.—Iron ore. 100

14 Bond, E., Harrison county, West Va.—Iron ore. 100

15 McMechen, S. A., Hardy county, West Va.—Iron ores. 100

16 Alexander, W. A., Greenbrier county, West Va.—Calc spar. 100

17 Lewis, F., & Co., Grant county, West Va.—Calc spar and iron ores. 100

18 Hill, Wm., Fayette county, West Va.—Iron ore. 100

19 Wilson, Lewis, Barbour county, West Va.—Carbonate of iron. 100

20 Stout, H. L., Philippi, West Va.—Carbonate of iron. 100

21 Nickell, G. W., Greenbrier county, West Va.

a Iron ore. 100

b Coal. 100

22 Hovey, W. M., Kanawha county, West Va.

a Iron ores. 100

b Coals. 107


a Carbonate of iron. 100

b Bituminous coal. 101

24 Great Western Mining & Manufacturing Co., Ky.

a Iron ore. 100

b Coal. 101


a Hematite ore. 100

b Marble. 102

26 Rufliner, L., & Lewis, J. D., Kanawha county, West Va.

a Black flint. 102

b Building sandstone. 102


a Carbonate of iron. 100

b Building sandstone. 102

28 Capon Iron Works, Hardy county, West Va.

a Iron ores. 100

b Limestone. 103


a Iron ores. 100

b White glass and sand. 104


a Iron ores. 100

b Fire clay. 104

31 Shimp, Jas., Hardy county, West Va.

a Iron ores. 100

b Potters' clay. 104


a Iron ore. 100

b Potters' clay. 104

33 Cantley, R. K., Greenbrier county, Va.

a Flint. 100

b Semi-bituminous coal. 102

c Limestone and siliceous coral. 103


a Carbonate of iron. 100

b Coal. 101

c Fire clay. 104

35 Clay, Cecil, Greenbrier county, West Va.

a Iron ore. 100

b Building sandstone. 102
c Clay. 104
d Mineral waters. 107


a Iron ore. 100

b Limestone. 103
c Sandstone for furnaces. 104

37 Mendenhall, U., Morgan county, West Va.

a Hematite ore. 100

b Limestone. 103
c White sand. 104

38 Willey, W. T., Monongahela county, West Va.

a Iron ores. 100

b Coals. 101

c Building sandstone. 102
d Limestone. 103
e Fire clay. 104


a Iron ores and black oxide of manganese. 100

b Mineral waters. 107

40 Johnson, J. F., Pendleton county, West Va.

a Hematite ores. 100

b Mineral water. 107

41 Dulin, C., Wirt county, West Va.—Petroleum. 101

42 Volcano Oil & Coal Co., Wood county, West Va.—Bituminous coal. 102

43 Hale & Porter, Wirt county, West Va.—Petroleum. 102

44 Aspenwall & Low, Wayne county, West Va.—Cannel coal. 103

45 Ferguson, Way, Wayne county, West Va.—Bituminous and cannel coal. 103

46 Barnes, J. H., Taylor county, West Va.—Bituminous coal. 102

47 McGregor, Dr., Ritchie county, West Va.—Petroleum and Ritchie mineral. 102
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<td>Beckley, A., Raleigh county, West Va.—Bituminous coal.</td>
<td>a Bituminous coal.</td>
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<td>49</td>
<td>Pocahontas, G. H., Raleigh county, West Va.—Bituminous coal.</td>
<td>b Building sandstone.</td>
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<td>50</td>
<td>Raymond Coal Co., Putnam county, West Va.—Bituminous coal.</td>
<td>c Limestone.</td>
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<td>51</td>
<td>Austen Coal Co., Preston county, West Va.—Coal and coke.</td>
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<td>52</td>
<td>Hill, M. L., Ohio county, West Va.—Bituminous coal.</td>
<td>a Bituminous coal.</td>
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<td>54</td>
<td>Hartford City Coal &amp; Salt Co., Mason county, West Va.—Bituminous coal.</td>
<td>c Limestone.</td>
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<td>55</td>
<td>Gaston Coal Mines, Marion county, West Va.—Gas coal.</td>
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<td>56</td>
<td>Aspinwall &amp; Low, Lincoln county, West Va.—Coal.</td>
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<td>57</td>
<td>Falling Rock Coal Co., Kanawha county, West Va.—Coal.</td>
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<td>58</td>
<td>Lewis, J. D., Kanawha county, West Va.—Coal.</td>
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<td>59</td>
<td>Enterprise Coal Co., Kanawha county, West Va.—Split coal.</td>
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<td>60</td>
<td>Kanawha Semi-Cannel Coal Co., West Va.—Coal.</td>
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<td>61</td>
<td>Mill Creek Cannel Coal Co., Kanawha county, West Va.—Cannel coal.</td>
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<td>62</td>
<td>Lewis ton Coal Co., Kanawha county, West Va.—Coal.</td>
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<td>63</td>
<td>Monongahela Gas Coal Co., Harrison county, West Va.—Gas coal.</td>
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<td>64</td>
<td>Despard Gas Co. Coal Co., Harrison county, West Va.—Gas coal.</td>
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<tr>
<td>65</td>
<td>Murphy's Run Coal Mine, Harrison county, West Va.—Gas coal.</td>
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<td>67</td>
<td>Cole, B., Fayette county, West Va.—Bituminous coal.</td>
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<td>68</td>
<td>Coal Valley Coal Co., Fayette county, West Va.—Gas coal.</td>
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<td>69</td>
<td>Gauley, —, Kanawha Coal Co., Fayette county, West Va.—Coal and coke.</td>
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<td>70</td>
<td>Laidley Coal &amp; Iron Co., Fayette county, West Va.—Coal and coke.</td>
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<td>71</td>
<td>Nuttallberg Coal Co., Fayette county, West Va.—Coal and coke.</td>
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<td>72</td>
<td>Stanton Rock Coal Co., Brooke county, West Va.—Cannel coal.</td>
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<td>73</td>
<td>Brown, T. L., Boone county, West Va.—Cannel coal.</td>
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<td>74</td>
<td>Peytona Cannel Coal Co., Boone county, West Va.—Cannel coal.</td>
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<td>75</td>
<td>Ball, A., Boone county, West Va.—Cannel coal.</td>
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<td>76</td>
<td>Corrathers, L., Taylor county, West Va.—Cannel coal.</td>
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<td>77</td>
<td>Radcliff, R. S., Marion county, West Va.—Bituminous coal.</td>
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<td>78</td>
<td>Hall, W. W., Pleasants county, West Va.—Bituminous coal.</td>
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<td>79</td>
<td>Boggs Run Mining Co., Ohio county, West Va.—Bituminous coal.</td>
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<td>80</td>
<td>Hudson, J. &amp; D., Hancock county, West Va.—Bituminous coal.</td>
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<td>81</td>
<td>Browse, R. H., Pleasants county, West Va.—Building sandstone.</td>
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<td>82</td>
<td>Waddie, J. &amp; M., Ohio county, West Va.—Building sandstone.</td>
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<td>83</td>
<td>Osborne, J., Monroe county, West Va.—Marble.</td>
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<td>84</td>
<td>Camden, P. B., Lewis county, West Va.—Building sandstone.</td>
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<td>85</td>
<td>Rall, R., Jefferson county, West Va.—White marble.</td>
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<td>86</td>
<td>Strider, S. W., Jefferson county, West Va.—Black marble.</td>
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<td>87</td>
<td>Strider, J. S., Jefferson county, West Va.—Black and white marble.</td>
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<td>88</td>
<td>Withrow, Jas., Greenbrier county, West Va.—Marliles.</td>
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<td>89</td>
<td>Miller, J. H., Fayette county, West Va.—Building sandstone.</td>
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<td>90</td>
<td>Lanham, Gabriel, Taylor county, West Va.—Building sandstone.</td>
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<td>91</td>
<td>Laideley, J. B., Cabell county, West Va.—Building sandstone.</td>
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<td>92</td>
<td>Lanham, Zadock, Taylor county, West Va.—Building sandstone.</td>
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<td>93</td>
<td>Gwinn, M., Summers county, West Va.—Hydraulic limestone.</td>
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<td>94</td>
<td>Lang, A. J., Ohio county, West Va.—Hydraulic limestone.</td>
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<td>95</td>
<td>Thompson, O. D., Ohio county, West Va.—Hydraulic limestone.</td>
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<td>96</td>
<td>Wells, J., Ohio county, West Va.—Limestone.</td>
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<td>97</td>
<td>Potomac Cement Mills, Jefferson county, West Va.—Hydraulic limestone and cement.</td>
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<td>98</td>
<td>Mann, M., Greenbrier county, West Va.—Sandstone and cement.</td>
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<td>99</td>
<td>Donnaghe, A. P., Wood county, West Va.—Potters' clay.</td>
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<td>Pickering, N. A., Wirt county, West Va.—Potters' clay.</td>
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<td>101</td>
<td>Johnson, D. D., Tyler county, West Va.—Fire clay.</td>
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<td>102</td>
<td>Glad, E. H., Marion county, West Va.—Fire clay.</td>
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<td>103</td>
<td>Wolfe, A., Hardy county, West Va.—White sand.</td>
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<td>104</td>
<td>Wells, N., Brooke county, West Va.—Potters' clay.</td>
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<td>105</td>
<td>Williamson, J. R., Barbour county, West Va.—White sand for glass.</td>
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<td>106</td>
<td>Seatt, J., Raleigh county, West Va.—Millstone rock.</td>
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138 McGregor, Dr., Ritchie county, West Va.—Schoolwork of Ritchie county public schools. 300
139 Staley, T. J., Tyler county, West Va.—Work from Buckhannon public school. 300
140 Radcliff, R. S., Marion county, West Va.—Schoolwork of Fairmount public schools, Marion county. 300
141 Ruffner, L. & Lewis, J. D., Kanawha county, West Va.—Schoolwork of public schools, Charleston, Kanawha county. 300

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163 Dull & Callaway, Putnam county, West Va.—Stakes and hoop poles. 600
164 Browse, R. H., Pleasants county, West Va.—Specimens of woods. 500
165 Banjoy, N. I., Pendleton county, West Va.—Laurel wretch and vine. 600
166 Hammer, B., Pendleton county, West Va.—Section of locust wood. 600
167 Hammer, Jacob, Pendleton county, West Va.—Sections of wild cherry and yellow pine. 600
168 Johnson, J. F., Pendleton county, West Va.—Sections of various woods. 600
169 Mestrezall, W., Monongahela county, West Va.—Walnut board. 600
170 Fairchild, Lawhead & Co., Monongahela county, West Va.—Woods used in wagon building. 6.0
171 Ruffner, L. & Lewis, J. D., Kanawha county, West Va.—Cross sections of twenty-one varieties of timber. 600
172 McKnight & Rohrer, Jefferson county, West Va.—Ax handles and follos. 6.0
173 Clay, Cecil, Greenbrier county, West Va.—Specimens of woods. 6.0
174 Letterman, W. H., Fayette county, West Va.—Samples of woods. 6.0
175 Head, D., Fayette county, West Va.—Molasses vinegar. 6.0
176 Guard, Jas., Fayette county, West Va.—White oak stave. 6.0
177 Abbott, J. M., Fayette county, West Va.—Holly. 6.0
178 Cassady, R. B., Fayette county, West Va.—Maple. 6.0
179 Miller, J. H., Fayette county, West Va.—Woods. 6.0
180 Sinsel, J. B., Fayette county, West Va.—Samples of ash. 6.0
181 Elk River Iron & Coal Co., Braxton county, West Va.—Charcoal. 6.0
182 Brown, S. H., Fayette county, West Va.—Veneers. 6.0
183 Peters, W. L., Cabell county, West Va.—Poplar boards, polished. 6.0

Agricultural Products.

184 Leigh, Wm., Berkeley county, West Va.—Corn. 6.0
185 Downer, J. E., Cabell county, West Va.—Corn on stalk. 6.0
186 Settle, J. G., Fayette county, West Va.—Corn. 6.0
  Wheat, buckwheat, and corn. 6.0
  Tobacco. 6.0
187 Marrs, John, Fayette county, West Va.—Oats. 6.0
188 Robson, H. A., Fayette county, West Va.—Corn. 6.0
189 Blake, L., Fayette county, West Va.—Corn. 6.0
190 Dickinson, M., Fayette county, West Va.—Corn. 6.0
191 Rice, J. P., Harrison county, West Va.—Wheat. 6.0
192 Bartlett, P. W., Harrison county, West Va.—Wheat. 6.0
193 Rider, B. D., Harrison county, West Va.—Corn, wheat, oats and buckwheat. 6.0
194 Bartlett & Riley, Harrison county, West Va.—Wheat. 6.0
195 Green, R. H., Harrison county, West Va.—Wheat. 6.0
196 Waters, G., Harrison county, West Va.—Oats. 6.0
197 Hickman, J., Harrison county, West Va.—Corn. 6.0
198 Bassett, D., Harrison county, West Va.—Wheat and corn. 6.0
199 Morrison, D., Harrison county, West Va.—Corn. 6.0
200 Sayre, J., Jackson county, West Va.—Corn. 6.0
201 Hopkins, A. D., Jackson county, West Va.—Wheat. 6.0
202 Fisher, J. W., Gilmer county, West Va.—Corn. 6.0
203 Wilson, H., Hardy county, West Va.—Oats. 6.0
204 Bean, Peter, Hardy county, West Va.—Buckwheat. 6.0
205 McNeal, R., Hardy county, West Va.—Corn. 6.0
206 Maslin, Thos., Hardy county, West Va.—Corn. 6.0
207 Williams, G. P., Hardy county, West Va.—Wheat. 6.0
208 Bean, J., Hardy county, West Va.—Oats and wheat. 6.0
209 Handley, H., Greenbrier county, West Va.—Oats, corn, timothy, orchard grass, and orchard grass seed. 6.0
210 Alexander, W. A., Greenbrier county, West Va.—Wheat. 6.0
211 Koontz, G., Jefferson county, West Va.—Corn. 6.0
212 Turner, G. H., Jefferson county, West Va.—Wheat. 6.0
213 Fleming, R. E., Marion county, West Va.—Corn and wheat. 6.0
214 Gray, W., Marshall county, West Va.—Corn on stalk. 6.0
215 Waddle, J. & M., Ohio county, West Va.—Corn. 6.0
216 Wilson, G. W., Ohio county, West Va.—Corn. 6.0
217 Dyer, J. P., Pendleton county, West Va.—Corn. 6.0
218 Cunningham, S., Pendleton county, West Va.—Corn. 6.0
219 Millar, Wm. C., Pendleton county, West Va.—Wheat. 6.0
220 Harris, T. M., Ritchie county, West Va.—Corn. 6.0
221 Browse, R. H., Pleasants county, West Va.—Corn and wheat. 6.0
222 Williams, J. S., Taylor county, West Va.—Corn and wheat. 6.0
223 Riley, John, Taylor county, West Va.—Wheat. 6.0
224 Shepard, L., Wirt county, West Va.—Corn. 6.0
225 Settle, W., Fayette county, West Va.—Corn. 6.0
  Tobacco. 6.0

6.0
No. 69. CANADIAN LOG HOUSE.
Size, 75 feet by 56 feet.
CANADIAN COMMISSION,
See Part IV., page 134.
Is one story high, constructed of logs, and located close by the British Government buildings. It constitutes an exhibit of the timbers of Canada.

No. 70. MISSOURI STATE BUILDING.

Architect, L. C. MILLER, St. Louis.—Size, 58 feet by 48 feet, with tower.

Location, State Avenue, George’s Hill. Headquarters of Board of State Centennial Managers, organized by State Legislature; President, Thomas Allen; Secretary, J. L. Tracy. Exhibits in Main Hall, Education Department, Mineral Annex, Agricultural Hall.

Nos. 71, 72, 73. BRITISH GOVERNMENT BUILDINGS.
Architect, THOMAS HARRIS, of London.—Size, No. 1, 5000 sup. feet; No. 2, 1200 sup. feet.

These edifices have been erected for the use of the members of the Royal Commission. The large one is the residence of the Commissioners and delegates, while the smaller furnishes accommodations for the members of the staff. They are built in a picturesque, half-timbered style, essentially English, and are located north of Machinery Hall. A bake-house and laundry are also attached to the above.

No. 74. NEW YORK STATE BUILDING.
Architects, CROFF & CAMP.—Size, 60 feet by 34 feet.

The Commissioners of the State of New York have offices in this building. It is a two-story structure, surrounded by about half an acre of ground. It is situated on State Avenue, north of the British buildings.

No. 75. COLONEL LIENARD’S GEORAMA.
Designer, COL. LIENARD, Paris.—Size, area 1450 square feet.

An open-air exhibit, models of the cities of Paris and Jerusalem, in gypsum. The contour of the ground is shown, and the streets appear fully delineated. It is in the centre of Fountain Avenue, at the head of the lake.
No. 76. POP-CORN BUILDINGS.
Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 41 feet by 32 feet each. 
J. A. BAKER, Dayton, Ohio.

One of these buildings is situated on Fountain Avenue opposite the northern extremity of the lake; the other is on Agricultural Avenue, east of and opposite the New England Farmers' Home and Modern Kitchen. They are devoted exclusively to the sale of pop-corn, and are built of wood, one story high.

No. 77. CIGAR STANDS.
The stands are located at various points north of the Avenue of the Republic, and west of Belmont Avenue.

No. 78. SODA WATER STANDS.
These stands are situated at various points north of the Avenue of the Republic, and west of Belmont Avenue.

No. 79. TUNISIAN CAFÉ AND BAZAAR.
A decorated pavilion with stained glass windows, designed for the display of Tunisian products. Situated on Fountain Avenue, north of Pennsylvania State building.

No. 80. CHRISTOPHER COLUMBUS MONUMENT.
Located at corner of Belmont and Fountain Avenues. It was erected by the Columbus Monument Association. It is of colossal size, and represents the Genoese navigator in a standing posture, with the right hand resting on a globe, and the left holding a chart; an anchor and rope indicating his occupation.

No. 81. DRINKING FOUNTAIN.
Size, 25 feet in diameter.
Erected by the SONS OF TEMPERANCE of Pennsylvania.

This fountain is built of wood, the structure inclosing it being circular in form, and it is situated at the junction of Fountain and Belmont Avenues. The Singer & Talcott drinking fountain is a marble fountain situated between the Bethlehem Bazaar and Tunisian Café.

No. 82. “TROIS FRÈRES PROVENÇAUX” RESTAURANT.
Architect, LEHMAN, of Paris.—Size, 177 feet by 110 feet. 
LOUIS GOYARD, Proprietor.

A two-story frame structure, situated on the corner of Belmont and Fountain Avenues. It has large garden surroundings, and is a duplicate of the restaurant of the same name in Paris as regards its management.

No. 83. NEW YORK “TRIBUNE” BUILDING.
Architect, E. E. RATH.—Size, 30 feet by 21 feet. 
NEW YORK TRIBUNE, New York.

A small octagonal wooden building, with verandas and a high tower-like roof. It is located close to the French Restaurant and the lake, and is used as an office for the correspondents and reporters of “The Tribune.”

No. 84. WORLD’S TICKET OFFICE.
Architect, H. J. SCHWARZMANN.—Size, 60 feet square. 

Situated immediately north of the eastern end of Machinery Hall. It is hexagonal in form, and contains a main hall and four private offices. Tickets to all parts of the world are offered for sale, and ornamental articles manufactured in Palestine are exhibited.
No. 85. PRESSSED FUEL COMPANY’S BUILDING.
Polygon, 24 feet in diameter.
E. F. Loiseau, Philadelphia.
Constructed of iron and situated in a garden plot on the Avenue of the Republic, west of the lake and opposite to Machinery Hall. It exhibits the fuel in a state of combustion, to demonstrate its economy and adaptability.

No. 86. SPANISH GOVERNMENT BUILDING.
Decagonal, .50 feet in diameter.
A one-story frame building, situated on the Avenue of the Republic, west of the Catholic Total Abstinence Fountain. Intended as headquarters of the Spanish soldiers.

86½. SPANISH EXHIBITION BUILDING.
Architect, ALEXANDER B. BARY.—Size, 80 feet by 100 feet.
Constructed of wood, in a style similar to Machinery Hall; adjacent to Spanish Engineers’ Pavilion.

Educational Systems, Methods, and Libraries.

1 Goizu & Co., Jaime, Alcira, Province of Valencia.—Books for primary instruction. 300
2 Rodriguez Mañanes, Pedro, Zamora.—Explanation of engravings and patterns for cutting garments. 300
3 Fábregas y Bru, José, Havana, Island of Cuba.—Writing desks. 300
4 Superior Normal School, Salamanca.—Programme for children’s schools. 300
5 Ilarra y Marús, Manuel, Salamanca.—Rational programme for lectures in normal school. 300
6 Rodríguez Martin, Vícente, Segovia, Province of Salamanca.—Linear designs. 300
7 Sanchez, Pilar, Sevilla.—Objects for the instruction of children. 300
8 Board of Primary Instruction, Victoria, Province of Alava.—Treatise on primary instruction. 300
9 Azpiazu, José Antonio de, Victoria, Province of Alava.—Method of penmanship. 300
10 Solano y Viton, Pablo, Valencia.—Books for primary instruction. 300
11 Aguilar, Simon, Valencia.—Books for primary instruction. 300
12 Solis, Prudencio, Valencia.—Books for primary instruction. 300
13 Perales, Baltasar, Valencia.—Books for primary instruction. 300
14 Montells y Nadal, Jacinto, Sevilla.—Books for primary instruction. 300
15 Gazapo y Loma, Juan Manuel, Madrid.—Syllable book. 300
16 Collado, Cayetano, Madrid.—Intuitive instruction. 300
17 Borja y Alarcon, Pedro, Madrid.—Geographical atlas. 300
18 Ladies’ Seminary, Madrid.—Work by pupils, and writing by the professors. 300
19 Molinero, Enrique, Madrid.—Alphabets. 300
20 Gonzalez y Luna, Ildefonso, Jaen.—Specimen of penmanship. 300

21 Diaz y Martinez, Manuel, Jerez de la Frontera, Province of Cadiz.—Apparatus for primary instruction. 300
22 College of Messrs. Peffort, Barcelona.—Work done by pupils. 300
23 National Institute for the Deaf and Dumb, and Blind, Madrid.—Method of instruction. 300
24 Nebreda y Lopez, Carlos, Madrid.—Works for the instruction of the deaf and dumb, and blind. 300
25 Institute for the Deaf and Dumb, and Blind, Seville.—Documents of the college. 300
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77 Santero y Moreno, Tomás, Madrid.—Medical clinic.  
79 Local Institute of Secondary Instruction, Baeza, Province of Jaén.—Photographs of its interior and exterior.  
80 Mingote, Policarpo, Leon.—Course of geography.  
81 Ruiz de la Peña, Francisco, Leon.—Latin translation, grammatical system, etc.  
82 Prieto, Anastasio, Logroño.—Regulation for the Normal School.  
83 Saenz Navarrete, José, Logroño.—Documents referring to the foundation and progress of his college.  
84 Royal Academy, Madrid.—Collection of its works.  
85 Carrares, Mariano, Madrid.—Political economy.  
86 Fernandez de Castro, Manuel, Madrid.—Treatise on electricity, metallurgy, etc.  
87 Cortazar, Daniel, Madrid.—Treatise on mathematics.  
88 Comelaran, Francisco A., Madrid.—Treatise on the Latin language.  
89 Chamorro, Rafael, Madrid.—System of explaining heat, light, electricity, etc.  
90 Page, Eugenio Roman, Badajoz.—Register of property.  
91 Graells, Francisco, Barcelona.—Geometric books.  
92 Magra y Jaime, Juan, Barcelona.—Elementary treatise on physiology.  
93 Superior Normal School of Masters, Barcelona.—Books.  
94 Fernandez Fontechia, Francisco, Cádiz.—Course of astronomy and navigation.  
95 Foly y Velasco, Federico, Cádiz.—Text-books.  
96 Ofarral, Javier, Cádiz.—French selections.  
97 Moreno y Espinosa, Alfonso, Cádiz.—Compendium of universal history.  
98 Rubio y Diaz, Vicente, Cádiz.—Elements of mathematics.  
99 Literary University, Santiago, Province of La Coruña.—Books.  
100 Pimentel y Donaire, Miguel, Madrid.—Legislative collection on primary instruction.  
101 Vilella y Font, Sebastian, Madrid.—Fables of Pedro.  
102 Saco y Arce, Juan A., Orense.—Grammar.  
103 Lasala Martinez, Atanasio, Orense.—Elements of arithmetic and algebra.  
104 Gaité Nuñez, Joaquin, Orense.—Elements of arithmetic and geography.  
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167 Garcia, Nicanor, Villalba, Province of Lugo.—Books for primary instruction. 3-6
168 Central Normal School, Madrid.—Books for primary instruction. 3-6
169 Vallin y Bustillo, Acisclo, Madrid.—Books for primary instruction. 3-6
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267 Fernandez de Castro, Manuel, Madrid.—Electricity and railroads. 3-6
268 Fernandez Peña, Pedro, Madrid.—Geographical atlas. 3-6
269 Garcia Bianco, Antonio M., Madrid.—Text works. 3-6
270 Codera, Francisco, Madrid.—Work on numismatic errors. 3-6
271 Rada y Delgado, Juan de Dios de la, Madrid.—Work on "Vertu and Antiquities." 3-6
272 Aldama, Lucas de, Madrid.—Treatise on industry and mines. 3-6
273 Pascual, Manuel Joaquin, Madrid.—Scientific works. 3-6
274 Mata y Fontanet, Pedro, Madrid.—Scientific and literary works. 3-6
275 Suarez, Victoriano, Madrid.—Scientific and literary works. 3-6
276 Aguilera y Martinez, Eusebio, Nalda, Province of Logroño.—School books and special treatises. 3-6
277 Gomez Ayazza, Nicolas, Logroño.—Text books, and "El Riojano," periodical. 3-6
278 Martinez Aleson, Tiburcio, Logroño.—Work on teaching children. 3-6
279 Soto Freire, Manuel, Lugo.—History of Galicia and introductory manual. 3-6
280 Panero Martinez, Manuel, Lugo.—"The Heart of Childhood." 3-6
281 Perez Villamil, Ramon Antonio, Huesca.—Pamphlet on weights and measures. 3-6
282 Rodriguez Villa, Antonio, Madrid.—Etiquette of the house of Austria. 3-6
283 Marichalar, Malo, y Manrique, Cayetano, Madrid.—History of the legislation of Spain. 3-6
284 Cortes y Morales, Balbino, Madrid.—Dictionary of legislation and jurisprudence. 3-6
285 BallD Bailliére, Carlos, Madrid.—Books. 3-6
286 Cruz Ruiz, Ciriaco, Madrid.—Greek grammar. 3-6
287 Leguina, Enrique, Madrid.—Book, "Illustrious Sons of Santander." 3-6
288 Conceiro, Gregorio Maria, Madrid.—Philosophy of the creation. 3-6
289 Martinez Acubilla, Indalecio, Madrid.—"Manual Moral of youth. 3-6
290 Palacios, Patricio, Cordoba.—Universal history and elements of geography. 3-6
291 Rey y Gorrindo, Pedro, Cordoba.—Theory of unknown quantities. 3-6
292 Surós, Antonio, Gerona.—Text and school books. 3-6
293 Obradores y Font, Sebastian, Gerona.—Treatise on Latin roots. 3-6
294 Lozano, de Vilches, Enriqueta, Granada.—Literary works. 3-6
295 University, Granada.—Works, speeches, and memoirs. 3-6
296 Ribot, Esteban & Bros., Granada.—Memoir. 3-6
297 Vidal Domingo, Antonio, Huesca.—History and geography. 3-6
298 Serra y Navarro, Mariano, Jaen.—Report on the condition of agriculture in Jaen. 3-6
299 Board of Public Instruction, Lérida.—Books. 3-6
300 Prieto, Atanasio, Logroño.—Treatise on arithmetic. 3-6
301 Corral y Pastor, Aniceto, Alesanco, Province of Logroño.—Compendium of Castilian grammar. 3-6
334 Liadós y Rius, Magín, Barcelona.—"El Porvenir de la Industria" (periodical).

335 Moreno y Roig, Barcelona.—History of the Church, etc.

336 Matallana, Mariano, Barcelona.—Manual for conversation on railroads.

337 Casals, Miguel, Barcelona.—Monthly publications.

338 Milà y Fontanai, Manuel, Barcelona.—Poetry.

339 Horticultural Society, Barcelona.—Horticultural Review.

340 Trilla & Serra, Barcelona.—"La Madeja" (periodical).

341 Alvarez Carretero, Antonio, Burgos.—Books.

342 Hernandez Martin, Antonio, Burgos.—Works on the instruction of the deaf and dumb.

343 Avila, Calixto, Burgos.—Guide of Burgos and Jura de Santa Gadea.

344 Archillas and Lopez, Ricardo, Baeza, Province of Jaen.—Paper read at the opening of the Baeza Institute.

345 Ginez de los Rios, Hermenegildo, Baeza, Province of Jaen.—Memoirs and projects.

346 Serra y Navarro, Mariano, Jaen.—Memos on the condition of agriculture in the Canaries.

347 Torres y Puig, Alejandro, Baeza, Province of Jaen.—Memos.

348 Direction of Customs, Madrid.—Ordinances, models, and documents.

349 Alvarez de Araujo y Cuéllar, Angel, Madrid.—Books.

350 Gaspar, Editors, Madrid.—Collection of books from the Universal Museum.

351 High Normal School of Masters, Salamanca.—Memos.

352 Guichot, Joaquin, Seville.—History of the town of Seville, etc.

353 Gozart y Seva, Printers, Alicante.—Catholic seminary.

354 Camilo Jover, Nicasio, Alicante.—"El Constitucional" (Liberal daily paper).

355 Suso, Manuel, Alicante.—"La Revelacion" (spiritual periodical).

356 Corporation of Barcelona.—Reports of public schools.

357 Provincial Institute for Secondary Instruction, Palma.—Memos.

358 Sanchez Almonacid, Mariano, Cuenca.—Memos of the Institute.

359 Ballestre, Guillermo, Madrid.—Manuals and regulations of the Hispanic-American College.

360 Director of the Institute for Secondary Instruction, Fontevdra.—Memos.

361 Institute for Secondary Instruction, Seville.—Books, catalogues, and reports.

362 Alarà, Mariano, Vilarrordona, Province of Tarragona.—Statistical data.

363 Provincial Institute, Tarragona.—Memos.

364 Institute for Secondary Instruction, Toledo.—Memos.

365 Navarro Reverte, Juan, Valencia.—"From the Turia to the Danube," Memoirs of the Vienna Exhibition.
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430 Sanche:z, Pedro, Cádiz.—Aquarelles.

431 Guisasola, Federico, Pontevedra.—Aquarelles.

432 Provincial Academy of Fine Arts, Cádiz.—Drawings by the pupils.

433 Provincial Deputation, Cádiz.—Calligraphic picture.

434 Lopez Valdemoro Ortiz de Lazcano, Madrid.—Crayon drawing.

435 Aramburu, Ricardo, Seville.—Crayon picture.

436 Reynoso, Emilio, Havana, Island of Cuba.—Calligraphic works.

437 Gelabert, R., & Bro., Barcelona.—Engravings.

438 Lemus, Eugenio, Madrid.—"Dame," engraved on copper.

439 Maura, Bartolomé, Madrid.—"Surrounders of Ireland," engraved on copper.

440 Martinez Espinosa, Juan, Madrid.—Engravings.

441 Salcedo, Pedro, Morata, Province of Madrid.—Plan of the Escorial.

442 Aranz, José, Havana, Island of Cuba.—Stone engraving.

443 Vidal y Roger, Andrés, Barcelona.—Music, engraved and printed.

444 National Calcography, Madrid.—Cuts.

445 Armada y Roca, Ramon, Barcelona.—Cuts.

446 Mencha y Rodriguez, Faustino, Logroño.—Lithographed figure.

447 Carderera y Solano, Valentin, Madrid.—Spanish iconography.

448 Fortanet, T., Madrid.—Printed books.

449 a Museum of Artillery, Madrid.—Collection of plates.

449 a Ariza y Campano, José, Seville.—Engraving, lithograph.

449 a Gonzalez y Montblanch, Modesto, Barcelona.—Lithography.

450 Mateu, José Maria, Madrid.—Chromo-lithographic plates.

451 Aranz, José, Havana, Island of Cuba.—Chromo-lithographs and oleographs.

451 a Blasquez, E.—Album of chromos.

452 Mariescurrena, Heribert, Barcelona.—Photographs.

453 Nobas, Narciso, Barcelona.—Photographs.

454 Moragas, Manuel, Gracia, Province of Barcelona.—Photograph of astronomical clock.

455 Casiñol, Leopoldo, Jerez de la Frontera, Province of Cádiz.—Heliochrome.

456 Napoleon, A. F., & Son, Barcelona.—Photographs.

457 Provincial Commission, Lugo.—Photographic reproductions of buildings.

458 Rodriguez Cortes, César, Lugo.—Photographic reproduction of engravings.

459 Spreaño, José, Málaga.—Album, with views.

460 Alviach & Co., Madrid.—Photographs.

461 Juliá y Garcia, Eusebio, Madrid.—Photographs.


463 Diaz Otero, Eduardo, Madrid.—Photographs.

464 National Mint, Madrid.—Photographs.

465 Institute of Secondary Instruction, Seville.—Photographic view.

466 Sebastia Vila, Pedro, Seville.—Photographs.

467 Arce, Inocencio, Barcelona.—Photograph.

468 Economical Society of Friends of the Country, Seville.—Photographs.

469 Arce, Inocencio, Barcelona.—Photographic reproductions.

470 Almela y Vinet, Francisco, Seville.—Application of varnish to photographs.

471 Mestres, José O., Barcelona.—Architectural monuments.

472 Soler, Federico, Barcelona.—Commemorative project.

473 Guastavin, Rafael, Barcelona.—Architectural plans.

474 Garriga y Roca, Miguel, Barcelona.—Architectural plans and designs.

475 Tenas, Ramon, Barcelona.—Project of a church.

476 Rovira y Rabbasa, Antonio, Barcelona.—Project of a monument.

477 Alonso, Arsenio, Madrid.—Project of a triumphal arch.

478 Duque, Eugenio, Madrid.—Projects of monuments.

479 Marin Baldo, José, Madrid.—Project of a monument at Colon.

480 Bustamente & Gallo, Madrid.—Mosaic in wood.

481 Rodriguez, Desiderio, Cienfuegos, Cuba.—Inlaid table.

482 Cuevas, Fernandez, Pascual, Biblioteca, Province of Bibrós.—Pictures of birds, made with their feathers.

483 Ruiz, Manuel, Cádiz.—Pictures of human hair, and picture made of wafers.

484 Lozano y Villarejo, Mateo, Madrid.—Album.
Arboriculture and Forest Products.

487 Forest District of Avila.—Collection of woods. 600

488 Medinaceli, Duchess, widow of, Las Navas y Valdemarena, Province of Madrid.—Trunk of pine tree. 600

489 Clarós, José María, La Calera, Province of Badajoz.—Cork. 600

490 Molano, Pedro, Badajoz.—Cork. 600

491 Carrion, Barcarrota, Province of Badajoz.—Cork. 600

492 Castellanos, Eduardo, Burguillos, Province of Badajoz.—Cork. 600

493 Tos, José, Badajoz.—Corks. 600

494 Garriga Francisco, Domingo, San Quirze de Besora, Province of Barcelona.—Arboriculture. 600

495 Corps of Forest Engineers, of various towns of the Province of Burgos.—Collection of woods. 600

496 Provincial Commission of Burgos.—Pine hoops. 600

497 Santa Marta, Marquis of, Cáceres.—Cork and manufactures. 600

498 Montenegro, Pedro L., Cáceres.—Cork and manufactures. 600

499 Torrevias Tunel, Martin, Mesas de Ibór, Province of Cáceres.—Cork and manufactures. 600

500 Diaz Agero, José, Malladas y Fresno, Province of Cáceres.—Corks. 600

501 Torre Diaz, Count of, Jerez de la Frontera, Province of Cádiz.—Cork. 600

502 Castro Chirino, Alonzo, Isle of Hierro, Canary Islands.—Wood. 600

503 Dominguez Mendez, Benigno, Isle of Hierro, Canary Islands.—Wood. 600

504 Delgado, Francisco, Isle of Gran Canaria, Canary Islands.—Wood. 600

505 Melian, Juan, Isle of Gran Canaria, Canary Islands.—Wood. 600

506 González, Manuel, Isle of Gran Canaria, Canary Islands.—Pine wood. 600

507 Provincial Board of Agriculture, Castellón.—Cork. 600

508 San Bernardo, Count of, Hornachuelos, Province of Córdoba.—Cork. 600

509 Lopez Seoane, Victor, Coruña.—Collection of woods. 600

510 Güito y Vall-Illoera, José, Romaña, Province of Gerona.—Cork. 600

511 Institute of Secondary Instruction, Province of Huelva.—Woods. 600

512 Martin Carnes, Eulogio, Aracena, Province of Huelva.—Woods. 600

513 King, Guillermo, & Co., Higuera de Aracena, Province of Huelva.—Cork. 600

514 Corporation of Bollullos del Condado, Province of Huelva.—Cork. 600

515 Chief Engineer of Woods & Forests, Province of Jaén.—Wood. 600

516 Tuñon de Lara, Mateo, Carolina, Province of Jaén.—Natural and prepared cork. 600

517 Provincial Institute, Province of Lugo.—Woods. 600

518 Corps of Forest Engineers, Madrid.—Woods, ashes, coal, and banks. 600

519 Iscar, Fernando, Término de Ca- baco, Province of Salamanca.—Cork. 600

520 Catáneo, Francisco, Segovia.—Woods. 600

521 González de Salcedo, F., Constancia, Province of Seville.—Cork. 600

522 Corporation of Poveda, Province of Soria.—Yew wood. 600

523 Corporation of Gallinero, Province of Soria.—Beech wood. 600

524 Corporation of Villaciervos, Province of Soria.—Juniper wood. 600

525 Corporation of Talvaila, Province of Soria.—Pine wood. 600

528 Corporation of Cortos, Province of Soria.—Oak wood. 600

527 Corporation of Navaleño, Province of Soria.—Pine wood. 600

528 Corporation of Molinos del Duero, Province of Soria.—Pine and poplar wood. 600

529 Campos, Manuel Maria, Havana, Island of Cuba.—Construction woods. 600

530 Inspection General of Woods & Forests, Havana, Island of Cuba.—Construction woods. 600

531 Uriña & Pinilla, Navia de Luarca, Province of Oviedo.—Charchol linent. 601

532 Inspection of Woods & Forests, San Juan, Puerto Rico.—Woods. 600

533 González, Manuel, Aquadilla, Puerto Rico.—Ornamental woods. 601

534 Quiroga Lopez, Benigno, Province of Lugo.—Construction and ornamental woods. 601

535 Inspection General of Woods & Forests, Havana, Island of Cuba.—Ornamental woods. 601

536 Verdu Perez, Joaquin, Monóvar, Province of Alicante.—Bastard saffron. 602

537 Monroy, daughter and heir of Ramón, Barcelona.—Dye-stuffs. 602

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539 Aguilara, Francisco, Priego, Province of Córdoba.—Sumac. 602

540 Lozano y Escobar, Romualdo, Buenache, Province of Cuencas.—Sumac. 602

541 Gallego, Domingo, Buenache, Province of Cuenca.—Sumac powder. 602

542 Corporation of Romanos, Province of Guadalajara.—Sumac. 602

543 Ayuso de las Heras, Angel, Valdegamas, Province of Guadalajara.—Madder root. 602

544 Acero, Antonio, Jaén.—Sumac. 602

545 Guerra M. de Soto, Anacleto, Porto, Province of Valladolid.—Madder root. 602

546 Valenzuela, Felix, Traspinedo, Province of Valladolid.—Sumac. 602

547 Inspection General of Woods & Forests, Havana, Island of Cuba.—Dye woods. 602

548 Medinaceli, Duchess, widow of, Madrid.—Resinous products. 603

549 Gonzalez, Manuel, Las Palmas, Canary Islands.—Resins. 603

550 Aviles y Merino, Francisco, Córdoba.—Fennel resin. 603

Corporation of Armallanes, Province of Guadalajara. — Pitch.

Corporation of Mountain Engineers, Madrid. — Resins.

Ferrandiz, Juan, San Vicente, Province of Albacete. — Salt wort.

Gonzalez Conde, Diego, Mahora, Province of Albacete. — Dried saffron.

Delgado, Jose, Tarazona, Province of Albacete. — Dried saffron.


Gonzalez, Manuel, Gran Canaria, Canary Islands. — Seeds.


Cabezuelas, Count of, Campo de Criptana, Province of Ciudad-Real. — Saffron.

Rodriguez, Antonio, Manzanares, Province of Ciudad-Real. — Saffron.

Rodriguez, Luis, Manzanares, Province of Ciudad-Real. — Saffron.

Gonzalez y Rubio, Maximo, Ciudad-Real. — Saffron.

Muñoz Mendez, Eugenio, Huesca, Province of Guadalajara. — Apricot seed.

Barnuevo, Manuel, Murcia. — Pine seed.

Onis, Federico, Cantalapiedra, Province of Salamanca. — Flax seed.

Fernandez, Manuel, Tembleque, Province of Toledo. — Saffron.

Corporation of Baños, Province of Cáceres. — Chestnut burrs.

Sanz Pasalodos, Julian, Portillo, Province of Valladolid. — Pine tree cones.

Sanz, Mariano, Pedrajaz de San Esteban, Province of Valladolid. — Pine seed.

Tablares, Felipe, Megues de Iscar, Province of Valladolid. — Pine seed.

Jordana y Morera, Ramon, Inspector-General of Woods & Forests, Province of Manila. — Work on the production of the public forests of the Philippine Islands.

Vidal & Soler, Sebastian, Chief-Engineer of Woods & Forests, Province of Manila. — Books on forestal, woods, and climate of the Philippine Islands.

Inspection-General of Woods & Forests. — Books on arboriculture.

Locyza & Co., Province of Manila. — "El Comercio" (evening paper), "Revista Mercantil" (semi-monthly paper).

Ramirez & Girandier, Province of Manila. — "El Diario de Manila" (daily periodical).


The Future of the Philippines, Province of Manila. — El Porvenir Filipino (daily periodical).

Ramirez & Girandier, Province of Manila. — La Ilustracion (semi-monthly paper).

Gimenez & Preysler, Province of Manila. — El Oriente (semi-monthly illustrated paper).

Institutions and Organizations.

Prieto, Federico, Tabaco, Province of Albay. — Human skulls.

Sales, Juan, Province of Manila. — Models of negroes, Spanish mestizos, Philippine Indians, etc.

Engineering, Architecture, Maps, etc.

Inspection-General of Public Works, Manila, Province of Manila. — Plans of public works.

Municipal Athenæum, Province of Manila. — Meteorological observations.

Physical, Social, and Moral Condition of Man.

Nueva Cáceres, Bishop of, Province of nueva Cáceres. — Books on religious instruction.

Aerial, Pneumatic, and Water Transportation.

Inspection-General of Woods & Forests. — Models of boats and vessels.

Jackson, Eduard, Province of Manila. — Model of loranca and life-boat.

Arsenal of Cavite, Province of Cavite. — Models of boats and vessels.

UNITED STATES SIGNAL OFFICE.

This exhibit consists of a field telegraph train, with battery, wire wagons, lance trucks, a portable signal tower, and other signaling appliances. It is situated on State Avenue, opposite the English Government buildings.

TENNESSEE STATE HEADQUARTERS.

A circular tent, containing specimens of minerals, also a portable charcoal stove patented and exhibited by Rice Moore, of Nashville, Tennessee. Situated on State Avenue, between the Maryland and Iowa buildings.
No. 89. MISSISSIPPI STATE BUILDING.

Size, 42 feet by 25 feet.
Situated on State Avenue, opposite and west of the Japanese Dwelling. The wood used in this structure is from the State of Mississippi, and numbers some hundred varieties in all.

No. 90. GEORGE'S HILL RESTAURANT.

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 112 feet by 72 feet.
TALMAN & KOHN, Philadelphia.
Located in the western portion of the grounds, on George's Hill, in the vicinity of the State buildings. It is a one-story structure, built of wood, and is also called the Hebrew Restaurant.

No. 91. BISHOP RICHARD ALLEN'S MONUMENT.

Size, base 6 feet by 6 feet; height, 16 feet.

No. 92. BOSTON "DAILY ADVERTISER," AND BOSTON "HERALD."

Size, 29 feet by 16 feet.
A one-story frame building, situated on Fountain Avenue opposite northwest corner of Machinery Hall; used as the headquarters of the correspondents and attaches of the newspapers erecting it.

No. 93. AMERICAN NEWSPAPER EXHIBITION.

Architect, M. J. MORILL, Brooklyn, N. Y.—Size, 70 feet by 46 feet.
GEO. P. ROWELL & Co., New York City.
A two-story frame structure of Swiss architecture, on Fountain Avenue, near the lake. It contains a large hall, and a reading-room supplied with newspapers from all parts of the United States. In April, 1876, the United States published regularly 8129 newspapers, a number which exceeds the combined issues of all the other nations of the earth. Regular files of most of these newspapers, and sample copies of all, are alphabetically arranged for exhibition, and a printed catalogue of the whole may be obtained for twenty-five cents. Messrs. George P. Rowell & Co. conduct an agency for the reception of advertisements for all American newspapers, at their office, No. 41 Park Row, New York.

No. 94. CALIFORNIA STATE BUILDING.

Size, 55 feet by 105 feet.
A two-story frame building, situated on State Avenue, opposite the British Government buildings. It contains accommodations for the State Commissioners and visitors, also a large hall for the purpose of exhibiting specimens of the agricultural productions of California.

No. 95. CENTENNIAL FIRE PATROL, No. 1.

This building is situated at the corner of Belmont and State Avenues, and contains two steam fire engines and one truck.
No. 96. TURKISH CAFÉ.

Architect, PIERRE MONTANI.—Size, 51 feet by 65 feet.

Turkish Commission.

An octagonal frame building, with a coffee-room, parlors, and bazaars, situated on a walk between Fountain Avenue and the Avenue of the Republic, near their junction north of Machinery Hall.

No. 97. FRANK LESLIE’S PAVILION.

This building is situated at eastern end of lake, on Belmont Avenue, adjoining the office of Cook, Son, & Jenkins. It is octagonal in shape, Moorish in design, and highly ornamented. It is used as an office of Frank Leslie’s publications.

No. 98. IOWA STATE BUILDING.

Size, 40 feet by 53 feet.

This is a two-story frame building, with portico in front and bay windows on both sides, located on State Avenue between the Missouri and Tennessee buildings, and used as a headquarters for Commissioners from this State.

No. 99. RHODE ISLAND STATE BUILDING.

Architects, WM. R. WALKER and T. J. GOLD, Providence, R. I.

A building of combined Swiss and Gothic architecture, situated on State Avenue, north of the Mississippi State building.

No. 100. VERMONT STATE BUILDING.

Architect, LAMOS, Ticonderoga, Vt.

A building of Doric architecture, northwest of Machinery Hall, and near Fountain Avenue. It contains an Estey organ, from Brattleboro’, Vt., and files of Vermont newspapers.

No. 101. MEMORIAL HALL (ART GALLERY).

See Part II., page 9.

No. 102. ART ANNEX.

See Part II., page 10.

No. 103. THE B’NAI B’RITH MONUMENT.

Erected by the Israelites to religious liberty, and situated between the Art Gallery and its annex.

No. 104. PHOTOGRAPHIC EXHIBITION BUILDING.

See Part II., page 137.

No. 105. VIENNA BAKERY, OR COMPRESSED YEAST BUILDING.

Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 146 feet by 105 feet.

GAFF, FLEISCHMANN, & Co., Blissville, Long Island, N. Y.

Designed to exhibit the advantages of using compound yeast in baking. It also contains a coffee house.

No. 106. ANNEX TO MAIN BUILDING (CARRIAGES, STOVES, etc.).

See Part I., page 374.
No. 107. SWEDISH SCHOOL-HOUSE AND METEOROGRAPH.
Architects, ISÆUS & JACOBSSON.—Size, 40 feet by 50 feet.
Situated in the Swedish Government grounds, north of the Main Exhibition Building. A one-story frame house, containing school-rooms and the interior arrangements of a Swedish school-house. The framework for the building was imported from Sweden, and is on exhibition by G. O. Wengtion, of Stockholm.

METEOROGRAPH.—A one-story latticed structure east of Swedish school-house, surmounted by semi-globular cups, connected with apparatus in the interior, showing the velocity of the wind.

No. 108. JAPANESE BAZAAR.
This building is situated on Lansdowne drive, immediately north of Department of Public Comfort, and is designed for sale of Japanese wares.

No. 109. JUDGES’ HALL.
Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 152 feet by 113 feet.
A two-story frame building, situated north of the Main Exhibition Building, containing ten committee rooms and four private rooms for the judges; also one large hall in the centre, and a smaller hall in the rear. It is intended for the accommodation of the International Board of Judges. The President of the Centennial Commission and the Chief of the Bureau of Awards have offices in this building.

No. 110. CENTENNIAL PHOTOGRAPHIC ASSOCIATION BUILDING.
Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 150 feet by 30 feet.
The Photographic Association have erected a one-story frame building, located north of the Main Exhibition Building on the east side of Belmont Avenue. It contains one room for the exhibition of photographs, and three rooms for photographers for working purposes.

No. 111. SHEET METAL PAVILION.
Size, 22 feet by 40 feet.
Architect, E. C. RYER.
Situated on Lansdowne drive and Belmont Avenue, opposite lake. Marshall Bros. & Co., Girard Avenue below Front Street, Philadelphia, Pa., exhibit the utilization of galvanized and leaded sheets in the construction of this building. American polished, cleaned, and refined sheets, galvanized cemetery and house work, and corrugated iron. The building itself is a specimen of the workmanship of the Kittredge Cornice and Ornament Co., Salem, O., and illustrates the application of sheet metal to architectural purposes.

No. 112. GERMAN EMPIRE PAVILION.
Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 83 feet by 33 feet.
Constructed of stone, one story high, furnishing accommodations for the Imperial Commissioners as well as German visitors. It is located on Lansdowne drive, between Belmont and Agricultural Avenues.

No. 113. PENNSYLVANIA RAILROAD OFFICE.
Architect, J. M. WILSON, Engineer of Bridges and Buildings, Pennsylvania Railroad Co.—Octagon, 75 feet in diameter.
A two-story frame building, situated on the northeast corner of Belmont Avenue and the Avenue of the Republic, adjoining the Judges’ Hall. It is designed for the general ticket office of the four great trunk lines, viz.: New York Central, Erie, Baltimore & Ohio, and Pennsylvania Railroads. Tickets are sold to all points, and information is furnished regarding routes of travel.
No. 114. OFFICE U. S. CENTENNIAL COMMISSION.
The western wing of the Public Comfort Building. It contains offices and committee rooms, and conveniences for newspaper correspondents.

No. 115. BRAZILIAN EMPIRE PAVILION.
This structure is of wood, situated on Lansdowne drive, adjoining the German Government building, and intended for use of the Brazilian Commission.

No. 116. THE DAIRY ASSOCIATION BUILDING.
Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 76 feet by 25 feet; pavilion, 80 feet by 30 feet.
Situated on the north side of Lansdowne Valley, southwest of Horticultural Hall. It is a two-story rustic building, and the surrounding grounds are laid out as a garden in which is a pavilion for the additional accommodation of visitors.

No. 117. RESTAURANT LAFAYETTE.
Architect, H. J. SCHWARZMANN.—Size, 130 feet by 30 feet.
This is a two-story wooden building, located northwest of the Art Gallery, between Lansdowne drive and the brook. It is conducted on the French plan.

No. 118. DEPARTMENT OF PUBLIC COMFORT.
Architects, BALDERSTON & HUTTON, Philadelphia.—Size, 264 feet by 112 feet.
DEPARTMENT OF PUBLIC COMFORT COMPANY, Limited.
W. MARSH KASSON, Chairman, Philadelphia.
Located on the corner of the Avenue of the Republic and Agricultural Avenue, opposite the northwestern corner of the Main Exhibition Building, and fronting the Esplanade. It is a two-story frame building, containing a reception room and ladies’ parlor, free to all, barber shop, coat and baggage room, lunch counter, and lavatories. Tickets for places of amusement are on sale, and a daily register of all visitors is kept. The western section of the building is occupied by the President of the Centennial Commission. Office desk room is afforded to exhibitors. The centre portion of the building is surmounted with an open-air gallery, giving a view of the grounds.

No. 119. EMPIRE TRANSPORTATION COMPANY’S BUILDING.
Architects, WILSON BROS. & Co., Philadelphia.—Size, 70 feet by 60 feet.
EMPIRE TRANSPORTATION Co., Philadelphia.
This structure is located north of the eastern end of the Main Exhibition Building, and exhibits by models the method of transportation used by the Empire Transportation Company and its auxiliaries in the United States.

No. 120. FRENCH GOVERNMENT PAVILION.
Architect, DE DARTEIN, France.—Size, 100 feet by 50 feet.
DEPARTMENT OF PUBLIC WORKS, France.
Is constructed of brick and iron, and exhibits models in relief and designs of all the public works of France executed during the last few years; also a collection of books and publications relative thereto. It is situated west of the Art Gallery, on Lansdowne drive.

No. 121. CENTENNIAL FIRE PATROL.
Architect, H. J. SCHWARZMANN.—Size: (1.) 60 feet by 58 feet. (2.) 84 feet by 74 feet.
The Fire Patrol is accommodated in two buildings, built of wood, one story high,
containing halls for the engines, stalls for the horses, and dormitories for the firemen. The smaller house is at the northeast corner of the Main Exhibition Building, and the larger at the intersection of Lansdowne drive and Belmont Avenue. They are supplied with steam fire engines, hose trucks, ladders, and patent fire extinguishers.

No. 122. THE PENNSYLVANIA EDUCATIONAL HALL.

Architects, Peters & Burger.—Size, 148 feet by 100 feet.

The object of this Hall is the exhibition of the educational interests of the State of Pennsylvania. It is situated north of the Art Gallery, fronting on the Lansdowne drive. The building is octagonal in shape, and contains thirty-two alcoves for the display, a large assembly room, and a reception room. The following summary represents the exhibits:

1 Representations of kindergarten, primary, grammar, and high schools, with their appropriate furniture, fittings, text-books, apparatus, and work.

Systems of graded schools, with views and models of buildings, charts of statistics, specimens of apparatus, and volumes of scholars' work.

Schools of counties, with county and township maps of school-houses, photographs of buildings, charts of statistics, and scholars' work; plans of school build- ings, with systems of heating, lighting, and ventilating, and designs.

Department of Public Instruction charts, showing statistics and outline of public schools, system, reports, forms, certificates, and laws.

Text-books, school furniture and merchandise, school apparatus and philosophical apparatus; school ornamentation, consisting of a fountain, a series of Rogers' groups, vases, hanging baskets, statues, engravings, etc.

2 Academies and Seminaries, with pictures of buildings, specimens of apparatus, cabinet collections, drawings, and paintings.

Universities and colleges, with pictures of buildings, maps of grounds, views of interior rooms, charts of history and statistics, courses of study, text-books, and productions of professors and alumni.

Technical schools and departments, with drawings, casts, models of bridges, specimens of apparatus, etc.

3 Normal Schools.—Views of buildings and grounds, models, courses and methods of study, catalogues and reports, charts of statistics, and students' work.

Schools of Design.—Drawings, models, etc.

Commercial Schools.—Specimens of penmanship, etc.

4 Institution for the Blind.—Apparatus for teaching, intellectual and industrial work done by the blind.

Institution for the Deaf and Dumb.—Apparatus and methods of teaching.

5 Orphan Schools.—Views of buildings, scholars' intellectual and industrial work, books of record, forms and charts.

School for the Feeble-minded.—Textbooks, apparatus, methods, etc.

6 Sunday-schools.—Collections of Sunday-school material, incentives, maps, charts, forms, and models.

7 Peirce's Union Business College, 99 South Tenth street, Philadelphia, Pa. Teachers, Dr. E. J. Peirce, M.A., President; and Proprietor; Rev. John Thompson, Business Manager, Residence, 2002 Brandywine street.

Brief description of the objects on exhibition.

I. Penmanship: (A.) Seven (7) sets of resolutions engrossed by order of the Philadelphia Board of Public Education, at different times during the past fifty years, and borrowed from owners for the purpose of showing the high order of talent employed by the college. (B.) The improvement in writing of fourteen hundred (1400) pupils of the college, showing the success of the penman as a teacher. (C.) A "reward of merit" engrossed by the penman, the like of which is given once a month to the pupil who makes the most improvement in writing during the month. (D.) A large piece of "Specimens of Spencerian Penmanship," and a set of resolutions, complimentary of the Principal, written by the penman, and a "deceiving picture" made with pen, brush, and pencil, by the professor of drawing, each illustrating the power and ability of the executor. (E.) A piece of ornamental penmanship with a bouquet in the centre, drawn with the pen, with which the drawings in the work done for the Board of Education, show the penman's skill in pen-drawing. II. Book-keeping: (A.) A case of samples of merchandise used by the pupils of the college in the transaction of business among themselves in the Actual Business Department, thus furnishing each pupil with an original and independent set of transactions for his books. (B.) Samples of college currency used in the payment of bills, together with copies of the various business papers used by the students. III. Course of Instruction: (A.) A small piece of lettering naming the subjects taught. (B.) A diploma setting forth the subjects of examination for graduation. IV. Objects of Institution and Classes who patronise it: A large piece of penmanship setting forth the same in detail.

Particular Merit which the Exhibitor Claims for his Exhibit.—I. The highest order of talent in the penman in all the departments of work done with the pen. II. Superior plans for the improvement of the writing of pupils in addition to the excellence of the teacher. III. Ingenious and successful plans for teaching book-keeping and imparting a sound, practical, and economical preparation of young men for business life.
No. 123. TELEGRAPHIC BUILDING.
Architects, BALDERSTON & HUTTON, Philadelphia.—Size, 80 feet by 75 feet.
DEPARTMENT OF PUBLIC COMFORT COMPANY, Limited.
W. MARSH KASSON, Chairman, Philadelphia.
The reception room of the Public Comfort building opens from the east into the telegraphic department, which furnishes communication with every portion of the world. Is a one-story frame building opposite the northwest corner of the Main Exhibition Building, fronting the Esplanade. All of the instruments and appliances of the latest design are on exhibition and in use.

1 Phillips, Wm. J., Philadelphia, Pa.—Printing telegraph instrument, combining the bell, dial, and printing telegraph in one instrument.
2 Phillips, Eugene F., Providence, R. I.—Covered wire for telegraphic purposes.
3 Gray, Elisha, Chicago, Ill.—Electro-harmonic telegraph, including apparatus for transmitting tunes and eight or more messages simultaneously.
5 Gray & Barton, Western Electric Telegraph Co., Chicago, Ill.—Printing telegraph instrument, with unison attachment.
6 Frost & Hanline, Philadelphia, Pa.—Automatic thermostat for fire-alarm telegraph.
7 Brooks, David, Philadelphia, Pa.—Underground cables for telegraph wires.
9 American District Telegraph Co., Philadelphia, Pa.—District telegraph signal-boxes, with self-starting registers for messengers, guides, and interpreters.

No. 124. AMERICAN FUSEE COMPANY’S BUILDING.
Size, 14 feet by 14 feet.
W. R. DAVENTPORT, New York.
Situated on Lansdowne drive, north of the Judges’ building.

No. 125. GLASS MAGAZINE.
Architect, H. J. SCHWARZMANN.—Size, 40 feet by 40 feet.
KLAUTSHECK, THOMAS, & STUART, Philadelphia.
This magazine is erected adjoining the Photographic Association Building, opposite the lake. It is constructed mainly of glass from the factories of the above firm, and contains a full assortment of plate and window glass, and glass shades for the accommodation of exhibitors; is two stories high, and is connected by a bridge with Belmont Avenue.

No. 126. MOORISH VILLA.
Constructed in Morocco by native workmen; exhibited by Dr. Max Schmiill, for the display of native products and fancy articles; conducted by Abd el Kader ben Katib. It is situated on Lansdowne drive, opposite Sheet Metal Pavilion.

No. 127. AMERICAN BIBLE SOCIETY PAVILION.
Architect, I. C. SIDNEY.—Size, 17 feet by 23 feet.
Located near Lansdowne Valley, south of Horticultural Hall, close to the bridge; oval in shape, and surmounted by a carved roof with a projecting cornice. It bears the inscription, “The Bible without note or comment.” In front is an open Bible, and over it the text from Jeremiah xxii. 29: “O earth, earth, earth, hear the word of the Lord.” Only Bibles and Testaments are sold.

No. 128. HUNTERS’ CAMP.
This camp illustrates sportsmen’s life in the backwoods, and contains what is known as a permanent camp, built of logs and bark, with all the appurtenances of hunting and fishing, including portable boats, sporting firearms, rods and fishing
tackle ready for use, portable cooking apparatus, specimens of game birds, a kennel of sporting dogs, etc., etc. An additional feature is a lake or pond stocked with game fish, and a running stream containing brook trout. It is located in the ravine south of Horticultural Hall.

No. 129. OFFICE WATER DEPARTMENT.

A frame building situated on Belmont Avenue, next to the Glass Magazine.

No. 130. SODA WATER STANDS.

These are located at various points east of Belmont Avenue and south of Fountain Avenue.

No. 131. CIGAR STANDS.

These are situated at various points east of Belmont Avenue and south of Fountain Avenue.

No. 132. SINGER SEWING MACHINE BUILDING.

Architect, James Van Dyke, Elizabeth.—Size, 81 feet by 56 feet.
Singer Manufacturing Co., New York City.

Contains an exhibit of every style of machine manufactured by the Singer Manufacturing Company, and samples of work. It is constructed of wood, and is located on Lansdowne drive, north of the Art Gallery.

No. 133. MEDICAL DEPARTMENT.

Architect, H. J. Schwarzmann.—Size, 65 feet by 32 feet 6 inches.

This department is instituted for the immediate gratuitous relief of accidents and sudden cases of illness occurring within the Exhibition grounds. It is located in Lansdowne ravine, equidistant from the Main Building and Horticultural Hall, and contains two wards of three beds each, for male and female patients. An ambulance is provided for the removal of patients to their homes or to city hospitals.

Officers.

William Pepper, M.D., Medical Director.
Theodore Herberte, M.D., Secretary and Resident Physician.
Jacob Roberts, M.D., Member of Staff.
S. W. Gross, M.D., Member of Staff.
H. C. Wood, M.D., Member of Staff.
R. G. Curtin, M.D., Member of Staff.
Hamilton Osgood, M.D., Member of Staff.
De Forrest Willard, M.D., Member of Staff.

No. 134. PORTUGUESE GOVERNMENT BUILDING.

Architects, H. J. Schwarzmann, Hugh Kafka.—Size, 55 feet by 51 feet.

A one-story wooden structure, with cupola, located on the northeast corner of Agricultural Avenue and Lansdowne drive, and used to accommodate Commissioners and visitors from Portugal.

No. 135. BANKERS' EXHIBIT.

Architect, James H. Windrim, Philadelphia.—Size, 69 feet by 41 feet.

Erected by the banks, bank officers, and bankers of the country for the exhibition of coins and currency. It is located east of the Art Gallery, and between the Photographic Gallery and the Vienna Bakery.
No. 136. FRENCH GLASS EXHIBIT.
R. DE BERGNE.
This building is constructed entirely of glass, and situated on Lansdowne drive, adjoining Moorish Villa. Is designed to show window glass, tiles, marble, onyx, etc.

No. 137. KINDERGARTEN.
Located north of Carriage Annex on Lansdowne drive, designed to show object teaching. Is a wooden structure, one story high.

No. 138. CENTENNIAL POLICE STATION.
Situated at northeast corner of Main Building, designed for accommodation of police, with cells for prisoners.

No. 139. PHILADELPHIA PAVILION.
Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 88 feet by 66 feet.
For the accommodation of the municipal government of the city of Philadelphia. It contains a hall and parlors, and a room devoted to the use of the Park Commission. It is a one-story frame building, situated on Lansdowne drive, east of Horticultural Hall.

No. 140. MUSIC PAVILION.
Pavilion with ornamented dome, situated in Lansdowne Ravine, near the bridge. For use of bands.

No. 141. BURIAL CASKET BUILDING.
Architect, N. B. GLEASON, Rochester, N. Y.—Size, 42 feet by 22 feet.
SCHUYLER & ARMSTRONG and S. STEIN, Proprietors.
The exhibit consists of various designs of funeral caskets, shrouds, etc. It is a one-story frame house with turrets, and is situated on Lansdowne drive near the bridge, and north of Art Gallery Annex.

No. 142. PERFORATED METALS.
This is a one-story brick building with skylight, located between the Carriage Annex and Lansdowne drive, and designed to show the practicability of using perforated window blinds in dwellings.

No. 143. RUBBER ROOFING.
This building is situated on Lansdowne drive, between the Carriage Annex and Pennsylvania Educational Hall. It is octagonal in shape, and surmounted by a tower ten feet high. The exhibit consists of rubber roofing.

No. 144. OFFICE OF CUBAN ACCLIMATION GARDEN.
See Part IV., page 134.
Architect and Manager, JULES LACHAUME.—Size, 12 feet by 25 feet.
This structure is designed to show tropical produce, seeds, vegetable physiology, and rustic work, and is situated directly south of Horticultural Hall.

No. 145. NAVAL GROUP.
This bronze statue is situated on the plaza immediately west of Art Gallery.

No. 146. DYING LIONESS.
This bronze work of art is in the plaza due east of Art Gallery.
No. 151. HORTICULTURAL HALL.
See Part IV., page 147.

No. 152. AGRICULTURAL HALL.

No. 153. WOMEN'S PAVILION.
See Part III., page 85.

No. 154. FROBEL'S KINDERGARTEN.
Architect, JAMES P. SIMS.—Size, 45 feet by 18 feet.
Situated northeast of the Women's Pavilion. Contains specimens of school work, and illustrates the operation of kindergarten teaching.

No. 155. NEW JERSEY STATE BUILDING.
Architect, CARL PFIEFFER, New York.—Size, 56 feet by 82 feet.
A two-story wooden building erected for the accommodation of the New Jersey State Commissioners, containing offices and private rooms. It is situated on Belmont Avenue, adjacent to the Women's Pavilion. Messrs. Hall & Son, of Perth Amboy, N. J., furnished the brick in the chimney, and Messrs. Maurer & Brevier, of Perth Amboy, the tiles used in the roofing of the building.

No. 156. THE “SOUTH” RESTAURANT.
Architects, H. J. SCHWARZMANN.—Size, 182 feet by 92 feet.
E. MERCER, Atlanta, Ga.
Situated on the northwest corner of State and Belmont Avenues, and is a one-story frame building.

No. 157. KANSAS AND COLORADO STATE BUILDING.
Architect, E. F. KARR.—Size, 132 feet square.
This structure is intended for the accommodation of the Commissioners from the States of Kansas and Colorado, and also for exhibition purposes. It is a two-story wooden building, containing an exhibition hall, private rooms and offices, and is situated east of the Southern Restaurant. The Kansas exhibit consists of agricultural products, minerals, silk cocoons, building stone, cotton, plaster of Paris, birds and animals.
The Colorado exhibit embraces mineral, geological, and ornithological specimens, petrifications, views of Colorado scenery, the Maxwell cabinets of minerals, birds and animals of the Rocky Mountains, etc.

No. 158. NEW ENGLAND FARMER’S HOME AND MODERN KITCHEN.
Size, 49 feet by 35 feet.
MISS E. B. SOUTHWICK, Boston.
A representation of a New England farmer's home 100 years ago, combined with a modern kitchen, thus illustrating 1776 and 1876. It is one story high, and situated on the corner of State and Agricultural Avenues.

No. 159. THE AMERICAN RESTAURANT.
Architects, H. J. SCHWARZMANN, HUGH KAFKA.—Size, 300 feet by 200 feet.
TOBIASON & HEILBRUN, Philadelphia.
Situated between Agricultural and Horticultural Halls. The seating capacity is five thousand. The banquet room accommodates six hundred guests. The waiters
speak various languages. There is a pavilion devoted to ice cream, etc. A bill of fare will be served either à la carte or table d'hôte.

No. 160. GERMAN RESTAURANT.
Architect, H. J. SCHWARZMANN.—Size, 200 feet by 150 feet.
PHILIP J. LAUBER, Philadelphia.
Contains three acres for garden arrangements, and is situated north of Horticultural Hall, on Lansdowne drive.

No. 161. TEA AND COFFEE PRESS EXTRACT BUILDING.
Architects, HAYES & McIVOR, Elmira, N. Y.—Size, 100 feet by 45 feet.
A two-story frame building, composed of four observatories connected by verandas. Located opposite the southeast corner of the Agricultural Building, and devoted to the exhibition of the process of making coffee, tea, and other extracts, by means of pressure caused by the expansion of the materials used.

No. 162. BUTTER AND CHEESE FACTORY.
Size, 100 feet by 116 feet.
A model factory, three stories high, built of wood, and situated east of the Agricultural Building, between it and Lansdowne drive.

No. 163. SODA WATER STANDS.
These structures are located at various points east of Belmont and north of Fountain Avenues.

No. 164. CIGAR STANDS.
These stands are found at various points east of Belmont and north of Fountain Avenues.

No. 165. FARM WAGON ANNEX.
See Part IV., page 135.

No. 166. POMOLOGICAL ANNEX.
See Part IV., page 135.

No. 167. BREWERS' BUILDING.
See Part IV., page 136.

No. 168. APIARY.
See Part IV., page 140.

No. 169. PACIFIC GUANO COMPANY'S PAVILION.
MR. JOHN M. GLIDDON, Manager.
This is, in style, similar to a Moorish kiosk. The exhibit consists of various products of the soil, guano in its various processes of manufacture, models of company's works at Wood's Hole and Chisolius Island, fossil remains, etc., while several acres of ground, in close proximity to their pavilion, are planted in cotton, cane, tobacco, etc., to demonstrate the efficacy of their manufacture. The building is situated on Fountain Avenue, east of Women's Pavilion.

No. 170. ANNEX TO HORTICULTURAL HALL, OR SPECIAL FLOWER PAVILION.
This building is made of glass and iron, located immediately north of Horticultural Hall, and is intended for the display of specialties in flowers.
No. 171. WIND MILLS.
See Part IV., page 140.

No. 172. "PRACTICAL FARMER" (NEWSPAPER OFFICE).
See Part IV., page 140.

No. 173. HAY PRESS.
One Dedrich portable engine, six horse-power, for running hay presses. The presses take in loose hay, baling and banding 20 tons to the hour, or 280 bales.

No. 174. CENTENNIAL POLICE STATION.
A frame building situated east of Hay Press and Agricultural Hall, intended for accommodation of Centennial Guards.

No. 175. SAFETY ELEVATED RAILWAY.
ROY STONE, Proprietor.
This railroad is situated over Belmont Ravine, north of Horticultural Hall. It was designed by Roy Stone, and first erected at Phoenixville, Pa. Examined and fully approved by eminent engineers. Brought here as an exhibit and for conveyance of passengers under the concession to West End Railroad Co. Intended for rapid transit in cities, or for very cheap country railroad for passengers and freight.

No. 176. BOILER HOUSE.
Situated east of Agricultural Hall, and furnishes steam for engine in that building.

No. 177. VIRGINIA STATE BUILDING.
A frame structure one story high, with veranda all around, situated on State Avenue east of the Kansas and Colorado building, facing Horticultural grounds.

No. 178. THE PROTECTIVE FIRE APPARATUS COMPANY OF NEW YORK.
Size, 8 feet by 10 feet.
This is a one-story wooden building, situated on Agricultural Avenue, west of Agricultural Hall, and is designed to display fire extinguishers.

No. 179. POP-CORN STAND.
Situated at corner of Agricultural Avenue, near station of Narrow-Gauge Railroad.

No. 180. FOUNTAIN OF THE JORDAN L. MOTT IRON WORKS OF NEW YORK.
Located east of Horticultural Hall. This is an iron fountain 45 feet in diameter and 26 feet high. There are four figures at the base, and the top is surmounted by the design of "Venus Rising from the Sea."
In the interior of the different buildings are located several fountains of varied designs.
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INTERNATIONAL EXHIBITION.

1876

Official Catalogue.

PART IV.

AGRICULTURAL AND HORTICULTURAL HALLS AND ANNEXES.

DEPARTMENT VI.—AGRICULTURE.
DEPARTMENT VII.—HORTICULTURE.

REVISED EDITION.

PHILADELPHIA:
Published for the Centennial Catalogue Company
By JOHN R. NAGLE AND COMPANY.
1876.
Entered according to Act of Congress, in the year 1876, by the
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† Metallurgical exhibit of Liberia, page 88.
‡ Countries marked thus, have Agricultural exhibits which are installed in the Main Building and catalogued in Part I.
§ A portion of the Chemical exhibit of Brazil, page 75.
No. 152. AGRICULTURAL HALL.

Size, parallelogram, 820 by 540 feet.

Architect, James H. Windrim, Philadelphia.
Contractor, Philip Quigley, Wilmington, Del.
Wrought iron furnished by Allison & Sons, Philadelphia.
Erectors, Bell Brothers.

The Agricultural Exhibition Building stands north of Horticultural Hall, on the eastern side of Belmont Avenue. A novel combination of materials is illustrated in its construction. It consists of a long nave crossed by three transepts, all composed of Howe truss arches of Gothic form. The four courts inclosed between the nave and transepts, as also the four spaces at the corners of the building, having the nave and transepts for their sides, are roofed in and form spaces for exhibits. The building covers an area of above ten acres. Stock yards for the exhibition of horses, cattle, sheep, swine, poultry, etc., are in the vicinity of the exhibition grounds.

The contract was made July 26th, 1875, and the building was begun in September 1875, and finished in April, 1876. It cost $260,000.

KEY TO THE NOTATION.

The location of objects in the Agricultural Building is shown by a letter and figure, indicating the nearest column of the building. The letters—A, B, C, to T—designate the successive ranges of columns, proceeding eastward from the western wall across the width of the building; the figures, the number of the column in each range, counting northwardly from the southern wall, the entire length of the building, from 1 to 28. Thus C 5 is the column in the third range from the west, and the fifth from the southern end of the building. The northeasternmost column is T 28.

The class of the classification (see pages 12–14) to which each exhibit belongs is indicated by the small figures at the end of the line.
AGRICULTURAL HALL.

Scale, 225 ft. to 1 in.

Total Length, 540 ft.  Width, 820 ft.  Height, 75 ft.
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<td>120—129 Mining Engineering.</td>
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<td>200—205 Chemical Manufactures.</td>
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<td>206—216 Ceramics, Pottery, Porcelain, Glass, etc.</td>
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<td>217—227 Furniture, etc.</td>
<td>Wood,</td>
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<td>228—234 Yarns and Woven Goods of Vegetable or Animal origin.</td>
<td>Textile</td>
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<td>235—241 Woven and Felted Goods of Wool, etc.</td>
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<td>242—249 Silk and Silk Fabrics.</td>
<td>Silk,</td>
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<td>250—257 Clothing, Jewelry, etc.</td>
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<td>258—264 Paper, Blank Books, Stationery.</td>
<td>Paper,</td>
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<td>265—271 Weapons, etc.</td>
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<td>272—279 Medicine, Surgery, Prothesis.</td>
<td>Medical,</td>
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<td>280—284 Hardware, Edge Tools, Cutlery, and Metallic Products.</td>
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<td>292—295 Carriages, Vehicles, and Accessories.</td>
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<td>II. Manufactures.</td>
<td>300—309 Educational Systems, Methods, and Libraries.</td>
<td>Science,</td>
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<td>310—319 Institutions and Organizations.</td>
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<td>330—339 Engineering, Architecture, Maps, etc.</td>
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<td>340—349 Physical, Social, and Moral Condition of Man.</td>
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<td>Main Building.</td>
<td>400—409 Sculpture.</td>
<td>Art,</td>
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<td>410—419 Painting.</td>
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<td>420—429 Engraving and Lithography.</td>
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<td>430—439 Photography.</td>
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<td>440—449 Industrial and Architectural Designs, etc.</td>
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<td>450—459 Ceramic Decorations, Mosaics, etc.</td>
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<td>Art Gallery.</td>
<td>500—509 Machines, Tools, etc., of Mining, Chemistry, etc.</td>
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<td>520—529 Machines and Implements of Spinning, Weaving, etc.</td>
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<td>530—539 Machines, etc., used in Sewing, Making Clothing, etc.</td>
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<td>540—549 Machines for Printing, Making Books, Paper Working, etc.</td>
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<td>550—559 Motors, Power Generators, etc.</td>
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<td>560—569 Hydraulic and Pneumatic Apparatus.</td>
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<td>570—579 Railway Plant, Rolling Stock, etc.</td>
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<td>580—589 Machinery used in Preparing Agricultural Products.</td>
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<td>590—599 Aerial, Pneumatic, and Water Transportation.</td>
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<td>600—609 Machinery, and Apparatus, especially adapted to the requirements of the Exhibition.</td>
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<td>Machinery Building.</td>
<td>610—619 Arboriculture and Forest Products.</td>
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<td>620—629 Pomology.</td>
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<td>630—639 Agricultural Products.</td>
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<td>640—649 Marine Animals, Fish Culture, and Apparatus.</td>
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<td>650—659 Animal and Vegetable Products.</td>
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<td>660—669 Textile Substances of Vegetable or Animal origin.</td>
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<td>670—679 Machines, Implements, and Processes of Manufacture.</td>
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<td>680—689 Agricultural Engineering and Administration.</td>
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<td>690—699 Tillage and General Management.</td>
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<td>Agricultural Building.</td>
<td>700—709 Ornamental Trees, Shrubs, and Flowers.</td>
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<td>710—719 Hot Houses, Conservatories, Grapevines.</td>
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<td>720—729 Garden Tools, Accessories of Gardening.</td>
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<td>730—739 Garden Designing, Construction, and Management.</td>
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<td>Horticultural Building.</td>
<td>800—809 Horticulture.</td>
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CLASSIFICATION.

DEPARTMENT VI.—Agriculture.

ARBORICULTURE AND FOREST PRODUCTS.

Class 600.—Timber and trunks of trees, entire or in transverse or truncated sections, with specimens of barks, leaves, flowers, seed vessels, and seed.

Masts, spars, knees, longitudinal sections of trees, railway ties, ship timber, lumber roughly sawn; as planks, shingles, lath, and staves.

Timber and lumber prepared in various ways to resist decay and combustion; as by injection of salts of copper and zinc.

Class 601.—Ornamental woods used in decorating and for furniture; as veneers of mahogany, rosewood, ebony, walnut, maple, and madrona.

Class 602.—Dyewoods, barks, and galls for coloring and tanning.

Class 603.—Gums, resins, caoutchouc, gutta percha, vegetable wax.

Class 604.—Lichens, mosses, fungi, pulu, ferns.

Class 605.—Seeds, nuts, etc., for food and ornamental purposes.

Class 606.—Forestry.—Illustrations of the art of planting, managing, and protecting forests. Statistics.

Class 607.—Fruit trees and shrubs.

POMOLOGY.

Class 610.—Fruits of temperate and semi-tropical regions; as apples, pears, quinces, peaches, nectarines, apricots, plums, grapes, cherries, strawberries, and melons.

Class 611.—Tropical fruits and nuts, oranges, bananas, plantains, lemons, pine-apples, pomegranates, figs, cocanuts.

AGRICULTURAL PRODUCTS.

Class 620.—Cereals, grasses, and forage plants.

Class 621.—Leguminous plants and esculent vegetables.

Class 622.—Roots and tubers.

Class 623.—Tobacco, hops, tea, coffee, spices, condiments, herbs.

Class 624.—Seeds and seed vessels.

LAND ANIMALS.

Class 630.—Horses, asses, mules.

Class 631.—Horned cattle.

Class 632.—Sheep.

Class 633.—Goats, alpaca, llama, camel.

Class 634.—Swine.

Class 635.—Poultry and birds.

Class 636.—Dogs and cats.

Class 637.—Wild animals.

Class 638.—Insects, useful and injurious. Honey bees, cochineal, silk-worms.
CLASSIFICATION.

MARINE ANIMALS, FISH CULTURE, AND APPARATUS.

Class 640.—Marine mammals.—Seals, cetaceans, etc., specimens living in aquaria, or stuffed, salted, preserved in alcohol, or otherwise.

Class 641.—Fishes, living or preserved.

Class 642.—Pickled fish, and parts of fish used for food.

Class 643.—Crustaceans, echinoderms, beche de mer.

Class 644.—Mollusks, oysters, clams, etc., used for food.

Class 645.—Shells, corals, and pearls.

Class 646.—Whalebone, shagreen, fish-glue, isinglass, sounds, fish-oil.

Class 647.—Instruments and apparatus of fishing.—Nets, baskets, hooks, and other apparatus used in catching fish.

Class 648.—Fish culture.—Aquaria, hatching pools, vessels for transporting roe and spawn, and other apparatus used in fish breeding, culture, or preservation.

ANIMAL AND VEGETABLE PRODUCTS.

(Used as food or as materials.)

Class 650.—Sponges, seaweed, and other growths used for food or in the arts.

Class 651.—The dairy.—Milk, cream, butter, cheese.

Class 652.—Hides, furs, and leather, tallow, oil, and lard, ivory, bone, horn, glue.

Class 653.—Eggs, feathers, down.

Class 654.—Honey and wax.

Class 655.—Animal perfumes; as musk, civet, ambergris.

Class 656.—Preserved meats, vegetables, and fruits. Dried, or in cans or jars.

Meat and vegetable extracts.

Class 657.—Flour; crushed and ground cereals, decorticated grains.

Class 658.—Starch and similar products.

Class 659.—Sugar and syrups.

Class 660.—Wines, alcohol, and malt liquors.

Class 661.—Bread, biscuits, crackers, cakes, confectionery, cocoa, chocolate, etc.

Class 662.—Vegetable oils, oil cake.

TEXTILE SUBSTANCES OF VEGETABLE OR ANIMAL ORIGIN.

Class 665.—Cotton on the stem, in the boll, ginned, and baled.

Class 666.—Hemp, flax, jute, ramie, etc., in primitive forms and in all stages of preparation for spinning.

Class 667.—Wool in the fleece, carded, and in bales.

Class 668.—Silk in the cocoon and reeled.

Class 669.—Hair, bristles.

MACHINES, IMPLEMENTS, AND PROCESSES OF MANUFACTURE.


Class 671.—Planting.—Manual implements, corn-planters and hand-drills. Animal power machinery, grain and manure drills, corn and cotton planters. Steam power machinery, grain and manure drills.


Potato diggers.

Class 673.—Preparatory to marketing.—Thrashers, clover-hullers, corn-shellers, winnowers, hay, cotton, flax, jute, ramie, wine, oil, and sugar making apparatus. Cleaners and smutters. Horse powers.
CLASSIFICATION.

Class 674.—Applicable to farm economy.—Portable and stationary engines, chaffers, hay and feed cutters, slicers, pulpers, corn mills, farm boilers and steamers, incubators, edged tools, mills, meat choppers.

Class 675.—Dairy fittings and appliances.—Churns for hand and power, butter-workers, cans and pails, cheese-presses, vats, and apparatus, ice-cream freezers, cedar-ware.

Agricultural Engineering and Administration.

Class 680.—Laying out and improving farms.—Clearing (stump extractors), construction of roads, draining, irrigating, models of fences, gates, drains, out-falls, dams, embankments, irrigating machinery, stack building and thatching.

Class 681.—Commercial fertilizers, phosphatic, ammoniacal, calcareous, etc.

Class 682.—Transportation.—Wagons, carts, sleds, harness, yokes, traction engines, and apparatus for road making and excavating.

Class 683.—Farm buildings.—Models and drawings of farm houses and tenements, barns, stables, hop-houses, fruit-driers, ice-houses, windmills, granaries, barracks, apiaries, cocooneries, aviaries, abattoirs, and dairies.

Tillage and General Management.

Class 690.—Systems of planting and cultivation.

Class 691.—Systems of draining and application of manures.

Class 692.—Systems of breeding and stock feeding, training.

Class 693.—Veterinary surgery and appliances.
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<tr>
<td>Wanamaker's Ready Made Clothing</td>
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DAVID LANDRETH & SONS'  
Agricultural Warehouse,  
21 and 23 South Sixth St., Philadelphia.  

SEED FARMS:  
Pennsylvania, New Jersey, Virginia, Wisconsin.  

W.A. DROWN & CO.  
Superior Umbrellas and Parasols.  
Warerooms:  
246 Market Street, Philadelphia.  
498 & 500 Broadway, New York.  

Established 1810.  
Manufactories in Philadelphia.  
Trade-mark.  

HASELTINE GALLERIES,  
1125 and 1127 Chestnut St., Philadelphia.
UNITED STATES.

Forest Products, Pomology, Agricultural Products.

Arboriculture and Forest Products.

1 Begg, Jonathan, Gilroy, Cal.—Collection of conifer of the Pacific Coast. E 25. 600
3 Western North Carolina Land Company, Charlotte, N. C.; branch office, 32 S. Third st., Philada.—Lands heavily wooded, rich in minerals, and well-adapted to grazing and agricultural purposes. Hard and soft woods in variety, and of gigantic growth; medicinal herbs, magnetic and hematite iron ores, manganese, gold, mica, etc. E 19. 600
4 State of Indiana.—Timber, all kinds found in the State. G 20. 600
5 State Board of Iowa (collective exhibit), Fairfield, Iowa.—Wood(s), native and cultivated; wood seeds, soils. C 15. 600
5a Rowland, Hillman, & Son, Kirkwood, N. J.—Charcoal. E 26. 600
6a State of New Jersey.—Native woods. E 17-18. 600
6b State of Wisconsin.—Forest products. F 20-21. 600
6c New Hampshire State Centennial Board.—Native woods. E 20-21. 600
6d Land Department Central Pacific Coast—Wood(s). F 15 to 19. 600
7 Woods, Perry, & Co., Cleveland, Ohio.—White pine lumber. F 25. 600
8 State of Oregon, Portland, Oregon.—Native woods, medicine roots, and bark; shingles. E 22. 600
9 Eastern Burnettizing Co., Boston, Mass.—Burnettized lumber for bridges, wharves, railroads, and all positions where wood is liable to decay. F 26. 600
10 State of Delaware (collective exhibit), Dover, Del.—Timber in the rough and dressed. F 17. 600
11 Albemarle Swamp Land Co., North Carolina.—Cedar and cypress shingles, staves, etc. F 26. 600
12 Davis, Wire, & Co., North Carolina.—Ribbed cedar and cypress shingles. F 28. 600
13 State of West Virginia (collective exhibit).—Forest products. F 19. 600
14 Gove, E., Bath, Maine.—Basswood products. F 23. 600
14a Cross & Mehling, Grand Rapids, Mich.—Imitation of walnut burl, etc. E 26. 601
14b Macatee & Bro., Front Royal, Va.—Ground sumac. F 28. 602
14c Williams, R. H., Milford, Del.—Quercitron bark. F 26. 602
16 Smythe, Earle, & Co., New York, N. Y.—Crude elastic gums, with botanical specimens of same. E 28. 603
16a Day, Austin G., Seymour, Conn.—India-rubber producing plants, from tropical countries; crude India-rubber; crude kerite, or substitute for rubber. J 27-28. 603
17a Delta Moss Co., New Orleans, La.—Southern moss. E 25. 604
18 Michigan State Agricultural College (collective exhibit).—Forestry. E 25. 606

Pomology.

19 Atlantic Co. for the Culture of Cranberries, Weymouth, N. J.—Cranberries, natural and preserved. J 23. 610
20 State Board of Iowa, Fairfield, Iowa.—Apples and pears in wax models. C 15. 610
20a Hennigh, John H., Egg Harbor City, N. J.—Strawberries and plants; grapes. K 14. 610
21 Collings, E. Z., Waterford, N. J.—Cranberries in jars, showing different varieties. C 20. 610
21a West Jersey Land & Cranberry Co., Atco, N. J.—Cranberries and vines. C 20. 610
21b Michigan Pomological Society, Detroit, Mich.—Apples. (Name of Agricultural Building.) 610
21c Bonzano, H., New Orleans, La.—Pecan nuts. H 28. 611

Agricultural Products.

22 State Board of Iowa, Fairfield, Iowa.—Corn, small grains, grass seeds, vegetable seeds, etc. C 15. 620
23 Branson, David H., Guthrieville, Pa.—Indian corn. N 10-11. 620
24 Beeson, Jacob, & Co., Detroit, Mich.—Samples of grain. J 17. 620
25 State of Massachusetts (collective exhibit), Boston, Mass.—Agricultural products. E and F 23. 620
26 Possisponi, Angola, Harrisburg, Pa.—Straw for the manufacture of straw goods. E 15. 620

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
For locations of objects indicated by letter and figure, see Key to Notation, p. 9; ground plan, p. 19.
Agricultural Products.


55 V. Martinez Ybor & Co., Key West, Fla.—Cigars. 1 24. 623


57 Marburg Bros., Baltimore, Md.—Smoking and leaf tobacco. G 26. 623

58 Volinia Farmers’ Club, Volinia, Mich.—General farm products, cereals, etc. K 15. 623

59 Seidenberg & Co., 84 and 86 Reade st., New York, N. Y. Factory, Key West, Fla.—Key West and Havana cigars. 1 23. 623

60 Shuck, Samuel, Bedford, Pa.—Anti-smoking cigars. 26. 623

60a Stewart, Isaac T., Philadelphia, Pa.—Tobacco. F 25. 623

60b Richey, Henry A., New York, N. Y.—Plug tobacco, etc. H 24. 623

60c Hart, R. T., McComb City, Miss.—Manufactured tobacco. J 25. 623


60e Pickering, Thomas R., Portland, Conn.—Connecticut-seed leaf tobacco. H 25. 623


61a Consolidated Tobacco Co., San Francisco, Calif.—Tobacco. I 24. 623

61b Grant, L. J., & Co., Richmond, Va.—Manufactured tobacco. F 25. 623


61d Landis, Israel L., Lancaster, Pa.—Tobacco. B 22. 563

61e Cochran & Gillespie, Philadelphia, Pa.—Leaf tobacco. H 25. 623

62 Bailey, Samuel M., Richmond, Va.—Plug tobacco. I 25. 623

62a Hancock, Salmon, & Co., Richmond, Va.—Manufactured tobacco, and labels. J 26. 623

62b Lovett, Joseph L., Emilie, Pa.—Tobacco. H 24. 623

62c Lottier, Lawrence, Richmond, Va.—Manufactured tobacco. H and I 25. 623

63 Mayo, P. H., & Brother, Richmond, Va.—Plug tobacco. H 25. 623

64 Holbrook, Harry C., Louisville, Ky.—Plug tobacco. G 25. 623

65 Turpin & Brother, Richmond, Va.—Plug tobacco. H 25. 623


70 Lovell & Buffington, Covington, Ky.—Fine-cut chewing tobacco. G 25. 623


72 Felgner, F. W., & Son, Baltimore, Md.—Smoking tobacco. Manufacturers of all kinds of smoking tobacco. H 26. 623

72a Williams, Thomas C., & Co., Richmond, Va.—Plug tobacco. F 25. 623

72b Carroll, John W., Lynchburg, Va.—Chewing and smoking tobacco. H 25. 623

73 Gail & Ax, Baltimore, Md.—Smoking and fine-cut chewing tobacco; snuffs. I 26. 623


75 Armistead, Louis L., Lynchburg, Va.—Granulated smoking tobacco. I 24. 623


82 Bonnett, Schenck, & Earle, New York, N. Y.—Spices and mustard. G 24. 623


85 Ledoux, C. Z., St. James Parish, La.—Cigarettes. G 25. 623


87 Kühn, von, & Silberman, Philada., Pa.—Tobacco pipes. H 25. 623

88 Tobacco-Growers of Penn’s Manor, Morrisville, Pa.—Unsweetened tobacco. This tobacco (known as Duck Island) is grown in Bucks Co., Pa., and adjoining islands. We believe it equal in texture, quality, and flavor to any grown in the United States, except that produced from Havana seed. See circular, to be had at case. I 24. 623

Land and Water Animals, Animal and Vegetable Products.

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<th>Page</th>
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<tr>
<td>50</td>
<td>Fulton, Joseph W., Libertyville, Iowa.—Corn, grains, grass, and fieldseeds, vegetable seeds, etc. C 15.</td>
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<tr>
<td>624</td>
<td>Commercial Exchange Association, Philadelphia, Pa.—Flour, grain, seeds, etc. H 15.</td>
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<tr>
<td>624</td>
<td>State of New Jersey.—Wheat, rye, oats, corn, buckwheat, clover, and grass seeds. E 17-18.</td>
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<td>624</td>
<td>Rogers, C. B., Philadelphia, Pa.—Field and garden seeds. I 16.</td>
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<tr>
<td>624</td>
<td>Illinois State Board of Agriculture (collective exhibit), Springfield, Ill.—Samples illustrating the agricultural, horticultural, geological, and other resources of the State. G 16-22.</td>
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<tr>
<td>624</td>
<td>Myers, Ephraim, Creagerstown, Md.—Tree, shrub, and flower seeds. C 15.</td>
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Land Animals.

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<td>624</td>
<td>Big old and injurious. 635</td>
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<td>Insects, useful and injurious. 638</td>
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<td>96a</td>
<td>Barrett, J. O., Glen Beulah, Wis.—&quot;Old Ab,&quot; the live war-egle.—carried for three years during the war of the rebellion by the 8th Regt. Wis. Vols. J 17. 633</td>
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<td>96a</td>
<td>McIlvaine, John H., Philadelphia, Pa.—Birds. E 26. 535</td>
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<td>Death, J. R., Philadelphia, Pa.—Stuffed birds. K 23. 635</td>
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<td>Aldrich, P. W., Readville, Mass.—Stuffed birds. K 23. 635</td>
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<td>102</td>
<td>Howlett, C. K., Hudson, Ohio.—Stuffed birds of America. K 23. 635</td>
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<tr>
<td>103</td>
<td>Brown, Clark D. W., Taxidermist and naturalist, Aurora, Ill.—Stuffed birds artistically arranged, representing the gathering of nations to the Centennial. Orders for groups, artistic or scientific, promptly filled and safely packed. K 24. 635</td>
</tr>
<tr>
<td>104</td>
<td>Crenshaw, George, Philadelphia, Pa.—Stuffed Hamburg fowls, with their young. K 24. 635</td>
</tr>
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For locations of objects, indicated by letter and figure, see Key to Notation, p. 9; ground plan, p. 10.
Fish Culture and Apparatus, Animal and Vegetable Products.

120: Cook, L. C., Philadelphia, Pa.—
Trot rod and case. A 27. 647


121a McBride, Miss Sarah J., Mummoford, Pa.—Artificial flies for fishing. A 19. 647

122: City of Gloucester, Essex Co., Mass.—
Exhibit of her progress, development, and industries as the largest fishing port in the United States. A and B 20 and 21. 647


125: Clarke, N. W., Northville, Mich.—Fishing apparatus. A 24. 648


126a Pacific Guano Co., Boston, Mass.—Aquarium with living fish. A and B 28. 648


Animal and Vegetable Products.


128a Sensenberger, Wm., Philadelphia, Pa.—Renovated J 17. 651


129: Napheyes, George C., & Son, Philadelphia, Pa.—Refined beef lard. K 20. 652

130: Chalmers, James, & Sons, Williamsville, N. Y.—Gelatine. K 22. 652

131: Wilcox, W. J., & Co., New York.—
Refined beef lard, hard starch, and hard oil. K 21. 652

132: Stein, Hirsh, & Co., Chicago, Ill.—
Egg albumen, blood albumen, casein and dried blood. J 22. 652


135: Upton, George, Boston, Mass.—
Glue in sheets, broken, ground, and powdered. K 20. 652


137: Lister Brothers, Newark, N. J.—
Glue, tallow, etc. C 25. 652

138: Cassard Bros. & Co., Baltimore.—
Refined lard. K 21. 652

138a Wahl Brothers, Chicago, III.—
Gelatine, neat's-foot oil, horns, hoofs, and bones. K 22. 652

138b Butchers' Slaughtering & Molding Association, Brighton, Mass.—
Steamed bones, horns, hoofs, etc. K 22. 652


138d Ward, N., & Co., Boston, Mass.—
Cattle bones, tallow, grease, hoofs, neat's-foot oil, etc. A 26. 652

138e Upton, Elijah W., Peabody, Mass.—
Glue. K 19. 652

139: Meriam Packing Co., Boston, Mass.—

a Hides, tallow, etc. 652

b Mess beef, concentrated roast beef, and canned turtle. 656

140: State of Oregon (collective exhibit), Portland, Oregon. E 22. 652

glue, condensed cider. 656

dried fruit. 652

2. Farina, and oatmeal. 657

140a Milligan & Higgins Glue Co., N. Y.—
Glue. K 19. 652


141: Mellen & Co., New York, N. Y.—
Renovated live-geese feathers. H 17. 653


142a Hurst, Lewis, Kewaneke, Ill.—
Fruit honey. J 24. 654

143: Fritsch, Joseph, Carlstadt, N. J.—
Sunbleached wax, and candles. J 23. 654

144: Lewis, W. K., & Brothers, Boston, Mass.—Canned vegetables, fruits, meats, and vegetables. J 22. 656


147: Atmore & Son, Philadelphia, Pa.—
Mince meat and English plum-pudding. J 24. 656


150: Anderson & Campbell, Camden, N. J.—Canned fruits, vegetables, fruit-butter, and mincemeat. J 24. 656

150a: Bigelow, John, Boston, Mass.—
Labeling machine. J 22. 656


150d: Armstrong, Herran M., & Co., Louisville, Ky.—Fork products K 22. 656


154: Wright, Joshua, & Son, Philadelphia, Pa.—Mincemeat. J 24. 656

155: Wilson Packing Co., Chicago, Ill.—
Hermetically sealed cooked meats; corned beef, ham, tongue, and fresh beef. J 23. 656


For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
DEPT. VI.—AGRICULTURE.

Animal and Vegetable Products.

157 Githens & Rexsamer, Philadelphia, Pa.—Canned fruits and vegetables. J 23. 656


160 Gordon & Dilworth, New York, N. Y.—Preserved domestic and foreign fruits, jellies, canned goods, sauces, syrups, and general table delicacies. J 23. 656

161 Chambers, Jos. M., Dover, Delaware.—Canned goods; dessert fruits a specialty. Strawberries, raspberries, cherries, pineapples, peaches, Bartlett pears, tomatoes, etc.

The location (Dover, Delaware) of this canning house gives the all-important advantages which are essential to ensure the superior quality and flavor of canned goods.

The fruit is allowed to fully mature on the trees before being picked, thereby securing a richness of flavor. As the fruit ripens it is carefully picked, pared by hand, and each piece carefully placed in the cans, filling them as full as possible not to mash or bruise the fruit, after which the cans are filled with heavy syrup made from the best granulated sugar.

No deleterious substances or patent preserving-powders used. All lovers of good desserts send for circular. I 24 and J 22. 656

162 Snedeker, David, New York, N. Y.—Preserved fruit, vegetables, meat, etc. I 24. 656


163b Annapolis Canning Co., Annapolis, Md.—Canned goods. J 23. 656

164 Richardson & Robbins, Dover, Del.—Canned and preserved fruits, potted meats, etc. J 24. 656

165 Fruit-Growers' Trade Co. of New Jersey, New York, N. Y.—Cranberries, natural and preserved, canned tomatoes, etc. D 24. 656

166 Clarkson, F. M., & Son, Bridgeville, Del.—Evaporated and canned fruits and vegetables. J 42. 656

167 Borden, John G., Brewwsters, New York, N. Y.—Canned milk, coffee, and cocoa, extract of beef, etc. J 22. 656


167c Greenfield, Nelson, New York, N. Y.—Flavors and coloring for confectionery. K 27. 656

167d Archdeacon, W., Chicago, Ill.—Preserves, preserves, jellies, sauces, and canned goods. J 22. 656


167f Selsor & Brother, Philadelphia, Pa.—Canned fruits and vegetables; catsup. J 25. 656

167g Farmers' Fruit Preserving Co. of Kent co., Del., Lebanon, Del.—Canned fruits and vegetables. J 24. 656

167h Smith, Wright, St. Louis, Mo.—Table sauce. J 20. 656


169 Flood, Wm. M., Philadelphia, Pa.—Munition in alcohol. A 27. 656


171 New York Desiccating Co., New York, N. Y.—Prepared coconuts for pies, cakes, etc. I 24. 656


172a Schepp, Leopold, New York, N. Y.—Desiccated coconuts. K 28. 656

172b Cook, J. W. & V., Portland, Oregon.—Canned salmon. J 25. 656


175 Little Creek Canning Co., Little Creek, Del.—Canned fruits and vegetables. J 23. 656

176 Jones, John Winslow, Portland, Maine.—Canned green corn, lobster, mackerel, salmon, and beef. B 24. 656

177 Cassard, Geo., Baltimore, Md.—Pepper hams. K 21. 656


180 La Croix, James, East Medway, Maine.—Canned vegetables, apples, etc. J 23. 656

181 Brooks, C. D., Boston, Mass.—Pickles, preserves, canned goods, etc. J 21. 656

182 MacGowan, John K., Philadelphia, Pa.—Table sauce. J 21. 656

182a King, William, Brooklyn, N. Y.—Table sauce. J 20. 656


182c Black & Krebs, Baltimore, Md.—Sugar-cured hams, refined lard. K 21. 656

183 Underwood, W., & Co., Boston, Mass.—Canned meats, fish, fruits, vegetables, etc.; pickles, catsups, sauces, etc. J 21. 656


185 Burnham & Morrill, Portland, Maine.—Canned meats, soups, fish, and vegetables. J 23. 656

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 10.
Hemp, grown.

Pickles, chow-chow, and sauces. Pickled meats, fish, etc., J 25.

Hams, shoulders, etc., J 25.

Hams, bacon, mess pork, and breakfast bacon. 15-16.

Lard-oil. Packers' lard-oil.

Miscellaneous

Animal and Vegetable Products.

Hemp, James, & Co., Cincinnati, Ohio.—Hams, bacon, mess pork, and breakfast bacon. 15-16.

Self-raising flour. Heckers' Superlative family flours, which received the First Premium at the World's Fair, London; and the World's Fair, New York. Very popular with those desiring "fine bread and biscuit as can be produced."

Heckers' Self-raising Flour, for Bread, Biscuit, Puddings, Cakes, etc., by adding only cold water or milk. This valuable improvement, introduced in 1850, by Heckers & Brother, was awarded the only Gold Medal given for Self-Raising Flour.

Hecker's Griddle Cake Self-Raising Flour. For Griddle Cakes, Muffins, Fritters, Waffles, Doughnuts, and for any use where a batter is required. Acid used in making Heckers' Self-Raising Flour.

Heckers' Farmina, a delicate and appropriate food for all seasons.

Heckers' Wheaten Grits, invaluable to dyspeptic and sedentary persons.


Baltimore Pearl Hominy Co., Baltimore, Md.—Breakfast hominy, meal, flour, samp, etc. J 28.

Deener, Cissel, & Welsh, Georgetown, D. C.—Flour. 1 95.

Ploch, James, Vincennes, Ind.—Flour. J 24.


Heaton, Edward, New Haven, Conn.—Granum. I and J 15.

Animal and Vegetable Products.

206c Baldwin, Homer, Youngstown, Ohio.—Flour. J 25. 657
206d Bedell & Conklin, Brooklyn, N. Y.—Meal, flour, hominy, etc. J 25. 657
206f Porter & Mowbray, Winona, Minn.—Flour. J 24. 657
206g Eisenmayer & Co., St. Louis, Mo.—Flour. J 25. 657
206h Thilenius, G. C., Cape Girardeau, Mo.—Flour. J 23. 657
208 Stuart & Douglas, Cedar Rapids, Iowa.—Oatmeal. J 22. 657
210 Kingsford, T., & Son, Oswego, N. Y.—Laundry starch, corn starch, etc. J 13-14. 658
212 Erkenbrecher, Andrew, Cincinnati, Ohio.—Starch, plain, perfumed, and flavored, St. Bernhard pure, refined pearl, wheaten, pulverized, "cornena" (copyrighted), corn flour for culinary purposes, "gloss sataena" (copyrighted) for laundry use. Manufacturer of perfumed and flavored starch. J 17, 18, 19. 658
213a Fox, George, Cincinnati, Ohio.—Starch. J 22. 658
213b Stone & Co., Chicago, Ill.—Zoline starch gloss. K 17. 658
214a Hutter, Robert, Philadelphia, Pa.—Grape sugar, etc. D 24. 659
215 Post, C. C., Burlington, Vt.—Maple sugar and syrup. C 24. 659
   a Beet sugar. 659
   b Peat. 660
216a McDonald, M. C., Philadelphia, Pa.—Crystal drips syrup. J 25. 659
216b New Hampshire State Centennial Board.—Sugar. E 20-21. 659
217a Agnew, Eisenbeis, & Co., Allegheny, Pa.—Table, pickling, and aromatic vinegars. H 28. 660
217c Hexamer, F. M., New Castle, N. Y.—Rum cider. K 13. 660
219 Hincke, Julius, Egg Harbor City, N. J.—Domestic wines. American grape wines, from Hincke's vineyards, all vintages since 1866, highly recommended for table use, as well as for invalids. K 12. 660
224 Sattler & Co., Baltimore, Md.—Whisky. K 18. 660
224a Speer, Alfred, Passaic, N. J.—Native wines. K 29. 660
224d Brecht, C. E., Philadelphia, Pa.—Wines and brandies. K 12. 660
224e Smith, Isaac, Centre Island, N. Y.—Apple wine. K 7. 660
224f White Elk Vineyards, Keokuk, Iowa.—Wines. K 16. 660
228 Poechel, M., & Scherer, Hermann, Mo.—Native wines. K 13. 660
229a Kohler & Frohling, San Francisco, Cal.—California wines and brandies. K 10-11. 660
230 Keller, J. S., Orwigsburg, Pa.—Wine and whisky. K 13. 660
231 Wehr, C. Werk, & Son, Middle Bass Island, Ohio.—Native wines. K 8. 660
233 Keller, M., Los Angeles, Cal.—Wines and brandies. K 7. 660
237 Beller, Jacob, Detroit, Mich.—Native grape wines, currant and elderberry wines. K 7. 660
240 Hughes, H. R., & M., Pittston, Pa.—Stock ale. K 16 and Brewers’ Building. 660

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 10.
Garden, Field and Flower Seeds,
Dutch Bulbous Roots, Summer Flowering Bulbs, Horticultural Implements,
REQUISITES FOR THE FARM AND GARDEN.

The Following Catalogues are published during the year, and will be mailed to all applicants on receipt of prices affixed. Regular Customers supplied gratis.

No. 1.—BLISS'S SEED CATALOGUE AND GUIDE TO THE FLOWER AND KITCHEN GARDEN. Contains upwards of 200 pages, with many beautiful illustrations, including splendid colored lithographs of favorite flowers and vegetables, and a descriptive list of upwards of two thousand varieties of flower and vegetable seeds. Also a list of upwards of one hundred varieties of French hybrid gladiolus, and other summer flowering bulbs, grapes, strawberries, raspberries, and other small fruits, etc. Price, including postage, 35 cents; an edition elegantly bound in muslin, $1.00.

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No. 3.—BLISS'S ILLUSTRATED POTATO CATALOGUE contains a descriptive list of all the new varieties recently introduced, with many other desirable sorts, also much useful information upon their cultivation. 32 pages, 10 cents.

No. 4.—BLISS'S BULB CATALOGUE. (Illustrated.) published September 1st, containing a choice collection of double and single hyacinths, arranged in their several colors; tulips, in many varieties, both double and single; polyanthus narcissus, crown imperials, jonquils, snow drops, lilies, etc. Price, 10 cents.

Address, B. K. BLISS & SONS,
P. O. Box No. 5712. 34 BARCLAY STREET, NEW YORK.

CHAS. G. BLATCHLEY, MANUFACTURER,
506 Commerce Street, Philadelphia.

Sizes, 3, 4, 6, 8, 12, 20, 30, 40 qt.
The closed head will save ice enough in one season to pay for the machine.
The Tub requires but one filling to freeze.

CHAS. G. BLATCHLEY, MANUFACTURER,
506 COMMERCE STREET, PHILADELPHIA.

At the Centennial Exhibition, Agricultural Hall, corner aisles 9 and 11, Column Letter O, No. 10.
The Philadelphia Lawn Mowers.

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<th>WIDTH</th>
<th>POWER</th>
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<th>WEIGHT</th>
<th>PRICE</th>
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<tr>
<td>10 inch</td>
<td>A Lady</td>
<td>26 lbs.</td>
<td>$15.00</td>
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<td>12 &quot;</td>
<td>&quot;</td>
<td>34 &quot;</td>
<td>18.00</td>
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<tr>
<td>14 &quot;</td>
<td>A Youth</td>
<td>37 &quot;</td>
<td>20.00</td>
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<tr>
<td>16 &quot;</td>
<td>One Man</td>
<td>41 &quot;</td>
<td>22.00</td>
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<td>18 &quot;</td>
<td>&quot;</td>
<td>46 &quot;</td>
<td>24.00</td>
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<tr>
<td>20 inch</td>
<td>One Man</td>
<td>30 lbs.</td>
<td>$26.00</td>
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<td>15 &quot;</td>
<td>&quot;</td>
<td>31 &quot;</td>
<td>22.00</td>
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<tr>
<td>16 &quot;</td>
<td>Light Horse</td>
<td>500 &quot;</td>
<td>90.00</td>
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<td>18 &quot;</td>
<td>&quot;</td>
<td>345 &quot;</td>
<td>110.00</td>
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These Lawn Mowers being but little over half the weight of the old style machines, they are far easier handled and very much lighter draft. They are on exhibition in Agricultural Hall, Columns L and 13 and 14.

Graham, Emlen & Passmore,
631 Market St., Philadelphia.

Biernatzki & Co., Hamburg, Germany.

European Agents.
Animal and Vegetable Products.

242 Naglee, H. M., San José, Cal.—Brandy. K 10. 660
243 Trommer Extract of Malt Co., Fremont, Ohio.—Extract of barley malt. K 18. 660
245 Levy, James, & Bro., 27 and 33 Sycamore street, Cincinnati, Ohio.—Bourbon and rye whiskies; specialty, Kentucky whiskies, both in bond and paid. K 16. 660
245a Lawrence, Daniel, & Sons, Boston, Mass.—Pum. K 13. 660
245b Le Franc, Charles, San José, Cal.—Wine and brandies. K 14. 660
248 Huck, John A., Chicago, Ill.—Wines. K 12. 660
249 Mahé, Gustave, San Francisco, Cal.—Golden wine. Extract from the report of the Committee of Industrial Exhibition of the Mechanics Institute, San Francisco, California: Mr. Mahé’s wine is made from what is called the Mission Grape, without any admixture of foreign grapes. It is singularly light and pure and has obtained the First Premium and only Medal awarded to the California Wine, at the Tenth Industrial Exhibition of the Mechanics’ Institute, San Francisco. Mr. Mahé’s property consists of about one hundred acres, forty-five of which are planted with vines. Of the seventy thousand feet of vineyard, twelve thousand are in vines nine years old, eight thousand five years old, thirty-five thousand in their fourth year, and the remaining fifteen thousand are three years old. Mr. Mahé estimates that when these vines are in full bearing (which will be in two or three years’ time), they will yield an average of from thirty to thirty-five thousand gallons of wine. In 1874 eighteen thousand feet in bearing yielded eight thousand five hundred gallons. The whole vineyard is planted with the grape known as the California Mission. The cellars, which are two and three floors deep, have a capacity of a hundred thousand gallons in casks and bottles together. The wine is to be kept in the cellar at least three years, that length of time being necessary to give it the greatest part of its valuable qualities, and Mr. Mahé intends to give it to the consumer in glass only, that he may be satisfied it cannot be used in any but its natural pure state.

"At the vintage, which is always in October, from the 15th to the 30th, the grapes, as soon as they have been gathered and brought to the press, are stripped from the stems. The stems are carefully thrown aside, and the grapes fall from the stripping machine into a mill, which breaks the grape without crushing the seeds. From this mill the broken grapes fall on the press, from which the juice passes directly through India-rubber pipes into the casks, and is drawn off three times: the first year, twice the second year, and once only the third year; and always in January. The third year the wine is bottled in the month of February, and is not offered for use till six months later, about September." The pulp and solid part of the grape left in the press are subjected to the action of a hydraulic press of sixty thousand pounds’ force worked easily by one man. The distillation of the Golden Wine should be the following: one cent of alcohol to the gallon; vintage of 1869, 12 per cent; vintage of 1870, 11 per cent; vintage of 1871, 11¼ per cent. It contains, therefore, the same proportion of alcohol as the wines of Bordeaux."

In order to enable the visitors to the Exhibition to appreciate the qualities of the wine of California, we have established in Agricultural Hall, near our exhibit, at the north entrance, a buffet, where an excellent lunch, including a half bottle of Golden Wine, will be daily served up, at the price of one dollar. Our fellow-citizens and our foreign friends are respectfully invited to honor us with a call. L. PONTON de ARCE, Manager. K 14. 660

250 Steuben County Vineyard Association, Bath, N. Y.—Native grape wine and brandy. K 12. 660
251 Criqui, Joseph, Newark, N. J.—Wine. K 9. 660
252 Kelley’s Island Wine Co., Kelley’s Island, Ohio.—Champagnes and claret wines, etc.; Catawba brandy. K 11. 660
254b Miller, George, & Sons, Philadelphia, Pa.—Confectionery. K 25. 661
259 Croft, Wilbur, & Co., Philadelphia, Pa.—Confectionery, lozenges, glace fruit, etc. K 26. 661
260 Morse, G. Byron, Philadelphia, Pa.—Plain and fancy cakes, milk and cream biscuits, rolls, buns, pastry, etc. K 50. 661
262 Hartman, John, Philadelphia, Pa.—Crackers, cakes, and biscuits. K 24. 661
263 Weaver, J. R., Philadelphia, Pa.—Confectionery. K 27. 661

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

266 Greensfeld & Strauss, Confectioners, 63 Barclay street, New York, N. Y.—Manufacturers of all kinds of confectionery, such as lozenges, pipe, gumdrops, con-work, creams, extra imperial, fine almonds, medicated lozenges, chocolates, and pistachio goods. Special attention given to the export trade. Goods packed for the South American market in glass and tins. Importers of and dealers in oils and materials for manufacturing confectionery. Manufacturers of XXX powdered sugar. Listas de precios en la lengua castellana a haber en la oficina & Nueva York. K 26. 661


268 Laurent, F., N. W. cor. Arch and Sixth sts., Philadelphia, Pa.—Confectionary and decorative ornaments for cakes. Manufacturer of fine confectionery and ornaments for decorating cakes, such as bride's, centre-pieces, flowers, roses, gum-paste leaves, etc. K 28. 661


270 Thorn & Brother, Trenton, N. J.—Crackers, butter, oyster, wine, and scroll biscuit. K 24. 661


272a Page, D. L., Philadelphia, Pa.—Candies. 661


273 Carrick, David, & Co., Philadelphia, Pa.—Crackers, cakes, ship-bread, etc. K 23. 661

274 Exton, Adam, & Co., Trenton, N. J.—Butter, oyster, and wine crackers. K 23. 661


276 Snider Bros. & Co., Cincinnati, Ohio.—Cream biscuit K 23. 661


278 Smith's Homeopathic Pharmacy, New York, N. Y.—Alkethreta, soluble chocolate, and chocolate confections. K 27. 661


Textile Substances of Vegetable or Animal Origin.

281 Murdock, Albert L., Boston, Mass.—Cotton from all countries. E 25. 665

281a Mohawk & Hudson Manufacturing Co., Waterford, N. Y.—Pressed cotton. S 8. 665

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6. ground plan, p. 10
Machines, Implements, and Processes of Manufacture.

296 Collins & Co., Hartford, Conn.—

Axes, hatchets, adzes, machetes, railway and mining tools, plows, etc. N 24. 670


298 Gibbs & Lee, New York, N. Y.—

Steam spader. M 24. 670

299 Hopkins, A. P., Bentleysville, Pa.—

Road-scrapers. C 21. 670

300 Kelsey, John, Yardleyville, Pa.—

Harrow and scraper. L 26. 670


302 Estes, William A., South Boston, Mass.—Plow, harrow, and stone truck. L 26. 670

303 Holland, Edward, Atlanta, Ga.—

Buggy-plow and cultivator. K 24. 670

304 Harper, Smith, Philadelphia, Pa.—

Steel hoes, rakes, etc. T 26. 670

305 Bean, H. & B. F., Pawling, Pa.—

Corn-marker, cultivator, grain and seed sower. N 19. 670


307 Peppler, Thomas, Hightstown, N. J.—Plow and cultivator. M 24. 670


309 Bucher, Gibbs, & Co., Canton, Ohio.—Plows on revolving tables representing "1796 and 1826." L 24. 670

310 Decker, P. H., Chicago, Ill.—

Hollow-tooth harrow, and roller mold-board plow. P 26. 670

311 Ward, Samuel B., Locust Mount, Va.—Plow, rake, etc. L 24. 670

312 Cooke & Foulke, Shelbyville, Ill.—

Cultivator. M 19. 670

313 Park, H. & H., Mt. Victory, Ohio.—

Fork, hoe, and broom handles. T 26. 670

314 Stuart & Kirkland, Jackson, Miss.—

Plows. N 24. 670

315 Michigan Double Stave Barrel Co., Charleston, Mich.—Barrels, etc. N 23. 670


317 Deere & Co., Moline, Ill.—Steel plows, gang and sulky plows, walking corn-cultivators. Q 24. 670

318 Morrison Brothers, Fort Madison, Iowa.—Self-clearing iron and wood beam plows. L 24. 670

319 Sheble & Fisher, Philadelphia, Pa.—

Hay and manure forks, rakes, potato-hooks, and manure-drags. S 25. 670

320 Wallace, Samuel J., Keokuk, Iowa.—

Straddle-row cultivator. L 26. 670

321 Miller & Wallace, Keokuk, Iowa.—

Texas plow. L 26. 670

322 Isaacs, Fred. H., Newark, N. J.—

Sub-muck plow. M 23. 670

323 Cotton, A. C., Wineland, N. J.—

Reversible scuffle-hoe. D 17. 670

324 Heydrick, W. H. H., Philadelphia, Pa.—Steam plow, and farm engine. L 23. 670


a Plow, cultivator, etc. 

b Corn-sheller, root-cutter, etc. 670

327 Brewster, Dodge, & Huse, Peru, Ill.—

Wheel corn-cultivator, steel plows for old ground and for breaking prairie-sod. Q 26. 670


329 Richmond Plow Works, Richmond, Ind.—Steel plows. L 25. 670


331 Laurence & Chapin, Kalamazoo, Mich.—Plows. M 24. 670

332 Muschert, B. F., Morrisville, Pa.—

Cultivator plow. M 23. 670

333 Strombeck, Charles W., Syracuse, N. Y.—Harrow. L 27. 670

334 Bidwell, J. C., Pittsburg, Pa.—

Plows, and steel castings. S 23. 670

335 Ellis, Minot, Greenfield, Mass.—

Swivel plows. L 24. 670

336 Feenders, Harm., Charles City, Iowa.—Clod-crusher. Q 12. 670


338 Lamborn, Lewis, Hamorton, Pa.—

Cultivator with attachment for eradication potato bugs. N 23. 670

339 Cagwin & Young, Joliet, Ill.—

Spading-plow. M 23. 670

340 Auburn M‘f’g Co., Auburn, N. Y.—Agricultural band implements. Intersection of aisle N 23 and main transept. 670

341 Rogers, C. B., Philadelphia, Pa.—

Cultivators, berry and fruit baskets. M 26. 670

342 Kroh, C. & P. G., Kroghville, Wis.—

Cultivator. M 24. 670


344 Michigan, Dubuque, Iowa.—

a Plows. 

b Power corn-shellers. 674

345 Benson, B. S., Baltimore, Md.—

Steam plow. N 9. 670


347 South Bend Iron Works, South Bend, Ind.—Chilled plows and attachments, specimens of chilled metal. P 26. 670

348 Hull, David H., Syracuse, N. Y.—

Machine for stripping and booking tobacco. M 22. 670

349 Brous, T. Miles, Philadelphia, Pa.—

Plows. M 24. 670

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12, 14.
DEPT. VI.—AGRICULTURE.

Machines, Implements, and Processes of Manufacture.


334 Binder & Schweiling, Mauch Chunk, Pa.—Adjustable corn-plow. L 23.


   a Horse wheat-hoe.
   b Seed-drill.


   a Gang plows and attachments, cultivators, harrows, and horse-hoes.
   b Seed-drills, planters, etc.

   a Plows, cultivators, harrows, and horse-hoes.
   b Seed-sowers.
   c Corn-sheller and separator.
   d Horizontal and vertical burr-stones, brick-machines, seed-hullers.


341 Avery, B. F., & Sons, Louisville, Ky.—Plows, cultivators, etc. N 25.


344 Harnish, Edward P., Felton, Del. L 22.
   a Cultivator.
   b Corn-planter.

   a Sulky-plow.
   b Mowing-machine.

346 Hutchinson, Samuel, Griggsville, Ill.—Adjustable harrow. P 28.


   a Plows and other agricultural implements.
   b Hay-cutters, corn-shellers, mills, presses, etc.
   c Churns.


351 Griffiths, George, Philadelphia, Pa.—Shovels, spades, handles, coal-hods, and pans. These goods are as produced at factory. We exhibit a spade used by Washington's army at Valley Forge. It was dug up by the late Rev. Dr. Brainerd. The handle replaced by one of style used at that date. T 27.


351b Orchard City Agricultural Works, Burlington, Iowa. P 26.
   a Plows.
   b Rakes.

351c Wayne Agricultural Company, Richmond, Ind. S 25.
   a Cultivators.
   b Drills.
   c Mowers and reapers.

351b Bowers & Stitzer, Hackettstown, N. J. L 11.
   a Seed-plow.
   b Churn worked by a dog.


353 Rowland, T., & Sons, Philadelphia, Pa.—Shovels and spades. T 17.


   a Sulky-plow.
   b Cotton-seed planter.

357 Bayliss, Edwin, Massillon, Ohio. O 17.
   a Wheel-harrow, iron cultivator, and shovel-plow.
   b Harvester.

   a Harrows.
   b Potato-planter and digger.

359 Brown, Hinman & Co., Columbus, Ohio. T 25.
   a Weeding-hoes, garden-rakes, manure and spading forks.
   b Scythe-snaths, grain-crades, hay-forks, etc.

   a Hand and horse cultivators.
   b Berry-crates.

   a Cast-steel hoes, rakes, and potato-hooks.
   b Hay and manure forks, scythe-snaths, etc.

   a Plow.
   b Corn-sheller.

   a Threshing-machine, dust-conveyor, and flail.
   b Self-acting hay-rake, mower, and reaper.
   c Sausage-cutter, stuffer, etc.

   a Plows and agricultural implements.
   b Corn-shellers, hay-spreaders, etc.
   c Cider-mills, meat-cutters, etc.

   a Plows, cultivators, hoes, shovels.
   b Mower, horse, and hand rakes.
   c Cotton-gin.
   d Milk-cooler.

   a Plows, cultivators, and tools for cultivation.
   b Seed-planter.
   c Threshing-machines, horse-powers.
   d Cotton-gins, steam-engines, and agricultural steels.

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 10.
Machines, Implements, and Processes of Manufacture.

Plows, harrows, rollers, clo-d-crushers, etc. 670

Hay-rakes. 672
c Corn-shellers. 673
cider and wine mills. 671

Hillborn, Buckman, & Co., New-
a Plows. 670
b Mower, horse-rake, etc. 672
c Corn-sheller. 673
c Fodder-cutter. 674

a Itasca or American wheel horse-rake. 670
c Centennial self-acting wheel horse-rake. 672
c Saratoga or New York wheel horse-rake. 672
c Clover-huller, or corn-sheller. 673
c Fodder-cutter. 674

Allen, S. L., & Co. No. 119 South Fourth st., Philadelphia, Pa.—Farm and garden tools. Manufacturers of that part of Mr. J. W. 
hand seed-drills and wheel-hoes. Also of improved horse-hoes and cultivators, insect fumigators, etc. M 20. 671

Farmers’ Friend Manufacturing Co., Dayton, Ohio.—Grain-drill and grass seed sower, grain-drill and broad-cast seed sower combined, grain-drill and fer-
tilizer combined. N 17. 671

Mast, P. P., & Co., Springfield, Ohio.—Grain-drills and seed-sowers, broadcast seeders and cultivator, riding or walking cultivator, and plow-sulk. M 17. 671

McSherry, D. E., & Co., Dayton, Ohio.—Grain and seed drills. We claim a positive force-feed, constructed in such a manner as not to allow any grain to pass the hopper, not carried out by the spiral wheel working inside of a cap or case underneath the hopper; provided with a patent washer, which prevents the grain from being broken, and causing a regular flow of seed. It is regulated by the change of cog-wheels, which is simple, durable, and making positive quantities. The quantities per acre are not raised by the roughness of the ground or the box being full or nearly empty. It has also been used successfully in drilling corn, beans, peas, etc. It is provided with a grass seed box, which can be used either front or rear of machine. An iron lifter bar is attached, which is strong, neat, and durable, by means of which the hoes are raised out of the ground, and at the same time throwing the whole machine out of gear. To the drill is attached a long hoe, iron drag-bars which can be changed from single to double rake, or vise versa. Bound to this is an iron shaft bar, which is held permanent by bolts, therefore not detracting from the strength of the frame. There is a light, strong frame, constructed with six pieces of timber, and with an iron axle running the whole width of it. It has a surveyor’s chart, that measures the ground actually sown. It has high wheels, broad tread. We also have a spring hoe, known as the Willoughby patent. Weight of drill about 453 pounds.

The Rice drill has a positive force-feed, constructed with a spiral wheel, provided with two washers or disks, one at each end of feed-wheel, working inside of cap or case underneath the hopper, causing a regular flow of seed. The quantity is regulated by change of cog-wheels, making it positive quantity. The frame is constructed of six pieces of timber, making it strong and durable. It is provided with a pair of shafts for one horse only. Has an iron axle running the whole width of frame. It has high wheels, broad tread, and weighs about 400 pounds.

Broad-cast seeders. This is a positive force-feed, constructed with a spiral wheel and flange, working inside cap, thereby causing a regular flow of seed, and only allows such grain to pass out as is carried by the wheel. The washers at the side of the wheel protect the grain from being broken or injured. The quantity is regulated by changing cog-wheels, making a positive quantity sown. The roughness of the ground or the box being full or nearly empty has no effect on the discharge of seed. It has six iron spouts for the grain to pass through and scatter in front of the hoes. Has twelve hoes, six on each side, and a bar. The points are hinged and are reversible; can be regulated to the depth desired. Has iron drag-bars, to which the hoes are attached. These be-
in side, shall be the main frame, with a hila-
bar attached to raise them out of the ground. It has a grass and flax seed at-
tachment, and has an iron axle running the whole width of the frame. Has high wheels, broad tread, and weighs about 450 pounds. M 13. 671

Campbell, J. & J. A., Harrison, Ohio.—Drill. M 23. 671


Claridge, John, Mt. Sterling, Ohio.—Corn and cotton-seed planter. M 17. 671

b Bresle-drill, corner-brace, saw-set, and lathe. 671

Apple-parer. 674


Selby, James, & Co., Peoria, Ill.—Corn-planter. M 22. 671

Beatty, Matthew O., Concord, N. C.—Cotton-planter, gunno-disposer, and cultivator combined. M 23. 671

Bickford & Huffman, Macedon, N. Y.—Grain-drill and attachments. L 18. 671

Last fall Bickford & Huffman were in-
vited by the chief of Centennial bureau to perform seeding of grain for the field trial to take place this year at Philadelphia. Seeding accomplished with following re-
seau by actual measurement of 4555 acres. Field to be sown with wheat 5 pecks to the acre. Quantity required 50 bushels 54 5/6 pounds; quantity sown, 57 bushels 27 5/6 pounds—an excess of only 2 5/6 bushels upon the entire field of 4555 acres, or less than 3 3/5 pound excess per acre. To account for which, if it need...
be accounted for, three headlands, upon which were lapped three tubes, were sown. This result was considered very satisfactory, and demonstrates the accuracy of the quantity-wheel. The fertilizer attachment, which has been transferred to the rear, is an improvement, and makes the distribution even and uniform. The machine is nicely balanced, and the weight removed from the horse's neck.

385 Hall, H. L., Chicago, Ill. — Combined seed-sower and cultivator. L 19. 671
386 Van deren Corn-Planter Co., Quincy, Ill.—Corn-planter. M 19. 671
387 Stokes, F. N., Urbana, Ohio — Planter, fertilizer, and pulverizer. K 18 and 19. 671
388 Cooper, Mark, Union, S. C.—Combined fertilizer, refiner, and seed-planter. N 22. 671
388a Bliss, B. K., & Sons, seedsmen, 34 Exchange St., New York, N. Y. — Randolph's hand seed-sower, for sowing all kinds of garden-seeds with accuracy and despatch, can be easily operated by a lady or child. Highly recommended by experienced gardeners and farmers. Its cost is trifling, compared with the advantages resulting from its use. The saving in time and seeds will undoubtedly repay the outlay in the planting of a single week. $1.25 each. Sent by mail, postpaid, to any address in the U. S. upon receipt of $1. 50. Randolph's fertilizer distributor, for distributing all kinds of concentrated fertilizers, ammoniates, guano, ashes, plaster, or chemical manures, without touching the material with the hands, a matter of some importance when caustic substances are used. One man can do the work of three by the ordinary method. Price, $5. B 26. 671
393 Crowell, J. B., & Co., Green Castle, Pa.—Grain, guano, and grass-seed drills. L 12. 671
394 Willoughby, James D., Philadelphia, Pa.—Grain-drill, with and without fertilizer attachment. L 22. 671
An excellent two-horse, two-esch row corn-planter; six chamber rotary drop; universal wrought-iron coupling; broad steel runners, woven wire open heel; simple in construction; certain in operation. Send for illustrated circular.
398 Rentchler, D. & H., Belleville, Ill. — Grain and seed drills. M 19. 671
399 Heamer, Andrew J., Pittsfield, Ill. — Hedges-trimmer. M 14. 671
400 Seymour, John B., Philadelphia, Pa.—Sow seed-planter. T 8. 671
401 Rutschen Bro's., Philadelphia, Pa., S 24. a Self-feeding hand-drill. 671 b Meat-chopper. 674
403 Esterly, George, & Son, White-water, Wis. P 30 and 21. a Cultivator and seeder combined. 671 b Harvester, self-raking reaper. 672
404 Brown, George W., Galesburg, Ill. L 19. a Corn-planter. 671 b Field corn-stalk cutter. 672
405 Goodell Co., Antrim, N. H. T 14. a Broadcast seed-sower. 671 b Apple-parters, peach-parters, cherry-stoners, etc. 674
406 Hagerstown Agricultural Implement Manufacturing Co., Hagerstown, Md. R and S 26. a Grain, seed, and fertilizing drills. 671 b Clover huffer and cleaner. 673 c Feed-cutter. 674
407 Willard Bros., Ithaca, N.Y. P 12. a Cultivator and grain-sower. 671 b Horse hay-rake. 677 c Portable engine. 671
408a Rank, Amos, & Co., Canton, Ohio — Mowers, reapers, etc. K 13. 67.
408c Johnston, Samuel, Brockport, N.Y. — Automatic harvesters and binders. T 13-14. 677
409 Eagle Mowing & Reaping Machine Co., Albany, N. Y.—Mowing and reaping machines. T 18. 672
411 Wood, Walter A., Hoosac Falls, N. Y. S and T 13-14. a Drillers. 672 b Mowers, reapers, harvesters, etc. 672
412 Warder, Mitchell, & Co., Springfield, Ohio.—Reapers and mowers. P 15. 672
413 Thomas, John H., & Sons, Springfield, Ohio.—Sulky-spring tooth hay-rake. L 15. 672

For locations of objects indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 10.
Machines, Implements, and Processes of Manufacture.

413 a Kelly, William E., New Brunswick, N. J.—Reciprocating screw mowing-machine. R 17. 672

413 b Chaplin, C. H., Tecumseh, Mich.—Reaper. L 14. 672

413 c Schenck, P. C., Jr., Neshanic, N. J.—Mower and reaper. K 15. 672

413 d Wells, French, & Co., Chicago, Ill.—Potato-digger. R 24. 672

413 e Whiton, David E., West Stafford, Conn.—Mowing-machine. K 14. 672

413 f Mills, Peck, & Co., Otsego, Mich.—Field and garden hoes. R 23. 672

413 g Whitley, Fassler, & Kelly, Springfield, Ohio.—Reapers and mowers. O 15 and 16. 726

413 h Prout, H. N., Westfield, Mass.—Adjustable hoeing-machine. Q 28. 672

413 i Ohmer, Augustus J., Hamilton, Ohio.—Hand mowing-machines. M 13. 672

413 j Wood, John, Dayton, Ohio.—Sulky horse hay-rakes. M 15. 672

413 k Barnes, George, & Co., Syracuse, N. Y.—Mower-knives, reaper-sickles, spring keys, and cutters. M 15. 672

413 l Taylor, B. C., Dayton, Ohio.—Wheel horse hay and grain rake. L 14. 672

413 m Coates, A. W., Alliance, Ohio.—Lock-lever horse hay-rake. L 15. 672

413 n Whittemore Bros., Boston, Mass.—Hay-rake and feed-cutter. L 20. 672

413 o Chadburn & Coldwell, Newburgh, N. Y.—Lawn-mower; smoked-beef cutter. N 13. 672

413 p Wisner, J. E., Friendship, N. Y.—Self-discharging rake. M 14. 672

413 q Converse, Bolivar C., Springfield, Ohio.—Reaping-machine. R 16. 672

413 r Eagle Company, Riverton, Conn.—Grain, grass, and bush sickles, grass-hooks, corn and hay knives. T 25. 672

413 s Huber Manufacturing Co., Marion, Ohio.—Revolving hay-rake. L 16. 672

413 t Dutton, R., Yorkers, N. Y.—Reaping and mowing machine. R 25. 672

413 u Rochester Agricultural Works, Rochester, N. Y.—Reapers and mowers. T 14. 672

413 v Seiberling, J. F., Akron, Ohio.—Mower and attachments. Q 14. 672

413 w Whitman & Miles Manufacturing Co., Akron, Ohio.—Mowing and reaping machine knives, sickles, and sections. T 13. 672

413 x Aultman, Miller, & Co., Akron, Ohio.—Mower with table-rake reaper. Q 15. 672

413 y Roche, John S., Cuylerville, N. Y.—Reapers. Q 25. 672

413 z Gordon, James F., Rochester, N. Y.—Self-binding harvester. P 17. 672

413 a Spunk, James L., & Co., Minneapolis, Minn.—Mowers and reapers. Q 14. 672

413 b Bellaire Manufacturing Co., Belle- laire, Ohio.—Mower and reaper. P 52. 672

413 c Russell, C., & Co., Canton, Ohio.—Self-raker, reaper, and mower combined, single mower. R 14. 672

413 d Tschop, Albert, Harrisburg, Pa.—Self-dumping wheel hay-rake. L 15. 672

413 e Hewitt, John C., Pennsgrove, N. J.—Potato-digger. M 16. 672


413 g Haynes, W. H., North Sudbury, Mass.—Hay-elevator. M 21. 672

413 h Graham, Emlen, & Passmore Philadelphia, Pa.—Lawn-mower. L 11 and 14. 672


413 j Field & Carpenter, Port Chester, N. Y.—Self-discharging hay-rake. L 15. 672

413 k Ball, Samuel, Cogan's Station, Pa.—Grain-craddle. L 22. 672

413 l Strait, H., Troy, N. Y.—Potato-digger. O 26. 672

413 m Long, Allstatte, & Co., Hamilton, Ohio.—Rake, knives, sickles, mower, etc. 672

413 n Fodder-cutter. 674

413 o Clegg, Wood, & Co., Dayton, Ohio.—Self-discharging hay-rake. L 15. 672

413 p Hills' Archimedean Lawn-Mower Co., Hartford, Conn.—Lawn-mowers. N 13. 672

413 q Norton, James, Hightstown, N. J.—Potato-digger, and Rigg's patent gang-plow, for cultivating corn, cotton, potatoes, etc., manufactured by Wyckoff & McDonald, Hightstown, N. J. M 16. 672

413 r Fisher, Henry, Canton, Ohio, U. S. A.—Patent prairie-mower knife-grinders, for sharpening harvester-knives; patent farm and plantation bells; patent ladles, hay-knives, harvester-knives, sections, etc. Illustrated descriptive circulars sent free upon application. T 24. 672

413 s Gibbs & Sterrett Manufacturing Co., Corry, Pa.—Mower and attachments hay-conveyor. Q 17 and 18. 672


413 u Pennock Manufacturing Co., Kennett Square, Pa.—Corn-sheller and hay-fork. Q 12. 672

413 v Wright, James W., Minneapolis, Minn.—Grain-harvester and binder. N 22. 672

413 w Superior Mower & Reaper Works, A. J. N., Newbury & Son, Proprietors, Wheeling, W. Va.—Mowing-chine without cog-wheels or shafts; a worm-wheel or the axle drives a double-threaded steel screw, which directly operates the knife. P 16. 672


For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Machines, Implements, and Processes of Manufacture.

451 Norwalk Lawn-Mower Co., Norwalk, Conn.—Lawn-mowers. M 14. 672
452 Chapman Binder Co., Rochester, Minn.—Reaper and binder. T 17. 672
453 Towanda Eureka Mower Co., Towanda, Pa.—Mower and reaper. Q 19. 672
455 Perry, Stuart, Newport, N. Y.—Hay-tedder. M 15. 672
458 Mayo, M. C., Boston, Mass.—Mowing-machine. T 19. 672
459 Nye, S. R., Winchendon, Mass.—Horse-rake. The peculiarities of the S. R. Nye and Improved Boy State Rake are: 1st. The peculiar shape of the teeth, those at each end being brought forward of those in the centre, which prevents the hay from scattering or roping out. This is particularly advantageous when working on a side, hill, or gleening. 2d. Also the manner of holding each tooth in its proper position laterally by what is called the guide, which prevents them from flopping about. 3d. Each tooth is independent of all others, thereby enabling it to pass over an obstruction twenty inches high without in the least affecting the teeth next to the side of it. 4th. The dumping arrangement, whereby any boy or girl who can drive a horse can rake as well as a man, as it is dumped entirely by the power of the horse. 5th. This rake has been submitted to some of the best mechanical talent in the country, who have pronounced it, with these improvements, to be simple and durable, having the unqualified approbation of farmers everywhere. 4000 of these rakes will be manufactured for the harvest of 1876. L 15. 672
460 Treman, Valentine, & Green, Ithaca, N. Y.—Corn sheller and hoe. L 27. 672
461 Maule, James S., Lewisburg, Pa.—Mower and automatic reaper. S 17. 672
462 Ithaca Agricultural Works, Ithaca, N. Y.—Wheel-rake and attachments. N 15. 672
463 Holt, Hiram, & Co., East Wilton, Me.—Grass and bush scythes, hay-knives, etc. T 25. 672
464 Read, C. A., Bridgeport, Conn.—Lawn-mower. M 14. 672
466 Goodwin, William F., Stelton, N. J.—Mowing and reaping machine. Q 13. 672
467 Kenyon Brothers, Caroline, Pa.—Potato-digger. M 15. 672
468 Mann, H. F., Pittsburg, Pa.—Hay-vesting and mowing machine. S and T. 672
469 Gammon & Deering, Chicago, Ill.—Harvester, automatic binder, wind-mill. No class of farm machinery has undergone so many valuable changes by way of improvements during the past forty-three years as the reapers, mowers, and harvesters. This reaper is protected by the patent secured by C. W. & W. W. Marsh, which saves the labor and annoyance of three men in binding the grain as it comes from the machine. In the Western and Middle States, where the grain is grown most extensively, the Marsh reaper is sold in great quantities. The Marsh harvester, which is popularly known in the West as the King of the Harvest Field, combines the essential features of simplicity, utility, durability, and lightness of draft. As it is the original of the harvester class, which has so completely revolutionized the trade in nearly all classes of these machines, it is but fair to say that the proprietors, who have made this machine such a wonderful success, have spared neither pains nor money in adding from year to year the many improvements so well known in its mechanism and general appearance. The Marsh harvester is a light machine, only weighing 800 pounds. It is made of the best material, all the timber used being seasoned or less, and, in every way, is so well made that the novel form of the automatic binder, which the inventors have been for several years in perfecting, is acknowledged by experienced mechanics a good and highly valuable addition. While the inventors do not claim for this form of binder perfection, they do claim that the present one works very satisfactorily. A large number are in use in the West and Southwest; and from the numerous testimonials from farmers and local committees appointed to test their merits, there can be no question that the binder is a valuable and fast becoming in general use. The harvester, together with the automatic binder, is in all respects first class, as it works almost to perfection, binds the bundles tight, and does not leave the straw unbound upon the field. It reduces the labor of harvesting to the very minimum, shortens the time in completing the work, is in no way complicated, is not likely to get out of order, and one trial convinces those desiring to purchase a first-class machine. It is labor-saving, manifestly popular, does clean, economical work, has been fully tested, embodies the improvements of many years, and its work will pay for it in a short time, reducing as it does the cost of harvesting to the farmer. O 20 and 21. 672
470 Handy Horse Hay-Fork Co., Conneautsville, Pa.—Hand horse hay-fork. L 22. 672
471 Otis Brothers & Co., New York, N. Y.—Mowing-machine. 672
472 Harrison Manufacturing Co., Lansing, Mich.—Rubber-lined knife-head for reapers and mowers. T 17. 672

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 10.
Machines, Implements, and Processes of Manufacture.

473 Champion Machine Co., Springfield, Ohio.—Reapers, mowers, rakers, and dropers. Q 15. 672
474 Hanes, John, Moorestown, N. J.—Corn-sheller. T 23. 672
475 Lewis, James H., Detroit, Mich.—Potato-digger. N 15. 672
476 Richardson Manufacturing Co., Worcester, Mass.—Combined mower and reaper, hay-tedder, etc. M 14. 672
478 Collyer, Robert H., Chicago, Ill.—Flax machinery. S 10. 672
479 Lee, James, Jr., Stonersville, Berks Co., Pa.—Hay-tedder with cr without rake. Merit: superior manner in which it turns the hay. L 15. 672
481 Gulick, Edwin, New Brunswick, N. J.—Safety-seat for harvesters and mowers. T 8. 672
483 Vermont Farm Machine Co., Belows Falls, Vt.—Gleaner, horse, hay, and grain rake. K 15. 672
484 Dunn Edge Tool Co., West Water ville, Me.—Scythe, axes, grass-hooks, hay, straw, and corn knives. R 24. 672
485 Riggs, M. B., Palmyra, N. Y.—Potato-digger. L 26. 672
488 Stevens, Ansel, Gorham, Maine.—Mower. T 21. 672
487 McMenery, John, Lexington, Ky.—Reaper and mower. P 17. 672
488 McPherson, D., California, N. Y.—Automatic grain-binder. K 17. 672
499 Patrons' Manufacturing Association, Indianapolis, Ind.—Direct draft mower. L 25. 672
491 Stratton & Cullum, Meadville, Pa.—Table-loading machines. S 25. 673
492 Sandwich Manufacturing Co., Sandwich, Ill. a Harvester. 672 b Self-feeding corn-sheller. 674
The Adams and French harvester differs from other riding and binding machines in not using canvas or belts, and cuts and elevates grain, wet, green, or dry. There are many good reasons why this rice binder is considered by experienced mechanics and farmers to possess many excellences, which have been recently added in the various improvements, some of them being entirely new, giving it very decided advantages. First, it uses no canvas or belts; the vibrating rakes carry the grain uniformly, evenly, and with great accuracy. Second, the raking apparatus is peculiarly constructed, so that it cannot be affected by weeds or dampness; and if this feature the farmer will recognize. Third, it has capacity for three sheaves when time presses; this capacity is of very great importance, as time is money, especially in the Western States, where this machine is mostly sold. It is manufactured in Sandwich, Ill., and principally sold in Kansas, Nebraska, Illinois, Missouri, Iowa, and Oregon. The Adams patent self-feeding power corn binder, known as picker-wheel machine, is a strictly automatic corn-shelling machine. The corn is shelled from the cob in much the same way it would be done by hand, and without subjecting the ears to undue pressure. In consequence of which the cobs are not broken and mixed with the grain and the kernels are not cracked and ground. The annual production of the corn is immense; and to properly and expeditiously prepare it for our market is a herculean task, but, aided by these thorough and cleaning shellers, the corn is rapidly made ready, and is in the best possible condition, the quality of the work being above just criticism. To this is added the adaptability of the machines to all qualities of corn, frosted, sound, or soft, and performing a great amount of work in a given time, with a given power, leaving the cob whole, suitable for fuel when needed, and the corn perfectly clean. The self-feeding is a matter of much labor and considerable expense, and commends the machine wherever introduced. The farmers' shelter is a compact little machine, but cannot take the place of the self-feeders, being designed for individual use, avoiding the delays of making use of self-feeders, often owned by a number, who are compelled to wait one on another. S and T 20-21.
493 Rue, George W., Hamilton, Ohio. N 15
a Garden-cultivator. 670 b Potato-digger. 671
495 Pritz & Sons, Dayton, Ohio. a Grain-drill. 670 b Field-roller. 671 c Self-raking reaper and mower. 672 The Centennial Dorsey self-raking reaper and mower, combined with corn binder, grain binder, and straw binder, have added to this reaper a perfect controllable self-rake, and one that can be operated by the driver to rake off at will, or the sheaf can be held as long as desired.
The "Centennial Dorsey" will be made with five rakes, either of which can be made to rake the sheaf or act as a reel, as the driver may see fit. The reel, when left alone, will make one sheaf every revolution of the rakes, but the driver can instantly and very easily make any rake make a sheaf. In heavy grain a sheaf of six to eight sheaves can be made of any size, from three to five sheaves in every sixteen feet of ground gone over, and in light grain the rakes can be held until the proper amount of sheaves have been made. The Centennial Dorsey raking machine being under the control of the driver, any size sheaf can be made. This reaper is strong and durable; has no side slippage; has rear weight on the rakes and drive-wheel; is easily managed, being entirely automatic and under the control of the driver. S and T 20-21.
a Marking and hay-rakes. 672 b Threshing-machine and clover-mill. 673 c Portable steam-engine, portable saw-mill, and hay-cutters. 674
For classes of exhibits, indicated by numbers at end of entries, see Classification, pp 12-14.
DEPT. VI.—AGRICULTURE.

Machines, Implements, and Processes of Manufacture.

a Burt's Union horse-power. The pivots and axes are all hardened and durable. Large truck wheels, and runs easy and at low elevation. Lawn mower, recent invention. 672  
b Rocking saw-table, pendulum-balanced, rapid and safe, for sawing cord-wood. Wood-splitter, cheap, simple, and efficient. 674

a Rack. 672  
b Corn-sheller, stalk-cutter, hand-saw-mill. 674  
c Churn. 675

498 Richardson, William H., Philadelphia, Pa.—Corn-husking machine, machine for cutting standing corn and husking. T 22. 673

499 Pitts, H. A., Sons, Manufacturing Co., Chicago, Ill.—Thresher, separator, and cleaner, horse-power. S 19. 673

500 New Era Manufacturing Co., Elmwood, Ill.—Grain-grader, grain-separator, smut ball extractor, scrouger, and wheat-brush machine. K 23. 673


502 Keller, Henry, Sank Centre, Minn.—Farm mills. T 25. 673

503 Kibler, N., Pittsfield, Ill.—Farm mills. M 25. 673

504 Freeman & Clark, Racine, Wis.—Farm mill; grain and seed separator. F 28. 673

505 Birdsell Manufacturing Co., South Bend, Ind.—Thresher, cleaner, huller, etc. L 18. 673

506 Ellis, Hoffman, & Co., Pottstown, Pa.—Endless chain horse-power threshers and cleaners. L 11-12. 673

507 Lidy, Geo. F., & Co., Waynesboro, Pa.—Fanning-mill, grain and seed separator. T 26. 673


509 Brayley, James, Buffalo, N. Y.—Threshing-machine and double pinion horse-power. T 7 and 8. 673

a Grain-drill and shovels. 671  
b Grain-fan and seed-separator. 673

511 Case, J. L., & Co., Racine, Wis.—Threshing-machine. T 9. 673

512 Tubbs, Hoyt, Osceola, Pa.—Grain separator and cleaner, separator and sifting-mill. S 8. 673

513 PIERPONT, Wm., Salem, N. J.—Threshing-machine with grain and seed separator. S 7. 673

514 Stone, Sarah M., & Porter, Samuel G., Lancaster, Pa.—Grain-fan. T 27. 673

a Horse-power, threshers and cleaners, threshers and shaker, cutting boxes. 673  
b Corn-shellers. 674


517 HEBNER & Sons, Lansdale, Pa.—Horse-powers, separators, cleaners, etc. S 7. 673

507 Cartrite, Barnard, Norwalk, Ohio.—Fanning-mill, box of grain and fixtures. T 28. 673

508 Kenosha Fanning-Mill Co., Kenosha, Wis.—Fanning-mill. S 28. 673

509 Miller, A. S., Republic, Ohio.—Fruit-ladder. T 23. 673


511 Spence, L. Martin's Ferry, Ohio.—Thresher and cleaner, double cleaners, horse-power, etc. O 8. 673

512 Brown Cotton Gin Co., New London, Conn.—Cotton gin with feeder and condenser; presses. P 21 and Q 12. 673

513 Nichols, Shepard, & Co., Battle Creek, Mich.—Grain-thresher, separator, and cleaner. K 7 and 8. 673

514 Kenyon, Silas R., Newark, N. J.—Corn-husking machine. S 26. 673


516 Cockle Separator Manufacturing Co., Millwaukee, Wis.—Separating machines. Q 11. 673

517 Hagerstown Steam Engine and Machine Co., Hagerstown, Md.—Grain threshing, separating, cleaning, and bagging machine. K 26. 673

518 Harder, Minard, Cobleskill, N. Y.—Railway horse-power, thresher and cleaner, model of railway horse-power. M 7. 673

The two Grand Gold Medals were awarded Harder's two-horse-power, and thresher and cleaner, at the great National Implement Trial, Auburn, N. Y., for "slow and easy movement of the horses, fifteen rods less than one and one-half miles' travel per hour; thorough and conscientious workmanship and material in every place; nothing slighted; mechanical execution of the very best kind," as shown by official report of Judges, distributed at column M 7, Agricultural Hall, International Exhibition.

519 New Hampshire State Centennial Exposition, E 50-51.  
a Agricultural implements. 673  
b Freezers. 675

518 Read, Calvin D., & Ellis D., Ayer, Mass.—Corn-sheller. N 22. 673

519a Wakeman, R., Port Deposit, Md.—Hay or cotton press. M 10 and 11. 673

519b Scaggertord, H. V., Philadelphia, Pa.—Cotton-gin and feeder. L 14. 673

519c Basset, Nathan, Philadelphia, Pa.—Fanning-machines. T 23. 673


519f Cardwell, J. W., & Co., Richmond, Va.—Rice-thresher. K 7. 673

519g Jones, John A., Mt. Pleasant, Del.—Potato-assorter. L 27. 673

519h Shooter, Buckwater, & Co., Royers Ford, Pa.—Horse-power and threshing-machine. K 10-11. 673

520 KAHNWEILER, David, New York, N. Y.—Cotton-seed huller. S 11. 673

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 10.
Machines, Implements, and Processes of Manufacture.

521 Judkins, Mark D., Osasko, Minn.—Self-sucking grain-separator. T 8. 673
523 Westinghouse, G., & Co., Scheneec-
tady, N. Y.—Grain-threshing machine. T 23. 673
The exhibitor claims these advantages: a complete cylinder and concave, no
loosening of teeth, unusual separating capacity, and perfect cleaning apparatus.
524 Pumphrey, W. F., Fairfield, Iowa.—
Wheat-threshing and grain-separator. S 7. 673
525 Ward, O. K., & Co., West Chazy,
N. Y.—Grain and seed separator and
fanning-mill combined. T 28, wall. 673
526 Silver & Deming Manufacturing
Co., Salem, Ohio. Q 23.
a Endless chain, two horse-power, for gen-
eral purposes.
b Drag sawing-machine, feed-cutters, etc.
527 Gaar, Scott, & Co., Richmond, Ind.
Q 9.
a Grain thrasher, separator, and cleaner. 673
b Portable farm-engine. 674
528 Manley, Almon D., Washington,
Mich. R 9 and Q 9. 673
Mounted railway tread-power and circular
wood-saw. Notable features of power,
centre balance, elevation easily varied
when running, wrought chain, no cogs,
centre roller drive, motion controlled by
Govemor, runs steady with belt off, least
traverse wheels, remarkable durability,
greatest power at given elevation, never
removed from track—steam engine. 674
529 Blymyer Manufacturing Co., Cin-
cinnati, Ohio. M and N 8. 673
a Thresher and cleaner, corn-cob crushers,
etc. 673
b Cane-mills, steam-engine, sugar-evapora-
tor, etc. 674
529a Wagoner, Elijah, Westminster,
Md.—Feed-cutter and masticator. S 7.
530 Evans & Baird, West Chester, Pa.
7 7.673
a Horse-railway power and thrasher. 673
b Dairy churn and power. 675
531 Rankin Manufacturing Co., Og-
ghenay, Pa.—Hand and power meat-chop-
pers, sausage-stuffers, portable engines,
etc. L 12. 674
532 Post, C. C., Burlington, Vt.—Imple-
ments for making maple sugar. C 24. 674
533 Sclocum, W. H., & Bro., Philadel-
phia, Pa.—Apple-parer and corer, meat-
cutter, raisin and currant cleaner. 23.
24. 674
533a Hughes, H. D., Radnor, Pa.—
Flour barrel. A 22. 674
533b Evans, Wm. F., Malvern, Pa.—
Wheat-feeder, oscillating engine, etc. J
25. 674
533c Mosher, A. J., Portland, Me.—Bag-
holder. A 27. 674
533d Best, John, Lancaster, Pa.—Agricul-
tural engines. K 8. 674
533e Branden Manufacturing Co., Bran-
den, Vt.—Howe scales. F 23. 674
533f Frederick, L. W., Hall, Ind.—
Wagon. S 23. 674
533g Fairbanks & Ewing, 715 Chestnut
St., Philadelphia, Pa.—Scales (manu-
facturers, E. and T. Fairbanks & Co.,
St. Johnsbury, Vermont), railroad track
weigh-lock, hay, coal, platform, and coun-
ter scales of all descriptions, fine gold
and druggists' scales; also improved test-
ing-machines for ascertaining the strength
drugs, etc. Principal warehouses: Bos-
on, New York, Philadelphia, Balti-
more, New Orleans, San Francisco, St.
Louis, Chicago, Louisville, Cincinnati
Cleveland, Buffalo, Pittsburg, Albany,
Montreal, and London. L 24. 674
—Automatic incubator for hatching eggs. B 23. 674
533i Cooper, J. G., Scranton, Pa.—
Wagon-spring brake. S 26. 674
533j Donner & Suhl, San Francisco,
Cal.—Hay and stalk cutter. M 23. 674
533k Skinner & Wood, Erie, Pa.—Boiler
and engine. K 8. 674
533l Chandler & Taylor, Indianapolis,
Ind.—Farm-engine and saw-mill. R 11
and 12. 674
534 Boyer, Wm. L., & Bro., Philadel-
phia, Pa.—Farm grist-mills, railway
horse-power, feed-cutter, lawn-mowers,
saw-table, broom-winder. R 24. 674
535 Nittinger, A. jr., & Son, Philadel-
phia, Pa.—Butchers' machinery, tools,
and supplies. T 24. 674
536 J. C. Hoadley Co., Lawrence, Mass.
—Portable steam-engines. L 7. 674
537 Empire Portable Forge Co., Troy,
N. Y.—Portable fan-blowing forge
farms. T 22. 674
537a Lee, E. S., & Co., Rochester, N. Y.
—Tree pruner. Q and R 23. 674
537b West Grove Manufacturing Co.
West Grove, Pa.—Liquid atomizer. N
10. 674
537c Wharry, John R., Moundsville,
West Va.—Vegetable and fruit slicer. N
21. 674
538 Ross, John, Williamsburg, N. Y.—
Grain-mills, paint and drug mills, etc. R
23. 674
539 Hotspiller & Co., Springfield,
Ohio.—Hominy-mill. M 21. 674
540 Corbett, A., Hicksville, N. Y.—
Poultry incubator. C 24. 674
540a Bergner, George, & Co., Wash-
ington, Ill.—Apple and peach parer, ap-
ple corer and slicer. R 28. 674
540b Smith, John M., & Sons, Philadel-
phia, Pa.—Cedar water-tank, Scotch
mashing-machine, valve for brewers and
malt-houses. M 12. 674
541 Vanderbilt, Henry S.,Washington,
D. C.—Lifting-jack. 1 17. 674
541a Stoddart, J. C., Lockport, N. Y.—
Steam calliope. (East end of Main Tran-
sport.) 674
542 Dederick, P. K., & Co., Albany,
N. Y.—Hay and cotton presses, bale-tie
machines, coal-tubs, dumping-car, brick
and tile machine, etc. Q 10. 674

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
DEPT. VI.—AGRICULTURE.

Machines, Implements, and Processes of Manufacture.

544 Furst & Bradley Manufacturing Co., Chicago, Ill.—Plows, harrows, hay-rakes, etc. Breaking and old-ground plows, sulky or riding plows, gang-plows, corn-cultivators, sulky hay-rakes, etc. Q 25. 674


546 Munson Brothers, Utica, N. Y.—Wheat-flouring and corn-grinding portable mill, millstone eye, spindles, and oil-tight bush. R 24. 674


548 Sandusky Machine & Agricultural Works, Sandusky, Ohio.—Cylinder corn-sheller. M 16. 674

549 Lombard, Daniel, Boston, Mass.—Rice and coffee cleaning mortars, coffee-shelling machine. P 23. 674

550 Dickey, A. P., Racine, Wis.—Fanning-mills, for cleaning all kinds of grain, perfectly separating all foul substances; also grades the grain, putting best out at the side of the fan, and balance in front; will clean and separates all kinds of seeds; will pay for itself in one season’s use. Send for catalogue and prices. T 27. 674

550a Munsell & Dexter, Elizabeth, N. J.—Lifting-jack. I 28. 674

551 Toll, Chas. H., Schenectady, N. Y.—Brooms. H 15. 674

552 Mansfield Machine Works, Mansfield, Ohio.—Mounted portable steam-engine. P 8. 674

553 Mitchell, J. E., Philadelphia, Pa.—Farmers’ grindstones, mounted, mowcr, knife-grinders, scythe and whetstones; grindstone of 1776. N 20. 674

554 Hazard, Thomas, Wilmington, Ohio.—Saw-cutters. O 22. 674

555 Bruner, M., jr., Fremont, Ohio.—Combination press. R 17 and 18. 674

557 Bailey Wringing-Machine Co., 99 Chambers st., New York, N. Y., American meat and vegetable choppers, for use of families, hotels, and butchers. More than 60,000 now in use. S 24. 674

558 Bushfield, W. H., Jersey City, N. J.—Dried-beet cutter. S 23. 674

559 Whitemore, D. H., Worcester, Mass.—Apple parer and slicer, meat-cutter, etc. N 22. 674

560 Foster, Calvin A., Fitchburg, Mass.—Meat-chopper and apple-parer. S 7. 674

560a Nevins, Wm., Titusville, Pa.—Combined machine for marking, ridging, planting, etc.; potato-digger. L 22. 674

561 Pierpont, C., & Co., New Haven, Conn.—Fodder-cutter. P 22. 674

562 Fitzhugh, J. R., Philadelphia, Pa.—Hay-elevator. F 19. 674


566a Wakeham, R., Port Deposit, Md.—Power-press. Q 11. 674

566b Emery, Horace L., Albany, N. Y.—Cotton-gin, lint-cleaner. Q 11. 674

566c Wilson Brothers & Co., Harrisburg, Pa.—Fodder-cutter. O 22. 674

566d Lee, George W., Homeworth, Ohio.—Fodder-cutter. T 25 and A 25. 674

566e Ross, John, Williamsburgh, N. Y.—Flour-mills, farm-mills, paint-mills, and mixers. R 23. 674

566f Esmond & Dunham, New York, N. Y.—Press and compress combined. S 24. 674

566g Coussland & Coussland, Philadelphia, Pa.—Adjustable picks, with movable bits. M 26. 674

566h Cooper, I. G., Scranton, Pa.—Hay and straw cutter. J 7. 674

566i Scharf, Louis, Philadelphia, Pa.—Combined water cooler and filter. F 19. 674

566j Baugh & Sons, Philadelphia, Pa.— Mills for crushing and grinding bones, minerals, woods, etc. K 25. 674


567a Belcher & Taylor Agricultural Tool Co., Chicopee Falls, Mass.—Hay-cutters, vegetable-cutters, corn-sheller, and bag-holder. T 21. 674

567b Skinner, E. W., Sioux City, Iowa.—Adjustable sugar-cane crusher. T 19. 674


567d Purdy, Hiram, Burlington, Iowa.—Cyclone heater, car-door, odorating apparatus. I 28. 674

567e Barrows, Savery, & Co., Philadelphia, Pa.—Steamer for cooking food. L 8. 674

567f Aldrich, Isaiah, Philadelphia, Pa.—Can soldering and capping machine. M 24. 674

567g Morse, Dudley, Norwich, N. Y.—Hay-fork and wagon-jack. H 23. 674

567h Smith, J. G., Faulburg, Ill.—Boiler for cooking. C 24. 674

568 Chesley, Plumer, Chelsea, Mass.—Meat-chopper. R 24. 674

569 Hanck, S. & Bro., Lebanon, Pa.—Vegetable-cutters. M 32. 674

570 Longaker, Thomas F., Philadelphia, Pa.—Stable-hook. C 20. 674


572 Peabody, George H., Brooklyn, N. Y.—Rice huller and polisher. L 16. 674

573 Boomer & Boschert Press Co., Syracuse, N. Y. S and T 12. 674

a Power cider-press (double platform), 200 tons capacity, sixty barrels in ten hours. Hand cider-press, power 125 tons. Wine-press, power 60 tons, Nos. 1, 2, and 3. Lard or tanking presses, power 80 and 120 tons. 674

b Apple-grater. 674

"For presses" for paper, cloth, etc., see Machinery Hall, E 39. 674

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 10.
For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 19-14.
Agricultural Engineering and Administration.

1903 Bean, H. & B. F., Pawling, Pa.—Picket fence. D 24. 680
1903 Ripley, Theodore, Hallowell, Maine.—Shovel scraper. C 20. 680
1905 Murdock, John, & Son, Poseyville, Ind.—Wheat ricker. M 15. 680
1906 Bowen, C. M., Maine Avenue, N. J.—Stump, grub, and rock extractor. D 17. 680
1909 Hall, S. W., Elmira, N. Y.—Fencing-machine, machine-made worm-fence, bracket, and wire fences. O 23. 680
1910 Patterson, William, Salem, N. J.—Wrought-iron road-scraper. D 18. 680
1911 Cotton, A. C., Vineland, N. J.—Stone and stumped extractor. D 17. 680
1912 Drake & Parimley, Painesville, Ohio.—Fence-post base. D 18. 680
1913 Rhodes & Waters, Elyria, Ohio.—Post-hole digger. C 19. 680
1914 Starbuck, Nathan, Wilmington, Ohio.—Mounted ditcher. C 17. 680
1915 Thompson, Woodard, Gardiner, Me.—Self-loading and unloading hod-road scraper, model of scraper, and model of railway joint. C 19. 680
1916 Leatherbarrows, John, Philadelphia, Pa.—Wrought-iron and wirefencings. D 17. 680
1917 Pioneer Iron Works, Brooklyn, N. Y.—Portable iron railroad and steam road-roller. D 22. 680
1917a Landis, Israel L., Lancaster, Pa.—Fence and gate models, step-ladder. B 22. 680
1917c Speckman, Thomas, Philadelphia, Pa.—Models of fences. B 23. 680
1917d Treat, J. A., Cleveland, Ohio.—Carriage gate. (Outside of Agricultural Building.) 680
1918 Chicago Scrapper and Ditcher Co., Chicago, Ill.—Scrapper and ditcher for road-making, repairing, and excavating. C 20. 680
1920 Rumford Chemical Works, Providence, R. I.—Fertilizers, bone charcoal, etc. K 21. 681
1921 Fisher, W. A., Bryn Mawr, Pa.—Fertilizers. D 26. 681
1922 Bradley Fertilizer Co., Boston, Mass.—Fertilizers. H 28. 681
1922a Jarvis & Hooper, Detroit, Mich.—Fertilizers. B 26. 681
1924 United States Fertilizing & Chemical Co., 140 Chestnut street, Philadelphia, Pa.—Phosphatic salts, bone, and fertilizers. Sole owners of Pratt’s patent “acid grinding” process, by which the greatest percentage of available bone phosphate of lime is obtained. The “national soluble bone” manufactured under this process is guaranteed to contain not less than from 28 to 33 per cent of available bone phosphate of lime. Also manufacturers of agricultural chemicals generally. C 28. 681
1925 Baugh & Sons, Philadelphia, Pa.—Raw bone superphosphate, ground raw bones; nitrogen. C 28. 681
1928 Crocker, L. L., Buffalo, N. Y.—Fertilizers for grain, tobacco, cotton, etc., plant-food for plants and flowers. C 26. 681
1929 Peck Brothers, Northfield, Conn.—Bone dust. D 28. 681
1930 Franklin Glue Works, Pittsburg, Pa.—Bone-dust, etc. K 20. 681
1931 White, Geo. E., 159 Front Street, New York, N. Y.—Superphosphates, acid bone-black, raw materials for fertilizers, and agricultural chemicals. This house furnished all the fertilizers purchased by the Centennial Commission for its farms where the mowers and reapers are tested. D 28. 681
1932 Swift & White, New York, N. Y.—Superphosphate of lime, ground bone, dried ground meat, and refined pond-culture. D 28. 681
1934a Mapes, Charles V., New York, N. Y.—Guano, bone, phosphate, etc. E 28. 681
1934b Lister Brothers, Newark, N. J.—Superphosphate of lime, guano, ground bone, bone charcoal, sulphate of ammonia, agricultural salts, and other fertilizers. C 25. 681
1937 Harrisburg Fertilizer Co., Harrisburg, Pa.—Flour of bone, ground bone, superphosphate, animal compost, and lubricators. B 25. 681
1938 Walton, Whann, & Co., Wilmington, Del.—Artificial fertilizers, bone-meal, and ground bone. C 25. 681
1939 Kyser, James, & Son, Cleveland Ohio—Guano, mill-fertilizer, check, and neck-fence fastenings. M 10. 682

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 10.
Agricultural Engineering and Administration.

640 Remington, E., & Sons, Ilion, N. Y. —Carriage gearing. P 20. 682
640b Tibbles, George N., Jersey City Heights, N. J. —Power or speed traction engines. C 17. 682
6411 Higginan Manufacturing Co., Higginan, Conn. —Trucks. L 25. 682
642 Allen, R. H., & Co., New York, N. Y. —Farm cart, water barrel, garden barrows, etc. Q and R 25. 682
6421 Tubular Barrow & Truck Co., Jersey City, N. J. —Barrow and trucks, cooling tubs. R 26-28. 682
646 State of Massachusetts, Boston, Mass. —Maps and plans of farm buildings. E and F 23. 683
646a Jewett, Solomon W., Rutland, Vt. —Architectural models. D 24. 683
648 Bost, Caleb E., Davidson College, N. C. —Beehive. J 28. 683
648c Isham, Charles R., Peoria, N. Y. —Glass honey-boxes. A 37. 683
649 Gay & Bryant, Dresden, Ohio. —Portable digger. C 19. 683
651 Collings, E. Z., Waterford, N. J. —Craberry-plants growing, representing cranberry-bog. C 20. 683
655 Murphy, R. R., Fulton, Ill. —Honey extractor; for removing honey from the comb. C 24. 683
656a Halderman, Frank, Mahanoy City, Pa. —Bird cage. K 7. 683
657 Murphy & Broom, Philadelphia, Pa. —Bird-cages, wire garden-furniture, rustic work, etc. C 26. 683
659 Harris, Milo, Jamestown, N. Y. —Domestic fruit dryer, model of lumber-kin and of coal-oil still. D 23. 683
660 Ryder, B. L., Chambersburg, Pa. —American drier or pneumatic evaporator. D 24. 683
661a Jones Fruit Evaporating Co., Chicago, Ill. —Pneumatic evaporator. C 23. 683
661b Ellisbury & Hayward, Winona, Minn. —Minnesota fruit and illustrations. C 24. 683
661c Cowder & Jones, Norristown, Pa. —Wind-mill with water-wheel. (Outside of building.) 653
661d Chapman, Frank W., Morrison, Ill. —Honey-extractor. A 23. 683
661e Milliet, D. Caldwell, Holmesburg, Pa. —Live bees. C 35. 683
661g Chapman, John Winslow, Hyannis, Mass. —Barrel-heading, etc. A 33. 683
661i Bouscaven, G., Cincinnati, Ohio. —Model of apparatus to extract saccharine juices of plants by diffusion. T 22. 683
661j Deitz, George A., Chico Cal. —California fruit dryer. C 18. 683
661k Ellis, Charles R., New York, N. Y. —Glass and marble tank. A 20. 683
663 Williams, John, South Haven, Mich. —Model of evaporator. D 24. 683
664 Goodrich, C. C. & F. W., Portland, Conn. —Tobacco hook with wilting-frame and builders' horse. Harvest your tobacco without laying it on the ground. D 25. 683
666 Hendryx & Eartholomew, Ansonia, Conn. —Bird cages and trimmings. D 25. 683
669 Elphes, Edmund, Montezuma, N. Y. —Grain-seed wrench-picture, representing the harvest of 1873. H 15. 683
669a Scantlin, Thos., & Sons, Evansville, Ind. —Sugar evaporator, self-seaming oil tank. C 23. 683
669b Kennard, Amos, Clearfield, Pa. —Cant-hook for rolling logs in saw-mill. M 4. 683
670 Foot, Scovill, D., New York, N. Y. —Portable fruit-preserver. I 23. 683

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Agricultural Engineering, Administration, Management.

672 Wood, Robert. & Co., 1136 Ridge avenue, Philadelphia, Pa.—Ornamental iron and bronze works. Fountains, vases, verandas, stairs, lamp posts, improved stable-fittings and furniture, wire-work of every description, wrought and cast iron railings. Also "Sumptuous bronzes"—colossal, heroic, or life-size—in the highest style of art. L 10. 683

673 Shaw, Philander, Scituate, Mass.—Beehive, with comb and hive of bees. M 12. 683


This machine is simple in its construction. With it labels of any description can be made with great rapidity for attaching to the animal's ear.

Four thousand labels can be made per hour. They are made of iron-wire rolled flat and washed tin, and stamped with numbers from one to one thousand, and with any name ordered. Mr. Dana is offering the label machine for foreign countries, and good-will of business.

674a Rose, W. L., Wadesboro', N. C.—Cotton-tie. D 24. 683

674 Worrall, E. Penn, West Chester, Pa.—Beehive, showing bees at work. B 19. 683

674c Jackson, James L., New York, N. Y.—Stable fixtures. T 10 and 11. 683

675 Deardoff, Isaac N., Canal Dover, Ohio.—Smoke-house stove. It saves fuel, increases volume of smoke, with easy regulation of production and distribution. Removes all danger from fire. N 21. 683

676 Betts, Albert C., Troy, N. Y.—Machine for making wire fencing, w. samples. P 23. 683

677 U. S. Wind-Engine & Pump Co., Batavia. Ill.—Windmills for pumping water, etc. Q 23. 683

678 State of Michigan.—Soils. H and I 20 to 21. 690

678 State of New Jersey.—Soils, sub-soils, greensand marls, calcareous marls, mineral phosphates, fish guano, cancerine, lime, superphosphates, etc. E 17-18. 690


Tillage and General Management.

679 Hirner, C. G., Allentown, Pa.—Farmers' Union Cattle-Powder, an artificial food for fattening stock and to increase the quantity and quality of milk and butter. B 28. 692

679a Rynal, P. H., Jackson, Mich.—Horse and cattle food. R 27. 692


684 Long, J. C, Jr., Philadelphia, Pa.—Prepared food for mocking-birds; grains and seeds for birds, pigeons, and poultry; bird invigorator; drinking fountains, etc. B 25. 692


687 Caryl, A. H., & Son, Forge Village, Mass.—Horseshoe nails pointed and finished, also not pointed. These nails are made by hammers from hot rods, and of the best Norway iron. B 24. 693

688 Burden, H., & Sons, Troy, N. Y.—Working model of horseshoe machine, samples of horse-shoes, boiler rivets, and merchant iron. F 23. 693


691 Putnam, S. S., & Co., Neposet, Mass.—"Government standard" forged and hammer-pointed horseshoe nails. These nails are made from the best Norway iron, are drawn out under hammers when nearly at a welding heat, whereby they are enabled to produce a nail that is tough and stiff, and perfectly reliable in all respects, easy for the blacksmith to drive. B 24. 693


692a Russell, William, Cincinnati, Ohio.—Hand and machine made horseshoes, etc. B 23. 693

692b Hull, Theodore, Newark, N. J.—Horseshoes. B 24. 693

692c Davis, H. S., Camden, N. J.—Horseshoes. B 24. 693

692d New Hampshire State Centennial Board.—Agricultural literature. E 20-21. 693


692f Baker, Joseph P., Melrose, Mass.—Horseshoes, etc. B 24. 693

693 Smith, Aaron W., Manchester, N. H.—Jointed horseshoes. B 24. 693

694 Atkins, J. L., Nashville, Tenn.—Horseshoes and plates. B 24. 693


696 Ward, Henry A., Rochester, N. Y.—Stuffed Bacterial camel and Shetland pony. K 26 and 27. 693

697 Gadsden, John W., Philadelphia, Pa.—Veterinary anatomical specimens. A 28. 693

For locations of objects, indicated by letter and figure, see Key to Notation, p. 6; ground plan, p. 10.
Veterinary Appliances.

698 National Horse Nail Co., Vergennes, Vt.—Horseshoe nails. B 24. 693
699 Gornes, John M., St. Louis, Mo.—Horseshoes. B 24. 693
700 Carroll, William, Philadelphia, Pa.—Horseshoes. B 24. 693
701 Day, Austin G., Seymour, Conn.—Horseshoe nails. B 24. 693
702 Tower, L. C., Chester, Pa.—Thermometers. A 16. 320
703 Collison, H. C., Dover, Del.—Syrup drip for measuring-vessels. S 25. 320

706 Protective Fire Apparatus Co., New York, N. Y.—Apparatus for extinguishing fires. (South side of Agricultural Hall.) 594
Agricultural Hall is protected by this apparatus.

The Protective Fire Apparatus consists of four systems:
System 1. Injecting into burning buildings or compartments of vessels pure carbonic acid gas.
System 2. Impregnating water with carbonic acid gas as it flows through the main water-pipe or fire-plugs, thereby throwing through the hose upon the fire a continuous stream of carbonic acid gas.
System 3. Throwing by hose-attachment impregnated water from the apparatus itself.
System 4. Injecting beneath the surface of oil or fluids carbonic acid gas.
All for the purpose of extinguishing fire.

706a Murtfeldt, Miss, Kirkwood, Mo.—Botanical specimens of Missouri. I 22. 799
707 Janes & Kirtland, New York, N. Y.—Ornamental fountain. (Intersection of nave and main transept.) 723

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Agricultural, Animal, and Vegetable Products.

Arboriculture and Forest Products.

1 Nicoll, Donald, London.—Starch and compounds rendering fabrics and timber uninflammable; carbon combined with caoutchouc, for the preservation of wood and iron. 600

Agricultural Products.

2 Delf, W., Colchester.—Wheat. 620
3 Field, W., Liverpool.—Oats. 620

Animal and Vegetable Products.

5 Chapman, Edwin, & Co., London.—Koumiss, a beverage prepared from cow's milk; koumiss extract, for converting milk into koumiss. 651
6 Evans & Stafford, Leicester.—Stilton cheese. 651
7 Hooker, J., London.—A large tin of milk which has been exposed to the air for five years; also desiccated milk, condensed milk, and other preparations made with milk. 651
9 Green, John, London.—Gelatine for cigar-boxes, printers, engravers, and artificial-flower makers. 652
14 Lovey, Edward, Ponsnook, Cornwall.—Beehives, with samples of honey and wax. 654
15 Schneider, Edward Albert, London.—Liquid essence of beef. 656
16 Nicoll, Donald, London.—Tea and coffee combined with milk and sugar, contained in soluble capsules for distribution in single cups; aérated beverages in vessels to allow rapid distribution in single draughts; preserved food. 656
17 Geyelin & Co., London.—Concentrated animal and vegetable food. 656
18 Goodall, Backhouse, & Co., Leeds. a Yorkshire relish sauce. 656 b Orange quinine wine. 660
19 Keen, Robinson, Bellville, & Co., London.—Preparations from mustard, barley, oats, etc. 656
20 Pratt, James, London.—Sauce. 656
21 Smith, T. & H., & Co., Edinburgh. a Essences of coffee and coffee with chicory. 656 b Aérated waters. 650 c Chemical products. 200 d Flavoring extracts. 203
22 Jaap, J., Glasgow.—Curry powders. 656
23 Menier, Emile, London.—Chocolates and cocoa. 656
23a Yuille, Andrew, Glasgow. a Essences of coffee and chocolate, coffee and milk, condensed milk. 656 b Vinegar. 660
23b Mellin, Gustav, London.—Non-farinaeous food for infants and invalids. 656
25 Mackay, John, Edinburgh.—Fluid flavoring quintessences and articles of diet for table use. 656
26 Ledger, H., & Co., London.—Pure extract of meat. 656
27 Ball, James, London.—Sauce. 656
28 Lea & Perrins, Worcester.—Sauce. 656
37 Crosse & Blackwell, London.—Pickles, sauces, vinegars, jams, jellies, mar- malades; potted and preserved meats; preserved fruits, soups, and fish; oils for salads, etc.; preserved provisions, sausages, vegetables, etc. 656
38 Field, W., Liverpool.—Oatmeal. 657
38a Richards & Co., London.—Self-raising flour. 657
39 Hunter, John, & Son, Woodhall Mills, Juniper Green, near Edinburgh. Oatmeal and pot barley. 657
40 Plunkett, John, & Co., Portland Works, Dublin.—Malt for brewing and distilling, and roasted malt for coloring and flavoring porter and ale. 657
41 McCann, John, Beamond Mills, Drogheda.—Oatmeal and groats. 657
42 Maw, Thomas, Leeds.—a Pickles and sauces. 656 b Syrups. 659 c Vinegar. 660 d Lozenges, baking powder. 661
42a Campbell, Thomas, Allanstown, Pa.—Malt and whisky. 660
42b Haig, J., & Co., Scotland.—Whisky. 660
43 Corry, William, & Co., Belfast, Ireland. a Aérated waters from Cromac Springs, Belfast. 660 b Non-metallic valves, plungers, connections, taps, and cylinder-linings. 665
44 Burke, Edward & John, Dublin.—English ales, Dublin stout, Irish and Scotch whiskies. 660
44a Grant, Thomas, The Distillery, Maidstone.—Cherry brandy. 660
44b Cork Distillery Co., Cork.—Whisky. 660
45 Wright, Herbert, & Co., Diamond Brewery, Dover.—Pale ale and stout. 660
46 Ind, Coope, & Co., Burton-on-Trent, Staffordshire.—Ale. 660
46a Inman Brothers, Huddersfield, Yorkshire.—Aérated waters. 660
46b Bewley & Draper, Dublin.—Aérated waters. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
<table>
<thead>
<tr>
<th>Machines, Implements, Engineering, and Administration.</th>
</tr>
</thead>
<tbody>
<tr>
<td>47 Bindley &amp; Co., Burton-on-Trent.—Ales. 660</td>
</tr>
<tr>
<td>47a Tennent, J. &amp; R., Glasgow.—Bottled ales. 660</td>
</tr>
<tr>
<td>48 Mott &amp; Co., Leicester.—Cowslip wine. 660</td>
</tr>
<tr>
<td>49 Muir, Jas., &amp; Son, Calton Hill Brewery, Edinburgh.—Ales. 660</td>
</tr>
<tr>
<td>49a Cantrell &amp; Cochrane, Dublin.—Ginger ale, aerated beverages, etc. 660</td>
</tr>
<tr>
<td>50 Johnson &amp; Co., Canterbury.—Pale ale. 660</td>
</tr>
<tr>
<td>50a Murree Brewery Co., Punjab, East India.—Bottled ales. 660</td>
</tr>
<tr>
<td>51 Pendock Brothers, Bristol.—Cider and perry. 660</td>
</tr>
<tr>
<td>52 Richardson, Earp, &amp; Slater.—Trent and Northgate Brewery, Newark-upon-Trent.—Ale. 660</td>
</tr>
<tr>
<td>53 Stevens, Thomas, Wrexham, North Wales.—Ornamental confectionery, birthday and christening cake, meringues, medallions, ornamental sugar-stand; rich cake. 661</td>
</tr>
<tr>
<td>53a Fry, Joseph Storrs, &amp; Sons, Bristol.—Chocolate and cocoa, and specimens illustrative of the process of manufacture. 661</td>
</tr>
<tr>
<td>54 Gissing, Anthony S., &amp; Sons, Eye, Suffolk.—Fancy biscuits, baking powder. 661</td>
</tr>
<tr>
<td>54a Allen, Frederick, &amp; Sons, London.—Confectionery and medicated confectionery. 661</td>
</tr>
<tr>
<td>54b Smith, Thomas, &amp; Co., London.—Wedding-cakes, ornaments, novelties for parties. 661</td>
</tr>
<tr>
<td>Textile Substances of Vegetable or Animal Origin.</td>
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<tr>
<td>56 The Mill Hill Wool and Rag Extracting Co. (limited), Mill Hill Works, Huddersfield.—Wools made from old rags, etc. 667</td>
</tr>
<tr>
<td>57 Bowes, John L., &amp; Bro., Liverpool.—Raw materials used in the woollen and worsted trade. 667</td>
</tr>
<tr>
<td>58 Smith, David, &amp; Co. (limited), Kensington Works, Halifax, Yorkshire.—Cleaned wool and wools extracted from waste products. 667</td>
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<tr>
<td>Machines, Implements, and Processes of Manufacture.</td>
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<tr>
<td>60 Wills, Arthur Winkler, Park Mills, Birmingham.—Hoes, axes, etc. 670</td>
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<tr>
<td>63 Fussell, James, Sons, &amp; Co., Mell’s Iron Works, near Frome, Somersetshire.—Edge tools used in agriculture. 670</td>
</tr>
<tr>
<td>64 Wilkinson, William, &amp; Sons, Spring Works, Sheffield.—Sheep and garden shears. 672</td>
</tr>
<tr>
<td>64a Greening, N., &amp; Sons, Warrington.—Riven wire for rice, flour, and other mills. 673</td>
</tr>
<tr>
<td>64b Brown, J. B., &amp; Co., London.—Galvanized wire netting, etc. 673</td>
</tr>
<tr>
<td>66 Lloyd, T., &amp; Sons, London.—Flour mills, dressing machines, grinding mill, and coffee mills. 673</td>
</tr>
<tr>
<td>66a Cheavin, G., Boston, Lincolnshire.—Filters. 673</td>
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<tr>
<td>66b Barnard, Bishop, &amp; Barnards, Norwich.—Galvanized wire netting. 673</td>
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<tr>
<td>66c Needham &amp; Kite, London.—Filter press for clarifying liquids. 673</td>
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<tr>
<td>67 Crook, Graham, &amp; Co., Halifax.—Bolilers. 674</td>
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<tr>
<td>67a Kay &amp; Hilton, Liverpool.—French burr millstones for wheat grinding. 674</td>
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<tr>
<td>68 Clark &amp; Dunham, London.—Mill stones and lubricators. 674</td>
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<tr>
<td>68a Chronometers for measuring and weighing grain. 322</td>
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<tr>
<td>68b Wellock, J., &amp; Co., Bradford.—Waterproof material for cart and wagon covers. 682</td>
</tr>
<tr>
<td>69 Aveling &amp; Porter, Rochester, Kent.—Agricultural locomotive engine, locomotive crane engine, steam road roller wagons for road locomotive engines. 682</td>
</tr>
<tr>
<td>70 Neighbour, C., &amp; Sons, London.—Beehives and bee furniture. 683</td>
</tr>
<tr>
<td>71 Barnard, Bishop, &amp; Barnards, Norwich.—Stable fittings. 683</td>
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<tr>
<td>72 Lovey, Edward, Cornwall.—Beehives. 683</td>
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<tr>
<td>73 Colthurst, Symons, &amp; Co., Bridge-water.—Scouring bricks. 106</td>
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<td>74 Star Plate Universal Polishing Powder Co., London.—Polishing powder. 106</td>
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<tr>
<td>75 Jaap, J., Glasgow.—Artificial yeast. 200</td>
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<tr>
<td>76 Higgin, T., &amp; Co., Northwich.—Salt. 200</td>
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<tr>
<td>77 Harper, Twelvetras, &amp; Co., London.—Soap powder. 201</td>
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<tr>
<td>78 Rawlings &amp; Son, Prescot.—Ultra marine, smalts, etc. 202</td>
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<tr>
<td>79 Eastwood &amp; Co., London.—Red terra cotta chimney shafts. 206</td>
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<td>80 Phillips, J., &amp; Co., Devonshire.—Terra cotta bricks and drain pipes. 206</td>
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<td>81 Johnson &amp; Co., Sussex.—Terra cotta. 206</td>
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<td>82 Edwards, J., &amp; Son, Burslem.—Ironstone white ware and fancy decorated goods 210</td>
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<td>83 Edwards, J., Fenton.—Porcelain and ironstone china. 213</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
NEW ZEALAND.

(East Aisle, Columns 1 to 5.)

Agricultural Products, Textile Substances.

Agricultural Products.
1 Banks, E. H., Christchurch.—Oats and other cereals. 620
2 Wood, W. D., Christchurch.—Wheat. 620
3 Cunningham, P., & Co., Christchurch.—Wheat grown in Canterbury. 620
4 Ruddenklan, J. G., Addington, Canterbury.—Wheat. 620
5 Wilkins, Robert, Christchurch.—Perennial rye grass and cocksfoot seed. 624

Textile Substances of Vegetable or Animal Origin.
6 Peter, W. S., Anama, Ashburton, Canterbury.—Merino wool. 667

NEW SOUTH WALES.

(East Aisle, Columns 1 to 5.)

Animal and Vegetable Products.

Animal and Vegetable Products.
1 Fallon, James T., Albury.—Wines. 660
2 Munro, A., Bebeah, Singleton.—Wines. 660
3 Carmichael, G. L. & J. B., Porphyry, Williams River.—Wines. 660
4 Brecht, Carl J. P., Rosemount, Denman.—Wines. 660
5 Powell, Edward, Richmond.—Wines. 660
6 Parnell, Montague, West Maitland, Hunter River.—Wines. 660
7 Wyndham, Wadham, Bukkulla, Inverell.—Wines. 660
8 Wyndham, George, Branxton, Hunter River.—Wines. 660
9 Doyle, J. F., Kaludah, Lochinvar.—Wines. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
SOUTH AUSTRALIA, JAMAICA.

SOUTH AUSTRALIA.

(East Aisle, Columns 1 to 5.)

Machines, Implements, and Accessories of Manufacture.

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<tr>
<th>Machines, Implements, and Accessories of Manufacture.</th>
<th>3 Saunders, Robert, Manager of the Burra Burra Copper Mine, near Adelaide—Model of improved ore dresser. 505</th>
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<tr>
<td>1 South Australian Commissioners, Adelaide.—Reaping Machine. 672</td>
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<td>2 South Australian Commissioners, Adelaide.—Castings from South Australian iron ores. 111</td>
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CAPE OF GOOD HOPE.

(South of South Transept, east of Nave.)

Agricultural, Animal, and Vegetable Products, Textile Substances.

Agricultural Products.

<table>
<thead>
<tr>
<th>Letterstedt &amp; Co., Cape Town.—Wheat. 620</th>
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<td>Clear, E., Cape Town.—Wheat. 620</td>
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Animal and Vegetable Products.

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<th>Dier &amp; Dietz, Port Elizabeth.—Skins. 652</th>
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<tr>
<td>Barry, Arnold, &amp; Co., Cape Town.—Wheat flour. 657</td>
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Textile Substances of Vegetable or Animal Origin.

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<tr>
<th>Grewar, John W., Uitenhage.—Scoured wool. 667</th>
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<td>Priest, W., Graff Reinet.—Fleece wool. 667</td>
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<tr>
<td>Rubidge, C., Graff Reinet.—Grease wool. 667</td>
</tr>
<tr>
<td>Stewart, A. C., &amp; Co., Port Elizabeth.—Grease and scoured wool. 667</td>
</tr>
<tr>
<td>Angora hair. 669</td>
</tr>
<tr>
<td>Court, P. W., Port Elizabeth.—“Fidus,” snow-white, and grease wool. 667</td>
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<tr>
<td>Barry &amp; Nephews, Cape Town.—Washed and scoured wool. 667</td>
</tr>
<tr>
<td>Barry, Arnold, &amp; Co., Cape Town.—Washed and grease wool. 667</td>
</tr>
<tr>
<td>Dier &amp; Dietz, Port Elizabeth.—Wool. 667</td>
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<tr>
<td>Barry &amp; Newpews, Mossel Bay.—Wool. 271</td>
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JAMAICA.

(South of South Transept, east of Nave.)

Pomology.

Pomology.

<table>
<thead>
<tr>
<th>Thompson, Robert, Jamaica.—A succession of fruit by each steamer during the season, including oranges, limes, lemons, citrons, shaddocks, forbidden fruit, ripley pines, sugar-loaf pines, black pines, bananas, mangoes, yams, cocoanuts, breadfruit, etc. 650</th>
</tr>
</thead>
</table>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Arboriculture and Forest Products.

1 Munro, D. R., St. Johns, N. B., Canada.—Collection of forest woods, shrubs, etc., evergreen and deciduous, indigenous to the province of New Brunswick, used for shipbuilding, constructional, cabinet, and ornamental purposes, polished, etc. Sixty-seven specimens, accompanied with foliage and cone, interesting and instructive to the student of nature. Collected and prepared by D. R. Munro.

2 Alder, M., Victoria, B. C.—Charcoal.


Pomology.


Agricultural Products.

11 Rennie, Wm., Toronto, Ont.  
   a Grains. 620  
   b Seeds. 624

12 Munton, H., Guelph, Ont.—Oatmeal. 620

13 Wilson, Jas., Fergus, Ont.—Oatmeal. 620

14 Martin & Sons, Mount Forrest, Ont.—Oatmeal. 620

15 Aspden & Pritchard, London, Ont.—Oatmeal and oats. 620

16 Scott & Co., Highgate, Ont.—Oatmeal. 620

17 McKay, Thomas, & Co., Ottawa, Ont.—Oatmeal. 620

8 Corn Exchange Association, Toronto, Ont.—Grain and oatmeal. 620

19 Weatherston, N., & Co., Toronto, Ont.—Grain. 620

20 Charlesworth, M., & Son, Egmontville, Ont.—Bar and shorts. 620

21 Morton, Geo., & Son, Knipton, Ont.—Malt. 620

22 Osborne, Wm., Hamilton, Ont.—Malt. 620

23 Slater, R. P., Galt, Ont.—Malt. 620

24 Northwood, Howard, Chatham, Ont.—Malt. 620

25 Kerr, J. R., Victoria, B. C.—Grass, oats, and wheat. 620

26 Tolmie, Dr., Victoria, B. C.—Wheat in the stalk. 620

27 Boyd, J., Victoria, B. C.—Grass and cereals. 620

28 Council of Agriculture, Montreal, Quebec.—Cereals. 620

29 Brodie & Harvey, Montreal, Quebec.—Corn, oatmeal, and buckwheat. 620

30 Advisory Board of P. E. Island, Charlottetown.—Cereals. 620

31 Canadian Commission.  
   a Corn-wheat grown by Indians of British Columbia, and cereals from Manitoba. 620
   b Indian or wild tea and wild hops from Manitoba. 623

32 Advisory Board of Nova Scotia.  
   a Cereals. 623  
   b Seeds. 624


34 Muirhead & Gray, London, Ont.  
   a Barley and oatmeal. 620  
   b Peas. 621

35 Girdlestone, C. H., & Co., Windsor, Ont.—Tobacco and cigars. 623

36 Downie, W., Saanich, B. C.—Hops. 623

37 Moses, D. S., Saanich, B. C.—Hops. 623

38 Wain, N., Saanich, B. C.—Hops. 623

39 Cook, Isaac, Saanich, B. C.—Hops. 623

40 Mann, J. W., Simcoe, Ont.—Grass and turnip seed. 624

41 Fuller, S. S., Stratford, Ont.—Flax seed. 624

Land Animals.

42 Carnell, J. H., St. John, N. B.  
   a Stuffed birds and ducks. 635
   b Fur-bearing animals, etc. 635

   a Six cases Canadian birds. 635
   b One pair caribou. 637
   c Two caribou heads. 637
   d Two moose heads. 637
   e One black bear. 637

44 Norvell, G. F., Hamilton, Ont.—Stuffed birds. 635

44a Foley, C., Lindsay, Ont.—Stuffed birds. 635

Water Animals, Fish—Culture, and Apparatus.

45 Loggie, A., & Co., New Westminster, B. C.—Salmon and trout. 641

46 Advisory Board of Nova Scotia.—Fishes. 641

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
### Agricultural Engineering and Administration

<table>
<thead>
<tr>
<th>No.</th>
<th>Company/Individual</th>
<th>Location</th>
<th>Item(s) Described</th>
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<tbody>
<tr>
<td>161</td>
<td>International Salt Co.</td>
<td>Goderich, Ont.</td>
<td>Salt</td>
</tr>
<tr>
<td>162</td>
<td>Coleman &amp; Gowanlock</td>
<td>Seaforth, Ont.</td>
<td>Salt</td>
</tr>
<tr>
<td>163</td>
<td>Harrison &amp; Evans</td>
<td>Goderich, Ont.</td>
<td>Salt</td>
</tr>
<tr>
<td>164</td>
<td>Rigg, Ben.</td>
<td>Stratford, Ont.</td>
<td>Soap</td>
</tr>
<tr>
<td>165</td>
<td>McKelvey, Jas.</td>
<td>St. Catharines</td>
<td>Refrigerators</td>
</tr>
<tr>
<td>166</td>
<td>Canadian Commission</td>
<td></td>
<td>a) Indian yarn from B.C.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b) Indian blankets from B.C.</td>
</tr>
<tr>
<td>167</td>
<td>Anderson, Alex.</td>
<td>London, Ont., Canada</td>
<td>Bread-knives</td>
</tr>
<tr>
<td>168</td>
<td>Stephen, Alex., &amp; Son</td>
<td>Halifax, N.S.</td>
<td>a) Brooms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b) Pails</td>
</tr>
<tr>
<td>169</td>
<td>Brazil, Peter B.</td>
<td>Barrie, Ont.</td>
<td>a) Sleigh</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b) Snow-plow</td>
</tr>
<tr>
<td>170</td>
<td>Bruce, Robt.</td>
<td>St. Catharines, Ont.</td>
<td>Tree-pruner</td>
</tr>
</tbody>
</table>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Metallurgy, Mining Engineering, Agricultural Products.

Minerals, Ores, Stone, Mining Products.

1 Laroche, A., Saulxures, Vosges.—Coal. 101
2 Asphalt Mining Co., Pyrimont-Seyssel, Ain.—Asphaltum. 101
3 Biron & Son, Paris.—Stone staircase and samples of colored Echalillon stone. 102
4 Cornu, Eugène, & Co., Paris.—Marble and Algerian onyx. 102
5 Marga, Eugène, Paris.—Samples of marble. 102
6 Parfony & Lemaire, Paris.—Marble for furniture. 102
7 Pont-Ollion, Nicolet, Grenoble, Isère.—Cements. 103
8 Thorrand & Co., Grenoble.—Cement. 103
9 Soulier & Brunot, Teil, Ardèche.—Hydraulic lime. 103
10 Lime, Cement, & Plaster Manufacturing Co., Paris.—Limes, cements, plasters, and bricks. 103
11 Hydraulic Lime Stock Co., Montélimar, Drôme.—Lime, cement, and artificial paving blocks. 103
12 Holl, Samuel J., Dieppe, Seine-Inférieure.—Chalk. 103
13 Pinson, Paris.—Shell, ivory, mother of pearl, and artificial stone. 103
14 Pavin de la Farge, L. E. & Viviers, Ardèche.—Hydraulic lime and Portland cement. 103
15 Louquety & Co., Boulogne-sur-Mer.—Cements. 103
16 Lauzun & Co., Bourg St. Andeol, Ardèche.—Artificial stone pavement, marbles, granite, and artificial marble. 103
17 Mailfert & Mathelin, Chatillon-sur-Seine, Côte d’Or.—Moulding sand for foundries. 104
18 Deplanque, jr., Maisons, Alfort, Seine.—Emery in grains and powder. 106
19 Roger, Son, & Co., La Ferté-sous-Jourarre, Seine and Marne.—Millstones. 106
20 Fauqueux, A., La Ferté-sous-Jourarre, Seine and Marne.—Millstones. 106
21 Lithographic Stone Quarry Co., Paris.—Lithographic stone. 106
22 Clément, Clément, & Co., Paris.—Diamonds. 106
23 Durrschmidt, Lyons.—Emery in grains and powder. 106
24 Bertrand, Jules, & Co., La Ferté-sous-Jourarre, Seine and Marne.—Millstones. 106
25 Bailly & Co., La Ferté-sous-Jourarre, Seine and Marne.—Millstones. 106
26 Weyl & Co., Paris.—Mineral waters from Aulus Springs. 107

Metallurgical Products.

27 Desmoutis, Quennessen, & Le Brun, Paris.—Platinum. 110
28 Chappée, A., Mans, Sarthe.—Iron pipes for water and gas. 111
29 Durenne, A., Paris.—Monumental fountain. 111
30 Martin, Pierre Emile, Sireuil, Charente.—Iron and steel. 111
31 Terrenoire, La Voulte, & Bessegges, Lyons.—Iron and steel castings. 111
32 Marseilles Gas Co., Marseilles.—Spiegelisen iron. 111
33 Marquise Foundry and Construction Works, Paris.—Iron pipes and chandeliers. 111
34 Secrétan, E., Paris.—Copper. 112

Mining Engineering.

36 Davey, Bickford, Watson, & Co., Rouen.—Safety fuse for mines. 120
37 Cosset, Dubrule, Lille, Nord.—Safety lamps for miners. 120
38 Galibert, A., Paris.—Apparatus for breathing amid suffocating gases. 120

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1 Delmas, Augustin, Toulouse.—Natural woods. 630
2 Gouturon, Mezin, Lot-et-Garonne.—Corks. 602

 Pomology.

3 Charozé Bros., La Pyramide, Maine-et-Loire.—Fruits. 610

Agricultural Products.

4 Barthe, G., Paris.—Corn. 620
5 Dumoutier, Ch., Claville, Eure.—Agricultural products. 620
6 Thoreau, E., & Son, Chateau de la Chèze, Maine-et-Loire.—Barley. 620
7 Gutmann & Bloch, Paris.—Barley. 620
8 Hops and malt. 623
9 Fos, Miss J., Paris.—Medicated cigarettes. 623

Water Animals, Fish Culture, and Apparatus.

9 Colin, jr., Nantes.—Preserved fish. 641
Animal and Vegetable Products.

11 Jacquier & Saupiquet, Nantes.—Sardines in oil.
12 Maille & Tandeau, Paris.—Ancho-\ties in oil.
13 Maré, C., Nantes.—Sardines.
14 Peltier & Paillard, Paris.—Sardines in oil.
15 Philippe & Co., Nantes.—Sardines in oil.
16 Terrien, Palais, Belle-Ille-en-Mer.—Sardines in oil.
17 Caillebotte & Dumagnou, Paris.—Sardines and pickled fish.
19 Peltier & Paillard, Paris.—Sardines in oil.
20 Clement & Co., Paris.—Pears.

Animal and Vegetable Products.

21 Coupic, E., Roquefort Cheese-Factory, Roquefort, Aveyron.—Cheese.
22 Bageau, H., Paris.—Waterproof glue for leather.
24 Clavé, Bertrand, Coulommiers, Seine-et-Marne.—Leather.
25 Burel, J., Paris.—Peltry; kid-skins.
26 Bayvet Bros., Paris.—Morocco sheep, calf, goat, and kid skins.
27 Basset & Co., Paris.—Kid for shoes.
28 Allain, Jules, Paris.—Kid for shoes.
29 Leven, M., senior & junior, Paris.—Calf-skin.
30 Fortier, Beaulieu, Paris.—Leather for furniture.
31 Treffousse & Co., Chaumont, Haute-Marne.—Leather and dyes for leather.
33 Sorro Bros., Millan, Aveyron.—Calf-skin.

34 COLLECTIVE EXHIBIT OF THE LEATHER MANUFACTURERS OF SAINT-SAENS, SEINE-INFERIEURE.—LEATHER. 652

Lefebvre, Felix.
Lecourtis, Arthur.
Lemonnier, Jules.
Sergent, Edmond.
Fache-Havé & Brother.
Frigot, Emile.
Lefebvre, Florintin.
Binet, Hippolyte.
Lenormand, Emile.
Morisset, Mrs.
Blot, Eugène.
Dumesnil, Paul.

35 Revillon Bros., Paris.—Peltries.
36 Daubin & Co., Paris.—Lard.
37 Duchesne Bros., Paris.—Morocco leather.
38 Peltier & Paillard, Paris.—Preserved meats.
39 Passion, Marc, Paris.—Preserved food.
40 Ségur & Obier, Périgueux, Dordogne.—Preserved food and pâté de foie gras.
41 Vicat, J. H., Paris.—Mustard and pickles.
42 Terrien, senior, Palais, Belle-Ile-en-Mer.—Preserved food.
43 Maré, C., Nantes.—Green peas.
44 Lenoir, A., Paris.—Preserved game, poultry, etc.; pâtés.
45 Le court, Francois, Paris.—Preserved food.
46 Landrin, Augustin, Paris.—Preserved fruits and vegetables.
47 Lamarche & Veillon, Paris.—Preserved game and pâtés de foie gras.
48 Jacquier & Saupiquet, Nantes.—Preserved food.
49 Henry, Louis, Paris.—Pâtés de foie gras.
50 Grout, jr., Paris.—Conserves.
51 Tivollier, Auguste, Toulouse.—Pâté de foie gras.
52 Fau, J., Bordeaux.—Prunes.
53 Escoffier, J., Nice.—Preserved fruits.
55 Dronne, L. F., Paris.—Pâté de foie gras and preserved meats.
56 Dione, A. C., Paris.—Preserved food.
57 Lamarche & Veillon, Paris.—Pâté de foie gras.
58 Deriviere, Julien, Paris.—Preserved food.
59 Dardelle & Co., Paris.—Preserved and dried vegetables.
60 Cormier & Véron, Paris.—Preserved food.
61 Colin, Joseph, Nantes.—Preserved food.
62 Chevalier, Appert, Paris.—Preserved food.
63 Caillebotte & Dumagnou, Paris.—Preserves.
64 Boyer, P., & Co., Gignac, Hérault.—Truffles, capers, and olives.
65 Bornibus, Alexandre, Paris.—Mustard and pickles.
67 Philippe & Co., Nantes.—Preserved food.
68 Fiton & Nouvialle, Bordeaux. a Preserved food and fruits.
69 Liqueurs.
68a Barthe, G., Paris.—Flour.
69 Ecorcheville & Legrand, Paris. a Preserved fruits.
69b Confectionery.
70 Dufour, A., & Co., Bordeaux. a Prunes.
69c Wines.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Address</th>
<th>Products</th>
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</thead>
<tbody>
<tr>
<td>71</td>
<td>Dandicotte &amp; Gaudin, Bordeaux.</td>
<td></td>
<td>Preserved food, Wines, Caramels.</td>
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<tr>
<td>74</td>
<td>Lesage &amp; Pignard, Paris</td>
<td></td>
<td>Preserves, Confectionery.</td>
</tr>
<tr>
<td>79</td>
<td>Antheaume &amp; Sons, Bourget-les-Paris, Seine</td>
<td></td>
<td>Glucose, Caramels.</td>
</tr>
<tr>
<td>80</td>
<td>Lévére &amp; RémonDET, Savigny-les-Beaune, Côte d’Or.</td>
<td>Sparkling wines.</td>
<td></td>
</tr>
<tr>
<td>81</td>
<td>Comber, J., Saumur, Maine-et-Loire.</td>
<td></td>
<td>Liquors.</td>
</tr>
<tr>
<td>83</td>
<td>Brizard &amp; Roger, Bordeaux.</td>
<td></td>
<td>Liquors.</td>
</tr>
<tr>
<td>84</td>
<td>Passier, A., Sautenay, Cote-d’Or.</td>
<td></td>
<td>Wines.</td>
</tr>
<tr>
<td>89</td>
<td>Montheuil, Franc, senior, Bordeaux.</td>
<td></td>
<td>Wines.</td>
</tr>
<tr>
<td>92</td>
<td>Merman, G., Bordeaux.</td>
<td></td>
<td>Wines.</td>
</tr>
<tr>
<td>93</td>
<td>Merman &amp; Maître, Bordeaux.</td>
<td></td>
<td>Wines.</td>
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<tr>
<td>98</td>
<td>Promis, Justin, Bordeaux.</td>
<td></td>
<td>Wines and brandies.</td>
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<td>100</td>
<td>Poitevin, Ch., &amp; Co., Bordeaux.</td>
<td></td>
<td>Wines.</td>
</tr>
<tr>
<td>101</td>
<td>Rouillé, E., Bordeaux.</td>
<td></td>
<td>Wines.</td>
</tr>
<tr>
<td>102</td>
<td>Rojat, Jules, Nimes, Gard.</td>
<td></td>
<td>White wine vinegar.</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
### Wines, Liquors, Vegetable Products, Agricultural Machines.

| 137 | Chiapella, Jérôme, Bordeaux.—Wines. |
| 138 | Clavelle, Jules, Bordeaux.—Wines. |
| 139 | Clerc, J. B., Bordeaux.—Wines. |
| 140 | Collin, Ad., Chalons-sur-Marne.—Champagne wines. |
| 141 | Coudert, G., & Son, Limoges.—Brandy. |
| 142 | Cunilffe, Dobson, & Co., Bordeaux.—Wines. |
| 143 | Curlier Bros. & Co., Paris.—Brandies. |
| 144 | Cusenier, E., & Co., Ornans, near Pontarlier.—Liquors. |
| 145 | Delizy & Doistau, jr., Pantin, Seine.—Liquors. |
| 146 | Thoreau, E., & Son, Chateau de la Cheva, near Saumur.—Champagne and red wines. |
| 147 | Tivet, B., Bordeaux.—Liquors and bitters. |
| 148 | Agricultural Union, Chateau-neuf, Charente.—Brandies. |
| 149 | Gourry & Co., Cognac.—Brandies. |
| 150 | Georq, I., & Co., Chalons-sur-Marne.—Champagne wines. |
| 151 | Giojuzza & Giobertini, Paris.—Wines. |
| 152 | Gerin, E., Saint Jean d’Angéley, Charente.—Brandy. |
| 153 | Garros, J. L., Bordeaux.—Wines. |
| 154 | Garnier, F., Noyon, Oise.—Liquors. |
| 156 | Frois, Leo, & Co., Bordeaux.—Wines. |
| 157 | Garnier, Jules, Epernay, Marne.—Champagne wines. |
| 158 | Fournier, A., Chateau de Figeac, Gironde.—Wines. |
| 159 | Foucher, L., & Co., Cognac.—Brandies and Liquors. |
| 161 | Detrie-Grandjean, Saint Loup-sur-Semouse, Haute Saone.—Kirschwasser. |
| 162 | Ditey, E., Paris.—Wines. |
| 163 | Dolin, Mrs., Chambéry, Haute Savoie.—Vermouth. |
| 164 | Druelle, Reims.—Champagne wines. |
| 165 | Dubois, E., & Co., Saint Jean d’Angéley, near Cognac.—Brandies. |
| 166 | Duquenel, Paris.—Wines and brandies. |
| 167 | Duret, Jules, & Co., Cognac.—Brandies. |
| 169 | Laplante, Edard de, Guyotville, near Algeria.—Wines. |
| 170 | Faure, J., & Co., Cognac.—Brandies. |
| 171 | Faurie, J., sr., Narbonne.—Wines. |

| 172 | Ferret, Bros., & Co., Macon.—Wines. |
| 173 | Fil, Francois, Narbonne, Ande.—Wines. |
| 174 | Fisse, Thirion, & Co., Reims.—Champagne wines. |
| 175 | Seignouret Bros.—Bordeaux.—Wines and brandies. |
| 176 | Mestrezat & Co., Bordeaux.—Wines and brandies. |
| 178 | Biardot, Alphonse, Paris.—Confectionery. |
| 179 | Chenut, P., Paris.—Confectionery. |
| 180 | Combet, Joseph, Paris.—Confectionery. |
| 181 | Ménier, Paris.—Chocolates. |
| 182 | Nègre, Joseph, Grasse, Alpes Maritimes.—Confectionery. |
| 183 | Lombart, Paris.—Chocolates. |
| 184 | Marge, Jr., Lyons.—Pâtes. |
| 185 | Mottet, J., & Co., Marseilles.—Olive oil. |
| 186 | Chudaca, Léon, Alger.—Oil. |
| 187 | Plagniol, James de, Marseilles.—Olive oil. |

### Textile Substances of Vegetable or Animal Origin.

| 188 | Boudon, Louis, St. Jean-du-Gard, Gard.—Raw silk. |
| 189 | Arlets, Dufour, Lyons.—Raw silk. |
| 190 | Thomas, F., Pont des Charettes, Gard.—Cescons and raw silk. |

### Machines, Implements, and Processes of Manufacture.

| 192 | Rabache, A., Clunay-sur-Odon, Calvados.—Double plow. |
| 193 | Couture, Paris.—Stripping machines for textiles. |
| 194 | Druelle, Reims.—Corking apparatus for champagne wines. |
| 196 | Maurice & Guerin, Epernay.—Corking machines. |
| 197 | Mobile Bros., Amboise, Indre and Loire.—Wine and oil presses. |
| 198 | Logette, Ay, Marne.—Clasps for bottles, and machines for using them. |
| 199 | Gervais, E., Bordeaux.—Corking machines. |
| 200 | Fréal, Epernay, Marne.—Machines for filling bottles. |
| 201 | Dubois, Emile, St. Jean d’Angéley.—Bottling machine. |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-14.
DEPT. VI.—AGRICULTURE.

Agricultural Machines, Engineering.

202 Mercier, Eug., Epernay.—Apparatus for vine-culture and for the manufacture of sparkling wines. 673
203 Malligand, Ed., jr., Paris.—Alcohol tester. 673
204 Pernollet, Jh., Paris.—Sieves, sorters, and root knives. 673
205 Tricourt, A., Reims.—Wine manufacturing machines. 673
206 Chenaille, Paris.—Evaporator. 673
207 Cicile, Labre, Reims, Marne.—Machines for cleaning bottles. 673
208 Dornon, L., Lyons.—Gauzes for bolting-rooms and sieves. 674
209 Pégard, V., Paris.—Sheep-shearing machine. 674
210 Fauqueux, A., La Ferté-Sous-Jouarre, Seine and Marne.—Mills. 674
211 Durvie, Ivry-la-Bataille, Eure.—Mechanical kneading-trough. 674
212 Scheidecker, Ch., Paris.—Shearing machines. 674
213 Roger, jr., & Co., La Ferté-Sous-Jouarre, Seine and Marne.—Mills. 674
214 Sensfelder, Arcueil, Seine.—Shearing machines. 674
215 Aubin & Baron, Paris.—Mills. 674
216 Baily & Co., La Ferté-Sous-Jouarre, Seine and Marne.—Mills. 674
217 Bertrand, J., & Co., La Ferté-Sous-Jouarre.—Mills. 674

Agricultural, Engineering, and Administration.

218 Coignet, senior & junior, & Co., Paris.—Manure. 681
219 Midi Phosphate Manufacturing Co., Paris.—Phosphate of lime. 681
220 Jacquand, senior & junior, Lyons.—Animal charcoal, phosphates, etc. 681
221 Solfatare de Pozzuoli Manufacturing Co., Paris.—Artificial manure. 681
222 Sensfelder, Arcueil, Seine.—Artificial manure. 681
223 Tancrede Bros., Paris.—Animal charcoal. 681
224 Desfeux, Ph., Paris.—Models of agricultural sheds. 683
225 Brot, Leopold, Paris.
   a Furniture and mirrors with double shutters and triple front. 217
   b Mirrors with gilt frames. 219

For classes of exhibits, indicated by numbers at end of entries, see Classification pp. 12-14.
GERMANY.

(West of Nave, Columns 1 to 4.)

Forest, Agricultural, Vegetable, Animal Products.

Arboriculture and Forest Products.
1 Körper & Co., Mannheim.—Resinous products in a manufactured state. 623

Agricultural Products.
1a Aly, August, Hamburg.—Barley, oats, rye, buckwheat, etc. 620
2 Noll, Joh. Balth., Giessen.—Cigars. 623
3 Grosskopf, L., Koenigsberg.—Cigarettes. 623
4 Eckstein, A. M., & Sons, Göttingen.—Tobacco and cigarettes. 623
5 Gaus, August, Baden-Baden.—Tobacco and cigarettes. 623
6 Landfried, P. J., Rauenburg.—Cigars. 623
7 Scherzinger, W., Stollhofen.—Tobacco and cigarettes. 623
8 Lotzbeck Bros., Lahr.—Snuff and tobacco. 623
9 Naumann, L., Dresden.—Spices. 623
10 Muller, A., Dresden.—Cigars. 623

Animal and Vegetable Products.
13 Körper & Co., Mannheim.—Grease and oil. 623
16 Dessauer, A., Aschaffenburg.—Parchment glue. 623
17 Winter, Fr., Offenbach-on-Main.—Glue. 623
21 Leipsic Malt Factory, Schkeuditz, near Leipsic.—Malt. 656
22 Moskopf, Th., Fahr, near Neuwied.—Mustard. 656
24 Naumann, L., Dresden.—Extracts, essences, etc. 656
28 Schörke, A., Gorlitz.—Grape sugar, assorted syrups. 659

COLLECTIVE EXHIBIT OF GERMANY WINES. 660

29 Altenkirch, F., Lorch. 660
30 Dahlen, J. F. J., Lorch. 660
31 Gernersheimer, Jac., Lorch. 660
32 Dahlen, F. K., Lorch. 660
33 Travers, Franz, Lorch. 660
34 Wittemann, Peter, Lorch. 660
35 Fendel, H. J., Lorch. 660
36 Jung, Joh. Ant., Assmanshausen. 660
37 Brück, Erwin, Assmanshausen. 660
38 Grün, Wilh., Assmanshausen. 660
40 Aumüller, Jac., Rüdesheim. 660
41 Brandmüller, J. B., Rüdesheim. 660
43 Dietrich & Co., Rüdesheim. 660
44 Dilthey, Sahl, & Co., Rüdesheim. 660
45 Ehrhardt, C., Rüdesheim. 660
46 Ehrhardt, J., Rüdesheim. 660
48 Jung, J. J., Rüdesheim. 660
49 Jung & Co., Rüdesheim. 660
50 Krass, J. A., Rüdesheim. 660
51 Meuschel, J. W., sr., Rüdesheim. 660
52 Schulz & Reuter, Rüdesheim. 660
53 Winkel & Rothenbach, Rüdesheim. 660
54 Burgeff, N., Geisenheim. 660
55 Höhl Bros., Geisenheim. 660
56 Lade, Fritz, Geisenheim. 660
57 Quitman, A., Geisenheim. 660
58 Rothe & Thorndike, Geisenheim. 660
59 Metternich, Prince von, Johannisburg. 660
60 Forst, J., Johannisberg. 660
61 Klein, Joh., Johannisberg. 660
61a Germont, L. F., Winkel. 660
62 Müller, Gottl., Winkel. 660
63 Cunibert, Baron von, Oestrich. 660
64 Pexz, Ernst, Oestrich. 660
65 Rasch, Oestrich. 660
66 Steinheimer, C. J. B., Oestrich. 660
68 Lauer & Krämer, Eltville. 660
69 Nillkens, A., Eltville. 660
70 Preusel & Bachmann, Eltville. 660
72 Schmidt & Kett, Eltville. 660
73 Kindlinger, V., Neudorf. 660
74 König, J. B., Rauenthal. 660
75 Siegfried, Rauenthal. 660
76 Rosenstein, B., Wiesbaden. 660
77 Zais, Wilhelm, Wiesbaden. 660
78 Diener, H., Hochheim. 660
80 Feist Bros. & Sons, Frankfurt-on-Main. 660
81 Keirrman, Fr., Coblenz. 660
82 Buhl, F. P., Deidesheim. 660
82a Jordan, L. A., Deidesheim. 660
86 Scheithorn, Walblich. 660
83 Fele, Louis, Deidesheim. 660
84 Eckel Bros., Deidesheim. 660
85 Seyler, Fr., Deidesheim. 660
86 Frölich, F. A., Edenkoben. 660
87 Vornberger, J. M., Würzburg. 660
87a Labroise Bros., Neustadt-on-Hardt. 660
88 Lang, F. J., Würzburg. 660
89 Oppmann, J., Würzburg. 660
91 Walckenberg, F. J., Worms. 660
92 Langenbach, J., & Sons, Worms. 660
93 Bach, A. H., Mayence. 660
95 Dreydelsohn & Co., Mayence. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-14.
Wines, Textile Substances, Machines, Implements.

95a Saarbach, E., & Co., Mayence.
95 Jäger & Son, Rüdesheim.
97 Meyer & Coibenz, Bingen.
98 Orb & Weise, Westhofen.
99 Herbster, J., Sulzberg.
100 Durlacher, S., & Sons, Kippenheim.
101 Schütt, A., Bühl.
102 Rössler, A., Neuweier.
103 Brogssitter, P. F., Ahrweiler.
103a Kessler, C. E., & Co., Esslingen.
104 Häusler, C. S., Hirschberg, Silesia.—Wine and cider.
105 Rhenish Sparkling Wine Co., Schierstein.—Wine.
106 Herkell & Co., Mayence.—Wine.
107 Lindbeck, A. G., Magdeburg.—Wines.
107a Wetterhahn, G., Mayence.—Wines.
108 Bäcker & Fier, Treves.—Liqueurs and brandies.
109 Behrens, Th., Kiel.—Wines and brandies.
10 Boyens, P. W., Tönning.—Liqueurs and spirits.
111 Brumby, G., Luckau.—Bitters. 660
112 Dammann, L., & Cordes, Thorn.—Spirits, bitters, essences, etc.
113 Hoffmann, M. & J., Pfalzburg.—Liqueurs.
114 Kadač, J., Berlin.—Bitters and cherry-juice. 660
115 Keiler, J. S., Dantzic.—Liqueurs.
116 Landauer & Macholl, Heilbronn.—Liqueurs.
117 Stein, G. & L., Offenburg.—Liqueurs.
118 Stibbè, H., Cologne.—Liqueurs and essences.
119 Underberg-Albrecht, H., Rheinberg.—Bitters.
120 Drouven, Jac., & Co., Coblenz.—Liqueurs, arrack punch-syrup.
121 Gilka, J. A., Berlin.—Liqueurs and spirits.
122 Lehment, Fr. & C., Kiel.—Liqueurs and spirits.
123 Köpp, Th., & Son, Wesel.—Spirit of vinegar and extracts. 660
24 Ulex, G. F., successors, Neuhaus-on-the-Oste.—Bitters. 660
125 Kantorowicz, H., Posen.—Liqueurs and fruit juices. 660
126 Lazar Brothers, Königsberg, Prussia.—Fruit juices. 660
127 Naumann, Fr., Delitzsch.—Liqueurs and fruit juices. 660
128 Bernhardt, A., Breslau.—Essences and liquors. 660
129 Schneider & Schorn, Magdeburg.—Essence of Jamaica rum. 660
130 Buck Bros., Lübeck.—Vinegar. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

131 Stengel, W., Leipzig.—Potato brandy. 660
132 Meyer, Edward, Stadthagen.—Herb-lathers. 660
133 Ackermann, Louis, Berlin.—Liqueurs. 660
134a Kirchner, A., & Co., Dedesdorff.—Liquors. 660
134 Wiedenbrug, H. T., Barnbeck.—Liqueurs. 660

COLLECTIVE EXHIBIT OF BAVARIAN HOPS, BEER, AND LITERATURE RELATING THERETO. 660

135 Dreijuss & Binswanger, Nuremberg.
136 Sahlmann Bros., Fürth.
137 City Council of Spalt.
138 Carl, J., Nuremberg.
139 Homann, C., Nuremberg.
140 Bottinger, H. F., Würzburg.
141 Böttteville, Baron von Mering.
142 Geisel, L., Neustadt-on-the-Hardt.
143 Pschorr Brewery, Munich.
144 Bassert von Thüngen Brewery, Weissenbach.
145 Weltz, H., Speier.

146 Bavarian Joint-Stock Brewery, Aschafenburg.—Beer. 660
146a Sick, Chr., Speier.—Beer. 660
147 Dortmund Brewery, Aix-la-Chapelle.—Beer. 660
148 Friedrichshüse Joint-stock Brewery, Berlin.—Beer. 660
149 Hildebrand, J., Pfungstadt.—Beer. 660
150 Overbeck, Peter, Dortmund.—Beer. 660
151 Brandt Brewing Co., Tivoli, Berlin.—Beer. 660
152a Roeper, J. F., Neuwied.—Macaroni, vermicelli, tapioca, etc. 662
152 Stollwerk Bros., Cologne.—Chocolates, etc. 662

Textile Substances of Vegetable or Animal Origin.

154 Mens, R. von, Carlsdorf, Silesia.—Merino wool. 667
155 Stein, H., & Co., Frankfort-on-Main.—Spun horse-hair. 669

Machines, Implements and Processes of Manufacture.

156 Mayer & Co., Kalk, near Cologne.—Winnowing and sorting machine. 672
157 Royal Wurtemberg Furnaces, Friedrichshthal.—Sicythes, choppers, etc. 674
158 Joacks & Behrens, Lubeck.—Model of a set of millstones. 674

Agriculture Engineering and Administration.

161 Raumer, C. von, Kunnersdorf, Silesia.—Works and models relating to drainage and irrigation. 681
AUSTRIA.

(West of West Aisle, Columns 1 to 4.)

Forest, Agricultural, Animal and Vegetable Products.

Arboriculture and Forest Products.

1 Weissmann, David, Adlersberg, & Isaac Leib, Porechinsko, Galicia.—Sounding-board wood. 620
2 Frankl, J. G. & L., Vienna.—Austrian timber for furniture manufacturers. 609

Pomology

4 Zierotin, Countess Gabriel von, Charles Pohl, chief gardener, Blauta, Moravia.—Gooseberry and currant bushes, two different fruits growing on the same stem. 620
6 Marko & Weyden, Budapest.—Turkish prunes. 620

Agricultural Products.

7 Lyka, Demeter, Pázmánd, Hungary.—Wheat. 620
8 Solnitzky & Mittler, Brunn. a Malt and barley. 621 b Peas. 621
g Gogl, Dr., Jr., Zeno, Krems.—Mustard. 623
10 Chleborad, Franz, Ladislav, Mrazditz.—Hops. 623
12 Tanzer Bros., Prague.—Hops. 623
13 Schwarz & Sons, Benjamin, Auscha, Bohemia.—Hops. 623
14 Schary, Johann Michael, Prague.—Hops. 623

Water Animals, Fish Culture and Apparatus.

18 Topich, Antonio, Lissa, Dalmatia.—Preserved fish. 641

Animal and Vegetable Products.

19 Kreitner & Sons, David, Hohenbruck, Bohemia.—Leather. 652
20 Icelineck, Adolph, Lieben, Bohemia.—Glove leather. 652
22 Ianesch, Edward, Klagenfurt, Karnten.—Leather. 652
23 Hoffmann, I. and S., Klagenfurt, Karnten.—Leather. 652
24 Foges, I., Gaudenzdorf, near Vienna.—Leather, calf and goat skins. 652
25 Eckstein, H. M., Lieben.—Kid leather. 652
26 Cerinsteine, Anton V., Pardubitz, Bohemia.—Cow leather and calf skin. 652
27 Breuer, Miromil, Elbeteints, Bohemia.—Patent leather. 652
30 Suess, A. H., & Sons, Vienna.—Leather. 652
31 Schmitt, Franz, Rehberg, near Krems.—Leather. 652
32 Schmalzl, George, Gaudenzdorf, near Vienna.—Leather, skins. 652
33 Neuner, Christof, Klagenfurt and Trieste.—Leather. 652
34 Mehlschmidt, Franz, Prague.—Kid leather. 652
34a Nachtmann, Jacob, Tannwald. a Honey. 654 b Raspberry syrup. 654 c Wine and liquors. 654
36 Tschurtschenthaler, Alois, Botzen.—Conserved and dried fruits. 656
37 Sandpickler, Leopold, Gorz.—Candied fruit. 656
38 Gall, Josef Anton, Innsbruck.—Condensed meat and milk. 656
39 Kaufmann, M., Brunn.—Moravian malt. 657
39a Solnitzky & Mittler, Brunn. a Barley. 657 b Malt. 657
c Peas. 657
41 Rosenthal, I., Vienna.—Wheat, wheaten flour. 657
42 Chiozza, Luigi, Cervignano, near Trieste.—Malzbe products. 658
43 Frizzi, Luigi, Trient.—Wine. 660
45 Auchmann, F., Marburg, Styria.—Champagne. 660
47 Achleb, Josef, The Farms, Kvasnici.—Liquor. 660
48 Abeles, Heinrich, Vienna.—Wine. 660
49 Magazzin, Matteo, Zara.—Liquors. 660
50 Luxardo, Girolamo, Zara, Dalmatia.—Liquors. 660
51 Lord & Co., F., Vienna.—Liquor. 660
53 Siebenburger Wine Association, Klausenburg.—Wines. 660
54 Cosmacendi, Anton, Zara.—Liquors. 660
55 Muntheit, Alois, Bozen.—Tyrol wines. 660
56 Kriebhuber, Alois Edler von, Marburg, Styria.—Wine. 660
57 Königstättler Bros., Neuszat, Hungary.—Spirit alcohol. 660
58 Ganz, Joseph, Dornberg, near Gorz.—Wine. 660
59 Fischer, Johann jr., & Franz Hubert, Presburg, Hungary.—Champagne. 660
60 Dreher, Anton, Kleinschwechat, near Vienna.—Beer. 660
61 Dalbello, Antonio, Spalato, Dalmatia.—Liquor. 660
62 Brewery Administration, Budweis, Bohemia.—Beer. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
VI.—AGRICULTURE.

Animal and Vegetable Products, Textiles, Implements.

64 Borhegyi Bros., Gaya, Moravia.—Wine. 660
65 Wretz, Michael, Marburg, Styria.—Wine. 660
66 A. Schwartz’s Successors, Edward & Emmerich Grossinger, Vienna.—Wine. 660
67 Sessler, Moritz & Leopold, Tyrnau, Hungary.—Malt. 660
68 Schnabel, Julius, Oravitzá, Hungary.—Slivovitz brandy. 660
69 Schenkel, August, Gut Lukauszen, near Luttenberg.—Wine. 660
70 Scarizza Giovanni, Spalato, Dalmatia.—Liquor. 660
71 Romer & Son, I., Vienna.—Wine. 660
72 Reiser, Dr. Othmar, Vienna.—Wine. 660
73 Prima Societa Enologica Dalmatia, Spalato, Dalmatia.—Wine. 660
74 Pokorny, Franz, Agram, Croatia.—Fruit distillery, wine. 660
75 Perko, Francis, Marburg, Styria.—Wine. 660
76 Noziecka, L. C., & W. Umgelter, Brunn.—Malt. 660
77 Mittler & Co., Brunn.—Malt. 660
78 Strakosch, Ignaz, Gross Seelovitz, Moravia.—Liquor essences. 660
79 Neuman & Sons, Emanuel, Waitzen, Hungary.—Vinegar essences. 660
80 Spreng, Fridolin, Graz.—Biscuits. 661
81 Brichta, Jacob, Trencsin, Hungary.—Juniper berries and oil. 662
82 Textile Substances of Vegetable or Animal Origin.

83 Russ & Co., M. H., Prague.—Hops. 666
83a Zeschka, L., Agram.—Rags. 666
84 Land & Forest Economy District Union, Neustadt, Moravia.—Flax. 666
85 Narbuth, Johann, Palanka, Hungary.—Hemp. 666
86 Karolyi, Count Alois, Stampfen, Hungary.—Sheep wool in fleeces and rolls. 667
87 Hunyady, Count Emerich, Uerményi, Hungary.—Wool fleeces. 667
88 Sheep-wool Washing Co., Budapest.—Cleaned wool. 667

Machines, Implements, and Processes of Manufacture.

89 Auer, Josef, Senftenberg, near Krems.—Vine shears, gardeners’ and insect scissors, pruning saw, and sheep shears. 670
91 Austrian Commission, Vienna.—Scythes and sickles. 672
92 Mosdorfer, Balthasar, Weiz, Styria.—Sickles. 672
93 Reibstein, Ignaz, Bubenc, Bohemia.—Beehives and utensils. 674

Agricultural Engineering and Administration.

94 Wärmer, Sigmund, Vienna.—Drain pipes. 680
95 Konstein, Gottfried, Prague.—Ether and essences. 681
96 Sheep-wool Washing Co., Budapest.—Potash. 681
97 Haas & Rosenfeld, Gaya.—Ether. 681

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

(N.B.—Other Austrian Exhibits in this Department are installed in the Main Building, and catalogued in that volume.)
SWITZERLAND.

(Note.—The Agricultural Exhibit of Switzerland is installed in the Main Building, and catalogued in that volume.)

BELGIUM.

(Note.—The Agricultural Exhibit of Belgium is installed in the Main Building, and catalogued in that volume.)

NETHERLANDS.

(West of West Aisle, Columns 3 to 5.)

Agricultural, Animal, Vegetable Products.

Arboriculture and Forest Products.
1 Thyssen, C. J. F.—Sieve frames. 620
2 Kleintjes, J., Rotterdam.—Plant 100 years old. 621
3 Hulskamp, F. A., Amsterdam.—Cork. 624

Agricultural Products.
4 Dutch Agricultural Society (collective exhibit).—Agriculture, horticulture, arboriculture. 620
5 Agricultural Association (collective exhibit), Geldrian.—Agricultural products. 620
6 Zeeland Association for Encouragement of Agriculture & Cattle-Breeding (collective exhibit). Middelburg.—Seeds, dye-woods, plants, and photographs of cattle. 620
7 Bouma, N. G. & J. G., Sneek.—Buckwheat. 620
8 Pool, Cz. P. van der, Brielle.
   a Wheat, barley, oats. 620
   b Cabbage. 624
   c Seeds. 624
9 Post, C. G. van der, Gouda.—Cigars. 623
10 Bleckmann, A. & B. C., & Van der Pool, H., Arnhem.—Cigars. 623
11 Mignot, A. J., & de Block, A. A. M., Eindhoven.—Cigars. 623
12 Jagt, P. G. van der, & Francois, J., Utrecht.—Cigars. 623
13 Koppen, H. T., & Son, Leerdam.—Cigars. 623

Water Animals, Fish Culture and Apparatus.
14 Maas, A. E., Scheveningen.—Boats, nets, hooks, etc. 647

Animal and Vegetable Products.
15 Heil, L. W., Haarlem.—Edam cheese. 651
16 Goede, D., Alkmaar.—Cheese. 651
17 Vliet, A. van, Bergambacht.—Cheese and butter. 651
18 Jong, de, M. & K., Hoorn.—Edam cheese. 651
21 Draisma van Valkenburg, S., Leeuwarden.—Liver-oil containing iodine and iron. 651
22 Heijnsbergen, P. van, Zaandam.—Liver-oil containing iron. 652
23 Klütgen, J. H., Rotterdam.—Bed-fathers. 652
24 Visser, J., Amersfoort.—Brown and white wax. 654
25 Surie, Widow J. W., & Son, & Co., Rotterdam.—Preserved eatables. 656
26 Nieuwenhuys, J. H., jr., & Co., Amsterdam.—Conserved eatables in tins, boxes, and bottles. 656
28 Hoogenstraaten, D. A. J., Leiden.—Vegetables and fruit in cans and boxes. 656
29 Wolff, M. B., Amersfoort.—Flour, ground and unground. 657
30 Schober, J. H. S., Utrecht.—Flour. 657

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp 12-14.
### Animal and Vegetable Products.

| 31 | Van Marken, J. C., jr., Delft. | d Corn. | 667 |
| 32 | Grootea, Pz. M., Westzaan. | Cacao, chocolate, and chocolateine. | 668 |
| 34 | Haagen, R. C. van, Utrecht. | Cacao, cacao-butter, and chocolate. | 658 |
| 35 | Egberts, B. H., Dalfsen. | Suckory. | 658 |
| 36 | Duijvis, J., Koog-aan-de-Zaan. | Starch. | 658 |
| 37 | Veenhoven, Schuringa, & Co., Wil- | dervank. | 658 |
| 38 | Stoet van Marxveld, G., Baron, Vol- | lenhoven. | 659 |
| 39 | Verweij, N. & Co., Tiel. | Sugar of grape and potato-meal. | 669 |
| 40 | De Bont, M. J., Amsterdam. | Confectionery and chocolate, in forms and moulds. | 659 |
| 41 | Visser, J., Amersfoort. | Brown and white meal. | 660 |
| 42 | Pollen, L. P. M., Rotterdam. | Liquors. | 660 |
| 43 | Schade van Westrum, J. C., Schiedam. | Gin. | 660 |
| 44 | Kiderlen, E., Delfshaven. | Alcohol and potash. | 660 |
| 45 | Bal, J. J., Middelburg. | Red currant wine. | 660 |
| 46 | Catz, S., Pekel, A. | Bitters and liquors. | 660 |
| 47 | Groen, Gz. J. B., Amsterdam. | Bitters and wine. | 660 |
| 48 | Stibbe, Lz. G., Kampen. | Fine liquors and bitters. | 660 |
| 49 | Nolet, J. J. G., Schiedam. | Gin and spirits. | 660 |
| 51 | Blankenheijm, J. J. M., & Lede, C. A. E. van, Rotterdam. | Gin. | 660 |

| 52 | Hoppe, P., Amsterdam. | Gin, liquors, and distillations. | 660 |
| 53 | Bols, de Erven Lucas, Amsterdam. | Fine liquors. | 660 |
| 54 | Oostra, G. Wildervank, Groningen. | Liquor and elixir. | 660 |
| 55 | Hofman, A. J. T., Woerden. | Liquors, bitters, extracts, and spirits. | 660 |
| 56 | Wynnand, Fockink, Amsterdam. | Fine liquors. | 660 |
| 58 | Valk, J. van der, & Co., Delfshaven. | Gin made of grain double distilled. | 660 |
| 59 | Zujiëkom, van Levert, & Co., Amster- | dam. | Fine liquors, bitters, gin, brandy, etc. | 660 |
| 60 | Meder, J. J., Schiedam. | Swan gin. | 660 |
| 61 | Levert & Co., Amsterdam. | Liquors. | 660 |
| 62 | Rademakers, A. C., Delfshaven. | Gin. | 660 |
| 63 | Smits, F. H. M., Breda. | Strong beer. | 660 |
| 64 | Van Dulken, Weiland, & Co., Rotter- | dam. | Gin, brandy, and alcohol. | 660 |
| 65 | Lensvelt, G., Gravenhage. | Table-biscuit, cake, ship-bread. | 661 |
| 66 | Ulrich, W. D., Rotterdam. | Ship-biscuit. | 661 |
| 67 | De Jongh, Wz. D., Dordrecht. | Vegetable oils and seed cakes. | 662 |
| 68 | Kruisimulder, Cz. D., Amsterdam. | Vegetable oils. | 662 |
| 69 | Dutch Association for Encouragement of the Flax Industry, Rotterdam. | Flax and linseed. | 662 |
| 70 | Gorter Brothers, Dokkum. | Flax. | 666 |
| 71 | Van Casteel, A. F., Rotterdam. | Holland, Freeland, and Iceland flax. | 666 |
| 72 | Mulder, L., Arnhem. | Agricultural newspaper. | 306 |

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**DENMARK.**

*(Note.—The Agricultural Exhibit of Denmark is installed in the Main Building, and catalogued in that volume.)*
Forest, Agricultural, Animal, and Vegetable Products.

Agriculture, Arboriculture, and Forest Products.

1 New Gellivara Co. (limited), Lulea. - Fir timber grown at the latitude of 67° N.; specimens of lumber. 600

Agricultural Products.

3 Fogelmark, Sixten, Ava, Lulea. - Cereals. 620
4 Hagendahl, C. A., Orebro. a Cereals. 620 b Seeds. 624
5 Hofmeister, Ch., Ingeistad, Kristianstad. - Cereals. 620
6 Hultenberg, C. A., Borgholm. - Barley. 620
6a New Gellivara Co. (limited), Lulea. - Agricultural products. 620
7 Kalmar Agricultural Society, Westervik. - Cereals. 620
8 Norbotten Agricultural Society, Lulea. - Agricultural products. 620
10 Platen, Count Carl von, Orbyhus. a Cereals. 620 b Seeds of forage plants. 623
12 Scheele, G. von, Kilanda, Goteborg. a Cereals. 620 b Grass seeds. 624
14 Stenstrom, O. E., Gardajö, Karlstad. - Cereals. 620
15 Upsala Agricultural Society, Upsala. a Cereals. 620 b Seeds. 624
16 Westerbottnens Agricultural Society, Umea. - Cereals. 620
17 Westmanlands Agricultural Society, Stenby, Strömsholm. a Cereals. 620 b Seeds. 624
19 Orebro Agricultural Society, Orebro, Nora. - Cereals. 620
21 Berggren, D. & J., Stockholm. - Tobacco. 623
22 Dahl, P., Carlashamn. - Snuff. 623
23 Hennig & Papenhagen, Kalmar. - Chicory. 623

Animal and Vegetable Products.

30 Ericsson, N. O., Tangen, Lysekil. - Anchovies and herrings. 642
31 Hallgren, J. J., Gullholmen, Oroust. - Anchovies and herrings. 642
32 Royal Swedish Commission, Stockholm. a Pickled fish. 642 b Instruments and apparatus for fishing. 647
33 Lundgren, P. W., Stockholm. - Preserved fish. 642
34 Lytell, Aug., Lysekil. - Anchovies. 642
35 Nilsson, Edv., Grebbestad. - Preserved mackerel. 642

Water Animals, Fish Culture, and Apparatus.

27 Amundson, Mrs. C. M., Uddevalla. - Oyster anchovy. 642
28 Andersson, Gustaf, Fjellbacka. - Anchovy and sardines. 642
29 Bergström, H. C., Lysekil. - Anchovy and herrings. 642

For classes of exhibits, indicated by numbers at end of entries. see Classification, pp. 12-14.
Machines, Implements, Engineering, and Administration.

65 Wallis, A. B., Dybeck, Ystad.—
   Ale. 661
65 Ulander, A., Upsala.—Punch. 660
66 Feith, H. J., & Son, Upsala.—Biscuits. 661
67 Royal Swedish Commission, Stockholm.—Dried bread. 661

Machines, Implements, and Processes of Manufacture.

69 Eklundh, L. P., Ulricehamn.—
   Plows. 670
70 Göteborg Machine Co. (limited),
   Göteborg.—Plows. 670
72 Pettersson, C. E., Elfdalen.—Scythes. 672
73 Andersson, J., Orebro.—Cow and
   sheep bells. 673

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

74 Atterling, C., Orebro.—Dairy apparatus. 675
75 Kallinge Iron Works, Malmö.—Dairy utensils of iron and pewter. 675
76 Rehnström, W., Köping.—Drawing of dairy-houses and utensils. 675

Agricultural Engineering and Administration.

79 Friestedt, A. W., Stockholm.—Commercial fertilizers. 681
80 Betou, P. D. in de, Stockholm.—Artificial manures. 681
81 Superphosphate Manufacturing Co.,
   Stockholm.—Fertilizers. 681
84 Löfvenskiöld, Ch., Mariestad.—
   Drawings of farm-houses. 682
Forest, Agricultural, Animal, and Vegetable Products, Fish Culture.

Arboriculture and Forest Products.
1 Holst, Chr., Ladegaardssøn, Christiania.—Samples of Norwegian wood. 600
4 Holmen's Sawing & Planing Mills, Drammen.—Grooved and tongued flooring boards and moldings. 600
5 Koldfossen's Bobbin Works, near Bergen.—Blocks and bobbins of birch and alder, condenser props, etc. 600
6 Thams & Co., M., Orkedal.—Trunks of trees, planks, battens, staves, cornices, cases, etc. 600

Agricultural Products.
7 Schirod, Chr., Aker.—Wheat, rye, corn, and barley. 620
8 Holst, Chr., Ladegaardssøn, Christiania.—Cereals in ear. 620
9 Agricultural School, Aas near Christiania. a Oats, rye, and barley. 620 b Seeds. 624
10 Rosenkrone, Baron, Rosendal.—Grain. 620
11 Stend Agricultural School. a Corn. 620 b Potatoes. 622
11 a Brovold, T.—Grain. 620
11 b Torkildsen, J.—Grain. 620
11 c Svanoe, Chr.—Grain. 620

Land Animals.
12 Holst, Chr., Ladegaardssøn, Christiania.—Photographs of Telemark cows and description of the race. 631

Marine Animals. Fish Culture and Apparatus.
13 Museum of Bergen, Bergen. a Mammals. 640 b Fishes. 641 c Crustaceans. 643 d Mollusks, oysters, etc., stuffed and in alcohol. 644
15 Bergens Rögeri, Bergen.—Red herrings. 642
16 Board of Commerce, Bergen. a Herrings, cods, hils, saithe, tusk, haddock, etc., pickled and dried. 642 b Fish-oil, fish-roses. 646
17 Board of Commerce, Aalesund. a Dried and salted fish. 642 b Collection of fishing tackle. 647
18 Hjul & Platou, Christiania.—Ancho- chovies. 642
19 Johnsen, Chr., Christiansund.—Salted and dried cod. 642
21 Mohn, Peter, Bergen.—White herrings. 642
22 Nordrock, Wm., Christiania.—An- chovies. 642
23 Telefsen, Mrs. Rina, Christiania.—Ancho- chovies. 642
24 Smith, Mrs. Gina, Christiania.—Ancho- chovies. 642
25 Soyland, L. B., Flekkefjord.—Preserved fish. 642
26 Dons, Henrik, Christiania.—Fish and anchovies. 642
27 Helgesen, H. A., Aalesund.—Preserved salmon, lobsters, etc. 642
28 Ronneberg, Carl A., Aalesund.—Salt fish. 642
29 Hjorth, Fr., Fredrikstad.—Ancho- chovies. 642
30 Lund, Georg, Christiania.—Ancho- chovies. 642
31 Thorne, Chr. Aug., Moss.—Ancho- chovies. 642
32 Egidius, Peter, Bergen.—Herring and anchovies. 642
33 Bordewich & Co., Lyngvær.—Fish- meal, fish-glue, caviar, fish-oil. 646
34 Dahl, Jens. O., Havøen.-Cod and herring nets, cod-lines. 647
35 Erichsen, Thomas, Bergen.—Fish- hooks. 647
36 Fagerheim Net Company, Bergen. —Salmon and herring seines, cod, mackerel, and herring nets. 647
37 Krassby Brothers, Aalesund.—Bait for cod-lines. 647
38 Falck, Ytter, Christiania.—Norwegian fishing sled with implements. 647
39 Bergen Glass Works, Bergen.—Buoys and floats for fishing nets and lines. 647

Animal and Vegetable Products.
40 Rosing's, A., widow, Christiania. a Condensed milk. 651 b Crackers of fishmeal. 661
40 a Stend Agricultural School.—But- ter. 651
41 Lund, Georg, Christiania.—Preserved old cheese. 651
42 Klem, Hansen & Co., Trondhjem.—Leather and sealing. 652
43 Meyer, Samuel B., Bergen.—Leath- er. 652
44 Hallen, J. P., Christiania.—Leath- er. 652
45 Fossen's Tannery, Flekkefjord.—Leather. 652

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Animal and Vegetable Products, Implements, Engineering.

46 Dalen’s Tannery, Flekkefjord.—Leather. 652
48 Haar & Wesnaes, Stavanger.—Preserved meats, etc. 656
49 Helgesen, H. A., Aalesund.—Preserved meats, etc. 656
50 Stavanger Preserving Company, Stavanger.—Preserved meats, beer, livers, fish, milk, cream, etc. 656
51 Dons, Henrik, Christiania.—Preserved meats, game, poultry, soups. 656
52 Tellefsen, Mrs. Rina, Christiania.—Preserved game. 656
53 Norwegian Condensed Milk Company, Christiania.—Condensed milk. 656
54 Silverdale, Chr. Aug., Moss.—Preserved meat and vegetables. 656
55 Norwegian Preserving Co., Mandal.—Preserved meats and vegetables. 656
56 Christiania Brewery, Christiania.—Pale ale. 660
57 Dahl, E. C., Trondhjem.—Pale ale. 660
58 Forseth, O. N., & Co., Christiania.—Pale ale. 660
59 Frydenlund Brewery, Christiania.—Pale ale. 660
60 Hamar Brewery, Hamar.—Pale ale. 660
61 Kongsberg Brewery, Kongsberg.—Pale ale. 660
63 Lysholm, Jorgen B., Trondhjem.—Norwegian brandy and punch. 660
64 Poulsen, H., & Co., Christiania.—Arrack punch. 660
65 Ruud, J. A., Christiania.—Pale ale from Moss brewery, Norwegian corn brandy. 660
66 Aass, P. L., Drammen.—Beer. 660
68 Wriedt, Chr., Drammen.—Beer. 660
69 Tandberg, Frants, Drammen.—Norwegian cordials. 660
70 Salicath, Oscar, Christiania.—Sugar-drops and punch. 660
71 Anisdahl, R. O., Skien.—Drops and peppermint. 662

Machines, Implements, and Processes of Manufacture.

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d Aguardente from sugar-cane, and liquor from maté herb and quince. 660

319 Long & Co.—Wax. 654

320 Miro, D. Maria.—Wax. 654

321 Safarrana, A. T.—Beeswax and wax candles. 654

322 Province of Goyaz.—Beeswax. 654

323 Araujo, J. Pereira de Sz.—Yellow wax. 654

324 Araujo, J. A. Vieira.—Honey. 654

325 Xavier, A. de Paula.—Honey. 654

326 Xavier, D. Lecocadia de P.—Wax. 654

327 Mendes, J. Olinto.—Honey and wax. 654

328 Macedo & Azeredo.—Wax. 654

329 Province of Ceara.—Sun-dried beef and confectionery. 656

330 Canoza, Rosalina R. Botelha.—Preserved vegetables. 656

331 Vasconcellos, F. P. de.—Preserved vegetables. 656

332 Castro, M. José de.—Sweetmeats. 656

333 Silva, Leal, & Santos.—Preserves. 656

334 Gattier & Wagner.—Preserved fruits. 656

335 Province of Para.—Preserved meats. 656

336 Santos & Ferreira.—Preserved vegetables, marmalade, and fruit-butter. 656

337 Province of Maranhao.

a Rice. 656
b Vegetable oils. 662

338 Province of Pernambuco.

a Dried fruits. 656
b Manioc and arrow-root flour. 657
c Sugar. 659
d Aguardente from sugar-cane. 660
e Cocoa oil. 662

339 Tamanaco Factory.—Crushed rice. 657

340 Schimmelfung. A.—Rye flour. 657

341 Dezincourt.—Arrowroot flour. 657

342 Alvarenga, Dr.

a Flour. 657
b Tapioca. 658

343 Leao, Hermelindo de.—Rice. 657

344 Murucy, Dr.—Maize and rye-flour. 657

345 Directory Board of the Colony of Angelina.—Corn-flour from the colony. 657

346 Silva, Carneiro da.—Manioc-flour. 657

347 Tripodi, Silvino.—Rice. 657

For classes of exhibits, indicated at and of entries, see Classification, pp. 12-14.
Animal and Vegetable Products.

348 Cordeiro, jr.—Rice on the branch. 657
349 Tarranbae, J.—Arrowroot flour. 657
350 Carvalho, Lima.—Manioc and orris-root flour. 657
351 Province of Santa Catharina.—Flour, rice, and arrowroot flour. 657
352 Guimarães, Antonio.  
- a Rice. 657
- b Aguardente from sugar-cane, orange, etc. 660
353 N——N——.  
- a Rice. 657
- b Farinas. 658
- c Vinegar. 660
354 Silva, M. C., & Sons.—Tapioca. 657
355 Pereira, J. J.—Farina of manioc. 657
356 Colony of Angelina.—Wheat flour. 657
357 Silva, J. J. Correa da.—Farina of manioc and tapioca. 657
358 Province of Parana.  
- a Feculas. 657
- b Matte liquor. 660
359 Province of Pernambuco.—Manioc and arrowroot flour. 657
360 Leao & Alves Grist Mill.—Wheat flour. 657
361 Pirapitinga, Baron of.—Polvilho (a starch). 658
362 Province of Santa Catharina.—Polvilho (a starch). 658
363 Fleminense Agricultural Institute.—Polvilho (a starch). 658
364 Pirapitinga, Baron of.—Tapioca and orris-root. 658
365 Constanca, Maria, & Sons.—Tapioca and orris-root. 658
366 Pinheiro, Thomas.—Sugar. 659
367 Carvalho & Oliveira.—Syrup and specé. 659
368 Diaz, Isidoro.—Sugar and syrup. 659
369 Maua, Viscount of.—Refined sugar. 660
370 Desincourt.—Crystallized sugar. 660
371 Barros, Bernardino de.—Brown and white sugar. 660
372 Barros, Fernandes de.—Sugar. 659
373 Costa & Co.—Refined sugar. 659
374 Costa, Ribeiro de.—Sugar. 659
375 Souza, Alves da.—Sugar. 659
376 Vianna, Paula.—Sugar. 659
377 Boa-Viagem, Baron of.—Sugar. 659
378 Wanderley, Barros.—Sugar. 659
379 Villa-Franca, Baron de.—Sugar. 659
380 Leao, Souza.—Sugar. 659
381 Virgens, Bernardo da.—Sugar. 659
382 Bastos, Rodriguez.—Sugar. 659
383 Braga & Co.  
- a Syrups. 660
- b Liquors; aguardente, cognac, etc. 660
384Province of Bahia.  
- a Refined sugar. 659
- b Chocolate if mixed. 661
385 Barroso, Paula.  
- a Sugar. 669
- b Aguardente from sugar-cane. 660
386 Castro, Ribeiro de.  
- a Sugar. 659
- b Brandy from sugar-cane. 660
387 Virgens, M. B. das.—Sugar. 659
388 Mansell, Carré, & Co.—Sugar. 659
389 Braga & Co.—Syrups. 659
390 Colony of Iatathy.—Sugar-cane brandy. 659
391 Braga & Brother.—Brandy, liquors, and alcohol. 660
392 Vellez Perdigao, D.—Alcoholic drinks and pineapple vinegar. 660
393 Freyung, Otto.—Liquors. 660
394 Belache.—Liquors. 660
395 Bella Vista, Baron of.—Sugar-cane brandy and orange liquor. 660
396 Amaral Raposó, J. do.—Liquors. 660
397 Carreira, F. L.—Wines and brandies. 659
398 Carneiro, F. Lucas.—Pao wine. 660
399 Bastos & Camacho.—Liquors and cordials. 660
400 Teixeira, A. de A.—Tonic liquors. 660
401 Bouly, José.—Pao wine. 660
402 Votuvera Commission.—Pao wine. 660
403 Silva, J. H. da.—Brandy and wine. 660
404 Falcao, Paulino P.—Sugar-cane brandy. 660
405 Souza, M. I. M. de.—Brandy and Laranginha. 660
406 Mendes, J. Olinto.—Liquor. 660
407 Menezes, B. A. de.—Quince liquor. 660
408 Xavier, A. P.—Honey wine, alcohol, and brandy. 660
409 Castelnuova, T.—Absinthe. 660
410 Moraes Rozeira, M. G. de.—Wines. 660
411 Vasconcellos, Francisco P. de.—Orange wine and alcoholic drinks. 660
412 Marizón, F. M. Celli de.—Laranginha. 660
413 Araujo, Ignacio de.—Liquors. 660
414 Oliveira, Roiz de.—Liquors. 660
415 Carvalho, Leitao de.—Laranginha and gin. 660
416 Falcao, Piris.—Aguardente. 660
417 Raposo, Amador.—Wines and liquors. 660
418 Pinto, Oliveira.—Aguardente from sugar-cane and caju wine. 660
419 Azevedo, Pereira de.—Aguardente. 660
420 Carvalho, M. de.—Gin. 660
421 Jeremóabo, T.—Aguardente from honey. 660
422 Schulmann & Co.—Wine and vinegar from sugar-cane. 660
423 Pimenta, Mattos.—Hesperidina-Yaguerembo. 660
424 Oliveira, C., & Sons.—Wine and aguardente from sugar-cane; vinegar from pine apple. 660
425 Frey, Otto.—Liquors. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Animal and Vegetable Products, Textile Substances.

426 Vasconcellos, P. de.—Orange wine. 660
427 Cattermole, Erdman.—Wines and liquors. 660
428 Alves & Co.—Liquors. 660
429 Barroso, Carvalho.—Alcohol. 660
430 Silveira, N.—Aguardente. 660
431 Pinheiro, Thomaz.—Laranjinha. 660
432 Caipora, Guimaraes.—Laranjinha. 660
433 Bella-Vista, Baron of.—Aguardente. 660
434 Province of Para.—Guarana. 660
435 Pereira, Estevao.—Laranjinha, aguardente from sugar-cane. 660
436 Itabaiana, Baron de.—Laranjinha. 660
437 Silva, Carneiro da.—Laranjinha. 660
438 Rebelo, Silva.—Liquor from coffee and other plants. 660
439 Mamede.—Caju wine for medicinal purposes. 660
440 Macedo, J. de.—Liquors. 660
441 Le Page.—Wines and Vinegar. 660
442 Viotti.—Peach liquor. 660
443 Vianna, Oliveira.—Aguardente. 660
444 Biagem, Boa, Baron da.—Aguardente. 660
445 Sardinha.—Wine. 660
446 Pinho, Francisco do.—Chocolate. 661
447 Leao, Hermelino de.—Farina biscuit. 661
448 Murici, Dr. Leao, Ermelindo de.—Liquor biscuits. 661
449 Silva, Leal, & Santos.—Vermicelli. 661
450 Province of Bahia.—Musgo chocolate. 636
451 Pinho, Francisco do.—Chocolate. 656
452 Dias, J. D.—Vegetable oils. 656
453 Cohin, Eliezer.—Oil of copahiba. 656
454 Cavalcante, J. B.—Oil of andiroba. 656
455 Barbosa, J. E. C.—Oil of batiputa. 656
456 Braga, J. F. C.—Oil of copahiba. 662
457 Veiga, J. da.—Oil of togo. 662
458 Silva, T. R. da.—Cocoonut oil. 662
459 Jorge, M. F. A.—Cocoonut oil. 662
460 Stechel, Frederico.—Oils. 662
461 Barreto, Jr.—Oils of copahiba, andiroba, etc. 662
462 Falcão, Dias C.—Oils. 662
463 Ferreira Valle, R. J.—Cocoonut oil. 662
464 Veyra, M. L.—Cocoonut oil. 662
465 Veyra, S. A.—Andiroba oil. 662
466 Province of Maranhao.—Oil of copahiba. 662
467 District of Paulo Afonso.—Cajunut oil. 662
468 Province of Ceara.—Oils. 662
469 Presidency of the Province of Bahia.—Richius and cocoonut oil. 662
470 Perdigao.—Vegetable oils. 662

Textile Substances of Vegetable or Animal Origin.

471 Mello, Correio de.—Brown cotton. 665
472 Hayer, Martin.—Cotton. 665
473 Moreira, Collares.—Cotton from Maranhao. 665
474 Province of Ceara.—Cotton. 665
475 Province of Matto Grosso.—Guinea cotton. 665
476 Province of Parahyba.—Cotton. 665
477 Province of Rio Grande do Norte.—Cotton. 665
478 C.—J. T. A.—Cotton from S. Paulo. 665
479 Barros, Souza.—Cotton from S. Paulo. 665
480 Maylasky.—Cotton from Soracaba. 665
481 B.—A. A.—Cotton from S. Paulo. 665
482 A.—J. C.—Cotton from S. Paulo. 665
483 Province of Alagoas.—Vegetable wool. 665
484 Province of Pernambuco.
  a Russian cotton. 665
  b Tow. 666
  c Bristles. 669
485 Province of Paraana.
  a Cotton. 665
  b Flax. 666
  c Wool. 667
d Animal hair. 669
486 Province of Maranhao.—Ginned cotton. 665
487 Municipality of Quebranguelo.—Cotton in the boll and twisted. 665
488 Province of San Paulo.—Cotton. 665
489 Miranda, M. M. de.—Ginned cotton. 665
490 Athayde, M. E. Souza.—Cotton on the stem. 665
491 G. B. T., Rio de Janeiro.—Cotton on the stem. 665
492 Soares, O. J.—Cotton. 665
493 Merch, Maximiliano.—Cotton. 665
494 Paes Leme, Rosalina.—Cotton. 665
495 Silva, F. J. Xavier da.—Cotton. 665
496 Colony Itajahy.—Cotton. 665
497 Mello, J. Correira de.—Cotton, called creoula. 665
498 Brava, Fray Luiz da.—Cotton. 665
499 Colony of Sancta Maria de Soledade.—Cotton. 665
500 Colony Blumenau.—Cotton. 665
501 Decker, Isaac.—Cotton. 665
502 Valle, Raymundo J. F.—Cotton on the stem. 665
503 Commission for Carnarui.—Grey cotton. 665

For classes of exhibits, indicated by numbers at end of entries, see Classification. pp. 12-14.
Textile Substances, Machinery, Engineering, Administration.

504 Barros, Diogo A. de.—Cotton in skeins. 665
505 J. C. A., Limeira.—Cotton. 665
506 Commission General for the National Exhibitions, Rio de Janeiro, a Hemp and other vegetable fibres. 666
b Horse-hair and other hair. 669
507 Province of Pernambuco.
   a Vegetable fibres. 666
   b Bristles. 668
508 Province of Sancta Catharina.—Tucum thread and paina. 666
509 Commission for Votureava.—Isca de Roca. 666
510 Province of Amazonas.—Piassaba fibres. 666
511 Barros, L. Gomes de.—Cipo mata gome for withe. 666
512 Muricy, Dr.—Cipo florao. 666
513 Leao, Rego Barros S.—White embira. 666
514 Palma, Ant. J. da.—Red embira. 666
515 Lacerda, A. F. de.—Piattaba fibres. 666
516 Bley, J.—Fibres of the Urtica speciosa. 666
517 Barros, A. Aguiar de.—Vegetable fibres. 666
518 Guimaraes, M. A.—Betas and fibres of tucum. 666
519 Oliveira, P. M. de.—Tapuru. 666
520 Taborda Ribas, M.—Isca of Urupe. 666
521 Boim, F. Theodoro do.—Fibres of the Anona silvatica. 666
522 Kilian, J. E.—Vegetable fibres. 666
523 Ferreira, S. P., & Negro, J. de S.—Fibres of the Cecropia pellata. 666
524 Leao, Agostinho de.—Paina. 666
525 Cruz, B. A. da, & Bomfun, Florindo T.—Fibres of bombax and of the Copifera officinalis. 666
526 Portella, Felix F.—Vegetable hair. 666
527 Ferreira & Co., Gasper P.—Fibres of the umbuha tree. 666
528 Bomfin, F. Theodoro do, and others.—Vegetable fibres. 666
529 Paes Leme, Rosalina.—Flax. 666
530 Keller, Philippe.—Flax. 666
531 Kalden, Baron of.—Prepared flax. 666
532 Ackermann, Carlos, & Blader G.—Prepared flax. 666
533 Barros, F. Fernandes de.—Fibres of tucum. 666
534 Leao, E. de.—Flax. 666
535 Almeida, A. Rufino de.—Vegetable fibres. 666
536 Province of Ceara.—Fibres of tucum and paina. 666
537 Steele, J.—Jute. 666
538 Leite, Severino.—Vegetable hair and wool. 666
539 Lang & Co.—Hemp and flax. 666

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
ARGENTINE REPUBLIC.

(West of West Aisle, Columns 9 to 13.)

Arboriculture and Forest Products.

17 Provincial Commission, Province of Tucuman.
 a Samples of wood in logs, partly polished. 600
 b Cebill bark for tanning, Socondo. 602

18 Provincial Commission, Province of Mendoza.
 a Samples of wood in logs. 600
 b Chanar bark for cleaning cloth and Retortuno for tanning. 602
 c Gums and resins. 603

19 Videla, Victor, Province of San Luis.
 a Collection of woods; polished samples. 600
 b Barks for tanning. 602

20 Provincial Commission, Province of Corrientes.—
 a Collection of polished and unpolished woods. 600
 b Bark of black laurel and curupai tree, used for tanning, etc. 602
 c Peanuts, and creeping plant called curu-hay guazu. 605

21 Roiban, Enrique, Province of Corrientes.—Caroba wood. 600

22 Resaagli, Luis, Province of Corrientes.—Collection of woods; boxes. 600

22a River Bermejo Navigation Co., Chaco, Argentine Territory.—Palo santo wood. 600

23 Bella Vista Sub-Commission, Province of Corrientes.
 a Collection of woods. 600
 b Orange seed, chichita, suspires, peanuts. 605

24 Perré, Vicente, Province of Corrientes.—Sticks of different woods. 600

25 National Department of Agriculture, Province of Corrientes.—Samples of Urunday wood. 600

26 Justice of the Peace of Ensenada, Province of Buenos Ayres.—Collection of woods. 600

27 Valdes, Emiliano, & Cipriano, Province of Buenos Ayres.
 a Collection of curramuel and other woods. 600
 b Mushrooms grown on willow bark. 604

28 Agricultural School of Santa Catalina, Province of Buenos Ayres.—Beehives made of black acacia. 600

29 Roiban, Federico, Province of Corrientes.—Pictures of trees in water-colors. 600

30 Boero, José, & Poletti, Antonio, Province of Buenos Ayres.—A rack made of twenty-five kinds of wood. 600

31 Iniguez, Manuel, Province of Buenos Ayres.—Specimens of woods. 600

Arboriculture and Forest Products.

1 Commission of the Chaco Argentine Territory.
 a Collection of natural and polished woods. 600
 b Indigo plant and curupai bark. 602

2 Gallegos, Miguel, Chaco Argentine Territory.—A cane; samples of wood. 600

3 Aguilar, Francisco D., Province of San Juan.—Flowers made from carob tree wood; chica wood; collection of woods to be presented to the National Department of Agriculture. 600

4 Laugan, Juan, Province of San Juan.—Collection of woods. 600

5 Provincial Commission, Province of Santa Fé.
 a Collection of woods, polished lignum-vitae. 600
 b Laurel bark and tanning materials. 602

6 Echevarria, Celicio, Province of Santa Fé.
 a Collection of woods; polished samples. 600
 b Dyes. 602

7 Provincial Commission, Province of Cordoba.
 a Collection of woods; polished samples. 600
 b White carob tree and melle seed. 605

8 Cornejo, John, Province of Salta.
 a Cherimoya seed. 600
 b Palo Santo resin. 603

10 Provincial Commission, Province of Salta.
 a Collection of seeds and woods. 600
 b Dying and tanning materials. 602

11 Villar, Salvador, Province of Jujui.
 a Collection of woods. 600
 b Socondo and pastilla bark. 602
 c Palm, lignum-vitae, quinaquina and pacara seeds, etc. 605

12 Provincial Commission, Province of Catamarca.
 a Collection of woods. 600
 b Dying and tanning materials. 602
 c Visco and lignumvitae seeds, etc. 605

13 Provincial Commission, Province of La Rioja.
 a Collection of woods. 600
 b Tar, carob resin, and Lata incense. 603
 c Yareta plant, containing much resin. 604
 d Collection of seeds. 605

14 Cecenarro, Vicente, Province of Catamarca.—Viscoe wood. 600

15 Lafone, Quevedo, Samuel Province of Catamarca.—Black carob wood. 600

16 Andalgalia Commission, Province of Catamarca.
 a Cactus. 600
 b Dying and tanning products. 602

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Arboriculture, Forest, and Agricultural Products.

32 Provincial Commission, Province of Santiago del Estero.
   a Collection of woods in logs. 600
   b Collection of dyeing woods, etc. 602

33 Provincial Commission, Province of Entre-Rios. — Samples of polished woods. 600

34 Elola, P., Province of Entre-Rios. Collection of woods. 600

35 Berdue, Martin, Province of Entre-Rios. — Box made of different woods. 600

36 Parana Commission, Province of Entre-Rios.
   a Collection of woods. 600
   b Roots and barks; cochineal and dyeing materials. 602
   c Turpentine. 603

37 Roman, José, Province of Buenos Ayres. — Carob and mandubay wood. 600

38 Garrigos, J. M., Province of Buenos Ayres. — Collection of woods. 600

39 Gallino, J. A., Province of Entre-Rios. — Collection of woods. 600

40 Echeberhe, Pedro, Province of Buenos Ayres. — Collection of woods. 600

41 Fontes, Vicente, & Neyra, Sisto, Province of Buenos Ayres. — Collection of woods. 600

42 Calderon, Pedro, Province of Buenos Ayres. — Collection of woods. 600

43 Gonzalez, Meliton, Province of Buenos Ayres. — Collection of woods. 600

45 Provincial Commission, Province of San Luis.
   a Dying and tanning products. 602
   b Gum and resin. 603

46 Medina, Luis R., Province of Catamarca.
   a Visco and coco woods. 600
   b Cocoanut bark. 602

47 Hurley, Tomas, Province of Catamarca. — Dying products. 602

47a Vidal, M. A., Province of San Juan.
   — Quillo and retortuno for dying. 602

47b Caceedo, A., Province of San Juan.
   — Retortuno for dying. 602

47c Correa, B., Province of San Juan.
   — Retortuno root for dying. 602

47d Rodriguez, V., Province of San Juan.
   — Retortuno root for dying. 602

47e Poblete, F., Province of San Juan.
   — Romerillo. 602

48 Sievert, Max, Province of Salta.
   a Silk and wood dyed with the product of the lapacho tree; other dying products. 603
   b Peat. 604

49 Gonzales, Joaquín, Province of La Rioja.
   a Sacana and roots for dying. 602
   b Guano, etc. 603

50 Wurffbain, Gustavo, Province of La Rioja.
   a Roots for tanning and dyeing, cleansing substances replacing soap, jume for making soap. 602
   b Cotton-seed. 605

51 Gelos, Martin, Province of La Rioja.
   — Dyeing and tanning products. 602

52 Fava, Carlos, Province of Corrientes.
   — Cochineal and indigo-plant. 602

53 Lopez, Feliciano, Province of Corrientes. — Mbuli plant, for dyeing silk and wool. 602

54 Pujol, Eliza, Province of Corrientes.
   — Root of isyypoyu, for dyeing; coloring roots. 602

55 Poisson, J. T., Province of Corrientes.
   — Uruco-seed, for dyeing. 602

56 Ritsch, Felipe, Province of Mendoza.
   — Roots for tanning. 602

57 Ocampo & Acosta, Province of Cordoba. — Bark, seed, and other products for tanning. 602

59 Ubach de Colon, José, Province of Entre-Rios. — Sansaparilla, carob-bark, and other tanning and dyeing products. 602

60 Sub-commission of the Department of Diamante, Province of Entre-Rios. — Cochineal, carob-bark, and other dyeing and tanning materials. 602

61 Soler, Ventura, Province of Entre-Rios. — Laurel and carob-bark and other dyeing and tanning materials. 602

62 Rodriguez, Severo, Province of San Juan.
   a Resins of chicha, etc. 604
   b Carob and myrth seed. 605

63 Balban, Nonasca, Province of Catamarca. — Carob-resin and black resin. 603

64 Flores, Nicanor, Province of Salta. — Tar. 603

65 Sollá, Juan, Province of Salta. — Yareta, a resinous plant. 603

66 Riso, Petrona, Province of Catamarca. — Cherimolia seed. 605

66a Flemming, Miguel, Province of Salta. — Tita and tacco seed. 605

67 Machado, Ruben, Province of Catamarca. — Mistol and carob tree seed. 605

67a Goyri, Bernardo, Province of Entre-Rios. — Samples of seeds. 605

68 Ponce, Isidora, Province of Catamarca. — Molle seed. 605

69 Esparaza, José, Province of Catamarca. — Seed of acacia aroma, for dyeing and medicinal purposes. 605

70 Miranda, José, Province of Catamarca. — Acacia for feed, and for hedges. 605

71 Alibrez, Francisco, Province of La Rioja. — Walnuts. 605

72 Larrahona, Pedro, Province of La Rioja. — Malingasta nuts. 605

73 Chaves, Cristologo, Province of La Rioja. — Tusca seeds. 605

74 Peluffo, Vicente, & Co., Province of Buenos Ayres. — Collection of seeds. 605

Agricultural Products.

75 Imaz Bros., Province of Buenos Ayres. — Wheat. 620

76 Unzué, Saturnino, Province of Buenos Ayres. — Wheat and corn. 620

77 Grego, A., Province of Buenos Ayres. — Wheat. 620

78 Diaz, Eugenio, Province of Buenos Ayres. — Wheat. 620

79 Traverso, Juan, Province of Buenos Ayres. — Wheat. 620

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp 12-14.
Agricultural Products.

80 Bruno, Domingo, Province of Buenos Ayres.—Wheat. 620
80a Vidal, Augustin, Province of Buenos Ayres.—Wheat. 620
81 Alonso, Manuel, Province of Buenos Ayres.—Wheat. 620
82 Ibarra, Venero, Province of Buenos Ayres.—Wheat. 620
83 Provincial Commission, Province of Buenos Ayres.—Wheat. 620
83a Cornejo, John, Province of Salta.—Sugar cane. 620
84 Bertolato, G., Province of Buenos Ayres.—Wheat. 620
85 Buffa, Agustín, Province of Buenos Ayres.—Wheat. 620
86 Lanzon, N., Province of Buenos Ayres.—Wheat. 620
87 Malvichini, N., Province of Buenos Ayres.—Wheat. 620
88 Costa, Bartolo, Province of Buenos Ayres.—Wheat. 620
89 Justice of the Peace of Juarez, Province of Buenos Ayres.—Wheat. 620
90 Justice of the Peace of Patagones, Province of Buenos Ayres.—Wheat, barley, and corn. 620
91 Guerin, N., Province of Buenos Ayres.—Wheat. 620
92 Mildred, Juan, Province of Buenos Ayres.
   a Wheat and barley. 620
   b Lucern seed. 624
93 Justice of the Peace of Bahia Blanca, Province of Buenos Ayres.—Wheat, barley, and corn. 620
94 Burgos, R., Province of Buenos Ayres.—Wheat. 620
95 Acuña, Francisco, Province of Buenos Ayres.—Barley and corn. 620
96 Peluffo, Angel, Province of Buenos Ayres.
   a Barley. 620
   b Lima beans. 621
   c Seeds; hemp and flax, lucern, lentils, palmarciest, etc. 624
97 Agricultural School of Santa Catalina, Province of Buenos Ayres.—Corn and grasses. 620
98 Arce, Invencio, Province of Buenos Ayres.—Corn. 620
99 Justice of the Peace of Zarate, Province of Buenos Ayres.—Corn. 620
100 Martinez, Hercules, Province of Buenos Ayres.—Corn. 620
101 Valdez, Emiliano, Province of Buenos Ayres.—Corn. 620
104 Agricultural School of Santa Catalina, Province of Buenos Ayres.—Fresh beans; lentils. 620
105 Valdes, Emiliano & Cipriano, Province of Buenos Ayres.
   a Barley, sugar-cane, straw, etc. 620
   b Garlic. 620
106 Galanani, Carlos, Province of Buenos Ayres.
   a Flax, barley, corn, wheat, maize, and cattle-feed. 620
   b Beets. 621
107 Government of the Province of San Juan.—Grasses, straw, maté herb, etc. 620
108 Rodriguez, Victor, Province of San Juan.—Junquille grass. 620
109 Sarmiento, Juan L., Province of San Juan.—Yellow and white corn; wheat. 620
110 Correa, Benedito, Province of San Juan.—Corn and wheat. 620
111 Mazo, Julian, Province of San Juan.
   a White and red corn. 620
   b Lima beans. 621
112 Amafil, Benigno, Province of San Juan.—Yellow corn. 620
113 Friaas, Salvador, Province of San Juan.—White corn, barley, wheat. 620
114 Vidal, Marco A., Province of San Juan.—Red corn, white wheat. 620
115 Jones, Fabian, Province of San Juan.—Red corn; wheat. 620
116 Aguilar, Juan M., Province of San Juan.—Red corn; wheat. 620
117 Ruiz, Clemente, Province of San Juan.
   a Red corn, wheat. 620
   b Beans. 621
   c Lucern seed. 624
118 Jofre, Roman, Province of San Juan.—Red corn. 620
119 Rufino, Geronimo C., Province of San Juan.
   a White corn. 620
   b Beans and peas. 621
120 Figueroa, Tomas, Province of San Juan.—White corn. 620
121 Ruiz, G., Province of San Juan.—White corn. 620
122 Balaguier, Tristan, Province of San Juan.—Corn. 620
123 Rosa, Rosario de la, Province of San Juan.
   a Corn. 620
   b Lucern seed. 624
124 Baca, John, Province of San Juan.—Corn, wheat. 620
125 Lloveras, Lisandro, Province of San Juan.—White corn. 620
126 Cordero, Pedro J., Province of San Juan.
   a White corn. 620
   b Peas, barley, and wheat. 621
   c Lucern seed. 624
127 Castro, Pedro, Province of San Juan.—White corn. 620
128 Bates, Benjamin, Province of San Juan.
   a Wheat. 620
   b Canary seed. 624
133 Bodarata, Juan, Province of San Juan.—Barley. 620
134 Ramirez & Co., Province of San Juan.
   a Barley, white corn. 620
   b Lima beans, peas, etc. 621
137 Day, Frederica, Province of San Juan.—Wheat. 620
138 Munoz, Brancisco, Province of San Juan.—Wheat. 620
139 Ledesma, H., Province of San Juan.—Wheat. 620

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Agricultural Products.

140 Provincial Commission, Province of Salta.
   a Corn, peanuts, barley, wheat, melons, sugar-cane, etc. 620
   b Tobacco. 623
   c Onion and lucern seed. 624

141 Flemming, Miguel, Province of Salta.
   a Wheat and corn. 620
   b Potatoes. 622

142 Corth, Ignacio, Province of Salta.—Wheat, barley, corn, and lucern seed. 620

143 Gonzalez, Joaquin, Province of La Rioja.—Corn for flowers, and also for flour, wheat, lucern seed. 620

144 Davila, Guillermo, Province of La Rioja.
   a White corn, sugar corn, wheat. 620
   b Lima beans. 621

145 Larrohona, Pedro, Province of La Rioja.
   a Corn, wheat, and barley. 620
   b Lima beans. 621

146 Villafane, Nicolasa, Province of La Rioja.
   a Corn. 620
   b Lima beans. 621

147 Illiañes, José Manuel, Province of La Rioja.—White corn, barley, wheat. 620

148 Provincial Commission, Province of La Rioja.
   a Corn, wheat, barley. 620
   b Lima beans. 621
   c Onion seed. 622

149 Gonzalez, Ventura, Province of La Rioja.—Wheat. 620

152 Alvarez, Francisco, Province of La Rioja.
   a Wheat in stalks. 620
   b Lima beans. 621

153 Maro, Froilan, Province of Catamarca.
   a Corn. 620
   b Beans and peas. 621

154 Diaz, Ramon, Province of Catamarca.
   a Wheat. 620
   b Lima beans. 621

155 Artaza, Santiago, Province of Catamarca.
   a Wheat. 620
   b Beans and peas. 621

156 Provincial Commission, Province of Catamarca.
   a Corn, wheat, barley, and grasses. 620
   b Lima beans. 621
   c Indian pepper, tobacco, cigars, etc. 623

157 Molina, José de, Province of Catamarca.
   a Corn, wheat. 620
   b Beans. 621

158 Vega, G., Province of Catamarca.—White corn. 620

159 Artasa, Manuel, Province of Catamarca.—Corn, etc. 620

160 Miranda, José A., Province of Catamarca.—White corn. 620

161 Sub-commission of the Department of Jujuy, Province of Catamarca.
   a Corn. 620
   b Lima beans, etc. 621

162 Sub-commission of the Department of Alto, Province of Catamarca.—White corn. 620

163 Alvarez, S., Province of Catamarca.—Wheat. 620

164 Ahamada, B., Province of Catamarca.—Wheat. 620

165 Riso, Ventura, Province of Catamarca.—Geneva wheat. 620

166 Herrera, Miguel, Province of Catamarca.—Wheat. 620

167 Aguilar, Olegaria, Province of Catamarca.—Wheat. 620

168 Tula, Nabor, Province of Catamarca.—Wheat, lucern seed. 620

169 Sub-commission of Belen, Province of Catamarca.
   a Corn, wheat. 620
   b Beans. 621

170 Sub-commission of the Department of Pachin, Province of Catamarca.
   a Small corn, wheat, Geneva seed, white and yellow corn. 620
   b Lima beans. 621

171 Sub-commission of the Department of Santa Maria, Province of Catamarca.—Corn and wheat. 620

172 Atric, Antonio, Province of San Luis.—Corn, wheat, and barley. 620

173 Provincial Commission, Province of San Luis.
   a Corn, wheat, barley, and cattle feed. 620
   b Beans. 621

174 Arrondo, Agustin, Province of Entre-Rios.—Wheat. 620

175 Paraña Commission, Province of Entre-Rios.
   a Corn, etc. 620
   b Beans and peas. 621
   c Potatoes. 622
   d Tobacco. 623

176 Gualeguaychu Sub-commission, Province of Entre-Rios.—Wheat, corn, etc. 620

177 Goyri, B., Province of Entre-Rios.—Corn. 620

178 Balugera, Domingo, Province of Entre-Rios.—Rice and corn. 620

179 Crespo, Manuel, Province of Entre-Rios.—Paraña wheat. 620

180 Uruguay and Paraña Commission, Province of Entre-Rios.
   a Collection of seeds and cereals. 620
   b Collection of seeds. 624

181 Meyer, Edmund, Province of Santa Fé.—Wheat and barley. 620

182 Ceretti, L., Province of Santa Fé.—Wheat. 620

183 Lubary, T., Province of Santa Fé.—Wheat. 620

184 Colonía San Carlos Sub-commission, Province of Santa Fé.—Barley. 620

185 Nickisch, Manuel, Province of Santa Fé.
   a Corn. 620
   b Lima beans, etc. 621

186 Iturrapse Co., Province of Santa Fé.—Wheat. 620

187 Bergeré, Dr., Province of Santa Fé.—Peanuts. 620

188 Blanchaud, Miguel, Province of Santa Fé.
   a Peanuts, corn, and wheat. 620
   b Chick-peas. 621
   c Leaf tobacco. 623

189 Beken, Federico, Province of Santa Fé.—Wheat. 620

190 Schuling, German, Province of Santa Fé.—Corn. 620

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
<table>
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<th>DEPT. VI.—AGRICULTURE.</th>
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<td><strong>Agricultural Products.</strong></td>
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| 191 | Pillier, N., Province of Santa Fé. | Wheat. | 620 |
| 192 | Carignano Bros., Province of Santa Fé. | Wheat. | 620 |
| 193 | Vaivas, Carlos, Province of Santa Fé. | Wheat. | 620 |
| 194 | Provincial Commission, Province of Santa Fé. | Dry lucern, corn. | 620 |
| 195 | Frisch, Cristino, Province of Santa Fé. | Wheat. | 620 |
| 196 | Arminchiardi, Juan, Province of Mendoza. | Wheat. | 620 |
| 197 | Fourcade, Pedro, Province of Mendoza. | Wheat. | 620 |
| 198 | De la Cruz Videla, Juan, Province of Mendoza. | Wheat. | 620 |
| 199 | Roman, Medardo, Province of Mendoza. | a. Wheat. | 620 |
|  |  | b. Lima beans. | 621 |
| 200 | Sanchez, Modesto, Province of Mendoza. | White Lima beans. | 621 |
| 201 | Provincial Commission, Province of Mendoza. | Corn. | 620 |
| 202 | Agricultural Villa of Mendoza, Province of Mendoza. | a. Corn and wheat. | 620 |
|  |  | b. Lima beans and peas. | 621 |
| 203 | Provincial Commission, Province of Jujuy. | a. Rice, corn, and wheat. | 620 |
|  |  | b. Indian pepper, tobacco. | 623 |
| 204 | Provincial Commission, Province of Tucuman. | a. Corn, rice, wheat. | 620 |
|  |  | b. Sweet potatoes, etc. | 622 |
|  |  | c. Tobacco, cigars, etc. | 623 |
| 205 | Commission of the Chaco Argentine Territory. | a. Corn, sugar-cane, esparritlo grass. | 620 |
|  |  | b. Tapyuya, used as a food; mandioca, for making starch and chipa bread, etc. | 620 |
|  |  | c. Flowers made of saffron; tobacco. | 623 |
| 206 | Harbor-master, Chaco Argentine Territory. | Sugar-cane plant, esparritlo grass, etc. | 620 |
| 207 | Ferré, Vicente, Province of Corrientes. | Sugar-canes. | 620 |
| 208 | Commission of the Province of Corrientes. | a. Sugar-cane. | 620 |
|  |  | b. Mandioca. | 622 |
|  |  | c. Tobacco, maté herbs, etc. | 623 |
| 209 | Bella Vista Sub-commission, Province of Corrientes. | a. Corn. | 620 |
|  |  | b. Pepi from mandioca. | 622 |
|  |  | c. Tobacco. | 623 |
| 210 | Appleyard, Juan B., Province of Corrientes. | a. Rice. | 620 |
|  |  | b. Maté herbs. | 625 |
| 211 | Provincial Commission, Province of Santiago del Estero. | a. Wheat. | 620 |
|  |  | b. Sweet potatoes. | 622 |
| 212 | Michielond, Miguel, Province of Santa Fé. | Peach sugar-cane. | 620 |
| 213 | Provincial Commission, Province of Córdoba. | a. Wheat. | 620 |
|  |  | b. Peas and beans. | 621 |
|  |  | c. Sweet potatoes. | 622 |
|  |  | d. Cigars, pepper, tobacco, mustard, etc. | 623 |

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
ARGENTINE REPUBLIC.

Animals, Animal and Vegetable Products.

238 Granada, Salvador, Province of Cordoba.—Chocolate. 623
239 Villar, Salvador, Province of Jujuy, a Coffee. b Castor beans, etc. 624
240 Carrillos, Pablo, Province of Jujuy.—Tobacco. 623
241 Baigorra, Jose, Province of Jujuy.—Wild cocoa, etc. 623
242 Burela, Serapio, Province of Salta.—Tobacco. 623
243 Davalo, Benjamin, Province of Salta.—Tobacco leaves. 623
244 Waile, S., Province of Salta.—Cigarettes. 623
245 Zolei, Nicolas, Province of Buenos Ayres.—Snuff and cigars. 623
246 Lago & Son, Antonio, Province of Buenos Ayres.—Cigarettes. 623
247 Andes, Mendez M. de, Province of Buenos Ayres.—Cigarettes. 623
248 Daumas, J., & Co., Province of Buenos Ayres.—Cigarettes and tobacco. 623
249 Coll, Vitoria, & Co., Province of Buenos Ayres.—Cigarettes. 623
250 Schroder, Nicolas, Province of Buenos Ayres.—Leaf tobacco and cigars. 623
251 Lista, Manuel, & Schroder, T., Province of Buenos Ayres.—Leaf tobacco. 623
252 Casanco, Juan, Province of Santa Fe.—Flax and spurge seed. 624
253 Peluffo, Vicente, & Co., Province of Buenos Ayres.—Seeds. 624
255 Arenales, A. M. Alvarez de, Province of Buenos Ayres.—Jerusalem artichoke seed. 624

Land Animals.

258 Provincial Commission, Province of Mendoza.—Collection of birds. 635
259 Lemos, Abraham, Province of Mendoza, a Hawk, woodpecker, wild sandpiper. 635 b Lynx, stuffed matoaco, etc. 637 c Lizard, scorpions, insects, etc. 638
260 Nuñez, Santos, Province of Catamarca.—Humming-bird. 635
261 Franco, Luis A., Province of Catamarca.—Humming-bird. 635
262 Poblete, Timurcio, Province of San Juan.—Ostrich skin. 635
263 Provincial Commission, Province of San Juan.—Prepared skins of terntern, partridge, chimango, crow birds, etc. 636
264 Dominguez, Jose, Province of San Juan.—Prepared skins of bandurria. 635
265 Rosario Tala, Sub-commission, Province of Entre-Rios.—Stuffed gull and quail. 635
267 Provincial Commission, Province of Salta.—Nest of horneno. 635 b Lizard skin. 638
268 Provincial Commission, Province of Catamarca, a Matoaco and quirquincho shells. b A wasp's nest. 638
269 Echeverts, Gabriel, Province of Buenos Ayres.—A stuffed wildcat of Balcarce. 637
269a Goyena, John, Province of Buenos Ayres.—Stuffed toad and rabbit. 637
269b Rio, T. R. del, Province of Buenos Ayres.—Teals. 637
269c Fuentes, D. G. de la, Province of Buenos Ayres.—Teals. 637
270 Gonzalez, Juan, Province of Buenos Ayres.—Polecats and small fox, stuffed. 637
271 Valdes, Emiliano & Cipriano, Province of Buenos Ayres.—Stuffed polecat. 637
272 Rosario Tala, Sub-commission, Province of Entre-Rios.—Stuffed polecat. 637
274 Echavarria, Cecilio, Province of Santa Fe.—Vipers. 638
275 Commission of the Chaco Argentinian Territory.—Rattlesnake and coral vipers. 638
276 Provincial Commission, Province of Corrientes.—Curiyu vipers' skin. 638
277 Fernandez, Severo, Province of Corrientes.—Viper skins. 638
278 Fava, Carlos, Province of Corrientes.—Viper skins. 638
279 Poisson, Juan T., Province of Corrientes.—Viper's skin. 638
280 Bella Vista Sub-commission, Province of Corrientes.—Spiders and their silk in cocoons, snakes. 638
281 Gonzalez, Pedro J., Province of Corrientes.—Dissected guana (South American lizard). 638
282 Diaz, Eulogia, Province of Corrientes.—Stuffed vipers. 638
283 Jurado, G. Doraliza de, Province of San Luis.—Black wasp's comb. 638
284 Escobar, Juan de D., Province of San Luis.—Snake skin. 638
286 Laborda, Franklin, Province of San Luis.—Insects, snake, and lizard. 638
287 Day, Edmund, Province of Mendoza.—Viper. 638
288 Sanchez, Modesta, Province of Mendoza.—Viper. 638
289 Iglesias, M. A., Province of Buenos Ayres.—Vipers in alcohol. 638

Water Animals, Fish Culture and Apparatus.

290 Provincial Commission, Province of Corrientes.—Shells. 645
291 Arteaga, Amancio, Province of Santa Fe.—Shells. 645
292 Provincial Commission, Province of San Juan.—Baskets. 647
293 Machado, Ruben, Province of Catamarca.—Basket of abeb straw. 647
294 Provincial Commission, Province of Salta.—Fishing-lines, etc. 647

Animal and Vegetable Products.

295 Parana Commission, Province of Entre-Rios, a Sponges. 650 b Colt-grease, shad-oil, leather, skins, etc. c Ostrich feathers. d Sausage, jelly. e Domestic beer, lemonade, and wine. 650

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Animal and Vegetable Products.

314 Mora, J., Province of Buenos Ayres.—Sheepskin. 652
315 Ayres, P. Garcia, Province of Buenos Ayres.—Cow tripe prepared for export. 652
316 Battini, Angel Petro, Province of Buenos Ayres.—Leather. 652
317 Duportal, Emilio, Province of Buenos Ayres.—Skins. 652
318 Arnault, Augusto, Province of Buenos Ayres.—Domestic cat-skins for the cure of rheumatism. 652
319 Escalada & Co., Buenos Ayres.—Tanned and colored kid skins for gloves. 652
320 Bernard, Joaquin, Province of Buenos Ayres.—Sheep and lamb skins. 652
321 Belloq Bros., Province of Buenos Ayres.—Calf skins. 652
322 Iniguez, A. Manuel, Province of Buenos Ayres.—Charcoal of curumanel wood. 652
323 Jaquemard, Victor, Province of Buenos Ayres.—Animal charcoal. 652
324 Majica, E. S., Province of Buenos Ayres.—Prepared blood for refining sugar and clarifying syrups. 652
325 Gauthier, Adolfo, Province of Buenos Ayres.—Tallow. 652
326 Santillan Bros. & Co., Province of Santiago del Estero.—Leather for boots and lizard leather for gaitees; skins, etc. 652
327 Gelos, Martin, Province of La Rioja.—Wild-boar skins. 652
328 Gonzalez, Joaquin, Province of La Rioja.—Lion, vicugna, and alai skins. 652
329 Provincial Commission, Province of La Rioja.—Leather, lion, goat, vicugna, and other skins, etc. 652
330 Commission of the Chaco Argentino Territory.—Tiger, wolf, deer, cat, and lion skins, etc. 652
331 Provincial Commission, Province of Catamarca.—Skins, leather, etc. 652
332 Andalgalá Sub-commission, Province of Catamarca.—Vicugna, alpacas, gray fox, lamb skins, leather, etc. 652
333 Vergara, Atillo, Province of Catamarca.—Barrel of wild-boar skin. 652
334 Tinogasta Sub-commission, Province of Catamarca.—Lion, chinchilla, fox, wild-cat, ferret, and wild-boar skins. 652
335 Medina, J., Province of Catamarca.—Ampalague and otter skins. 652
336 Santa Maria Sub-commission, Province of Catamarca.—Vicugna, chinchilla, and fox skins. 652

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Animal and Vegetable Products.

337 Pachin Sub-commission, Province of Catamarca.—Wildcat, ferret, guama skins, etc. 652
338 Belen Sub-commission, Province of Catamarca.
   a Alpaca and vicugna skins. 652
   b White wine. 660
339 Provincial Commission, Province of Tucuman.
   a Skins and leather. 652
   b Wheat starch. 658
   c Sugar. 659
   d Biscuits. 661
340 Provincial Commission, Province of Entre-Ríos.—Swan and deer skins. 652
341 Victoria Sub-commission, Province of Entre-Ríos.—Chajá skin. 652
   a Tallow. 652
   b Wax and honey. 654
   c Preserved meats, beef extracts, etc. 650
343 Allurralde, Punte ye Carril, Province of Entre-Ríos.—Horse hide. 652
344 Darcher, Amadeo, Province of Entre-Ríos.—Sea-wolf, fox, wildcat, and otter skins, etc. 652
345 Barcos, Pedro B., Province of Entre-Ríos.—Skins. 652
346 Rosario Sub-commission, Province of Entre-Ríos.—Buck, otter, ferret, coati, lion, fox, weasel, wildcat skins, etc. 652
347 Victoria Sub-commission, Province of Entre-Ríos.—Skins. 652
348 Allurralde, Rodolfo, Province of Entre-Ríos.—Wildcat skin. 652
349 Puerto, Gregorio T. de la, & Del Carril, Pedro A., Province of Entre-Ríos.—Sea-wolf, horse, deer skins, etc. 652
350 Provincial Commission, Province of Entre-Ríos.—Wildcat, fox, otter skins, etc. 652
351 Fontes, Vicente M., & Neygra, Sixto, Province of Entre-Ríos.—Tiger, lion, wolf, fox, ferret, otter, rabbit, wildcat, and weasel skins. 652
352 Goyri, Bernardo, Province of Entre-Ríos.—Fox and weasel skins. 652
353 Maglioni, Francisco, Province of Entre-Ríos.—Carpincho and deer skins. 652
354 Ceballos, Desiderio, Province of Salta.—Soles, black and morocco leather. 652
355 García, Domingo, Province of Ríoja.
   a Glue. 652
   b Grape syrup. 652
355 Saenz, Victoriano, Province of Salta.—Tiger skin. 652
356 Zorilla, Benjamin, Province of Salta.—Llama skin. 652
357 Correas, Segundo, Province of Mendoza.—Lion skin. 652
358 Provincial Commission, Province of Mendoza.
   a Fox skins. 652
   b Ostrich feathers. 653
   c Dried peaches, sweetmeats, preserved lemons, etc. 656
359 Gomez, Cecilio, Province of Mendosa.—Chancho wild-boar skin. 652
360 Ribera, Jacinto, Province of San Luis.—Wildcat skins. 652
361 Sierra, Ramon de la, Province of San Luis.—Aguarás purse and occiput of an ostrich. 652
362 Lahiton, Pedro, Province of San Luis.—Tanned hides, morocco, etc. 652
363 Ladies' Commission, Province of San Luis.
   a Peach preserve, plum, melon, peach, lemon, water-melon, and quince sweetmeats, etc. 656
   b Lemon and orange liquors. 660
364 Rodriguez, Severo, Province of San Juan.
   a Tanned hide. 652
   b Musk and peeled raisins. 660
   c Wines. 660
365 Vidart, Juan A., Province of San Juan.—Lamb hides. 652
366 Ruiz, Clemente, Province of San Juan.—Merino metis skin. 652
367 Moreno, Federico, Province of San Juan.—Ox hide. 652
368 Provincial Commission, Province of San Juan.
   a Horse and fox skins. 652
   b Raisins, preserved fruits. 656
369 Rodriguez, Victor, Province of San Juan.
   a Horn combs. 652
   b Raisins, etc. 656
   c Wheat starch. 658
   d Wines. 660
370 Provincial Commission, Province of Cordoba.
   a Horn flakes and combs; lion, wild cat, and goat skins. 652
   b Flava wax and honey. 654
   c Sweetmeats. 656
   d Flour, bran, etc. 657
   e Indian fig-syrup. 659
371 Iriarte, Carlos, Province of Cordoba.—Tanned goat skins. 652
372 Ocampo & Acosta, Province of Cordoba.—Tanned goat skins. 652
373 Provincial Commission, Province of Jujuy.
   a Vicugna, llama, tiger, and other skins. 652
   b Wax and wild honey. 654
   c Dried peaches. 656
   d Corn and wheat flour. 657
   e Sugar. 669
   f Querosilla mead. 660
374 Dagorret, Modesta, Province of Corrientes.—Tanned viper skin, sole leather, hides, etc. 652
375 Provincial Commission, Province of Corrientes.
   a Otter skins. 652
   b Ostrich feathers. 653
   c Wax. 654
   d Citron, peanut, lime, and other sweetmeats; cocoanuts. 666
376 Bella Vista Sub-commission, Province of Corrientes.—Otter skins. 652
377 Echevarria, Cecilio, Province of Santa Fé.
   a Wolf, lion, tiger, fox, ostrich, and other skins. 652
   b Wax. 654
   c Wild fruit, preserved. 656
   d Sugar-cane brandy. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Wine, syrup.

Orange-wine, grape, raisins, and figs.

Barraquero, Carmen, Province of Mendoza.

Pouyet, Miguel, Province of Mendoza.

Jurado, Doraliza, G. de, Province of San Luis.

Albarracin, Saturnino, Province of San Juan.

Cortezes, Domitilio, Province of San Juan.

Piñero, Aurelio, Province of Cordoba.

Passel, Teodoro, Province of Cordoba.

Cespedes, José, Province of Mendoza.

Biraben, A., Province of Entre- Rios.

Godoy, Nicolas, Province of Mendoza.

Vignoles, Henry, Province of Santa Fé.

Sanchez, Modesto, Province of Mendoza.

Chaves, Rosaura, Province of Mendoza.

Campos, Enrique, Province of Mendoza.

Ruño, Gerónimo C., Province of San Juan.

Ramirez & Co., Province of San Juan.

Sarmiento, J. L., Province of San Juan.

Bates, Benjamin, Province of San Juan.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Animal and Vegetable Products.

432 Escobar, Juan D., Province of San Luis.  
   a Dried figs and peaches. 656  
   b Wine and carob meal. 656  

433 Ronchetti, Valentín, Province of Santa Fé.—Pickled partridges. 656  

434 Nikisch, Manuel, Province of Santa Fé.—Pickled tongues. 656  

435 Garvino, Signor, Province of Entre-Ríos.—Salt meat and tongues; gelatine. 656  

436 Valdes, Emiliano and Cipriano, Province of Buenos Aires.—Salt tongues and beef, etc. 656  

437 Olifon, Tomas, Province of Buenos Aires.  
   a Sheep tongue, dried mutton and beef. 656  
   b Cognac bitters. 660  

438 Beriso, Juan, & Co., Province of Buenos Aires.—Dried tongues. 656  

439 Cambaceres, Antonio, Province of Buenos Aires.—Jerked beef and salt tongues. 656  

440 Roverano Bros., Province of Buenos Aires.—Sweetmeats in syrup. 656  

442 Colla, Juan, Province of Entre-Ríos.—Flour. 657  

443 Cabilla, A., Province of Entre-Ríos.—Grits. 657  

444 Buada, F., Province of Entre-Ríos.—Flour. 657  

445 Dubois, José B., Province of Entre-Ríos.—Flour. 657  

446 Berizo, Domingo, Province of Entre-Ríos.—Flour. 657  

448 Pillier, N., Province of Santa Fé.—Flour. 657  

449 Iturraspe & Co., Province of Santa Fé.—Bran, flour. 657  

450 Hurt, Carlos de, Province of Santa Fé.—Flour. 657  

451 Quelet, Enrique, Province of Santa Fé.—Wheat flour. 657  

452 Bauer, G., Province of Santa Fé.—Flour. 657  

453 Lubary, Tomas, Province of Santa Fé.—Flour. 657  

454 Frank & Lami, Province of Santa Fé.—Flour. 657  

455 Frisch, Celestino, Province of Santa Fé.—Wheat flour. 657  

456 Gallo, B., Province of San Juan.—Flour and bran. 657  

457 Frias, Salvador, Province of San Juan.—Flour and white flour. 657  

458 Appleyard, T. B., Province of Corrientes.  
   a Mandioca flour. 657  
   b Mandioca starch. 657  

459 Fourcade, Pedro, Province of Mendoza.—Flour and bran. 657  

460 Casas, Molino de, Province of Mendoza.—Flour. 657  

461 Armenghiardi, Juan, Province of Mendoza.  
   a Comal meal and flour. 657  
   b Macaroni, vermicelli. 658  

462 Tillar, Carlos, Province of Jujuy.—Flour. 657  

463 Aldrí, Antonio, Province of San Luis.—Flour and bran. 657  

464 Provincial Commission, Province of Santiago del Estero.—Flour. 657  

465 Navarro, Cornelio, Province of Mendoza.—Wheat starch. 657  

466 Gazzo, Luis, Province of Santa Fé.—Vermicelli. 658  

467 Davila, Nicolasa, Province of La Rioja.—Nonagasta syrup. 659  

468 Mendivil, Fidel, Province of Tucuman.—Sugar. 659  

469 Davila, Guillermo, Province of La Rioja.—Nonagasta syrup. 659  

470 Gordillo, Alcibiades, Province of La Rioja.—Nonagasta syrup. 659  

471 Dominguez, José D., Province of San Juan.—Syrup. 659  

472 Ovejero, Sisto, Province of Salta.  
   a Sugar. 659  
   b White wine. 660  

473 Figueroa, José E., Province of Catamarca.—Syrup. 659  

473 a Garcia, S., Province of Tucuman.—Sugar. 659  

474 Briscuela, Primitivo, Province of Catamarca.—Grape syrup. 659  

475 Arrob, Adelaida, Province of Catamarca.—Grape syrup. 659  

476 Castello, Guadalupe, Province of Catamarca.—Grape syrup. 659  

477 Leri, Petrona de, Province of Catamarca.—Grape syrup. 659  

478 Aguero, Patricia, Province of Tucuman.—Grape syrup. 659  

478 a Mendez & Keller, Province of Tucuman.  
   a Sugar. 659  
   b Wines. 660  

479 Aybar, J. R., Province of Catamarca.—Grape syrup. 659  

479 a Arguellos & Oliver, Province of Tucuman.—Loaf sugar. 659  

479 b Garcia, Fidel, Bros., Province of Tucuman.—Sugars. 659  

480 Laborda, Franklin, Province of San Luis.—Orange, lemon, currant, banana, and peach syrup. 659  

481 Bagley, M. S., Province of Buenos Aires.—Bitters. 660  

482 Pizzona, Miguel, Province of Buenos Aires.—White and red wines. 660  

483 Pla, José, & Co., Province of Buenos Aires.—Anisette brandy. 660  

494 Lo, José, Province of Buenos Aires.—Hesperidina bitters. 660  

485 Nuttall, Enrique, Province of Buenos Aires.—Hesperidina bitters. 660  

486 Calatroni, Pedro, Province of Buenos Aires.—Banana balm, bittersweet tonic, and liqueurs. 660  

487 German Brewery, Province of Buenos Aires.—Chivalley beer. 660  

488 Hanot, Jorge, Province of Buenos Aires.—Orange-flower water, Chartreuse and Kermian liquor. 660  

490 Dominguez, José, Province of San Juan.—Vinegar. 660  

490 Terramole, Defin, Province of San Juan.—Wine and vinegar. 660  

491 Zavalla, Pedro J., Province of San Juan.—Wine. 660  

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Animal and Vegetable Products, Textile Substances.

493 Quiroga, Isidro, Province of San Juan.—White wine. 660
493 Quiroga, Abraham, Province of San Juan.—Wine. 660
494 Balaguer, Juan E., Province of San Juan.—White and red wine. 660
495 Coll, Francisco M., Province of San Juan.—Bordeaux wine. 660
496 Doncel, Rosalba, Province of San Juan.—Wine. 660
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398 Maza, Juan Gomez de la, Olivares, Province of Sevilla.—Barley. 620

399 Silva y Perez, Jose, Olivares, Province of Sevilla.—Maize. 620

400 Perez, Jose, Olivares, Province of Sevilla.—Barley. 620

401 Ojeda, Juan Maria Rodriguez, Olivares, Province of Sevilla.—Wheat. 620

402 Cotan y Munoz, Manuel, Olivares, Province of Sevilla.—Wheat. 620

403 Cotan, Antonio Garcia, Olivares, Province of Sevilla.—Wheat. 620

404 Estrada y Lasarte, Manuel, Osuna, Province of Sevilla.—Barley. 620

405 Ramirez, Manuel Tamayo, Osuna, Province of Sevilla.—Barley. 620

406 Castro y Torres, Francisco, Osuna, Province of Sevilla.—Wheat. 620

407 Morillas, Ramon Farfan, Cantillana, Province of Sevilla.—Wheat. 620

408 Rivas y Morillas, Antonio, Cantillana, Province of Sevilla.—Barley. 620

409 Teruel, Pedro, & Bro., Cantillana, Province of Sevilla.—Wheat. 620

410 Sanchez, Benito Navarro, Mairena del Alcor, Province of Sevilla.—Wheat. 620

411 Lozano, Manuel Seda, Mairena del Alcor, Province of Sevilla.—Barley. 620

412 Mendez, Antonio, Mairena del Alcor, Province of Sevilla.—Seed wheat. 620

413 Puente, Salvador & Alejandro Linares, Burguillos, Province of Sevilla.—Wheat. 620

414 Martinez Sainz Bros., Sevilla.—Wheat. 620

415 Caso-Galindo, Count of, Carmona, Province of Sevilla.—Wheat. 620

416 Dos Fuentes, Viscount of, Carmona, Province of Sevilla.—Wheat. 620

417 Vallejo, Jose, Mairena del Alcor, Province of Sevilla.—Canary seed. 620

418 Rosa y Silva, Jose de la, Villamanrique, Province of Sevilla.—Maize. 620

419 Puig, Juan, La Rinconada, Province of Sevilla.—Seed wheat. 620

420 Alba, Diego Sanchez, Lebrija, Province of Sevilla.—Summer wheat. 620

421 Vasquez y Rodriguez, Ignacio, Aznalcazar, Province of Sevilla.—Barley and wheat. 620

422 Mendez, Felipe, Mairena del Alcor, Province of Sevilla.—Wheat and barley. 620

423 Auñon y Leon, Antonio, Moron, Province of Sevilla.—Wheat and barley. 620

424 Villalon y Torres, Andres, Moron, Province of Sevilla.—Barley and canary seed. 620

425 Amores, Manuel, Salteras y Olivares, Province of Sevilla.—Barley and St. Peter's corn. 620

426 Serrano, Miguel Perez, Olivares, Province of Sevilla.—Wheat. 620

427 Leon, Manuel Gimenez, Carmona, Province of Sevilla.—Wheat. 620

428 Orejuela, Joaquina de, Utrera, Province of Sevilla.—Wheat, barley, and maize. 620

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Agricultural Products.

429 Burgos, Felipe de, Utrera, Province of Sevilla.—Wheat, barley, and oats.
430 Rivas, Pedro, Utrera, Province of Sevilla.—Wheat.
431 Cuadra, Enrique de la, Utrera, Province of Sevilla.—Cereals.
432 Cuellar, José Antonio, Utrera, Province of Sevilla.—Wheat, barley, and maize.
433 Riarola, Rafael, Utrera, Province of Sevilla.—Wheat and barley.
434 Cravero, Rafael, Utrera, Province of Sevilla.—Wheat and barley.
435 Saavedra, Francisco, Utrera, Province of Sevilla.—Wheat.
436 Dominguez, Pedro, Utrera, Province of Sevilla.—Maize.
437 Royo, Damian, Soria.—Wheat.
438 Corporation of Villar de Maya, Province of Soria.—Wheat, barley, and oats.
439 Corporation of Almanza, Province of Soria.—Wheat, rye, and barley.
440 Gimenez Justo, Valderrodilla, Province of Soria.—Wheat.
441 Corporation of Rioseco, Province of Soria.—Wheat.
442 Corporation of Baraona, Province of Soria.—Wheat and barley.
443 Carretero, Pedro, Utrilla, Province of Soria.—Wheat.
444 Ballano, Faustino, Aguaviva, Province of Soria.—Wheat.
445 Velasco, Francisco, Aguaviva, Province of Soria.—Wheat and barley.
446 Flour Association of Reus, Province of Tarragona.—Wheat.
447 Virgili, Pablo, Tarragona.—Urgel wheat, maize, barley, oats, and millet.
448 Plana, Antonio, & Bro., Reus, Province of Tarragona.—Wheat.
449 Sedo, Juan Vilanova, Reus, Province of Tarragona.—Wheat.
450 Avila & Marti, Reus, Province of Tarragona.—Wheat.
451 Saperas, Francisco, Reus, Province of Tarragona.—Wheat.
452 Marti, Bornas & Co., Reus, Province of Tarragona.—Wheat.
453 Forasé y Perré, Juan, Villaseca, Province of Tarragona.—Wheat.
454 Jausa, Pablo, La Canonja, Province of Tarragona.—Maize.
455 Domingo, Dimas, Reus, Province of Tarragona.—Maize and barley.
456 Gatell y Folch, Juan, Altafulla, Province of Tarragona.—Maize.
457 Mas Blanch, Julio C. de Esteve de, Amposta, Province of Tarragona.—Rice.
458 Corporation of Amposta, Province of Tarragona.—Rice.
459 Bignell, Jaime, San Carlos de la Rápita, Province of Tarragona.—Rice.
460 Soxias y Domenech, Juan, Villaseca, Province of Tarragona.—Maize.
461 Oller, Pedro, Reus, Province of Tarragona.—Maize.

462 Montaner, Amalio, Reus, Province of Tarragona.—Panic grass.
463 Margenat, Antonio Bages, Reus, Province of Tarragona.—Maize.
464 Barenys y Magriñá, Juan Bautista, Villaseca, Province of Tarragona.—Barley.
465 Fonts, Mariano, Reus, Province of Tarragona.—Barley.
466 Moreno, Manuel Ortiz, Ocaña, Province of Toledo.—Wheat, barley, and oats.
467 Fernandez, Manuel, Tembleque, Province of Toledo.—Wheat.
468 Pasaran, Isidoro, Olías del Rey, Province of Toledo.—Wheat.
469 Esteban, Francisco, Toledo.—Summer wheat.
470 Negrete, Acisclo Fernandez, Villalba, Province of Toledo.—Wheat and barley.
471 Serrano y Fernandez, Federico, Madrid, Province of Toledo.—Summer wheat.
472 Mejia, Isaac, Ocaña, Province of Toledo.—Summer wheat and barley.
473 Redondo, Juan Bautista, Carmena, Province of Toledo.—Wheat and barley.
474 Indo, Valentin Martinez, Arges, Province of Toledo.—Summer wheat.
475 Campo, Victoriano Martin del, Madrid, Province of Toledo.—Summer wheat.
476 Diego, Fabian de, Guadamur, Province of Toledo.—Summer wheat.
477 Ortiz, Rufo Moreno, Escalonilla, Province of Toledo.—Summer wheat.
478 Perez, Luis, Toledo.—Summer wheat.
479 Huelbes y Ortiz, Emilio de, Ocaña, Province of Toledo.—Summer wheat and oats.
480 Arrue, Miguel, Benaguacil, Province of Valencia.—Wheat.
481 Reig y Garcia, Fernando, Puebla de Vallbona, Province of Valencia.—Wheat and maize.
482 Lasala y Palomares, Vicente, Masia de la Mar, Province of Valencia.—Wheat and yellow maize.
483 Agricultural Society of Valencia, Valencia.—Rice, maize, barley, and oats.
484 Valdivi, Rafael Gonzalez, Torrente, Province of Valencia.—Maize.
485 Ferrandis y Soler, Josè Onentiente, Province of Valencia.—Maize.
486 Montealegre, Widow & Son of, Medina del Campo, Province of Valladolid.—Common wheat.
487 Corporation of Medina del Campo, Province of Valladolid.—Common red wheat.
488 Rico, Antonio Ceinos, Puntihoyoelo, Province of Valladolid.—Common red wheat.
489 Monedero, Eusebio, Valoria la Buena, Province of Valladolid.—Wheat.
490 Monedero, Ventura, Valoria la Buena, Province of Valladolid.—Summer wheat. 620
491 Lozano, Juan, Molacillo, Province of Zamora.—Summer wheat. 620
492 Silva, Genaro, Montamarta, Province of Zamora.—Wheat. 620
493 Falcón, Felipe, Benavente, Province of Zamora.—Wheat. 620
494 Alegre, Salvador Fernandez, Fuentesauco, Province of Zamora.—Summer wheat. 620
495 Temprano, José, Vardemarban, Province of Zamora.—Summer wheat. 620
496 Marrón, José, Victor, Alcañices, Province of Zamora.—Wheat. 620
497 Rodríguez y Rodríguez, Fernando, Villamayor, Province of Zamora.—Wheat. 620
498 Vecinos, Isidoro, Molacillos, Province of Zamora.—Wheat and barley. 620
499 García, Miguel, Fuentes Pradas, Province of Zamora.—Summer wheat and common barley. 620
500 Angas, Francisco, Candasnos, Province of Zaragoza.—Wheat. 620
501 Sosot, Joaquín, Candasnos, Province of Zaragoza.—Wheat. 620
502 Grós, José, Avio, Candasnos, Province of Zaragoza.—Wheat. 620
503 Claver, Mariano, Peñalba, Province of Zaragoza.—Wheat. 620
504 Rosas, Manuel, Bujaraloz, Province of Zaragoza.—Summer and admixed wheat and rye. 620
505 Rosas, Eusebio, La Almolda, Province of Zaragoza.—Wheat. 620
506 Sampér, Joaquín, Bujaraloz, Province of Zaragoza.—Wheat. 620
507 Grós, Mariano, Bujaraloz, Province of Zaragoza.—Wheat. 620
508 Peisen, José J., Balfarta, Province of Zaragoza.—Wheat. 620
509 Pállas, José, Bujaraloz, Province of Zaragoza.—Wheat. 620
510 Escamilla, Segundo, Bujaraloz, Province of Zaragoza.—Wheat. 620
511 Bull, José, Castejon de Monegros, Province of Zaragoza.—Wheat. 620
512 La Viñaza, Count of, Epila, Province of Zaragoza.—Wheat. 620
513 Loring Bros., Malaga.—Wheat. 620
514 School of Agriculture, Vitoria, Province of Alava.—Leguminous plants and esculent vegetables. 621
515 Aguado, Juan de Dios, Corral Rubinio, Province of Albacete.—LeNTILS and blue vetch. 621
516 Ruiz, Santiago, Hellin, Province of Albacete.—Rice. 621
517 Verdu y Perez, Joaquin, Monovar, Province of Alicante.—Esculent vegetables. 621
518 Daza y Ruiz, Francisco, Purchena, Province of Almeria.—Kidney beans. 621
519 Linares, José Ramon, Albanches, Province of Almeria.—Chick-peas. 621
520 Perez, Mariano Valverde, Fontiveros, Province of Avila.—Chick-peas. 621
521 Rodriguez Francisco Mariano, Fontiveros, Province of Avila.—Chick-peas. 621
522 Sainz, Matías, Donvidas, Province of Avila.—Chick-peas. 621
523 Lambas y Gutierrez, Gregorio, Pájares de Goda, Province of Avila.—Chick-peas. 621
524 Gonzalez, Manuel, Barco de Avila, Province of Avila.—French peas. 621
525 Soto, José Diaz, Cabeza de Vaca, Province of Badajoz.—Chick-peas. 621
526 Moreno, Cayetano, Villalba de los Barros, Province of Badajoz.—Chick-peas. 621
527 Paredes, Carlos, Guareña, Province of Badajoz.—Beans. 621
528 Venegas, Juan, Valle de Matamoros, Province of Badajoz.—Kidney beans. 621
529 Tortades, José de, Vich, Province of Barcelona.—Kidney beans. 621
530 Fontordera, Juan de, Vich, Province of Barcelona.—Kidney beans. 621
531 Mascaro, José, Vich, Province of Barcelona.—Spanish peas. 621
532 Picó, Mariano de, Vich, Province of Barcelona.—Leguminous plants and esculent vegetables. 621
533 Prat, José, Vich, Province of Barcelona.—Lupine. 621
534 Lerda y Daniel, José, Vich, Province of Barcelona.—Spanish peas. 621
535 Soler y Stussa, Valentin, Barcelona.—Esculent vegetables. 621
536 Garriga, Francisco Domingo, San Quirse de Besora, Province of Barcelona.—Esculent vegetables. 621
537 Provincial Deputation of Burgos.—Pipirigallo (Hedysarum onobrythis) and galagna (lathyrus ciceria). 621
538 Commission of the Province of Burgos.—Esculent vegetables. 621
539 Arribas, Indalecio Anton, Lerma, Province of Burgos.—True bitter vetch. 621
540 García y Garcia, Francisco, Miranda de Ebro, Province of Burgos.—Kidney beans. 621
541 Morales, Luis, Miranda de Ebro, Province of Burgos.—Lentils. 621
542 Garcia, Antonio Gimenez, Guibo de Santa Barbara, Province of Cáceres.—Chick-peas and kidney beans. 621
543 Sande Olives, Jeronimo de, Garrovillas de Alconetar, Province of Cáceres.—Chick-peas. 621
544 Martin, Ramon, Olvera, Province of Cádiz.—Chick-peas. 621
545 Perez, Francisco Garcia, Jerez de la Frontera, Province of Cádiz.—Chick-peas, beans and Spanish peas. 621
546 Corporation of Tarifa, Province of Cádiz.—Beans. 621
547 Provincial Commission, Isle of Terneire, Canary Islands.—Chick-peas. 621
548 Leon, Juan Ponce de, Isle of Gran Canaria, Canary Islands.—Kidney beans and chick-peas. 621
549 Quevedo, José C., Isle of Gran Canaria, Canary Islands.—Kidney beans and chick-peas. 621
Agricultural Products.

550 Vega Grande, Count of, Isle of Gran Canaria, Canary Islands.—Kidney beans. 621

551 Provincial Board of Agriculture, Castellon.—Esculent vegetables. 621

552 Rubisco, Cayetano Clemente, Ciudad Real.—Beans. 621

553 Las Cabezuelas, Count of, Campo de Criptana, Province of Ciudad-Real.—Beans. 621

554 Cabanas y Blanco, Rafael, Cordoba.—Esculent vegetables. 621

555 Matilla, Carlos, Cordoba.—Lupine and Spanish peas. 621

556 Prieto, Sebastian, Encinas Reales.—Chick-peas and beans. 621

557 Corporation of Cabra, Province of Cordoba.—Esculent vegetables. 621

558 Gimenez, Jose Maria, Baena, Province of Cordoba.—Beans and chick-peas. 621

559 Barrionuevo, Fernando, Cordoba.—Moohir beans. 621

560 San Bernardo, Count of, Cordoba.—Moohir beans. 621

561 Vallejo, Rafael, Cordoba.—Moohir beans. 621

562 Pacheco, Rafael Granados, Benamjio, Province of Cordoba.—Beans. 621

563 Poyato, Manuel, Zuheros, Province of Cordoba.—Chick-peas. 621

564 Escribano, Luis, Pozoblanco, Province of Cordoba.—Chick-peas. 621

565 Blanco, Alfonso, Dos-Torres, Province of Cordoba.—Chick-peas. 621

566 Torrico, Manuel, Hinojosa, Province of Cordoba.—Chick-peas. 621

567 Sanz y Calatanazor, Jeronimo Cordoba.—Chick-peas. 621

568 Conde, Juan, Cordoba.—True bitter vetch. 621

569 Carrillo, Librado, Priego, Province of Cordoba.—White kidney beans. 621

570 Masso y Soler, Felix, Blanes, Province of Gerona.—Esculent vegetables. 621

571 Sanchez, Juan Francisco, Siguenza, Province of Guadalajara.—Flesh-colored kidney beans. 621

572 Gil, Santiago, Siguenza, Province of Guadalajara.—White kidney beans. 621

573 Heras, Angel Ayuso de las, Valdearenas, Province of Guadalajara.—Kidney beans. 621

574 Reyes y Rich, Juan, Guadalajara.—Beans. 621

575 Soldan, Antonio, La Palma, Province of Huelva.—Esculent vegetables. 621

576 Riera y Fernandez, Jose, Huelva.—Esculent vegetables. 621

577 Carrasco, Jose Maria, Bonares, Province of Huelva.—Beans. 621

578 Otal, Jose Maria, Castello de Caborneros, Province of Huesca.—Chick-peas and beans. 621

579 Paula Bulnes, Francisco de, Cazorla, Province of Jaen.—Chick-peas. 621

580 Vasquez, Francisco, Cazorla, Province of Jaen.—Chick-peas. 621

581 Quesada y Salazar, Pedro de, Valdepenas, Province of Jaen.—Chick-peas. 621

582 Quesada, Carlos Garcia de, Valdepenas, Province of Jaen.—Chick-peas. 621

583 Esteban y Balen, Andres, Navas de San Juan, Province of Jaen.—Chick-peas. 621

584 Herreros, Juan Ignacio, Izanatorf, Province of Jaen.—Chick-peas. 621

585 Higueras, Jose, Los Villares, Province of Jaen.—Lentils. 621

586 Prado, Maximo Alonso de, Leon.—Esculent vegetables. 621

587 Corporation of Vega de Infanzones, Leon.—Kidney beans. 621

588 Corporation of Valdefresno, Province of Leon.—Chick-peas and kidney beans. 621

589 Corporation of Arganza, Province of Leon.—Chick-peas and kidney beans. 621

590 Corporation of Congosto, Province of Leon.—Chick-peas and kidney beans. 621

591 Corporation of Mansilla Mayor, Province of Leon.—Chick-peas and kidney beans. 621

592 Corporation of Villaturriel, Province of Leon.—Chick-peas and kidney beans. 621

593 Corporation of Valverde del Camino, Province of Leon.—Chick-peas and kidney beans. 621

594 Corporation of Mansilla de las Manas, Province of Leon.—Chick-peas and kidney beans. 621

595 Corporation of Ponferrada, Province of Leon.—Chick-peas and kidney beans. 621

596 Corporation of Encinado, Province of Leon.—Kidney beans. 621

597 Corporation of Fajarcos de los Otros, Province of Leon.—Chick-peas. 621

598 Corporation of Magaz, Province of Leon.—Kidney beans. 621

599 Corporation of Omaña, Province of Leon.—Kidney beans. 621

600 Fernandez, Tomas, Armunia, Province of Leon.—Kidney beans and chick-peas. 621

601 Nuñez, Lino, Sahagun, Province of Leon.—Kidney beans. 621

602 Santos, Pablo, Fuentes de los Otros, Province of Leon.—Kidney beans. 621

603 Oliveres, Mauricio, Torreseron, Province of Lérida.—Kidney beans on the vine. 621

604 Lu, Ambrosio, Albesa, Province of Lérida.—Kidney beans. 621

605 Jovet, Luisa de, Tarragia, Province of Lérida.—Kidney beans. 621

606 Ignés, Pedro, Cervera, Province of Lérida.—Blue vetch. 621

607 Freire, Manuel Soto, Fanton, Province of Lugo.—Chick-peas and beans. 621

608 Pillado, Elisio Martinez, Foz, Province of Lugo.—Kidney beans. 621

609 Martinez, Ramon Antonio, Sarria, Province of Lugo.—Kidney beans. 621
Agricultural Products.

610 Moreno, Ramon Armesto, Puebla del Brollon, Province of Lugo.—Colored kidney beans. 621
611 Valcarcel, Teresa Pardo, Sarria, Province of Lugo.—Chick-peas. 621
612 Corporation of Puebla del Brollon, Province of Lugo.—Beans. 621
613 Mendez, Alejo Perez, Monforte, Province of Lugo.—Chick-peas. 621
614 Calatrava, Francisco Garcia, Alcobendas, Province of Madrid.—Chick-peas. 621
615 Pascual, Elias, Alfarnate, Province of Malaga.—Chick-peas. 621
616 Marin, Juan F. Garcia, Caravaca, Province of Murcia.—Kidney beans. 621
617 Anta, Ignacio, Orense.—Beans. 621
618 Rodriguez, Manuel Iglesias, Celaya, Province of Orense.—Escarlente vegetables. 621
619 Rodriguez y Gomez, Camilo, Ginzo de Limia, Province of Orense.—Chick-peas. 621
620 Rey, Manuel Pereiro, Rivela, Province of Orense.—Kidney beans. 621
621 Iglesias, Ramon, Canedo y Veiro, Province of Orense.—Kidney beans. 621
622 Provincial Board of Agriculture, Oviedo.—Kidney beans and peas. 621
623 Llanos, Andres, Saldaña, Province of Palencia.—Chick-peas and French peas. 621
624 Carrasco, Antolin Galan, Carrion, Province of Palencia.—Chick-peas. 621
625 Carande, Isidoro, Nogal de las Huertas, Province of Palencia.—Chick-peas. 621
626 Garcia, Ignacio, Herrera del Rio Pliego, Province of Palencia.—White French peas. 621
627 Gallego, Felix, Cevico de la Torre, Province of Palencia.—White French peas. 621
628 Gutierrez, Juan Francisco, Palencia.—White French peas. 621
629 Monedero, Juan, Quintana del Puenete, Province of Palencia.—Carrots. 621
630 Ortega, Demetrio, Palencia.—Beans. 621
631 Gutierrez, Calisto, Palencia.—Beans. 621
632 Rivas, Galo Ruiz, Province of Palencia.—Peas. 621
633 Colombres, Genaro, Perales, Province of Palencia.—True bitter vetch. 621
634 Onis, Federico, Cantalapiedra, Province of Palencia.—Escarlate vegetables. 621
635 Toribio, Antonio Martin, Villares de la Reina.—Chick peas, lentils, and beans. 621
636 Carbaya, Luis, San Cristobal de la Cueza, Province of Salamanca.—Lentils and chick-peas. 621
637 Nieto, Francisco Hernandez, Boveda del Rio Almar, Province of Salamanca.—Chick-peas. 621
638 Garcia, Rafael, Cantalapiedra, Province of Salamanca.—Chick-peas. 621
639 Ronco, Gregorio, Ragama, Province of Salamanca.—Chick-peas. 621
640 Terrero, Santiago Juanes, Villares, Province of Salamanca.—Chick-peas. 621
641 Salvadors, Gaspar Diaz, Villaflores, Province of Salamanca.—Chick-peas. 621
642 Mayoral, Andres, Los Huelmos, Province of Salamanca.—Chick-peas. 621
643 Poveda, Paulino, Pedroso, Province of Salamanca.—Chick-peas. 621
644 Garcia, Angel, Cantalapiedra, Province of Salamanca.—Peas. 621
645 Rodriguez, Zacarias, Cantalapiedra, Province of Salamanca.—Carrots. 621
646 Fuentes, Jose, La Pinilla, Province of Salamanca.—Black peas. 621
647 Hernandez, Vicente, Cantalapiedra, Province of Salamanca.—Peas. 621
648 Iglesias, Angel, Monterrubio de Armaña, Province of Salamanca.—Lentils. 621
649 Hernandez, Baldomero, Parada de Rubides, Province of Salamanca.—Beans. 621
650 Gomez, Miguel Martin, Balseca.—Provinces of Segovia.—Chick-peas. 621
651 Gimenez Isidro, Villacastin, Province of Segovia.—Chick-peas. 621
652 Linares, Salvador & Alejandro, Burgillos & Alcalal del Rio, Province of Seville.—Beans and Spanish peas. 621
653 Velasco, Ramon, Carmona, Province of Seville.—Chick-peas. 621
654 Olivaress, Manuel Garcia, Olivaress, Province of Seville.—Chick-peas. 621
655 Ojeda, Manuel, Seville.—Chick-peas. 621
656 Leon, Manuel Gimenez, Vido del Alcor, Province of Seville.—Chick-peas. 621
657 Teran, Francisco Collantes de, Alcala de Guadaira, Province of Seville.—Chick-peas. 621
658 Puig, Juan, Seville.—Chick-peas. 621
659 Ojeda y Gomez, Juan, Seville.—Chick peas. 621
660 Orellana, Joaquin de, Utrera, Province of Seville.—Chick-peas and Spanish peas. 621
661 Cuadra, Enrique de la, Utrera, Province of Seville.—Escarlente vegetables. 621
662 Amores, Manuel, Salteres y Olivarres, Province of Seville.—Escarlente vegetables. 621
663 Perez y Serrano, Miguel, Olivarres, Province of Seville.—Chick-peas and Spanish peas. 621
664 Muñoz y Leon, Antonio, Moran, Province of Seville.—Chick-peas. 621
665 Mendez, Felipe, Mairena del Alcor, Province of Seville.—Chick-peas. 621
666 Saavedra, Francisco, Utrera, Province of Seville.—Chick-peas. 621
667 Valdivieso, Antonio, Fernandez, Aguadas, Province of Seville.—Beans. 621
668 Alcaraz, Manuel de, Osuna, Province of Seville.—Beans. 621
669 Rivas, Pedro de, Utrera, Province of Seville.—Beans. 621
670 Gonzalez, Rafael, Seville.—Beans. 621
Agricultural Products.

671 Mayorga, Ramon Diaz, Moron, Province of Sevilla.—Beans. 621
672 Saavedra, Jose Maria, Mairena del Alcor, Province of Sevilla.—Beans. 621
673 Torres, Andres Villalon, Moron, Province of Sevilla.—Beans and Spanish peas. 621
674 Vinañ, Jose Maria Gimenez, Mairena del Alcor, Province of Sevilla.—Spanish peas. 621
675 Burgos, Felipe de, Utrera, Province of Sevilla.—Spanish peas. 621
676 Cuellar, Jose Antonio, Utrera, Province of Sevilla.—Esculent vegetables. 621
677 Rojo, Damian, Soria.—Blue vetch. 621
678 Lenguas, Pablo, Soria.—Blue vetch. 621
679 Barcens y Mariné, Jose, Vilaseca, Province of Tarragona.—Beans and peas. 621
680 Fausa, Pablo, La Canonja, Province of Tarragona.—Blue vetch, lentils, and Lima beans. 621
681 Virgil, Pablo, Tarragona.—Kidney beans, Lima beans, and blue vetch. 621
682 Gil, Francisco, Reus, Province of Tarragona.—Beans. 621
683 Prieto, Eusebio, Reus, Province of Tarragona.—Spanish peas and blue vetch. 621
684 Oller, Pedro, Reus, Province of Tarragona.—Peas, beans, and true bitter vetch. 621
685 Grau y Plà, Jose, Reus, Province of Tarragona.—Peas, beans, and true bitter vetch. 621
686 Montaner, Amalio, Reus, Province of Tarragona.—Beans. 621
687 Sorias y Domenech, Juan, Vilaseca, Province of Tarragona.—Kidney beans. 621
688 Monner, Manuel, La Riera, Province of Tarragona.—Kidney beans. 621
689 Fulles, Antonio Moreira, & Son, Tarragona.—Chick-peas. 621
690 Llurba, Juan Bautista, Ulledomolins, Province of Tarragona.—Chick-peas. 621
691 Vidal y Bas, Benito, Province of Tarragona.—Beans. 621
692 Fonts, Mariano, Reus, Province of Tarragona.—Beans. 621
693 Margenas, Antonio Bages Reus, Province of Tarragona.—Kidney beans. 621
694 Perez, Lino, Tedeo.—Kidney beans and chick-peas. 621
695 Basarán, Isidoro, Olias del Rey, Province of Tedeo.—Blue vetch. 621
696 Society of Agriculture, Valencia.—Esculent vegetables. 621
697 Palomares, Vicente Lassala, Masia de la Mar, Province of Valencia.—Beans and carrobs. 621
698 Lassala y Camp, Vicente, Alboraya, Province of Valencia.—Beans. 621
699 Albores y Alboros, Carlos, Picasent, Province of Valencia.—Carrobs. 621
700 Ferrandis y Soler, Onentienente, Province of Valencia.—Carrobs. 621
701 Casta, Joaquin Pardo de la Ternes, Province of Valencia.—Carrobs. 621
702 Baldoví, Rafael Gonzalez, Torrente, Province of Valencia.—Carrobs. 621
703 Arrue, Miguel, Benguasil, Province of Valencia.—Kidney beans. 621
704 Vaca, Francisco Cabeza de, Fuente Duero, Province of Valladolid.—Chick-peas. 621
705 Lecanda, Eloy, Valbuena de Duero, Province of Valladolid.—Chick-peas. 621
706 Cocho, Tiburcio, Santovenia, Province of Valladolid.—Blue vetch and lentils. 621
707 Corporation of Fuentesauco, Province of Zamora.—Chick-peas. 621
708 Mateos, Facundo Martin, Fuentesauco, Province of Zamora.—Chick-peas. 621
709 Bausela, Esteban Garcia, Castroviejo, Province of Zamora.—Chick-peas. 621
710 Poey, Juan, Habana, Cuba.—Vegetables of the country. 621
711 Sereiz, Eduardo Campos, Alicante.—Carrobs. 621
712 Llampaillas, Antonio, Masnou, Province of Barcelona.—Carrobs. 621
713 Escoda y Teixido, Antonio, Vilaseca, Province of Tarragona.—Carrobs. 621
714 Freixa, Sebastian, Reus, Province of Tarragona.—Carrobs. 621
715 Salvador, Salvador, Rindoms, Province of Tarragona.—Carrobs. 621
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1084 Mora, Celestino Merino de la, Grijota, Province of Palencia.—Flour. 657
1085 Vega, Lucas Ortiz, Grijota, Province of Palencia.—Flour. 657
1086 Barrios, Marcelo, Grijota, Province of Palencia.—Flour. 657
1087 Ascoitia, Higinio, Grijota, Province of Palencia.—Flour. 657
1088 Barrios, Rios & Co., Palencia.—Flour. 657
1089 Durango, Manuel Martínez, Huesillos, Province of Palencia.—Flour. 657
1090 Dulce y Alvarez, Blas, Herrera de Valdecáñizas, Province of Palencia.—Flour. 657
1091 Sanchez, Basilio Iga, Peñaranda de Bracamonte, Province of Salamanca.—Flour. 657
1092 Villa Alcazar, Marquis of, Tejares, Province of Salamanca.—Flour. 657
1093 Carretero, E., Widow of, Segovia.—Flour. 657
1094 Carretero, Martín, Segovia.—Flour. 657
1095 Riber, Villa & Puerta, Segovia.—Flour. 657
1096 Saperas, Francisco, Reus, Province of Tarragona.—Flour and bran. 657
1097 Industrial Flour Mill of Reus, Province of Tarragona.—Flour and bran. 657
1098 Gatell y Folch, Juan, Altafulla, Province of Tarragona.—Maize flour. 657
1099 Estéban, Francisco, Toledo.—Wheat flour. 657
1100 Huelbes y Ortíz, Emilio, Ocaña, Province of Toledo.—Vetch flour. 657
1101 Martinez, Gomez & Co., Sueca, Province of Valencia.—Decorticated rice. 657
1102 Society "La Edetana," Province of Valencia.—Wheat flour. 657
1103 Quemada, Juan de Dios, & Sons, Viloria, Providence of Valladolid.—Wheat flour. 657
1104 Hornedo y Velasco, Pedro, Valladolid.—Wheat flour. 657
Animal and Vegetable Products.

1105 Pardo, R. & P., Corcos, Province of Valladolid.—Wheat flour. 657
1106 La Patulía, Count of, Benavente, Province of Zamora.—Wheat flour. 657
1107 Palomar, Nascio, Zaragoza.—Flour. 657
1108 Higuera, Tomás, Zaragoza.—Flour. 657
1109 Segura, José, Sevilla.—Grits. 657
1110 Ribera, Guarrner & Bros., Alacante.—Fermented and fine pastes. 658
1111 Esteve, Juan M., Alicante.—Starch. 658
1112 Ponseti y Omila, José, Mahon, Balearic Islands.—Soup paste. 658
1113 Battlo Bros., Barcelona.—Starch. 658
1114 Draper y Frecios, Salvador, San Martín de Provensals, Province of Barcelona.—Starch. 658
1115 Provincial Board of Agriculture, Castellon.—Starch. 658
1116 Provincial Deputation, Murcia.—Soup pastes. 658
1117 Rey, Manuel Pereiro, Orense.—Soup pastes. 658
1118 Barrera, Pedro García, Ciudad-Rodrigo, Province of Salamanca.—Starch. 658
1119 Carnero & Colsa, Salamanca.—Starch. 658
1120 Moro, José, Salamanca.—Starch. 658
1121 Mirat & Son, Salamanca.—Starch. 658
1122 Jarrin, Bernardo, Salamanca.—Soup pastes. 658
1123 Martinez Sainz Bros., Sevilla.—Soup pastes and starch. 658
1124 Gil, Gregorio, Valladolid.—Starch. 658
1125 Cuevas & García, Valladolid.—Vermicelli. 658
1126 Castañeda, Romualdo Ruiz, Torralba de Calatrava, Province of Ciudad-Real.—Arrope (a kind of syrup). 659
1127 Rey, Luis Jouva, Granada.—Sugar and molasses. 659
1128 Torrent, Francisco, Almuñécar, Province of Granada.—Sugar. 659
1129 Huelin, Guillermo & Son, Málaga.—Unrefined sugar. 659
1130 Provincial Deputation, Málaga.—Jelly and syrup. 659
1131 Roca Bros., Málaga.—Pomegranate. 659
1132 Mallet, Ildefonso, Zaragoza.—Oriental nectar. 659
1133 Central Commission of the Island of Cuba, Habana.—Sugar. 659
1134 Iznaga, Natividad, Habana, Cuba.—Sugar. 659
1135 Vieguer y Nagué, Juan, Habana, Cuba.—Sugar. 659
1136 Poey Juan, Habana, Cuba.—Sugar and Guaraná (fermented cane liquor). 659
1137 Girart, Nicolas, Regla, Cuba.—Sap of the sugar-cane. 659
1138 Capsir, José Damian, Puebla de Rugat, Province of Valencia.—Grape syrup. 659
1139 Gasco y Beltran, Joaquin, Zaragoza.—Raspberry syrup. 659
1140 García Muñoz, Emilia Samá de, Habana, Cuba.—Sugar. 659
1141 Skirit Bros., San Juan de Puerto Rico.—Sugar. 659
1142 Balanzategui, Canuto, El Ciego, Province of Alava.—Red wine. 660
1143 Riscal de Alegre, Marquis of, El Ciego, Province of Alava.—Red wine. 660
1144 Tortosa, Joaquin, Hellin, Province of Albacete.—Brandy. 660
1145 Gil, Eloy, Hellin, Province of Albacete.—Wine. 660
1146 Lopez, Celestino, Tarazona de la Mancha, Province of Albacete.—Brandy. 660
1147 Aroca, José, Tarazona de la Mancha, Province of Albacete.—White wine. 660
1148 Lopez, Alonso, Tarazona de la Mancha, Province of Albacete.—Brandy. 660
1149 Sanchez, José Acacio, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
1150 Pedraja, Bernardo Gomez, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
1151 Fernandez, Antonio, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
1152 Simarro, Miguel, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
1153 Lara, Celestino Picazo, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
1154 Tendero, Gerónimo, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
1155 Picazo, Pedro Bautista, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
1156 Serrano, Maria Roza, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
1157 Dénia, Rafael, Tarazona de la Mancha, Province of Albacete.—Red wine. 660
1158 Albi y Ginér, Antonio, Jabea, Province of Alicante.—Muscatel vinegar. 660
1159 Ferris y Martínez, Cristóbal, Campo de Mirra, Province of Alicante.—Wine. 660
1160 Rojas Aguado, José, Agres, Province of Alicante.—Wine. 660
1161 Gumiel y García, Luis, Aspe, Province of Alicante.—Anise-seed cordial. 660
1162 Romany, Vicente, & Sons, Dénia, Province of Alicante.—White wine. 660
1163 Albert, Antoliano Perez, Monóvar, Province of Alicante.—Wines and brandies. 660
1164 Campos, Eduardo, Alicante.—Wine. 660
1165 Alina, José, Partido de Campello, Province of Alicante.—White and red wine. 660
Animal and Vegetable Products.

1166 Alenda, Antonio, & Son, Novelda, Province of Alicante.—Brandy. 660
1167 Almodóvar, Antonio Sanchez, Alicante.—Wines. 660
1168 Prat, Quereynon Alfonso, Monóvar, Province of Alicante.—Brandy. 660
1169 Vidal, Joaquin Calpca, Monóvar, Province of Alicante.—Red wine. 660
1170 Muñoz, Lorenzo Fernandez, San Juan, Province of Alicante.—Wine. 660
1171 Ortuño y Maestre, Juan Francisco, Salinas, Province of Alicante.—Wine. 660
1172 Verdú y Perez, Joaquín, Monóvar, Province of Alicante.—Wines. 660
1173 Leach, Giró & Co., Alicante.—White wines. 660
1174 Novelda, Tomás Escolano, Province of Alicante.—Brandy. 660
1175 Berenguer, Raimundo, Monóvar, Province of Alicante.—Sweet brandy. 660
1176 Cerdá, Enrique, Monóvar, Province of Alicante.—Vinegar. 660
1177 Verdú y Rico, Monóvar, Province of Alicante.—Vinegar. 660
1178 Perez Verdú, Brothers, Monóvar, Province of Alicante.—Vinegar and wines. 660
1179 Paya, Ciro Perez, Monóvar, Province of Alicante.—Wines. 660
1180 Verdú, Marcial, Monóvar, Province of Alicante.—Red wine. 660
1181 Verdú y Cortés, Vedado, Monóvar, Province of Alicante.—Vinegar. 660
1182 Verdú y Perez, Luis, Monóvar, Province of Alicante.—Wines. 660
1183 Rico, Antonio Perez, Monóvar, Province of Alicante.—Wines. 660
1184 Rico y Albert, Alejandro, Monóvar, Province of Alicante.—Wines. 660
1185 Verdú, Remedios Perez, Monóvar, Province of Alicante.—Vinegar and wines. 660
1186 Albert, Perez, & Co., Province of Alicante.—Vinegar and wines. 660
1187 Gisbert y Marco, Francisco, 1bi, Province of Alicante.—Red wine. 660
1188 Boculini, Juan Baeza, Alicante.—Red wine. 660
1189 Ferrera, Jaime, Alicante.—Vinegar. 660
1190 Fages Bros. & Co., Sax, Province of Alicante.—Anise-seed cordial and spirits of wine. 660
1191 Coquillat y Sempere, José, Elche, Province of Alicante.—Muscatel wine. 660
1192 Amorós, Juan Esteve, Monforte, Province of Alicante.—Wine. 660
1193 García, Luis Gumiel, Aspe, Province of Alicante.—Brandies. 660
1194 Aguilló, Francisco, Fuente, & Bros., Elche, Province of Alicante.—Wines, vinegar, alcohol, and pomegranate wine. 660
1195 Pina, Juan Bautista, Monforte, Province of Alicante.—Mistela (national drink). 660
1196 Benito, Juan Pina, Monforte, Province of Alicante.—Wine. 660
1197 Scals, José, Jijona, Province of Alicante.—Wine. 660
1198 Somoza, Ramon Maria Nava, Moraléa Matucabras, Province of Avila.—White wine. 660
1199 Soria, Mariano, Nava del Rey, Province of Avila.—Vinegar. 660
1200 Davernat & Co., Velez-Rubio, Province of Almeria.—Fig-brandy. 660
1201 Abadía, Nicolas, Bros., Velez-Rubio, Province of Almeria.—Wines. 660
1202 Vilches & Jover, Alhama, Province of Almeria.—Wines and brandies. 660
1203 Trell y Chacon, Miguel del, Berja, Province of Almeria.—Wines. 660
1204 Daza y Ruiz, Francisco, Purchena, Province of Almeria.—Wines. 660
1205 Romero, Manuel Carbonero, Purchena, Province of Almeria.—Wines. 660
1206 Roca, Bartolomé, Palma, Balearic Islands.—Brandies and wines. 660
1207 Viza, Agustín, Mahon, Balearic Islands.—Refrined vinegar. 660
1208 Prohens, Damian, Fèlanix, Balearic Islands.—Anise-seed cordial. 660
1209 Jaime, Miguel, Santa Maria, Balearic Islands.—Anise-seed cordial. 660
1210 Bisellach, Guillermo, Benisalén, Balearic Islands.—Wines. 660
1211 Munar, Gabriel, Benisalen, Balearic Islands.—Wines. 660
1212 Mulet, Antonio, Beñalbufar, Balearic Islands.—Malmsy wine. 660
1213 La Cenà, Marquis of, Beñalbufar, Balearic Islands.—Muscatel wine. 660
1214 Humbert, Nicasio, Llummayor, Balearic Islands.—Wines. 660
1215 Ferrant, Manuel, Barcelona.—Vinegar. 660
1216 Soler y Stussa, Valentin, Barcelona.—Wines and vinegars. 660
1217 Society Burchers, Pedro Miret, San Juan de Vilasar, Province of Barcelona.—Liquors. 660
1218 Ballester y de Torres, Laureano, Mediona, Province of Barcelona.—Wines. 660
1219 Castells de Mas, Joaquin Pedrosa, de, Esparraguera, Province of Barcelona.—Wines. 660
1220 Valls, Pedro, & Viñas, Gospar, Esparraguera, Province of Barcelona.—Wines and liquors. 660
1221 Liampallas, Antonio, Masnou, Province of Barcelona.—Wines. 660
1222 Ventura y Sampedro, Amado, Masnou, Province of Barcelona.—Liquors and anise-seed cordial. 660
1223 Pascual, Miguel, Masnou, Province of Barcelona.—Wines. 660
1224 Golar y Sirasol, José, Villanueva y Geltrú, Province of Barcelona.—Red wine. 660
1225 Cusi y Ferret, Federico, Villanueva y Geltrú, Province of Barcelona.—Hygienic wine. 660
1226 Juándo y Rafecas, Juan, Villanueva y Geltrú, Province of Barcelona.—Wines. 660
1227 Marqués, Jerónimo, Villanueva y Geltrú, Province of Barcelona.—Wines. 660
Animal and Vegetable Products.

1228 Alegret, Francisco, Villanueva y Geltrú, Province of Barcelona.—Misted (national drink). 660
1229 Sotá, Félix, Villanueva y Geltrú, Province of Barcelona.—Red wine. 660
1230 Baro y Gibert, José, Villanueva y Geltrú, Province of Barcelona.—Virgin wine. 660
1231 Roig y Serra, Juan, Villanueva y Geltrú, Province of Barcelona.—Wines. 660
1232 Creux, Teodoro, Villanueva y Geltrú, Province of Barcelona.—Wines. 660
1233 Dodero y Ponte, José Oriol, Pomar de Badalona, Province of Barcelona.—Wines. 660
1234 Valenti, Joaquín, Cabrera de Mataró, Province of Barcelona.—Wine. 660
1235 Sivia y Martorell, Narciso, Villafranca de Panadés, Province of Barcelona.—Anise-seed wine. 660
1236 Girona, Silvestre, Villarfranca de Poblet, Province of Barcelona.—Anise-seed cordial. 660
1237 Olivella, Cristóbal, Villafranca de Panadés, Province of Barcelona.—Imitation wines. 660
1238 Mullol, Buenaventura Rius, Villafranca de Panadés, Province of Barcelona.—Wines. 660
1239 Escofet Nello, Margarita, Widow of, Province of Barcelona.—Macon wine and imitations. 660
1240 Font, Salvador, Mataró, Province of Barcelona.—Liquors. 660
1241 Palau, Joaquín de, Mataró, Province of Barcelona.—Wines. 660
1242 Monte, Pedro Prat del, Barcelona.—Florentine vermouth. 660
1243 Fontanals, José Teresa, Barcelona.—Beer. 660
1244 Sallés, Salvador, Barcelona.—Wine. 660
1245 Plà y Vila, Pedro, Barcelona.—Brandy. 660
1246 Oliver Bros., Barcelona.—Wines. 660
1247 Sàvina y Riu, Ramon, San Boy de Llobregat, Province of Barcelona.—Wine. 660
1248 Durán, Eduardo, San Vicente, Province of Barcelona.—Wine. 660
1249 Gerona, Manuel, Villa de Cabals, Province of Barcelona.—Wine. 660
1250 Santacana, José, La Granada, Province of Barcelona.—Misted wine. 660
1251 Deu, José & Co., Masqueja y Martorell, Province of Barcelona.—Wine. 660
1252 Forrell y Batllaura, Juan, Abella, Province of Barcelona.—Wine. 660
1253 Oliver y Coll, Francisco, Papiol, Province of Barcelona.—Wine, liquors, and vinegar. 660
1254 Beltran y Rosell, Manuel, Igualada, Province of Barcelona.—Wine. 660
1255 Robira y Grau, Jose, San Martín de Sarroca, Province of Barcelona.—Wines and imitations. 660
1256 Barrera, Gabriel, Tàt, Province of Barcelona.—Wine. 660

1257 Bosch y Grau, José, Badalona, Province of Barcelona.—Brandy. 660
1258 Amell y Carbonell, José, Sitges, Province of Barcelona.—Wine. 660
1259 Puig, José Buenaventura, Sitges, Province of Barcelona.—Muscatel and Malmsy wine. 660
1260 Ventalló y Lobataras, Domingo, Tarrasa, Province of Barcelona.—Wines. 660
1261 Castellet, Buenaventura, Tarrasa, Province of Barcelona.—Wines. 660
1262 Gali, Antonio, Tarrasa, Province of Barcelona.—Wines. 660
1263 Pons, Antonio Castells de, Esparreguera, Province of Barcelona.—Wines. 660
1264 Castell de Mas, Joaquín Pedrosa, de, Esparraguera, Province of Barcelona.—Wine. 660
1265 Camprubí, Juan, Barcelona.—Liquor and anise-seed cordial. 660
1266 Puig & Llagosteras Bros., Barcelona.—Vinegar. 660
1267 Llobet, Antonio Maria, Barcelona.—Wine. 660
1268 Pátiño, José María, Cabeza de Vaca, Province of Badajoz.—Wine. 660
1269 Carrasco, Alfonso, Guareña, Province of Badajoz.—Wine. 660
1270 Sífreí, Juan Bautista, Almendralejo, Province of Badajoz.—Brandy and wine. 660
1271 Parades, Carlos, Guareña, Province of Badajoz.—Muscatel wine. 660
1272 Cortés, José Inocente, Guareña, Province of Badajoz.—Pedro Jimenez wine. 660
1273 Lopez, Aureliano, Badajoz.—Red and white wine. 660
1274 Benito y Reoyo, Genaro, Burgos.—Brandy. 660
1275 Regúlez, Dionisio, Miranda de Ebro, Province of Burgos.—Wine. 660
1276 San Román, Agustin Lopez de, Valladolid, Provincia de Burgos.—Red and white wine. 660
1277 Goya y Lopez, Marcelino, Burgos.—Vinegar. 660
1278 Franco, Ramon Santivañez, Casar de Palomero, Province of Cáceres.—Wine. 660
1279 Olivares, Jeronimo Sande, Garrovillas, Province of Cáceres.—Wine. 660
1280 Bustamante, Bernardino, Villa-miel, Province of Cáceres.—Wine. 660
1281 Bacas y Estévez, Ignacio, Cilleros, Province of Cáceres.—Wine. 660
1282 Herrán & Co., Jerez de la Frontera, Province of Cadiz.—Wine. 660
1283 Troya, Hidalfonso, Prado del Rey, Province of Cadiz.—Wine. 660
1284 Hortoria y Tezanos, Joaquin, Sanlúcar, Province of Cadiz.—Wine. 660
1285 Hidalgo y Verjano, Eduardo, Sanlúcar, Province of Cadiz.—Wines and vinegar. 660
1286 Blanco, Antonio, Prado del Rey, Province of Cadiz.—Wine. 660
1287 Argüeso y Argüeso, Leon de, Sanlúcar, Province of Cadiz.—Wine. 660
Animal and Vegetable Products.

1288 Martinez, Antonio, Sanlúcar, Province of Cadiz.—Wine. 660
1289 Linares y Obeso, Diego, Sanlúcar, Province of Cadiz.—Wine. 660
1290 Urmeneta, Fermín de, Chiclana, Province of Cádiz.—Brandy. 660
1291 Sanchez, Antonio, Chiclana, Province of Cádiz.—Wine. 660
1292 Rivas, Francisco Martínez de, Chiclana, Province of Cádiz.—Wine. 660
1293 Hugues, Guillermo H., Puerto de Santa María, Province of Cádiz.—Wine. 660
1294 Alvarez, Serafín, Puerto de Santa María, Province of Cádiz.—Wine. 660
1295 Segundo, Federico, Puerto de Santa María, Province of Cádiz.—Wine. 660
1296 Rudolph, Federico, Puerto de Santa María, Province of Cádiz.—Wine. 660
1297 Carli, Ramon, Puerto de Santa María, Province of Cádiz.—Wine. 660
1298 Pico, José María, Puerto de Santa María, Province of Cádiz.—Wine. 660
1299 Pró, José María, Puerto de Santa María, Province of Cádiz.—Wine. 660
1300 Parilla, José de Fuentes, Jerez de la Frontera, Province of Cádiz.—Wine. 660
1301 Gonzalez, Bias & Co., Jerez de la Frontera, Province of Cádiz.—Wines. 660
1302 Santarelli Bros., Jerez de la Frontera, Province of Cádiz.—Wines. 660
1303 Lopez, Juan Antonio, Widow of Jerez de la Frontera, Province of Cádiz.—Wines. 660
1304 Lebrun & Co., La Orotava, Canary Islands.—Wines. 660
1305 Davidson, Guillermo, & Co., La Orotava, Canary Islands.—Wines. 660
1306 Carpenter & Co., La Orotava, Canary Islands.—Wines. 660
1307 Bruce, Hamilton, & Co., La Orotava, Canary Islands.—Wines. 660
1308 Monteverde, Antonio, La Orotava, Canary Islands.—Wine. 660
1309 Tolosa, Fernan Do, La Orotava, Canary Islands.—Wine. 660
1310 Lopez, Juan José Barriuso, La Victoria, Canary Islands.—Wine and brandies. 660
1311 Diego, Wood & Co., Las Palmas, Canary Islands.—Wines. 660
1312 Castello y Olivares, José del, Las Palmas, Canary Islands.—Wines. 660
1313 Vega Grande, Count of, Las Palmas, Canary Islands.—Wine. 660
1314 Avilés, Nicolás, Las Palmas, Canary Islands.—Wine. 660
1315 Quevedo y Perez, José C., Isle of Gran Canaria, Canary Islands.—Wines. 660
1316 Gourié, Alfonso, Las Palmas, Canary Islands.—Wines. 660
1317 Quintana, Juan de, Las Palmas, Canary Islands.—Wine. 660
1318 Massieu, Domingo, Balsequillo, Canary Islands.—Wine. 660
1319 Peraza, Alejandro, Granadilla, Canary Islands.—Wine. 660
1320 Llovera y Llovet, Vicente, Masía de Cucalón, Province of Castellón.—Wine. 660
1321 Villares, Marquis of, Torrebio, Province of Castellón.—Wines. 660
1322 Vilanova y Piers, Pascual, Alcañiza Chivers, Province of Castellón.—Wines. 660
1323 Provincial Board of Agriculture, Borrion, Province of Castellón.—Vigneron and wines. 660
1324 Ripolles y Perez, Manuel, Castellón.—Brandy. 660
1325 Gasco, F. B., Castellón.—Brandy. 660
1326 Climent, Vicente, Castellón.—Wines. 660
1327 Claramunt, Hilarión, Vinaroz, Province of Castellón.—Wines. 660
1328 Mazorra, Mateo, & Son, Valdepeñas, Province of Ciudad-Real.—Wine. 660
1329 Mazarron, Miguel, Valdepeñas, Province of Ciudad-Real.—Wines. 660
1330 Mudela, Marquis of, Valdepeñas, Province of Ciudad-Real.—Wines. 660
1331 Fraile, María de la Asunción Valdepeñas, Province of Ciudad-Real.—Wines. 660
1332 Peinado y Lasa, Tiburcio, Tomelloso, Province of Ciudad-Real.—Brandy. 660
1333 Villena y Parra, Sinfioriano, Tomelloso, Province of Ciudad-Real.—Brandy and spirits of wine. 660
1334 Ramírez, Primo, Tomesello, Province of Ciudad-Real.—Brandy and spirits of wine. 660
1335 Bujon, Trinidad, Torralba, Province of Ciudad-Real.—Wine. 660
1336 Delgado y Palacios, Juan, Ciudad-Real.—Alcohol and anise-seed cordial. 660
1337 Ruiz, Romualdo, Torralba, Province of Ciudad-Real.—Wines. 660
1338 Medrano, José, Ciudad-Real.—Wine. 660
1339 Soria, Marcial de, Valdepeñas, Province of Ciudad-Real.—Wine. 660
1340 Avansay, Hipólito, & Son, Valdepeñas, Province of Ciudad-Real.—Wine. 660
1341 Blanco y Alcalde, Rafael, Cabra, Province of Córdoba.—Wine. 660
1342 Carretero, Pedro, Córdoba.—Wine. 660
1343 Molina, Isidro, Rute, Province of Córdoba.—Wine. 660
1344 Perez, Diego Eceja, Rute, Province of Córdoba.—Brandy. 660
1345 Ruiz, Francisco Moreno, Doña Mencia, Province of Córdoba.—Brandy. 660
1346 Calvo, José María, Cabra, Province of Córdoba.—Brandy. 660
1347 Rubio, José Calvo, Aguilar, Province of Córdoba.—Monillia wine. 660
1348 Vargas, Sebastian, Villavicencio, Province of Córdoba.—Wines. 660
1349 Infante, José Escobar, Villavicencio, Province of Córdoba.—Wine. 660
1350 Arribas, Antonio Escobar, Villaviciosa, Province of Córdoba.—Wine, 660
Animal and Vegetable Products.

1351 Módenes, Juan R., Baena, Province of Córdoba.—Wines. 660
1352 Negres, Francisco de Paula, Baena, Province of Córdoba.—Wine. 660
1353 Fernandez, Francisco, Baena, Province of Córdoba.—Wine. 660
1354 Salas, Francisco Solano, Montilla, Province of Córdoba.—Montilla wine. 660
1355 Jurado, José, Montilla, Province of Córdoba.—Montilla wine. 660
1356 Raigor, Antonio, Montilla, Province of Córdoba.—Montilla wine. 660
1357 Navarro, Antonio José, Montilla, Province of Córdoba.—Montilla wine. 660
1358 Alvear, Carlos, Montilla, Province of Córdoba.—Montilla wine. 660
1359 Alvear y Ward, Francisco, Montilla, Province of Córdoba.—Montilla wine. 660
1360 Polo, Bartolomé, Montilla, Province of Córdoba.—Montilla wine. 660
1361 Canela, José, Lucena, Province of Córdoba.—Montilla wine. 660
1362 Sotomayor, Eduardo Alvarez, Lucena, Province of Córdoba.—Wine. 660
1363 Valle, José Muñoz, Lucena, Province of Córdoba.—Wine. 660
1364 Valenzuela, José Valé, Lucena, Province of Córdoba.—Wine. 660
1365 Algar, José Ruiz de, Lucena, Province of Córdoba.—Wine. 660
1366 Gallardo, José, Montilla, Province of Córdoba.—Wines. 660
1367 Vilaiba y Sotomayor, Manuel, Montilla, Province of Córdoba.—Montilla wine. 660
1368 La Cortés, Marquis of, Cabrera, Province of Córdoba.—Wines. 660
1369 López, Pedro, Córdoba.—Wine. 660
1370 Neyralores, Gerardo, Fañ, Province of Córdoba.—White wine. 660
1371 Bustinduy, José Antonio, San Clemente, Province of Cuenca.—Wines. 660
1372 Moreno, Domingo, Tarancón, Province of Cuenca.—Wine. 660
1373 Retamoso, Count of, Tarancón, Province of Cuenca.—Wine and brandy. 660
1374 Torre y Salto, Antonio de la, Tarancón, Province of Cuenca.—Red wine. 660
1375 Valera, Julian Martínez, Chilaron, Province of Cuenca.—Red wine. 660
1376 Carné, José, Tarancón, Province of Cuenca.—Red wine. 660
1377 Escobar y del Campo, Francisco, Rábades Bajos, Province of Cuenca.—Red wine. 660
1378 Vilaret, Agustín, Blanes, Province of Gerona.—Malmsay wine. 660
1379 Descals, Francisco Puig, Rojar, Province of Gerona.—Wine. 660
1380 Vega y Tejada, Ezequiel de la, Guadarrama.—Wines. 660
1381 Martínez, Gregorio García, Guadalajara.—Wine. 660
1382 Reyes, Juan A., Guadalajara.—Wine. 660
1383 Muñoz y Mendez, Eugenio, Huelva, Province of Guadalajara.—Wines. 660
1384 Martí, Diego García, Guadalajara.—Wines. 660
1385 Iñiguez, José, Gibraleon, Province of Huelva.—Wine and brandy. 660
1386 Cepeda, Ignacio de, Almonte, Province of Huelva.—Wine and vinegar. 660
1387 Roldán, Manuel Moreno, Almonte, Province of Huelva.—Wine. 660
1388 Acebedo, Francisco, Almonte, Province of Huelva.—Manzanilla wine. 660
1389 Lagarín, Francisco, Almonte, Province of Huelva.—White wine. 660
1390 González, Nicolás Gómez, Huelva.—Wines and brandy. 660
1391 Cueva, Fernando de la, Huelva.—Wines and brandy. 660
1392 Días y Gómez, Eduardo, Huelva.—Wines. 660
1393 Mesa, Francisco Carrion, Huelva.—Brandy and anis-seed cordial. 660
1394 Martín & Colombo, Huelva.—Alcohol and brandy. 660
1395 López, Luis María, Huelva.—White wine. 660
1396 Quintero, Juan García, Huelva.—Vinegar. 660
1397 Torre y Figueras, Antonio de la, Huelva.—Red wine. 660
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<td>2058 Pellicer, José,</td>
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<td>2059 Fumafua Bros.,</td>
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<td>2060 Odena y Pujol,</td>
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<td>2061 Avello, A.,</td>
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<td>2062 Gasull,</td>
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<td>2063 Gil, Francisco,</td>
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<td>2064 Morlías, José,</td>
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<td>2065 Rincon, José,</td>
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<td>2066 Sirvent y Oliver,</td>
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<td>2067 Carol, Antonio,</td>
<td>&amp; Co., Reus, Province of</td>
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<td>2068 Esteve, D. A.,</td>
<td>Widow &amp; Son of, Reus, Province</td>
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<td>2069 Basseda y Andreu,</td>
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<td>2070 Zamora, Francisco,</td>
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<td>2071 Peña y Mach,</td>
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<td>2072 García, Sebastian,</td>
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<td>2074 Gattell y Folchs,</td>
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<td>2075 Siscar, Ramon,</td>
<td>La Canonja, Province of Toledo</td>
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<td>2076 Indo, Valentín,</td>
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<td>2077 Redondo, Juan,</td>
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<td>2078 Basaran, Isidoro,</td>
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<td>2079 Moreno, Manuel,</td>
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<td>2080 Diego, Francisco,</td>
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<td>2082 Calabuyg,</td>
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<td>2084 Cañamas, Blas,</td>
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<td>2085 Albor y Albor,</td>
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<td>2086 Valdobi, Rafael,</td>
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<td>2088 Olias, Vicente,</td>
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<td>2089 Bremont, Manuel,</td>
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<td>2090 Latorre, Federico,</td>
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<td>2093 Flores, P., Manuel</td>
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2166 Rodriguez, Manuel Iglesias, Cela-
nova, Province of Orense.—Flax. 666
2167 Romero y Romero, José, Guinzo
de Limia, Province of Orense.—Flax. 666
2168 Calvo, Lorenzo, Salamanca.—
Flax. 666
2169 Casado y Febrero, Francisco, Seville.—Hempen ropes. 666
2170 Igualada, Francisco, Sevilla.—
Cordage and sandals of hemp. 666
2171 Monner, Juan, La Riera, Province of Tarragona.—Hemp. 666
2172 Batlle y Marca, Pedro, Province of Tarragona.—Ropes. 666
2173 Valencian Society of Agriculture, Valencia.—Esparto grass, hemp, nettle, and agave. 666
2174 Philadelphia Commission of Va-
lenica.—Objects made of hemp. 666
2175 Villalva, Benigno, Corrales de Duerto, Province of Valladolid.—
Hemp. 666
2176 Borbujo, Juan, Benavente, Pro-
vine of Zamora.—Flax. 666
2177 Marron, José Victor, Alcañices, Province of Zamora.—Flax. 666
2178 La Viñaza, Count of, Epila, Province of Zaragoza.—Flax and hemp. 666
2179 Loring Bros., Málaga.—Esparto grass. 666
2179a Corps of Engineers of Woods and Forests, Madrid.—Esparto grass. 666
2180 Robles, Vicente, Badajoz.—
Pelt. 667
2181 Moreno, Cayetano, Villalba de los Barros, Province of Badajoz.—Merino wool. 667
Textile Substances, Machines, Engineering, etc.

2182 Arenzana, Son of, & Co., Badajoz.—Merino wool. 667
2183 Carrasco, Alfonso, Guareña, Province of Badajoz.—Merino wool. 667
2184 Espinosa, Fernando Monteiro de, Badajoz.—Merino wool. 667
2185 Patiño, José María, Cabeza de Vaca, Province of Badajoz.—Merino wool. 667
2186 Provincial Commission, Burjós.—Coarse and fine wool. 667
2187 Hernáiz, Francisco, Huerta de Abajo, Province of Bérgas.—Merino wool. 667
2188 Agero, José Díaz, Moraleja, Province of Cáceres.—Wool. 667
2189 Santa Marta, Marquis of, Cáceres.—Wool. 667
2190 Montoya, Vicente Llopis, Bojas, Province of Castellón.—Wool. 667
2191 Gil Smera, Giner, Morella, Province of Castellón.—Wool. 667
2192 Provincial Board of Castellón, Morella, Province of Castellón.—Wool. 667
2193 Valdeavellano, J. García, Espiel, Province of Córdoba.—Wool. 667
2194 Conde, Juan M., Córdoba.—Wool. 667
2195 Lozano, Juan Antonio, Belmex, Province of Córdoba.—Wool. 667
2196 Cortés y Velarde, Enrique, Fuente Ovejuna, Province of Córdoba.—Wool. 667
2197 Torrico, Manuel, Hinojosa, Province of Córdoba.—Wool. 667
2198 Yaniz, Ambrosio, Cuenca.—Wool. 667
2199 Hernández, Pedro, Moguer, Province of Huelva.—Wool. 667
2200 Soldán, Antonio, La Palma, Province of Huelva.—Wool. 667
2201 Otal, José María, Almudevar, Province of Huelva.—Wool. 667
2202 Giménez, Francisco, Jaén.—Wool. 667
2203 Freires, Manuel Soto, Papon, Province of Lugo.—Wool. 667
2204 Cruz Gómez, Juan de la, Caravaca, Province of Murcia.—Shoddy. 667
2205 García y García, Manuel, Salamanca.—Wool. 667
2206 García, Mariano, Salvatierra de Tormes, Province of Salamanca.—Wool. 667
2207 Díaz, Cándido, Villaflores, Province of Salamanca.—Wool. 667
2208 Torreja, Ricardo, Zaratan, Province of Salamanca.—Wool. 667
2209 Cabrera, Victoriano, Cantalapiedra, Province of Salamanca.—Wool. 667
2210 Onía, Federico de, Cantalapiedra, Province of Salamanca.—Wool. 667
2211 Lozoya, Marquis of, Segovia.—Wool. 667
2212 Tomé, Gabino, Segovia.—Wool. 667
2213 Quintanilla, Antonio, Carmona, Province of Sevilla.—Wool. 667
2214 Rosa, José de la, Villamanrique, Province of Sevilla.—Wool. 667
2215 Zayas y Trigueros, Miguel, Arobas, Province of Sevilla.—Wool. 667
2216 Vasquez, Juan, Sevilla.—Wool. 667
2217 Cuadra, Enrique de la, Utrera, Province of Sevilla.—Wool. 667
2218 Gonzalez, Ramon, Quintana Rejondas, Province of Soria.—Wool. 667
2219 Delgado, Manuel, Tejarro, Province of Soria.—Wool. 667
2220 Romero, Angel, Soria.—Wool. 667
2221 Perez, Lino, Toledo.—Wool. 667
2222 Corporation of Medina del Campo, Talavera.—Wool. 667
2223 Salarich, Joaquín, Vich, Province of Barcelona.—Silk in the cocoon and reeled. 668
2224 Riscal de Alegre, Marquis of, Alía, Province of Cáceres.—Cocoon. 668
2225 La Viesca, Marquis of, Fregeneda, Province of Salamanca.—Spun silk. 668
2226 Paulino, Cipriano Perez, Fregeneda, Province of Salamanca.—Spun silk. 668
2227 Villalta y Uribe, Antonio, Jaen.—Cocoon. 668
2228 Gonzalez, Pedro, Eutalmo, Province of Orense.—Cocoon. 668

Machines, Implements, and Processes of Manufacture.

2229 Albornoz, Juan Gil, Avila.—Plows. 670
2230 Cruz, Rafael Trianes de la, Huelva.—Models of harrows. 670
2231 Corps of Engineers of Woods and Forests, Madrid.—Manual implements. 670
2232 Philadelphia Commission of Valencia.—Agricultural instruments. 670
2233 Perez, Felipe, Húana, Cuba.—Cultivator. 670
2234 Serrano, Juan, Castellón.— Implements for tillage. 670

Agricultural Engineering and Administration.

2235 Barnosell, Pedro, Vallecas, Province of Madrid.—Guano. 681
2236 Provincial Deputation, Murcia.—Barrilla for fertilizing. 681
2237 Muñoz, Bruno, Peñaranda, Province of Salamanca.—Girth. 682
2238 Provincial Commission of Valencia.—Harness appendages. 683
2239 Villar, Francisco Maria del Barcelona.—Projects of rural constructions. 683
2240 Garriga, Francisco Domingo, Saúl Quise de Besora, Province of Barcelona.—Model of feeding-trough. 683
2241 Cruz, Rivero, Rafael Trianes de la, Huelva.—Plan of country house. 683

Tillage and General Management.

2242 Garriga, Francisco Domingo, San Quintin de Besora, Province of Barcelona.—Systems of rotation and calculations for agricultural products. 690
2243 Corps of Engineers of Woods and Forests, Madrid.—Plan of the special school, and technical designs made by the pupils; books on forestry, and models of implements used for the proper cultivation of forests. 690
Arboriculture and Forest Products.

1. Menezes, Jose de Vasconcellos Carneiro, Marco de Canaveses, Oporto.—Woods, corkwood. 600
2. Archer, Jacintho F., Setubal, Lisbon.—Corks and corkwood. 600
2a. Almeida, Jacintho Pacheco, Ponta Delgada.—Samples of wood. 600
3. Almeida, Antonio Joaquim de, Villa Nova de Ourem, Santarem.—Timber. 600
3a. Bettencourt, Francisco, Ponta Delgada.—Samples of wood. 600
4. Administrative Council of Castro Daire, Castro Daire, Viseu.—Timber. 600
5. Administrative Council of Penacova, Penacova, Coimbra.—Corkwood. 600
6. Administrative Council of Penafalda, Penafal, Viseu.—Timber. 600
6a. Salles, Jose Joaquim Pereira, Miranda, Braganca.—Corkwood. 600
7. Albergaria, Thomas Antonio Pinto Soares, Villa Cha Averti.—Corkwood and oak bark. 600
8. Administrative Council of Vourela, Vourela, Viseu.—Timber. 600
9. Gago, Joao Henriques Nunes, Galveas, Portalegre.—Corkwood. 600
10. Goulao, Joao Pereira Pestana Pina, Niza, Portalegre.—Corkwood. 600
11. Vaz Preto, Geraldes, Manuel Louza, Castello Branco.—Corkwood. 600
12. Joaquim Guilherme de Vasconelos & Sons, Elvas, Portalegre.—Corkwood. 600
13. Herdeiros de Roberto & Hunter Reynolds, Estremoz, Evora.—Corks. 600
14. Almeida, Francisco Alves, Miranda do Douro, Braganca.—Corkwood. 600
15. Rebocha, Francisco Freire, Constancia, Santarem.—Timber. 600
16. Ventura, Jose Goncalves da Costa, Quinta do Mosteiro, Oporto.—Corkwood. 600
17. Agricultural Society of Oporto, Oporto.—Woods. 600
19. Fernando, Joaquim Mogao, Santarem.—Cork. 600
19a. Castro, Joao Vaz, Pacheco, Ponta Delgada.—Samples of wood. 600
20. Queiroz, Jose de Sequeira Pinto, S. Sebastiao do Duque, Viana do Castello.—Corkwood and barks. 600
2a. Walnuts and chestnuts. 600
21. Ramalho, Jose Maria, Evora.—Corkwood and corks. 600
22. Frausto, Antonio Joaquim, Montalvao, Portalegre.—Corkwood. 600
22a. Rocha, Francisco Coelho, Feira.—Corks. 600
23. Faria, Manuel Simplicio, Niza, Port Legre.—Corkwood. 600
24. Falcao, Joao Carlos da Costa, Fundao.—Chestnut staves, and rods for making hoops. 600
26. Guerra, Jose Manuel, Miranda do Douro, Braganca.—Corkwood. 600
27. Murta, Ramiro Cesar, Castello de Vide.—Corkwood. 600
28. Mesquita, Pedro Jose de, Sinde, Coimbra.—Corkwood. 600
29. Ororio, Manuel de Arevedo Ferraz, Monforte, Castello Branco.—Corkwood. 600
30. Murteira, Joaquim Antonio, Campo Maior, Portalegre.—Timber. 600
31. Maria, Angelica, Montargil, Portalegre.—Corkwood. 600
32. Netto, Joao Mascarenhas, Silves, Faro.—Corks and corkwood. 600
33. Nunes & Co., Grandola, Lisbon.—Corks and corkwood. 600
34. Ratto, Antonio Gonsalves, Barquinha, Santarem.—Corkwood. 600
35. Souza, Joze Saldanha Oliveira e, Lisbon.—Corkwood. 600
36. Salgado, Julio Bivar d’Azevedo, Sadoal, Santarem.—Corkwood. 600
37. Souza, Pedro Augusto Pereira Abreu e, Santa Marinha, Vista Real.—Corkwood. 600
38. Lagria, Juan, Grandola, Lisbon.—Corks. 600
39. Lacerda, Jose de Aragao Costa, Alfreda Nova do Cabo, Castello Branco.—Chestnut rods, staves. 600
40. Orb, J. Augusto de, Portalegre.—Corkwood. 600
41. Marcal, Joao Lopes, Evora.—Corkwood. 600
42. Peres, Roure, & Co., S. Thargo de Cacem, Lisbon.—Corkwood. 600
43. Margiochi, jr., Francisco Simoes, Lisbon.—Corkwood. 600
44. Ribeiro, J. Lopes, Anciaes, Braganca.—Corkwood. 600
45. Ribeiro, Serafim Garcia, Oliveira do Hospital.—Corkwood. 600
46. Rodrigues, Manuel Antonio, Ferradosa, Braganca.—Corkwood. 600
47. Moraes, Antonio, S. Thiago, Lisbon.—Corks and corkwood. 600
48. Moraes, Manuel F. de, Lisbon.—Corkwood. 600
49. Rankin, William, & Sons, Almada, Lisbon.—Corkwood. 600
50. Ventura, Jose Goncalves da Costa, Quinta do Mosteiro, Oporto.—Corkwood. 600

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Arboriculture and Forest Products, Pomology.

51 Valente, Jose Justiniano d’Oliveira, Aveiro.—Pine kernels. 600
52 Vilarinho & Nephew, Silves, Faro.—Corks and corkwood. 600
53 Proença, Francisco Tavares d’Almeida, Castello Branco.—Corkwood. 600
54 Silva, Antonio Jose de Sousa e Vai-longo, Oporto.—Cherry tree. 600
55 Peres, Joaquim Manuel de Mattos, Evora.—Corkwood. 600
56 Moreno, P., & Sons, Portalegre.—Corks and corkwood. 600
57 Cordeiro, Caetano Manuel, Evora,—/Cork. 600
58 Menezes, C., & Co., Oporto.—Cork and manufactures. 600
59 Direction of the Works on the River Mondego and Figueira bar, Coimbra.—Timber woods and barks. 600
60 Ferreira, Manuel Felix, Villa Cha, Bragança.—Corkwood. 600
61 Vasconcellos, Catharina Mousinho Almadamin, Nisa, Portalegre.—Corkwood. 600
62 Vaz, Eduardo Augusto da Cruz, Castello Branco.—Corkwood. 600
63 Vargas, Antonio Alexandre, Alcacer do Sal, Lisbon.—Corkwood. 600
64 Outeiro Fundao, Viscount of, Castello Branco.—Corkwood. 600
65 Vasconcellos, Joaquim Guilherme de, Elvas, Portalegre.—Woods. 600
66 Saramago, Francisco Ferreira, Reguengo, Evora.—Corkwood. 600
67 Silva, Manuel Joaquim da, Redondo, Evora.—Oak-galls. 600
68 Andrade, Antonio Garcia de, Elvas, Portalegre.—Scarlet oak-bark and corkwood. 600
69 Almeida, Augusto de Avedo, Pinto de, Feira, Aveiro.—Corks. 600
70 Beca, Agostinho da Rocha, Penafiel, Porto.—Corkwood, pine tree, and oak-bark. 600
71 Coelho, Manuel Diogo, Castello de, Vise, Portalegre.—Timber. 600
72 Carreira, Jose Ivo, Peniche, Leiria. —Juniper-wood. 600
73 Calca e Pina, Antonio, Souzel, Portalegre.—Corkwood. 600
74 Robinson, George, Portalegre.—Corkwood. 600
75 Ramalho, Jose Maria, Evora.—Corkwood. 600
76 Salema Mattos, & Co., S. Thiaio do Cacem.—Corks. 600
77 Pinheiro, Francisco Rodrigues, Marvao, Portalegre.—Corkwood. 600
78 Pereira, Francisco Jose.—Cork and corkwood. 600
79 Souza, Antonio Joaquim, Lanudos, Oporto.—Corkwood. 600
80 Administrator of the Concelho of Manguarle, Manguarle, Viseu.—Timber. 600
81 Almeida, Joaquim Ribeiro, Campanha, Oporto.—Corkwood. 600
82 Camello, Joaquim Augusto da Silva, Penafiel, Oporto.—Corks. 600
83 Board of Public Forests, Lisbon.—Shipbuilding timber and construction, Cork and corkwood. 600
85 Carlos Brandao & Son, Oporto.—Corkwood and cork. 600
86 Casa Nova, Manuel Gonsalves, Beires, Oporto.—Corkwood. 600
87 Biester Campos, & Co., Lisbon.—Corkwood, prepared. 600
88 Zagallo, Antonio Carlos, Elvas, Portalegre.—Corkwood. 600
89 Machado, Joao Jose de Souza, Pa redes, Oporto.—Timber. 600
90 Costa Busto & Co., Oporto.—Mapogany woods. 601
90 Corte Real, Antonio Freire, Valle de Praceres, Castello Branco.—Dyewood. 602
91 Cassola, Antonio Joaquim, Portalegre.—Oak tree and cork tree barks. 602
92 Veiga, Jose Mendes, Covilha, Castello Branco.—Wood dyes. 602
93 Nogueira, Henrique de Sa, Portalegre.—Cork tree bark, oak tree bark, middle layer. 602
94 Cardoso, Francisco de Paula, Alpedrinh, Castello Branco.—Sumac. 602
95 Chaves & Brother, Lisbon.—Saffron flower. 602
96 Poiares, Antonio Jose da Silva, Can tanheco, Coimbra.—Pitch. 603
97 Gago, Joao Henriquees Nunes, Gal veis, Portalegre.—Acorns. 603
98 Saraiva, Francisco Martins, Belmonte, Castello Branco.—Dried chestnuts. 603
99 Souza, Manuel Lopes de, Guarda.—Walnuts and chestnuts. 603
100 Silva, Joaquim Nunes da, Elvas, Portalegre.—Acorns. 603
101 Rago, Antonio Profrio Gomes do, Covilha, Castello Branco.—Chesnuts. 605
102 Souto, Antonio Duarte da Cunha, Freixinho, Viseu.—Dried chestnuts. 605
103 Oliveira Soares, M. E. de, Evora. —Acorns. 605
104 Company of Lelizitas do Tagus & Sado, Lisbon.—Corkwood. 606

Pomology.

105 Martins, Jeronymo, & Son, Lisbon.—Nuts. 611
106 Margalhaes, Luis Antonio, Aldea, Nova do Cabi, Castello Branco.—Chestnuts. 611
107 Morao, Maria Emilia d’Almeida, Penamacor, Castello Branco.—Olives. 611
108 Mesquita, Pedro Jose de, Sind, Coimbra.—Dried chestnuts. 611
109 Pereira, Pedro Maria Dantas, Torres Vedras, Santarem.—Almonds. 611
110 Pinto, Clemencia, Villa Boim, Portalegre.—Acorns. 611
111 Oliveira, Verissimo Ferreira A. de, Montalegre, Santarem.—Olives. 611
112 Pessoa, Luis Manuel da Costa, Alfandega da Fe, Braganca.—Olives. 611
113 Ornelas & Lister, Lisbon.—Olives. 611

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Pomology.

114 Botelho, Jose Fernandes, Mar-vaO, Portalegre.—Walnuts. 611
115 Burguete, Miguel Serrao, Sardoal, Santarem.—Walnuts and hazelnuts. 611
116 Silveira, Manuel Jose da, Arganil, Coimbra.—Walnuts. 611
117 Costa, Joao Carlos, Elvas, Porta-legre.—Acorns. 611
118 Peres, Joaquim Manuel de Mattis, Evora.—Acorns. 611
119 Santos, Ascendo Jose dos, Valenca, Vila Nova do Castello.—Chestnuts, filberts, and almonds. 611
120 Pimenta, Jose Maria Dantas, Tor-res Novas, Santarem.—Walnuts and almonds. 611
121 Coelho, Manuel Diogo, Castello de Vide, Portalegre.—Walnuts and chestnuts. 611
122 Figueira, Manuel Duarte, Castello Branco.—Oives. 611
123 Gomes, Francisco Antonio.—Mon-covo, Braganca.—Oives. 611
124 Gomes, Francisco Antonio.—Oives. 611
125 Garfias, M. J. de L., Villa Nova de, Portimao, Faro.—Almonds. 611
126 Guerra, Joaquim Jose da, Elvas, Portalegre.—Oives. 611
127 Guedes, Francisco Domingues, Castello Branco.—Oives. 611
127a Abrancalha Abrantes, Viscount de, Santarem.—Oives. 611
128 Grillo, Manuel Francisco, Ribeiro de Niza, Portalegre.—Walnuts and hazelnuts. 611
130 Jose, Joaquim das, Neves & Sons, Lisboa.—Almonds. 611
132 Pelxoto, Jose Nunes de Soura, Penafiel, Oporto.—Acorns. 611
133 Coelho, Jose Justino, Villa de Tamega, Villa Real.—Walnuts. 611
134 Correa, Joaquim, Penacova, Coim-bra.—Walnuts. 611
135 Menezes, Manuel Antonio Horta da Vitolarica, Braganca.—Figs. 611
136 Castel Branco, Manuel de Barros, Portalegre.—Chesnuts. 611
137 Direction of Works of the River Montego and the Figueira bar, Coim-bra.—Oives. 611
138 Transo, Leandro Pinto, Maroao, Portalegre.—Walnuts and chestnuts. 611
139 Guerra, Jose da Conceicao, Elvas, Portalegre.—Grapes, olives. 611
140 Castro, Luis Bernardo Lampiao M., Amedo, Braganca.—Walnuts. 611
141 Coutinho, Luis C. de Lucena Araio, Vilha da Fonte, Viseu.—Dried chestnuts. 611
142 Camara, Municipal de Penafiel, Penafiel, Oporto.—Walnuts, chestnuts, and filberts. 611
143 Coelho, Antonio Jose, Villielo do Tamega, Villa Real.—Dried chestnuts. 611
144 Campos, Antonio Carlos de, Mon-covo, Braganca.—Almonds. 611
145 Miranda, Joaquim Lobo de, Lagoa, Faro.—Almonds. 611
146 Nunes, Guilhermes Francisco Pe-reira, Oliveira do Hospital, Coimbra.—Olives. 611
147 Neves, Adelino, & Son, St. Antonio dos Olveaes, Coimbra.—Filberts. 611
148 Lourinho, Antonio Jose, Monte Car-valho, Portalegre.—Walnuts, chestnuts, and hazelnuts. 611
149 Lanhoso, Jose, Regoa.—Walnuts and almonds. 611
150 Lecoq, Joao Jose, Castello de Vide, Portalegre.—Almonds and walnuts. 611
151 Lopes, Jose Martins Thomar, San-tarem.—Figs. 611
152 Lobo, Jose Maria, Guarda.—Walnuts. 611
153 Murteira, Manuel Maria, Campo Maior, Portalegre.—Olives. 611
154 Mattis, Manuel Antonio de, Cam-po Maior, Portalegre.—Olives. 611
155 Meneses, Casemiro Esteves, Aviz, Portalegre.—Walnuts. 611
156 Martel, Joaquim Trigueras, Pesta-na, Castello Branco.—Olives. 611
157 Martins, Antonio Joaquin da Silva, Elvas, Portalegre.—Olives. 611
158 Miranda, Manuel Patricio de, Povo de Meadas, Portalegre.—Olives. 611
159 Miranda, Antonio Augusto Lobo de Lagos, Faro.—Almonds. 611
160 Ribas, Lima, Guarda.—Olives. 611
160a Mira, Jose Paulo de, Evora.—Oives. 611
161 Nogueira, Henrique de Sa, Porta-legre.—Chesnuts. 611
162 Margarid, Luiz Jose Ferreira, Vil-la Nova de Foscoa, Guarda.—Almonds. 611
163 Moraes, Antonio da Silva, Sardoal, Santarem.—Almonds. 611
164 Matta, Anacleto da Fonseca, Sar-doal, Santarem.—Chesnuts. 611
165 Vasconcellas, Manuel S., Quares-ma, Cardeisa, Coimbra.—Walnuts. 611
166 Veiga, Francisco Antonio, Goes, Coimbra.—Dried chestnuts. 611
167 Vinva, Jorge, & Sons, Pereiras, Saoarem.—Almonds. 611
168 Visetto, Jose Bernardo, Tavira, Faro.—Almonds. 611
169 Veiga, Jose Mendes, Covilha, Castello Branco.—Almonds. 611
170 Saramago, Francisco Ferreira, Reguengo, Evora.—Almonds. 611
171 Saraiva, Francisco Martins, Bel-monte, Castello Branco.—Leguminous fruits. 611
172 Antonio, Eduardo Montalvas de, Franca, Portalegre.—Acorns. 611
174 Inchado, Jose Antonio Dias, Mourao, Portalegre.—Walnuts. 611
176 Jara, Loui, Faro.—Almonds. 611
177 Neves, Jose Joaquim dos, & Bros., Lisboa.—Almonds. 611
178 Trincio, Romao Antunes, Lapas, Santarem.—Walnuts. 611
179 Tavares, Antonio Jose, Covilha Castello Branco.—Nuts, almonds, etc. 611
180 Trigo, Antonio Manuel de Sousa, Moncorvo, Braganca.—Almonds. 611
For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Agricultural Products.

188 Baptista & Co., Lisbon.—Wheat. 620
189 Albergaria, Thomas Antonio Pinto Soares, Villa Cha, Aveiro.—Husk, rye, and Indian corn. 620
190 Almeida, Francisco Mendes Alacer do Sal, Lisbon.—Wheat. 620
191 Calisto & Dias, S. Thomas de Mira, Coimbra.—Rice. 620
192 Camara, Municipal of Penafiel, Penafiel, Oporto.—Grasses and serradella. 620
193 Souza, Jose d'Andrade e, Portalegre.—Indian corn. 620
194 Souza, Jose Saldanha Oliveira e.—Wheat and rye. 620
195 Santa Clara, Francisco de Paula, Elvas, Portalegre.—Wheat and barley. 620
196 Rosa, Jose da Graca Pereira, Niza, Portalegre.—Rye, Indian corn, and millet. 620
197 Reis, Antonio Nunes dos, Turtifal, Lisbon.—Wheat. 620
198 Rego, Antonio Profriso Gomes do, Covilha, Castello Branco.—Indian corn. 620
199 Ramos, Manuel Nogueira, Goes, Coimbra.—Wheat. 620
200 Almeida, Antonio Joaquim de, Villa Nova de Ourem, Santarem.—Indian corn. 620
201 Cruz, Joao Maria, Setubal, Lisbon.—Spurtum. 620
202 Castro, Joao Lopes de, Montargil, Portalegre.—Wheat. 620
203 Corinho, Jose Maria, Montargil, Portalegre.—Indian corn and wheat. 620
204 Corado, Vicente Joaquim, Arronches, Portalegre.—Wheat. 620
205 Cunha Ozorio, Joaquim Felizardo da, Arronches, Portalegre.—Wheat. 620
206 Calca e Pinia, Augusto, Souzel, Portalegre.—Wheat. 620
207 Cervantes, Pedro, Peniche, Leiria.—Orchilla weed. 620
208 Calca e Pinia, Antonio, Souzel, Portalegre.—Cereals. 620
209 Pinto, Jose Clemente, St. Cruz, Coimbra.—Wheat. 620
210 Gago, Joao Henriquees Nunes, Galveus, Portalegre.—Wheat and rice. 620
211 Antao, Manuel Antonio, Miranda do Douro, Braganca.—Wheat. 620
212 Arajao, Bernardo, Bretiande, Lisbon.—Indian corn. 620
213 Almeida, Joaquim Ribeiro de, Cambpanha de Vaixo, Oporto.—Indian corn. 620
214 Contada, Jose Domingues, Carapecos, Braga.—Indian corn. 620
215 Britto, Joao de, Lisbon.—Wheat. 620
216 Gouvea, Jose dos Santos, Constanci cal, Santarem. a Cereals. 620 b Leguminous plants. 620
217 Mello e Faro, Joaquim Carvalho d’Arravado Resende, Viseu.—Wheat, millet, almonds, and chestnuts. 620
218 Magalhaes, Antonio de Barros, Sattam, Viseu.—Dried chestnuts. 620
219 Tavares, Antonio Jose, Covilha, Castello Branco. a Cereals. 620 b Leguminous fruits. 620
220 Teixeira, Carlos Augusto, Gran do, Lisbon. a Rice. 620 b Beans. 621
221 Guerreiro, Antonio Manuel, Villa Nova de Cerveira, Viana do Castelo, a Wheat, rye, Indian corn. 620 b Beans. 621 c Linseed. 624
222 Gomes, Antonio Luis, Valenca, Viana do Castello. a Indian corn. 620 b Beans. 621 c Linseed. 624
223 Miranda, Antonio Augusto Lobo de, Lagos, Faro. a Indian corn and wheat. 620 b Peas, carob beans, lupines. 621 c Linseed. 624
224 Magalhaes, Luis Antonio, Aldeca Nova do Cabo, Castello Branco. a Rye. 620 b Beans, kidney beans. 621 c Potatoes. 622
225 Rapozo, Luis, Miranda do Douro, Braganca.—Rye. 620
226 Ribeiro, Jose Rodrigues, Miranda do Douro, Braganca.—Barley. 620
227 Rua, Manuel Ribeiro, Magueija, Viseu.—Wheat. 620
228 Rosette, Jose, Palancoulo, Braganca.—Wheat. 620
229 Velho, Jose Bernardino Bringel, Beja.—Wheat, rye, and barley. 620
230 Vieira, Francisco de Lemos Cunha, Evora.—Wheat, rye, and barley. 620
231 Machado, Pedro Xavier, Portalegre.—Wheat and rye. 620
232 Moraes, Jose Bazillo de, Arronches, Portalegre.—Wheat. 620
233 Murteira, Antonio Maria, Camelo Maior, Portalegre.—Wheat. 620
234 Lobo Francisco Rasquilha, Jr., S. Bartholomeo, Portalegre.—Wheat and rye. 620

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Agricultural Products.

356 Administrative Council of Guimaraes, Braga.—Wheat, rye, Indian corn, pannick.  
357 Indian corn.  
358 Beans.  
359 Araujo & Brother, Lisbon.  
360 Rice flour.  
361 Araujo & Brother, Lisbon.  
362 Silva, Antonio Joaquim de Sousa e, Valongo, Oporto.  
363 Wheat.  
364 Pinto da Fonseca, Francisco Ramos, Fronteira, Portalegre.  
365 Ribas, Simao, Guarda.  
366 Silva, Antonio Jose da, Leia do Bispo, Oporto.  
367 Bogalho, Joao Joaquim, Villa Boim.  
368 Calaça e Pina, Antonio, Souzel, Portalegre.  
369 Couto, Joaquim Lucio do, Elvas, Portalegre.  
370 Figueiredo, Jose Paulo Teixeira de Matheus, Villa Real.  
371 Direction of Works of the River Mondego and the Figueira bar, Coimbra.  
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375 Fernandes, Manuel Ignacio, Telhao, Villa Real.  
376 Fernandes, Antonio Vicente d’Almeida, Benavente, Santarem.  
377 Formosinho, Jose Maria Gomes, Serpa, Beja.  
378 Fragoso, S. Thiago, Lisbon.  
379 Fernandes, Joaquim Filipe, Beja.  
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381 Guerra, Joaquim Jose da, Elvas, Portalegre.  
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391 Souza e Mello, Antonio Machado de, S. Sebastiao, Ponta Delgada.  
392 Souza, Manuel Lopes de, Guarda.  
393 Souza, Manuel Lopes de, Guarda.  
394 Matta, Antonio Mendes de, Alpendrinha, Castello Branco.  
395 Vaz, Eduardo Augusto da Cruz, Castello Branco.  
396 Vasella, Jose jr., Gomes, Serpa, Beja.  
397 Poiares, Francisco, Oporto.  
398 Matheus, Chick-peas.  
399 Barcarena, Chick-peas.  
400 Sattam, Chick-peas.  

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
| 397 Abrançalha, Viscount of, Abrantes, Santarem. |
|---|---|
| a Wheat, barley, rice, Indian corn. | 629 |
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| 398 Boa, Viscount of, Vista, Beja.—Wheat. | 629 |

| 399 Villas, Manuel Pereira, Torroso, Oporto. |
|---|---|
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| 400 Veiga, Francisco Antonio, Goes, Coimbra. |
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| 401 Valente, Jose Justiniano d’Oliveira, Esurreije, Aveiro. |
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| 402 Montoso, Andre de Brito Monforte, Portalegre. |
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| b Beans. | 629 |

| 403 Mira, Jose Paula de, Evora. |
|---|---|
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| 404 Novaes, Antonio Jose Cabecceiras de Basto, Braga. |
|---|---|
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| b Beans. | 629 |

| 405 Oliveira, Manuel Rodrigues, Fraguas, Viseu.—Indian corn, wheat. | 629 |

| 406 Mendes, Luis Antonio Soares, Castelo Branco. |
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| 407 Moniz, Antonio Bernardino da Fonseca, Barcal, Guarda. |
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| 408 Oliveira, Verissimo, Ferreira A. de, Montalvo, Santarem. |
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| 409 Lacerda, Jose de Aragao Costa, Aldoa Nova do Cabo, Castello Branco. |
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| 410 Pedroza, Maria Jose Lopes, Lavos, Coimbra. |
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| 411 Mourato, Mathias, Alpalhao, Portalegre. |
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| 412 Viuva Marques & Sons, Lisbon. |
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| 413 Morgado, Joao Alves, Constanca, Santarem. |
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| 414 Queiroz, Jose de Sequiera Pinto, S. Sebastiao do Duque, Vianna do Castello. |
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| c Seeds and pine kernels. | 629 |

| 415 Rangel, Manuel de Souza, Gilhufe, Oporto. |
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| 416 Ribeiro, J. Lopes, Ancaia, Braganca. |
|---|---|
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| b Beans. | 629 |

| 417 Roquete, Jose Ferreira, Salvaterra, Santarem. |
|---|---|
| a Cereals. | 629 |
| b Kidney beans. | 629 |

| 418 Rio, Filipe de Jesus, Elvas, Portalegre. |
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| 419 Risques, Augusto, Aviz, Portalegre. |
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| 420 Souza, Manuel Paulo de, Miranda do Douro, Braganca. |
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| 421 Sa, Antonio Alves do Conto e, Germunde, Oporto. |
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For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Agricultural Products.

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565 Carreira, Jose Ivo, Peniche, Leiria.—Castor-oil beans. 621
566 Albergaria, Thomas Antonio Pinto Soares, Villa Cha, Aveiro.—Beans. 621
567 Coelho, Jose Justino, Villa do Tabega, Villa Real.—Beans. 621
568 Carvalho, Luis Xavier do Amaral, Rio de Mouchos, Vilan.—Beans. 621
569 Seixas, Jose Maria Ayres de, Gavião, Portalegre.—Beans. 621
570 Silva, Marcellino Ferreira da, Lisbon.—Chuck-peas and kidney-beans. 621
571 Silva, Jeronimo Jose Alves da, Elvas, Portalegre.—Chuck-peas. 621
572 Silva, Antonio Jose da, Boucas, Oporto.—Beans. 621
573 Factory of Tobacco, Lealdaide, Oporto.—Cut leaf, cigars, cigarettes, and snuff. 623
574 Factory of Miguel Augusto da Silva Pereira, Oporto.—Tobacco. 621
575 Factory of Tobacco, Liberdade, Oporto.—Cut tobacco, cigars, and cigarettes. 623
576 Lisbon Tobacco Co., Lisbon.—Cigars and snuff. 623
577 Ferreira & Co., Lisbon.—Chocolate. 623
578 Vasconcellos, Duarte, Loureiro, Viseu.—Hops. 623
580 Cunha, Antonio Jose, Paredes de Coura, Viana do Castello.—Millet seed. 624
581 Coutinho, Luis C. de Lucena, Arawjo, Villa da Fonte, Viseu.—Millet seed. 624
582 Camello, Joaquim Augusto da Silveira, Penafiel, Oporto.—Seeds. 624
583 Administrative Council of Cantanhede, Coimbra.—Seeds. 624
584 Albergaria, Thomas Antonio Pinto Soares, Villa Cha, Aveiro.—Grape seed. 624
585 Mesquita, Pedro Jose de, Sino, Coimbra.—Linseed. 624
586 Margarido, Luis Jose Ferreira, Villa Nova de Foscoa, Guarda.—Sumach. 624
587 Alvim, Joao Cardoso de Souza, Alteridio do Chao, Portalegre.—Linseed. 624
588 Sousa, Jose Luis Rodrigues, V dojueo, Viana do Castello.—Linseed. 624
589 Castel-Branco, Manuel de Barros, Portalegre.—Acorns. 624
590 Fernandes, Joaquim Filipe, Beja.—Acorns and seeds. 624
591 Valente, Jose Justiniano d’Oliveira, Estarreja, Aveiro.—Seeds, pine kernels. 624
592 Guerreiro, Antonio Manuel, Villa Nova da Cerveira, Viana do Castello.—Linseed. 624

Marine Animals, Fish Culture, and Apparatus.

593 Neto, Manuel Jose Setubal, Lisbon.—Preserved fish. 641
594 Ornellas & Linder, Lisbon.—Preserved fish. 641
595 Fabrica Povoaense, Povoa de Varim.—Preserved fish. 641
596 Freitas, Joao S., jr., Setubal, Lisbon.—Preserved sardines. 641
597 Direction of the Works of Mendo River and Figueira bar, Coimbra.—Preserved fish. 641
598 Romao, Joanna Balbina, Aveiro.—Preserved fishes. 641
599 Leite & Co., Francisco, Alcanta-rilha, Faro.—Salt tunny-fish. 642
599 Pilao e Luxes, A. d’O., e J. G. L.—Ovar.—Models of fishing nets. 647
599b Oliveira, Gaspar Jose, Oporto.—Fishing nets. 647

Animal and Vegetable Products.

600 Gomes, J. Carlos, & Moura, F. A., Marques de S. Salvador, Aveiro.—
Seaweeds. 650
6 Olive oils. 662
601 Queiroz, Jose de Sequeira Pinto, S. Sebastiao du Duque, Viana do Castello. —
Seaweeds. 650
6 Wine and brandy. 660
602 Morgado, Francisco Xavier Annes, Miranda do Douro, Braganca.—Cheese. 651
603 Formosinho, Jose Maria Gomes, Serpa, Beja.—Cheese. 651
604 Franco, Jose da Costa, Beja.—Cheese. 651
605 Coelho, Antonio, Gouva, Guarda.—Cheese. 651
606 Lobo, Jose Maria, Guarda.—Cheese. 651
607 Saraiva, Franco Sales, Belmonte, Castello Branco.—Cheese. 651
608 Sobrinho, Jose Guerreiro de L., Ferreira, Beja.—Cheese. 651
609 Callado, Joao da Costa, Jr., Alter do Chao, Portalegre.—Cheese. 651
610 Pereira, Jose Francisco, Castello de Vide, Portalegre.—Cheese. 651
611 Penedo, Francisco Antonio, Beja.—Cheese. 651
612 Valladas, Pedro d’Ordaz, Castello Branco. —
Cheese. 651
6 Olive. 661
6e Olive oil. 661

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp.12-14.
DEPT. VI.—AGRICULTURE.

Animal and Vegetable Products.

613 Viegas, Agostinho Thomas dos Santos, Cen, Guarda.  
  a Cheese.  
  d White wine.  
  e Olive oil.  
  651

614 Vicondessa d'Oleiros, Castello Branco.
  a Cheese.  
  b Olives.  
  c Olive oil.  
  651

615 Caica e Pina, Antonio, Souzel, Portalegre.
  a Cheese.  
  b Honey.  
  c Preserved meats.  
  d Olive oil.  
  651

616 Pimentel, Jose Reis, Castello de Vide, Portalegre.
  a Cheese.  
  b Honey.  
  651

617 Aboim, Joao Cardoso de Souza, Alter do Chao, Portalegre.
  a Cheese.  
  b Preserved meats.  
  c Wines and vinegar.  
  651

618 Abrunhosa, Joao Caetano de, Castello Branco.
  a Cheese.  
  b Olives and preserved meat.  
  c Olive oil.  
  651

619 Alvim, Joao Cardoso de Souza, Alter do Chao, Portalegre.
  a Cheese.  
  b Preserved meat.  
  c Olive oil.  
  651

621 Coelho, Manuel Diogo, Castello de Vide, Portalegre.
  a Cheese.  
  b Preserved meats and olives.  
  651

622 Alcantara, Francisco Augusto Mendes de, Lagos, Coimbra.
  a Cheese.  
  b Wine and brandy.  
  651

623 Caial, Eloziario, Cea, Guarda.
  a Cheese.  
  b Red wine.  
  c Vegetable oils.  
  651

623a Pimenta, Isidora, E. O. C. Mares, Villa Boim, Portalegre.
  a Cheese.  
  b Honey.  
  c Preserved meat.  
  d Brandy.  
  651

324 Fernandes, Joaquim Filipe, Beja.
  a Cheese.  
  b Olive oil.  
  651

324a Baia, Viscount da, Vista, Beja.
  a Cheese.  
  b Olive oil.  
  651

25 Gago, Joao Henriquez Nunes, Galveas, Portalegre.
  a Cheese.  
  b Olive oil.  
  651

26 Vaz Preto, Geralddes, Manuel Louisa, Castello Branco.
  a Cheese.  
  b Honey.  
  c Wine.  
  d Olive oil.  
  651

47 Terreiro, Manuel Guerra, Freixo d'Espad' a Cinta, Braganca.
  a Cheese.  
  b Honey.  
  c Olive oil.  
  651

628 Taborda, Joao Manuel Correa, Freixo d'Espad' a Cinta, Braganca.
  a Cheese.  
  b Olives.  
  c Olive oil.  
  651

629 Goncalves, Jose Joaquim, Elvas, Portalegre.
  a Cheese.  
  b Honey.  
  c Olive oil.  
  651

630 Mattel, Joaquim Trigueiros Pestana, Castello Branco.
  a Cheese.  
  b Olive oil.  
  651

631 Oliveira Soares, M. E. de, Evora.
  a Cheese.  
  b Red wine.  
  c Olive oil.  
  651

632 Oliveira, Jose Miguel de, Moura, Beja.
  a Cheese.  
  b Preserved meat.  
  651

633 Lobo, Bartholomeo Jose, Oliveira do Hospital, Coimbra.
  a Cheese.  
  b Red wine.  
  c Olive oil.  
  651

634 Veiga, Jose Mendes, Covilha, Castello Branco.
  a Cheese.  
  b Dried fruits and olives.  
  c Vinegar.  
  d Olive oil.  
  651

  a Butter and cheese and milk.  
  b Olives, gums, preserved meat and fruits.  
  651

636 Raposo, Joao, do Carmo, Moura.
  a Cheese.  
  b Olives.  
  c Olive oil.  
  651

637 Pinto, Luis Marques, Elvas, Portalegre.
  a Cheese.  
  b Preserved meat.  
  651

638 Pinto, Joaquim Pereira da Costa, Sousel, Portalegre.
  a Cheese.  
  b Olive oil.  
  651

639 Moraes, Rodrigo Antonio Leite de, Oporto—Hides.  
  651

640 Viuva Chaves & Son, Guimarães.—Leather and skins.  
  651

641 Alcantara & Bros., Joao Antonio, Lisbon.—Leather and skins.  
  651

642 Godinho, Francisco Ferreira, Cruz Quebrada.—Leather and skins.  
  651

643 Jose Maria d'Andrade, & Bros., Valeena.—Leather and calfskin.  
  651

644a Lamos, Jose, & Co., Lisbon.—Belting and cables for machinery.  
  651

644 Santos, Narcizo Jose dos, Evora.—Animal charcoal.  
  651

645 Lamas & Co., Jose, Lisbon.—Leather.  
  651

645a Ramos, Joaquim Antonio, Beja.—Goatskins.  
  651

646 Ferreira, Camillo P. da C., Lisbon.—D'Azevedo.—Leather.  
  651

647 Joao Antonio Alcantea & Sons, Lisbon.—Leather and skins.  
  651

or classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-14.
Animal and Vegetable Products.

648 Gama, Antonio Domingos & Oliveira, Oporto.—Hides. 652
649 Ferreira, Antonio Cypriano, Lisbon.—Leather and skins. 652
650 Fernandes, Lucas, Macao, Santarem.—Skins. 652
651 Ferreira & Bro., Casas dos Gallegos, Santarem.—Kid skins. 652
652 Cassola, Antonio Joaquim, Portalegre.—Leather and skins. 652
653 President of the Municipal Chamber of Lisbon.—Tallow. 652
654 Jeronimo, Francisco Manuel, Coimbras, Braganca.—Leather, hides, and glue shavings. 652
655 Jose Maria d'Andrade & Bros., Valenca.—Leather, calfskin. 652
656 Oliveira, Custodio de, Adufe, Braga.—Glue. 652
657 Viva, Machado, & Sons, Alcanena.—Hides. 652
658 Cerqueira, Lima, & Co., Vianna do Castello.—Leather, hides, skins, and glue shavings. 652
659 Smidt, Joao Luis, Oporto.—Skins. 652
660 Martins, Andre, Sobrado, Oporto.—Wax. 654
661 Verna, Manuel, Melres, Oporto.—Honey. 654
661.1 Mello, Antonio Jose Teixeira, Lisbon.—Wax. 654
662 Teronio, Matheus Rodrigues, Alter do Chao, Portalegre.—Honey. 654
662.2 Silva, Diogo Monteiro, Lisbon.—Manufactured wax. 654
663 Torregon, Antonio Joaquim, Redondo, Evora.—Honey. 654
664 Juizarte, Jose Francisco, Monforte, Portalegre.—Honey. 654
665 Garcia, Jose Camillo, Almodovar, Beja.—Wax. 654
666 Espada, J. C., Valelho, Portalegre.—Honey. 654
670 Garcao, Jose Maria, Elvas, Portalegre.—Honey and wax. 654
671 Figueiredo, Joaquim de, Aviz, Portalegre.—Honey. 654
672 Contreiras, Jose da Silva, Almodovar, Beja.—Honey-comb and honey. 654
673 Bussaco, Jose Rodrigues, Grandala, Lisbon.—Honey. 654
674 Boucinha, Manuel da Costa, Balthasar, Oporto.—Honey and honey-comb. 654
675 Braga, Joao Jose de Sousa, Oporto.—Honey. 654
676 Mello, Antonio Jose, Para, Lisbon.—Honey and wax. 654
677 Moreas, Jose, Basilio de Arronches, Portalegre.—Honey. 654
678 Atlen Rebello Volente, Oporto.
   a Honey. 654
   b Wines. 650
   c Olive oil. 652
679 Pessoa, Luis Manuel da Costa, Alenquer da Fe, Braganca.—Honey. 654
680 Loureiro, Bento Maria, Aldeia Nova, Beja.—Honey. 654
681 Saramago, Francisco Ferreira, Reguengo, Evora.—Honey. 654
682 Sena, Joao Pereira, Montargil, Portalegre.—Honey. 654
683 Vinha de Manuel, Pedro do, Alter do Chao, Portalegre.—Wax. 654
684 Vassallo, Jose Baptista, Alcanena, Santarem.—Bleached wax. 654
685 Vieia, Francisco de Semas, Cunha, Evora.—Honey. 654
686 Vieira, Jose Augusto, Evora, Cidade, Evora.—Honey, white and yellow wax. 654
687 Miranda, Joaquim Antonio de Reguengo, Portalegre.—Honey and honey-comb. 654
688 Moreira, David Martins, Castelo de Vide, Portalegre.—Bleached wax. 654
689 Moita, Jose Francisco, Aldeia Nova, Beja.—Honey. 654
690 Raposa, Vicente Narcizo, Castelo de Vide, Portalegre.—Honey. 654
691 Silva, Joao Miguel, Santa Eulalia, Portalegre.—Honey. 654
692 Costa da Mendiga, Jose da, Mendiga, Leiria.—Honey. 654
693 Santos, Luis Marcelino dos, Fredro, Braganca.—Honey. 654
694 Silva, Antonio Mendes da, Linhares, Braganca.—Honey. 654
695 Pereira, Jeronimo, Serpa, Beja.—Honey. 654
696 Pinheiro, Jose de Sousa Idanha a Nova, Castello, Braganca.—Honey. 654
697 Carvalho, Jose Fernandes Antonio de, Gois, Coimbra.—Honey. 654
698 Abreu, Jose Martins de, Aioens, Viseu.—Honey. 654
699 Albergaria, Thomas Antonio Pinto, Lloses, Villa Cha Avera.—Honey and wax. 654
700 Almeida, Francisco de Mattos, Perafil, Porto.—Wax. 654
701 Azevedo, Jose Manuel Joaquim, Elvas, Portalegre.—Honey. 654
702 Almida, Joao Manuel Joaquim, Elvas, Portalegre.—Honey. 654
703 Perez, Roure, & Co., S. Thiago do Cacem, Lisbon.
   a Honey and wax. 654
   b Rice. 657
   c Wine. 660
   d Olive oil. 652
704 Lemos, Francisco Antonio Pereira, Villarelhos, Braganca.
   a Honey. 664
   b Red wine. 660
705 Falcao, Jeronimo Fernandes, Lamas, Coimbra.
   a Honey. 654
   b Wine. 660
706 Bello, Manuel Guiao, Marcas, Santarem.
   a Honey. 654
   b Wines. 665
   c Olive oil. 662

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Animal and Vegetable Products.

707 Pimentel, Antonio Augusto de Moreaes, Castello Branco, Bragança.
   a Honey.  654
   b Olives.  656
c Olive oil.  662

708 Baptista, Jose Antonio, Mirandella, Bragança.
   a Honey.  654
   b Brandy.  660

709 Baptista, Jose Ignacio de Macedo, Mirandella, Bragança.
   a Honey.  654
   b Brandy.  660

710 Allen Rebello Volente, Oporto.
   a Honey.  654
   b Port and muscadine wine.  660
c Olive oil.  662

711 Administrador do Concelho de Polares, Polares, Coimbra.
   a Wax.  654
   b Olive oil.  656

712 Pinto, Clemencia, Villa Boim, Portalegre.
   a Honey.  654
   b Brandy.  660

713 Andrade, Antonio Pequito, Leiras de Gavias, Portalegre.
   a Honey.  654
   b Dried grapes.  666

714 Calca e Pina, Augusto, Sourel, Portalegre.
   a Honey.  654
   b Olive oil.  662

715 Figueiredo, Jose Cereira de Sattam, Viseu.
   a Honey.  654
   b Wine.  660

716 Coelho, Jose Fialho, Mousa, Beja.
   a Honey.  654
   b Preserved meat.  666

717 Fernandes, Manuel Ignacio, Tel-Jose, Villa Real.
   a Honey.  654
   b Dried chestnuts.  666

718 Fonseca Santos, Antonio Germano da, Redondo, Evora.
   a Honey.  654
   b Vinegar.  660
c Olive oil.  662

719 Gouveia, Jose dos Santos, Constanta, Santarem.
   a Honey.  654
   b Wine.  660

720 Fernandes, Jose Manuel, Redondo.
   a Honey.  654
   b Vinegar.  660

   a Wax.  654
   b Olive oil.  662

722 Tocha, Jose Rodrigues, Estremos, Coimbra.
   a Honey.  654
   b Olives.  666
   c Wine and vinegar.  660
d Olive oil.  662

723 Monte, Jose Manuel do, Redondo, Evora.
   a Wax and honey.  654
   b Brandy and vinegar.  660
c Olive oil.  662

724 Nunes, Antonio Candido, Elvas, Portalegre.
   a Honey.  654
   b Vinegar.  660

725 Miranda, Antonio Augusto Lobo de, Lagos, Furo.
   a Honey.  654
   b Wine, brandy, vinegar.  660
c Olive oil.  662

726 Lemos, Antonio da Cunha d'Azevedo, S. Jose da Pesqueira, Viseu.
   a Honey.  654
   b Wine and brandy.  660

727 Menezes, Jose de Vasconcellos, Canavezes, Porto.
   a Honey.  654
   b Wine, vinegar.  660
c Olive oil.  662

728 Margiochi, Francisco, jr., Simes, Lisbon.
   a Honey.  654
   b Wine.  660
c Olive oil.  662

729 Marcal, Joao Lopes, Evora.
   a Honey.  654
   b Olive oil.  662

730 Pinto Basto, Augusto Ferreira, Oliveira do Bairro, Aveiro.
   a Honey.  654
   b Wine.  660
c Olive oil.  662

731 Silva, Joaquim Nunes da, Elvas, Portalegre.
   a Honey.  654
   b Olive oil.  662

732 Sobrinho, Rafael Baptista, Alvito, Beja.
   a Honey.  654
   b Wine.  660
c Olive oil.  662

733 Vasconcellos, Catharina Mousinho, Almadaminus, Nisa, Portalegre.
   a Honey.  654
   b White wine.  660

734 Viscount of Guedes, Evora.
   a Honey.  654
   b Wine.  660
c Olive oil.  662

735 Mattos, Manuel Antonio de, Campo Maior, Portalegre.
   a Honey.  654
   b Dried grapes.  666
c Brandy, wines, vinegar.  660
d Olive oil.  662

736 Mira, Jose Paulo de, Evora.
   a Honey.  654
   b Vinegar.  660
c Olive oil.  662

737 Monteia, Diogo Lopes, Castello Branco.
   a Honey.  654
   b Olive oil.  662

738 Morgado, Joas Aloes, Constancia, Santarem.
   a Honey.  654
   b Brandy, red and white wine, vinegar.  660
c Olive oil.  662

739 Matta, Antonio Nunes, Grandola, Lisbon.
   a Honey.  654
   b Wine.  660
c Olive oil.  662

740 Queimado, Isidoro Maria, Redondo, Evora.
   a Honey.  654
   b Brandy, white wine, and vinegar.  660

741 Rosa, Jose da Graça Pereira, Nisa, Portalegre.
   a Honey.  654
   b Preserved meat.  666
   c White wine, brandy, and vinegar.  660
d Olive oil.  662

or For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Animal and Vegetable Products.

742 Rosa, Joaquim Matheus Vieira, Villa Nova de Ourem, Santarem.  
    a Honey.  
    b Olive oil.  

743 Rodrigues, Francisco Pedro, Grândola, Lisbon.  
    a Wax and honey.  
    b Wine.  
    c Olive oil.  

744 Sa, Antonio Aloes do Monte e, Gemande, Oporto.  
    a Honey.  
    b Olive oil.  

745 Santos, Joaquim Ferreira, S. Martinho do Campo, Oporto.  
    a Honey.  
    b Wine.  

746 Serra, Joaquim, Vale Formoso, Santarem.  
    a Honey.  
    b Olive oil.  

747 Sa, Sabino Barros de, Pous de Soudo, Santarem.  
    a Honey.  
    b Olive oil.  

748 Santos, Ascencio dos, Valença, Vianna do Castello.  
    a Wax.  
    b Sweetmeats.  
    c Wine.  

749 Pereira, Joao M., Constancia, Santarem.  
    a Honey.  
    b Olive oil.  

750 Pedroso, Henrique Caldeira, Castello Branco.  
    a Honey.  
    b Olives.  
    c White wine.  
    d Olive oil.  

751 Bertao, Ladislau Xavier, Torrao, Baja.  
    a Honey.  
    b Olive oil.  

752 Rosado, Joao Antonio Margues, Redondo, Evora.  
    a Honey.  
    b Red and white wine, and brandy.  
    c Olive oil.  

753 Rosado, Antonio Joaquim da Silva, Zambujeiro, Evora.  
    a Honey.  
    b Red wine.  

754 Pinheiro, Candido Alberto A., Monchique, Faro.  
    a Honey.  
    b Olives.  

755 Mascarenhas, S., Faro.—Dried fruits.  

756 Moura, Francisco Antonio Mar- 
    gues, Ilhavo, Aveiro.—Olives.  

757 Meneses, Jose Correia, Lamego, Vi- 
    sa.—Dried fruits.  

758 Mattos, Maria de Livramento, Oporto.—Preserved fruit.  

759 Maria do, Gloria, & Co., Oporto.— 
    Preserved fruits.  

760 Leal, Costa, & Co., Lisbon.—Pres- 
   erved meats, fish, and fruits.  

761 Torres, Rodrigo Bravo, Novellos, 
    Penafiel.—Olives and pickled pepper- 
    pods.  

762 Trigo, Antonio Manuel de Sousa, 
    Moncorvo, Bragança.—Sweetmeats.  

763 Themuda, Engracia Narcisa, Bar- 
    cellos.—Sweetmeats.  

764 Teixeira, Francisco de Sa, Saldes, 
    Viseu.—Dried figs.  

765 Victorino, Jose, Braganca.—Ham.  

766 Varsca & Coelho, Oporto.—Pres- 
   erved meats, fish, olives, etc.  

767 Tapadinha, Jose Joaquim, Portale- 
    gre.—Preserved meats.  

768 Trindade, Alfredo, Faro.—Figs.  

769 Themudo, Jose Vicente, Castello de 
    Vide, Portalegre.—Preserved meats.  

771 Sanhoso, Jose Regoa.—Elder- 
    berries, raisins, and dried figs.  

773 Oliveira & Co., Jose Antonio de, 
    Preserved meats, fish, fruits, vegetables, 
    and sweetmeats.  

774 Jose Joaquim dos Neves & Sons, 
    Lisbon.—Dried figs.  

775 Lehmann, J. W., Gustav, Oporto.  
    —Sweetmeats.  

777 Guimaraes, Antonio, Faro.—Dried 
    figs.  

778 Gomes, Jose Libanio, Villa Nova 
    de Portimao, Faro.—Dried figs.  

779 Gouvea, Jose Bernardino d'Abren, 
    Sande, Viseu.—Preserved fruits.  

780 Rodrigues & Nephew, Fernando, 
    Lisbon.—Preserved meat, vegetables, and 
    fruits.  

781 Franco, Joaquim, Portimao, Faro.  
    —Dried figs.  

782 Ferreira Convent, Ferreira d'Aves, 
    Viseu.—Dried plums.  

783 Dantas Pimenta, Jose Maria, Tor- 
    res Novas, Santarem.—Dried fruit.  

784 Castanheiro, Balthazar Rodrigues, 
    Lisbon.—Sweet fruits.  

785 Barros, Jose Xavier Pereira, Villa 
    Real, Tras-os-Montes.—Sweetmeats.  

786 Leitao, Alberto, Penacova, Coim- 
    bra.—Dried damson.  

787 Pimenta, Anna Augusta de Souza, 
    S. Joao de Lobrigos, Viseu.—Dried fruits.  

788 Ornellas & Lisher, Lisbon.—Pre- 
    served fruits and vegetables, sweetmeats 
    and fruits.  

789 Le Coq, Jose Joao, Castello de 
    Vide, Portalegre.—Olives.  

790 Silva, Domingos da, Elvas, Porta- 
    legre.—Olives.  

791 Valentim, Jose, Arraiollos, Evora.  
    —Preserved meats.  

792 Mendes, Augusto Alexandre Es- 
    teves, Aviz, Portalegre.—Preserved meat.  

793 Mascarenhas, Luis de, Portimao, 
    Faro.—Dried figs.  

794 Rodrigues, Antonio Manuel, Vin- 
    haes, Braganca.—Sausages.  

795 Romao, Joanna Balbina, Aveiro.— 
    Sweetmeat.  

796 Mello, Luis de Mendonca e, Tavira, 
    Faro.—Dried figs.  

797 Miranda, Joao Eduardo Lobo de, 
    Faro.—Dried figs.  

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Animal and Vegetable Products.

849 Trincao, Roman Antunes, Lapas, Santarem.
   a Dried figs and grapes. 656
   b Grapes. 650

850 Administrative Council of Lamas, Lamas, Oporto.
   a Preserved fruits. 650
   b Red wine. 650

852 Almeida, Bernardo Caieiro de, Serpa, Beja.
   a Olives. 650
   b Olive oil. 660

853 Barboza, Paulo da Silva, Oporto.
   a Sweetenings. 656
   b Vinegar. 656

854 Burguete, Miguel Serra, Sardoal, Santarem.
   a Olives, dried fruit. 650
   b Vinegar. 650

855 Costa Falcao, Antonio Ozorio d’Azevedo da, Alpedrinha, Castelo Branco.
   a Olives. 656
   b White wine. 650
   c Olive oil. 660

856 Figueiredo, Antonio Jose de, Carrazeda d’Anches, Braganca.
   a Olives. 656
   b Wine. 660
   c Olive oil. 660

857 Ferreira, Antonio Manuel, Torres Novas, Santarem.
   a Dried fruits. 650
   b Wine and brandy. 650

858 Feria, Jose Maria de la, Serpa, Beja.
   a Olives. 656
   b Wine and brandy. 660

859 Figueira, Gaspar Augusto, Evora.
   a Sugared almonds. 656
   b Wine and brandy. 660

860 Ferreira & Co., Lisbon.
   a Candy. 655
   b Syrups. 659
   c Lemond. 650

861 Martins, Jeronymo, & Son, Lisbon.
   a Dried fruits. 656
   b Wine. 660
   c Olive oil. 660

862 Guedes, Francisco Domingues, Castelo Branco.
   a Sausages. 656
   b Olive oil. 660

863 Magalhaes, Luis Antonio, Aldea Nova do Cabo, Castelo Branco.—Timber, corkwood, sweet fruits.
   a Dried fruits. 656
   b Wine. 660
   c Olive oil. 660

864 Mendes, Luis Antonio Soares, Castelo Branco.
   a Dried chestnuts. 656
   b Vinegar. 660

865 Macedo Pinto, Joaquim Ferreira de, Tobaco, Viseu.
   a Preserved fruits, elderberries. 656
   b Wine. 660
   c Olive oil. 660

866 Lemos, Antonio Maria Tovar de Moura, Beja.
   a Olives. 656
   b Vinegar. 660
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<td>Brandy</td>
<td>660</td>
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<td>1062</td>
<td>Barao de Nellas, Nellas, Viseu.</td>
<td>Wine</td>
<td>660</td>
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<td>1063</td>
<td>Borga, Francisco Maximino, Villa Nova de Ourem, Santarem.</td>
<td>Red and white wine</td>
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<td>1064</td>
<td>Batalhos, Jose dos, Prazeres, Cartaxo, Santarem.</td>
<td>Red and white wine</td>
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<td>1065</td>
<td>Pereira, Manuel Augusto, Lisbon.</td>
<td>Red and white wine</td>
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<td>Peixoto, Antonio Jose da Cunha, Olhalvo, Lisbon.</td>
<td>Wine</td>
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<td>1067</td>
<td>Rocha, Jose Alexandre da, Valle de Prazeres, Castello Branco.</td>
<td>Red wine</td>
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<td>Pinheiro, Joaquim Garcia, Villa Nova, Regueiro, Evora.</td>
<td>Red wine</td>
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<td>1069</td>
<td>Prego, Ezequiel de Paula Sa, Alemquer, Lisbon.</td>
<td>White and red wine</td>
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<td>1070</td>
<td>Affonso, Joao Hilario, Redondo, Evora.</td>
<td>Wine and brandy</td>
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<td>1072</td>
<td>Alves, Sabastido, Borba, Evora.</td>
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<td>Azeveda, Manuel Rodrigues de, Buccllas, Lisbon.</td>
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<td>Assis, Domingos Francisco de, Alhandra, Lisbon.</td>
<td>Red wine</td>
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<td>Barbosa, Manuel Paes Ferrao, Povoa de Midoes, Coimbra.</td>
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<td>1076</td>
<td>Baiza, Miguel de Sousa, Sanfins, Villa Real.</td>
<td>Wine, muscadine wine</td>
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<td>Ramalho, Esteves Goncalves, Villa Nova de Regueiro, Evora.</td>
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<td>Reixo, Jose Antonio Nunes, Vila-cos, Lisbon.</td>
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<td>Silva &amp; Cosens, Oporto.</td>
<td>Port wine</td>
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<td>1080</td>
<td>Soares, Antonio, Carrazede d'An-ciaes, Braganca.</td>
<td>Vinegar</td>
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<td>Sousa, Bernardino Jose de Mello, Penafiel, Oporto.</td>
<td>Vinegar</td>
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<td>Pimenta, Jose Maria, Dantas, Torres Novas.</td>
<td>Wine</td>
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<td>1083</td>
<td>Pereira, Candido Manuel, Lavadio, Lisbon.</td>
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<td>Ramalho, Antonio Jose, Reguengao, Evora.</td>
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<td>1085</td>
<td>Pinheiro, Jose, Azambuja, Lisbon.</td>
<td>Red and white wine</td>
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<td>1086</td>
<td>Ferreira, Jose Henriques, Lisbon.</td>
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<td>1087</td>
<td>Fragoso, Jr., Luis Antonio, Ferreira, Cuba.</td>
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<td>Figueira, Boaventura da Piedade, Cuba, Beja.</td>
<td>White wine</td>
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<td>1089</td>
<td>Fialho, Francisco d'Abreu, Portimao, Faro.</td>
<td>Red wine</td>
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<td>1090</td>
<td>Gonsalves, Jose dos Santos, Taboa, Coimbra.</td>
<td>Red wine</td>
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<td>1091</td>
<td>Fragoso, Manuel Figueira Sonto Mayor, Villegueria, Beja.</td>
<td>Wines</td>
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<td>1092</td>
<td>Guerra, Jose Ignacio Pinto, Miranda de Douro, Braganca.</td>
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<td>1093</td>
<td>Guerra, Francisco Aranches do Amaral, Coimbra.</td>
<td>Wine and vinegar</td>
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For classes of exhibits, indicated by numbers at ends of entries, see Classification, pp. 12-14.
Animal and Vegetable Products.

1094 Fora, Jose Augusto dos Santos, Figueira da Foz, Coimbra.—Wine. 660
1095 Faria, Francisca Albertina de, Rates, Oporto.—Wine. 660
1096 Fonseca, Manuel Coelho da, Oliveira de Hospital, Coimbra.—Wine. 660
1097 Fonseca, Francisco Maximo da, Sentelos, Viseu.—Wine. 660
1098 Figueiredo, Manuel, Gonsalves, Aveiro.—Wine. 660
1099 Ferreira, Adriano Baptista, Vancarica, Aveiro.—Wine. 660
1100 Freire, Joao Pereira, Panafel, Oporto.—Wine. 660
1101 Falcão, Maria Miguela, Mirande da Corvo, Coimbra.—Brandy. 660
1102 Bassoa, Jose Luis de, S. Moncide, Viana do Castello.—Wine and brandy. 660
1103 Brandao, Francisco Antonio, Reborda, Viana.—White wine. 660
1104 Brito, J. F. L. Costa, Parada, Viseu.—White wine. 660
1105 Barreira, Antonio, jr., Alfandega da Fe, Bragança.—Red wine. 660
1106 Boto, Joao de Sousa Dounas, Ervedosa, Viseu.—Red wine. 660
1107 Brandao, Augusto Ferreira, Vancarica, Aveiro.—White wine. 660
1108 Bernardo Augusto Lopes & Co., Figueira da Fox, Coimbra.—Red wine. 660
1109 Barao do Calvario, Panafel, Oporto.—Wines. 660
1110 Barao, Jose Correa de, Sabrosa, Vila Real.—Red wine. 660
1111 Lopes, Jacintho, Elvas, Portalegre.—Red and white wine. 660
1112 Lima, Carlos Joao Ribeiro, Melgaco, Viana do Castello.—Wine. 660
1113 Lima, Jose Jose Xavier de, Vill Alva, Beja.—White wine. 660
1114 Lisboa, Antonio da Silva, Panafel, Oporto.—Wine. 660
1115 Laranja, Manuel Duarte, Coimbra, Santarem.—White wine. 660
1116 Leite, Francisco de Paula, Alcacer do Sal, Lisbon.—Wines. 660
1117 Leal, Francisco da Costa, Arneiro, Lisbon.—Red wine. 660
1118 Oliveira Soares, Eduardo, Evora.—Red wine. 660
1119 Bintrago, Jose Carniero d’Almeida de, Tusefal, Lisbon.—Red wine. 660
1120 Silva, Daniel Pereira da, Celorico, Guarda.—Wines. 660
1121 Silveira, Joao Vicente da, Abrigada, Lisbon.—Wines. 660
1122 Silva, Jose Gomes da, Collares, Lisbon.—Wine. 660
1123 Souza, Joao Candido de Castro e, Beja.—White wine. 660
1124 Souza, Jose Maximo Coelho J., Guarda, SantaMaria.—Red wine. 660
1125 Silva, Antonio Martins da, Redondo, Evora.—Red wine. 660
1126 Sernerio, Domingos Francisco, Villa Nova de Reguengos, Evora.—Red wine. 660
1127 Silva, A. Augusto da, Lisbon.—Wine. 660
1128 Salgado, Antonio Lopes Vidigal, Cortes, Santarem.—Red wine. 660
1129 Simoes, Francisco, Villa Soeiro, Guarda.—Red wine. 660
1130 Sa, Antonio Manuel da Cunha e, Torre de Evedal, Leiria.—Wine. 660
1131 Souza, Joaquim da Silva, Ribeira de Baixo, Leiria.—Brandy. 660
1132 Silva, Francisco Jose de Bastos e, Torres Vedras, Lisbon.—Wines. 660
1133 Santos, Joao Bernardo dos, Lagoa, Faro.—Wine. 660
1134 Souza, Francisca Jose de, Labrugeira, Lisbon.—Red wine. 660
1135 Silva, Ernesto de Mendonca e, Abrigada, Lisbon.—Wines. 660
1136 Silva, Antonio Pires da, Villa Franca de Xira, Lisbon.—Wines. 660
1137 Ozorio, Jose Augusto da Sa, Pe,reira, Eretindo, Viseu.—Red wine. 660
1138 Ozorio, Antonio Perfeito Pera, Pied Cãmes, Viseu.—Wine. 660
1139 Oliveira, Domingos Carneiro de, Agrela, Porto.—Wine. 660
1140 Nunes, Jose Cabrita, Lagoa, Faro.—Red wine. 660
1141 Outeiro, Viscount of, Fundo, Castello Branco.—Red wine. 660
1142 Vasconcellos, Joaquim Guilherme de, Elvas, Portalegre.—Red and white wine. 660
1143 Silva, Francisco Candido da, Torres Novas.—Wine. 660
1144 Silveira, Joao Vicente da, Abrigada, Lisbon.—Wine. 660
1145 Vasconcellos, Antonio de, Villa Nova, Vidigueira, Beja.—White wine. 660
1146 Vilhena, Agostinho de, S. Thiaio, Lisbon.—Red wine. 660
1147 Esperanca, Viscount of, Cuba, Beja.—Red and white wine and vinegar. 660
1148 Nogueira, Henrique de Sa, Portalegre.—Red wine. 660
1149 Nascimento, Manuel Antionio, Ponta Delgada, Azores.—Liquor brandy, cognac. 660
1150 Oliveira, Jose Bernardo de, Mon- dim de Basta, Villa Real.—Brandy. 660
1151 Oliveira, Antionio Simoes de, Moluido, Viseu.—Wine. 660
1152 Offley, Cramp, & Forrester, Oporto.—Wine. 660
1153 Vasconcellos, Adelino d’Almeida, Neiva, Viseu.—White wine. 660
1154 Serrado, Viscount of, Viseu.—Wine. 660
1155 Villafanha, Antonio de, Tondella, Viseu.—Red and white wine. 660
1156 Valle, Jose de Seixas da, Tondella, Viseu.—Wine. 660
1157 Veiga, Ricardo Antonio da, Pova de Miodes, Coimbra.—Red wine. 660
1158 S. Vincente, Viscount of, Soure, Coimbra.—Red wine. 660
1159 Valle, Manuel de Sousa Dias, Oporto.—Wine. 660
1160 Vieira, Venancio Dias de Figueiredo, Eiro, Aveiro.—Wine. 660
1161 For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
DEPT. VI.—AGRICULTURE.

Animal and Vegetable Products.

1162 Moidmenta da Beira, Viscount of, Viseu.—Red wine. 660
1163 Viva Pinto, & Son, Lisbon.—Red and white wine. 660
1164 Viva, Pevelin, & Sons, Torres Vedras, Lisbon.—Red and white wine. 660
1165 Welsh Brothers, Funchal, Madeira.—Madeira wine, grape juice, etc. 660
1166 Abrigada, Viscount of, Lisbon.—Muscatel and other wines. 660
1167 Mossamedes, Viscount of, Beja, Lisbon.—Wine. 660
1168 Carnide, Viscount of, Carnide, Lisbon.—Red and white wine. 660
1169 Velooso, Antonio Guedes, Cambres, Setubal, Lisbon.—Red wine. 660
1170 Vilhena, Barbosa Arthur Peres de, Cartaxo, Guarda.—Red wine. 660
1171 Sagiosa, Viscountess of, Sagiosua, Guarda.—White wine. 660
1172 Nunes, Jose Jacintho, Grandola, Lisbon.—Wine. 660
1173 Nobre, Manuel de Barros, Tavora, Viseu.—Red wine. 660
1174 Neves, Fortunato Vieira das, Taboa, Coimbra.—White wine. 660
1175 Vas Freire, Jose Sebastiao Torres, Evora.—Red and white wine. 660
1176 Pereira, Widow Theotonio, & Sons, Lisbon.—White and red wine. 660
1177 Velho, Francisco da Rosa, Evora.—Red and white wine. 660
1178 Formosinho, Widow of Joao Martins, Lagoa, Faro.—Wine. 660
1179 Velles, Luis Nunes de, Portalegre.—Brandy. 660
1180 Judice, A. J., Widow of, Mexilhoeira, Faro.—Wine. 660
1181 Menezes, Jose Maria da Silveira, Parbo.—White wine. 660
1182 Mazzotti, Antonio Maria Dias P. Chaves, Colares, Lisbon.—White and red wine. 660
1183 Machado, Pedro Xavier, Portalegre.—White wine. 660
1184 Martins, Miguel Castro, Montargil, Portalegre.—Wines. 660
1185 Mattos, Bento F. M., Mondim de Basto, Villa Real.—Wine. 660
1186 Lisboa, Luis Emilio, Vieira, Wine. 660
1187 Neves, Jose Eloy das, Cadaval, Lisbon.—White and red wine, and brandy. 660
1188 Natividade, Jose Goncalves, Constancia, Santarem.—White wine. 660
1189 Lobo, Francisco Teixeira, Sabrosa, Villa Real.—Muscadine wine. 660
1190 Lima, Jose Duarte, Cartaxo, Santarem.—Red and white wine, brandy. 660
1191 Mello, Hygino Otto de Queiros, Lamego, Viseu.—Red wine. 660
1192 Lebre, Manuel Ferreira, Anadia, Aveiro.—Red wine. 660
1193 Lemos, Alexandre Maria de, Lamego, Viseu.—Red wine. 660
1194 Montes, Jose Nunes Moraes, Castello Branco.—Red wine. 660
1195 Martins, Benedicto Matheus, Elvas, Portalegre.—Wine. 660
1196 Macedo, Luis A. d’A. Estremos, Evora.—Red wine. 660
1197 Macedo, Camillo de Jr., Pesa da Regua, Villa Real.—Wines and brandy. 660
1198 Magalhaes, Luis Francisco da Silva, Villarinho de S. Romao, Villa Real.—Red wine. 660
1199 Leitao, Alipio, Penacova, Coimbra.—Red wine and vinegar. 660
1200 Meirelles, Antonio de Chaves, Povoa de Midoes, Coimbra.—Red wine. 660
1201 Lima, Jose Duarte, Cartaxo, Lisbon.—Wine. 660
1202 Moraes, Jose Alves de, Vinaheas, Braganza.—Wine. 660
1203 Madeira, Jose, Povoa de Midoes, Coimbra.—Red wine. 660
1204 Leite, Francisco de Moraes, Villa Flor, Braganza.—Wine and vinegar. 660
1205 Leite, Guilherme da Costa, Santo Thome, Porto.—Wine. 660
1206 Oliveira, Augusto Jose de, Lisbon.—Red wine. 660
1207 Oliveira, Jose Vaz Rato de, Alter do Chao, Portalegre.—Brandy and vinegar. 660
1208 Ornellas, A. de, Funchal, Madeira.—Madeira wine. 660
1209 Magalhaes, Joao Guedes de, Red wine. 660
1210 Moraes, Joaquim Claudino de, Regoa, Villa Real.—Red wine. 660
1211 Monteiro, Joaquim Soares, Mesquinhata, Oporto.—Wine. 660
1212 Magalhaes, Roberto Augusto Pinto de, Vale de Mendis, Villa Real.—Red wine. 660
1213 Motta, Luis Antonio, Ferreira da Andrades, Villa Real.—Wines. 660
1214 Mourao, Luis Teixeira, Caazal de Loives, Villa Real.—Red wine. 660
1215 Marques, Joao Antonio de Meirelles, Villa Real.—Red wine. 660
1216 Monteiro, Jose Justino Teixeira, Covas do Douro, Villa Real.—Red wine. 660
1217 Mello, Joao, C. da Rosa Malheiro, Candido, Villa Real.—White wine, brandy. 660
1218 Matheus, Jose Paulino, S. Miguel de Lobigo, Villa Real.—Wine. 660
1219 Lobo, Nicolau Joaquim Salles, Evora.—Red wine, vinegar. 660
1220 Lopes, Jose Ramos, Airo, Braga.—Wine. 660
1221 Meirelles, Antonio Nunes de Chaves, Povoa de Midoes, Coimbra.—Red wine. 660
1222 Miranda, Jose Victorino de, Matacaes, Lisbon.—Red wine. 660
1223 Pinto, Joao Adriano, Alfandega da Feg, Braganza.—Brandy. 660
1224 Pascoal, Otero, Oporto.—Beer. 660
1225 Macedo, Antonio Luis de, Arruda dos Vinhos, Lisbon.—Red wine. 660
1226 Martins, Luis Antonio, Torres Vedras, Lisbon.—Wine. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14
**Animal and Vegetable Products.**

<table>
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<th>Animal and Vegetable Products</th>
<th>1227 Moniz, Antonio Bernardino da Fonseca, Barcoal, Guarda.—<em>Wine</em>, 660</th>
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<tr>
<td>1228 Madeira, Alexandre Jose, Can-dedo, Villa Real.—<em>Wine</em>. 660</td>
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<td>1229 Monteiro, Abilio Affonso da Silva, Vento sa do Bairro, Aveiro.—<em>Red wine</em>. 660</td>
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<td>1230 Mello, Antonio Maria de, Miran-da do Corvo, Coimbra.—<em>Red wine</em>. 660</td>
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<td>1231 Marques Estevao Jose, Aldeia de Mata, Evora.—<em>White and red wine</em>. 660</td>
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<td>1232 Marques Maria Jose Perpetua, Redondo, Evora.—<em>Red wine</em>. 660</td>
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<td>1233 Pavao, Antonio Augusto Gon-salves, Villa Real.—<em>Wine</em>. 660</td>
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<td>1234 Pinheiro, Custodio Jose, Valverde, Villa Real.—<em>Wine</em>. 660</td>
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<td>1235 Moura, Christiano Augusto da Silva, Midoes, Coimbra.—<em>Red wine</em>. 660</td>
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<td>1236 Moraes &amp; Moura, Figueira, Coim- bra.—<em>Wine</em>. 660</td>
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<td>1237 Lima, Antonio Joaquim Fernandes, Villa Nova da Cerveira, Viana do Castello.—<em>Wine</em>. 660</td>
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<td>1238 Marques, Estevao Jose, Evora.—<em>Brandy</em>. 660</td>
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<td>1239 Miranda, Felix Honorio Gomes de, Torres Vedras, Lisbon.—<em>Red and white wine</em>. 660</td>
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<td>1240 Lima, Jose Dormate de, Cartaxo, Santarem.—<em>Wine, vinegar</em>. 660</td>
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<td>1241 Leito, Manuel Pinto, Fontes, Villa Real.—<em>Wine</em>. 660</td>
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<td>1242 Lago, Francisco d’Assis Pere da, Arcos, Braganca.—<em>Red wine</em>. 660</td>
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<td>1243 Mattos, Joao Chrisostome de Car-valho, Villarouco, Viseu.—<em>Red wine</em>. 660</td>
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<td>1244 Levita, Joaquim Fortunato, Porta-legre.—<em>Brandy</em>. 660</td>
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<td>1245 Lopes, Manoel Joao, Foseta, Faro.—<em>Red wine</em>. 660</td>
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<td>1246 Negreiros, Bento Antonio, Trigo de Miranda, Braganca.—<em>Red and white wine</em>. 660</td>
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<td>1247 Napoles, Miguel Tudella de Souza, Castelloses, Viseu.—<em>White wine</em>. 660</td>
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<td>1249 Leitao, A. Baptista Covilha, Castello Branco.—<em>Red wine</em>. 660</td>
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<td>1250 Lopes, Antonio Camillo da Silva, Cortuche, Santarem.—<em>Wine</em>. 660</td>
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<td>1251 Lopes, Jose Oalia, Castello Bran-co.—<em>Wines</em>. 660</td>
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<td>1252 Lobo, Bernardino Vas, Celorico de Basto, Braga.—<em>Wine</em>. 660</td>
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<td>1253 Lopes, Joao da Cunha, Silvares, Viseu.—<em>Wine</em>. 660</td>
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<td>1254 Lobo, Jose Nogueira Pereira, Ran-hudos, Viseu.—<em>Wine</em>. 660</td>
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<td>1255 Leao, Manuel da Cunha, Sobreira, Oporto.—<em>Corkwood and corks</em>. 660</td>
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<td>1256 Lima, Joao Ferreira, Braganza.—<em>Wine</em>. 660</td>
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<td>1258 Motta, Ranulfo Antonio, Portimao, Faro.—<em>Red and white wine</em>. 660</td>
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<td>1259 Mello, Miguel Antonio de Sousa, Villa Franca de Xira, Lisbon.—<em>Red wine</em>. 660</td>
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<td>1260 Moita, Antonio F. da Silva, Torres Novas, Santarem.—<em>Wines</em>. 660</td>
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<td>1261 Jansen, J. H., &amp; Co., Lisbon.—<em>Beer and ginger beer</em>. 660</td>
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<td>1262 Kopke &amp; Co., Massarelos, Oporto.—<em>Port wine and muscadine wine</em>. 660</td>
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<td>1263 Leacock &amp; Co., Funchal, Madeira.—<em>Wine</em>. 660</td>
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<td>1264 Morte Certo, Antonio Pedro Car-doso, Alcacer do Sal, Lisbon.—<em>Wine</em>. 660</td>
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<td>1265 Louro, Francisco Rico, Aldeia de Matto, Evora.—<em>Red wine</em>. 660</td>
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<td>1266 Mello, Jose de, Thomar, Santarem.—<em>Red and white wine</em>. 660</td>
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<td>1267 Moraes, Jose Correa Pinto de, Constanca, Santarem.—<em>Red and white wine</em>. 660</td>
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<td>1268 Martins, Jose Maria, Setubal, Lisbon.—<em>Wines</em>. 660</td>
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<td>1269 Martins, Joao Pedro, Setubal, Lisbon.—<em>Wines</em>. 660</td>
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<td>1270 Martel, Joao Campello Trigueiros, Sacoavem, Lisbon.—<em>Red and white wine</em>. 660</td>
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<td>1271 Mesquita, Antonio da Silva, Cartaxo, Santarem.—<em>Red and white wine</em>. 660</td>
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<td>1272 Machado, Thomaz Jose, Lisbon.—<em>Wines</em>. 660</td>
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<td>1273 Monteiro, Antonio Manuel, Vill-Alba, Beja.—<em>Red wine</em>. 660</td>
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<td>1274 Marquez de Pombal, Oeiras, Lisbon.—<em>White and red wine</em>. 660</td>
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<td>1275 Machado, Honorato Jose Torres, Azambuja, Lisbon.—<em>Brandy, wine, and vinegar</em>. 660</td>
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<td>1276 Ribeiro, Francisco Maria, Couto de Cima, Viseu.—<em>Wine</em>. 660</td>
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<td>1277 Ribeiro, Serafim Garcia, Oliveira do Hospital.—<em>Brandy</em>. 660</td>
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<td>1278 Rodrigues, Antonio Caetano, Oporto.—<em>Port wine</em>. 660</td>
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<td>1279 Ribeiro, Manuel, Penafiel, Oporto.—<em>Brandy</em>. 660</td>
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<td>1281 Magalhaes, Vicente Xavier, Tavira, Faro.—<em>Red wine</em>. 660</td>
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<td>1282 Mendonca, Manuel Marcal, Oeiao, Faro.—<em>Red wine</em>. 660</td>
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<td>1283 Mira, Jose Maria de, Vidigueira, Beja.—<em>White wine</em>. 660</td>
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<td>1284 Motta, Anaceto da Fonseca, Sardosel, Santarem.—<em>Wine</em>. 660</td>
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<td>1285 Moreno, Jose Joaquim, S. Thiago, Lisbon.—<em>Wine</em>. 660</td>
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<td>1286 Ribeiro, Jose Joaquim, S. Joao da Pesqueira, Viseu.—<em>Red wine</em>. 660</td>
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<td>1287 Rego, Manuel Diogo, Moncorvo, Braganca.—<em>Red wine</em>. 660</td>
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<td>1289 Creswell &amp; Co., Lisbon.—<em>Red wine</em>. 660</td>
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<td><strong>1388 Cardozo, Antonio Abreiro, Braganca.—Red wine.</strong> 660</td>
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<td><strong>1391 Correa, Jose Augusto, Santa Comba Dao, Viseu.—Red wine.</strong> 660</td>
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<td><strong>1392 Cardoso, Antonio Abreiro, Braganca.—Red wine.</strong> 660</td>
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<td><strong>1396 Cunha, Bernardino Alves Teixera, Celorico de Basto, Braga.—Wine.</strong> 660</td>
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<td><strong>1398 Castro, Antonio Augusto d'Almeida, Mosa, Villa Real.—Wine.</strong> 660</td>
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<td><strong>1399 Bairrada Commercial Wine Co., Varesta, Aveiro.—Red and white wine.</strong> 660</td>
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<td><strong>1400 Camello, Joaquim Augusto da Silveira, Penafiel, Oporto.—Wine and cider.</strong> 660</td>
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<td><strong>1404 Cruz, Jose Lopes da, Nogueira, Villa Real.—Red wine.</strong> 660</td>
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<td><strong>1405 Costa, Jose Joaquim Pinto da, Nogueira, Villa Real.—Red wine.</strong> 660</td>
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<td><strong>1407 Champalimau, Antonio Monte, Godim, Villa Real.—Red wine.</strong> 660</td>
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<td><strong>1408 Chaves, Manuel Jose da Cunha, Vale Passos, Villa Real.—Wine.</strong> 660</td>
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<td><strong>1412 Abreu, Francisco Jose de, Lamego, Viseu.—Red wine.</strong> 660</td>
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<td><strong>1413 Costa, Francisco Bento da, Gontuei, Viseu.—Wine.</strong> 660</td>
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<td><strong>1414 Contada, Jose Domingues, Carpecos, Braga.—Wine.</strong> 660</td>
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1515 Tavares, Antonio Jose, Covilha, Castello Branco.—Wine and vinegar.

1516 Jusarte, Jose Carlos, Parada, Viseu.—White wine.

1517 Royal Wine Company of Alto Douro, Oporto.—Vinegar, port wine 1875-1875.

1518 Lacerda, Alberto Araujo Figueiro dos Vinhos, Leiria.—Red wine.

1519 Michon & Gussac, Oporto.—Brandy of grains.

1520 Madeira, Antonio, Goes, Coimbra.—Brandy.

1521 Moreira, Antonio Ignacio, Oporto.—Brandy.

1522 Meneses, Jose Rebelo Cardoso, Timpeira, Villa Real.—Wine.

1523 Machado, Manuel Alves, Celorico de Basto, Braga.—Wine.

1524 Magalhaes, Antonio de Barros, Sattam, Viseu.—Wine.

1525 Marques, Jacintho, Salgueiros, Viseu.—Red and white wine, brandy.

1526 Magalhaes, Manuel Alexandre de, Budios, Viseu.—Wine.

1527 Machado, Domingas Alves, Castello de Basto, Braga.—Wine.

1528 Moura, Luis Manuel Alves, Celorico de Basto, Braga.—Wine.

1529 Mosquito, Simao P. Velho, Monsanto, Viana.—Wine.

1530 Moura, Augusto, Celorico de Basto, Braga.—Wine.

1531 Moraes, Antonio Carlos, Boelhe, Oporto.—Wine.

1532 Moraes, Antonio Fernandes, Abeleiha, Viana do Castello.—Wine.

1533 Marques, Jose Parada, jr., Viseu.—Red and white wine.

1534 Martins, Manuel Jose, Gondomil, Viana da Castello.—Wine.

1535 Messias, Manuel Antonio, Horta da Villarica, Braganca.—Wine.

1536 Martins, Jose da Veiga, Carraze da Anclaes, Braganca.—Red wine.

1537 Magalhaes, Joao da Veiga, Vina, Braganca.—Wine.

1538 Moraes, Domingos Alves, Poca, Braganca.—Wine.

1539 Miranda, Antonio Bernardino, Horta da Villarica, Braganca.—White wine.

1540 Basto, Manuel Jose Teixeira, S. Miguel de Refajo, Braga.

1541 Abacass Brothers, Lisbon.

1542 Castro, Luis de Mello T. Soares d'Allegaria, S. Thiago, Coimbra.

1543 Carvalho, Joao Antonio, Pedrogam, Santarem.

1544 Carvalho, Carlos Manuel de, Pedrogam, Santarem.

1545 Caldeira, Joaquim de, Albuquerque, Castello Branco.

1546 Pereira, Eduardo Augusto, Meixamil, Oporto.

1547 Casqueiro, Jose Maria, Crato, Portalegre.

1548 Conde da Junqueira, Almeirim, Santarem.

1549 Cardoso, Manuel Gauldino, Gaume, Torres Novas, Santarem.

For classes of exhibits indicated by numbers at end of entries, see Classification, pp. 12-14.
Animal and Vegetable Products.

1550 Carvalho, Luis Xavier do Amaral, Rio de Moinho, Viseu. a Wine. b Olive oil. 660 662
1551 Albuquerque, Manuel Lopes, Alvito, Braga. a Wine. b Olive oil. 660
1552 Abreu, Honorato Jose Marchado, Zibreira, Lisbon. a Red wine. b Olive oil. 660
1553 Puyvatelli, Jose da Cunha,Guarda. a Red and white wine. b Olive oil. 660
1554 Ramalho, Domingos Antonio, Falle Redondo, Evora. a Red and white wine and brandy, vinegar. b Olive oil. 662
1555 Abreu, Carlos de Sousa Pinto, Valle de Praceres, Castello Branco. a Wine. b Olive oil. 660
1556 Antonio Nunes de Souza & Co., Covilha, Castello Branco. a Wine. b Olive oil. 660
1557 Athayde, Luis da Silva, Leiria. a Red and white wine and brandy. b Olive oil. 660
1558 Accioli, Joao da Fonseca, Portalegre. a Vinegar. b Olive oil. 660
1559 Beltraa, Jose de Gouvea de Luce- na, Anca, Coimbra. a Red wine. b Olive oil. 660
1560 Boim, Joao Joaquim, Villa a Red and white wine. b Olive oil. 660
1561 Durao, Pedro Manuel, Castello de a Vinegar. b Olive oil. 660
1562 Caldas, Manuel Duarte de Silva, Cartaxo, Santarem. a Wine and vinegar. b Olive oil. 660
1563 Carreira Joaquim de Salles Simoes, Batalha, Leiria. a Brandy. b Olive oil. 660
1564 Faro, Joaquim de Carvalho Aze- vedo, Rezende, Viseu. a Wine. b Olive oil. 660
1565 Guimaraes, Jose Lopes, Coimbra. a Red wine and brandy. b Olive oil. 660
1566 Falcao, Luiz da Costa, Constancia, Santarem. a Wine. b Olive oil. 660
1567 Franco, Vital Jose Pereira,Guarda. a Red wine. b Olive oil. 660
1568 Ferreira, Augusto Dias, Santarem. a Wine. b Olive oil. 660
1569 Franco, Rev., Francisco Guedes, Portalegre. a Vinegar. b Olive oil. 660
1570 Francisco, Maria do Carmo, Cartaxo, Santarem. a Vinegar. b Olive oil. 660
1571 Guerra, Joaquim Jose da, Elvas, Portalegre. a Wine and brandy. b Olive oil. 660
1572 Villarinho, Viscount of, S. Ro- mas, Porto. a Muscadine and other wines. b Olive oil. 660
1574 Prime, Viscount of, Viseu. a Red and white wine. b Olive oil. 660
1575 Jose Ferreira Pinto Basto, Heirs of, Santa Eulalia de Ferreira, Coimbra. a Red wine. b Olive oil. 660
1576 Joaquin Guillerme de Vasconcellos & Sons, Elvas, Portalegre. a Vinegar. b Olive oil. 660
1579 Lima, Jorge Abraham d'Almeida, Alleia de Palo Fires, Lisbon. a Red and white wine. b Olive oil. 660
1582 Souza, Manuel Lopes de. a Wines and vinegar. b Olive oil. 660
1584 Viva, Barreto, Covilha, Castello b Olive oil. 660
1585 Alcacer, Viscount of Sal, Lisbon. a Wine. b Olive oil. 660
1586 Oliveira, Rafael Rodrigues de, Tor- res Novas, Santarem. a Red wine. b Olive oil. 660
1587 Castello de Borges, Viscount of, Lisbon. a Wines. b Olive oil. 660
1588 Vinha Jorge & Sons, Parreiras, Santarem. a Brandy. b Olive oil. 660
1589 Vital, Antonio Jose Rodrigues, Vaccarica, Aveiro. a Red and white wine. b Olive oil. 660
1590 Prime, Viscount of, Viseu. a Red and white wine. b Olive oil. 660
1591 Caevuo, Viscount of, Gaira, Guarda. a Wine. b Olive oil. 660
For classes of exhibits, indicated by numbers at end of entries, see Classification, pp 12-14.
Animal and Vegetable Products.

1592 Macedo, Joaquim Augusto de
a Wine. 660
b Olive oil. 662

1593 Esperanca, Viscount of, Jose,
a Brandy, red wine, and vinegar. 660
b Olive oil. 662

1594 S. Sebastiao, Viscount of, Leiria.
a Brandy. 660
b Olive oil. 662

1595 Mesquita, Pedro Jose de, Sinde,
Coimbra. a White wine, vinegar. 660
b Olive oil. 662

1596 Magalhaes, Francisco T., Sinde,
Coimbra. a White wine. 660
b Olive oil. 662

1597 Oliveira, Verissimo Ferreira A. de,
Montalvao, Santarem. a Red wine, vinegar. 660
b Olive oil. 662

1598 Pedrozo, Maria Jose Lopes,
Lavos, Coimbra. a Wine, brandy, and vinegar. 660
b Olive oil. 662

1599 Lopes, Joaquim Emilio, Leiria.
a Wines and brandy. 660
b Olive oil. 662

1600 Le Coq, Joao Jose, Castello de
Vide, Portalegre. a Wine. 660
b Olive oil. 662

1601 Larcher, Marcal, Ramiro, Portalegre.
a Brandy. 660
b Olive oil. 662

1602 Levita, Jose Eduardo, Portalegre.
a Vinegar and brandy. 660
b Olive oil. 662

1603 Larcher, Maria Jose, Portalegre.
a Vinegar. 660
b Olive oil. 662

1604 Mendes, Carlos da Costa Pereira,
Thomar, Santarem. a Wine. 660
b Olive oil. 662

1605 Machado, Pedro Xavier,
Portalegre. a Wine, brandy, vinegar. 660
b Olive oil. 662

1606 Moraes, Antonio da Silva, Sardosil, Santarem.
a Wine. 660
b Olive oil. 662

1607 Quintanilha, Francisco, Cuba, Reja.
a White and red wine. 660
b Olive oil. 662

1608 Matosso, Alfredo de Moura, S.
Tilago, Coimbra. a White wine, brandy. 660
b Olive oil. 662

1609 Rangel, Manuel de Souza, Guilhume,
Oporto. a Wine. 660
b Olive oil. 662

1610 Rangel, Diogo, Torres Novas, Santarem.
a Alcohol and white wine. 660
b Olive oil. 662

1611 Rego, Antonio Prfrio Gomes do,
Covilha, Castello Branco. a Wine. 660
b Olive oil. 662

1612 Reis, Antonio Nunes dos, Turen
tal, Lisbon. a Wines. 660
b Olive oil. 662

1613 Relvas, Carlos, Collega, Santarem.
a Wine. 660
b Olive oil. 662

1614 Ramos, Antonio Maria Taborda,
Castello Branco. a Wine. 660
b Olive oil. 662

1615 Rodrigues, Joao Antonio, Gran
dola, Lisbon. a Wine. 660
b Olive oil. 662

1616 Silva, Francisco Candido da,
Torres Novas, Santarem. a Wine and brandy. 660
b Olive oil. 662

1617 Souza, Pedro Augusto Pereira e
Abreu, Santa Marinha, Villa Real. a Wine. 660
b Olive oil. 662

1618 Sa, Jose Filipe de, Azoia de
Iixo, Santarem. a Wine. 660
b Olive oil. 662

1619 Seixas, Jose Maria Ayres de,
Caviao, Portalegre. a Wine. 660
b Olive oil. 662

1620 Caires, Manuel A. de Mello Pe
creira, Penva da Castello, Viseu. a Red wine. 660
b Olive oil. 662

1621 Condessa d'Anadia, Santa Clara,
Coimbra. a White and red wine, and vinegar. 660
b Olive oil. 662

1622 Castello Branco, Amelia Pinto de,
Tavares, Valle de Prareres, Castello Branco.
a White wine. 660
b Olive oil. 662

1623 Castello Branco, Ignacio Cardoso de,
B. Caldeira, Portalegre. a Red wine. 660
b Olive oil. 662

1624 Carrilho Bello, AntonioMarcellino,
Castello de Vide, Portalegre. a Red and white wine, and vinegar. 660
b Olive oil. 662

1625 Castello Branco, Amelia Pinto de,
Tavares, Valle de Prareres, Castello Branco.
a White wine. 660
b Olive oil. 662

1626 Barao do Salgueiro, Leiria.
a White and red wine. 660
b Olive oil. 662

1627 Britto, Joao de, Lisbon. a Red and white wine, vinegar. 660
b Biscuits. 661
c Corn flour. 663

1628 Barao de Mogadouro, Freixeas,
Guarda. a Red and white wine. 660
b Olive oil. 662

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
### Animal and Vegetable Products.

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>Description</th>
<th>Address</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1629</td>
<td>Castro, Miguel Ozorio Cabral de</td>
<td>Red and white wine</td>
<td>Santa Clara, Coimbra</td>
<td>Olive oil</td>
</tr>
<tr>
<td>1630</td>
<td>Costeira, Manuel Fernandes Lagemego, Viseu</td>
<td>Red wine</td>
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<td>Olive oil</td>
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<tr>
<td>1631</td>
<td>Costa, Lourenco Justimiano da Fonseca, Oliveira do Hospital, Coimbra</td>
<td>Wine</td>
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<td>Olive oil</td>
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<td>1632</td>
<td>Morao, Maria Emilia d'Almeida, Penamacor, Castello Branco</td>
<td>White wine</td>
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<td>Olive oil</td>
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<tr>
<td>1633</td>
<td>Albino Jose de Freitas Almeida &amp; Co., Ega, Coimbra</td>
<td>Wines</td>
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<td>Olive oil</td>
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<td>1634</td>
<td>Asambuja, Antonio Maria da, Meaux, Coimbra</td>
<td>White wine</td>
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<td>Olive oil</td>
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<tr>
<td>1635</td>
<td>Pontes, Francisco Ferraz Tavares de, Miranda do Corvo, Coimbra</td>
<td>Red wine</td>
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<td>Olive oil</td>
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<tr>
<td>1636</td>
<td>Pinto, Antonio Rodrigues, Coimbra</td>
<td>Wine and vinegar</td>
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<td>Olive oil</td>
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<tr>
<td>1637</td>
<td>Pinto, Augusto Leal de Gouveia, Miranda do Corvo, Coimbra</td>
<td>Red and white wine</td>
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<td>Olive oil</td>
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<tr>
<td>1638</td>
<td>Pereira, Antonio Ignacio, Redondo, Evora</td>
<td>Brandy, red wine, vinegar</td>
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<td>Olive oil</td>
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<tr>
<td>1639</td>
<td>Accioli, Joao da Fonseca, Portalegre</td>
<td>Vinegar</td>
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<td>1640</td>
<td>Melleiro, Francisco Carmello, Lisbon</td>
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<td>Pinto, Jose Clemente, Sta. Cruz, Coimbra</td>
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<td>1642</td>
<td>Cruz, Jose Francisco da, Coimbra</td>
<td>Biscuits</td>
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<td>Olive oil</td>
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<td>1643</td>
<td>Costa, Eduardo Antonio da, Lisbon</td>
<td>Biscuits</td>
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<td>1644</td>
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<td>Olive oil</td>
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<td>1646</td>
<td>Silva, Estavao Ribeiro da, Lisbon</td>
<td>Bread</td>
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<tr>
<td>1647</td>
<td>Auroso, Antonio Correa de, Coimbra</td>
<td>Biscuits</td>
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<tr>
<td>1648</td>
<td>Administrator of the Conselho of Guinaraes, Guinaraes, Braga</td>
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<tr>
<td>1649</td>
<td>Papanca, Manuel Augusto Mendes, Resguenos, Evora</td>
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<td>Olive oil</td>
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<tr>
<td>1650</td>
<td>Pina, Manuel Maria de, Portalegre</td>
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<td>Olive oil</td>
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<tr>
<td>1651</td>
<td>Pereira, Jose Ignacio, Elvas, Portalegre</td>
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<td>Olive oil</td>
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<tr>
<td>1652</td>
<td>Proenca, Francisco Tavares d'Almeida, Castello Branco</td>
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<td>Olive oil</td>
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<tr>
<td>1653</td>
<td>Possidonio, Antonio, Montalvao, Portalegre</td>
<td></td>
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<td>Olive oil</td>
</tr>
</tbody>
</table>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Animal and Vegetable Products.

1688 Conde da Gracia, Arcos, Aveiro. — Olive oil. 662
1689 Costa, Lucio Jose da, Salzedas, Visa. — Olive oil. 662
1690 Cantinho, Fernando Affonso d’Almeida, Sepins, Coimbra. — Olive oil. 662
1691 Souza, Jose d’Andrade e, Portalegre. — Olive oil. 662
1692 Souza, Jose Saldanha Oliveira e, — Olive oil. 662
1693 Santa Clara, Francisco de Paula, Elvas, Portalegre. — Olive oil. 662
1694 Salazar, Manuel Maia, Torres Novas, Santarem. — Olive oil. 662
1695 Reis, Antonio dos, Lisbon. — Olive oil. 662
1696 Riio, Joaquim Antonio, Elvas, Portalegre. — Olive oil. 662
1697 Ramires, Manuel Peres, Evora. — Olive oil. 662
1698 Regalho, Antonio Meira, Portalegre. — Olive oil. 662
1699 Ratto, Antonio Gonsalves, Barquinha, Santarem. — Olive oil. 662
1700 Ramos, Manuel Nogueira, Goes, Coimbra. — Olive oil. 662
1701 Rodrigues, Manuel Antonio, Ferreira, Braganca. — Olive oil. 662
1702 Rocha, Serafim de Sousa, Canellas, Oporto. — Olive oil. 662
1703 Rocha, Antonio Ceelho da, Gondomar, Oporto. — Olive oil. 662
1704 Mendonca, Joao Themudo de Oliveira, Abrantes, Santarem. — Olive oil. 662
1705 Mendes, Joa, Jose Soares, Abrantes, Santarem. — Olive oil. 662
1706 Barao de Casaes do Douro, Casaes do Visen, Coimbra. — Olive oil. 662
1707 Lemos, Joao Gonsalves de, Souza, Coimbra. — Olive oil. 662
1708 Leite, Joao Baptista de Araujo, Vila Franca, Braganca. — Olive oil. 662
1709 Monteiro, Francisco Vaz, Ponte Sor, Portalegre. — Olive oil. 662
1710 Vasconcellos, Francisco Maria de, Sabugal, Guarda. — Olive oil. 662
1711 Vieira, Agostinho Jose, Sto. Ovidio, Porto. — Olive oil. 662
1712 Vassea & Coelho, Oporto. — Olive oil. 662
1713 Vasconcellos, Manuel S. Quaresma, Condeixa, Condeixa. — Olive oil. 662
1714 Veiga, Francisco Antonio, Goes, Coimbra. — Olive oil. 662
1715 Vasconcellos, Joaquim Guillerme de, Elvas, Portalegre. — Olive oil. 662
1716 Varella jr., Jose Gomes, Serpa, Beja. — Olive oil. 662
1717 Oliveira Manuel Joaquim de Sendin, Miranda do Douro. — Olive oil. 662
1718 Oliveira, Jose Duarte, Murca, Villa Real. — Olive oil. 662
1719 Vazdez, Antonio de Campos, Alcacer do Sal, Lisbon. — Olive oil. 662
1720 Serpa, Francisco Lopes, Portalegre. — Olive oil. 662
1721 Moran, Jose Antonio Martins, Viana do Almoucho. — Olive oil. 662
1722 Osorio, Manuel de Azevedo Ferreira, Monforte, Castello Branco. — Olive oil. 662
1723 Leitaao, Joas Paes d’Almeida, Santarem, Visa. — Olive oil. 662
1724 Leite, Jeronimo Augusto Pereira, Cavaca, Braga. — Olive oil. 662
1725 Loio, Gaspar da Silva, Armamar, Visa. — Olive oil. 662
1726 Lobo, Jose Maria, Guarda. — Olive oil. 662
1727 Neves, Filho, Adelino St. Antonio dos Olvaes, Coimbra. — Olive oil. 662
1728 Negrao, Manuel Nicolau Osorio, Ansede, Oporto. — Olive oil. 662
1729 Pinto, Antonio Thomas da Costa, Bibalonga, Braganca. — Olive oil. 662
1730 Pereira, Jose Sebastiania Martins, S. Thiago, Coimbra. — Olive oil. 662
1731 Lima Meyer & Sons, Lisbon. — Olive oil. 662
1732 Mendes, Raimundo Jose Soares, Abrantes, Santarem. — Olive oil. 662
1733 Mourato, Mathias, Alpatao, Portalegre. — Olive oil. 662
1734 Kempe, Guilherme, Lisbon. — Olive oil. 662
1735 Mendes, Casemiro Esteves, Aviz, Portalegre. — Olive oil. 662
1736 Mocinha, Manuel Jeronimo, Campo Maior, Portalegre. — Olive oil. 662
1737 Moraes, Jose Barzilio, Arronches, Portalegre. — Olive oil. 662
1738 Lima, Andre Avelino de, Cano, Portalegre. — Olive oil. 662
1739a Abrantes, Viscount de A., Santarem. — Olive oil. 662
1739 Chicorro, Andre G., Monforte, Portalegre. — Olive oil. 662
1740 Lobo, Thomas, Antonio de Araujo, Oporto. — Olive oil. 662
1741 Souza, Jose Antonio Nunes de, Covilha, Castello Branco. — Olive oil. 662
1742 Senna Bello, Manuel Thomar de, Guarda. — Olive oil. 662
1743 Silva, Jose Nunes, Elvas, Portalegre. — Olive oil. 662
1744 Mello, Higino O. de, Queruza, Santarem. — Olive oil. 662
1744 Asevedo, Mariano Lemos, Villa Nova de Ourem, Santarem. — Olive oil. 662
1745 Araujo, Antonio Joaquim de, Thomar, Santarem. — Olive oil. 662
1746 Almeida, Antonio Mendes, Alcacer do Sal, Lisbon. — Olive oil. 662
1747 Almeida, Sebastiao Saldanha de, Portalegre. — Olive oil. 662
1748 Bentes, Ignacio Jose, Serpa, Beja. — Olive oil. 662
1749 Cardozo, Antonio Augusto Correia da Silva, Cellorico, Guarda. — Olive oil. 662
1750 Castello Branco, Joao da Silva Ferreiro de, Villa Franca, Lisbon. — Olive oil. 662
1751 Domingues, Victorino Jose, Faro. — Olive oil. 662
1752 Duarte, Egydio Jose, Castello de Vide, Portalegre. — Olive oil. 662

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 17-18.
Textile Substances of Vegetable or Animal Origin.

1789 Sarmento, Antonio Ferreira, Vinares, Braganca.—Flax.

1800 Silva, Domingos de Almeida e, S. Janeiro, Oporto.—National flax.

1801 Secadas, Manuel Gomes Moreira, Amorim, Oporto.—Flax.

1802 Louza, Augusto Pereira d'Abreu, Sta. Marinha, Villa Real.—Flax.

1803 Pygnatelli, Jose de Cunha, Guarda.—Flax.

1804 Cavadas, Jose de Silva, S. Madede, Oporto.—Flax.

1805 Mattos, Rita de, Ponta Delgada.—Linen in various stages of preparation.

1806 Castello, Antonio de Gouvea Rebelo, Serame, Viseu.—Flax.

1807 Souto, Antonio Duarte da Cunho, Freixinno, Viseu.—Flax.

1809 Rodrigues, Joaquim, Oporto.—Combed flax.

1810 Queiroz, Joaquim Carneiro Luso, Meixomil, Oporto.—Flax.

1811 Queiroz, Jose de Sequeira Pinto, S. Sebastian do Duque, Viana do Castello.—Flax.

1814 Almeida, Joaquim Ribeiro, Campanha, Oporto.—Flax.

1815 Albergaria, Thomas Antonio Pinto Soares, Villa Cha, Aveiro.—Flax.

1816 Administrator of the Counsel of Alentum, Alentum, Oporto.—Flax.

1817 Almeida, Manuel d', Gafanhao, Viseu.—Flax.

1818 Coelho, Jose Justino, Villa do Tamega, Villa Real.—Flax.

1819 Carvalho, Joaquim Augusto da Silveira, Penafiel, Porto.—Flax.

1820 Costa, Manuel Jorge da, Valongo, Oporto.—Flax.

1821 Cadaval, Francisco de Sousa, Villa Nova da Cerveira, Viana do Castello.—Flax.

1822 Moraes, Antonio da Silva, Sadoal, Santarem.—Flax.

1823 Matta, Anacleto da Fonseca, Sadoal, Santarem.—Hemp.

1824 Silva, Jose Diogo da, Lisbon.—Wood.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp 12-14.
Portugal.

Textile Substances.

1829 Saraiva, Francisco Martins, Belmonde, Castello Branco.  a Flax.  666  b Wool.  666
1827 Basto, Manuel Jose Teixeira, S. Miguel de Refoyos, Braga.—Flax.  666
1828 Pimentel, Jose Reis, Castello de Vide, Portalegre.—Flax.  666
1829 Freitas, Jose Monteiro de, Cumpello, Oporto.—Flax.  666
1830 Ferreira, Joao Dias, Vallowgo, Oporto.—Flax.  666
1831 Frausto, Leandro Pinto, Marvao, Portalegre.—Flax.  666
1832 Franco, Joao, Povoa de Meadas, Portalegre.—Flax.  666
1833 Guerra, Thomas Ignacio de Melhelos, Moncorvo, Braganca.—Flax.  666
1834 Gama, Manuel Telles da, Lisbo, —Wines.  666
1835 Gomes, Antonio Luis, Valenca, Viana do Castello.—Flax.  666
1836 Guerreiro, Antonio Manuel, Villa Nova de Cerveira, Viana do Castello—Flax.  666
1837 Vieira, Pedro Martins, Cabeceras de Bастo, Braga.—Flax.  666
1838 Torres, Antonio Alves, Arcos, Oporto.—Flax.  666
1839 Moreira, Joao Baptista, Rates, Oporto.—Flax.  666
1840 Machado, Manuel Barcellos, Visei.—Flax.  666
1841 Soeveral, Victorino da Costa, Mon-dim de Bастo.—Flax.  666
1842 Leite, Luis Maria Pelgueiras, Megadouro, Braganca.—Hemp.  666
1843 Leal, Manuel da Cunha, Sobreira, Oporto.—Flax.  666
1844 Nogueira, Francisco Bento, Paredes de Coura, Viana do Castello.—Flax.  666
1845 Pedroza, Maria Jose Lopes, Lavos, Coimbra.—Flax.  666
1846 Mattos, Rosa de, Island of St. Michael, Ponta Delgada.—Flax, hemp, and hemp-thread.  666
1847 Mesquita, Pedro Jose de, Sinde, Coimbra.—Flax.  666
1848 Leite, Antonio Bernardo d'Oliveira, Cabeceras de Bастo, Braga.—Flax.  666
1849 Mendes, Luis Antonio Soares, Castello Branco.—Flax.  666
1850 Fernandes, Manuel Ignacio, Tel-joes, Villa Real.  a Flax.  666  b Wool.  666
1851 Montenegro, Joao Joaquim Pereira Telles de Menezes Mozello, Viana do Castello.  a Flax.  666  b Wool.  666
1852 Rapozo, Luis, Miranda do Douro, Braganca.  a Flax.  666  AA Wool.  666
1853 Magalhaes, Francisco T., Sinde, Lourenco.  a Flax.  666  b Wool.  666
1854 Silva, Antonio Lopes da, Balanear, Oporto.  a Flax.  666  b Wool.  666
1855 Santos, Ascenio Jose dos, Valenca, Viana de Castello.  a Flax.  666  e Wool.  666
1856 a Rosa, Jose de Graca Pereira, Niza, Portalegre.—Wool.  666
1856 Sarmento, Manuel Gomes de, St. Estevao, Villa Real.—Wool.  666
1856 Souza, Manuel Lopes de, Guarda—Wool.  666
1857 Piteira Fernandez, Joaquim Filippe, Reguengo, Evora.—Wool.  666
1857 a Sardinha, Joao Maria da Silva, Monforte, Portalegre.—Wool.  666
1858 Pinto, Antonio Mascarenha, Villa Baim, Portalegre.—Wool.  666
1858 a Silva, Jose Diogo da, Lisbon.—Wool.  666
1858 Oliveira, Isidoro E. O. C. Margues, Villa Baim, Portalegre.—Wool.  666
1860 Pereira, Jose Francisco, Castello de Vide, Portalegre.—Wool in the fleece.  667
1861 Pereira, Jeronimo, Serpa, Beja.—Wool.  667
1862 Pimentel, Jose Reis, Povoa de Meadas, Portalegre.—Wool.  667
1863 Continho, Fernando Affonso d'Almeida, Sepins, Coimbra.—Wool.  667
1864 Pimentel, Antonio Augusto de Moraes, Castello Branco, Braganca.—Wool.  667
1865 Couraca, Jose de Gouveia, Faia, Visei.—Wool.  667
1866 Rio, Antonio Manuel, Miranda do Douro, Braganca.—Wool.  667
1867 Montoya, Diogo Lopes, Castello Branco.—Wool.  667
1868 Murteira, Manuel Maria, Campo Maior, Portalegre.—Wool.  667
1869 Lacerda, Antonio Augusto de, Chorindo, Visei.—Wool.  667
1870 Costa, Lourenco Justiniian da Fonseca, Oliveira do Hospital, Coimbra.—Wool.  667
1871 Calca e Pina, Antonio, Souzel, Portalegre.—Wool.  667
1872 Lecocq, Joao Jose, Castello de Vide, Portalegre.—Wool.  667
1873 Pera, Francisco Marcos, Miranda do Douro, Braganca.—Wool.  667
1874 Pascual, Eduardo Augusto, Meixe-mil, Oporto.—Wool.  667
1875 Lemos, Francisco Antonio Pereira, Villarellos, Braganca.—Wool.  667
1876 Marcal & Bro., Portalegre.—Wool unwashed and washed.  667
1877 Oliveira Soares, M. E. de, Evora.—Wool.  667
1878 Villai, Manuel Pereira, Torroso, Oporto.—Wool.  667
1879 Carneiro, Jose Antonio, Santa Eufalia, Portalegre.—Wool.  667
1880 Casqueiro, Jose Maria, Crato, Portalegre.—Wool.  667

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Textile Substances, Engineering and Administration.

1881 O. Veira, Domingos Manuel, Miranda do Douro, Braganca.—Wool. 667
1882 Vasconcellos, Bartholomeu d’Aragao Costa Tavares de, Fundao, Castello Branco.—Wool. 667
1883 Miranda, Antonio Augusto Lobo de, Lagos, Faro.—Wool. 667
1884 Bogalho, Joao Joaquim, Villa Boim.—Wool. 667
1885 Bello, Francisco Severiano Carilho, Castello de Vide, Portalegre.—Wool in the fleece. 667
1886 Coelho, Luis Pires, Sardoal, Santarem.—Wool. 667
1887 Guimaraes, Victorino Barbosa, Penafiel, Oporto.—Wool. 667
1888 Migueis, Joao, Ilhavo.—Wool. 667
1889 Castel Branco, Francisco Barreto Caldeira, Portalegre.—Wool. 667
1890 Falcão, Lazaro Domingos, Povoa, Braganca.—Wool. 667
1891 Geraldes, Manuel Vaz Preto, Loura, Castello Branco.—Wool. 667
1892 Veiga, Jose d’Almeida, Anciães, Braganca.—Wool. 667
1894 Costa, Joao Carlos, Elvas, Portalegre.—Wool. 667
1895 Cid, Jose Ignacio, Mirandella Braganca.—Wool. 667
1896 Central Commission of the District of Viseu, Viseu.—Wool. 667
1897 Nunes, Antonio Manuel, Chacim, Braganca.—Raw silk. 668
1898 Franqueira, Romao, Carracedo, Braganca.—Cocoons. 668
1899 Cabral, Paco F., & Sons, Sernancelhe, Viseu.—Cocoons and raw silk. 668
1900 Silk Manufacturing Company, Egyptianiense, Oporto.—Silk balls. 668

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

TURKEY.

(Note.—The Agricultural Exhibit of Turkey is installed in the Main Building, and catalogued in that volume.)
RUSSIA.

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Arboriculture, Pomology, Agricultural Products.

Arboriculture and Forest Products.
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2 Verekha, Peter, St. Petersburg. a Wild-growing trees; collection of sections. 620
Δ Statistical map of forests (Russia in Europe). 626
3 Ostrom Bros., Uleaborg, Finland. —Willow bark, tanning material. 620
4 Matteissen, Nicolas, Moscow.—Gallnuts. 620
5 Wagner, Charles, Riga. —Fir and pine tree seeds. 620
6 Russian Society of Forestry, St. Petersburg.—Seeds of forest-growing trees. 625

Pomology.
8 Imperial Russian Horticultural Society, St. Petersburg.—Reproduction of apples growing on the island of Walaam, on the Ladogalake. 610

Agricultural Products.
9 Ergert, John von Henziany, Government of Warsaw, District of Radimin.—Oats, barley, in grain and sheaves. 620
10 Dengink, Henrietta, Kishineff, Bessarabia.—American maize. 620
11 Bessarabian Horticultural School, Kishineff. a Bessarabian wheat, maize, and Indian millet. 620
Δ Linseed and sunflower seed. 624
12 Bell, David, Alexandria. Farm, near St. Petersburg.—Wheat, rye, barley, oats, and timothy grass-seed. 620
13 Novossiltseff, John, Voin, Government of Orel.—Rye, barley, oats, red clover, rape, and tares. 620
14 Pirsoff, George, Michalafskoe, Government of Voronesch, District of Ostragoisk.—Wheat and oats. 620
15 Penzin, John, Samara.—Wheat. 620
16 Plighin, Philip, Volks, Government of Saratoff.—Wheat. 620
17 Shatiloff, Joseph, Mokhovoer, Government of Tula, District of Novosil.—Wheat, rye, barley, and oats in grains and sheaves. 620
18 Stichinsky, Simon, Gololobovo, near Voronesch.—Wheat and oats. 620
19 Vassilitchikoff, Prince Victor, Troobschtinov, Government of Tambow, District of Lebedan.—Wheat, rye, and oats. 620
20 Warschaafszy, A., St. Petersburg.—Wheat, rye, and oats. 620
21 Wickberg, Charles, Sedercla, Finland, Government of Nyland.—Wheat, rye, barley, and timothy grass-seed. 620
22 Grotenfend, Nicolas, Finland, St. Michael.—Barley. 620
23 Emnildff, Alexis, Archangelskoe, near Voronesch. a Wheat, oats, peas. 620
Δ Timothy and French grass-seeds 624
24 Institute of Agriculture & Forestry, New Alexandra, Government of Lablin, District of Alexandrovsk.—Wheat. 620
25 Fastrzembsky, Stanislas, Yurkou and Demblany, Government of Kielce, District of Pintioow.—Wheat, rye, peas, millet, barley, and oats. 620
26 Kazan Model Farm.—Wheat, rye, oats, timothy grass, clover, tares, and cornspurry seed. 620
27 Karamyseff, Nicolas, Polossy, Government of Pskoff, District of Porkhoff.—Wheat, rye, and oats. 620
28 Korf, Baron Michael, Selzo, near St. Petersburg.—Wheat, rye, barley, and oats. 620
29 Krapotkine, Prince Demetrius, Kablyino, Government of Kazan, District of Kishik. a Samples of wheat and buckwheat. 620
Δ Peas. 621
30 Labenski, W., Okence, Government and District of Warsaw.—Wheat and rye. 620
31 Levchine, Theodore, St. Petersburg.—Wheat. 620
32 Maltzoff, Michael, Nikolaevsk, Government of Saratoff, Belotoorokka.—Wheat. 620
33 Mariynska Model Farm, near Saratoff.—Samples of cereals. 620
34 Gorki Model Farm, Government of Mogileff.—Wheat and rye in grain and sheaves. 620
35 Petrovski Rural Academy Model Farm, near Moscow.—Wheat, rye, barley, and oats. 620
36 Mookhin, John, Moscow.—Red clover, timothy grass, white and black tares. 620
37 Nostitz, Count John, Government of Ekaterinoslaw, District of Novo-Moskovsk.—Red wheat and barley. 620
38 Obratoff, Paul, Uralsk.—Summer wheat. 620
39 Odesa Exchange Committee, Odessa.—Wheat, rye, barley, maize, and millet. 620
40 Ooohin Brothers, Pokrovskoe, Government of Saratoff, District of Novo-Oven.—Wheat. 620

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
### Agricultural, Animal, and Vegetable Products, Fish Culture.

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<td>b Leaf tobacco.</td>
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<td>c Comine and beet seed.</td>
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<td>45</td>
<td>Odessa Exchange Committee.</td>
<td>Peas and French beans.</td>
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<td>Mariynska Model Farm, near Saratoff.</td>
<td>Common and French beans.</td>
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<td>Rape seed.</td>
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<td>Kooshnareff, James, Rostaff on the Don.</td>
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<td>Rymarenko, Martha, Moscow.</td>
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<td>Petroff Bros., St. Petersburg.</td>
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<td>Chicory-root roasted.</td>
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<td>Meyer, L., St. Petersburg.</td>
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<td>Hofmark, Bruno, St. Petersburg.</td>
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<td>71</td>
<td>Kharkoff Model Farm.</td>
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For classes of exhibits, indicated by numbers at end of entries, see Classification. pp. 127-14.
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106 Nikitin, Alexander, Smolensk.— Fruit preserves. 656
107 Mangold, Charles, St. Petersburg.— Preserved meats. 656
108 Nirnberg, Otto, Uleaborg, Finland.— Preserved game. 656
109 Likhonin, Gregory, St. Petersburg.— Cranberry juice condensed by freezing. 656
110 Foorkhin, Paul, St. Petersburg.— Fruit paste (pastila). 656
111 Martens, Julius, St. Petersburg.— Coffee extract, dry and liquid. 656
112 Company for the Supply of Food, Varonesh and Moscow.— Preserved meat and vegetables for the army. 656
113 Petroff, John, St. Petersburg.— Cranberry juice. 656
114 Abrikosoff's Sons, Moscow.— Preserves, marmalade, fruit-paste. 656
115 Stéphany, F., Mitau.— Wheat-flour. 657
116 Waag & Sons, Doobovka, Government of Saratoff. a Mustard-flour, decorticated mustard-seed and husks. 657 b Mustard-seed oil and cake. 662
117 Verevitin, Alexis, Mzensk, Government of Orel.— Wheat-flour and decorticated grain. 657
118 Taldykin, Catherine, Eitz, Government of Orel.— Wheat-flour and decorticated grain. 657
119 Müller, Christian, Doobovka, Government of Saratoff, District of Tarotsin. a Mustard-flour, decorticated seed and husks. 657 b Mustard-seed oil and cakes. 662
120 Matteissen, Nicolas, Moscow.— a Flour and groats. 657 b Anise and mustard seed oil. 662
122 Golikoff, K. P., Frtzaich, Government of Riazan, District of Spassk.— Starch and glycose. 658
123 Tarnoskij, Basil, Paraèèvéka, Government of Tcheragoff, District of Berdsk.— 659
124 Galtzyn, Prince Victor, Slavgorod, Kharkoff, District of Akhvyrke.— Raw beet-root sugar. 659
125 Hermanoff Sugar Manufacturing Company, Government of Warsaw.— Refined sugar in loaves and crystalized. 659
126 Gnevan Sugar Manufacturing Company, Government of Warsaw.— Refined sugar. 659
127 Wassitchikoff, Prince Victor, Trobetchina, Government of Tamboff, District of Lépetzk.— Raw beet-root sugar. 659
128 Warsaw Sugar Manufacturing Company, Warsaw.— Refined sugar. 659
129 Sokolovka Sugar Manufacturing Company, Government of Podolia, District of Oléopol.— Refined beet-sugar. 659
130 Ostroff Sugar Manufacturing Company, Warsaw.— Sugar refined. 659
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132 Nathansohn, Jacob, Warsaw.— Sugar refined. 659
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134 Mück, Charles von, Brailovka, Government of Podolia, District of Winiolia.— Beet-root sugar, raw and refined. 659
135 Lanin, Nicolas, Moscow.— Frit syrup and juices, effervescent fruit liquors and mineral waters. 659
136 Kümens, Richard, Sobolevka & Tsharnomin, Government of Podolia, District of Gaisén.— Sugar, raw and refined. 659
137 Krasince Sugar Mill Company, Government of Plock.— Sugar. 659
138 Késhner, Frederic, St. Petersburg.— Refined beet-root sugar. 659
139 Yeozéfow Sugar Manufacturing Company, Government of Warsaw.— Refined sugar. 659
140 Goözov Sugar Manufacturing Company, Government of Warsaw.— Refined sugar. 659
141 Dobrozelinsky Sugar Manufacturing Company, Government of Warsaw.— Sugar, raw and refined. 659
142 Maizner, N. Lameta, & Fzabelin, Sugar Mills, Government of Warsaw.— Beet-root sugar, raw and refined. 659
143 Lysckowice Sugar Manufacturing Company, Government of Warsaw.— Refined sugar. 659
144 Leonoff Sugar Manufacturing Company, Government of Warsaw.— Beet-root sugar, refined. 659
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146 Doolvetoff, David, Simpheropol, Crimea.— White wine. 660
147 Imperial Nikitkszy Garden, Yalta, Crimea.— White and red wine. 660
148 Foondoocley, John, Goorsoor District, Yalta, Crimea.— Wine. 660
149 Kniajevitch, Antoine, Alushta, Crimea.— Refined sugar. 660
150 Lancki, Robert, Soodack, Crimea.— Red and white wine. 660
151 Lanin, Nicolas, Moscow.— Liquors. 660
152 Hartwig, Herman, Malo Danilov brewery near Kharkoff.— Beer, mead, and malt. 660
153 Worontzoff, Prince Simon, Massandra, Crimea.— Red and white wines. 660
154 Bashmakoff, S. D., St. Petersburgh.— Spirits and liquors. 660
155 Deshariot, A., Moscow.— Spirits, cordials, and liquors. 660
156 Makaroff, Petrus, Tiflis.— Kakhetian wine, red and white. 660
157 Rajevski, Nicolas, Crimea district, Yalta.—Wines. 660
158 Brianzoff, Victor, Irkoutsck.— Cordials and liquors. 660
159 Fokrath & Co., St. Petersburgh.— Cordials and liquors. 660
160 Grevsmiil, Alexander, Moscow.— Spirits. 660

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Animal and Vegetable Products, Textile Substances.

161 Grote, Alexander von, Lemburg, near Riga.—Cumin liqueur.  
660
162 Korf, Baron K., St. Petersburg.—  
Spirits and liquors.  
660
163 Karali, G. N., & Co., St. Petersburg.—  
Cordials, liquors, and spirits.  
660
164 Kalashnikoff, Peter, Pskov.—  
Spirits, cordials, and liquors.  
660
165 Tankowski, T., Warsaw.—Cordials and liquors.  
660
166 Scheierman & Co., Riga.—Vinegars.  
660
167 Lutoslawski, T., Drozdovo, Government & District of Lomza.—Bottled beer.  
660
168 Krause, W., Warsaw.—Beer.  
660
169 Tigezem Brewery Company, near Riga.—Malt extract.  
660
170 Doordin, John, St. Petersburg.—  
Beer.  
660
171 Zyzynkin, M. Y., Brothers, Moscow.—  
Cordials, liquors, and artificial champagne.  
660
172 Wickel, Y., Helsingfors.—Swedish punch.  
660
173 Varaksin, Demetrius, & Sanin, George, Kazan.—Spirits and liquors.  
660
174 Traverse, Marquis Alexander de Looga, Government of St. Petersburg.—  
Cordials and liquors.  
660
175 Stemnikovski, A., Warsaw.—Corn brandy and mead.  
660
176 Smirnoff, Peter, Moscow.—  
Cordials, spirits, and liquors.  
660
177 Rougine, Pauline, Moscow.—Cordials and liquors.  
660
178 Petroff, W., St. Petersburg.—Spirits, cordials, and liquors.  
660
179 Natus, T., & Co., St. Petersburg.—  
Spirits and liquors.  
660
180 Martini, G., St. Petersburg.—  
Spirits, cordials, and liquors.  
660
181 Lilieroth, Victor, Helsingfors.—  
Imperial and fruit punch.  
660
182 Landrin, George, St. Petersburg.—  
Ponbore and chocolate.  
661
183 Zaitzeff, Simon, Moscow.—Cakes and gingerbread.  
661
184 Sivakhin, E., St. Petersburg.—Gingerbread.  
661
185 Meyer L., St. Petersburg.—  
Gingerbread and boubons.  
661
186 Lopin, N. & A., Brothers, St. Petersburg.—  
Cakes, marmalade, chocolate, and confectionery.  
661
187 Koodriazeff, A. & G., Brothers, Moscow.—Sweetmeats and sugar candy.  
661
188 Ootkin, Basil, Tver.—Cakes.  
661
189 Belolipietsky, Michael, Tula.—Cakes.  
661
190 Tselikoff, Theodore, Moscow.—  
Vegetable oils and linseed oil cakes.  
662
192 Zablotsky, Dessetovsky Paul, Krymnik, Government of Kieff, District of Tchigrin.—  
Camline seed oil.  
662

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195 Agricultural Museum of the Ministry of Domains, St. Petersburg.—Samples of cotton and cotton seed grown in Turkistan, Central Asia.  
665
196 Wishaw, Alfred, St. Petersburg.—  
Vologda flax.  
666
197 Warschafsky, A., St. Petersburg.—Flax.  
666
198 Repnin, Prince Nicolas, Fagotin, Government of Poltawa, District of Periatin.—Flax in different stages of preparation.  
666
199 Pskov Statistical Committee.—  
Flax from the Government of Pskov.  
666
200 Nemiloff, Anthony, Orel.—Hemp cleaned and uncleansed.  
666
201 Maximoff, Basil, Zagorye, Government of Kostrma, District of Nerekhta.—Flax raw and clean.  
666
202 Kazan Model Farm, Kazan.—Flax.  
666
203 Karamysheff, Nicholas, Polossy, Government of Pskov, District of Pskov.—Flax.  
666
204 Karamysheff, Eugene, Torjok, Government of Tver.—Flax.  
666
205 Gent & Co., Pskov.—Flax.  
666
206 Riga Exchange Committee, Riga.—Flax and hemp.  
666
207 Cartau, Robert, Pskov.—Flax.  
666
208 Vassilief, Nicolas, Ovekque.—Flax, clean and half clean, flax tow.  
666
209 Bykoff, Theodore, Vologda.—Flax.  
666
210 Mariolaki, P., Rostoff on the Don.—Washed wool of the Russian Donskoy breed.  
667
211 Stichinsky, Simon, Gololubovo, near Voronesh.—Wool in fleece.  
667
212 Orloff, Nicolas, Repievka, Government of Saratoff, District of Dalashoff.—Wool in fleece.  
667
213 Warschafsky, A., St. Petersburg.—Wool Rambouillet and Rambouillet Negretti breeds.  
667
214 Moshevscky, Wladislav, Odessa.—Wool of common Don breed.  
667
215 Mariynska Model Farm, near Saratoff.—Wool in fleece.  
667
216 Labensky, V., Okence, Government & District of Warsaw.—Samples of wool.  
667
667
218 Komarovsky, Count, Government & District of Orel.—Wool in fleece, Russian and Negretti breeds.  
667
219 Glinka, Nicolas, Szczavin, Government of Lomza, District of Ostredouka.—Wool.  
667
220 Ganeshin Brothers & Co., Moscow.—Washed wool, Meits and Trizgi breed.  
667
221 Fatz, Theodore, Oliviopol, Government of Kherson.—Wool in fleece, Spanish breed.  
667

For classes of exhibits, indicated by numbers. i end of entries, see Classification, pp. 22-24.
Machines, Implements, Engineering, and Administration.

222 Falz, Fein, Edward, Kakhovka, Government of Tauride.—Washed and unwashed wool. 667
223 Baklanoff's, K. K., Sons, Moscow.—Washed wool, merino breed. 667
224 Pokrovsky Sisterhood of Charity, Moscow.—Cocoons of silk-worms, floss and raw silk. 668
225 Lootchinsky, Laurentius, Oaman, Government of Kief.—Cocoons, raw and floss silk. 668
226 Kozishnikoff, Peter, Veliki Ooustioog, Government of Vologda.—Bristles. 669

Machines, Implements, and Processes of Manufacture.

227 Lilpop, Rau, & Loevenstein, Warsaw.
   a Reaping-machine. 672
   & Threshing-machine for corn and clover-seed. 673

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
JAPAN.
Location, South-west Corner of Agricultural Hall.

Arboriculture, Agricultural Products, Fish Culture.

Arboriculture and Forest Products.
1 Kuwangiyo-Riyo (Imperial Board of Agriculture, Industry, & Commerce), Tokio.
   a Specimens of trees. 600
   b Dye woods, barks, and galls. 602
   c Resins, etc. 603
2 Matsu-o, I., Tokio.—Bamboo. 604

Agricultural Products.
3 Kuwangiyo-Riyo (Imperial Board of Agriculture, Industry, & Commerce), Tokio.
   a Rice, millet, wheat, sorghum, Indian corn, etc. 603
   b Beans, peas, etc. 604
   c Teas, green and black. 623
   d Seeds. 624
4 Kaitakushi (Department for the Colonization of the island of Yesso) Tea. 605
5 Shirakawa-ken, Local Government of.—Tobacco leaves, cut and uncut. 623
6 Kagoshima-ken, Local Government of.—Tobacco leaves, cut and uncut. 623
7 Shiga-ken, Local Government of.—Tobacco leaves, cut. 624
8 Kiyoto, Municipality of, Kiyoto-fu.—Tobacco leaves, cut and uncut. 623
9 Osaka, Municipality of, Osaka-fu.—Tobacco leaves, cut and uncut. 623
10 Nagasaki-ken, Local Government of.—Cigars. 623
11 Saga-ken, Local Government of.—Tobacco. 623
12 Noda, D., Kumamoto, Province of Higo.—Tobacco leaves and cigars. 623
13 Kiriu-Kocho-Kuwaisha (First Japanese Manufacturing & Trading Company), Tokio.—Cigarettes and tea. 623
14 Susuki, S., Province of Hiuga.—Tea. 623
15 Kuroki, Y., Province of Hiuga.—Tea. 623
16 Otori, M., Province of Hiuga.—Tea. 623
17 Sato, S., Province of Hiuga.—Tea. 623
18 Womura, I., Province of Hiuga.—Tea. 623
19 Watanebe, M., Province of Hitachi.—Green tea. 623
20 Yebihara, Y., Province of Hitachi.—Green tea. 623
21 Kataura, J., Province of Hitachi.—Green tea. 623
22 Kuroda, N., Province of Higo.—Green tea. 623
23 Kamimura, N., Province of Higo.—Green tea. 623
24 Kaku, S., Province of Higo.—Green tea. 623
25 Fujita, H., Province of Higo.—Green tea. 623
26 Kobori, C., Province of Higo.—Green tea. 623
27 Hirano, H., Province of Higo.—Black tea. 624
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143 Maceda, Leon, Province of Laguña.
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152 Dimayuga, Procesa, Province of
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153 Reyes, Juan, Province of Bohol.
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154 Roa, A., & Son, Province of Cebú.
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155 Beluyos, Damian, Province of Ba-
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163 Provincial Board, Province of Samar.—Balibago barks.
164 Cortina, Mariano de la, Province of Batangas.—Maguey plant.
165 Provincial Board, Province of Manila.—Balibago fibres.
166 Argoncillo, Eustaquio, Lopez, Province of Tayabas.—Abacá fibres.
167 Figueroa, Andrés, Province of Albay.—Abacá fibres.
168 Rodríguez, José, Vigan, Province of Ilocos Sur.—Maguey.
169 Muñoz & Bros., Province of Albay.—Abacá and cabé negro.
170 Provincial Board, Province of Camarines N.—Balibago fibres and abacá.
171 Gallegos, Tomás, Province of Albay.—Abacá lúpix.
172 Medina, Ildefonso, Province of Mindoro.—Abacá.
173 García, Cirilo, Guinobatan, Province of Albay.—Abacá.
174 Provincial Board, Burasun, Province of Leite.—Cabo negro and Nabó.
175 Parochial Curate, Province of Pangasinan.—Textile substances.
176 Banson, Nicolas, Province of Batan.—Textile vegetable fibres and samples of work.
177 Banson, Arcadio, Province of Batan.—Dantan cord.
178 Provincial Board, Province of Pangasinan.—Textile vegetable fibres and samples of work.
179 Mangataren, Parson of, Pangasinan.—Alinoa bark and ropes.
180 Provincial Board, Province of Bohol.—Malacapas.
181 Jesús, Francisco de, Province of Pampanga.—Cord of thistle fibres.
182 Provincial Board, Province of Pampanga.—Textile vegetable fibres.
183 Vera, Rosa de, Province of Albay.—Nito.
184 Provincial Board, Province of Antigua.—Textile vegetable substances.
185 Liñas, Gabriel, Province of Manila.—Dugtung-ajas bindweed.
186 Provincial Board, Province of Albay.—Bark and abacá fibres.
187 Provincial Board, Province of Laguna.—Abacá.
188 Reyes, Andrés, Province of Samar.—Abacá.
189 Juan, Fernando, Tanuan, Province of Leite.—Abacá lay-ajon.
190 Peñaflor, Ines, Province of Cavite.—Abacá.
191 Nieva, Calixto M., Province of Mindoro.—Abacá.
192 Perfecto, Teodora, Province of Camarines Sur.—Abacá.
193 Gallegos, Tomás, Province of Batangas.—Abacá lúpix.
194 Perez, Agustin, Province of Albay.—Abacá fibres.
195 Rivera, Gregorio, Orion, Province of Bataan.—Balibago fibres.
196 Reyes, Juana, Lemery, Province of Batangas.—Prepared abacá.
197 San Isidro, Parson of, Province of Pargasman.—Cabulagna roots, and split bark.
198 Esteves, Félice, Province of Albay.—Nito and piña.
199 Adriatano, Luciano M., Province of Mindoro.—Cabo negro.
200 Zugadi, Nicolás, Province of Bula¬can.—Nito.
201 Provincial Board, Province of Bohol.—Textile vegetable fibres, etc.
202 Buison, Julian, Province of Pampanga.—Bark of the buri palm tree.
203 Peele, Hubbell, & Co., Santa Mesa, Province of Manila.—Abacá rigging.
204 Villamarzo, Tiburcio, Province of Tayabas.—Cabo negro cables, nabo and pasao fibres.
205 Rivera, L. de, Province of Bataan.—Bark of the malacacas tree.
206 Panda, Corporation of, Province of Antigué.—Pineapple leaf fibres.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
ANNEXES AND SPECIAL EXHIBITS IN THE DEPARTMENT OF AGRICULTURE.

No. 69. CANADIAN LOG HOUSE.

Size, 40 feet by 64.

Canadian Commission.

Is one story high, constructed of logs, and located close by the British Government Buildings. Its materials and contents constitute an exhibit of Canadian arboriculture and forest products.

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|     | b Sugar maple.  
|     | c Ash birch.  
|     | d Chestnut elm.  
|     | e Hemlock butternut.  
|     | f Yellow pine, red cherry.  
|     | g Spruce cedar.  
|     | h Black walnut.  
|     | i Poplar oak.  
|     | j Pear wood.  
| 2   | Quercus & Genana, Victoria, B. C. - Oak.  
| 3   | Canadian Commission, Victoria, B. C. - Arbutus.  
| 4   | George, D. F., Fredericton, N. B. - Clapboards.  
| 5   | Moody & Nelson, Victoria.  
|     | a Native woods, etc.  
|     | b Shingles.  
| 6   | Layard, W. P., Victoria. - Oak flooring, etc.  
| 8   | Layard, W. P., Victoria, B. C. - Pine.  
| 9   | Cusack, H. P., Newberry. - Flour barrel hoops.  
| 10  | Richardson, Peter, Chatham. - Hoops.  
| 11  | Lactinbros, Wm., Quebec. - Yellow pine planks.  
| 12  | Rochester, I., Ottawa. - Yellow pine, etc.  
| 13  | Head, James S., Ottawa. - Pine shingles.  
| 14  | Perley & Patton, Ottawa. - Yellow pine laths.  
| 15  | Silliman, James R., Toronto. - Pine lumber, etc.  
| 16  | Oliver, John, Toronto. - Chestnut, ash, oak, etc.  
| 17  | Colwell, H., & Son, Ontario. - Ash.  
| 18  | Young, Levi, Quebec. - Board lumber.  
| 19  | Bronsons & Weston, Ontario. - White pine.  
| 20  | Lachlaw, W., Bros., Arnprior. - Pine.  
| 21  | Canadian Commission, Victoria, B. C - a Dogos pine.  
|     | b Dogwood.  
| 22  | Newell, George, Ottawa. - Ash columns.  
| 23  | New Brunswick Advisory Board.  
|     | a Woods, etc.  
|     | b Maple logs.  
|     | c Ash logs.  
|     | d Birch logs.  
|     | e Squared birch.  
| 24  | Canadian Commission, Victoria, B. C. - Mouldings.  
| 25  | Hayward & Jenkinson, Victoria, B. C. - Mouldings, etc.  

No. 144. CUBAN ACCLIMATION GARDEN.

Emile Lachaume, Proprietor.

Contains a variety of tropical plants, etc. Situated south of Horticultural Hall.
No. 165. WAGON BUILDING.

Size, 144 feet by 196 feet.

Constructed of wood, one story high, situated north-east of Agricultural Hall, consists of three lines of sheds. Is used to display wagons, trucks, etc.

Arboriculture, Machines, Engineering, Administration, Vehicles.

Arboriculture and Forest Products.

1 Reppard, R. B., Savannah, Ga.—Yellow pine timber. 682

Machines, Implements, and Processes of Manufacture.

2 Decrow, A. W., Bangor, Maine.—Scavenger. 674
3 Lynch, Peter, Mt. Holly, N. J.—Hog scalders. 674

Agricultural Engineering and Administration.

4 Wenkenbach, W., & Sons, Philadelphia, Pa.—Beer wagon. 682
5 Keiser, Joseph, New York, N. Y.—Beer wagon. 682
6 Sebastian, Jacob, New York, N. Y.—Wagon and truck. 682
7 Crater, Charles H., North Kingsville, O.—Vehicle coupling. 682
8 Lehig Car Manufacturing Co., Stemton, Pa.—Platform, spring wagon, truck wagon. 682
9 Studebaker Bros. Manufacturing Co., South Bend, Ind.—Farm, lumber, and express wagons. 682
10 Cortland Wagon Manufacturing Co., Cortland, N. Y.—Platform spring business wagon. 682
11 Jarboe, John W., New York, N. Y.—Paper model of wagon body. 682
12 Adgate, J. J., New York, N. Y.—Self-unloading wagon. 682
13 Carré, W. W., New Orleans, La.—Lumber wagon. 682
14 Ressler, H. & G., Philadelphia, Pa.—Carts and wagons. 682
15 Server & Brenz, Philadelphia, Pa.—Wagons. 682
16 Mills & Combs, Wilmington, Del.—Wagon. 682
17 Rech, Jacob, Philadelphia, Pa.—Milk wagon. 682

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.

18 Becker, Jacob, jr., Seymour, Ind.—Farmers' wagon. 682
19 Beggs, John, & Sons, Philadelphia, Pa.—Wagon and wagon. 682
20 Lengert, George, & Son, Philadelphia, Pa.—Express wagons. 682
21 Winchester & Partridge Manufacturing Co., Whitewater, Wis.—Wagons. 682
22 Knickerbocker Ice Co., Philadelphia, Pa.—Ice wagon, and set of wheels. 682
23 Wright Spring Co., Denmark, Iowa.—Wagon springs. 682
24 Heytler, Frank, Burlington, Iowa.—Wagon. 682
25 Wilson, Childs, & Co., Philadelphia, Pa.—Wagons and carts. 682
26 Kramer, Jacob, New York, N. Y.—Dumping wagon. 682
27 French & Co., Davenport, Ia.—Piano truck. 682
28 Schauz, C., Philadelphia, Pa.—Business and express wagons. 682
29 Funk & Hertzler, Burlington, Ia.—Farm wagons. 682
30 Rauch, Charles, Cleveland, O.—Ice wagon. 682
31 Harrison, Lautz Bros., & Co., South Bend, Ind.—Dump wagon. 682
32 Austin, Tomlinson, & Webster Manufacturing Co., Jackson, Mich.—Lumber wagons. 682
33 Fish Bros. & Co., Racine, Wis.—Farm and California rack bed wagons. 682
34 Moline Wagon Co., Moline, Ill.—Farm and spring wagons. 682
35 Schuttler, Peter, Chicago, Ills.—Spring farm and freight wagons. 682
36 Kansas Manufacturing Co., Leavenworth, Kansas.—Farm wagons. 682
37 Milburn Wagon Co., Toledo, O.—Spring farm and freight wagons, sleds. 682
38 Stryker, Peter J., New Brunswick, N. J.—Self-loading excavator. 682

No. 166. POMOLOGICAL BUILDING.

Size, 182 feet by 192 feet.

Constructed of wood, one story high, situated east of Agricultural Hall. Is designed for the exhibit of fruits in season.
No. 167. BREWERS' BUILDING.

Architect, H. J. SCHWARZMANN.—Size, 272 feet by 96 feet.

Erected under the auspices of the United States Brewers' Association.

Constructed of wood in the style of Machinery Hall, and situated on Lansdowne drive, opposite the northeast corner of Agricultural Hall. It contains a model brewery, and exhibits the several processes of manufacturing malt liquors.

### Agricultural, Animal, and Vegetable Products.

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<tr>
<th>Agricultural Products</th>
<th>Animal and Vegetable Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Palin, Thomas, Brooklyn, N. Y.—Malt.</td>
<td>29 Howe &amp; French, Boston, Mass.—Isinglass.</td>
</tr>
<tr>
<td>6 Committee on Barley &amp; Malt, New York, N. Y.—Barley and malt.</td>
<td>31 Greenway, John, Syracuse, N. Y.—Beer and porter.</td>
</tr>
<tr>
<td>7 Perot's, Francis, Sons, Philadelphia, Pa.—Barley and malt.</td>
<td>32 Hartung &amp; Krantz, Honesdale, Pa.—Beer.</td>
</tr>
<tr>
<td>12 Pardee, Charles W., Oswego, N. Y.—Barley and malt.</td>
<td>37 Hinckel, Frederick, Albany, N. Y.—Beer.</td>
</tr>
<tr>
<td>13 Lynde, B. A., Buffalo, N. Y.—Malt.</td>
<td>38 Yuengling &amp; Sons, Pottsville, Pa.—Ale, porter, and beer.</td>
</tr>
<tr>
<td>16 Poke, Charles, Chicago, Ill.—Malt.</td>
<td>41 Bolton, S., &amp; Sons, Lansingburg, N. Y.—Ale.</td>
</tr>
<tr>
<td>19 White, Rufus P., New York, N. Y.—Malt and barley.</td>
<td>44 Smith, Robert, Philadelphia, Pa.—Ale.</td>
</tr>
<tr>
<td>23 Uhiman, Simon, New York, N. Y.—Hops.</td>
<td>48 Blatz, Valentine, Milwaukee, Wis.—Beer.</td>
</tr>
<tr>
<td>24 Dole Bros., Boston, Mass.—Hops.</td>
<td>49 Reuter &amp; Alley, Boston, Mass.—Ale.</td>
</tr>
</tbody>
</table>

*For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.*
Animal and Vegetable Products, Machines, Implements.

50 Walker, J., & Co., Cincinnati, O.—Ale. 660
51 Clausen, H., & Co., New York, N. Y.—Beer. 660
52 Anheuser, E., & Co.'s Brewing Association, St. Louis, Mo.—Malt liquor. 660
53 Pfannenstiel, C., Philadelphia, Pa.—Beer. 660
54 Ruppert, Jacob, New York, N. Y.—Beer. 660
55 Gukes, C., Philadelphia, Pa.—Ale. 660
56 Philip Best Brewing Co., Milwaukee, Wis.—Malt liquor. 660
57 Jones, David, New York, N. Y.—Malt. 660
58 Barbey, Peter, Reading, Pa.—Beer. 660
59 Feigh, Adrian, New York, N. Y.—Beer. 660
60 Kane, E., & Co., Brooklyn, N. Y.—Beer. 660
61 Rulss & Horrman, Stapleton, N. Y.—Beer. 660
62 Hofstel's, A., Sons, New York, N. Y.—Beer. 660
63 Ziegele, Albert, Buffalo, N. Y.—Beer. 660
64 Schmitte & Kohne, New York, N. Y.—Beer. 660
65 Jos. Schiltz Brewing Co., Milwaukee, Wis.—Beer. 660
66 Mayer & Bachman, Staten Island, N. Y.—Beer. 660
67 Bechtel, George, Staten Island, N. Y.—Beer. 660
68 Grasser & Brand, Toledo, O.—Beer. 660
69 Ferris, H., & Son, New York, N. Y.—Ale. 660
70 Ehrel, George, New York, N. Y.—Beer. 660
71 Ebling, Philip & William, Morris- sania, N. Y.—Beer. 660
72 Hoffman & Merkel, New York, N. Y.—Beer. 660
73 Loewer, Valentine, New York, N. Y.—Beer. 660
74 Urg, Joseph, St. Louis, Mo.—Beer. 660
75 Lemp, Wm. I., St. Louis, Mo.—Beer. 660
76 Ellis & Betz, New York, N. Y.—Beer. 660
77 Mark, J. & F., Brooklyn, N. Y.—Beer. 660
78 Finck, A., & Son, New York, N. Y.—Beer. 660
79 Voigt, E. W., Detroit, Mich.—Beer. 660
80 Kuechle, Joseph, St. Josephs, Mo.—Beer. 660
81 Rose, Miss Sophie, Baltimore, Md.—Beer. 660
82 Boeufleine, C., Bro., & Co., Bennett's Station, Pa.—Beer. 660
83 Seiger, I., Baltimore, Md.—Beer. 660
84 Schloterer, S., Philadelphia, Pa.—Beer. 660
85 Howard & Fuller, Brooklyn, N. Y.—Ale. 660
86 Schwaner & Amend, New York, N. Y.—Beer. 660
87 McKechnie, J. & A., Canandaigua, N. Y.—Ale and beer. 660
88 Philip Best Brewing Co., Milwaukee, Wis.—Beer. 660
90 Hughes, H. R. & M., Pittston, Pa.—Ale. 660
91 Liebmann's, S., Sons, Brooklyn, N. Y.—Beer. 660
92 Hollender & Co., New York, N. Y.—Beer. 660
93 Lyman, T. C., & Co., New York, N. Y.—Ale. 660
94 Hawkins, Chas. P., New York, N. Y.—Ale. 660
95 Anheuser, E., Co.'s Brewing Association, St. Louis, Mo.—Beer. 660
96 Flanagan & Wallace, New York, N. Y.—Ale. 660
97 Beasley's Waukegan Brewing Co., Chicago, Ill.—Ale. 660
98 Von der Horst, J. H., Baltimore, Md.—Beer. 660
99 Beadleston, Price, & Woerz, New York, N. Y.—Ale. 660
100 Stein, Conrad, New York, N. Y.—Beer. 660

Machines, Implements, and Processes of Manufacture.

101 Kampf, Stephen, Albany, N. Y.—Malt-shovels. 670
102 Lynde, B. A., Buffalo, N. Y.—Malt-shovels. 670
103 Knapp, S. P., New York, N. Y.—Malt shovels. 670
104 Beardsley, B. A., Waterville, N. Y.—Hop press. 673
105 Ingraham & Beard, Chicago, Ill.—Grain separator and grader. 673
106 Keastner, Chas., & Co., Chicago, Ill.—Feed-mills. 674
107 Haberman, S., New York, N. Y.—Beer-swimmer. 674
108 White's N. Y. Malt House, New York, N. Y.—a Plows, shovels, etc. 670
   b Elevator buckets, etc. 674
110 Roos, Aug., New York, N. Y.—Beer-swimmer. 674
111 Zoller, A., Hoboken, N. J.—Barrel- washer, valves, and faucets. 674
112 Steubing, Henry, New York, N. Y.—Ice-swimmer. 674
113 Decker, John, & Son, Philadelphia, Pa.—Ice-swimmers, water-cutting-can, funnels, and yeast-sieve. 674
114 Iron C'ad Can Co., New York, N. Y.—Apparatus for preserving ales, beer, etc. 674

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Machinery, Implements, Engineering, Administration.

115 Trotman & Ott, Philadelphia, Pa. — Cooler. 674

116 Spiess, Fr., New York, N. Y.—Malt-mill. 674

117 Schalk, C. W., Reading, Pa.—Malt-mill. 674

118 Hupfel, Adolf G., New York, N. Y. —Barrel-rolling machine. 674

119 Bergner, Theodore, Philadelphia, Pa.—Cork-driver, valves. 674

120 Otto, John M., Brooklyn, N. Y.—Beer-cooler, ice-swimmer, buckets. 674

121 Union Hardware Co., New York, N. Y.—Beer-coolers. 674

122 Kirby Bung Manufacturing Co., Cincinnati, O.—Bung machine and saw. 674

123 Cornell, G. B., Chicago, Ill.—Bung-bushes. 675

124 Union Machine Works, New York, N. Y.—Malt-mill. 674

125 Haas, Edward, Philadelphia, Pa.—Malt-mill, scourer, and cleaner. 674

126 Stoll, Cha., Brooklyn, N. Y.—Scales, malt-mill. 674

127 Bremer, J. L., Bro., & Co., New York, N. Y.—Grain-bags. 674

128 Littlejohn, L., New York, N. Y.—Bung-bushes and tools. 674

129 Spiess, Fr., New York, N. Y.—Pumps, belt-stretcher, shaving-machine. 674

130 Storms, James, Buffalo, N. Y.—Elevator buckets. 674


132 Schmah, Martin, New York, N. Y.—Copper-washing apparatus. 674

133 Woerle, W., Milwaukee, Wis.—Ice-swimmer. 674

134 Murphy, C. J., New York, N. Y.—Testing still. 674

135 Hupfel, J. C. G., New York, N. Y.—Barrel-rinsing machine. 674

136 Woehrle, Cha., New York, N. Y.—Elevator buckets. 675


138 Morrison, J., Portsmouth, N. H.—Hoghead. 675

139 Burkhardt, G. J., & Co., Philadelphia, Pa.—Vats and tanks. 675

140 Link, John, Cincinnati, O.—Barrels and kegs. 675

141 Fisher & Hall, Philadelphia, Pa.—Cedar tubs. 675

142 Smith, John M., & Son, Philadelphia, Pa.—Steam-tub. 675

143 Dieringer, C., Cincinnati, O.—Cooper’s work. 675

144 Lutz, R. F., Wabash, Ind.—Kegs and staves. 675

145 Schwarzwaldler & Son, New York, N. Y.—Kegs, barrels, and hogheads. 675

146 Luckhardt Bros., Columbus, O.—Kegs. 675

147 Wendt, Samuel, Brooklyn, N. Y.—Tubs. 675

148 Seligsberg, Arnold, New York, N. Y.—Tubs, vats, malt-holders, and chests. 675

Agricultural Engineering and Administration.

149 White’s N. Y. Malt House, New York, N. Y.—Carts. 682

150 Saal & Schlic, Philadelphia, Pa.—Beer wagon and machinery. 682

151 Wenkenbach, W. L., Philadelphia, Pa.—Beer-wagon. 682

152 Kiesler, Joseph, New York, N. Y.—Beer-wagon. 682

153 Brunner, August F., New York, N. Y.—Plan of ice-house. 683

154 Wisker, Aug., Boston, Mass.—Model of brewery. 683

155 Weibacher, P., New York, N. Y.—Hop-kiln. 683

156 Stoll, Charles, Brooklyn, N. Y.—Model of brewery. 683

157 Holden, D. L., Philadelphia, Pa.—Drawings of ice and refrigerating machines. 683

158 Seligsberg, A., New York, N. Y.—Grain-box. 683

159 White’s N. Y. Malt House, New York, N. Y.—Kiln flooring and furnace. 683

160 Bergner, Theodore, Philadelphia, Pa.—Malt turner and kiln. 683

161 Spangenburg, Schroeder, & Co., Milwaukee, Wis.—Wire kiln surface. 683

162 Hughes, W. W., & Son, Philadelphia, Pa.—Malt-kiln, etc. 683

163 Hampel, Otto, New York, N. Y.—Model malt-kiln. 683

164 Lieber, Robert, Boston, Mass.—Model of brewery. 683

165 Korn, George W., Philadelphia, Pa.—Refrigerator. Brewers’ store. 683

166 Shaia, O. S., Philadelphia, Pa.—Block of coal. 101

167 German Rock Asphalt Co., New York, N. Y.—Cement flooring. 103

168 White’s New York Malt House elevator, New York, N. Y.—Cement flooring. 103

169 Mock, Isidor, Brooklyn, N. Y.—Cement floors. 103

170 Meyers, A. G., New York, N. Y.—Compound for lining barrels. 103

171 Wehn, G. H., Philadelphia, Pa.—Artificial stone. 103

172 Doerchuck, Gustav, Brooklyn, N. Y. 202

173 Hatter, Carl, New York, N. Y.—Bottle-stoppers. 215

174 Brown & Jones, Waterville, N. Y.—Stove to dry hops. 222


176 Bremer, J. L., Bro. & Co., Philadelphia, Pa.—Seamless bags. 229

177 Tucherfarber, F., & Co., Cincinnati, O.—Show-cards. 262

178 Simon, A., New York, N. Y.—Weather-vanes. 283

For U. S. S. S. of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Agricultural Engineering and Administration.

179 Wells, Hope, & Co., Philadelphia, Pa.—Metallic signs. 283
180 Trageser, John, New York, N. Y.—Copper work. 284
181 Toope, Charles, New York, N. Y.—Grate-bars. 573
182 Brown, A. & F., New York, N. Y.—Horizontal engine, shafting, pulleys, etc. 552
183 Vogt, Henry, & Bro., Brooklyn, N. Y.—Tubular boiler. 552
184 Brown, A. & F., New York, N. Y.—Shafting, pulleys, and hangers. 553
185 Albany Lubricating Compound & Cup Co., New York, N. Y.—Oil cups. 555
186 Niagara Steam Pump Works, Brooklyn, N. Y.—Pumps. 560
187 Schutte & Gehringer, Philadelphia, Pa.—Pumps. 560
188 George F. Blake Manufacturing Co., New York, N. Y.—Steam pumps. 560
189 Zinsser, Wm., & Co., New York, N. Y.—Pumps. 560
190 Knowles Steam Pump Works, New York, N. Y.—Pumps. 560
191 Cope & Maxwell Manufacturing Co., Cincinnati, O.—Air pumps. 561
192 Krakovicz, F. O., Walkertown, Ind.—Ventilator. 562
193 Otis Bros., New York, N. Y.—Elevator. 563
194 Bawer, E., Brooklyn, New York.—Racking-off hose. 564
195 Maegerlein, Chas., Chicago, Ill.—Hose. 564
196 Fairbanks & Ewing, Philadelphia, Pa.—Scales. 571
197 Haas, Edward, Philadelphia, Pa.—Scales and hopper, etc. 571
198 Buffalo Scale Co., Buffalo, N. Y.—Scales. 571
199 Willing & Co., New York, N. Y.—Racking-cock. 587
200 Schmitz, Theodore, New York, N. Y.—Britannia measures. 587
201 Guth, H., New York, N. Y.—Brewers' instruments. 587
202 Tagliabue, Charles J., New York, N. Y.—Brewers' instruments. 587
203 Travis, M. W., New York, N. Y.—Weighing and measuring implements. 587
204 Fiedlerin, F., New York, N. Y.—Mashing-machine. 587
205 Schaftaus, John, New York, N. Y.—Mashing-machine. 587
206 Schimper & Immen, Newark, N. J.—Mashing-machine. 587
207 Spittler & Lang, New York, N. Y.—Mashing and shaving machine. 587

GREAT BRITAIN.

Animal and Vegetable Products, Engineering, Administration.

Animal and Vegetable Products.
1 Pickering, Jonathan, Stockton-on-Tees, England.—Must. 661

Agricultural Engineering and Administration.
2 Lawrence & Co., London, England.—Refrigerators. 661

CANADA.

Animal and Vegetable Products.

Animal and Vegetable Products.
1 Davis, T., & Bro., Toronto, Canada.—Porter and ale. 661
2 Keith & Son, Halifax, N. S.—Ale. 661

GERMANY.

(West of Nave, Columns 1 to 4.)

Agricultural Products.

Agricultural Products.
1 Schlemmer, August von, Hochheim, Germany.—Malt. 623

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12—14.
No. 168. THE HOUSE APIARY.

Size, 10 feet by 16 feet.

J. S. Coe, Montclair, N. J.

Exhibits thirty-two colonies of Italian, Corinthian, and Cyprian bees at work making honey. Situated east of the Pomological Building.

No. 169. GUANO BUILDING.

Situated east of the Women’s Pavilion, and north of Fountain Avenue. Is used for the exhibition of fertilizers.

No. 171. WINDMILLS.

1 Eclipse Windmill Co., Beloit, Wis.—Three windmills for pumping water, grinding, etc.
2 U. S. Wind Engine & Pump Co., Batavia, Ill.—Two windmills.
3 Stover Wind Engine Co., Greensville, Pa.—One windmill.
4 Hartford Pump Co., Hartford, Conn.—One windmill for raising water by compressed air.

No. 172. HEADQUARTERS OF THE "PRACTICAL FARMER."

(Newspaper.)

Size, 10 feet by 16 feet.

J. R. Garretson, Proprietor, Rochester, N. Y.

Situated east of the Pomological Building. Office of the paper.

No. 173. HAY PRESS.


P. K. Dedrick & Co., Albany, N. Y.

Exhibits the perpetual baling press.

No. 176. BOILER HOUSE.

Size, 40 feet by 100 feet.

Situated directly east of Agricultural Hall, contains two Mast sectional boilers, manufactured at Springfield, Ohio, 100 horse-power each, which furnish steam to the machines in Agricultural Hall.
The Stated Displays in the Agricultural Department of the International Exhibition are as follows:

**AGRICULTURAL PRODUCTS.**

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<th>Product</th>
<th>Dates</th>
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<td>May 16th to 24th</td>
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<tr>
<td>Strawberries</td>
<td>June 7th to 15th</td>
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<tr>
<td>Early Grass Butter and Cheese</td>
<td>June 26th to July 6th</td>
</tr>
<tr>
<td>Early Summer Vegetables</td>
<td>June 20th to 24th</td>
</tr>
<tr>
<td>Honey</td>
<td>June 26th to 24th</td>
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<tr>
<td>Raspberries and Blackberries</td>
<td>July 3rd to 8th</td>
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<tr>
<td>Southern Pomological Products</td>
<td>July 18th to 22nd</td>
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<td>Melons</td>
<td>August 22nd to 26th</td>
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<tr>
<td>Peaches</td>
<td>September 4th to 9th</td>
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<tr>
<td>Northern Pomological Products</td>
<td>September 11th to 16th</td>
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<tr>
<td>Autumn Vegetables</td>
<td>September 15th to 23rd</td>
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<tr>
<td>Cereals</td>
<td>September 25th to 30th</td>
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<td>Potatoes and Feeding Roots</td>
<td>October 2nd to 7th</td>
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<td>Grapes</td>
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<td>Autumn Butter and Cheese</td>
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<td>Autumn Honey and Wax</td>
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**FIELD EXHIBITIONS.**

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<tr>
<td>Reaping Machines</td>
<td>July 5th to 10th</td>
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<tr>
<td>Fly-Casting Tournament</td>
<td>August 15th</td>
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**LIVE STOCK.**

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<th>Animal</th>
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<tr>
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<td>September 1st to 14th</td>
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<td>Dogs</td>
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<tr>
<td>Neat Cattle</td>
<td>September 21st to October 4th</td>
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<tr>
<td>Sheep</td>
<td>October 10th to 18th</td>
</tr>
<tr>
<td>Swine</td>
<td>October 10th to 18th</td>
</tr>
<tr>
<td>Poultry</td>
<td>October 27th to November 6th</td>
</tr>
</tbody>
</table>
EXHIBITIONS OF LIVE STOCK.

1. The live stock display at the International Exhibition will be held within the months of September, October, and November, 1876; the periods devoted to each family being as follows: Horses, mules, and asses, from September 1st to 14th. Dogs from September 1st to 8th. Horned cattle, from September 21st to October 4th. Sheep, swine, and goats, from October 10th to 18th. Poultry will be exhibited from October 27th to November 6th.

2. Animals to be eligible for admission to the International Exhibition must be, with the exception of trotting stock, walking horses, matched teams, fat and draught cattle, of such pedigree that the exhibitor can furnish satisfactory evidence to the Chief of Bureau, that as applied to thorough bred horses, as far back as the fifth generation of ancestors on both sides, they are of pure blood and of the same identical breed. As to short-horned cattle, they are registered in either Allen's, Alexander's, or the English herd-books. As to Holsteins, Herefords, Ayshires, Devons, Guernseys, Brittannys, Kereys, and other pure breeds, they are either imported or descended from imported animals on both sides. As to Jerseys, they are entered in the Herd Register of the American Jersey Club, or in that of the Royal Agricultural Society of Jersey. As to sheep or swine they are imported or descended from imported animals, and that the home-bred shall be of pure blood as far back as the fifth generation.

3. The term breed, as used, is intended to comprehend all animals where the distinction in form and character dates back through years of separation; for instance, it is held that the progeny of a pure-blood Jersey and a pure-blood Guernsey is not a thoroughbred but a cross-bred animal, and, as such, is necessarily excluded.

4. In awarding prizes to animals of pure blood, the judges will take into consideration chiefly the relative merits as to the power of the transmission of their valuable qualities; a cardinal object of the Exhibition being to promote improvement in breeding stock.

5. In case of doubt relative to the age of an animal, satisfactory proof must be furnished or the animal will be subject to examination by a veterinary surgeon; and should the state of dentition indicate that the age has not been correctly stated, the person so entering as an exhibitor will be prohibited from exhibiting in any class.

6. The forms of classification for awards, as given under each head, are intended except in the case of trotting stock, walking horses, matched teams, fat and draught cattle to apply to the animals of any pure breed that are entered for competition.

7. The Exhibition being open to the world, it is of the first importance that the best of their kind only be brought forward, as the character of the stock will be judged by the general average of those exhibited.

8. Exhibitors will be expected to furnish their own attendants, on whom all responsibility of the care of feeding, watering, and cleaning the animals, and also of cleaning the stalls, will rest.

9. Forage and grain will be furnished at cost prices, at depots conveniently located within the grounds. Water can be had at all hours, ample facilities being provided for its conveyance and distribution throughout the stock yards.

10. Exhibitors must supply all harness, saddlery, vehicles, and other appointments, and all such must be kept in their appointed places.

11. The Commission will erect ample accommodation for the exhibition and protection of live stock, yet contributors who may desire to make special arrangements for the display of their stock, will be afforded facilities at their own cost. Fractions animals, whether stallions, mares with foals, or bulls, will be provided with stalls of suitable character.

12. All stalls will be regularly and distinctly numbered; corresponding numbers on labels of uniform character will be given to each exhibitor, and no animal will be allowed to pass from its stall without its proper number attached.

13. Numbers alone will distinguish stock in the show yards, preceding the awards of prizes.

14. The judges of live stock will make examination of all animals on the opening day of each serial show, and will for that day have exclusive entrance to the show yard.

15. No premium will be awarded an inferior animal, though there be no competition.

16. All animals will be under the supervision of a veterinary surgeon, who will examine them before admission, to guard against infection, and who will also make a daily inspection and report. In case of sickness the animal will be removed to a suitable inclosure especially prepared for its comfort and medical treatment.

17. When animals are taken sick, the exhibitors may either direct the treatment themselves, or allow the veterinary surgeon appointed by the Commission to treat the case. In this latter event the exhibitor will be charged for all expenses incurred. All possible care will be taken of animals exhibited, but the Commission cannot be held responsible for any injury or accident.

18. A surcharge will be provided for the display and exercise of horses and cattle.

19. On the last day of each serial show, a public auction may be held of such animals as the exhibitors may desire to sell. Animals may be sold at private sale at any time during their exhibition. During the period of a serial show, no animal, even in the event of being sold, will be allowed to be definitely removed.

20. An official catalogue of the animals exhibited will be published.
21. Exhibitors of thoroughbred animals must, at the time of making their entries, file with the Chief of the Bureau a statement as to their pedigree, affirmed or sworn to before an officer authorized to take affidavits, and the papers so filed shall be furnished to the Judge of Expositions.

22. The ages of live stock must be calculated up to the opening day of the exhibition of the class to which they belong.

23. Sheep breeders, desiring to exhibit wool, the produce of the flocks, will display not less than five fleeces.

24. All animals must be entered according to the prescribed rules as given in forms of entry, which forms will be furnished to the applicant to the Chief of the Bureau of Agriculture.

**BREEDING HORSES.**

Mares entered as breeding animals must have had foals within one year of the show, or if in foal, certificates must be furnished to that effect.

All foals exhibited must be the offspring of the mare with which they are at foot.

Awards will be made to respective breeds for stallions, mares and stallions, six years and over; pure bred turf stallions, over four years and under six years; pure bred turf stallions, over two years and under four years; pure bred turf mares, six years and over; pure bred turf mares, over two and under six years.

Awards will be made for trotting stallions, six years and over; trotting stallions, over four years and under six; trotting stallions, over two years and under four; pure bred draught stallions, over four years and under six years; pure bred draught stallions, over two years and under four years; pure bred draught mares, six years and over; pure bred draught mares, over two and under six years; trotting brood mares, six years and over; trotting fillies, over four years, and under six; trotting fillies, over two years and under four.

**RUNNING AND TROTTING HORSES**

Shall be judged according to their record up to August 15th, 1876, due regard being had to present condition.

Awards will be made for running horses having made the fastest record; trotting stallions having trotted a mile within two-thirty; mares and geldings having trotted a mile within two-twenty-five.

**WALKING HORSES.**

Fast-walking horses, whether bred for agricultural purposes or the saddle, will compete in the ring for awards.

**MATCHED TEAMS.**

Awards will be made for matched teams having trotted a mile in two-thirty-five; matched stallions for heavy draught, over sixteen hands high, and over fifteen hundred pounds weight each; matched geldings for heavy draught, over sixteen hands high, and over fifteen hundred pounds weight each; matched mares for heavy draught, over fifteen hands high, and over fourteen hundred pounds weight each, matched mules for heavy draught, over fifteen and a half hands high, and over thirteen hundred pounds weight each.

**BREEDING ASSES.**

Awards will be made to respective breeds of pure bred jacks over six years; pure bred jacks over three years and under six; pure bred she-asses over six years; pure bred she-asses over three years and under six.

**NEAT CATTLE.**

No cow will be eligible for entry unless accompanied with a certificate that, within fifteen months preceding the show, she had a living calf, or that the calf, if born dead, was born at its proper time. No heifer entered as its calf must be accompanied with a certificate that she had been bulled before the first of April, or presents unmistakable proof of the fact to the judges. No bull above one year old can be entered unless he have been in nose, and the attendant be provided with a leading stick, which must be used whenever the animal is taken out of stall.

Awards will be made for the best herd of each respective breed, and for the best single animal of each breed.

Nect, cattle, of each respective breed, will compete individually for awards; bulls, three and over; bulls over two years and under three years; bulls over one year and under two years; cows four years and over; cows over three and under four years; cows or heifers in calf, over two years and under three years; yearling heifers. A sweepstakes award will be made for the best cow of any breed. A sweepstakes award will be made for the best cow of any breed.

**FAT AND DRAUGHT CATTLE.**

Animals entered as fat and draught cattle need not be of pure blood, but will compete on individual merits. Fat cattle must be weighed, and in general those will be judged best which have the greatest weight with the least surface and offal.

Awards will be made for best fatted steer of any age and breed; best fatted cow of any age or breed; most powerful yoke of oxen; most rapidly walking yoke of oxen; most thoroughly trained yoke of oxen; most thoroughly trained team of three or more yokes of oxen.

**BREEDING SHEEP.**

All sheep offered for exhibition must be accompanied with certificate to the effect that they have been born since the first of April, and the date given. If not fairly shorn, or if clipped so as to conceal defects, or with a view to improve the form or appearance, they will be excluded from competition.

Awards will be made to respective breeds for the best five animals of each breed, including one ram, the ewes all having had living lambs the past spring.

Awards will be made to respective breeds for rams two years and over; shearing rams.

A sweepstakes award will be made for the best ram, respectively of long, middle, and fine woolled breeds.

Awards will be made to respective breeds for ewes in pens of three, all having had living lambs; shearlings in pens of three.

A sweepstakes award will be made for the best pen of three breeding ewes, respectively of long, middle, and fine woolled breeds.

**FAT SHEEP.**

Fat sheep entered for competition must be weighed, and in general those will be judged best which have the greatest weight, with the least surface and offal.

Awards will be made for pen of three best fat fatted sheep of each breed; pen of three best fat fatted sheep of any breed.

**BREEDING SWINE.**

Every competing sow above one year old must have had a litter, or be in pig, and the owner must produce proof of these facts required. If a litter of pigs be sent with a sow, the young pigs must be sucklings, the offspring of the sow, and must not exceed the age of three months.
Awards will be made to respective breeds for the best pen of one boar and two breeding sows; for pen of sow and litter.

Awards will be made to respective breeds for boars two years old and over; boars one year old and under two years; boars between nine months and one year; breeding sows two years old and over; breeding sows one year old and under two years; pen of three sow pigs between nine months and one year.

A sweepstake award will be made for the best boar of any breed. A sweepstake award will be made for the best sow of any breed.

**FAT SWINE.**

Fat swine entered for competition must be weighed, and, in general, those will be judged best which have the greatest weight, with the least surface and offal.

Awards will be made for pairs of best fatted hogs of each breed; pairs of best fatted hogs of any breed.

**DOGS.**

Benches will be furnished free of charge. Exhibitors may themselves assume the cost of attendance upon their animals, but to provide for them who cannot conveniently attend the Exhibition, the Commission will assume the expenses of feeding and daily care, upon the payment of an attendance charge of three dollars upon each animal.

Awards will be made to respective breeds for dogs of two years and over; dogs of one year and under two; pups.

A sweepstake award will be made for the best foreign-bred dog of any breed. A sweepstake award will be made for the best home-bred dog of any breed.

Awards will be made to respective breeds for bitches of two years and over; bitches of one year and under two; bitch pups.

A sweepstake award will be made for the best foreign-bred bitch of any breed. A sweepstake award will be made for the best home-bred bitch of any breed.

**POULTRY.**

Poultry can only be exhibited in coops made after specifications furnished by the Bureau of Agriculture. The Commission will furnish coops and attendance upon payment of one dollar on each bird of the gallinaceous division, and two dollars on each pair of the aquatic division.

Awards will be made to respective breeds for pairs of one year and over, of chickens, turkeys, ducks, geese, swans, pigeons, guineas, and ornamental birds; for pairs under one year.

**FISH.**

Living fishes will be displayed in both fresh and salt water aquaria.

Awards will be made for largest display of fish of each species; largest display of fish of all species.
DEPARTMENT OF HORTICULTURE.
No. 151. HORTICULTURAL HALL.

Size 383 by 193 feet.

Architect, H. J. SCHWARZMAN.
Contractor, JOHN RICE, Philadelphia.

Wrought iron furnished by KEYSTONE BRIDGE COMPANY, Pittsburgh, Pa.
Cast iron furnished by SAMUEL J. CRESSWELL, Philadelphia.
Painting by JOSEPH CHAPMAN, Philadelphia.
Masonry by MOORE & SCATTERGOOD, Philadelphia.

Appropriations of the City of Philadelphia have provided the Horticultural Building, which is to remain in permanence as an ornament of Fairmount Park. It is on the Lansdowne Terrace, a short distance north of the Main Building and Art Gallery, and has a commanding view of the Schuylkill river and the northwestern portion of the city. The design is in the Moorish style of architecture of the twelfth century, the principal materials externally being iron and glass. The main floor is occupied by the central conservatory, 230 by 80 feet, and 55 feet high, surmounted by a lantern 170 feet long, 20 feet wide, and 14 feet high. Running entirely around this conservatory, at a height of 20 feet from the floor, is a gallery 5 feet wide. On the north and south sides of this principal room are four forcing houses for the propagation of young plants, each of them 100 by 30 feet, covered with curved roofs of iron and glass. Dividing the two forcing houses in each of these sides is a vestibule 30 feet square. At the centre of the east and west ends are similar vestibules, on either side of which are the restaurants, reception room, offices, etc. From the vestibules ornamental stairways lead to the internal galleries of the conservatory, as well as to the four external galleries, each 100 feet long and 10 feet wide, which surmount the roofs of the forcing houses. These external galleries are connected with a grand promenade, formed by the roofs of the rooms on the ground floor, which has a superficial area of 1800 square yards.

The east and west entrances are approached by flights of blue marble steps from terraces 80 by 20 feet, in the centre of each of which stands an open kiosque 20 feet in diameter. The angles of the main conservatory are adorned with eight ornamental fountains. In the basement, which is of fireproof construction, are the kitchen, storerooms, coal-houses, ash-pits, heating arrangements, etc.

The ground was graded and the foundations of Horticultural Hall laid on May 1st, 1875. The building was finished April 1st, 1876. It covers an area for exhibition purposes of 122,500 square feet, and cost about $300,000. This building will be permanent.
HORTICULTURAL HALL.

Scale, 80 ft. to 1 in.


CLASSIFICATION.

DEPARTMENT VII.—HORTICULTURE.

ORNAMENTAL TREES, SHRUBS, AND FLOWERS.

CLASS 700.—Ornamental trees and shrubs, evergreens.
CLASS 701.—Herbaceous perennial plants.
CLASS 702.—Bulbous and tuberous rooted plants.
CLASS 703.—Decorative and ornamental foliage plants.
CLASS 704.—Annuals and other soft-wooded plants, to be exhibited in successive periods during the season.
CLASS 705.—Roses.
CLASS 706.—Cactacea.
CLASS 707.—Ferns, their management in the open air and in ferneries, wardian cases, etc.
CLASS 708.—New plants, with statement of their origin.
CLASS 709.—Floral designs, etc.—Cut flowers, bouquets, preserved flowers, leaves, seaweeds. Illustrations of plants and flowers.—Materials for floral designs. Bouquet materials, bouquet holders, bouquet papers, models of fruits, vegetables, and flowers.

HOTHOUSES, CONSERVATORIES, GRAPERIES, AND THEIR MANAGEMENT.

CLASS 710.—Hothouse and conservatory plants.
CLASS 711.—Fruit trees under glass.
CLASS 712.—Orchids and parasitic plants.
CLASS 713.—Forcing and propagation of plants.
CLASS 714.—Aquatic plants under glass, or in aquaria, etc.
CLASS 715.—Horticultural buildings, propagating houses, hotbeds, etc., and modes of heating them. Structures for propagating and forcing small fruits.
CLASS 716.—Portable or movable orchard houses and graperies, without artificial heat. Frames, beds.

GARDEN TOOLS, ACCESSORIES OF GARDENING.

CLASS 720.—Tools and implements.—Machines for the transplanting of trees, shrubs, etc. Portable forcing pumps, for watering plants in greenhouses and methods of watering the garden and lawn.
CLASS 721.—Receptacles for plants.—Flower pots, plant-boxes, tubs, fern cases, jardinieres, etc. Window gardening. Plant and flower stands, ornate designs in iron, wood, and wire.
CLASS 722.—Ornamental wirework, viz.: fences, gates, trellis bordering of flower beds, porches. Park seats, chairs, garden statuary, vases, fountains, etc. Designations, labels, numbers.

GARDEN DESIGNING, CONSTRUCTION, AND MANAGEMENT.

CLASS 731.—Treatment of water for ornamental purposes, cascades, fountains, reservoirs, lakes.
CLASS 732.—Formation and after-treatment of lawns.
CLASS 733.—Garden construction, buildings, etc.—Rockwork, grottoes. Rustic constructions and adornments for private gardens and public grounds.
CLASS 734.—Planting, fertilizing, and cultivating.
**UNITED STATES.**

**Trees, Shrubs, Flowers, Hot-House Plants.**

<table>
<thead>
<tr>
<th>Ornamental Trees, Shrubs, Flowers, and Floral Designs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Wharton, Joseph, Philadelphia, Pa. —Eucalyptus globulus. 700</td>
</tr>
<tr>
<td>1a Bingham, Rodolphus, Camden, N. J.—Nelumbium luteum; sarracenia purpurea, drosera. 700</td>
</tr>
<tr>
<td>1b Bliss, G. K., &amp; Sons, New York, N. Y.—Gladiolus, brenclyeasis. 702</td>
</tr>
<tr>
<td>2 Lovering, Joseph S., Philadelphia, Pa.—Decorative foliage plants, etc. 703</td>
</tr>
<tr>
<td>3 Graham, Hugo, Philadelphia, Pa. a Decorative and ornamental foliage plants, etc. 704</td>
</tr>
<tr>
<td>b Begonias, soft-wooded plants, etc. 704</td>
</tr>
<tr>
<td>c Ferns, in collection. 707</td>
</tr>
<tr>
<td>d Floral designs and cut flowers. 709</td>
</tr>
<tr>
<td>4 Pennock Brothers, Philadelphia, Pa. a Foliage plants. 703</td>
</tr>
<tr>
<td>b Cut-flower designs. 709</td>
</tr>
<tr>
<td>4a Boyle, W. F., Philadelphia, Pa.—Decorative and ornamental foliage plants. 703</td>
</tr>
<tr>
<td>4b Comptonu, Louis F., New Brighton, N. Y.—Variety of coleus. 703</td>
</tr>
<tr>
<td>4c Eagle, Louis J., Philadelphia, Pa.—Decorative and ornamental foliage plants. 703</td>
</tr>
<tr>
<td>4d Robertson, Thomas, Philadelphia, Pa.—Decorative and ornamental foliage plants. 703</td>
</tr>
<tr>
<td>5 The Misses Richardson, Philadelphia, Pa.—Causus. 706</td>
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<tr>
<td>6 Fitzgerald, R., Philadelphia, Pa.—Cactus. 706</td>
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<tr>
<td>7 Miller &amp; Sievers, San Francisco, Cal. a Collection of Pacific coast cactus. 706</td>
</tr>
<tr>
<td>b Collection of ferns. 707</td>
</tr>
<tr>
<td>8 Such, George, South Amboy, N. J. a Decorative and ornamental foliage plants. 703</td>
</tr>
<tr>
<td>b Cactus, in collection. 706</td>
</tr>
<tr>
<td>c New plants. 708</td>
</tr>
<tr>
<td>9 Moon, Mahlon, &amp; Son, Morrisville, Pa.—Collection of ferns. 707</td>
</tr>
<tr>
<td>10 Dick, John, Philadelphia, Pa. a Cactus. 706</td>
</tr>
<tr>
<td>b Ferns. 707</td>
</tr>
<tr>
<td>11 Miller &amp; Hayes, Philadelphia, Pa.—Tropical ferns from Australia. 707</td>
</tr>
<tr>
<td>12 Parsons, S. B., &amp; Sons, Flushing, N. Y. a Varieties of ferns. 707</td>
</tr>
<tr>
<td>b Skeleton plants. 709</td>
</tr>
<tr>
<td>13 Sturtevant, Edmund D., Bordentown, N. J.—Ferns. 707</td>
</tr>
<tr>
<td>14 Saunders, William, Washington, D. C.—New and rare plants. 707</td>
</tr>
<tr>
<td>15 Rohrs, I., New York, N. Y.—Begonia treble; entirely new begonia. 708</td>
</tr>
<tr>
<td>16 Freeman, J. R., Georgetown, D. C.—Seedling begonia (large leaved species). 708</td>
</tr>
</tbody>
</table>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
Hot-House Plants and Appliances, Gardening Implements.

29 Brossé, Madame S. C., San Francisco, Cal.—Collection of California sea mosses. 709

30 Long Brothers, Buffalo, N. Y.—Floral designs, comprising monograms, in itials, etc. 709

31 Klag, Philip, New York, N. Y.—Preserved natural flowers. 709

31a Hazelhurst & Young, Philadelphia, Pa.—Cut flowers. (Special concession to sell in the Exhibition grounds.) 709

Hot-Houses, Conservatories, Graperies, and their Management.


33 Graham, Hugh, Philadelphia, Pa.—Hot-house and conservatory plants, etc. 710

34 Loevinger, Joseph S., Philadelphia, Pa.—Hot-house and conservatory plants. 710

35 Price, Stephen S., Philadelphia, Pa.—Hot-houses and conservatory plants. 710

36 Committee of the Congressional Library of the United States (Botanic Garden), Washington, D. C.—Official medicinal, tropical, and semi-tropical plants. 710

37 United States Agricultural Department, Washington, D. C.—Official medicinal and medicinal plants, mahogany, cocoa, chocolate, guava, papaw, rose apple, etc. 710

38 Baldwin, Mrs. M. W., Philadelphia, Pa.—Hot-house and conservatory plants. 710

39 Zoological Society, Philadelphia, Pa.—Australian tree fern. 710

40 Bines, Samuel M., Philadelphia, Pa.—India rubber tree. 710

41 Merryweather, Ann E., Camden, N. J.—Aloe. 710

42 Sellers, John, jr., Philadelphia, Pa.—Hot-house and conservatory plants. 710

43 Cummings, William, Philadelphia, Pa.—Orange tree, banana, ivy, and date palm. 710

44 Faust, William F., Philadelphia, Pa.—Phylodendron pertususum and water lily. 710

45 Mackenzie, Thos. J., Philadelphia, Pa.—Hot-house and conservatory plants, plants of commerce. 710

46 Johnson, Joseph, Philadelphia, Pa.—Xylo plant. 710

47 Cuthbert, Allen, Philadelphia, Pa.—Orange tree. 710

48 Carpenter, Mrs. George W., Philadelphia, Pa.—Collection of conservatory plants. 710

50 Abbott, Charles F., Philadelphia, Pa.—Century plants (green and striped), sago palm. 710

52 Agnew, Hannah A., Philadelphia, Pa.—Banana. 710

53 Morris, Galloway C., Philadelphia, Pa.—Hot-house and conservatory plants. 710

54 Hoffner, Jacob, Cincinnati, Ohio,—Sago palm over 100 years old, belonged to Robert Morris in 1776. 710

55 Stokton, John A., Philadelphia, Pa.—Fig tree. 710

56 Weightman, William, Philadelphia, Pa.—Hot-house and conservatory plants. 710

57 Hance, A., & Sons, Red Bank, N. J.—Cycas revoluta. 710

58 Schaffer, William L., Philadelphia, Pa.—Sago palms. 710

59 Cope, Alfred, Philadelphia, Pa.—Century plants. 710

60 Such, George, South Amboy, N. J.—Ferns, hot-house, and conservatory plants. 710

61 Clark, E. W., Philadelphia, Pa.—Century plants. 710

63 Moon, Mahlon, & Son, Morrisville, Pa.—Variegated pineapple. 710

63a Sturtevant, Edmund D., Bordentown, N. J.—Orchids and parasitic plants. 710

64 Wilson, John G., New York, N. Y.—Portable green-house boiler, hot water pipe with vapor pan attached. 715

64a Myers, Thomas J., & Son, Philadelphia, Pa.—Green-house boiler for heating conservatories. 715

65 Dick, John, Philadelphia, Pa.—Boiler for heating green-houses, conservatories, etc. 715

66c Warner, James, Philadelphia, Pa.—Boiler for heating green-houses, conservatories, etc. 715

65 Jordan Horticultural Co., St. Louis, Mo.—Heating apparatus for green-houses. 715

65a Hitchings & Co., New York, N. Y.—Corrugated fire-box, boilers, and base-burning water-heater for warming green-houses, conservatories, etc. 715

66 Smith & Lynch, Boston, Mass.—Portable boilers for heating green-houses. 715

67 Ellis, Charles R., New York, N. Y.—Base-burning boilers for heating green-houses, graperies, etc. 715

Garden Tools, Accessories of Gardening.


69 Jones, John M., Palmyra, N. Y.—Horticultural and floricultural implements of various styles and modifications. 721

75 Revolving-staff implements for pruning, transplanting, weeding, and cultivating. 2d. Implements to be used with one hand, for weeding, transplanting, and cultivating; and in one of its forms is very convenient and attractive for ladies' use. 720

69a Bliss, B. K., & Sons, New York, N. Y.—Hand seed-sower, fertilizer dropper. 720

69b Jenkins, George E., Concord, N. H.—Portable sprinkler and fountain for irrigating and ornamenting lawns, etc. 720

69c Farra, L. D., Philadelphia, Pa.—Lawn sprinkler. 720

70 Wheeler, W. F., Boston, Mass.—Hose liquid distributor, watering pot, insect annihilator, for garden and field, liquid manure distributor. 720

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12—14.
Garden Ornaments, Accessories, and Designs.

71 Moon, Mahlon, & Son, Morrisville, Pa.  
a Wheel hoe. 720  

a Tools and implements. 720  
b Receivers for plants, fern cases, etc. 721  
73 Bingham, O. A., Keene, N. H.—Revolving flower stand. 721  
74 Hewitt, A. H., & Co., North Cambridge, Mass.—Flower pots, hanging pots, ferneries, garden vases, etc. 721  
75 Pierce, Mrs. M. R., New York, N. Y.—Window attachments and other improved flower stands with water receptacle, sprinkling pan, and draining saucer. 721  
76 Chase, James, Rochester, N. Y.—Combined aquarium, plant stand, bird cage, and fernery. 721  
77 McClunie, Thomas, Hartford, Conn.—Drainer and evaporator with globe attachments for pots, vases and hanging baskets. 721  
78 Rolker, August, & Sons, New York, N. Y.—Flower pots, boxes, fern cases, flower stands, etc. 721  
79 Hills, George, Plainville, Conn.—Revolving flower stand with fountain attachment. For hydrants, self-sprinkling, surplus water caught by drip-pan. 721  
80 Perine, M., & Sons, Baltimore, Md.—Flower pots, stone and fancy earthenware. 721  
81 Pennock Brothers, Philadelphia, Pa.—Wardian cases, ferneries with shades 721  
82 Hess, John M., & Sons, Philadelphia, Pa.—Chandelier designs with baskets, hanging baskets, hanging ferneries, vases, etc. 721  
83 Freeman & Smith, Racine, Wis.  
a Aquaria, ferneries, fountains, vases, etc. 721  
b Plant stands, flower-pot brackets, window boxes and shelves, tree-tub castors, etc. 721  

Illustrated catalogues free. Goods packed flat for shipment.

84 Racine Hardware Co., Racine, Wis.  
a Plant and flower stands, ferneries, aquariums, etc. 721  
b Fountains, vases, sets, etc. 722  
85 Galloway & Graff, Philadelphia, Pa.  
a Parlor vases, window boxes, pots, fern cases, baskets, etc. 721  
b Terra-cotta stationary, vases, tazzas, pedestals. 722  
a Plant stands. 721  
b Trellises. 722  
87 Chase, Benj., jr., Derry, N. H.—Round-tapering flower stakes. 722  
88 Balderston, George, Colora, Md.—Sectional vases. 722  
89 Henderson, Peter, Jersey City, N. J.—Pot, plant, garden, and veranda vases. 722  
90 Harvey & Adamson, Philadelphia, Pa.—Oriental and Japanese garden vases, statuary, etc. 722  
92 Mott, J. L., Iron Works, New York, N. Y.—Garden statuary, vases, etc. 722  
93 Sangunnetti, Percy A., Philadelphia, Pa.—Glass-covered metallic labels, treecovering boxes. 722  
94 Mayer, Charles, Baltimore, Md.—Self-acting water fountain. 722  
95 Ebert, John, Philadelphia, Pa.—Parlor self-driving fountain. 722  
96 W. H. F., Philadelphia, Pa.—Wire baskets, flower stands, etc. 722  
96 Mueller, Quackenboss & Co., Philadelphia, Pa.—Vases in artificial stone designs. 722  
97 Brown, J. Morton, Philadelphia, Pa.—Grape-vine trellises. 722  
98 Moorhead Clay Works, Philadelphia, Pa.—Terra-cotta vases. 722  

Garden Designing, Construction, and Management.

99 Miller & Hayes, Philadelphia, Pa.—Designs for laying out gardens and improving country residences. 730  
101 Weidenmann, Jacob, New York, N. Y.—Set of plans for beautifying and improving country homes; survey, drainage, planting, and general maps. 730  
102 Heissinger, F. X., New York, N. Y.—Designs for landscape gardening. 730  
103 McClunie, Thomas, Hartford, Ct.  
a Designs for laying out gardens, and the improvement of public grounds. 730  
b Essay on formation and after-treatment of lawns. 731  
c Metallic lawn gutters, curb, and drain. 733  
103 Bliss, B. K., & Sons, New York, N. Y.—Globe sun-dial, adapted to any latitude. 730  
103 Shove, Geo. A., Dighton, Mass.—Designs for a sanatorium. 347  
103 Phoenix Stone Manufacturing Co., Philadelphia, Pa.—Artificial stone. 715  
103 d Rion, James H., Winsboro', S. C.—Section of cork-oak raised from an acorn. 680

OUT-DOOR EXHIBITS.

Ornamental Trees, Shrubs, and Flowers.

1 Bingham, Rudolphus, Camden, N. J.—Water lilies. 722  
1a Salt, James, Philadelphia, Pa.—Fig tree. 720  
1f Bliss, B. K., & Sons, New York, N. Y.—Gladiolus breviflillas. 722  
2 Mackenzie, Thomas I., Philadelphia, Pa.—Decorative foliage plants. 703  
2a Wilson, Charles H., Lower Merion, Pa.—Collection of geraniums. 713
Garden Ornaments, Designs, Tools, Ornamental Plants.


2c Harris, Wm. K., Philadelphia, Pa.—Collection of geraniums.

   a Bulbous and tuberous-rooted plants.
   b Ornamental foliage plants.
   c Annuals and soft-wooled plants.
   d Ferns, in ferneries and wardian cases.

3a Scott, Robert, Philadelphia, Pa. 
   a Collection of geraniums; Zonias geraniums.
   b Collection of roses.

   a Annuals and other soft-wooled plants.
   b Roses, in collection.

4a Marc, Gabriel, Woodside, N.Y.—Collection of roses.

5 Moon, Mahlon, & Son, Morrisville, Pa. 
   a Ornamental trees, shrubs, etc.
   b Herbaceous plants.
   c Gladiolus, dahlias, etc.
   d Flowering and ornamental plants, etc.
   e Soft-wooled plants.
   f Roses, in collection.
   g New plants.

5a Allen’s new American hybrid gladiolus, raised by C. L. Allen, Long Island, New York.

5b H. E. Hooker’s new grape Brighton, very early, hardy, and excellent.

5c E. Y. Teas’ new tri-colored cana, and new geraniums.

5d Wm. H. Moon’s collection of new clematis.

   a Herbaceous perennial plants.
   b Bulbous and tuberous-rooted plants.
   c Annuals and other soft-wooled plants.

6 Sturtevant, Edmund D., Borden-town, N.Y. 
   a Herbaceous plants.
   b Ferns.

7 Such, George, South Amboy, N.J. 
   a Ornamental trees, shrubs, etc.
   b Herbaceous perennial plants.
   c Bulbous and tuberous-rooted plants.

   a Ornamental trees, shrubs, etc.
   b Decorative and ornamental plants.
   c Soft-wooled plants.
   d Roses.
   e New plants.

10 Wilson, William C., Astoria (L.I.), N.Y.—Plants for flower beds.

11 Henderson, Peter, 35 Courtlandt st., New York, N.Y.—250 varieties of new and rare geraniums, comprising double zonals, silver tri-color and golden tri-color sorts; also a circular bed of 500 plants, representing the “massing” or “ribbon” style of gardening by the use of different colored leaves. Located on and near Agricultural avenue.

   a Hardy trees and shrubs.
   b New plants.


For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
THE PENNSYLVANIA RAILROAD  
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of the Company in all principal cities and towns.  

FRANK THOMSON,  
General Manager.  

D. M. BOYD, Jr.,  
General Passenger Agent.
The Sun Newspaper

Is printed and published every day in the year, at 166, 168, and 170 Nassau Street, New York City. Its regular edition on secular days now (April, 1876) averages about 149,000; its weekly edition over 85,000; and its Sunday issue is nearly 100,000. It thus prints and sells more than a million copies a week, which are read all over the United States. This is a circulation unprecedented in American journalism, and it is constantly on the increase. In proof of this, let the following figures testify. They show the number of copies of The Sun printed every week during the year ending March 11, 1876.

<table>
<thead>
<tr>
<th>Week Ending</th>
<th>Copies Printed</th>
</tr>
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<tbody>
<tr>
<td>March 20</td>
<td>849,382</td>
</tr>
<tr>
<td>27</td>
<td>845,802</td>
</tr>
<tr>
<td>April 3</td>
<td>857,956</td>
</tr>
<tr>
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<td>868,056</td>
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<tr>
<td>17</td>
<td>855,076</td>
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<tr>
<td>24</td>
<td>858,270</td>
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<tr>
<td>May 1</td>
<td>869,542</td>
</tr>
<tr>
<td>8</td>
<td>857,550</td>
</tr>
<tr>
<td>15</td>
<td>877,450</td>
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<tr>
<td>22</td>
<td>874,946</td>
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<tr>
<td>29</td>
<td>866,276</td>
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<tr>
<td>June 5</td>
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<tr>
<td>12</td>
<td>869,789</td>
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<tr>
<td>19</td>
<td>880,848</td>
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<tr>
<td>26</td>
<td>883,846</td>
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<tr>
<td>July 3</td>
<td>898,802</td>
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<tr>
<td>10</td>
<td>876,574</td>
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<td>17</td>
<td>877,400</td>
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<td>24</td>
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<td>61</td>
<td>871,216</td>
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<td>August 7</td>
<td>865,558</td>
</tr>
<tr>
<td>14</td>
<td>875,982</td>
</tr>
<tr>
<td>21</td>
<td>880,488</td>
</tr>
<tr>
<td>28</td>
<td>870,502</td>
</tr>
<tr>
<td>September 4</td>
<td>872,211</td>
</tr>
<tr>
<td>11</td>
<td>860,755</td>
</tr>
<tr>
<td>September 18</td>
<td>899,858</td>
</tr>
<tr>
<td>25</td>
<td>888,778</td>
</tr>
<tr>
<td>October 2</td>
<td>863,955</td>
</tr>
<tr>
<td>9</td>
<td>870,820</td>
</tr>
<tr>
<td>16</td>
<td>875,082</td>
</tr>
<tr>
<td>23</td>
<td>874,025</td>
</tr>
<tr>
<td>November 6</td>
<td>876,160</td>
</tr>
<tr>
<td>13</td>
<td>908,580</td>
</tr>
<tr>
<td>20</td>
<td>847,815</td>
</tr>
<tr>
<td>27</td>
<td>886,248</td>
</tr>
<tr>
<td>December 4</td>
<td>845,378</td>
</tr>
<tr>
<td>11</td>
<td>1,042,716</td>
</tr>
<tr>
<td>October 25</td>
<td>858,778</td>
</tr>
<tr>
<td>2</td>
<td>863,935</td>
</tr>
<tr>
<td>9</td>
<td>870,820</td>
</tr>
<tr>
<td>16</td>
<td>875,082</td>
</tr>
<tr>
<td>23</td>
<td>874,025</td>
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<td>847,815</td>
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<td>27</td>
<td>886,248</td>
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<tr>
<td>December 4</td>
<td>845,378</td>
</tr>
<tr>
<td>11</td>
<td>1,042,716</td>
</tr>
<tr>
<td>January 1</td>
<td>933,987</td>
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<tr>
<td>8</td>
<td>952,201</td>
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<tr>
<td>15</td>
<td>953,019</td>
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<td>22</td>
<td>969,910</td>
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<td>29</td>
<td>967,350</td>
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<tr>
<td>February 9</td>
<td>993,030</td>
</tr>
<tr>
<td>6</td>
<td>933,987</td>
</tr>
<tr>
<td>12</td>
<td>1,024,047</td>
</tr>
<tr>
<td>19</td>
<td>1,024,047</td>
</tr>
<tr>
<td>26</td>
<td>1,014,766</td>
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<tr>
<td>March 4</td>
<td>1,014,998</td>
</tr>
<tr>
<td>11</td>
<td>1,028,951</td>
</tr>
</tbody>
</table>

Total: 46,799,769

In printing these papers, no less than three million four hundred and twenty-six thousand six hundred and ten (3,426,610) pounds of paper were consumed.

Advertising Rates.

Daily and Sunday, 40 cents a line, ordinary advertising; large type, 80 cents; and preferred positions, 50 cents to $2.50, according to classification.

Weekly, 50 cents a line; no extra charge for large type. Preferred positions, from 75 cents to $2.00.

Subscription Rates.

Daily (4 pages), by mail, 55c. a month, or $6.50 a year, postpaid; with Sunday edition, $7.70.

Sunday (8 pages), $1.20 per year, postpaid.

Weekly (8 pages), $1.20 per year, postpaid.

Address, THE SUN, New York.
### Garden Designing, Construction, and Management.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34 Peck &amp; Skilton, Westville, Ct.</td>
<td>Rustic buildings.</td>
</tr>
<tr>
<td>35b Elmore, Daniel, Trumansburg, N.Y.</td>
<td>Summer-houses and pagodas.</td>
</tr>
<tr>
<td>36a Commercial fertilizers, phosphatic, calcereous, etc.</td>
<td></td>
</tr>
<tr>
<td>37 Boileau, A., New York, N.Y.</td>
<td>Trained fruit trees.</td>
</tr>
<tr>
<td>38 Austin, R., Camden, N.J.</td>
<td>Cranberry vines.</td>
</tr>
</tbody>
</table>

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
### GREAT BRITAIN.

**Ornamental Trees, Shrubs, Tools, and Accessories of Gardening.**

<table>
<thead>
<tr>
<th><strong>Ornamental Trees and Shrubs.</strong></th>
<th><strong>Garden Tools, Accessories of Gardening.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Veitch, James, &amp; Sons, Royal Exotic Nursery, London.</strong>&lt;br&gt;a Collection of standard and dwarf rhododendrons, standard and dwarf hollies, standard Portugal laurels 700&lt;br&gt;b Collection of new Japanese conifers. 708</td>
<td><strong>4 Bull, William, Chelsea, London.—</strong>&lt;br&gt;Illustration of new and rare plants. 709</td>
</tr>
<tr>
<td><strong>2 Waterer, Anthony, Knap Hill Nursery, Woking, Surrey.—Rhododendrons and azaleas (in tent).</strong> 700</td>
<td><strong>5 Barnard, Bishop, &amp; Barnard, Norfolk Iron Works, Norwich.</strong>&lt;br&gt;a Lawn-mowers, garden-rollers, horse-reels, water-barrows, croquet-netting, espalier-trainers, etc. 720&lt;br&gt;b Garden-chairs. 722</td>
</tr>
<tr>
<td><strong>3 Williams, B. S., Victoria &amp; Paradise Nurseries, London.</strong>—Collection of new and rare plants, orchids, and ferns of recent introduction. 708</td>
<td><strong>6 Doulton, H., &amp; Co., Lambeth, London.</strong>—Terra-cotta work, statue of Diana (heroic size), Amazon vase, and sundry other vases. 722</td>
</tr>
</tbody>
</table>

### NEW ZEALAND.

**Ornamental Trees and Shrubs.**

| **1 New Zealand.—**Esculent fern root. Will germinate if crushed and planted in rich soil and shady place; collection of ferns. 707 |

### JAMAICA.

**Hot-Houses, Conservatories, and their Management.**

<table>
<thead>
<tr>
<th><strong>Hot-Houses, Conservatories, and their Management.</strong></th>
<th><strong>For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>**1 Thompson, Robert, Jamaica.—**Collection of economic plants. 710</td>
<td></td>
</tr>
</tbody>
</table>
CANADA.

Gardening Appliances.

1. Wells, William, Beamsville, Ont.—Flower-pots and saucers. 721
2. Ahern, J. H., Paris, Ont.—Flower-pots and saucers. 721
3. Pratt, Chorless, London, Ont.—Flower-pots and saucers. 721
4. Welding, E., Brantford, Ont.—Flower-pots and saucers. 721
5. Farrar, G. H. & L. E., St. John, Q.—Fancy flower-pots. 721
6. Hobson, Walter, Quebec, Q.—Flower-pots. 721

FRANCE.

Ornamental Plants, Hot-Houses, Ornaments, Designs.

Ornamental Trees, Shrubs, and Flowers.

1. Roempler, L., Nancy.—Ornamental plants. 700
2. Leroy, Louis, Angers, Maine-et-Loire.—Ornamental plants and fruit trees. 700
3. Verdier, E., senior, Paris.—Gladiolus. 702
4. Verdier, Charles, Paris.—Gladiolus. 702
5. Alber, Paris.—Roses. 705
6. Lacharme, Fr., Lyons.—A collection of roses; thirty-seven varieties originated and grown by exhibitor. 705
7. Allegatoire, Lyons.—New zonal double geraniums, originated and grown by exhibitor. 708
8. Sisley, Jean, Lyons.—New zonal geraniums, originated and grown by exhibitor. 708

Hot-Houses, Conservatories, Glasseries.

6. Roempler, L., Nancy.—Hot-house plants. 710
7. Pinel, C. P., Paris.—Application of electricity to germination and fructification. 713
8. Lichtenfelder, Paris.—Monumental hot-houses. 715
9. Couette, La Briche, Seine.—Portable tents, kiosk, and sheds; folding arm-chairs, bedsteads. 722
10. Durenne, A., Paris.—Monumental fountain. 722
11. Lichtenfelder, Paris.—Garden furniture; elastic seats; iron gates and railings. 724
12. Thiry, J., jr., Paris.—Trellises and galvanized iron fences. 724
13. Walcker, W., Paris.—Garden seats. 724
14. Bonvoisin, A., Paris.—Garden plans. 730
15. Duviplier, E., Paris.—Park and garden plans; books on parks and gardens. 730
16. Vilmorin, Andrieux, & Co., Paris.—Photographs of flowers, vegetables, and plants; samples of seeds. 730
17. Ratine, Paris.—Rocky grotto. 733

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
GERMANY.

Garden Designing, Construction, and Management.

2 Eichler, Gustav, Sans Souci.—Plans for gardens.

AUSTRIA.

Garden Designing, Construction, and Management.

1 Pohl, Charles, Austria.—Standard currants and gooseberries.

NETHERLANDS.

Fruit Trees, Ornamental Plants, Flowers, Designing.

Ornamental Trees, Shrubs, and Flowers.

1 Galesboot, J. P. R., Amsterdam.—Fruit trees.

2 Boer, W. C., Boskoop.—Ornamental trees and shrubs.

3 Krelage, J. H., Haarlem.

4 Nes, Az. P. van, Boskoop.—Trees, shrubs, and flowers.

6 Groenevegen, A. C., Haarlem.—The flowers of Haarlem.

Garden Designing, Construction, and Management.

7 Nes, Az. P. van, Boskoop.—Trained fruit trees.

8 Galesboot, J. P. R., Amsterdam.—Trained fruit trees.

SWEDEN.

Garden Tools.

1 Von Essen, H. H., Baron, Tidaholm.—Gardeners' Scissors.
ITALY.

Garden Decoration.

Garden Tools, Accessories of Gardening.
1 Foley, Margaret A., Rome.—Marble Fountain.

LUXEMBURG.

Ornamental Trees.

Ornamental Trees, Shrubs, and Flowers.
1 Support & Notting, Limpertsberg, near Luxemburg.—Rose trees.

HAWAII.

Ornamental Trees.

Ornamental Trees and Shrubs.
1 Hawaiian Islands.—Ferns.

ARGENTINE REPUBLIC.

Ornamental Plants, Designs.

Ornamental Trees, Shrubs, and Flowers.
1 Provincial Commission, Province of Santiago del Estero.—Cacti.
2 Fuente, Diego de la, Province of Corrientes.—Caraguata plant.
3 Gelos, Martin, Province of La Rioja.—Scarlet oak, coccus cacti.
4 Provincial Commission, Province of Mendoza.—Cacti.
5 Provincial Commission, Province of Cordoba.—Cacti.
6 Forkel, F., Province of Buenos Ayres.—Projected plan of the park "3d of February."

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 12-14.
SPAIN.

Ornamental Trees, Shrubs, Flowers, Garden Designing.

| Ornamental Trees, Shrubs, Flowers, and Floral Designs. | 3 Poey, Juan, Havana, Cuba.—Forty plants presented to the U.S. Centennial Commission. 710 |
| 1 Lachaume, Jules, Havana, Cuba.—Collection of plants, cactus, new plants. 706 |
| Hot Houses, Conservatories, Grapeways, and their Management. |
| 2 Lachaume, Jules, Havana, Cuba.—Agaves, euphorbias. 710 |

PHILIPPINE ISLANDS.

Ornamental Trees and Shrubs.

Ornamental Trees and Shrubs.

1 Philippine Islands.—Ferns. 727

No. 170. HORTICULTURAL ANNEX.

North of Horticultural Hall. Constructed of wood and iron, in the form of a tent, and covered with canvas. Designed for the exhibition of flowers and plants during the season.

For classes of exhibits, indicated by numbers at end of entries, see Classification, pp. 13-14.
**THE AMERICAN NEWSPAPER UNION.**

A. J. AIKENS, President.

<table>
<thead>
<tr>
<th>Newspaper Union</th>
<th>Number of Newspapers</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York Newspaper Union, 148 and 150 Worth St., New York</td>
<td>315</td>
<td>$3.00 per line, per week.</td>
</tr>
<tr>
<td>Chicago Newspaper Union, 114 Monroe St., Chicago</td>
<td>350</td>
<td>$3.50</td>
</tr>
<tr>
<td>Milwaukee Newspaper Union, 365 East Water St., Milwaukee</td>
<td>120</td>
<td>$1.25</td>
</tr>
<tr>
<td>Aikens Newspaper Union, 143 Race St., Cincinnati</td>
<td>200</td>
<td>$2.00</td>
</tr>
<tr>
<td>Southern Newspaper Union, 227 Second St., Memphis, Tenn.</td>
<td>145</td>
<td>$1.50</td>
</tr>
<tr>
<td>St. Paul Newspaper Union, 17 Wabashaw St., St. Paul, Minn.</td>
<td>73</td>
<td>$0.75</td>
</tr>
</tbody>
</table>

**THE ORIGIN OF CO-OPE RATIVE NEWSPAPER ADVERTISING.**

Co-operative newspaper printing, as now practised, originated in Wisconsin twelve years ago. It is termed co-operative for the reason that one side of each of the newspapers is printed at a central office, and the paper sent in its half-printed state to the home office, where it is completed with editorials, local news, and other matter prepared by the editor or publisher. In December, 1846, the idea of co-operation, with advertisements, occurred to Mr. Aikens, while yet serving his time as an apprentice, in printing the message of President Polk on one side of a country newspaper of New England at Boston, and the other half being printed at the local office.

Mr. A. J. Aikens, a practical printer and business man, conceived the idea of reducing the cost of ready-printed paper, as it is now termed, to country publishers, by making an agreement with them to use a certain space in each of their papers for advertisements that he might procure. This plan of co-operation he put into practice twelve years ago, at the office of Cramer, Aikens & Cramer, Milwaukee. It at once became successful, leading to the establishment of co-operative newspaper printing-offices in Chicago, New York, St. Louis, Cincinnati, Memphis, St. Paul, and other places. There are now over two thousand newspapers printed upon the co-operative plan in the United States and Canadas, and the number is constantly increasing, it having more than doubled in the last five years. The enterprise is no longer an experiment, but an established success, and the system is one yielding manifold advantages to advertisers as well as to local publishers.

**The American Newspaper Union**

Is essentially national. The papers represented in it are located in all the States of the Union and in nearly five hundred county seats. They circulate over the whole area of the country from Maine to Colorado, distributing at least one hundred copies every year to each square mile of the settled portions of the United States.

Although, as a whole, the Union List is national, covering all sections, it is so made up of different members as to be susceptible of easy division into sections—East, Middle, West, South. The distribution of the papers is as follows:

<table>
<thead>
<tr>
<th>State</th>
<th>Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>New England</td>
<td>78</td>
</tr>
<tr>
<td>New York</td>
<td>101</td>
</tr>
<tr>
<td>New Jersey</td>
<td>27</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>65</td>
</tr>
<tr>
<td>Virginia</td>
<td>21</td>
</tr>
<tr>
<td>No. and So. Carolina</td>
<td>24</td>
</tr>
<tr>
<td>Ohio</td>
<td>122</td>
</tr>
<tr>
<td>Indiana</td>
<td>81</td>
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<tr>
<td>Illinois</td>
<td>117</td>
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<td>Michigan</td>
<td>86</td>
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<tr>
<td>Wisconsin</td>
<td>98</td>
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<td>Tennessee</td>
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<td>Minnesota</td>
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<td>Iowa</td>
<td>85</td>
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<td>Nebrasaka</td>
<td>15</td>
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<tr>
<td>Missouri</td>
<td>17</td>
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<tr>
<td>Georgia</td>
<td>10</td>
</tr>
<tr>
<td>Alabama</td>
<td>32</td>
</tr>
<tr>
<td>Louisiana</td>
<td>11</td>
</tr>
<tr>
<td>Mississippi</td>
<td>29</td>
</tr>
<tr>
<td>Other States</td>
<td>46</td>
</tr>
</tbody>
</table>

**AGGREGATE CIRCULATION.**

The circulation of these papers is large and constantly increasing. It is larger than the circulation of any other lists or combinations of country papers in the United States—the last aggregate weekly circulation being seven hundred thousand seven hundred and thirty copies (700,730).

SEND TO EITHER OFFICE FOR A CIRCULAR.
Ph. J. Lauber's
Centennial Restaurant
NEAR HORTICULTURAL HALL, CENTENNIAL GROUNDS,
IMPORTER OF WINES.

RESTAURANT, 24 South Fifth Street,
PHILADELPHIA.
Corner of Belmont and Fountain Avenues,
NEAR THE LAKE.

FRENCH RESTAURANT,
LES TROIS FRÈRES PROVENCAUX.
The same which had such a great success in the Vienna Exhibition, in 1873.

CH. VERDIER,
of the MAISON DORÉE, of Paris, Proprietor.
Near the Lake, opposite the U. S. Government Building.

LONDON. BY ROYAL LETTERS PATENT.
CORRY & Co.'s
GOLD MEDAL GINGER ALE,
And other Pure Aerated Waters.
CROMAC SPRINGS, BELFAST, IRELAND.
Established 1875.

PARIS.

HICGIN'S FACTORY FILLED SALT,
Which is prepared expressly for Dairy purposes, is admitted by all Butchers and
Packers who use it, to preserve Hams and bacon in the finest possible condition,
and to impart an unusually fine color and appearance to the fat; and its great
purity makes it especially valuable for the curing of Jutter and Cheese. It
never cakes in the sack. Sample bags may be had gratis on application to

Works—Northwich, Cheshire, England. Office Address—THOMAS HICGIN & Co., 33,
Tower Buildings West, Liverpool, England. Orders received by LOGAN & FERRIS,

CLEEVE HOOPER, Junr.,
Leather, Hide and Bark Factor.
6, 7 & 8, NEW WESTON STREET,
BERMONDSEY, LONDON, S.E.,
ENGLAND.

STATISTICAL APPENDIX.
STATISTICAL APPENDIX.

UNITED STATES.

The United States of America occupy the entire width of the central portion of North America, between latitude 24° 30' and 49° north, and from longitude 66° 50' and 124° 30' west. They are bounded, north, by New Brunswick, Canada (from which they are separated by the river St. Lawrence and the great lakes), and British Columbia; on the south, by Mexico and the Gulf of Mexico; east, by the Atlantic; and west, by the Pacific Ocean. Their greatest breadth, from Cape Cod, on the Atlantic, to the Pacific, near the parallel of latitude 42 degrees, is about 2600 miles. Their greatest length, from the northern boundary of Maine to Key West, in Florida, is about 1600 miles. Their mean length, from east to west, is about 1600 miles, and from north to south about 1300 miles. Their area, according to calculations founded on the report of the Commissioner of the General Land Office, for 1867, is 3,057,497 square miles, or 1,256,740,480 acres. This, however, is exclusive of the district of Alaska, in the extreme northwest of the continent, purchased from Russia, and comprising 577,350 square miles, or 369,529,600 acres. Including Alaska, the entire area of the United States and territories is 3,634,797 square miles.

Three mountain ranges, the Appalachian chain towards the east, the Rocky Mountains in the centre, and the Sierra Nevada in the west, divide the United States into four great regions. The first of these is the Atlantic slope, or all that portion lying east of the Appalachian or Alleghany range; the second, lying between the Appalachian and the Rocky Mountains, is known as the basin of the Mississippi and Missouri; the third is the country between the Rocky Mountains on the east and the Sierra Nevada on the west; the fourth extends from the Sierra Nevada to the Pacific Ocean, and is known as the Pacific slope.

The Appalachian or Alleghany mountains extend from the State of Mississippi northeast through the States of Alabama, Georgia, Tennessee, North Carolina, Virginia, Pennsylvania, New York, and Vermont, for about 1200 miles, at a variable distance of from 70 to 300 miles from the Atlantic coast, and with an average breadth of about 100 miles. Their mean height is from 2000 to 3000 feet, half of which consists in the elevation of the mountains over the adjacent plains, and the rest in the elevation of these plains above the sea. The White Mountains of New Hampshire, belonging to this chain, reach a height of 6226 feet, and the Black Mountain, of North Carolina, is 6732 feet above the level of the sea. The Rocky Mountains are a prolongation of the Mexican Cordillera, and some of their highest peaks attain to between 12,000 and 15,000 feet above the level of the sea. Their average altitude is about 8500 feet. The Sierra Nevada, or Snowy Mountains, are 10° to 12° west of the Rocky Mountains. Under different names, and with different altitudes, this range extends from the peninsula of lower California to Alaska, some of its passes being about 9000 feet, and its highest summits about 16,000 feet above the level of the sea.

The rivers of the United States are of great magnitude and importance. Of those flowing east and south the principal are the Mississippi and Missouri, which, with their tributaries, the Ohio, Arkansas, Red, Yellowstone, and Nebraska rivers, give to the interior an extent of inland navigation and a facility of communication unequaled on any other continent. Among the principal rivers flowing into the Atlantic, are the Hudson, Delaware, Susquehanna, Potomac, Savannah, and St. Johns. The Columbia, Sacramento, and Colorado flow into the Pacific Ocean. The Mississippi,
Alabama, Colorado (of Texas), and Rio Grande (the last named forming the boundary between Texas and Mexico), empty into the Gulf of Mexico. The area of the water-basins has been estimated as follows: Rivers flowing into the Pacific, 644,040 square miles; into the Atlantic, 488,877; into the Gulf of Mexico, 1,683,325 square miles, of which 1,257,457 are drained by the Mississippi-Missouri rivers. The coastline on both oceans has a length of about 13,200 miles, excluding the numerous bays and sounds, besides 3600 miles on the great northern lakes.

The following table shows the area and population of each State and Territory:

<table>
<thead>
<tr>
<th>States</th>
<th>Population in 1870</th>
<th>Area in Square Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>496,092</td>
<td>50,722</td>
</tr>
<tr>
<td>Arkansas</td>
<td>484,471</td>
<td>53,168</td>
</tr>
<tr>
<td>California</td>
<td>560,247</td>
<td>188,981</td>
</tr>
<tr>
<td>Colorado</td>
<td>39,861</td>
<td>104,000</td>
</tr>
<tr>
<td>Connecticut</td>
<td>537,454</td>
<td>4,759</td>
</tr>
<tr>
<td>Delaware</td>
<td>125,013</td>
<td>2,120</td>
</tr>
<tr>
<td>Florida</td>
<td>187,748</td>
<td>58,268</td>
</tr>
<tr>
<td>Georgia</td>
<td>1,124,109</td>
<td>58,000</td>
</tr>
<tr>
<td>Illinois</td>
<td>2,539,891</td>
<td>55,410</td>
</tr>
<tr>
<td>Indiana</td>
<td>1,680,037</td>
<td>33,809</td>
</tr>
<tr>
<td>Iowa</td>
<td>1,194,020</td>
<td>53,045</td>
</tr>
<tr>
<td>Kansas</td>
<td>364,399</td>
<td>81,318</td>
</tr>
<tr>
<td>Kentucky</td>
<td>1,321,011</td>
<td>37,680</td>
</tr>
<tr>
<td>Louisiana</td>
<td>736,915</td>
<td>41,346</td>
</tr>
<tr>
<td>Maine</td>
<td>626,015</td>
<td>35,000</td>
</tr>
<tr>
<td>Maryland</td>
<td>730,894</td>
<td>11,124</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>1,457,351</td>
<td>7,800</td>
</tr>
<tr>
<td>Michigan</td>
<td>1,184,059</td>
<td>50,451</td>
</tr>
<tr>
<td>Minnesota</td>
<td>430,700</td>
<td>83,831</td>
</tr>
<tr>
<td>Mississippi</td>
<td>827,922</td>
<td>47,156</td>
</tr>
<tr>
<td>Missouri</td>
<td>1,721,295</td>
<td>65,350</td>
</tr>
<tr>
<td>Nebraska</td>
<td>1,226,693</td>
<td>75,995</td>
</tr>
<tr>
<td>Nevada</td>
<td>42,491</td>
<td>104,125</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>313,300</td>
<td>9,280</td>
</tr>
<tr>
<td>New Jersey</td>
<td>550,096</td>
<td>8,320</td>
</tr>
<tr>
<td>New York</td>
<td>4,384,759</td>
<td>47,000</td>
</tr>
<tr>
<td>North Carolina</td>
<td>1,071,301</td>
<td>59,704</td>
</tr>
<tr>
<td>Ohio</td>
<td>2,605,260</td>
<td>39,964</td>
</tr>
<tr>
<td>Oregon</td>
<td>90,923</td>
<td>95,274</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>3,521,051</td>
<td>49,000</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>217,353</td>
<td>1,306</td>
</tr>
<tr>
<td>South Carolina</td>
<td>705,066</td>
<td>34,000</td>
</tr>
<tr>
<td>Tennessee</td>
<td>1,238,520</td>
<td>45,600</td>
</tr>
<tr>
<td>Texas</td>
<td>818,579</td>
<td>274,356</td>
</tr>
<tr>
<td>Vermont</td>
<td>330,551</td>
<td>10,212</td>
</tr>
<tr>
<td>Virginia</td>
<td>1,225,163</td>
<td>38,348</td>
</tr>
<tr>
<td>West Virginia</td>
<td>442,014</td>
<td>23,000</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>1,054,670</td>
<td>53,924</td>
</tr>
</tbody>
</table>

ORGANIZED TERRITORIES.

Arizona, 9,658 113,916
Dakota, 14,181 150,932
District of Columbia, 131,700 64
Idaho, 14,999 80,294
Montana, 20,595 143,776
New Mexico, 91,874 121,291
Utah, 86,786 84,476
Washington, 23,955 69,944
Wyoming, 9,118 97,883

TERRITORIES NOT ORGANIZED.

Alaska, 577,340
Indian, 68,961

Total, 38,558,351 3,602,424
In a country extending through 24° of latitude, and nearly 60° of longitude, the climate varies considerably. In the north, along the British frontier, the winter is very severe; during this season the snow is sufficiently abundant in New England to admit the use of sleighs, and the ice on the rivers strong enough to bear the passage of horses and wagons. As far south as Pennsylvania and New Jersey, the thermometer falls, in winter, below zero; rising, in summer, to nearly 100° Fahr. Along the Atlantic coast, between latitude 41° and 45°, the climate is colder in winter, and warmer in summer, by nearly 10°, than in those parts of Europe which lie under the same parallels. Snow, however, rarely falls south of latitude 30°, nor is it frequently seen south of the Potomac, except on mountains. The mean annual temperature of Albany is about 49°; of New York and Cincinnati, about 51°; of Philadelphia, 54°; of Natchez, 65°, and of Cantonment Brooke, in Florida, 72°. The temperature along the Pacific is much higher than in corresponding latitudes on the eastern coast.

The Mississippi valley is very fertile. In the Eastern States there still exist large forests of valuable timber, such as beech, birch, maple, oak, pine, syruee, elm, ash, walnut; and, in the South, live-oak, water-oak, magnolia, palmetto, tulip tree, cypress, etc., remnants of the wooded region which formerly extended over the whole Atlantic slope, but into which great inroads have been made by advancing civilization. Apples, pears, cherries, and plums flourish in the North; peaches, melons, and grapes in the Middle States; pineapples, pomegranates, figs, almonds, and oranges in the South. Maize is grown from Maine to Louisiana, and wheat throughout the Union; tobacco as far north as Connecticut, and in the Western States south of Ohio. There is not much cotton raised north of 37°, though it grows as far north as 39°. Rice is cultivated in South Carolina, Georgia, Louisiana, and as far north as St. Louis, Mo. The sugar-cane grows as high as 33°, but does not thoroughly succeed beyond 31° 30'. The vine and mulberry tree grow in various parts of the Union; oats, rye, and barley throughout the North and the mountainous parts of the South; and hemp, flax, and hops in the Western and Middle States. The following figures, taken from the report of the ninth census (1870), will convey an idea of the extent of the annual productions of agriculture:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring wheat</td>
<td>112,549,733 bushels</td>
</tr>
<tr>
<td>Winter wheat</td>
<td>175,195,593 bushels</td>
</tr>
<tr>
<td>Rye</td>
<td>16,912,595 bushels</td>
</tr>
<tr>
<td>Indian corn</td>
<td>760,944,569 bushels</td>
</tr>
<tr>
<td>Oats</td>
<td>282,107,157 bushels</td>
</tr>
<tr>
<td>Barley</td>
<td>29,761,305 bushels</td>
</tr>
<tr>
<td>Buckwheat</td>
<td>9,821,721 bushels</td>
</tr>
<tr>
<td>Rice</td>
<td>73,635,021 pounds</td>
</tr>
<tr>
<td>Tobacco</td>
<td>262,735,341 bushels</td>
</tr>
<tr>
<td>Cotton</td>
<td>3,011,996 bales</td>
</tr>
<tr>
<td>Peas and beans</td>
<td>5,746,027 bushels</td>
</tr>
<tr>
<td>Irish potatoes</td>
<td>143,337,173 bushels</td>
</tr>
<tr>
<td>Sweet potatoes</td>
<td>21,709,521 bushels</td>
</tr>
<tr>
<td>Wine</td>
<td>3,092,389 gallons</td>
</tr>
<tr>
<td>Hay</td>
<td>27,315,048 tons</td>
</tr>
<tr>
<td>Clover seed</td>
<td>639,057 bushels</td>
</tr>
<tr>
<td>Grass seed</td>
<td>583,188 bushels</td>
</tr>
<tr>
<td>Sugar (from cane)</td>
<td>87,043 hhd</td>
</tr>
<tr>
<td>Maple sugar</td>
<td>28,443,645 pounds</td>
</tr>
<tr>
<td>Molasses</td>
<td>23,564,469 gallons</td>
</tr>
<tr>
<td>Dairy Products—Butter</td>
<td>514,092,683 pounds</td>
</tr>
<tr>
<td>Cheese</td>
<td>53,492,153 bushels</td>
</tr>
<tr>
<td>Milk sold</td>
<td>238,590,599 gallons</td>
</tr>
<tr>
<td>Wool</td>
<td>100,102,387 pounds</td>
</tr>
<tr>
<td>Wax</td>
<td>631,129 bushels</td>
</tr>
<tr>
<td>Honey</td>
<td>14,702,815 bushels</td>
</tr>
</tbody>
</table>

The same report gives the cash value of farms in the United States at $9,262,803,881; of farming implements and machinery, at $336,878,429; live stock, at $1,525,276,457.
Total estimated value of all farm productions, including betterments and additions to stock, $2,447,538,658. Value of orchard products, $47,335,189; products of market gardening, $36,719,229.

There were, at the same time, 8,690,219 horses, 28,074,982 cattle, 28,477,951 sheep, and 25,184,540 hogs.

Except a few small isolated fields, all the bituminous coal in the United States lies west of the Appalachian chain, where a vast series of coal beds stretch from the mountains west through Ohio, Indiana, and Illinois, parts of Kentucky and Alabama, into the State of Missouri, and as far as two hundred miles beyond the Mississippi. Anthracite coal is found most extensively in Pennsylvania; also in Western Virginia and the eastern portion of Ohio and Illinois. The oil-wells of northwestern Pennsylvania contain apparently inexhaustible stores of mineral oil or petroleum. Numerous salt-springs exist in New York, Virginia, Pennsylvania, and the Western States. Iron is distributed most abundantly through the coal measures in Pennsylvania, Ohio, Virginia, and Tennessee, the ore containing from 25 to 33 per cent. of metal. Iron ore also abounds in the Northwestern States; and that found in one part of Vermont yields 78 per cent. of iron. A large proportion of the ore found in this part of the Union is magnetic. Lead is found in various places, but more especially in Missouri, Wisconsin, and Illinois. In some parts of Wisconsin this ore yields from 60 to 70 per cent. of lead. Large deposits of copper have been found in Michigan, in the Lake Superior region. Gold, in large quantities, and silver, have been found in the States and Territories west of the Rocky Mountains. Gold has also been found in Virginia, the Carolinas, Georgia, and Tennessee. Quicksilver, zinc, manganese, with lime and building stone, are the other chief mineral products. The following figures are from the Statistics of Mining, Table VIII, Report of the Ninth Census (1870):

<table>
<thead>
<tr>
<th>VALUE OF PRODUCTS.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthracite coal</td>
<td>$38,495,745</td>
</tr>
<tr>
<td>Bituminous coal</td>
<td>35,029,247</td>
</tr>
<tr>
<td>Copper</td>
<td>5,201,312</td>
</tr>
<tr>
<td>Gold, placer mined</td>
<td>7,266,613</td>
</tr>
<tr>
<td>&quot;     hydraulic mined</td>
<td>2,508,531</td>
</tr>
<tr>
<td>Quartz, gold and silver bearing</td>
<td>16,677,503</td>
</tr>
<tr>
<td>Iron ore</td>
<td>13,204,138</td>
</tr>
<tr>
<td>Lead</td>
<td>736,004</td>
</tr>
<tr>
<td>Petroleum</td>
<td>19,304,224</td>
</tr>
</tbody>
</table>

The mechanical and manufacturing establishments of the Union, in 1870, numbered 252,148, using steam-engines of 1,215,711 horse-power and 1,130,431 horse-power in water-wheels, and employing 2,953,996 hands. The amount of capital invested is $2,118,208,769; annual wages, $775,534,343; material used, $2,488,427,242, and the total products $4,232,325,442. The chief manufacturing States are Pennsylvania, New York, Massachusetts, Ohio, Illinois, New Jersey, Connecticut, and Rhode Island.

The importations for the year ending June 30th, 1875, were:

| Merchandise                      | $533,005,536 |
| Gold and silver                 | 29,894,217 |
| Total                           | $562,899,753 |

| Foreign exports, merchandise    | $14,157,611 |
| Gold and silver                | 8,475,017  |
| Total                           | $22,632,628 |

The gold value of domestic exports, during the same period, was $583,141 229.
In the length of miles of railway open to traffic, the United States exceed all other nations, although in the proportion of miles of railway to miles of area, it ranks below some of the smaller and more densely populated states of Europe. The following figures, from Poor's "Railway Manual," illustrate the growth of the railway system in the United States:

In 1830, there were 23 miles in operation.  
" 1840, " " 2,818 " " "  
" 1850, " " 9,021 " " "  
" 1860, " " 20,635 " " "  
" 1870, " " 52,898 " " "  
" 1874, " " 72,623 " " "

During the year 1874, the gross earnings were $320,466,016, of which $379,466,935 was for freight, and $140,999,081 for passengers. Net earnings, $189,570,958; dividends paid, $67,042,942.

The government of the United States is, by the Constitution, intrusted to three separate authorities, the executive, the legislative, and the judicial. The executive power is vested in a President, who is elected every four years, and is eligible for re-election. The legislative power is vested in two houses, the Senate and the House of Representatives, the President having a veto power, which may be overcome by a two-thirds vote of both houses. Two senators from each State are elected by the legislature thereof, for the term of six years; and representatives are chosen in each State, by popular vote, for two years. The number of Representatives for each State is allotted in proportion to its population, one for each 135,259.

The supreme judicial authority is vested in a Chief Justice and eight Associate Justices, who are appointed for life by the President, by and with the consent of the Senate.

The government of each State is on the same model as that of the general government. There is a governor chosen by popular vote, and a State legislature, similarly chosen, composed of two houses. Each State also has a constitution which prescribes its form of government.

The following statistics apply to the army and navy of the United States in 1875: The army consisted, July 1st, 1875, of 2204 commissioned officers, and 25,000 enlisted men; the navy of 175 vessels, with an armament of 1282 guns, 8500 men, 1254 commissioned, and 490 non-commissioned officers on the active list.

The postal service is conducted by the general government. During the fiscal year ending June 30th, 1875, it carried 601,921,520 letters, 117,215,850 stamped wrappers, 13,950,750 newspapers, and 31,094,500 postal cards. The money orders amounted to $75,425,854.

The telegraph lines belong to private corporations. Their total length, in January, 1875, was 75,000 miles; length of wires, 165,000 miles; number of offices, 6172; number of messages transmitted during the year 1874, 13,700,000.

Education is conducted by the separate States. In general the primary schools are supported by a property tax, and nearly all the States have school funds in addition, the income of which is distributed among the towns in proportion to the number of pupils educated. The gifts with which, during late years, private individuals have endowed institutions of learning, prove a growing appreciation of the claims of the higher education.

The following statistics are collated from the report of the ninth census, 1870:

PUBLIC SCHOOLS.

<table>
<thead>
<tr>
<th>NUMBER OF SCHOOLS</th>
<th>MALE</th>
<th>FEMALE</th>
<th>TOTAL</th>
<th>MALE</th>
<th>FEMALE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>125,059</td>
<td>74,174</td>
<td>109,024</td>
<td>183,198</td>
<td>3,120,052</td>
<td>3,108,003</td>
<td>6,228,055</td>
</tr>
</tbody>
</table>
The schools "Not Public" are arranged under two headings: "Classical, Professional, and Technical," and "Other Schools."

"NOT PUBLIC" SCHOOLS (Classical, Professional, and Technical).

<table>
<thead>
<tr>
<th>NUMBER.</th>
<th>TEACHERS.</th>
<th></th>
<th>PUPILS.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MALE.</td>
<td>FEMALE.</td>
<td>TOTAL.</td>
<td>MALE.</td>
</tr>
<tr>
<td>Classical, etc., 2,545</td>
<td>7,766</td>
<td>5,001</td>
<td>12,767</td>
<td>148,810</td>
</tr>
<tr>
<td>Other Schools, 14,025</td>
<td>11,389</td>
<td>13,688</td>
<td>25,077</td>
<td>353,134</td>
</tr>
</tbody>
</table>

INCOME.

<table>
<thead>
<tr>
<th>PUBLIC.</th>
<th>NOT PUBLIC.</th>
<th>CLASSICAL, PROFESSIONAL, AND TECHNICAL</th>
<th>OTHERS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Taxation of Public Funds, . . .</td>
<td>$58,855,507</td>
<td>$2,320,259</td>
<td>$570,282</td>
</tr>
<tr>
<td>&quot; Endowments. . . . . . . . . . .</td>
<td>144,533</td>
<td>3,336,003</td>
<td>163,249</td>
</tr>
<tr>
<td>&quot; Other Sources, including Tuition, . . .</td>
<td>5,030,633</td>
<td>11,999,654</td>
<td>12,962,615</td>
</tr>
<tr>
<td>$64,030,673</td>
<td>$17,675,907</td>
<td>$13,696,146</td>
<td></td>
</tr>
</tbody>
</table>

The total number of libraries returned was 163,353, containing 44,539,184 volumes. Of these, 107,673 were private libraries, containing 25,571,503 volumes. In the opinion of the superintendent of the census, these results are "manifestly far below the truth."

The newspaper and periodical press comprised, in 1875, 7,870 publications, divided as follows: Daily, 1,718; tri-weekly, 80; semi-weekly, 107; weekly, 5,957; bi-weekly, 24; semi-monthly, 106; monthly, 802; bi-monthly, 8; quarterly, 68.
The following brief table is given (approximately) of the area, population, revenue, and commerce of the British Empire. It is not possible to give the exact figures, but for all practical purposes those now given will be sufficient. The colonies which exhibit are treated under their proper names.

<table>
<thead>
<tr>
<th>NAME OF COUNTRY</th>
<th>AREA IN SQUARE MILES</th>
<th>POPULATION</th>
<th>REVENUE</th>
<th>PUBLIC DEBT.</th>
<th>IMPORTS AND EXPORTS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Britain and Ireland,</td>
<td>122,518</td>
<td>31,857,338</td>
<td>$389,600,000</td>
<td>$3,835,000</td>
<td>$3,260,900,000</td>
</tr>
<tr>
<td>Indian Possessions, etc.,</td>
<td>1,558,254</td>
<td>249,000,000</td>
<td>243,500,000</td>
<td>539,310,000</td>
<td>470,390,000</td>
</tr>
<tr>
<td>Other Eastern Possessions,</td>
<td>108,264</td>
<td>2,106,000</td>
<td>16,370,000</td>
<td>8,700,000</td>
<td>60,700,000</td>
</tr>
<tr>
<td>Australasia</td>
<td>3,067,000</td>
<td>3,150,000</td>
<td>3,087,000</td>
<td>219,000</td>
<td>365,250,000</td>
</tr>
<tr>
<td>North America,</td>
<td>3,520,500</td>
<td>4,000,000</td>
<td>3,087,000</td>
<td>10,714,000</td>
<td>2,105,000</td>
</tr>
<tr>
<td>Africa</td>
<td>2,500,000</td>
<td>4,870,000</td>
<td>2,500,000</td>
<td>10,714,000</td>
<td>4,000,000</td>
</tr>
<tr>
<td>West Indies</td>
<td>1,707,000</td>
<td>1,400,000</td>
<td>4,870,000</td>
<td>7,720,000</td>
<td>1,217,500</td>
</tr>
<tr>
<td>European Possessions,</td>
<td>1,707,000</td>
<td>1,600,000</td>
<td>1,022,700</td>
<td>4,870,000</td>
<td>73,050,000</td>
</tr>
<tr>
<td>Various settlements</td>
<td>96,171</td>
<td>200,000</td>
<td>2,678,500</td>
<td>535,700</td>
<td>1,217,500</td>
</tr>
<tr>
<td>Totals</td>
<td>8,772,534</td>
<td>283,047,328</td>
<td>$378,425,000</td>
<td>$4,457,511</td>
<td>$4,060,590,000</td>
</tr>
</tbody>
</table>

The United Kingdom of Great Britain and Ireland is the full designation of the country more generally known as Great Britain or the United Kingdom. It includes the two large islands of Great Britain and Ireland, and the adjacent smaller islands, together with the Channel Islands and the Isle of Man.

The following table exhibits the area, in English square miles, and population, according to the last census of the several constituent parts:

<table>
<thead>
<tr>
<th>NAME OF COUNTRY</th>
<th>AREA.</th>
<th>POPULATION.</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>59,922</td>
<td>21,495,131</td>
</tr>
<tr>
<td>Wales</td>
<td>7,397</td>
<td>1,217,135</td>
</tr>
<tr>
<td>Scotland</td>
<td>31,324</td>
<td>3,360,018</td>
</tr>
<tr>
<td>Great Britain</td>
<td>89,648</td>
<td>26,072,284</td>
</tr>
<tr>
<td>Ireland</td>
<td>32,481</td>
<td>5,411,416</td>
</tr>
<tr>
<td>Isle of Man, and Channel Islands</td>
<td>394</td>
<td>144,638</td>
</tr>
<tr>
<td>Army and Navy, and Merchant Seamen</td>
<td>122,518</td>
<td>229,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31,857,338</td>
</tr>
</tbody>
</table>

The island of Great Britain lies between latitude 49° 57' 30" and 58° 40' 24" north, and between longitude 1° 46' east, and 6° 13' west, and is the largest island in Europe. It is bounded on the north by the Atlantic, on the east by the North Sea, and on the south by the English Channel, and on the west by the Atlantic, the Irish Sea, and St. George's Channel. Its greatest length is about 608 miles, and its greatest breadth (from Land's End to the east coast of Kent), about 300 miles.

England, which may be roughly said to be divided from Scotland on the north by the Cheviot Hills and the Rivers Tyne and Solway, and from Wales by the Severn
and Dec, is, except on the west and north, for the most part a level country, so cultivated as to be highly productive. The other districts have mineral riches, as iron, tin, lead, copper, and coal, which make abundant amends for the poverty of their surface. Wales is generally mountainous, and also has great mineral wealth.

The greater part of the surface of Scotland is irregularly distributed into mountains and valleys, a very small proportion spreading into level plains. The eastern coast forms a waving, continuous, and rarely broken line; the western is extremely irregular, being deeply indented with bays and arms of the sea, and exhibiting steep promontories and mountainous islands. The whole country is physically divided into Highlands and Lowlands—the former comprehending the northwest, west, and central portions; the latter, generally speaking, the east coast and the country south of the Forth and Clyde.

Ireland is an island lying between $51^\circ 26'$ and $55^\circ 23'$ north latitude, and $5^\circ 20'$ and $10^\circ 26'$ west longitude. It is about 60 miles to the west of England. On three sides it is washed by the Atlantic Ocean, and on the east by the Irish Sea and St. George's Channel. Its greatest length is, from north to south, 306 miles, and from east to west 120 to 180 miles. Ireland is divided into the four provinces of Ulster, Leinster, Munster, and Connaught, which are again subdivided into 32 counties.

The geology of Great Britain is of peculiar importance. British geologists have given to the world the names whereby the various strata are known, and British rocks form the typical series of the earth's strata. The whole recognized series of stratified deposits occur in Britain, one or two only being more fully developed elsewhere; and it is only in these singular cases that the foreign equivalents are taken as the types. British geology is no less important from the influence it has had in the development of the country, its mineral wealth, especially the coal and iron, being the real sinew of Britain's wealth and power.

In the year 1874, there was produced from the ore nearly 6,000,000 tons of pig iron, value £16,476,372; and 383 ounces of gold were raised, value £1540. Copper, tin, lead, zinc, silver, and other metals brought the total value of metals produced up to £19,539,070. The aggregate value of all the minerals, metals, coal, etc., obtained in the United Kingdom in 1874, was £67,834,373. Included in this were 125,043,257 tons of coal, value £46,849,794.

The climate of Great Britain is mild and equable in a remarkable degree, the winters being considerably warmer and the summers colder than at places within the same parallels of latitude. The mean temperature of England is 49.5°, and of Scotland 47.5°.

Very few species of plants or animals are peculiar to Great Britain. The flora, for the greater part, resembles that of Germany; but in the south of England there is, as might be expected, a closer correspondence with that of the northwest of France; and some plants found in the Channel Islands and on the French coast appear nowhere in Britain but on the southwest coast of England. The mountains of Wales, Cumberland, and Scotland have a vegetation resembling that of Scandinavia more than that of the mountains of central or southern Europe. The state of the case is much the same as to the fauna. There are, however, many remarkable instances both of plants and animals, which, from these apparent relations to continental Europe, might be expected in Great Britain, and which are not indigenous to it; as, for instance, among plants, the Norway spruce, and among animals, the lemming, both common in Scandinavia. The progress of civilization and of cultivation has completely banished from Great Britain many of the animals which were once numerous, as bears, wolves, etc. On the other hand, many plants which were unquestionably introduced by man, have become thoroughly naturalized.

For administrative purposes, Great Britain with its surrounding islands (excepting the Channel Islands and the Isle of Man, which are under peculiar jurisdiction) is divided into 84 counties or shires.
The soil of Great Britain is almost exclusively devoted to the production of the two primary necessities of society,—breadstuffs (chiefly wheat, barley, and oats) and grass, roots, etc., as food for domestic animals. The annual value of the pastures and meadow hay is immense. The total extent of land returned in 1872, as being under all kinds of crops, bare fallow and grass, was 31,004,173 acres in Great Britain, 15,749,547 acres in Ireland, 88,573 in the Isle of Man, 18,026 acres in the island of Jersey, and 12,007 acres in the islands of Guernsey, Alderney, etc., making a total for the United Kingdom of 46,869,326 acres. The number of horses included in the agricultural returns was 1,808,259; the number licensed in Great Britain was 857,043; the number of others than agricultural horses exempt from license duty, was probably about 35,000; and the number belonging to the army at home may be stated at 15,000, which would bring the total number of horses in the United Kingdom up to 2,725,000. The total number of cattle returned for the United Kingdom in 1872, was 9,718,000; sheep, 32,246,000; pigs, 4,178,000.

Constabulary returns, based upon information obtained from farmers and others and received by the Boards of Guardians, show that in the year 1873, Ireland produced 469,563 quarters of wheat, 6,912,765 quarters of oats, 1,016,339 quarters of barley, 25,576 quarters of bere and rye, 48,375 quarters of beans and peas, 2,683,060 tons of potatoes, 4,429,697 tons of turnips, 515,690 tons of mangold wurzel, 278,923 tons of cabbage, 19,843 tons of flax, and 3,306,163 tons of hay. At the end of 1873, Ireland had 4,142,400 head of cattle, 4,482,053 sheep, 532,146 horses and 1,042,244 pigs.

The following table shows the condition of the textile industries of the United Kingdom, 1874:

<table>
<thead>
<tr>
<th>NO. OF FACTORIES</th>
<th>HANDS EMPLOYED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton,</td>
<td>2,055</td>
</tr>
<tr>
<td>Woollen,</td>
<td>1,800</td>
</tr>
<tr>
<td>Worsted,</td>
<td>692</td>
</tr>
<tr>
<td>Flax,</td>
<td>449</td>
</tr>
<tr>
<td>Silk,</td>
<td>818</td>
</tr>
<tr>
<td>Shoddy,</td>
<td>125</td>
</tr>
<tr>
<td>Hemp,</td>
<td>61</td>
</tr>
<tr>
<td>Jute,</td>
<td>110</td>
</tr>
<tr>
<td>Hair,</td>
<td>27</td>
</tr>
<tr>
<td>Hosiery and other factories</td>
<td>557</td>
</tr>
<tr>
<td><strong>Total,</strong></td>
<td><strong>7,294</strong></td>
</tr>
</tbody>
</table>

The government of Great Britain is of the kind known as a “constitutional monarchy,” in which the sovereign accepts of his dignity under an express agreement to abide by certain prescribed conditions. The sovereignty is hereditary in the family of Brunswick, now on the throne, and in the person of either a male or a female. The executive government of the United Kingdom is vested nominally in the crown, but practically in a committee of Ministers, commonly called the Cabinet, which has come to absorb the functions of the ancient Privy Council, the members of which, bearing the title of Right Honorable, are sworn “to advise the king according to the best of their cunning and discretion,” and “to help and strengthen the execution of what shall be resolved.” Though not the offspring of any formal election, the Cabinet is virtually appointed by Parliament, and more especially by the House of Commons, its existence being dependent on the possession of a majority in the latter body.

The powers of Parliament are politically omnipotent within the United Kingdom, its colonies and dependencies. It can make new laws, and enlarge, alter, or repeal those existing. Its authority extends to all ecclesiastical, temporal, civil, or military matters, as well as to altering or changing the constitution of the realm. Parliament is the highest court of law, over which no other has jurisdiction.

The budget estimates for the financial year 1875-76, laid by the Chancellor of the Exchequer before the House of Commons, April 15th, 1875, was as follows:
The following figures show the numerical strength of the military force in the United Kingdom in 1875:

- Cavalry, ........................................................................................................ 13,358
- Artillery, ....................................................................................................... 19,418
- Engineers, .................................................................................................... 4,020
- Infantry, ....................................................................................................... 55,590
- Total, ........................................................................................................... 92,386

The army estimates of March 31st, 1876, contain votes of money for four classes of reserves, as follows:

- Militia, .......................................................................................................... 139,018
- Yeomanry cavalry, ..................................................................................... 15,130
- Volunteers, .................................................................................................. 161,150
- Enrolled pensioners and army reserve force, ........................................... 32,000

The total force of the British army in India was stated, in the estimates of 1875-76, to amount to 63,197.

On the 1st of December, 1874, the navy consisted of 233 steamers and sailing vessels, manned by crews aggregating 60,000.

The following are the statistics for the year 1874 of the tonnage of British and foreign vessels (sailing and steam) entered and cleared at ports in the United Kingdom from and to foreign countries and British possessions:

<table>
<thead>
<tr>
<th></th>
<th>ENTERED.</th>
<th>CLEARED.</th>
<th>TOTAL.</th>
</tr>
</thead>
<tbody>
<tr>
<td>British</td>
<td>14,833,644</td>
<td>15,256,639</td>
<td>30,090,283</td>
</tr>
<tr>
<td>Foreign</td>
<td>7,534,866</td>
<td>7,804,408</td>
<td>15,339,274</td>
</tr>
<tr>
<td>Total</td>
<td>22,368,510</td>
<td>23,060,447</td>
<td>45,428,957</td>
</tr>
</tbody>
</table>

There were, in 1874, 20,872 vessels, with crews aggregating 203,606, and of a registered tonnage of 5,864,588.

On the 1st of January, 1875, there were 16,448 miles of railway open in the United Kingdom. The statistics of capital, passengers, receipts, and working expenses for the year 1874 were as follows: Total capital paid up (shares, loans), £2,970,456,106; number of passengers, 478,316,701; total of traffic receipts, £277,109,238; working expenses, £158,040,397.

The number of letters delivered in 1874 was, in England and Wales, 804,000,000, in Scotland, 90,000,000, and in Ireland, 73,000,000. Of postal cards there were 66,000,000 delivered in England and Wales; 5,000,000 in Scotland; and 4,000,000 in Ireland; total for the United Kingdom, 79,000,000.

The number of newspapers and book packets delivered in 1874 was 207,000,000 in England and Wales, 29,000,000 in Scotland, and 23,000,000 in Ireland; total, 259,000,000. The number of money orders in 1874, in the whole of the United Kingdom was 15,900,562, of the aggregate value of £26,256,441. At the end of the year the total amount of deposits held by the Post Office Savings Bank was £24,030,711.

There were 19,116,634 telegraph messages forwarded from postal telegraph stations in the year 1874. The number of post offices at the end of 1874 was 13,950. The total number of telegraph offices, at the same date, was 5600, including 1300 railway telegraph offices. The total length of the postal telegraph wires at the end of 1874 was 107,000 miles.
In England, the chief institutions for education are the ancient national universities of Oxford and Cambridge; the more recent institutions of London, Durham, and Lampeter, in Wales; the classical schools of Eton, Westminster, Winchester, Harrow, Charter House, and Rugby; Owens College, Manchester, and other colleges and schools, chiefly for physical science; the various military schools; the colleges of the dissenting denominations; the middle class schools, either started by individual teachers or by associated bodies acting as directors, to whom the teachers are responsible; and the schools of design.

For primary education, a national system has now been established. Under the Elementary Education Act for England, 1870, a popularly elected school board is established in any district where the existing schools are deficient. Schools under the act are supported by school-rates and fees, and by parliamentary grants, varying according to the number of pupils, and their proficiency, as tested by different standards of examination. They are at all times to be open to government inspection. It is left to the discretion of school boards to make education compulsory.

Scotland possesses four universities for the higher branches of education, viz.: Edinburgh, Glasgow, St. Andrew's, and Aberdeen, besides a variety of other minor colleges. The Scotch education act, 1872, is modelled after the English act, but differs from it by enacting that a school board is to be elected in every parish and burgh; by making it illegal for parents to omit educating their children, between five and thirteen, in reading, writing, and arithmetic; and by comprehending higher class schools.

The number of the day-schools in Great Britain, inspected in 1871, was 10,700; the daily average attendance throughout the year was 1,434,488; 1,724,689 scholars were present at inspection; 875,298 were examined; and 598,203 passed the prescribed tests. On the registers of the inspected day-schools were 2,055,312 children, of whom 517,344 were under six years of age, 1,332,229 between six and twelve, and 205,739 above twelve; 2709 night-schools, were inspected, having an average attendance of 86,206 each night. In December, 1871, there were in Great Britain 15,605 certificated teachers, 1196 assistant teachers, and 21,854 pupil teachers.

Ireland is well supplied with educational establishments, having three universities, a large number of endowed schools, and an admirable system of mixed schools.

Commission from Great Britain and Colonies to the International Exhibition:

His Grace the Duke of Richmond and Gordon, K. G.,
Lord President of the Council.

The Rt. Hon. Viscount Sandon, M. P., Vice-President of the Committee of Council on Education.


Executive Staff:

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NEW ZEALAND.

NEW ZEALAND, a British colony in the South Pacific Ocean, consists of three principal islands, called, respectively, the North, South, and Stewart Islands. There are several small islets—mostly uninhabited—dependent on the colony; the chief of them are the Chatham Islands and the Auckland Islands. The New Zealand group is situated about 6500 miles west of South America, and about 1200 miles east of Australia. The entire group lies between 34° and 48° south latitude and 166° and 179° east longitude. The three principal islands extend in length 1100 miles, but their breadth is extremely variable, ranging from 46 miles to 250 miles; the average breadth being about 140 miles. The North and South Islands are separated by Cook Strait, which is crossed by steamers in about two hours.

The total area of New Zealand is about 100,000 square miles, or 64,000,000 acres.

According to a census taken March 31st, 1874, the population (exclusive of the aborigines) numbered 299,514 souls. It is estimated that the present white population (April, 1876) is about 400,000. The Maori population, according to an approximate census taken on June 1st, 1874, was 45,470.

The aborigines, called Maoris, who formerly caused much trouble, though a large number have always sided with the British, are now peacefully settling down to agricultural pursuits, and, since 1871, permanent tranquility appears to have been established.

The New Zealand Islands are of primitive rocks and tertiary plains, but a great portion of the entire area is occupied by mountains, among which are many extinct and a few active volcanoes. The mountains are mostly clothed with evergreen forests of luxuriant growth, interspersed with fern-clad ranges, and occasionally with treeless grassy plains. Extensive and rich valleys and sheltered dales abound in the North Island; and in the east of the South Island there are many extensive plains of rich land, admirably adapted either for agriculture or cattle-breeding. Water and water-power are found in great abundance in the colony, and the numerous rivers are subject to sudden floods from the melting of the mountain snows. As a rule, however, the streams are short, and are not navigable for more than 50 miles above their mouths. The chief is the Clutha, in the South Island, and the Waikato river, in the North Island, which latter, issuing from the Taupo lake (30 miles long by 20 broad), flows in a northern direction for 200 miles, and reaches the sea on the west coast.

In the North Island, around Lakes Rotomahana and Rotorua, are a number of grand and beautiful geysers, which throw up water heated to the boiling point. The southwest coast of the South Island is indented with a number of deep sounds, of which Milford Sound is the chief. In this sound the water is unfathomable; the only way of securing a ship being to moor it, stem and steru, to the trees which overhang the water. Steamers of 2000 tons have been thus moored. The geology of New Zealand is remarkable and varied in a high degree. The mountains, which are of every variety of outline, are chiefly composed of the schist and slate-rocks, primary sandstone, and limestone. Extensive beds of coal and lignite exist; the former have been to some extent worked, and are at present being largely developed by the construction of railways and harbor works in their vicinity.

Of the whole surface extent of New Zealand, one-fourth is estimated to consist of
dense forest tracts, one-half of excellent soil, and the remainder of waste lands, scoria hills, and rugged mountain regions. Nearly 40,000,000 acres are supposed to be more or less suitable for agriculture and cattle-breeding. The soil, though often clayey, has in the volcanic districts more than a medium fertility; but the luxuriant and semi-tropical vegetation is perhaps as much due to excellence of climate as to richness of soil. Owing to the prevalence of light and easily worked soils, all agricultural processes are performed with unusual ease. The climate of New Zealand is one of the finest in the world. The country contains few physical sources of disease; the average temperature is remarkably even at all seasons of the year, and the atmosphere is continually agitated and freshened by winds that blow over an immense expanse of ocean. In the North Island, the mean annual temperature is 57°; in the South Island, 52°. The mean temperature of the hottest month at Auckland, in the northernmost province, is 68°, and at Dunedin, in the most southern province, 58°; of the coldest month, 51° and 49° respectively. The air is very humid, and the fall of rain is greater than in England, but there are more dry days. All the native trees and plants are evergreens. Forests, shrubberies, and plains are clothed in green throughout the year, the results of which are that cattle, as a rule, browse on the herbage and shrubs of the open country all the year round, thus saving great expense to the cattle-breeder; and that the operations of reclaiming and cultivating land can be carried on at all seasons. The seasons in New Zealand are the reverse of ours; January is their hottest month, and June the coldest. All the grains, grasses, fruits, and vegetables grown in England are cultivated in the colony with perfect success, being excellent in quality and heavy in yield; while, besides these, the vine is cultivated in the open air, and maize, the taro (Caladium esculentum), and the sweet potato are cultivated with success in the sunny valleys of the North Island.

The temperature, it will be thus observed, is very equable, for while the summers are as cool as those of England, the winters are as warm as those of Italy. The mean annual temperature of Auckland is nearly the same as at Rome; at Wellington, nearly the same as at Milan; at Dunedin, nearly the same as at London. The official reports of the British Army Medical Department show that, where the annual mortality from all diseases out of every 1000 British soldiers quartered in the United Kingdom was 16, it was only 5 out of every 1000 in the troops quartered for more than 25 years in New Zealand. In other words, this colony appears to be peculiarly favorable to the duration of human life.

In connection with this, it may be mentioned, in order to show the redundancy of the population in New Zealand, that in 1874 the births were 40,05 per 1000 of the population, and the death rate was only 12.97 per 1000, while the marriages were 8.81 for every 1000 people.

The entire acreage under crop, in February, 1875, was 1,788,800. Of the crop, the principal were wheat, oats, barley, potatoes, and sown grass. At the same date, the number of holdings was 16,009, the population being 296,018. The average yield of wheat was, in 1875, over 28 bushels per acre.

The live stock of the colony consisted, at the census of March 1st, 1874, of 99,859 horses, 494,917 cattle, 11,704,853 sheep, 123,021 pigs, and 1,038,198 head of poultry.

Large gold fields were discovered in the spring of 1857. In the year 1874, there were 376,338 ounces of gold, of the declared value of $7,525,655, exported from New Zealand, the average annual yield of the gold fields since 1862 being 538,072 ounces, or value of $11,395,140, while from April 1st, 1857, to December 31st, 1875, the total quantity of gold exported was 8,025,675 ounces, valued at $151,271,293 gold.

The principal produce of the colony is wool, 46,848,735 pounds, valued at $14,173,475, having been exported in 1874.

The total imports of the colony during the year 1874 were $40,609,060; the total exports, $46,256,345.
The class of people most required in New Zealand are farmers with a small capital, carpenters, who can earn, according to their skill, from 11 shillings to 15 shillings per diem, and single women, who always gain good wages, and rarely stop in service for a long time, being greatly in demand in the matrimonial market. All classes of laborers find ready employment at remunerative rates.

By an imperial statute, passed in 1852, the legislative power is vested in the Governor and a Parliament of two chambers; the first called the Legislative Council, and the second the House of Representatives, and collectively, the General Assembly. The Legislative Council consists at present of 49 members, nominated by the crown for life; and the House of Representatives of 83 members, elected by the people for five years. Two Maoris sit in the Legislative Council, and 4 in the House of Representatives. Two of the latter also are members of the Executive Council. The Governor is assisted by an Executive Council, composed of the responsible ministers for the time being, and any others he may appoint. Members of both branches receive pay at the rate of $787 for the session, which generally lasts three months. Every owner of a freehold worth $250, or tenant house-holder, in the country at $25, in the town at $50 a year rent, is qualified to vote for members of the House, and is eligible for membership. The seat of government is at Wellington, a town of about 12,000 people, and centrally situated.

The colony is divided into nine provinces; four in the North, and five in the South Island. Each of these provinces is governed by an elected Superintendent and Provincial Council. In 1875, the General Assembly passed a bill declaring that the provincial governments should cease to exist after the close of their next session. The form of local government which is to take the place of provincial government has not been decided upon, but will probably take the shape of legislative powers.

In the year 1874, the total ordinary revenue (including provincial) was $9,367,240, and the territorial revenue, $5,754,500, which, with incidental receipts of $221,320, makes the total general revenue—ordinary, territorial, and incidental—amount to $15,343,060. The total ordinary expenditure by general and provincial governments was $14,803,555.

Beyond the ordinary expenditure, a sum of $13,629,465 was spent, which is charged to the loan account. The public debt of New Zealand amounted, at the end of 1874, to $66,834,680, and as a loan expenditure is still proceeding, it is estimated that the total debt will shortly amount to about $95,000,000. Against this there is a sinking fund already amounting to $5,000,000, and, moreover, a large amount has been spent on reproductive works. In 1870, the sum of $20,000,000 was authorized to be borrowed for the purposes of emigration and public works (such as railways, roads, telegraphs, water-races, bridges, etc.), besides $5,000,000 for defence and other purposes. Since then, further large loans have been contracted for public works. To assist in the development of these works, a vast number of emigrants have been brought into the country, receiving either free passage from England or a grant of land. Railways are now being constructed throughout the islands, 260 miles being open for traffic; 420 miles under construction, of which a good deal is near completion; and 330 miles are authorized to be constructed.

Under the stimulus of the public works and emigration policy, no less than 43,965 emigrants arrived in New Zealand in 1874.

On the 31st of December, 1874, the colony had 2632 miles of telegraph lines, and 5284 miles of wires. The number of telegrams during the year was 84,430, of which total 724,582 were private, and the remainder government messages.

During the year 1874, the post office received 4,339,165 letters, and dispatched 4,719,291. The total number of newspapers received was 3,872,668, and dispatched, 2,434,024. Money orders to the number of 62,712 and the amount of $1,315,820 were issued during 1874.

Grammar and free schools, endowed from the public revenues of the various
provinces, several colleges, and two universities, one being established in Otago and the other a corporation endowed by the general government, are the principal educational institutions.

The shipping entered in 1874 consisted of 856 vessels, with a tonnage of 399,296. Of these, 237 vessels, measuring 201,017 tons, were British; 552, measuring 170,303 tons, colonial; and 67, measuring 27,976, were foreign. Of the foreign vessels entered, 50 were American. Coasters are not included in the above statistics. In 1874 the number of vessels entered coastwise was 14,351, and their tonnage 1,353,085.

The number of individual exhibits included in this Catalogue from New Zealand is 1114.

Commission from New Zealand to the International Exhibition:

The Hon. Walter Ballock Durant Mantell, M. L. C., F. G. S., Chairman.
The Hon. William Gisborne.
William Hort Levin, Esq.
Daniel McIntyre, Esq., Consular Agent of the United States Government at Wellington.
James Hector, Esq., C. M. G., M.D., F. R. S., Special Commissioner to Philadelphia.
Arthur Thomas Bothamley, Secretary.
NEW SOUTH WALES.

NEW SOUTH WALES, a British colony in the southeastern portion of Australia, is bounded on the north by a line which, beginning at Point Danger, in latitude 28° 8' south, follows several lines of heights across the Dividing Range till it meets the 99th parallel, which forms the rest of the boundary westward; on the west by the 141st meridian; on the east by the Pacific Ocean; and the line separating it from Victoria on the south runs from Cape Howe, at the southeast of the island, northwest to the source of the Murray, and then along that stream, in a direction west by north, to the western boundary of the two colonies.

Its area is 323,437 square miles, and its population in 1874 was, exclusive of aborigines, 584,278. At the same date the population of Sydney, the capital, was 150,000. Within the colony of New South Wales, the mountain range, which girdles nearly the whole island, is most continuous and elevated, and is known as the Dividing Range. The section of this mountain system on the southern boundary of the colony, called the Australian Alps, rises in Mount Kosciusko to 6,580 feet. From this the range extends northward, the water-shed being from 50 to 150 miles distant from the east coast, and thus divides the colony into two slopes, with two distinct water systems. The rivers on the eastern side descend with great rapidity, and in oblique tortuous courses, their channels often forming deep ravines. Many of them are navigable in their lower course for sea-going steamers. The principal are the Richmond, Clarence, Macleay, Manning, Hunter, Hawkesbury, and Shoalhaven. The numerous streams that rise on the west side of the water-shed within the colony, all converge and empty their waters into the sea through one channel within the colony of South Australia. The southern and main branch of this great river system is the Murray. The other great trunks of the system are the Murrumbidgee, which is navigable, the Lachlan, at times reduced to a string of ponds, and the Darling. The Macquarie, passing through the rich district of Bathurst, is a large tributary of the Darling, but it reaches it only in the rainy seasons. The coast line from Cape Howe to Point Danger is upwards of 700 miles long, and presents numerous good harbors formed by the estuaries of the rivers. Owing to the great extent of the colony, stretching as it does over eleven degrees of latitude, the climate is very various. In the northern districts, which are the warmest, the climate is tropical, the summer heat occasionally rising in inland districts to 120°, while on the high table-lands weeks of severe frost are sometimes experienced. At Sydney, the mean temperature of the year is about 65°. The mean heat of summer, which lasts here from the beginning of December to the 1st of February, is about 80°, but it is much modified on the coast by the refreshing sea breeze. The annual fall of rain is about 50 inches. Rain sometimes descends in continuous torrents, and causes the rivers to
rise to an extraordinary height. Sometimes the rains almost fail for five or six months in succession. Along the coast, for 300 miles from the northern boundary, the soil and climate are admirably adapted for the growth of cotton, and that plant has already been cultivated as far south as the river Manning (latitude 32° south). Farther south the climate is more temperate, and is fitted to produce all the grain products of Europe. Immense tracts of land, admirably adapted for agriculture, occur in the southwestern interior; while in the southeast coast districts the soil is celebrated for its richness and fertility. In the north, the tobacco plant, the vine, and sugar-cane are grown; and pineapples, bananas, guavas, lemons, citrons, and other tropical fruits are produced. In the cooler regions of the south, peaches, apricots, nectarines, oranges, grapes, pears, pomegranates, melons, and all the British fruits are grown in perfection, and sometimes in such abundance that pigs are fed with them. Wheat, barley, oats, and all the cereals and vegetables of Europe are also grown.

In 1875, New South Wales had 22,872,882 sheep, 856,699 horned cattle, 346,691 horses, and 219,958 pigs. The total area of land under cultivation, at the same date, embraced 469,957 acres, of which there were under wheat, 166,911 acres, under barley, 3984 acres, under oats, 17,974, under rye, 1342, under maize, 119,956.

New South Wales is believed to be richer in coal than the other territories of Australia. In 1874 there were 28 mines worked, producing in the year 1,298,400 tons of coal, valued at £286,152.

The gold mines of New South Wales cover a vast area, extending chiefly over the districts called the Western Fields, the Northern Fields, and the Southern Fields. Of these the Western Fields are the most important, furnishing three-fourths of the total supply. The gold exports of 1873 consisted of 200,134 ounces, value £773,439, of gold dust and bar, and of 490 boxes, value £2,151,168, of gold coin. The yield from the copper mines, in 1873, was 6027 tons.

The total exports during the year 1874 were £12,345,603; imports, £11,493,739.

The constitution of New South Wales vests the legislative power in a Parliament of two houses, the first called the Legislative Council, and the second the Legislative Assembly. The Legislative Council consists of not less than 21 members, nominated by the crown, and the Assembly of 72 members, elected by sixty constituencies. To be eligible a man must be of age, a natural-born subject of the Queen, or, if an alien, he must have been naturalized for five years, and resident for two years before election. There is no property qualification for electors, and the votes are taken by secret ballot. The executive is in the hands of a governor, nominated by the crown, who acts under the advice of ministers responsible to Parliament.

The public revenue during 1874 was £4,664,588; the expenditure, £4,426,040. The public debt, chiefly incurred for railways and other public works, amounted, at the end of 1874, to £10,842,415.

New South Wales possesses 436 miles of railways. Of electric telegraph, there were in the colony 8000 miles of wire, at the end of 1874. Number of paid messages transmitted during 1874, 385,000; number of telegraph stations, 105.

The post office of the colony transmitted 9,300,000 letters, 4720 newspapers, and 250,000 packets in 1874.

The number of schools, public and private, in 1872, was 1464, with 106,691 pupils.

Commission from New South Wales to the International Exhibition:

His Honor, Sir James Martin Knight, Chief Justice, President.
Hon. John Hay, President of the Legislative Council, Vice-President.
Hon. George Wigram Allen, Speaker of the Legislative Assembly, Vice-President.
Commissioners:

THE REV. CHAS. BADHAM, D.D.
SAMUEL BENNETT, ESQ.
JAMES BYRNS, ESQ.
R. W. CAMERON, ESQ., Resident Commissioner, N. Y.
The Hon. G. H. COX, M. L. C.
J. R. FAIRFAX, ESQ.
ANDREW GARRAN, ESQ., LL.D.
HON. S. D. GORDON, M. L. C.
HENRY HALLORAN, ESQ.
EDWARD S. HILL, ESQ.
HON. THOS. HOLT, M. L. C.
P. A. JENNINGS, ESQ.
G. W. LORD, ESQ., M. P.
HON. SIR WM. MACARTHUR KNIGHT, M. L. C.
WILLIAM MACLEAY, ESQ., F. L. S.
T. S. MORT, ESQ.
BENJAMIN PALMER, Mayor of Sydney.
COMMANDER THOS. STACKHOUSE, R. N.
ALEXANDER STUART, ESQ., M. P.
GEORGE THORNTON, ESQ., J. P.

WILLIAM WALLIS, ESQ.
JAMES WATSON, ESQ., M. P.
HON. J. B. WATT, M. L. C.
FITZ WILLIAM WENTWORTH, ESQ.
JOHN WILLIAMS, ESQ.
W. C. WINDEYER, ESQ.
ROBERT WISDOM, ESQ., M. P.
JOHN WOODS, ESQ.
WILLIAM WOLLFFEN, ESQ.
REV. W. B. CLARKE, M. A.
PROFESSOR SWERSEDGE.
C. L. WILKINSON, ESQ.
CHARLES MOORE, ESQ.
P. F. ADAMS, ESQ.
ROBERT ADAMS, ESQ.
JAMES POWELL, ESQ.
ARCHIBALD THOMPSON, ESQ.
JOSEPH THOMPSON, ESQ.
P. N. FREEBECK, ESQ.
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Resident Commissioners:

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MARSHALL BURDEKIN, ESQ., of Sydney.
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DR. R. W. FORBES, of New York.
PATRICK ALFRED JENNINGS, ESQ., of Sydney.
THE HONORABLE JACOB LEVI MONTEFIORE, of Sydney, a member of the Legislative Council of New South Wales.
GEORGE OAKES, ESQ., of Sydney.
JOSEPH JAMES PHELPS, ESQ., of Sydney, a member of the Legislative Assembly of New South Wales.
GEORGE RUSSELL, ESQ., of Scotland.
THE HONORABLE JAMES WHITE, of Sydney, a member of the Legislative Council of New South Wales.
CHRISTOPHER ROLLESTON, ESQ.
WILLIAM MORRIS, ESQ.
CHARLES ROBINSON, ESQ., Secretary.
VICTORIA.

VICTORIA comprises the southeastern corner of Australia, at that part where its territory projects furthest into cool southern latitudes. Wilson's Promontory, to the southeast, the most southerly headland, just passes the 39° of south latitude, while the most northern point, which is at the opposite or northwest extreme, is in south latitude 34°. The longitude comprises 9°—between 141° and 150° east of Greenwich. To the west is the colony of South Australia, separated by the 141° of east longitude, to the north is New South Wales, separated by the line of the Murray river eastwards from 141° east longitude to its source, and thence by a straight line southeast to Cape Howe, and from Cape Howe to South Australia again the colony is bounded on the south by Bass's Strait. The extreme length is east and west, and is about 500 miles, by an extreme width north and south of 300 miles. But a remarkable indentation of both the north and south boundaries opposite each other, about the middle of the colony, reduces the breadth between the head of the Port Phillip inlet and the Murray to only 120 miles. The superficial area is 88,198 English square miles.

Although Victoria may be called mountainous, as compared with the general flatness of Australia, it has much of the quiet and peculiar scenery characteristic of that division of the world. The highest mountain in Australia, Mount Feathertop, is 6303 feet in height. The largest river, which runs throughout its entire course in Victoria, is the Gouldbourn, 230 miles long. The Murray, which winds for a distance of 630 miles along the northern boundary of Victoria, rises in New South Wales, and falls into the sea in South Australia, so that it can scarcely be called a Victorian river.

The climate is on the whole healthful and agreeable. The average temperature of Melbourne is 57.6°, about the same as that of Marseilles, Bordeaux, Bologna, Nice, and Madrid. The common summer heat is from 65° to 80°, with an occasional advance to 90°, and even to 100°, during hot winds and a dry season. The winter range is mostly from 45° to 60°. Ice occasionally occurs in the midwinter of July, but it rarely, except on elevated ground, survives the noonday sun.

The estimated population of Victoria, on the 31st of March, 1875, was returned at 810,442 by the Registrar-general. In 1875 there were 1,011,776 acres under crops, including 332,936 acres of wheat, 114,921 of oats, 29,505 of barley, 35,183 of potatoes, 119,031 of hay, and 253,129 of green forage. The gross produce was: wheat, 4,850,165 bushels; oats, 2,121,612 bushels; barley, 619,896 bushels; potatoes, 124,310 tons; hay, 157,261 tons; wine, 577,493 gallons. The total number of horses was, in 1875, 180,254; milch cows, 241,137; horned cattle, 717,251; sheep, 11,221,036; pigs, 137,941. The manufactures of Victoria employed 25,000 persons, and the capital invested in machinery and plant was £5,000,000. The number of persons at work in the gold fields, December 31st, 1874, was 45,151, of whom 12,180, or 27 per cent., were Chinese.

The total value of the imports and exports of Victoria, including bullion and specie, for the year 1874, was as follows: Imports, £16,953,985; exports, £15,441,109. The most important, in value, of the imports are woolens, sugar, cotton, apparel and haberdashery, and tea. The two staple articles of export are wool and gold. The total exports of wool in 1874 amounted to 88,662,311 pounds, of the value of £5,373,641. The export of gold, exclusive of specie, was 1,012,153 ounces, of a declared value of £4,053,288.
The number of mercantile vessels on the register of Victoria, at the end of 1874, was 429, with a total tonnage of 70,696, and crews of 3229 men. Of these vessels 47 were steamers.

The constitution of Victoria was established by an act passed by the legislature of the colony in 1854, and subsequently confirmed by the crown. The legislative authority is vested in a parliament of two chambers—the Legislative Council, composed of 30 members, and the Legislative Assembly, composed of 78 members. A property qualification is required both for members and electors of the Legislative Council. No electoral property qualification is required for graduates of British universities, matriculated students of the Melbourne university, religious ministers of all denominations, certificated schoolmasters, lawyers, medical practitioners, and officers of the army and navy. Six members, or a fifth, of the Legislature Council must retire every two years, so that a total change is effected in ten years. The members of the Legislative Assembly are elected by universal suffrage, for the term of three years. The executive consists of a governor appointed by the crown, and a ministry which must contain at least four members of parliament, and must command a majority in the assembly. The revenue for the year 1874-75 was £4,406,906; the expenditure, £4,425,277. The public debt, incurred entirely for the construction of public works, amounted to £12,485,432 on January 1st, 1875.

Victoria has a more extensive system of railways than any other of the Australasian colonies. On the 1st of January, 1875, there were 457½ miles opened for traffic, and 427 more in course of construction. There were, in 1874, 148 telegraph stations, 4464 miles of wires. Number of telegrams forwarded during the year, 701,080. The work of the post office during the same year, 15,732,888 letters, 6,866,913 newspapers, and 1,269,822 packets. Number of post offices, 802.

The following table shows the educational condition of the population above five years of age:

<table>
<thead>
<tr>
<th></th>
<th>MALES.</th>
<th>FEMALES</th>
<th>TOTAL.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Able to read and write,</td>
<td>264,665</td>
<td>209,898</td>
<td>474,563</td>
</tr>
<tr>
<td>Able to read only,</td>
<td>39,049</td>
<td>36,336</td>
<td>75,385</td>
</tr>
<tr>
<td>Unable to read,</td>
<td>25,462</td>
<td>26,315</td>
<td>51,777</td>
</tr>
</tbody>
</table>

The state of education among the children, between 5 and 15, showed that 846 children out of 1000 could read, 640 could read and write, and only 154 were totally un instructed. Education in Victoria is gratuitous, secular, and compulsory, and the legislature has voted large sums for the primary education of the people.

The total number of schools is 1867, including 908 "common" schools, with an attendance of 154,353 pupils. (Furnished, in part, by the Victoria Commission.)

Commission from VICTORIA to the International Exhibition:

SIR REDMOND BARRY, Acting Chief Justice of the Supreme Court, President.

HON. J. J. CASEY, M. P.
HON. J. F. SULLIVAN, M. P.
HON. C. J. JENNER, M. L. C.
JAMES MUNRO, HON., M. P.
J. MCLLWRAITH, ESQ.
L. J. SHERRARD, ESQ.
COUNT DE CASTELNAU.
HON. S. H. BINDON.
JAMES BOSISTO, ESQ., M. P.
JAS. GATEHOUSE, ESQ., Mayor of Melbourne.
JOHN McINTYRE, ESQ.

| J. I. BLEASDALE, D.D. |
| HON. SIR JOHN O'SHANASSY, K.C.M.G. |
| HON. SIR JAMES McCulloch, M. P. |
| HON. JOHN ALEXANDER MACPHERSON, M. P. |
| HON. JOHN THOMAS SMITH, M. P. |
| LESLIE JAMES SHERRARD, ESQ. |
| JOHN DANKS, ESQ. |
| GEORGE COLLINS LEVEY, ESQ., SECRETARY. |
SOUTH AUSTRALIA.

The colony of South Australia embraces 25 degrees of latitude through the centre of the continent of Australia, from the Southern to the Indian Ocean, and is bounded on the east by the colonies of Victoria, New South Wales, and Queensland, and on the west by the colony of Western Australia. Its area is 914,730 square miles, or 585,427,200 acres; being about a third of the area of the United States of America, or ten times that of Great Britain. Its population is 210,669.

Its chief exports are wool, wheat, and copper. In 1875 the exports were valued at £4,442,100—namely: of wool, £1,778,297; of agricultural produce, £1,688,035; of metals, £738,664; and of other products, £217,104. Its revenue in 1875 was £1,143,312, its people not being taxed at a higher rate than 25 shillings a head. The people have purchased land of the government to the extent of 4,634,711 acres, of which 1,400,000 are under cultivation; and the average price paid since 1845 is £1 5s. 2d. per acre. The public debt is about £3,000,000; but, as an offset, is a sum of £2,225,000 due for lands sold to occupiers, and payable within six years.

The natural wealth of the colony in healthy climate, fruitful soils, and abundant minerals, has been greatly augmented by useful and substantial improvements. In addition to numerous ports made serviceable for coasting trade, inland traffic is facilitated by 884 miles of excellent macadamized roads, which have cost over £2,000,000; and by railways of nearly an equal further cost. The public and private buildings, both in towns and country, are mostly of well-built stone, with slate or iron roofs. Gardens and orchards, pasture and arable fields cover the more settled portions of the colony, whilst over hundreds of miles outside of these some 6,000,000 sheep, 200,000 head of horned cattle, many thousands of horses, and a few hundred camels, thrive at large on the native vegetation, save that their ranges, or runs, are mostly inclosed in areas of from 5 to 50 square miles with good post and wire fencing.

The best of meat and bread, fruit and vegetables, grow in abundance in South Australia. People there live well at little cost. Labor is well rewarded. There are not, or ought not to be, any able-bodied paupers in the colony. At the savings' banks, which are guaranteed by government, the small deposits of the poorer classes approximate £300,000, on which four to five per cent. interest is paid. Immigration is promoted by annual money votes, which, through Mr. F. S. Dutton, C. M. G., Agent-General for the colony in London, supply free or assisted passages for eligible persons.

The government, the laws, and the social institutions, like the people of South Australia, have an Anglo-Saxon character. There is the fullest civil and religious freedom under a vice-regal governor, whose ministers are chosen by, and are responsible to, a majority of two houses of parliament elected by ballot, as to the larger house, of manhood suffrage alone, and, as to the smaller house, by a slightly restricted property qualification. These organizations have worked harmoniously to the contentment of the people.

Churches and schools are numerous. The facilities for acquiring real property in the colony are great, and laws well secure its quiet enjoyment. The public lands are mostly sold on credit: one-tenth per cent. is paid down as interest on the purchase money, which is not less than twenty shillings per acre. The balance is deferred to the sixth year, a second ten per cent. on the purchase money having been paid on the third year as interest. At the sixth year half the
balance may be renewed for four years at four per cent. if needed; but that the State may secure certain benefit from the sale of its lands under a credit system, the purchaser is bound to effect annual improvements. All metals, precious or other, go to the purchaser. The title to real estate from the crown is by registration, of which the purchaser gets a certificate in simple form. This system is popular, for it is ready and inexpensive at the outset, and is returnable to the registration office for record on it of all subsequent dealings, or for substituted certificate, or certificate as needed, in the event of sales. At the close of 1874 the value of landed property, which had passed under it, amounted to £9,260,186. Adjoining colonies have adopted this law.

The settled portions of the colony of South Australia are sectioned off into counties, and these counties, when arable cultivation requires it, are subdivided into hundreds, whose municipal governing bodies can be elected for local public works and education. Outside the hundreds, in the southern portion of the colony, the public lands are left for purely pastoral occupation, for which fourteen or twenty-one years' leases can be procured at moderate rents, regulated much by distance from ports of shipment, except that, both as to public lands inside or outside the hundreds, rights to search for and work minerals are readily granted. The rent of a mining lease is fixed at ten shillings an acre per annum, on a fourteen years' term, renewable.

For the northern territory of South Australia, with its tropical climate, the land laws are modified. Land there is open for selection and sale at 7s. 6d. per acre, or for lease over ten years at 6d. per acre per annum. And, for the special growth of sugar, cotton, tea, rice, and tobacco, selections varying from 320 to 1280 acres can be made at a rental of 6d. per acre per annum for five years, when, if the land has been inclosed and one-half under cultivation, a free grant is procurable.

In 1872 South Australia erected 1973 miles of telegraph wire across her territory, and, at a cost of £350,000, connected Australia with India and Europe.

Commission from SOUTH AUSTRALIA (ADELAIDE) to the International Exhibition:

HIS EXCELLENCY, SIR ANTHONY MUSGRAVE, C. M. G., Chairman,

Hon. John Crozier, M. L. C., J. P.
Hon. Wentwood Cavanaugh, Esq., M. P., J. P.
Josiah Boothly, Esq., J. P.
E. W. Andrews, Esq., J. P.
S. Davenport, Esq., J. P., Special Commissioner.
George McEwen, Esq., J. P.

Dr. Schomburgh, D. P., J. P.
Caleb Peacock, Esq., J. P.
R. D. Ross, Esq., M. P., J. P.
W. E. Smith, Esq., M. P., J. P.
Walter Hacke, Esq.
J. A. Holden, Esq., J. P.
Joseph Crompton, Esq.
S. V. Pizey, Esq.
F. G. Waterhouse, Esq.
W. A. E. West Erskine, Esq.
C. J. Coates, Esq., Commissioner and Honorary Secretary.
CAPE OF GOOD HOPE.

The colony of the Cape of Good Hope is bounded north and northeast by the Orange river, which divides it, in parts of its course, from the Free State; east and northeast by the Tese, a small tributary of the Orange, the Stormbergen Mountains, and the Indwe and Great Kei, which two rivers separate the Cape Colony from Kaffirland; on the south it is bounded by the Indian Ocean, and on the west by the Atlantic. Latitude 28° 10' to 34° 51' south; longitude 16° 20' to 28° 20' east. The breadth on the greatest meridian is about 450 miles, the length on the largest parallel about 600 miles, and the total area is about 201,000 square miles. The colony is generally considered as forming two sections, the Western and Eastern Provinces, each divided into 16 electoral divisions, which are again subdivided for fiscal and magisterial purposes. The first regular census (1865) gave the following result as to the numbers of the population:

White, or European, 181,592
Hottentot, 81,598
Kaffir, 100,536
Other colored, 132,655

496,381

Since the census, the annexation of British Kaffraria, Basutoland, Fingoland, and Normansland, added 58,47 whites and 273,930 colored to the population, making the total, 776,158.

Hydrographically, the country, as a whole, is decidedly superior to most parts of Africa. The seaboard presents several comparatively safe and commodious harbors. Of these, however, two—Table Bay in the Western Province, and Algoa Bay in the Eastern—absorb nearly the whole of the foreign trade. Hardly any of the ports command navigable communication with the interior.

The highest range of mountains within the colony is 9000 feet above the sea. The dividing ridge runs parallel with the coast at a distance of 100 miles. Between the principal range and the sea, on the east, there are two other ranges, less continuous and regular; the intermediate one generally more distant from the first than they are from each other.

The prevalent winds—the southeast in summer, and the northeast in winter—mitigate each the rigor, whether heat or cold, of its own season; and, in spite of occasionally sudden and great changes, render the temperature, as a whole, one of the most salubrious and delightful in the world. The mean temperature of the year at Cape Town is about 68° F.; that of the coldest month being 57°, and of the hottest, 79°.

The value of the total exports and imports of the Cape Colony, including British Kaffraria, was, in 1873, as follows:

Imports, £5,451,927
Exports, 4,011,327

Among the articles of export, wool is the most important, forming nearly ninetenths of the total. Among the other leading items are copper ore, feathers, and sheepskins.
There were, at the end of 1865, in the colony, 692,514 head of cattle and 9,836,065 sheep. The sheep farms are often of very great extent, comprising from 3000 to 15,000 acres and upwards. Those in tillage are comparatively small. The graziers are, for the most part, proprietors of the farms they occupy, paying a quit rent to government, as the original owner of the soil.

**COMPARISON OF TOTAL STOCK IN THE COLONY IN 1865 AND 1875.**

<table>
<thead>
<tr>
<th></th>
<th>1865</th>
<th>1875</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horses</td>
<td>228,405</td>
<td>207,318</td>
</tr>
<tr>
<td>Mules and asses</td>
<td>24,267</td>
<td>29,517</td>
</tr>
<tr>
<td>Draught oxen</td>
<td>249,291</td>
<td>398,825</td>
</tr>
<tr>
<td>Other cattle</td>
<td>443,004</td>
<td>698,681</td>
</tr>
<tr>
<td>Wooled sheep</td>
<td>8,426,619</td>
<td>10,064,289</td>
</tr>
<tr>
<td>Other sheep</td>
<td>1,465,883</td>
<td>944,050</td>
</tr>
<tr>
<td>Angora goats</td>
<td>121,432</td>
<td>972,733</td>
</tr>
<tr>
<td>Common goats</td>
<td>2,147,807</td>
<td>2,122,808</td>
</tr>
<tr>
<td>Pigs</td>
<td>78,578</td>
<td>110,489</td>
</tr>
<tr>
<td>Ostriches</td>
<td>80</td>
<td>22,257</td>
</tr>
</tbody>
</table>

There were lines of railways of a total length of 134 miles at the end of 1874, and a system of other main lines, as well as of telegraphs, was under consideration by the government.

The constitution vests the executive in the Governor and an Executive Council, composed of certain officeholders appointed by the crown. The legislative power rests with a Legislative Council of 21 members, and a House of Assembly of 66 members.

The income and expenditure of the colony, during 1873, were as follows:

- **Revenue:** £2,078,220
- **Expenditure:** £2,159,658

Included in the above receipts is a loan of £859,000 for public works. The public debt, on the 1st of January, 1875, amounted to £1,723,144.

Commissioner from the Cape of Good Hope to the International Exhibition:

**Mr. H. Crawford Coates, Executive Commissioner.**
JAMAICA.

JAMAICA, one of the West India Islands, and by far the most important of those belonging to Great Britain, is about 90 miles to the south of Cuba, and stretches in north latitude between 17° 40' and 18° 30', and in west longitude between 76° 15' and 78° 25'. Area, 6900 square miles; population (in 1871), 506,154, of whom less than three per cent. were white. The greatest length of the island is 150 miles, and its greatest breadth, 50 miles. It is traversed from east to west by a heavily timbered ridge called the Blue Mountains, which rises to about 7000 feet. From this range at least 70 streams descend to the north and south shores; one of these, the Black river, affords for small craft a passage of about 30 miles into the interior. The others, owing to the shortness and declivity of their course, are not navigable. Excellent harbors are everywhere to be found. The best of these is formed by a deep and capacious basin, in the southeast quarter of the island, which washes the most spacious and fertile of the plains between the hill country and the coast. Around this inlet, and within a few miles of each other, are all the considerable centres of population, Port Royal, Kingston, and Spanish Town.

The climate varies considerably, the torrid belt of the coast gradually passing into the temperate region of the central heights. The latter is said to be remarkably favorable to longevity; and, after having long been a retreat for the residents themselves, it has lately begun to attract invalids from the United States. To contrast two positions—the one near Kingston harbor, the other at an intermediate elevation of 4000 feet—their annual mean temperature are stated to be respectively 81° F. and 68° F.

In 1871 the chief exports were in value as follows: Sugar, £502,193; rum, £271,267; coffee, £147,562; logwood, £115,423; while the chief imports were: Flour, £135,500, and salt-fish, £92,801. During the same year the revenue amounted to £434,564; the expenditure to £430,154.

The sum of £19,403 was devoted to the support of the schools during the year 1872.

Commissioner from JAMAICA to the International Exhibition:

WM. ROBERT THOMSON, ESQ., Kingston.
BAHAMAS.

A chain of islands lying between 21° 42' and 27° 31' N. lat., and 72° 40' and 79° 5' W. long. The group is composed of about twenty inhabited islands and an immense number of islets and rocks. The principal islands are New Providence (containing the capital, Nassau), Abaco, Harbor Island, Eleuthera, Inagua, Mayaguana, St. Salvador, Andros Island, Great Bahama, Ragged Island, Rum Cay, Exuma, Long Island, Crooked Island, Acklin Island, Long Cay, Watling's Island, the Berry Islands, and the Biminis. In 1848 the Turks and Caicos Islands were separated from the other Bahamas and formed into a distinct government, under the government-in-chief of the governor of Jamaica. The Turks and Caicos Islands lie between 21° and 22° N. lat., and 71° and 72° 37' W. long.

There are ten colonial custom-houses and ports of entry in the government of the Bahamas—viz., Nassau, Abaco, Eleuthera, Harbor Island, Exuma, Rum Cay, Long Island, Long Cay, Inagua, and Ragged Island. Considerable quantities of pineapples, oranges, and sponges are exported, chiefly to England and the United States. The pineapple crop is very precarious. The industry of salt-raking has ceased to be remunerative, owing to the duties imposed on salt by the United States. Experiments in coffee-planting and other branches of industry have been commenced under the patronage of the present governor.

The public expenditures for 1874 were £37,283; receipts during the same year, £38,374. The total public debt in 1873 was £65,081.

In 1874 the imports were valued at £183,993, and the exports at £130,293. The census of 1871 gave the population of the colony as 39,162.

The colony's staples are salt, fruit, sponge, barks, dye and furniture woods, guano and straw, turtle-shell, fish-scale, and shell-work.

The articles on exhibition fairly represent the productions and manufactures of these islands, and both might be indefinitely extended. But it is not the commercial position of the Bahamas only which should make a knowledge of them general. Their equal and wonderful salubrity of climate commend them to all who seek a genial, healthy, life-giving atmosphere. As a winter home for the afflicted, Peter Henry Bruce wrote nearly a century and half ago, "It is no wonder the sick fly hither for relief, being sure to find a cure here." Modern travelers also testify that, as a resort from damp and cold to sunshine and summer, for those who require change and climatic benefit, the Bahamas offer peculiar advantages. The heat is tempered by an ocean breeze of softness and purity seldom experienced elsewhere. Tropical flowers gladden the eye, and the luscious pineapple, orange, and melon tempt the palate with their freshness and beauty. Fish abound in the clear pellucid waters surrounding these islands, and the northern fowl seek a home on the lakes. In a word, the Bahamas seem by nature fitted as a grand sanitarium for the afflicted from the North American continent, and as a most desirable winter resort for all who wish to escape the rigors of the northern season.

(The above data have been derived from the special Catalogue of the British section.)

Commission from BAHAMAS to the International Exhibition.

DR. EDWARD T. WEBB, Commissioner, Philadelphia.
BERMUDAS.

OR Somers' Islands, are a cluster of about one hundred small islands, situated on the western side of the Atlantic Ocean, in lat. 32° 15' N. and long. 64° 51' W., at a distance of about 580 miles from the nearest land—viz., Cape Hatteras, in North Carolina. Fifteen or sixteen of these islands are inhabited; the rest are of considerable size, the largest, or Bermuda proper, containing less than twenty square miles of land, and nowhere exceeding three miles in breadth.

The islands extend from N.E. to S.W. in a curved line for about twenty miles, bending inward at both extremities, so as to enclose spacious and secure harbors.

Besides the main island, on which the town of Hamilton, the present seat of government, is situated, the principal islands are St. George's, where the ancient town of St. George, the former capital, stands; Ireland Island, where the dockyard is established; Boaz and Watford Islands, occupied entirely by a military detachment, formerly a convict establishment; Somerset, St. David's, Smith's, Cooper's, Nonsuch, Godet's, Port's, and River's. With the exception of one break between Somerset and Watford Islands, there is continuous communication by bridges from St. George's to Ireland Island. The climate has been long celebrated for its mildness and salubrity. The islands produce arrowroot of a fine quality, and an indigenous cedar of great durability, well adapted for ship-building and house-timber. A few whales are occasionally taken in the neighboring waters. Turtle are common.

The islands derive their name from Bermuda, a Spaniard, who sighted them in 1527. They were first colonized by Admiral Sir George Somers, who was shipwrecked there in 1609, on his way to Virginia. On his report the Virginia Company claimed them, and obtained a charter for them from James I. in 1612. This company sold their right for £2000 to an association of 120 persons, who obtained a new charter in 1616, incorporating them as the Bermuda Company, and granting them very extensive powers and privileges. Representative government was introduced in 1620. In 1621 the Bermuda Company in London made a Body of Ordinances for the government of the colony. During the civil war great numbers of emigrants from England were attracted thither by the favorable reports of the climate and soil. Toward the end of the reign of Charles II. grave complaints were made by the inhabitants of the misgovernment of the plantation by the company, and its charter was annulled by process of quo warranto, at Westminster, in 1684-85.

Since then the governors have been appointed by the Crown, and laws for the colony enacted by a local legislature, consisting of the governor, council, and assembly. The lands belonging to the company were forfeited to the Crown on the annulment of their charter, and, with the exception of some reserved for public uses, were granted in 1759 to purchasers on small quit-rents, extinguishable on the payment of a fixed sum of money.

During the Revolutionary war in North America the inhabitants suffered great privations from the scarcity of food; and although they export largely certain articles of agricultural produce, especially potatoes, onions, tomatoes, and arrowroot, they are still dependent on foreign supplies for all the flour and most of the meat consumed. Early in the present century the importance of the Bermudas as a naval station came to be recognized. Ireland Island was purchased exclusively by the government, and a dockyard established there. By order in council, dated June
28, 1824, the Bermudas were declared a place where male convicts might be kept at hard labor on the public works; but these islands never were made a penal settlement, strictly speaking, where convicts might be discharged. The establishment was broken up in 1863. On the abolition of slavery in 1834, the system of temporary apprenticeship of the emancipated slaves, permitted by the Act of Parliament in the slave-holding colonies, was dispensed with by the local legislature of Bermuda, so as to entitle the slaves to their absolute freedom six years sooner than was required by Parliament. They and their descendants now form more than a numerical half of the entire population.

In 1846 a lighthouse, visible at more than thirty miles' distance, was erected on the highest land in the colony, the light being 362 feet above the sea. A public library was established in 1839. In 1871 the island of St. George's was connected with the main island by a causeway and road two miles in length, commenced in 1866, and completed at a cost of nearly £30,000. An iron-girder swing-bridge still permits the passage of vessels.

The revenue in 1874 was £29,066, the expenditure £29,800, the public debt £13,234, the imports £252,435, the exports £81,585; total tonnage of vessels entered 72,212; cleared, 71,935. The census of 1871 showed a population of 12,121, of whom 4725 were white, 7396 colored.

(The above data have been derived from the special Catalogue of the British section.)

Commission from BERMUDA to the International Exhibition:

His Hon. Thomas L. Wood, Chief Justice, President.
Hon. Henry Fowler, Receiver-General.
Lt. Col. Bland, R. E.
James Tucker, Esq., Colonial Secretary and Honorary Secretary.
Capt. Lockhart, R. A., A. D. C.

Assistant Commissioners.

A. H. Frazer Lefroy, Esq. | J. B. Heyl, Esq.
W. S. Barr, Esq. | C. C. Keane, Esq.
H. J. Hinson, Esq., M. D.

Resident Commissioner—A. A. Outerbridge, Philadelphia.

BRITISH GUIANA.

This colony is a portion of the South American Continent, extending from east to west about two hundred miles. It includes the settlements of Demerara, Essequibo, and Berbice. It is bounded on the east by Dutch Guiana, from which it is divided by the river Corentyn, on the south by Brazil, on the west by Venezuela, and on the north and north-east by the Atlantic Ocean.

This territory was first partially settled by the Dutch West India Company in 1580. It was from time to time held by Holland, France, and England. It was restored to the Dutch in 1802, but in the following year retaken by Great Britain, to whom it was finally ceded in 1814. It is impossible to determine the exact area of the
CEYLON.

An island situated in the Indian Ocean, off the southern extremity of Hindostan, lying between 5° 55' and 9° 51' N. lat., and 79° 41' and 81° 54' E. long.; its extreme length from north to south—i. e., from Point Palmyra to Donderea Head—is 266 miles; its greatest width 140½ miles, from Colombo on the west coast to Sangemankende on the east.

The climate for a tropical country is comparatively healthy; the heat in the plains, which is nearly the same throughout the year, being much less oppressive than in Hindostan. Along the coast the annual mean temperature is about 86° Fahr.; at Kandy, 1465 feet above the sea level, it is 76° (average of ten years); at Colombo the annual variation is from 76° to 86°; at Galle 70° to 90°; and at Trincomallee 74° to 91°. In the mountain ranges there is of course a great variety of climate, the thermometer at the hill station Nuwara Eliya, which is some 6000 feet above the level of the sea, falling at night as low as 32°.

Ceylon was visited in early days by the Greeks, Romans, and Venetians; in 1505 the Portuguese formed settlements on the west and south of the island; in the next century they were dispossessed by the Dutch. In 1795-6 the British took possession of the Dutch settlements in the island. They were annexed then to the Presidency of Madras, but five years later, in 1801, Ceylon was constituted a separate colony. In 1815 war was declared against the native government of the interior: the Kandyan king was taken prisoner, and the whole island fell under the rule of the British.
By letters patent under the Great Seal, April, 1831, a Council of Government was appointed, and by a supplementary commission to the then governor (March, 1833) the form of government almost as now existing was established.

The public expenditures for 1874 were £1,184,192; receipts, £1,324,328. The total public debt in 1874 was £600,000. In 1874 the total value of imports was £5,691,860, and of exports £4,687,388.

(The above data have been derived from the special Catalogue of the British section.)

STRAITS SETTLEMENTS.

SINGAPORE is an island about 25 miles long by 14 wide, situated at the southern extremity of the Malayan peninsula, from which it is separated by a narrow strait about 3 of a mile in width. There are a number of small islands adjacent to it which form part of the settlement. The seat of government is the town of Singapore, at the southern point of the island, in lat. 1° 16' N., and long. 103° 53' E.

Penang is an island about 20 miles long and 9 broad, containing an area of 107 square miles, situated off the west coast of the Malayan peninsula in 5° N. lat., and at the northern extremity or entrance to the Straits of Malacca. On the opposite shore of the mainland, from which the island is separated by a strait from 2 to 10 miles broad, is Province Wellesley, a strip of territory forming part of the settlement, averaging 8 miles in width, and extending 45 miles along the coast, including 10 miles of newly-acquired territory to the south of the Krean. The chief town is George Town, in 5° 24' N. lat. and 100° 21' E. long.

Malacca is situated on the western coast of the peninsula, between Singapore and Penang, about 120 miles from the former and 240 from the latter, and consists of a strip of territory about 42 miles in length, and from 8 to 24½ miles in breadth. The principal town, called Malacca, is 2° 10' N. lat. and 102° 14' E. long.

The revenue during the year 1874 was £309,991, and the public expenditures £317,726.

(The above data have been derived from the special Catalogue of the British section.)

GOLD COAST COLONY, WEST AFRICA.

The Gold Coast Colony, which comprises the British settlements on the Gold Coast and at Lagos, was constituted by a charter under the Great Seal, bearing date the 24th day of July, 1874.
The Gold Coast is the name generally given to a portion of Upper Guinea, between 5° and 4° 20' E. long., stretching along the Gulf of Guinea from the river Assini on the west to the river Volta on the east, between which points are the settlements of Axim, Dixcove, Secondee, Elmina, Cape Coast Castle, Anamaboe, Accra, and Addah. In 1672 a company was formed, called the Royal African Company, which built forts at Dixcove, Secondee, Commandah, Anamaboe, Winnebah, and Accra, besides strengthening Cape Coast Castle, which was already in existence. This company was succeeded in 1750 by the African Company of Merchants, constituted by Act of Parliament, with liberty to trade and to form establishments on the West Coast of Africa between 20° N. and 20° S. lat. This company was dissolved in 1821 by Act of Parliament, and the forts transferred to the Crown, by whom they were placed under the government of Sierra Leone.

The revenue of the Gold Coast for 1874 was £74,858, the expenditure £47,796. The annual imports were £225,525, the exports, £330,624. It has no public debt. The estimated population, including the protectorate, is 400,000.

The revenue of Lagos for 1874 was £39,350, the expenditure £37,296, the public debt £11,631. The imports for the same year were £348,636, the exports £486,227. The population is 62,021.

(The above data have been derived from the special Catalogue of the British section.)

MAURITIUS.

An island lying in the Indian Ocean, between 57° 17' and 57° 46' E. long., and 19° 58' and 20° 32' S. lat. It is 400 miles east of Madagascar. It comprises an area of 676 square miles.

The Mauritius was discovered by the Portuguese in 1507. They claimed possession of it during nearly the whole of the sixteenth century. The first who made any settlement in it were the Dutch in 1598, who named it Mauritius, in honor of their prince Maurice. It was abandoned by them in 1710, and afterward taken possession of by the French. Mauritius was for a long time during the war a source of great mischief to English merchant-vessels and Indiamen, from the facility with which sorties might be made from it upon traders by French men-of-war and privateers. The British government determined on an expedition for its capture, which was effected in 1810. The possession of the island was ratified by the treaty of Paris, 1814.

Mauritius pays £45,000 per annum to the imperial government as military contribution, but this amount is subject to reduction when the garrison is below the standard fixed upon as necessary for the defence of the colony. The total police force is 839.

The revenue for 1874 was £720,130, the expenditure £727,063, the public debt £895,600, bearing six per cent. interest. The imports were £2,427,313, the exports £2,697,892. The estimated population at the close of 1874 was 3,331,371, of whom 233,017 were Indians.

(The above data have been derived from the special Catalogue of the British section.)
QUEENSLAND.

QUEENSLAND occupies the whole of the northeastern portion of Australia, commencing at a point of the east coast about 400 miles north of Sidney, called Point Danger, in latitude 28° 8′ south. The greater portion of the southern boundary line is formed by the 29th parallel of south latitude. The eastern seaboard extends about 1300 miles to Cape York, the extreme northern point of the continent, in latitude 10° 40′. The mean breadth of the territory is 900 miles from the eastern coast-line to the meridian of 138° east longitude, which forms the western boundary line. This includes the greater portion of the Gulf of Carpentaria, which has a seaboard of about 900 miles. The whole of Queensland comprises 678,000 square miles,—nearly twelve times the area of England and Wales.

The portion of the colony extending along the eastern coast, is indented with numerous bays, which are the outlets of many navigable rivers, having their sources in the cool gorges and deep recesses of a great mountain range, running north and south, parallel with the sea coast, at a distance of from 50 to 100 miles. The summits of this great dividing range rise from 2000 to 6000 feet above the level of the sea. Numerous spurs are given off from the range, in ridges sloping gradually towards the coast. These ridges are generally composed principally of quartz, and in many places form good natural roads for a considerable distance. The ridges are usually covered with a variety of fine and valuable timber. The iron-bark, bloodwood, box, and other descriptions of wood, very valuable to the farmer for fencing and building, are found here in great abundance.

Unlike almost every other portion of Australia, Queensland is correctly described as "a land of rivers and streams." These rivers find an outlet in the many large and beautiful bays and estuaries on the eastern seaboard. One of these, Moreton Bay, receives the waters of five rivers, which are always navigable. The largest of these, the Brisbane, is navigated by good-sized steamers for 75 miles, and is nearly a quarter of a mile wide at a distance of 15 miles from its mouth. The principal rivers on the eastern seaboard are the Logan, the Brisbane, the Mary, the Caliope, the Boyne, the Fitzroy, the Pioneer and the Burdekin. The longest tidal river in Queensland is the Fitzroy, which drains an area of not less than 30,000,000 acres, and is navigable as far as Yaruba, 60 miles from its estuary in Keppel Bay. It receives as its principal tributaries, the Dawson, Mackenzie, and Isaacs, large streams flowing for several hundred miles from the northwest, west, and southwestern parts of the interior. The tide at Rockhampton (40 miles from the embouchure of the river) rises 4 feet, and the stream is thus navigable for vessels of considerable burden.

The banks of the rivers are usually well elevated, and in many places consist of very rich alluvium, brought down from the great mountain ranges. This alluvial soil is frequently of very great depth, and is marked everywhere by a magnificent growth of timber, very unlike the ordinary Australian wood.

Beyond the Main, or great dividing range, the country presents features of still greater beauty and fertility. Vast plains—60, 70, or 80 miles across—stretch out their level surface, unbroken by a single tree, but covered with luxuriant grass, and often purpled over with fragrant herbage. These great plains are composed of rich, black soil. They are well watered with a network of streams, which trickle down from the gradual slopes of the mountain range. The soil in this locality is admirably adapted for tillage; and within a certain distance of the mountain range the rains fall with great regularity. The land here is lightly timbered, and is cleared with less labor than on the lower lands, and the soil has proved to be peculiarly adapted for the growth of wheat of the finest quality. The yield per acre in this locality has sometimes been as much as 50, and even 60 bushels, of 63 pounds to the bushel.
average yield may be estimated at 30 bushels per acre. Indian corn and other cereals as well as all the European fruits grow luxuriantly, and come to the greatest perfection in this highly favored locality, which has been called the Garden of Queensland.

This country, west of the great dividing range, stretches away in a series of fine plateaux for a distance of 400 or 500 miles westward, and, with the interruptions of other mountain ranges crossing the main range at right angles, for upwards of 1000 miles towards the fertile plains bordering the shores of the Gulf of Carpentaria.

The climate of Queensland is said to closely resemble that of Madeira; the mean annual external shade temperature, taken at Brisbane, being very nearly the same as at Funchal in Madeira, though it is a little hotter in the summer and colder in the winter at Brisbane than at Funchal. Moreton Bay, now Brisbane, has for many years been the resort of invalids from all the other British colonies in the southern hemisphere, and has been called the Montpellier of Australia. The summer season is hot,—the thermometer rising sometimes to 90° or even 100° in the shade; but the air is dry, elastic, and healthy, and the sea breezes temper the heat, and make it perfectly endurable, even to the outdoor laborer, in the hottest time of the year. However hot the day, the night is almost invariably cool, even in the most northern parts of the colony.

The growth of cotton and of the sugar-cane has been attempted in recent years, and both industries are reported to be rapidly advancing. At the end of 1873, there were 6663 acres under cotton, and 14,492 acres under sugar-cane, out of a total of 64,218 acres under cultivation.

The live stock at the end of 1873 numbered 99,243 horses, 1,343,093 cattle, 7,268,946 sheep, and 42,884 pigs. It is estimated that there are, at present, about 17,000,000 sheep in the colony.

There are several coal mines in the colony, the produce of which, in 1873, amounted to 33,613 ounces, valued at £22,052. Gold fields were discovered in 1867, the principal of them at Gympie Creek, which had a digging population of 5010 at the end of 1873. The total gold produce amounted to 163,672 ounces, valued at £555,310, in 1873.

The total value of the imports and exports of Queensland, during the year 1875, was: Imports, £3,881,726; exports, £4,544,513. The principal articles of export are gold, wool, tin ore, and raw cotton.

The form of government of Queensland was established December 10th, 1859, on its separation from New South Wales. The power of making laws and imposing taxes is vested in a Parliament of two houses, the Legislative Council and the Legislative Assembly. The former consists of 21 members, nominated by the crown for life. The House of Assembly comprises 42 deputies, returned from as many districts, for five years, by the ballot vote of all taxpayers. The executive is vested in a governor appointed by the crown.

Queensland is divided into 17 municipalities, the largest of which, as regards population, is Brisbane. It contains the city of Brisbane, the capital of the colony and the seat of government, with a population of 19,413, at the end of 1872.

At the end of 1873, there were 218 miles of railway open for traffic.

The post office during that year carried 2,459,434 letters, 1,594,792 newspapers, and 93,540 packets. There were 20,998 money orders, to the value of £85,455.

At the end of 1873, there were in the colony, 3609 miles of telegraph wire, with 73 stations. The number of messages sent in 1873, was 156,608.

An excellent system of primary education, which, since 1870, has been made successful and vigorous operation throughout the colony.

Commission from Queensland to the International Exhibition:

ANGUS MACKAY, ESQ.
P. A. JENNINGS, ESQ.
W. B. TOOTH, ESQ.
W. HILL, ESQ.

W. R. GORDON, ESQ.
C. STRAGER, ESQ.
T. STOMAN, ESQ.
SEYCHELLES ARCHIPELAGO.

The island of Rodrigues, the Seychelles Islands, Diego Garcia, and others, are dependencies of the Mauritius. Rodrigues is situated about 300 miles east of Mauritius. It is 26 miles in length by 12 in breadth. It is cultivated by colonists from Mauritius.

The Seychelles, or Mahe Islands, are situated between the parallels of south latitude 4° and 5°; the total number of acres comprised in this group is 50,120; the distance from Mauritius 940 miles. These islands are under the superintendence of a Chief Civil Commissioner (assisted by a Board of Commissioners) at Mahe, who is appointed by the Secretary of State, but is subordinate to the Governor of Mauritius, from whom he takes instructions.

(The above data have been derived from the special Catalogue of the British section.)

TASMANIA.

TASMANIA, formerly known as Van Diemen's Land, is an island about 100 miles S. E. of Australia, from which it is separated by Bass' Strait. It lies between lat. 40° 45' and 43° 35' S., and long. 144° 50' and 148° 20' E. Its greatest length from N. to S. is 186 miles, its medium breadth 165 miles. The total area is 16,778,000 acres, of which 3,982,003 acres are alienated from the Crown by grant and sale; 1,348,400 acres are held under depasturing licenses from the Crown; the total area under cultivation is 326,486 acres. Wheat is cultivated on 57,633 acres; barley on 5129; oats on 32,704. Consequent on the high duties enforced on agricultural produce by the other Australian colonies, and the fluctuating state of the intercolonial markets, the attention of Tasmanian agriculturists has of late years been turned to the production of wheat for the English market, and this has become the most important article of strictly agricultural produce. The export of grain in the year 1874 was valued at £115,788.

Salubrity and comparative coldness of climate, owing to higher latitude, make Tasmania a breeding station of stud stock for all the Australian continent. The number of horses in 1874 was 23,208, cattle 110,450, and sheep 1,714,168.

Most of the wool produced is merino, the export during the year 1874 amounting to 5,050,020 lbs., which represented a value of £350,713.

Mining industry for many years was confined to gold and coal, but of late tin, iron, and slate have attracted attention. The yield of gold in 1874, produced by 185 persons, was—alluvial 850 oz., quartz 3800 oz. 14 dwt. The quantity of quartz crushed was 3452½ tons. The average yield per ton of stone was 1 oz. 5 dwt. 8½ grs. The average value of gold per ounce was £3 15s. 6d. for alluvial; quartz, £3 19s. 6d. The total value of the produce of gold for 1874 was £18,491. The mineral which occupies the greatest share of attention is tin, the supply of ore being practically unlimited. The total amount raised in 1874 was 450 tons, valued at £73 a ton. The only locality in which silver ore has been worked in Tasmania is Pen-
guin Creek. Of iron the quantity raised during 1874 was 1,400 tons; of this quantity 1,000 tons were raised at Lempriere, West Tamar, and 400 tons at Lewisha.

The island is intersected by valuable coal-measures. At present the output of Tasmanian coal is not extensive, and the island is mainly supplied from Newcastle, New South Wales, although, for domestic purposes, Tasmanian coal is used to a considerable extent.

Of late years attention has been directed to the slate deposits of Tasmania; the high prices ruling for English slates in the colonial markets has induced the Australian Slate Company to commence work on a fair scale. In 1874 a quarter of a million of slates were prepared for sale at Piper's River.

At Ilfracombe Bay there is an extensive bed of pure white clay which seems very refractory, and which, when mixed with fine quartz (also abundant and close at hand), forms an admirable fire-brick. Common clays are found in all directions and the iron companies are now manufacturing bricks. Kaolin or porcelain clay is also found at Circular Head.

In the West Tamar district limestone quarries have been worked for many years past. There is an immense mountain of blue limestone situated about two miles from the township of Latrobe, on the River Mersey. At the River Don there are very large deposits of pure carbonate of lime, and the eastern districts, especially Fingal, abound with lime of various kinds and qualities.

The principal timber trees of Tasmania—such as blue gum, stringy bark, white gum or gum-topped stringy bark, swamp gum, and peppermint tree—furnish a hard, close-grained, and strong timber. Other useful woods are the huon pine, blackwood, myrtle, swamp gum, sassafras, celery-topped pine, silver wattle, ironwood, native cherry, whitewood, pinkwood, and native pear.

Bark is largely exported to England and New Zealand for tanning purposes. The price of ground bark varies from £4 to £6 per ton at the ports. During the year 1874 about 4,870 tons were exported, valued at £22,123. Hops are also largely cultivated. In 1874, 819,145 pounds weight were exported, valued at £42,284.

The principal animals are the kangaroo, wallaby, opossum, and bandicoot, the skins of which are all available for tanning purposes, the fur being highly valuable as rugs, etc. The devil and Tasmanian tiger are formidable beasts, and used to make great havoc among the flocks. The tiger is a low, long-bodied animal with powerful forequarters and a dog-like head, weighing sometimes from sixty to seventy pounds. The devil, though not so large, is more hideous in appearance than the tiger.

Of birds 171 species have been observed, but of these only 20 species are supposed to be peculiar to Tasmania. The notes of many of the birds are very musical, the most remarkable being the reed warbler, the tones of which approach those of the nightingale, the black and white magpie, and the butcher-bird. The principal edible birds are varieties of quail, duck, snipe, golden plover, and pigeons.

There are many species of freshwater fish, the most valuable being the cucumber grayling. Among the estuary fish, those most appreciated as edible are the sole, whiting, garfish, and rock-cod. The best of the deep-sea fish are the trumpeter and kingfish. During the last ten years the salmon trout and brown trout, the tench and perch, have been established in many of the rivers and lakes. Salmon and salmon trout have also succeeded.

The chief industries are brewing, milling, jam-making,fellmongering, tanning, and coopering. Most of the beer is excellent, and is appreciated in the other colonies. In 1874 ale to the quantity of 22,900 gallons was exported. The quantity of jam exported in the same year was 2,648,012 lbs., and 179,752 bushels of fruit, valued together at £120,027. Tasmanian leather is excellent, all varieties from kip to kangaroo being supplied of such quality that a great falling off in the importation of inferior leather from European ports has taken place; and in 1874, £15,513 worth was exported from Hobart Town.
There is one remarkable feature distinguishing Tasmania from all other countries whose statistics have been compared with hers which ought not to be passed by unnoticed—namely, the small mortality among children, particularly those under one year of age. Taking an average of five years, the following results have been arrived at. Out of 100 infants born there died within the first year in Tasmania 9.45; in N. S. Wales, 9.57; in Queensland, 11.07; in Victoria, 11.85; in S. Australia, 14.24; the number in England being about 16; in Scotland about 12½. The percentage of deaths of children under five years was: Tasmania, 20.08; N. S. Wales, 42.14; Victoria, 45.50; Queensland, 46.33; S. Australia, 54.17. The proportion of children under five who died to 1000 children of the same age living was: In Victoria (ten years) about 52%; in England and Wales (thirty years), about 67½%; in Tasmania, less than 27. Thus it appears that the mortality of children under five years of age in Tasmania is little more than half that of the least healthy of the Australian colonies. It is also considerably under that of New Zealand, which, as regards the general death-rate, is the most healthy of all the Australasian group.

In 1870 the population, according to the census then taken, numbered 99,328 souls; the estimated population on the 31st of December, 1874, was 104,176. The revenue for 1874 was £327,925, and the expenditure £318,278. The amount expended for public works, roads, bridges, and railways, inclusive of the expenditure on the Launceston and Western District Railway, amounted during the year 1874 to £45,410. The value of imports during the same period was £1,247,785, while that of exports was £925,325.

(The above data have been in part condensed from the official report of the Victoria Exhibition, 1870.)

Commission from Tasmania to the International Exhibition.
H. P. Welch, Esq., Commissioner, P. A. Jennings.

TRINIDAD.

Trinidad is an island lying to the eastward of Venezuela, between N. latitude 10° 3' and 10° 50', W. longitude 61° and 62° 4' of Greenwich. Its length is 65 miles on the southern and 53 miles on the northern side of the island, and its breadth, on the eastern and western sides respectively, 48 and 49 miles. It is separated from the continent of America by the Gulf of Paria, into which fall the northern mouths of the Orinoco. The area of the island is 1754½ square miles. Port of Spain, the chief town and port of entry, according to the census of 1871, contains 23,561 inhabitants. The second town and port of entry is San Fernando, 26 miles south from Port of Spain, with a population of 5006 inhabitants. There are also the minor island towns of St. John, St. Joseph, Aronca, and Arima. The harbor is the finest in the West Indies.

The revenue for 1874 was £276,529, the expenditure £294,006. The public debt is £100,000 for railways and £47,500 secured on general revenue, but recoverable by the colony from other parties. The imports in 1874 were £1,342,992, the exports, £1,412,260. The census of 1871 showed a population of 109,638.

(The above data are derived from the "Colony Office List," 1876.)
INDIA.

BRITISH INDIA is the name given to those parts of Hither and Further India placed under the administration of the viceroy, or governor-general of India. It does not include Ceylon, which, although a British possession, has its government entirely separate from that of Hindustan; but it extends along the eastern coast of the Bay of Bengal to 10° south latitude, and thus includes part of Further India, or Indo-China.

The following table, from the statistical abstract, relating to British India, for 1873 shows the area and population of the provinces under British administration:

<table>
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<tr>
<th>TERRITORIES AND PROVINCES UNDER THE ADMINISTRATION OF</th>
<th>AREA IN ENGLISH SQ. MILES</th>
<th>POPULATION</th>
<th>AVERAGE PCT. PER SQ. MILE</th>
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<td>17,566,752</td>
<td>173</td>
</tr>
<tr>
<td>Chief Commissioner of Oude,</td>
<td>23,673</td>
<td>11,220,747</td>
<td>465</td>
</tr>
<tr>
<td>&quot; &quot; &quot; Central Provinces,</td>
<td>84,162</td>
<td>9,066,038</td>
<td>108</td>
</tr>
<tr>
<td>&quot; &quot; British Burmah,</td>
<td>93,064</td>
<td>2,562,323</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>950,919</td>
<td>191,307,070</td>
<td>201</td>
</tr>
</tbody>
</table>

Cotton is the most important product of Hindustan. Wool will probably soon become a great Indian staple. The chief supply is from the Himalaya and Afghan regions. Hemp and flax, silk from the high lands, coffee, linseed, tobacco, and indigo, are all valuable productions of British India. The leaves and silver blossoms of the tea plant are beginning to cover the Himalaya slopes, and the hilly districts of Bengal, the Northwest Provinces, and the Punjab. Great quantities of rice are raised in Southern India and British Burmah. The Malabar district, Martaban, and Tenasserim furnish thousands of logs of the best teak timber. The cinchona or quinine plant has lately been introduced on the Neilgherries with great success, the original plants having been brought over from Peru.

The total value of the imports of British India, during the year 1874, was as follows:

<table>
<thead>
<tr>
<th>IMPORTS.</th>
<th>EXPORTS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merchandise,</td>
<td>£32,593,609</td>
</tr>
<tr>
<td>Treasure,</td>
<td>£54,960,778</td>
</tr>
<tr>
<td>Total,</td>
<td>£38,386,142</td>
</tr>
<tr>
<td></td>
<td>£56,874,849</td>
</tr>
</tbody>
</table>

The imports and exports, including treasure, were divided as follows:

<table>
<thead>
<tr>
<th>IMPORTS.</th>
<th>EXPORTS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bengal,</td>
<td>£17,169,310</td>
</tr>
<tr>
<td>British Burmah,</td>
<td>1,852,459</td>
</tr>
<tr>
<td>Madras,</td>
<td>3,861,057</td>
</tr>
<tr>
<td>Bombay,</td>
<td>15,054,121</td>
</tr>
<tr>
<td></td>
<td>£23,201,820</td>
</tr>
<tr>
<td></td>
<td>3,480,407</td>
</tr>
<tr>
<td></td>
<td>7,258,147</td>
</tr>
<tr>
<td></td>
<td>21,694,571</td>
</tr>
</tbody>
</table>
The most important articles of exports from India to the United Kingdom, during 1874, were:

<table>
<thead>
<tr>
<th>Article</th>
<th>Quantity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton</td>
<td>4,260,170 cwt</td>
<td>£10,325,630</td>
</tr>
<tr>
<td>Jute</td>
<td>62,203</td>
<td>£3,545,124</td>
</tr>
<tr>
<td>Rice</td>
<td>6,387,966 lbs.</td>
<td>£2,326,232</td>
</tr>
<tr>
<td>Indigo</td>
<td>17,608,538 lbs.</td>
<td>£1,661,745</td>
</tr>
<tr>
<td>Tea</td>
<td>1,566,128</td>
<td>£1,566,128</td>
</tr>
<tr>
<td>Hides</td>
<td>45.852</td>
<td>£1,351,696</td>
</tr>
</tbody>
</table>

Next to the United Kingdom, the countries having the largest trade with India are China and Japan, the imports from which average £8,500,000 per annum, while the exports to them are of the average value of £12,000,000. Exports of the average value of £5,000,000 are also sent to Egypt, in transit for the United Kingdom.

The following figures show the number and tonnage of vessels, including native craft, which entered and cleared during 1874:

<table>
<thead>
<tr>
<th>Vessels</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entered</td>
<td>20,435</td>
</tr>
<tr>
<td>Cleared</td>
<td>19,629</td>
</tr>
</tbody>
</table>

The executive authority in India is vested in a Governor-general, or Viceroy, appointed by the crown, and acting under the orders of the Secretary of State for India. The Governor-general, in council, has power to make laws for all persons, whether British or native, foreigners or others, within the Indian territories under the dominion of Her Majesty, and for all subjects of the crown, within the dominions of Indian princes and states in alliance with Her Majesty.

The duties of the Council of State are, under the direction of the Secretary of State, to conduct the business transacted in the United Kingdom in relation to the government of and the correspondence with India. The government in India is exercised by the Council of the Governor-general, consisting of five ordinary members, and one extraordinary member, the latter the commander-in-chief.

The total revenue and expenditure, during the year ending March, 1874, were:

<table>
<thead>
<tr>
<th>Revenue</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>In India</td>
<td>£49,360,142</td>
</tr>
<tr>
<td>In Great Britain</td>
<td>238,111</td>
</tr>
<tr>
<td>Total</td>
<td>£49,598,253</td>
</tr>
</tbody>
</table>

In the army estimates for the British forces in India, in the year 1875-76, the strength was stated as follows:

<table>
<thead>
<tr>
<th>Branch</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal horse artillery</td>
<td>2,497</td>
</tr>
<tr>
<td>Cavalry of the line</td>
<td>4,339</td>
</tr>
<tr>
<td>Royal artillery and engineers</td>
<td>10,171</td>
</tr>
<tr>
<td>Infantry of the line</td>
<td>45,852</td>
</tr>
<tr>
<td>Total</td>
<td>62,850</td>
</tr>
</tbody>
</table>

Returns of the year 1874 state that the combined armies of the native chiefs of India number 315,000 men, with an artillery of 5300 large guns.

On December 31, 1874, there were 6273 miles of railway, built at an expense of £97,000,000, open for traffic. A further extent of 2518 miles was in course of construction at the commencement of 1875.

In the fiscal year ending March 31, 1874, the number of letters which passed through the post office of British India was 98,531,628, of newspapers, 8,762,200, of parcels, 605,312, and of books and patterns, 1,336,363, being a total of 109,235,303. The mail traveled over 54,617 miles, of which total 41,857 miles were done by boats
and runners, 4003 miles by carts and on horseback, and 5739 miles by railways. Number of post offices and letter boxes, 6805.

There were at the same time 16,436 miles of telegraph lines, 32,148 miles of wires, and 225 telegraph offices. The total number of messages during the year was 788,048.

Efforts for spreading education among the population of India have been made since 1848, in which year the Lieutenant-governor of Agra brought forward a scheme for giving a schoolmaster to every village of at least a hundred families. After three years' discussion, the Court of Directors of the East India Company accepted the groundwork of the plan, and orders were issued directing that a good vernacular school should be established for every cercle of villages, called Hulkabundee, and that the teacher should be paid from a cess of 2 per cent. on the land revenue.

In the year 1871 the number of educational institutions belonging to, aided, or maintained by the government in British India, was 25,147; average attendance of pupils, 799,622; amount expended by government, £749,724; total expenditure from all sources, £1,019,418.

In the northwestern provinces and Madras the foundation has been laid of a national system of education; while the general position for India is that the government has succeeded in establishing a system of public instruction for the upper and middle classes, but has as yet made little or no impression on the middle classes.
CANADA.

The Dominion of Canada consists of the provinces of Ontario, Quebec—formerly Upper and Lower Canada—Nova Scotia, New Brunswick, Manitoba, British Columbia, and Prince Edward’s Island. The two principal provinces, Quebec and Ontario, are almost entirely embraced within the basin of the river St. Lawrence, but occupy only those portions north of the great lakes, and of the river as far as the town of Cornwall (45° north latitude and 74° 45’ west longitude), whence eastward they occupy both banks, and are bounded on the south by the United States. The most westerly limit is the heads of the Pigeon and Arrow rivers, which debouch in Lake Superior. The eastern or maritime provinces embrace no portion of the basin of the great river.

The following table shows the area and population of the various provinces:

<table>
<thead>
<tr>
<th>Province</th>
<th>Area (Eng. sq. miles)</th>
<th>Population (1871)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontario</td>
<td>121,260</td>
<td>1,620,851</td>
</tr>
<tr>
<td>Quebec</td>
<td>210,020</td>
<td>1,191,516</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>18,660</td>
<td>387,800</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>27,105</td>
<td>285,594</td>
</tr>
<tr>
<td>Manitoba</td>
<td>2,891,734</td>
<td>11,953</td>
</tr>
<tr>
<td>British Columbia</td>
<td>213,000</td>
<td>10,586</td>
</tr>
<tr>
<td>Prince Edward’s Island</td>
<td>2,173</td>
<td>9,402</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,483,952</strong></td>
<td><strong>3,602,321</strong></td>
</tr>
</tbody>
</table>

The principal river of Canada is the St. Lawrence. Its most important tributaries are all from the left. The St. Lawrence drains an area of 565,000 miles. The Ottawa, 450 miles long, forms the boundary between Ontario and Quebec. The St. Maurice is nearly 400 miles in length, and the Saguenay, noted for its fine scenery, is 225 miles long. The only affluents from the right worth naming are the Richelieu, the St. Francis, and the Chaudiere.

A great part of Canada, more especially the shores of Lake Superior, is valuable only for mineral resources, such as iron, zinc, lead, copper, silver, gold, cobalt, manganese, gypsum, marl, granite, sandstone, limestone, slate, and marbles of nearly every imaginable color. Considerable portions, also, though heavily timbered, chiefly with pine, are yet but little adapted to settlement and cultivation. Towards the Gulf of the St. Lawrence, again, a considerable section derives importance mainly from the fisheries, being, with partial exceptions in Gaspe, comparatively worthless for every other object. Thus the area for the profitable production of ordinary cereals cannot materially exceed 40,000 square miles, containing, however, within this space a singularly small portion of irreclaimable surface. This cultivable block increases regularly in width and fertility, from its commencement on the lower St. Lawrence to the shores of Lake Huron. Below Quebec—to say nothing of the precarious nature of the crops—there may always be seen, on one or on both sides, the primeval forest. Between that city, again, and the basin of the Ottawa, a gradual improvement shows itself, even on the north side; and towards the south there stretches away to the frontier of the United States a broad belt of generally undulating character, probably the best field in the country for the blending of pasturage and agriculture. From the basin of the Ottawa inclusive, the parallel of the south end of Lake Nipissing may be said to cut off, towards the southwest, the entire residue of the practicable soil, in the shape of a roughly defined triangle, which, as a whole, is at least equal, in the growth of grain in general and of wheat in particular, to any region of the same extent in North America.

The climate of Canada is subject to great extremes of heat and cold, the thermometer ranging between 102° above and 36° below the zero of Fahrenheit.

As Canada slants southwards eight or nine degrees from the mouth of the St Lawrence to that of the Detroit, which communicates between Lakes St. Clair and Erie,
the climate of the west must be warmer than that of the east. Besides, the lakes of Upper Canada appear, in a good measure, to neutralize and mitigate the extremes of a Canadian climate. While Quebec in winter ordinarily enjoys five or six months of sleighing, the corresponding season in Toronto ranges from five or six days to five or six weeks. As to summers, the difference in favor of Toronto is rather in point of duration than of intensity. As indications of the climate of Canada, it may be stated that the isle of Orleans, immediately below Quebec, is famous for its plums, and the island of Montreal for its apples; and from the neighborhood of Toronto to the head of Lake Erie, grapes and peaches ripen without any aid whatever. Melons, again, of large size, come to maturity, through the settled parts of the province, in the open air; and pumpkins and squashes attain enormous size, some of them near Toronto having weighed 300 pounds.

The following statistics of the mining, agricultural, and manufacturing industries are taken from the Official Report of the Canadian Census of 1871. They refer only to the provinces of Ontario, Quebec, New Brunswick, and Nova Scotia.

RAW MINERAL PRODUCTS.

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>671,008 tons</td>
</tr>
<tr>
<td>Iron ore</td>
<td>129,363</td>
</tr>
<tr>
<td>Copper ore</td>
<td>13,310</td>
</tr>
<tr>
<td>Pyrites</td>
<td>8,300</td>
</tr>
<tr>
<td>Manganese</td>
<td>635</td>
</tr>
<tr>
<td>Other ores</td>
<td>14,063</td>
</tr>
<tr>
<td>Peat</td>
<td>14,773</td>
</tr>
<tr>
<td>Plumbago</td>
<td>270</td>
</tr>
<tr>
<td>Lump gypsum</td>
<td>114,433</td>
</tr>
<tr>
<td>Gold</td>
<td>22,941 oz</td>
</tr>
<tr>
<td>Silver</td>
<td>69,907 &quot;</td>
</tr>
<tr>
<td>Phosphate of lime</td>
<td>1,980 tons</td>
</tr>
<tr>
<td>Mica</td>
<td>4,010 lbs</td>
</tr>
<tr>
<td>Crude petroleum</td>
<td>12,969,435 gals</td>
</tr>
<tr>
<td>Grained marble</td>
<td>8,870 cuf. ft</td>
</tr>
<tr>
<td>Roofing slate</td>
<td>6,013 sqs</td>
</tr>
<tr>
<td>Building stone for dressing</td>
<td>5,206,796</td>
</tr>
</tbody>
</table>

The statistics of agriculture are as follows:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring wheat</td>
<td>10,355,912 bushels</td>
</tr>
<tr>
<td>Winter wheat</td>
<td>6,367,961</td>
</tr>
<tr>
<td>Barley</td>
<td>11,496,608</td>
</tr>
<tr>
<td>Oats</td>
<td>42,849,493</td>
</tr>
<tr>
<td>Rye</td>
<td>1,064,354</td>
</tr>
<tr>
<td>Peas</td>
<td>9,905,720</td>
</tr>
<tr>
<td>Hay</td>
<td>3,818,541 tons</td>
</tr>
<tr>
<td>Beans</td>
<td>220,644 bushels</td>
</tr>
<tr>
<td>Buckwheat</td>
<td>3,726,484 &quot;</td>
</tr>
<tr>
<td>Corn</td>
<td>3,882,839 &quot;</td>
</tr>
<tr>
<td>Potatoes</td>
<td>47,339,187 &quot;</td>
</tr>
<tr>
<td>Turnips</td>
<td>24,339,479 &quot;</td>
</tr>
<tr>
<td>Grass and clover</td>
<td>348,605 &quot;</td>
</tr>
</tbody>
</table>

The principal items of furs are 488,182 muskrats, 49,799 minks, 48,151 beavers, 19,271 moose, cariboo and deer, 17,582 martens, 37,402 seals, 12,861 foxes, 6132 otters, and 2553 bears.

The following are the statistics of manufactures:

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital invested</td>
<td>$77,064,020</td>
</tr>
<tr>
<td>Number of hands employed</td>
<td>187,942</td>
</tr>
<tr>
<td>Amount of yearly wages</td>
<td>40,851,906</td>
</tr>
<tr>
<td>Value of raw material</td>
<td>124,907,846</td>
</tr>
<tr>
<td>Total value of products</td>
<td>221,017,773</td>
</tr>
</tbody>
</table>

The statistics of the fisheries are as follows: Vessels, 991, men, 6984; boats, 16,876, men, 25,876; shoremen, 4647; fathoms of nets, 1,879,435.

The leading items of the production of the fisheries were 682,631 quintals of cod, 120,213 quintals of haddock, 417,300 barrels of herring, 77,925 barrels of mackerel, 2,491 gallons of cod-liver oil, and 676,403 gallons of other fish oils.

The foreign trade, during 1874, was, including bullion and specie, as follows: Imports, $128,213,582; exports, $89,851,928. The trade of the Dominion of Canada is chiefly with the United States and Great Britain.

The "British North American Act, 1867," orders that the constitution of the Dominion shall be "similar in principle to that of the United Kingdom;" that the executive authority shall be vested in the sovereign of Great Britain and Ireland, and carried on in her name by a Governor-general and Privy Council; and that the legislative power shall be exercised by a Parliament of two Houses, called the Senate and the House of Commons. Provision is made in the act for the admission of Newfoundland, still an independent province of British North America, into the Dominion of Canada. The seven provinces forming the Dominion have each a separate parliament and administration, with a Lieutenant-governor at the head of
the executive. They have full power to regulate their own local affairs, dispose of their revenues, and enact such laws as they may deem best for their own internal welfare, provided only they do not interfere with, and are not adverse to, the action and policy of the central administration under the Governor-general.

The public debt of the Dominion, incurred chiefly on account of public works, and the interest on which forms the largest branch of the expenditure, was $116,682,917 on the 1st of July, 1875. The total revenue during the year ending June 30th, 1874, was $39,930,791; the total expenditure during the same period, $36,524,876.

The strength of the troops maintained by the imperial government, and forming the garrison of Halifax, was reduced, in 1871, to 2000 men. Besides these, Canada has a large volunteer force, and a newly organized militia. By the terms of the act passed in March, 1868, "to provide for the defence of the Dominion," the militia consists of all British subjects between the ages of 18 and 60, who are called out to serve in four classes, namely: 1st class, 18 to 39, unmarried; 2d, from 30 to 45 unmarried; 3d, 18 to 45, married; 4th, 45 to 60. A general order from the Militia Department, issued in 1874, reduced the active militia force, for the purposes of drill and pay, for the years 1874 and 1875, to 30,000 officers and men. Two schools of military instruction for infantry are established in each of the provinces of Ontario and Quebec, and one in each of the provinces of New Brunswick and Nova Scotia.

The naval forces of Canada consisted, in 1875, of 8 screw steamers, carrying 18 guns. Besides these, the government owned two fast steamers, employed on coast service, not fitted with guns, but available as gunboats.

The total shipping registered on the 31st of December, 1874, was 6930 vessels of a burthen of 1,158,363 tons. Included in this were 634 steamers, of 76,487 tons.

At the end of October, 1874, Canada had a network of railways of a total length of 4022 miles. There were, at the same period, lines of a total length of 1120 miles in course of construction, and 3000 miles more had been surveyed and concessions granted by the government.

On June 30th, 1875, there were in the Dominion, 3943 post offices. The number of letters and post-cards sent through the mails, during the year, was 34,750,000; of newspapers, 25,480,000.

The provinces of Quebec and Ontario have separate school laws, adapted to the religious element prevailing in either. Each township in Ontario is divided into several school sections, according to the requirements of inhabitants. The common schools are supported partly by the government and partly by local self-imposed taxation, and occasionally by the payment of a small fee for each scholar. All teachers must pass an examination before a county board of educators, or receive a license from the provincial normal school, empowering them to teach, before they can claim the government allowance.

Commission from Canada to the International Exhibition:

Senator Luc Letellier de St. Just, Minister of Agriculture, President.

Honorary Commissioners.

Hon. S. C. Wood, Provincial Treasurer.
Hon. P. A. Garneau Minister of Agriculture.
Hon. P. Carteret Hill, Provincial Secretary.

Hon. J. J.Frazer, Provincial Sect'y.
Hon. L. C. Owen, Attorney-General.
Hon. W. J. Armstrong, Minister of Agriculture.
Hon. Mr. Nolin, Minister of Agriculture.

Executive Commissioners.

Hon. E. G. Penny, Senator Montreal.
Hon. R. D. Wilmot, Senator Sanbury.

D. MacDougall, Esq., Berlin.
J. Perrault, Esq., Secretary.
FRANCE.

France is the most westerly state of Central Europe, extending from 42° 20' to 51° 5' north latitude, and from 7° 45' east to 4° 45' west longitude. It is bounded on the north by the Channel and the Straits of Dover, which separate it from England, by Belgium, the grand duchy of Luxembourg; on the east by Germany, Switzerland, and Italy, on the south by the Mediterranean and Spain, from which it is separated by the Pyrenees, and on the west by the Atlantic Ocean (the Bay of Biscay). The greatest length of France, from Dunkirk, in the north, to the Col de Falguere, in the south, is about 620 miles; its greatest breadth from east to west, from the boundary line in the Vosges to Cape St. Mattheiu, in Finisterre, is about 550 miles. The superficial area of France, including the two Savoy provinces and Corsica, is reckoned at about 201,600 square miles. The possessions of France, which are situated in the non-European parts of the world, have a total superficial area of 463,827 square miles, and the largest is Algeria, with an area of 258,310 square miles. France is divided into 86 departments. The total population, exclusive of Algeria and the colonies, was given (in 1872) at 56,102,921.

The colonies and foreign possessions of France in Africa are Algeria, Senegambia, the islands of Bourbon (Reunion), St. Marie, Mayotte, and Nussi-be, in the Indian Ocean, and Gaboon, on the coast of Guinea. The total possessions in Africa cover an area of about 270,000 square miles, with a population of 2,820,000 souls. In America are the islands of Martinique and Guadalupe in the West Indies, French Guiana, or Cayenne, with St. Pierre and Miquelon, near Newfoundland; forming together an area of 45,000 square miles, with a population of 345,000. In Asia, the Indian settlements of Pondicherry, Mahe, Karikal, Vanaon, and Chaudernagore, comprise 19,600 square miles, with a population of 265,000. A settlement has also been made in Coch in China, embracing 21,700 square miles and 1,336,000 inhabitants, and a protectorate declared over the Empire of Anam. In the Pacific Ocean are two groups, the Marquesas and Tahiti, and New Caledonia, with the Loyalty Isles, the whole forming an area of 11,182 square miles, with 87,000 inhabitants.

The following table gives the population, in 1872, of some of the largest cities in France:

<table>
<thead>
<tr>
<th>City</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paris</td>
<td>1,850,000</td>
</tr>
<tr>
<td>Lyons</td>
<td>323,000</td>
</tr>
<tr>
<td>Marseilles</td>
<td>313,000</td>
</tr>
<tr>
<td>Bordeaux</td>
<td>194,000</td>
</tr>
<tr>
<td>Lille</td>
<td>158,000</td>
</tr>
<tr>
<td>Toulouse</td>
<td>125,000</td>
</tr>
<tr>
<td>Nantes</td>
<td>119,000</td>
</tr>
<tr>
<td>St. Etienne</td>
<td>111,000</td>
</tr>
<tr>
<td>Rouen</td>
<td>102,000</td>
</tr>
</tbody>
</table>

There are four great mountain chains belonging to France—the Pyrenees which separate the French territory from Spain; the Cevenne-Vosgian range, running north and south between the Moselle and the new boundary line; the Alps, which separate the Swiss territory from the provinces of Savoy and Nice; and the Sardo-Corsican range which belongs, as the name implies, to the islands of Sardinia and Corsica. The highest peaks in the Pyrenees are the Maladetta and Mont Perdu (10,886 feet and 10,994 feet); in the Ceveno-Vosgian range, the greatest height
(the Widderkalm) does not greatly exceed 7000 feet. The French portion of the Alps now includes several of the highest mountains and most elevated passes of the ranges, as Mont Blanc, 15,744 feet; Mont Iserean, 13,272 feet; Mont Cenis, 11,457 feet; and the pass of Little St. Bernard, 7190 feet, etc. In Corsica, the highest peak rises to an elevation of 9000 feet. The grand water-shed of France is the Cevenno-Vosges chain, which determines the direction of the four great rivers, the Seine, the Loire, the Garonne, and the Rhone; the first three of which flow north-west into the Bay of Biscay and the English Channel, and the fourth into the Gulf of Lyons.

The entire extent of river navigation in France amounts to 5500 miles, or 8,900,000 metres, while the 99 larger canals, which have been constructed either to connect the various river courses or to supply entirely new channels of water communication, extend over a length of 2900 miles, or 4,700,000 metres. The most important of these works are the canals connecting Nantes and Brest, and the Rhone with the Rhine, and those of Berry, Nivernais, and Bourgogne.

France is peculiarly rich in mineral springs, of which there are said to be nearly 1000 in use. Of these, more than 400 are situated in the group of the Pyrenees, where there are 93 establishments for their systematic use. It is estimated that there are, moreover, fully 4000 springs not hitherto employed.

According to M. Maurice Block's estimate, the physical and agricultural character of the soil of France may be comprised under the following heads:

<table>
<thead>
<tr>
<th>Hectares. *</th>
<th>Mountainous districts, heaths, and commons</th>
<th>9,944,839</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rich land</td>
<td>7,276,399</td>
</tr>
<tr>
<td></td>
<td>Chalk, or lime districts</td>
<td>9,788,197</td>
</tr>
<tr>
<td></td>
<td>Gravel, stony and sandy</td>
<td>15,951,618</td>
</tr>
<tr>
<td></td>
<td>Clay, marshy, miscellaneous</td>
<td>9,807,577</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>52,768,600</strong></td>
</tr>
</tbody>
</table>

The same writer further subdivides the soil of France, according to its actual employment, under the following heads:

<table>
<thead>
<tr>
<th>Per cent. of the whole acre.</th>
<th>Arable lands</th>
<th>48.3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Meadow lands</td>
<td>9.7</td>
</tr>
<tr>
<td></td>
<td>Vineyards</td>
<td>3.7</td>
</tr>
<tr>
<td></td>
<td>Cultivated lands</td>
<td>17.8</td>
</tr>
<tr>
<td></td>
<td>Roads, streets, public walks, etc.,</td>
<td>3.7</td>
</tr>
<tr>
<td></td>
<td>Forest and unproductive lands</td>
<td>16.3</td>
</tr>
</tbody>
</table>

France possesses one of the finest climates in Europe, although, owing to its great extent of area, very considerable diversities of temperature are to be met with. The mean annual temperature of different parts of France has been estimated as follows, by Humboldt: Toulon, 62° F.; Marseilles, 59.5°; Bordeaux, 56°; Nantes, 55.2°; Paris, 51.2°; Dunkirk, 50.5°.

The following are the statistics of agricultural productions for the year 1869:

<table>
<thead>
<tr>
<th>Hectolitres. †</th>
<th>Wheat</th>
<th>108,800,000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rye</td>
<td>24,000,000</td>
</tr>
<tr>
<td></td>
<td>Barley and oats</td>
<td>90,000,000</td>
</tr>
<tr>
<td></td>
<td>Maize</td>
<td>10,000,000</td>
</tr>
<tr>
<td></td>
<td>Potatoes</td>
<td>100,000,000</td>
</tr>
</tbody>
</table>

The production of beet-root sugar in 1872-73 amounted to 418,000 tons. The average yearly produce of the vineyards of France is estimated at about 50,000,000

* The hectare is equal to about 2.47 English acres.
† The hectolitre equals 27.5 bushels.
of hectolitres (about 1,000,000,000 of gallons). Of this about one-seventh is made into brandy.

The principal forest trees are the chestnut and beech on the central mountains, the oak and cork tree in the Pyrenees, and the fir in the Landes. The destruction of the national forests has been enormous within the last two centuries, but measures have been taken in recent years to plant wood, in order to protect those mountain slopes which are exposed to inundations from mountain torrents, and to provide a supply for the ever-increasing demand for fuel. About one-seventh of the entire territory of France is still covered with wood. Turf taken from the marshy lands is extensively used, more especially in the rural districts, for fuel.

According to the census of 1866—the most recent in regard to animals—there were in France 3,312,637 horses, 518,000 asses, 350,000 mules; 12,733,000 horned cattle, 30,386,000 sheep, 5,500,000 swine, and 1,580,000 goats. There were, according to the Statistique Agricole for 1858, about 3,000,000 of beehives, valued at rather more than 44,000,000 of francs; the mean annual returns are, for honey, 6,670,000, and for wax, 1,620,000 kilogrammes.\(^1\) Poultry constitutes an important item of farm produce in France, estimated at 45,500,000 of francs, while the eggs and feathers yield 35,250,000 of francs.

The following figures show the condition of the merchant navy of France on the 31st of December, 1873:

<table>
<thead>
<tr>
<th></th>
<th>Tonnage</th>
<th>Men.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sailing vessels</td>
<td>15,043</td>
<td>88,865</td>
</tr>
<tr>
<td>Steam vessels</td>
<td>516</td>
<td>135,165</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15,559</td>
<td>10,448</td>
</tr>
</tbody>
</table>

The cabotage, or internal coasting traffic, is a great source of financial wealth to the State, to which all rivers and canals belong. In 1873, it employed 2776 vessels, with a tonnage of 122,850 and an equipment of 10,381.

The chief mineral products of France are coal and iron, in the excavation of which nearly 250,000 men were employed in 1868. The production of coal in 1868 was 132,-

- **cubic feet** of quintals, the quintal being equal to 1.97 hundredweight. During the same year, there were 150 iron mines in operation, yielding 34,500,000 of quintals, more than half of this quantity being obtained from the five departments of Haute-Marne, Haute-Saone, Cher, Moselle, and Nord. Argentiferous galena, a little silver and gold, copper, lead, manganese, antimony, and tin occur, but hitherto their working has not proved very productive. The department of Charento-Inferieure yields the largest amount of salt, the mean annual produce being 1,500,000 of quintals (2,500,000 of francs), which is fully one-third of the entire annual produce of the whole country. France derives about 41,000,000 of francs from its quarries of granite and freestone, its kaolin, marbles, sands, lithographic stones, millstones, etc. Granite and syenite are found in the Alps, Vosges, Corsica, Normandy, and Burgundy; porphyry in the Vosges; and basalt and lava, for pavements, in the mountains of Auvergne. Marble is met with in more than 40 departments; alabaster occurs in the Pyrenees; the largest State quarries are near Cherbourg and St. Lo.

The following list gives an approximate estimate of the value of the chief products of French industry:

<table>
<thead>
<tr>
<th>Product</th>
<th>Value (Millions of Francs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linen fabrics</td>
<td>250</td>
</tr>
<tr>
<td>Cotton fabrics</td>
<td>650</td>
</tr>
<tr>
<td>Woolen fabrics</td>
<td>950</td>
</tr>
<tr>
<td>Silk fabrics</td>
<td>5000</td>
</tr>
<tr>
<td>Mixed fabrics</td>
<td>330</td>
</tr>
<tr>
<td>Jewelry, watchmaking</td>
<td>35</td>
</tr>
<tr>
<td>Glassware</td>
<td>12</td>
</tr>
</tbody>
</table>

\(^1\) The kilogramme equals 2.2 pounds avoirdupois.
Minerals, minerals, salt, etc., 600
Articles of food, as sugar, wines, etc., 364
Skins, leather, oils, tobacco, 556
Bone, ivory, isinglass, etc., 30
Chemical products, 80
Ceramic arts, 86
Paper, printing, 60
Forests, fisheries, 98

The total imports, for 1873, were 4,576,000,000, and the total exports, for the same year, 4,822,000,000 of francs.

France was proclaimed a republic on the 4th of September, 1870. According to the law of February 25th, 1875, the legislative power is vested in the two Houses, the Chamber of Deputies and the Senate. The Chamber of Deputies is elected by universal suffrage. The Senate is composed of 300 members, 225 of whom are elected by the departments and the colonies, and 75 by the National Assembly. The President of the republic is elected by a majority of the votes of the Senate and Chamber of Deputies, united as the National Assembly. His term of office is for seven years, and he is eligible for re-election.

According to the budget for 1876, the estimated receipts for the year are put down at 2,575,025,582 francs, and the expenditures at 2,570,505,513. The public debt is 23,493,000,000 francs.

The nominal strength of the army, on a peace footing, is given in the latest government returns as 490,332 men; on a war footing, 1,750,000.

The navy of France was composed, at the end of 1873, of 62 ironclads, 264 unarmored screw steamers, 62 paddle steamers, and 113 sailing vessels.

According to the official report for December, 1874, the railways in operation measure 20,711 kilometres, or about 12,866 miles. With the exception of less than 500 miles, the railways of France are held by six companies, which are under the superintendence of the State.

The number of letters forwarded by the post office, in 1874, was 341,068,000; newspapers, postal cards, and parcels, 331,786,000.

At the end of 1873, there were 45,942 kilometres of lines of telegraphs, comprising 123,669 kilometres of wire. The number of messages sent, in 1873, was 6,225,000, of which nearly one-fourth were international messages. There were annual deficits since the establishment of the public telegraph department, in March, 1851. There were 2206 telegraph offices at the end of 1873.

Public instruction is presided over in France by a special ministry. Nearly half the expenses connected with it are defrayed by the State, and the remainder by the departments. There are 15 academies, located in the following towns: Aix, Besançon, Bordeaux, Caen, Clermont, Dijon, Douni, Grenoble, Lyon, Montpellier, Nancy, Paris, Poitiers, Rennes, Toulon. These academies are divided into the five faculties of theology, law, medicine, sciences, and literature, and supplemented by various superior and preparatory schools. The professors are paid partly by the State and partly by fees. Secondary instruction has received an immense impetus during the present century. The different departments share very unequally in the diffusion of education, and it may be generally observed that the proportion of the educated is highest in the northern and eastern districts of France. France supports numerous colleges and schools for instruction in special branches of knowledge. There are also numerous agricultural, forest, farming, and veterinary schools, besides the Ecole Polytechnique, specially designed to prepare youths for the public services; and military and naval colleges at St. Cyr, Saumur, Paris, Vincennes, Brest, Toulon, and St. Denis.

Paris possesses several libraries belonging to, and supported by, the State, but freely opened to the public. There are 338 public libraries in the provinces, to all of which access is afforded in the most liberal spirit. France is rich in public galleries of painting, statuary, and articles of vertu. The expenses of secondary and
primary education, literary and scientific institutions, etc., are charged in the budget for 1876 at 44,912,545 francs.

(Detailed information as to the colonial dependencies of France will be found under the appropriate headings in other portions of the catalogue.)

Commission from FRANCE to the International Exhibition:

M. M. OZENNE, Counsellor of State, Secretary-General of the Ministry of Agriculture and Commerce, Commissioner-General of International Exhibitions.

DU SOMMERARD, Director of the Museums of Thermes and Cluny, Commissioner-General of International Exhibitions.

Committee.

Organized under the Presidency of the Minister of Agriculture and Commerce.

M. DUCLERC, Vice-President of the National Assembly, Member of the Committee on International Exhibitions.

MARQUIS DE TALHOUET, Deputy.

BARON DE SOUBEYRAN, Deputy.

MR. WOLOWSKI, Deputy.

MARQUIS DE LAFAYETTE, Deputy.

M. BOINET, Deputy.

M. FLOTARD, Deputy.

M. LABOUAYE, Deputy.

M. DIETZ-MONIN, Deputy.

M. COUNT DE BOUILLE, Deputy.

VISCOUNT D’HAUSSEONVILLE, Deputy.

M. DE CHABROL, Deputy.

M. JULLIEN, Deputy.

The Secretary-General of the Ministry of Agriculture and Commerce.

The Director-General of Customs.

The Director of the Academy of Fine Arts.

The Director of Consulates and Commercial Affairs, at the Ministry of Foreign Affairs.

M. OUTREY, Minister Plenipotentiary.

M. DU SUMMERARD, Director of the Museum of Thermes and Cluny.

The Assistant Director of Foreign Commerce.

The President of the Paris Chamber of Commerce.

M. GUILLAUME, Member of the Institute.

MARQUIS DE ROCHAMBEAU.

BARON ALPHONSE DE ROTHSCHILD.

M. SIEBER.

M. ALFRED MAHE.

M. JULES LAVEISSIERE, Dealer in Metals.

M. ROULLEAUX DUGAGE, Secretary.

M. DE FALLOIS, late Chief of Bureau, Ministry of Public Works, Assistant Secretary.

Resident Commissioners.

MR. DE LAFOREST, Consul-General of France, Commissioner-General.

MR. RAVIN D’ELPEUX, Vice-Consul.

CAPT. ANFRYE, Military Attache, French Legation.

MR. BAZERGNE, Attaché.

MR. A. IMBERT GOUBBEYRE, Secretary.
GERMANY.

The German Empire occupies the central portion of Europe, and extends from 6° to 22° 40' east longitude and 49° 7' to 55° 50' north latitude. It is bounded on the north by the German Ocean, the Danish Peninsula, and the Baltic; on the east by Russia and Austria; on the south by Russia, Austria, and Switzerland, and on the west by France, Belgium, and the Netherlands. The population (1871) is about 47,000,000. Its area is estimated at 210,000 square miles, or about one-sixteenth of that of all Europe. The coast line measures about 950 miles.

Germany is composed of an aggregation of 26 different States. The following list gives the names of these States, their population, area, and the number of members representing each in the Bundesrath, or Federal Council, and the Reichstag, or Imperial Diet:

<table>
<thead>
<tr>
<th>States</th>
<th>Population in 1871</th>
<th>Area in square miles</th>
<th>No. of Members in Bundesrath</th>
<th>No. of Members in Reichstag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kingdoms:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Prussia</td>
<td>24,691,397</td>
<td>139,751</td>
<td>17</td>
<td>236</td>
</tr>
<tr>
<td>2. Bavaria</td>
<td>4,063,450</td>
<td>29,280</td>
<td>6</td>
<td>48</td>
</tr>
<tr>
<td>3. Saxony</td>
<td>2,550,244</td>
<td>5,780</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>4. Wurttemburg</td>
<td>1,818,539</td>
<td>7,532</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>Grand Duchies:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Baden</td>
<td>1,611,562</td>
<td>5,850</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>6. Hesse</td>
<td>852,894</td>
<td>2,692</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>7. Mecklenburg-Schwerin</td>
<td>557,807</td>
<td>5,136</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>8. Saxe-Weimar</td>
<td>286,183</td>
<td>1,493</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>9. Mecklenburg-Strelitz</td>
<td>96,962</td>
<td>1,130</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Oldenburg</td>
<td>314,777</td>
<td>2,470</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Duchies:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Brunswick</td>
<td>311,754</td>
<td>1,425</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12. Saxe-Meiningen</td>
<td>187,884</td>
<td>955</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>13. Saxe-Altenburg</td>
<td>142,122</td>
<td>510</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>14. Saxe-Coburg-Gotha</td>
<td>174,339</td>
<td>760</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15. Anhalt</td>
<td>203,437</td>
<td>896</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Principalities:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Schwarzburg-Rudolstadt</td>
<td>75,533</td>
<td>367</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>17. Schwarzburg-Sondershausen</td>
<td>67,191</td>
<td>332</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>18. Waldeck</td>
<td>50,244</td>
<td>438</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>19. Reuss (ältere Linie),</td>
<td>45,094</td>
<td>123</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>20. Reuss (jüngere Linie),</td>
<td>89,032</td>
<td>320</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>21. Schaumburg-Lippe</td>
<td>32,059</td>
<td>170</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>22. Lippe-Detmold,</td>
<td>111,135</td>
<td>438</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Free Towns:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Lubeck</td>
<td>52,138</td>
<td>110</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>24. Bremen</td>
<td>122,402</td>
<td>97</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>25. Hamburg</td>
<td>338,974</td>
<td>158</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>26. Alsace-Lorraine</td>
<td>1,549,439</td>
<td>5,590</td>
<td>58</td>
<td>382</td>
</tr>
</tbody>
</table>

Total: 41,058,632 208,613 58 382
The *Almanac de Gotha*, for 1876, divides the population of the German Empire, in regard to nationality, as follows: Germans, 37,820,000; Poles, 2,450,000; Wends, 140,000; Czechs, 50,000; Lithuanians and Courlanders, 150,000; Danes, 150,000; French and Walloons, 210,000. The Germans admit of being divided into high and low Germans; the phraseology of the former is the cultivated language of all the German States; that of the latter, known as *Platt-Deutsch*, is spoken in the north and northwest. The Poles are found exclusively in the east and northeast of Prussia; the Czechs in Silesia, about Appeln and Breslau; the Wends, in Silesia, Brandenburg, and Prussian Lusitia; the Lithuanians and Courlanders in east Prussia; the Danes, in Schleswig; the Walloons, about Aix-la-Chapelle, in Rhenish Prussia, and the French, partly in the same region, and in Alsace and Lorraine.

Germany presents two very distinct physical formations. First, a range of high table land, occupying the centre and southern parts of the country, interspersed with numerous ranges and groups of mountains, the most important of which are the Harz and Teutoburger in the north, the Taunus and Thuringerwald in the middle, and the Schwarzwald and Raube Alps in the south, and containing an area, including Alsace and Lorraine, of 110,000 square miles. Second, a vast sandy plain, which extends from the centre of the empire north to the German Ocean, and including Schleswig-Holstein, contains an area of about 98,000 square miles. This great plain, stretching from the Russian frontier on the east to the Netherlands on the west, is varied by two terrace-like elevations. The one stretches from the Vistula into Mecklenburg, at no great distance from the coast of the Baltic, and has a mean elevation of 500 to 600 feet, rising in one point near Danzig to 1020 feet; the other line of elevations begins in Silesia, and terminates in the moorlands of Luneberg, in Hanover, its course being marked by several summits from 500 to 800 feet in height. A large portion of the plain is occupied by sandy tracts, interspersed with deposits of peat; but other parts are moderately fertile, and admit of successful cultivation.

In respect of drainage the surface of Germany belongs to three different basins. The Danube, from its source in the Schwarzwald to the borders of Austria, belongs to Germany, and through this channel the waters of the greater part of Bavaria are poured into the Black Sea, thus opening up communication with the east. The greater part of the surface, however (about 185,000 square miles), has a northern slope, and belongs partly to the basin of the North Sea, and partly to the basin of the Baltic. The chief German streams flowing into the North Sea are the Rhine, the Weser, and the Elbe; into the Baltic, the Oder and the Vistula.

The most important of the numerous canals of Germany are the Ludwig's canal, in Bavaria, connecting the Danube and Main, and thus opening a communication between the Black Sea and the German Ocean; the Finow and Friedrich Wilhelm's canals, in Brandenburg; the Plaue canal, connecting the Elbe and the Havel; and the Kiel and Eyder canal, uniting the Baltic and the German Ocean. Numerous lakes occur both in the table-land of southern Germany, and in the lowlands of the northern district, but few of them are of any great size. Mineral springs occur principally in Nassau, Wurttemburg, Baden, Bavaria, and Rhenish Prussia. Many of these springs have retained their high reputation from the earliest ages.

The climate of Germany presents less diversity than a first glance at the map might lead one to infer, for the greater heats of the more southern latitudes are considerably modified by the alpine character of the country in those parallels, while the cold of the northern plains is mitigated by their vicinity to the ocean. The average decrease in the mean temperature is in going from south to north, about 1° F. for every 52 miles; and in going from west to east, about 1° F. for every 72 miles. The line of perpetual snow varies from 7200 to 8000 feet above the level of the sea. The mean annual fall of rain is 20 inches.
The following table shows the mean temperature at different points:

<table>
<thead>
<tr>
<th>MEAN ANNUAL TEMPERATURE</th>
<th>SUMMER</th>
<th>WINTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamburg</td>
<td>47.2</td>
<td>64</td>
</tr>
<tr>
<td>Dresden</td>
<td>48.3</td>
<td>67</td>
</tr>
<tr>
<td>Frankfort-on-the-Main</td>
<td>48.5</td>
<td>66</td>
</tr>
<tr>
<td>Berlin</td>
<td>48.5</td>
<td>66</td>
</tr>
<tr>
<td>Hanover</td>
<td>48.3</td>
<td>63</td>
</tr>
<tr>
<td>Königsberg</td>
<td>43.6</td>
<td>62</td>
</tr>
</tbody>
</table>

Germany is rich in mineral products, among which the most important are silver, found in the Hartz mountains; iron in numerous mountain ranges; salt in many parts of the country; coal in Rhenish Prussia, Silesia. Cobalt, arsenic, sulphur, saltpetre, alum, gypsum, bismuth, pumice-stone, tripoli-slate, kaolin, emery, ochre, and vitriol, are all among the exports of Germany.

The following figures show the product of the principal mining industries of Germany (exclusive of Alsace and Lorraine) for the year 1870:

<table>
<thead>
<tr>
<th>NO. OF WORKS</th>
<th>PERSONS EMPLOYED</th>
<th>PRODUCT IN CWT.</th>
<th>VALUE IN THALERS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal (including brown coal)</td>
<td>1362</td>
<td>145,782</td>
<td>680,660,074</td>
</tr>
<tr>
<td>Iron ore,</td>
<td>1258</td>
<td>24,793</td>
<td>58,550,399</td>
</tr>
<tr>
<td>Zinc ore,</td>
<td>72</td>
<td>9,797</td>
<td>13,335,603</td>
</tr>
<tr>
<td>Lead ore,</td>
<td>174</td>
<td>18,057</td>
<td>2,111,810</td>
</tr>
<tr>
<td>Copper ore,</td>
<td>3</td>
<td>6,159</td>
<td>4,147,627</td>
</tr>
</tbody>
</table>

The yield of salt, for the same year, was 14,658,990 hundredweight, from 69 works, employing 4010 persons, and valued at 3,926,650 thalers.

The leading products of the metallurgical industries are given as follows:

<table>
<thead>
<tr>
<th>WORKS</th>
<th>PERSONS EMPLOYED</th>
<th>AMOUNT PRODUCED IN CWT.</th>
<th>VALUE IN THALERS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cast iron,</td>
<td>631</td>
<td>39,525</td>
<td>29,942,264</td>
</tr>
<tr>
<td>Wrought iron (including wire, bars, and manufactured iron of various kinds)</td>
<td>354</td>
<td>43,849</td>
<td>17,437,766</td>
</tr>
<tr>
<td>Steel,</td>
<td>216</td>
<td>12,992</td>
<td>3,999,027</td>
</tr>
<tr>
<td>Zinc,</td>
<td>53</td>
<td>6,256</td>
<td>1,727,570</td>
</tr>
<tr>
<td>Silver,</td>
<td>10</td>
<td>1,601</td>
<td>(lbs.) 185,847</td>
</tr>
<tr>
<td>Lead (products of),</td>
<td>17</td>
<td>1,513</td>
<td>1,195,733</td>
</tr>
<tr>
<td>Copper,</td>
<td>28</td>
<td>1,971</td>
<td>174,687</td>
</tr>
</tbody>
</table>

The entire production of mines, furnaces, salt works, etc., is given as 824,965,732 hundredweight, valued (including 186,370 pounds of gold and silver) at 246,482,999 thalers.

The vegetable products comprise a very large proportion of the European flora. All the ordinary cereals are extensively cultivated in the north, and largely exported, chiefly from Wurtemberg and Bavaria; hemp and flax, madder, woad, and saffron grow well in the central districts, where the vine, the cultivation of which extends in suitable localities as far north as 51°, is brought to greater cultivation—the best wine-producing districts being the valleys of the Danube, Rhine, Main, Neckar, and Moselle, which are, moreover, generally noted for the excellence of their fruits and vegetables. Tobacco is grown in sufficient quantities for extensive exportation on the Upper Rhine, the Werra, and Oder. The hops of Bavaria have a high reputation, and the chicory grown in that country and in the district between the Elbe and
the Weser finds its way all over Europe as a substitute for coffee. The average annual product of cereals is approximately as follows:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Amount (hectolitres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rye</td>
<td>89,000,000</td>
</tr>
<tr>
<td>Oats</td>
<td>87,000,000</td>
</tr>
<tr>
<td>Wheat</td>
<td>34,000,000</td>
</tr>
<tr>
<td>Barley</td>
<td>30,000,000</td>
</tr>
</tbody>
</table>

The average annual potato crop amounts to 272,000,000 hectolitres. The production of beets, in 1872, was over 61,000,000 hundredweight. A fair yield of wine is about 4,500,000 hectolitres, and of tobacco, about 700,000 hundredweight.

The most extensive forests are found in central Germany; and in some parts of Prussia, while the northwestern parts of the great plain are deficient in wood, the place of which is in some degree supplied by the abundance of turf yielded by the marshy lands. Germany has long been noted for the good breed of horses raised in the northern parts of the continent, while Saxony, Silesia, and Brandenburg have an equal reputation for their sheep-flocks, and the fine quality of the wool which they yield. The rich alluvial flats of Mecklenburg and Hanover are celebrated for their cattle; the forests of northern and central Germany abound in swine, and in small game of various kinds; while the Bavarian Alps afford shelter to the larger animals, as the chamois, the red deer and wild goat, the fox, marten, and wolf.

According to the last enumeration of live stock, there were in Germany 3,500,000 horses, 15,000,000 cattle, 30,000,000 sheep, 8,000,000 swine, and 2,000,000 goats.

The wool crop for 1869 amounted to 750,000 hundredweight.

Among the fishes of Germany, the most generally distributed are carp, salmon, trout, and eels; the rivers contain also crayfish, pearl-bearing mussels, and leeches. The oyster, herring, and cod fisheries constitute important branches of industry on the German shores of the Baltic and North Seas.

The preservation and cultivation of woods receive almost as much attention in Germany as agriculture, and, like the latter, are elevated to the rank of a science. The larger woods and forests in most of the states belong to the government, and are under the care of special boards of management, which exercise the right of supervision and control over all forest lands, whether public or private. The value of the forests of Germany was, in 1873, estimated at 666,000 thalers.

The oldest and most important of the German industrial arts are the manufactures of linen and woolen goods. The chief localities for the cultivation and preparation of flax, and the weaving of linen fabrics, are the mountain valleys of Silesia, Lusatia, Westphalia, the Harz, and Saxony (for thread laces); while cotton fabrics are principally made in Rhenish Prussia and Saxony. The same districts, together with Pomerania and Bavaria, manufacture the choicest woolen fabrics, including damasks and carpets. Toys, wooden clocks, and wood-carvings, which may be regarded as almost a specialty of Germany industry, are carried to the greatest perfection in the hilly districts of Saxony, Bavaria, and the Black Forest. The best iron and steel manufactures belong to Silesia, Hanover, and Saxony. Silesia probably possesses the finest glass manufactories; while Saxony and Prussia stand pre-eminent for the excellence of their china and earthen wares. Augsburg and Nuremberg dispute with Munich and Berlin the title to pre-eminence in silver, gold, and jewelry work, and in the manufacture of philosophical and musical instruments; while Leipzig and Munich claim the first rank for type foundries, printing, and lithography. The trading cities of northern Germany nearly monopolize the entire business connected with the preparation of tobacco, snuff, etc., the distillation of brandies, and the manufacture of sugar from the beet, potato, and other roots; while vinegar and oils are prepared almost exclusively in central and southern Germany.

The constitution of the empire is confederate, under the presidency of the King of Prussia, who bears the hereditary title of German Emperor. He has the right

* The hectolitre equals 2.75 bushels.
and duty of representing the empire in all respects of international law, of declaring war in the name of the empire, making peace and treaties, etc. For a declaration of war the consent of the Bundesrath is necessary. He is the commander-in-chief of the whole army and navy, in peace as well as in war, except the military powers of Wurttemberg and Bavaria, which—in times of peace only—form separate corps under the command of their respective kings. He names and dismisses the officers and functionaries of the empire. His orders, issued in the name of the empire, must be countersigned by the Chancellor, who, as the first minister of the empire, is by his signature responsible for them.

The legislative powers lie in the Bundesrath and the Reichstog. The former consists of the delegates of the confederate governments, representing in all fifty-eight votes. The Reichstag has 382 members directly elected by the secret ballot of the people. The bills promulgated by these two assemblies in accordance are compulsory on all governments of the empire, and annual constitutions all possible institutions contradictory to them in the several States.

The empire has no debt. The debts of the separate States amounted, in 1873, to 1,093,800,000 thalers, 589,300,000 of which sum was for railways.

The army consists, on a peace footing, of about 400,000 men; on a war footing, of about 1,200,000. The navy comprises 51 vessels, of which number 47 are steamers, of 77,130 horse-power, 64,198 tons burthen, and carrying 321 guns; and 4 sailing vessels (1 frigate and 3 brigs) mounting 36 guns.

The multiplicity of small States into which Germany was long broken up, opposed great obstacles to the development of commerce; but the difficulty has to some extent been obviated by the establishment of the Zollverein, or “Customs confederation.” The Hanse Towns, Hamburg and Bremen, do not belong to it, being free ports; but it comprises all the other states of the empire and the grand duchy of Luxembourg.

The estimated value of goods exported, imported, and in transit (by the customs lines) for 1873 was as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imports</td>
<td>4,257,300,000 marks</td>
</tr>
<tr>
<td>Exports</td>
<td>2,489,000,000</td>
</tr>
<tr>
<td>In transit</td>
<td>1,233,000,000</td>
</tr>
</tbody>
</table>

The merchant navy comprised, in 1873, 474 vessels, including 253 steamers, with a total of 1,201,358 tonnage.

The railways measured, in 1871, about 13,310 English miles; but these figures represent the length, not of the lines within the limits of the German Empire, but of those which are under German administration, though extending some way into neighboring States.

The various telegraphic lines of the empire (excepting those of Bavaria and Wurttemburg) are now under a central administration, and, in 1874, the whole measured 42,571 kilometres; length of wires, 149,410 kilometres; number of messages, 13,422,511; number of offices, 4,992.

The post office forwarded in 1874:

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private letters</td>
<td>521,900,000</td>
</tr>
<tr>
<td>Postal cards</td>
<td>47,900,000</td>
</tr>
<tr>
<td>Official letters</td>
<td>37,700,000</td>
</tr>
<tr>
<td>Parcels, etc.</td>
<td>89,700,000</td>
</tr>
<tr>
<td>Newspapers</td>
<td>349,600,000</td>
</tr>
<tr>
<td>Number of offices</td>
<td>7,900</td>
</tr>
</tbody>
</table>

Education is more generally diffused in Germany than in any other part of Europe, and is cultivated with an earnest and systematic devotion not met with, to an equal extent, among other nations. The attendance of children at school, for at
least four or five years, is made compulsory in nearly all the German States, and hence the proportion of persons who cannot read and write is exceedingly small in Germany.

The elementary schools are 60,000 in number, and are attended by 6,000,000 pupils between the ages of six and fourteen. Of the middle schools, including 330 gymnasia and 214 pro-gymnasia and Latin schools, there were in 1873 over 1,000, attended by 177,379 pupils. There are 21 universities, with (in 1873) 1620 instructors and 17,858 students. Of polytechnic schools there are ten, with 360 instructors and 4500 students. Besides these there are numerous special schools of technology, agriculture, commerce, mining, metallurgy, military science, navigation, trades, etc. The German academies of art and sciences and conservatories of music enjoy a world-wide reputation. Public libraries—of which there are more than one hundred and fifty—museums, botanical gardens, art collections, and picture galleries are to be met with in most of the capitals and many of the country towns.

Commission from the German Empire to the International Exhibition:

DR. JACOBI, Royal Prussian Actual Privy Superior Government Counsellor and Ministerial Director, President.
DR. STUVE, Royal Prussian Privy Government Counsellor and Counsellor in the Ministry of Commerce.
DR. WEDDING, Royal Prussian Counsellor of Mines.
MR. REITHER, Royal Bavarian Counsellor of Legation.
MR. VON NOSTITZ WALWITZ, Royal Saxon Envoy Extraordinary and Minister Plenipotentiary.
BARON VON SPITZEMBERG, Royal Wurtemberg Envoy Extraordinary and Minister Plenipotentiary.
DR. NEIDHARDT, Grand Ducal Hessian Ministerial Counsellor.
MR. KAUFMANN, Royal Prussian Counsellor of Commerce.
DR. KRUGER, Hanseatic Minister, Resident.
MR. VON HOLLOBEN, Royal Prussian Superior Tribunal Counsellor.
MR. NIEBERDING, Counsellor in the Office of the Chancellor of the Empire.
BARON VON ZEDLITZ, Royal Prussian Provincial Counsellor.
MR. F. REULEAUX, Commissioner General.
MR. KNIFFLER, Assistant Engineer.
G. A. RADTKE, Secretary.

Resident Commissioners.

JOHN D. LANKENAU, Esq.  |  GUSTAVUS REMAK, Esq.
CHARLES H. MEYER, Esq., Consul.  |  DR. FRED. VOLCK.
MR. BARTELS, Engineer and Architect.
AUSTRIA.

The Austrian Empire forms, on the whole, a compact territory with a circumference of about 3349 miles. It is included between 42° to 51° north latitude, and between 8° 20' to 26° 20' east longitude. The body of the empire lies in the interior of the European continent, though, by means of the southern projection of Dalmatia, it has about 1200 miles of sea-coast on the Adriatic. With the rest of its circumference, it borders on the States of the Church, Modena, Parma, Italy, Switzerland, Bavaria, Saxony, Prussia, Russia, Moldavia, Wallachia, Servia, Turkey, and Montenegro. Its present provinces embrace an area of 241,123 square miles, and a population which, in 1869, amounted to 35,904,435.

The following table gives the area, number of civil inhabitants, and total population, civil and military, of the various provinces of the empire—distinguishing its two great political divisions, the German monarchy, or Cisleithan Austria, and the Hungarian kingdom, or Transleithan Austria, together with the so-called military frontier, placed under the administration of the ministry of war for the whole empire—according to the official returns for 1869:

<table>
<thead>
<tr>
<th>PROVINCES</th>
<th>AREA IN ENGLISH SQ. MILES</th>
<th>CIVIL POPULATION</th>
<th>TOTAL POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>GERMAN MONARCHY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower Austria</td>
<td>7,653</td>
<td>1,954,251</td>
<td>1,990,708</td>
</tr>
<tr>
<td>Upper Austria</td>
<td>4,634</td>
<td>731,579</td>
<td>736,557</td>
</tr>
<tr>
<td>Salzburg</td>
<td>2,768</td>
<td>151,410</td>
<td>153,159</td>
</tr>
<tr>
<td>Styria</td>
<td>8,674</td>
<td>1,131,309</td>
<td>1,137,990</td>
</tr>
<tr>
<td>Carinthia</td>
<td>4,007</td>
<td>336,400</td>
<td>337,694</td>
</tr>
<tr>
<td>Carniola</td>
<td>3,858</td>
<td>463,273</td>
<td>449,334</td>
</tr>
<tr>
<td>Coast Land</td>
<td>3,085</td>
<td>582,079</td>
<td>600,525</td>
</tr>
<tr>
<td>Tyrol and Vorarlberg</td>
<td>11,321</td>
<td>878,907</td>
<td>885,789</td>
</tr>
<tr>
<td>Bohemia</td>
<td>20,783</td>
<td>5,106,069</td>
<td>5,140,544</td>
</tr>
<tr>
<td>Moravia</td>
<td>8,579</td>
<td>1,997,897</td>
<td>2,017,274</td>
</tr>
<tr>
<td>Silesia</td>
<td>1,688</td>
<td>511,581</td>
<td>513,352</td>
</tr>
<tr>
<td>Galicia</td>
<td>39,320</td>
<td>5,418,016</td>
<td>5,444,683</td>
</tr>
<tr>
<td>Bukowena</td>
<td>4,037</td>
<td>511,964</td>
<td>513,494</td>
</tr>
<tr>
<td>Dalmatia</td>
<td>4,942</td>
<td>442,796</td>
<td>456,961</td>
</tr>
<tr>
<td>Total German Monarchy</td>
<td>116,634</td>
<td>20,217,531</td>
<td>20,934,980</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KINGDOM OF HUNGARY</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hungary</td>
<td>82,867</td>
<td>11,117,523</td>
<td>11,118,502</td>
</tr>
<tr>
<td>Croatia and Slavonia</td>
<td>7,445</td>
<td>1,160,085</td>
<td>1,164,806</td>
</tr>
<tr>
<td>Transylvania</td>
<td>21,222</td>
<td>2,101,727</td>
<td>2,115,024</td>
</tr>
<tr>
<td>Military Frontier</td>
<td>12,956</td>
<td>1,037,892</td>
<td>1,041,123</td>
</tr>
<tr>
<td>Total Hungary</td>
<td>124,490</td>
<td>15,417,327</td>
<td>15,509,455</td>
</tr>
<tr>
<td>Total Austro-Hungary</td>
<td>241,124</td>
<td>35,634,858</td>
<td>35,904,435</td>
</tr>
</tbody>
</table>

Three-fourths of Austria is mountainous or hilly, being traversed by three great mountain chains—the Alps, Carpathians, and Sudetes, whose chief ridges are of primitive rock. The Alps are accompanied, north and south, by parallel ranges of calcareous mountains, covering whole provinces with their ramifications. The Carpathians are lapped on their northern side by sandstone formations; mountains of the
same character also occupy Transylvania. Springing from the northwest bend of the Carpathians, the Sudetes run through the northeast of Moravia and Bohemia, in which last the range is known as the Riesen gebirge, or Giant mountains. Continuous with this range, and beginning on the left bank of the Elbe, are the Erzgebirge, or Ore mountains, on the confines of Saxony; and veering round to nearly southeast, the range is further prolonged in the Bohemian Forest mountains, between Bohemia and Bavaria. The chief plains of the Austrian empire are: the great plains of Hungary (the smaller of these is in the west, between the offsets of the Alps and Carpathians, and is about 4200 square miles in extent; the other, which is in the east, and traversed by the Danube and the Theiss, has an area of 21,000 square miles), and the plains of Galicia.

From the south point of Dalmatia to the boundary of Italy, Austria has a sea-line of about 1000 miles, not counting the coasts of the numerous islands, the largest of which is Veglia, 23 miles by 12. The chief lakes are: the Platten See, and the Neusiedler See, both in Hungary. The first is navigable by steamers, and both are rich in fish, and have fruitful vineyards around them. The Alps and Carpathians inclose numerous mountain lakes, which are surrounded with wood and rock, and all the other attributes of picturesque scenery. The Long lake in the Tatra mountains lies at an elevation of 6000 feet. The most remarkable of all is the Zirknitz lake, in Illyria. There are extensive swamps or morasses in Hungary. One connected with the Neusiedler See covers some 80 square miles. A good deal has been done in the way of reclaiming lands by draining morasses.

The leading rivers that have navigable tributaries are: the Danube, which has a course of 849 miles within the Austrian dominions, the Vistula, the Elbe, and the Dniester. The Rhine bounds Austria for about fourteen miles above Lake Constance.

The climate of Austria is on the whole very favorable; but from the extent and diversity of surface, it presents great varieties. In the warmest southern region, between 42° to 46° latitude, rice, olives, oranges, and lemons ripen in the better localities; and wine and maize are produced everywhere. In the middle temperate region from 46° to 49°, which has the greatest extent and diversity of surface, the vine and maize still thrive in perfection. In the northern region, beyond 49°, except in favored spots, neither the vine nor maize succeeds; but grain, fruit, flax, and hemp, thrive excellently. The mean temperature of the year is, at Trieste, 58° F.; at Vienna, 51°; at Lemberg, in Galicia, 44°.

The raw products of Austria are abundant and various; and in this respect it is one of the most favored countries in Europe. Its mineral wealth is not surpassed in any European country; it is only lately that Russia has exceeded it in the production of gold and silver. Mining has been a favorite pursuit in Austria for centuries, and has been encouraged and promoted by the government. Bohemia, Hungary, Styria, Carinthia, Salzburg, and Tyrol, take the first place in respect of mineral produce. Except platinum, none of the useful metals is wanting. The mines are partly State property, and partly owned by private individuals. Gold is found chiefly in Hungary and Transylvania, and in smaller quantity in Salzburg and Tyrol. The same countries, along with Bohemia, yield silver. The discovery of quicksilver at Idria first brought this branch of mining industry into importance. This metal is now also found in Hungary, Transylvania, Styria, and Carinthia. Copper is found in many districts—tin, in Bohemia alone. Zinc is got chiefly in Cracow and Carinthia. The most productive lead mines are in Carinthia. Iron is found in almost every province of the monarchy, though Styria, Carinthia, and Carniola are chief seats. The production, though great, is not yet equal to the consumption. Antimony is confined to Hungary; arsenic is found in Salzburg and Bohemia; cobalt in Hungary, Styria, and Bohemia; sulphur in Galicia, Bohemia, Hungary, Venice, Salzburg, etc., though not enough to supply home consumption. Graphite is found abundantly in Bohemia, Moravia, Carinthia, etc.
The useful earths and building-stones are to be had in great profusion; all sorts of clay up to the finest porcelain earth (in Moravia, Bohemia, Hungary, Venice), and likewise marble, gypsum, chalk, etc. Of precious and semi-precious stones are the Hungarian opal, which passes in commerce as oriental, Bohemian garnets—the finest in Europe—cornelians, agates, beryl, amethyst, jasper, ruby, sapphire, topaz, etc.

The following table shows the principal metals and minerals produced in Austria in 1867, and their average value in florins at the place of production:

<table>
<thead>
<tr>
<th>Metal</th>
<th>Weight</th>
<th>Value in Florins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold (Austrian pound)</td>
<td>3,562</td>
<td>2,409,041</td>
</tr>
<tr>
<td>Silver</td>
<td>81,378</td>
<td>3,655,643</td>
</tr>
<tr>
<td>Quicksilver (Austrian hundredweight)</td>
<td>5,944</td>
<td>723,958</td>
</tr>
<tr>
<td>Tin</td>
<td>591</td>
<td>33,812</td>
</tr>
<tr>
<td>Zinc</td>
<td>40,296</td>
<td>495,956</td>
</tr>
<tr>
<td>Copper</td>
<td>47,939</td>
<td>4,377,840</td>
</tr>
<tr>
<td>Lead and litharge</td>
<td>136,668</td>
<td>1,770,884</td>
</tr>
<tr>
<td>Iron, raw and cast</td>
<td>5,705,761</td>
<td>16,709,039</td>
</tr>
<tr>
<td>Graphite</td>
<td>279,355</td>
<td>271,123</td>
</tr>
<tr>
<td>Mineral coal</td>
<td>108,488,390</td>
<td>17,322,283</td>
</tr>
</tbody>
</table>

Austria is peculiarly rich in salt. Rocksalt exists in immense beds on both sides of the Carpathians, chiefly at Wieliczka and Bochnia, in Galicia, and in the country of Marmaros in Hungary, and in Transylvania. The annual produce of rocksalt is greatly above three million hundredweight. Salt is also made at State salt-works by evaporating the water of salt-springs. The chief works are those at Hallstadt, Ischl, Hallein, and Hall in Tyrol. From two to three millions hundredweight are thus produced annually. A considerable quantity is also made from sea-water on the coast of the Adriatic. Of other salts, alum, sulphate of iron, and sulphate of copper are the chief. Austria has abundance of mineral springs, frequented for their salubrity; 1600 are enumerated, some of them of European reputation, as the sulphurous baths of Baden, in lower Austria, the saline waters of Karlsbad, Marienbad, and Ofen, etc.

The vegetable productions, as might be expected from the vast diversity in the soil and position of the different provinces, are extremely various. Although three-fourths of the surface is mountainous, more than five-sixths is productive, being used either for tillage, meadows, pasture, or forest. Grain of all kinds is cultivated most abundantly in Hungary and the districts south of it on the Danube, in Bohemia, Moravia, Silesia, and Galicia. Agriculture is not yet far advanced; the prevailing system is still what is called the three-field system, introduced into Germany by Charlemagne, in which a crop of winter wheat is followed by one of summer grain, and that by fallow.

In Hungary, the Magyar adheres to his primitive husbandry; the German and Slave are adopting improved methods. Rice is cultivated in the Banat, but not enough for the consumption. Potatoes are raised everywhere; and in elevated districts, are often the sole subsistence of the inhabitants. Horticulture is carried to great perfection; and the orchards of Bohemia, Austria proper, Tyrol, and many parts of Hungary, produce a profusion of fruit. Great quantities of cider are made in upper Austria and Carinthia, and of plum brandy in Slavonia. In Dalmatia, oranges and lemons are produced, but not sufficient for the requirements of the country; twice as much olive oil is imported as is raised in the monarchy.

In the production of wine, Austria is second only to France. With the exception of Galicia, Silesia, and upper Austria, the vine is cultivated in all the provinces; but Hungary stands first, yielding not only the finest quality of wine, but four-fifths the amount of the whole produce of the empire. The average produce of the whole empire is estimated at about 680 millions of gallons.

Of plants used in manufactures and commerce, the first place is held by flax and
hemp. Flax is cultivated almost universally; white hemp in Galicia, Moravia, Hungary, etc. Tobacco is raised in great quantities, especially in Hungary, which also is first in the cultivation of rapeseed. Bohemia raises hops of the first quality, which are partly exported, though other provinces import from abroad. The indigo plant has lately been successfully acclimatized in Dalmatia. More than a third of the productive surface is covered with wood (75,000 square miles), which, besides timber, yields a number of secondary products, as tar, potash, charcoal, bark, cork, etc. 

As to animals, bears are found in the Carpathians, Alps, and Dalmatia; wolves, jackals, and lynxes in these same districts, and also in the Banat, Croatia, Slavonia, and the military frontiers. The marmot, otter, and beaver are also found in Dalmatia. Game has of late sensibly diminished. The wild goat lives in the highest, the chamois and white Alpine hare in the middle regions of the Alps and Carpathians. More productive than the chase are the fisheries of the Danube, Theiss, and numerous streams, lakes, and ponds. The chief sea-fishing is in Dalmatia. Leeches, procured chiefly in Hungary and Moravia, form an article of considerable trade. For foreign commerce, the most important branch of rural industry is the rearing of silk.

Austria produces about a quarter a million of silk cocoons annually. The silk trade is very extensive on the Tyrol—the yearly supply of cocoons in that country being about 32,000. 

In 1851, the number of horses in the monarchy was stated at 3,229,884 (not including 75,000 belonging to the army); cattle, 10,410,484; sheep, 16,801,545; goats, 2,275,900; and swine, 7,401,300. Nearly three-fourths of the population are engaged in husbandry, so that Austria is decidedly an agricultural State, though its capabilities in this respect have by no means been fully developed. 

The annual value of its manufactures—not including small trades—is estimated at 1000 to 1200 millions of florins, while that of its husbandry may reach 3000 millions. Bohemia takes the lead in this industry; then follow Austria proper, Moravia and Silesia, Hungary. Vienna is the chief seat of manufacture for articles of luxury; Moravia, Silesia, and Bohemia for linen, woolen, and glass wares; Styria and Carinthia for iron and steel wares. The chief manufactured articles of export are silken and woolen; the only others of consequence are linen, twist, glasswares, and cotton goods. The yearly value of manufactured iron is about fifty-four millions of florins. The glasswares of Bohemia are of special excellence. The hemp and flax industry is one of the oldest and still most important. 

No branch of industry has risen more rapidly than that of cotton. The annual value of the silk industry is estimated at about sixty millions of florins. The manufacture of tobacco is a State monopoly, and produced a revenue in 1873 of 58,126,000 florins. The salt monopoly secured 18,720,000 florins. 

The imports for the year 1874 were 565,600,000 florins; the exports were 452,200,000 florins. This is exclusive of Dalmatia—not within the imperial line of customs. The figures for Dalmatia were, during the same year: 9,600,000 florins imports, and 6,600,000 florins exports. 

The merchant navy, at the beginning of 1875, comprised 7203 vessels, with a tonnage of 332,005, and an equipment of 27,381 seamen. Of great importance for the commerce of the empire is the Austrian Lloyds. This company owned, on the 1st of January, 1874, a fleet of seventy-six steamers, of 15,800 horse-power. 

Since the year 1867 Austria has been a twofold empire, consisting of a German or “Cisleithan” monarchy—Austria proper; and a Magyar or Transleithan kingdom—Hungary. Each of the two countries has its own laws, parliament, ministers, and government; and the formal tie between them is a body known as the Delegations. These form a parliament of 120 members; one-half is chosen by the legislature of Austria, and the other by that of Hungary, the upper house of each returning twenty, the lower house forty delegates. The delegations have jurisdiction over all
matters affecting the common interests of the two countries, especially foreign affairs, war, and finance. The acts of the delegations require to be confirmed by the representative assemblies of their respective countries.

The administration of Austria proper is divided among nine ministries—Foreign Affairs, Police, Public Education, Agriculture and Public Works, Finance, Interior, War and Navy, Commerce, and Justice. The Reichsrath consists of an upper and a lower house. The upper house is constituted by princes, nobles, archbishops, bishops, and life members nominated by the emperor. To give validity to bills passed by the Reichsrath, the consent of both chambers is required, as well as the sanction of the emperor.

The executive of Hungary is carried on in the name of the king by a responsible ministry.

The following figures are extracted from the budget for 1875:

<table>
<thead>
<tr>
<th>EXPENDITURES.</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria,</td>
<td>319,016,323 florins.</td>
<td></td>
</tr>
<tr>
<td>Hungary,</td>
<td>218,558,301 &quot;</td>
<td></td>
</tr>
<tr>
<td>General,</td>
<td>116,304,502 &quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>634,839,125 &quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RECEIPTS.</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria,</td>
<td>283,298,975 florins.</td>
<td></td>
</tr>
<tr>
<td>Hungary,</td>
<td>209,633,909 &quot;</td>
<td></td>
</tr>
<tr>
<td>From duties and other sources,</td>
<td>123,315,125 &quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>616,248,009 &quot;</td>
<td></td>
</tr>
</tbody>
</table>

The public debt of Austria, on the 1st of January, 1875, was 2,649,484,475 florins; that of Hungary, January 1st, 1873, was 488,717,380 florins.

According to official returns, Austria possessed, in 1875, a standing army numbering 284,435 men on the peace footing, and 783,649 on the war footing.

The naval forces consisted of seventy-one vessels, of a tonnage of 115,380, carrying 308 heavy and 87 light guns. Of this fleet, 47 vessels were steamers, of 100,260 tons burthen.

The length of railways, at the close of 1875, was

In Austria, 9,823 kilometres.
" Hungary, 6,415 "

Total, 16,238 "

The work of the post office in Austria-Hungary for 1874 was as follows:

| Letters, | 253,099,000 |
| Postal cards, | 28,741,000 |
| Parcels, | 31,959,000 |
| Newspapers, | 82,085,000 |
| Number of post offices, | 6,296 |

The statistics of telegraphs for the year 1874 are as follows:

| Length of lines (Austria-Hungary), | 45,441 kilometres. |
| " " wires " " | 129,171 " |
| Number of offices, | 2,923 " |
| " of dispatches, | 5,797,492 " |

Education, since 1849, is under the care of a Minister of Public Worship and Instruction. In the major part of German Austria the law enforces the compulsory attendance in the "Volksschulen," or National Schools, of all children between the ages of six and twelve, and parents are liable to punishment for neglect. It is rarely, however, that cases occur in which penalties for non-attendance at school have to be enforced. The cost of public education mainly falls on the communes, but of late
years the State has come forward to assist in the establishment of schools for primary education.

There are seven universities in the empire. Four of these, the high schools at Vienna, Prague, Graz, and Innsbruck, are called German universities, and were attended as follows, in 1872:

<table>
<thead>
<tr>
<th>University</th>
<th>Professors and Teachers</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vienna</td>
<td>200</td>
<td>3881</td>
</tr>
<tr>
<td>Prague</td>
<td>97</td>
<td>1709</td>
</tr>
<tr>
<td>Graz</td>
<td>70</td>
<td>926</td>
</tr>
<tr>
<td>Innsbruck</td>
<td>58</td>
<td>612</td>
</tr>
</tbody>
</table>

Of the other universities, Pesth, the high school of Hungary, had 2500 students at the end of 1873, and Cracow and Lemberg, the high schools for Galicia and the other Slavonian provinces, had, at the same date, together, 1900 students.

Commission from Austria to the International Exhibition:

RUDOLF ISBARY, Vice-President of the Chamber of Commerce, President.
FRANZ RITTER VON LIEBIG, Member of the Chamber of Commerce, First Vice-President.
MICHAEL MATSHEKO, Manufacturer, Second Vice-President.
DR. F. MIGERVA, Counsellor to the I. R. Austrian Ministry of Commerce, Commissioner General, and Resident Commissioner.
EUGENE FELIX, President of the Society of Arts.
EDWARD KANITZ, Member of the Chamber of Commerce.
KARL VON OBERLEITNER, Member of the Chamber of Commerce.
OTTO VON BAUER, Member of the Chamber of Commerce.
ERNST VON PONTZEN, Engineer.
DR. EMIL HORNIG, Counsellor.
THEO. A. HAVEMEYER, Austro-Hungarian Consul-General.
Switzerland is an inland country of Europe, situated between 45° 48' and 47° 49' north latitude, and 5° 55' and 10° 30' east longitude. Its greatest length from east to west is 180 miles, and its greatest width from north to south, 130 miles.

The following table gives the area and population of each of the 22 cantons, according to the census returns of 1870:

<table>
<thead>
<tr>
<th>Canton</th>
<th>English Square Miles</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graubünden</td>
<td>2,068</td>
<td>91,782</td>
</tr>
<tr>
<td>Bern</td>
<td>2,561.5</td>
<td>506,465</td>
</tr>
<tr>
<td>Wallis (Valais)</td>
<td>1,661.6</td>
<td>96,887</td>
</tr>
<tr>
<td>Vaud (Waadt)</td>
<td>1,181.9</td>
<td>231,700</td>
</tr>
<tr>
<td>Ticino (Tessin)</td>
<td>1,034.7</td>
<td>119,619</td>
</tr>
<tr>
<td>St. Gallen</td>
<td>747.7</td>
<td>191,015</td>
</tr>
<tr>
<td>Zurich</td>
<td>685.3</td>
<td>284,786</td>
</tr>
<tr>
<td>Luzern</td>
<td>587.4</td>
<td>134,338</td>
</tr>
<tr>
<td>Fribourg (Freeburg)</td>
<td>563.9</td>
<td>110,832</td>
</tr>
<tr>
<td>Aargau</td>
<td>502.4</td>
<td>198,873</td>
</tr>
<tr>
<td>Uri</td>
<td>420.8</td>
<td>10,107</td>
</tr>
<tr>
<td>Schwyz</td>
<td>338.3</td>
<td>47,705</td>
</tr>
<tr>
<td>Neuchatel (Neuenburg)</td>
<td>280.2</td>
<td>97,284</td>
</tr>
<tr>
<td>Glarus</td>
<td>279.8</td>
<td>35,150</td>
</tr>
<tr>
<td>Thurgau</td>
<td>268.3</td>
<td>93,300</td>
</tr>
<tr>
<td>Unterwalden</td>
<td>262.8</td>
<td>26,116</td>
</tr>
<tr>
<td>Solothurn</td>
<td>254.6</td>
<td>74,713</td>
</tr>
<tr>
<td>Basle</td>
<td>184.6</td>
<td>101,837</td>
</tr>
<tr>
<td>Appenzell</td>
<td>152.8</td>
<td>60,635</td>
</tr>
<tr>
<td>Schaffhausen</td>
<td>119.7</td>
<td>37,721</td>
</tr>
<tr>
<td>Genève (Genf)</td>
<td>91.3</td>
<td>93,239</td>
</tr>
<tr>
<td>Zug</td>
<td>85.4</td>
<td>20,993</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15,233.0</strong></td>
<td><strong>2,669,147</strong></td>
</tr>
</tbody>
</table>

Switzerland is the most mountainous country of Europe. Its principal chains are the Alps and the Jura. The former run from east to west along its southern or Italian frontier. Their ramifications fill more than one-half the country, and terminate along a line which may be traced from Vevey, on the lake of Geneva, to Mount Moleson and Mount Napf, across Lake Zug, to the southern shores of the lakes of Zurich and Wallenstein, and Sargans on the Rhine. The mean elevation of the highest chain is from 8000 to 9000 feet. The Jura run northeast from the western corner of Switzerland. They consist of a series of parallel ridges inclosing long and narrow valleys, and their mean elevation does not exceed 4000 feet. In the angle formed between them and the Alps lies the plain of Switzerland, a table-land 100 miles in length, and from 20 to 30 miles in width, with a mean elevation of about 1400 feet above the sea. It is not absolutely level, but covered with elevations which seem very unimportant when contrasted with the huge masses of the Alps and Jura. The communication between the plain of Switzerland and the German valleys of the Danube and Rhine is not continuous. The plain terminates in the east in a third hilly tract, the Thur hill country, which lies between the lakes of Zurich and Constance, and, to some extent, forms a barrier between the plain of Switzerland and Germany. The Jura, the plain, and the hill country, are the three great divisions of northern Switzerland. The divisions in the Alpine region are more strongly marked.
in nature. They isolate and inclose (1) the valleys drained by the Rhone which connect Switzerland with southern France; (2) Ticino, drained by streams which descend to the Po, and bring this section into communication with Italy; (3) the Grisons, the most sequestered valleys of Switzerland, drained by the tributaries of the Rhine and Danube, and shut out by mountains from the lower basins of these rivers; (4) Bernese Oberland, which slopes towards the western extremity of the Swiss plain; (5) the district of the Forest Cantons, Schwyz, Uri, and Unterwalden, surrounding the Lake of Lucerne.

In Switzerland the climate chiefly varies with the elevation above the sea level. At a height exceeding 9500 feet the mountains are covered with perpetual snow, which descends along the glaciers to a much lower level, and thus covers the elevated part of the country with a vast sea of ice. Below the level of perpetual snow the surface of Switzerland has been divided into a series of belts, characterized by different climates and productions. The highest of these, lying between the snow and the level of 6900 feet, has been called the Upper Alpine region. In it the glaciers fill the valleys, but plants clothe the scanty soil of the ridges. The second or Lower Alpine belt descends to 4800 feet, and is a country of pastures in which shrubs, but no trees, are seen. In the third belt, which descends to 4350 feet, meadows still abound, but forests of firs and maples, in many parts, replace them. The fourth belt sinks to 3000 feet. Here forests still abound, the beech being the prevailing tree; the meadows are excellent, and rye and barley are successfully cultivated. The fifth belt descends to 1800 feet. In it the oak and walnut are the characteristic forest trees. Speilt and the best wheat are cultivated. The last belt sinks to 750 feet. In it the chestnut is the characteristic tree; the mulberry and vine are extensively cultivated, and wheat is the grain chiefly grown. This belt includes the greater part of the Swiss plain, and sinks to its lowest level in the valley of the Rhine, between Constance and Basle, and the banks of Lake Zurich and Lago Maggiore. In the last district the vegetation is that of northern Italy. The most populous part of Switzerland lies between 1250 and 2150 feet. The temperature of this region is fairly represented by that of Zurich, which averages, for the year, 47.95°.

The German language is spoken by the majority of the inhabitants in sixteen cantons, the French in four, and the Italian in two. It is reported in the census returns of 1870 that 384,561 families speak German, 134,183 French, and 30,293 Italian. According to the same returns there were but five towns in Switzerland with more than 20,000 inhabitants, namely, Geneva, seat of the watch and jewelry industry, with 46,783; Basle, centre of the silk industry, with 44,834; Bern, political capital, with 36,003; Lausanne, with 26,520; and Zurich, with 21,199 inhabitants. The soil is pretty equally divided among the population, it being estimated that four-fifths of the inhabitants are land owners. Of every 100 square miles of land 20 are pasture, 17 forest, 11 arable, 20 meadow, 1 vineyard, and 30 uncultivated, or occupied by lakes, rivers, and mountains.

According to the census of 1870 there are 1,095,447 individuals supported, either wholly or in part, by agriculture. At the same date, the manufactories employed 216,468 persons, the handcrafts 241,425. In the canton of Basle the manufacture of silk ribbons employs 6000 persons, with a total annual production valued at $7,000,000. In the canton of Zurich silk stuffs, to the value of about $8,000,000, are made by 12,000 operatives. The manufacture of watches and jewelry in the cantons of Neuchatel, Geneva, Vaud, Bern, and Solothurn, employ 39,000 workmen, who produce annually 500,000 watches—three-sevenths gold, four-sevenths silver—valued at $9,000,000. In the cantons of St. Gall and Appenzell, 6000 workers make $2,000,000 worth of embroidery annually. The printing and dyeing factories of Glarus turn out goods to the value of $3,000,000, per annum. The manufacture of cotton goods occupies upwards of 1,000,000 spindles, 4000 looms, and 22,000 operatives, besides 38,000 hand-loom weavers.
The Federal custom house returns classify all imports and exports under three chief headings, namely, live stock, *ad valorem* goods, and goods taxed per quintal. No returns are published of the value of imports or exports: only the quantities are given. The following table shows the imports and exports during the year 1871:

**Imports.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live stock</td>
<td>256,851 head</td>
</tr>
<tr>
<td>Agricultural instruments, carts, and railway carriages for travelers and merchandise, <em>ad valorem</em>,</td>
<td>1,043,991 francs</td>
</tr>
<tr>
<td>Goods taxed per quintal, including loads reduced to quintals,</td>
<td>25,450,359 quintals</td>
</tr>
</tbody>
</table>

**Exports.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live stock</td>
<td>127,490 head</td>
</tr>
<tr>
<td>Wood and coal, <em>ad valorem</em>,</td>
<td>5,351,941 francs</td>
</tr>
<tr>
<td>Goods, per load and quintal,</td>
<td>4,086,646 quintals</td>
</tr>
</tbody>
</table>

The present constitution vests the supreme legislative and executive authority in a parliament of two chambers, a Standerath, or State Council, and a Nationalrath, or National Council. The first is composed of 44 members, chosen by the 22 cantons—2 for each canton. The Nationalrath consists of 135 representatives, chosen by popular vote, at the rate of one deputy for every 20,000 souls. A general election for representatives takes place every three years. Both chambers united are called the Bundesversammlung, or Federal Assembly, and as such represent the supreme government of the republic. The chief executive authority is deputed to a Bundesrath, or Federal Council, consisting of seven members elected for three years by the Federal Assembly. The president and vice-president of the Federal Council are the first magistrates of the republic. Both are elected by the Federal Assembly for the term of one year, and are not re-eligible until after the expiration of another year. Independent of the Federal Assembly, though issuing from the same, is the Bundes-Gericht, or Federal Tribunal, consisting of eleven members, elected for three years. The Federal Tribunal decides, in the last instance, on all matters in dispute between the various cantons, or between the cantons and the Federal government, and acts in general as a high court of appeal. Each of the Swiss cantons and demi-cantons has its local government, different in organization in most instances, but all based on the absolute sovereignty of the people.

In the budget estimates for the year 1875 the total revenue is set down at 39,516,000 francs,* and total expenditure at 39,266,000 francs. The public debt of the republic amounted, at the commencement of 1875, to 30,635,552 francs, as a set-off against which there was a so-called Federal fortune, or property belonging to the State, valued at 31,783,303 francs.

The fundamental laws of the republic forbid the maintenance of a standing army within the limits of the confederation. The troops are divided into three classes: 1, the Bundes-Auszug, or Federal army, consisting of all men able to bear arms from the age of 20 to 30; 2, the army of reserve, consisting of all men who have served in the first class, from the age of 31 to 40; 3, the Landwehr, or militia, comprising all men from the 41st to the completed 44th year. The strength of the armed forces of Switzerland, at the end of 1874, was as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff</td>
<td>841</td>
</tr>
<tr>
<td>Bundes-auszug</td>
<td>84,369</td>
</tr>
<tr>
<td>Reserve</td>
<td>50,069</td>
</tr>
<tr>
<td>Landwehr</td>
<td>65,081</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>201,260</td>
</tr>
</tbody>
</table>

* One franc = 19.3 cts. gold.
From official returns it appears that the railways open for public traffic in Switzerland had, at the end of 1874, a total length of 1024 English miles.

The post office of Switzerland forwarded, during the year 1874, 63,252,884 letters; 19,925,200 packets, and 45,651,344 newspapers.

At the end of September, 1875, there were 3736 miles of telegraph lines and 9538 miles of wires. The number of messages sent, in the year 1874, was 2,625,104; number of offices, 815. The entire telegraph system belongs to the State.

In no country is elementary instruction more widely diffused. Parents are compelled to send their children to school from five to twelve, but not above that age. There are universities on the German model at Basle, Bern, and Zurich, and academies on the French plan at Geneva and Lausanne. The number of clubs for scientific, literary, musical, and social purposes, is remarkable. There are few pursuits to which any class of men can devote themselves which are not represented in Switzerland by societies.

Commission from Switzerland to the International Exhibition:

Dr. Schenk, Member of Federal Council, Chief of the Department of Railways and Commerce, President.

John Hitz, Consul-General of Switzerland.

R. Koradi, Consul, Resident-Commissioner.

W. Itschner, Vice-Consul.

Dr. Adolph Hirsch, Director of the Observatory.

Mr. Saur-Usteri, Engineer.

Mr. Salvisberg, Architect.

Dr. Emile Schumacher.

Colonel Siegfried, Chief of Bureau of the General Staff.

Mr. Steinmann Bucher, Secretary of the Department of Commerce.

Dr. Fr. de Tschudi, Councillor of State.

Dr. Willi, Secretary of the Federal Department of Commerce, Secretary.

Resident Commission in Switzerland.

Colonel H. Rieter, Commissioner-General.

Resident Commissioners in Philadelphia.

Mr. Edward Guver, Secretary-General.

Mr. John E. Icely, Engineer.

Mr. Joseph Beeler, Secretary.
BELGIUM.

BELGIUM lies between latitude 49° 27' and 51° 30' north, and between longitude 2° 33' and 6° 5' east. It is bounded on the north by Holland; on the east by Dutch Limbourg, Luxemburg, and Rhenish Prussia; on the south and southwest by France; and on the northwest by the North Sea. Its greatest length, from northwest to southeast, is 173 English miles; and its greatest breadth, from north to south, 112 English miles. The whole area is 11,313 square miles. The following table gives a list of the provinces in Belgium, with the area, population, and chief town of each:

<table>
<thead>
<tr>
<th>PROVINCES</th>
<th>AREA IN SQ. MILES</th>
<th>POPULATION (1870)</th>
<th>CHIEF CITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antwerp</td>
<td>1,094</td>
<td>492,482</td>
<td>Antwerp</td>
</tr>
<tr>
<td>West Flanders</td>
<td>1,243</td>
<td>668,976</td>
<td>Bruges</td>
</tr>
<tr>
<td>East Flanders</td>
<td>1,154</td>
<td>837,726</td>
<td>Ghent</td>
</tr>
<tr>
<td>Hainault</td>
<td>1,430</td>
<td>896,285</td>
<td>Mons</td>
</tr>
<tr>
<td>Liege</td>
<td>1,111</td>
<td>592,177</td>
<td>Liege</td>
</tr>
<tr>
<td>Brabant</td>
<td>1,260</td>
<td>879,814</td>
<td>Brussels</td>
</tr>
<tr>
<td>Limbourg</td>
<td>929</td>
<td>200,336</td>
<td>Hasselt</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>1,695</td>
<td>205,784</td>
<td>Arlon</td>
</tr>
<tr>
<td>Namur</td>
<td>1,397</td>
<td>313,525</td>
<td>Namur</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11,313</strong></td>
<td><strong>5,087,105</strong></td>
<td></td>
</tr>
</tbody>
</table>

Belgium is the most densely populated country in Europe, the population being about 404 to the square mile; and in the particular provinces of East Flanders, 675; Brabant, 594; Hainault, 537; and West Flanders, 502, respectively, to the square mile. The rural population bears to that of the towns a proportion of about 3 to 1. About 58 per cent. of the inhabitants are Flemish, the rest Walloon and French, with 39,000 Germans in Luxemburg. Belgium is, on the whole, a level and even low-lying country; diversified, however, by hilly districts. In the southeast, a western branch of the Ardennes highlands makes its appearance, separating the basin of the Maas from that of the Moselle, but attains only the moderate elevation of 2000 feet. In Flanders the land becomes so low that in parts where the natural protection afforded by the downs is deficient, dikes, etc., have been raised to check the encroachments of the sea. In the northeast part of Antwerp, a naturally unfertile district named the Campine, and composed of marshes and barren heaths, extends in a line parallel with the coast. The once impassable morasses of the Morini and the Menapii, which stayed the progress of Caesar's legions, are now drained, and converted into fertile fields, surrounded by dense plantations, which make the land at a distance look like a vast green forest—though, when more closely regarded, we see only numerous dwellings interspersed among fields, canals, and meadows.

The abundant water-system of Belgium is chiefly supplied by the rivers Scheldt and Maas, both of which rise in France, and have their embouchures in Holland. At Antwerp, the Scheldt, which, like the Maas, is navigable all through Belgium, is 32 feet deep, and about 480 yards wide. Its tributaries are the Lys, Dender, and Rupel. The Maas, or Meuse, receives in its course the waters of the Sambre, the Ourthe, and the Roer. These natural hydrographical advantages are increased by a system of canals which unite Brussels and Louvain with the Rupel, Brussels with Charleroi, Mons with Conde, Ostend with Bruges and Ghent, and this last place with Ternesse. The climate of Belgium, in the plains near the sea, is cool, humid, and somewhat unhealthy; but in the higher southeast districts, hot summers alternate with very cold winters. April and November are always rainy months. The geological formations
of Belgium are closely associated with France and Britain. The greater portion of the country is covered with tertiary deposits. A line drawn across the course of the Scheldt, by Mechlin, along the Demer and Maas, will have on its northern and northwestern aspect a tract of tertiary deposits, bounded northwards by the sea. In these tertiary strata the different geological periods are fully represented; but only the second, containing the Pleiocene deposits, is rich in fossils. The secondary deposits occupy an extensive tract in the centre of Belgium, between the Scheldt and the Demer. The most important district, economically, is the southwestern, consisting of palaeozoic rocks—Silurian, Devonian, and Carboniferous. These beds have a very complicated structure, from the numerous and extensive flexures and folds they have undergone, and these are often accompanied with great upward shifts, by which beds of many different ages are brought to the same level. Belgium is rich in minerals, which, next to its abundant agriculture, constitute the chief source of its national prosperity. The four provinces in which they are found are Hainault, Namur, Liege, and Luxembourg. They include lead, copper, zinc, calamine, alum, peat, marble, limestone, slate, iron, and coal. Lead is wrought, but only to a small extent, in Liege; copper in Hainault and Liege; manganese in Liege and Namur; black marble at Dinant; slates at Herbeumont; and calamine principally at Liege. But these products are insignificant compared to the superabundance of coal—from anthracite to the richest gas coal—and iron.

In the year 1871, the total coal production of Belgium amounted to 13,733,176 tons, of a total value of 153,803,000 francs. Number of hands employed in the coal mines of Belgium, 94,186. The average daily pay of the workmen, in 1871, was 2½ francs per day; average cost of production, 9½ francs per ton of coal. The Ardennes districts yield a large supply of wood; while the level provinces raise all kinds of grain—wheat, rye, barley, oats, etc., leguminous plants, hemp, flax, colza, tobacco, hops, dye-plants, and chicory. Belgium contains upwards of 7,000,000 acres, of which one-half is arable, rather more than one-fifth in meadow and pasture, the same in woods and forests, and not above 500,000 acres lying waste. Some hundreds of acres are devoted to vineyards, but the wine produced is of an inferior quality. The forests of Ardennes abound in game and other wild animals. Good pasturage is found on the slopes and in the valleys of the hilly districts, and in the rich meadows of the low provinces. Gardening occupies not less than 130,000 acres; indeed, it has been said that the agriculture of Belgium is just gardening on a large scale, so carefully and laboriously is every inch of soil cultivated. The spade is still the principal instrument used. In the Campine, the care of bees is very productive, and the cultivation of the silkworm is encouraged. There are valuable fisheries on the coast, which, in 1871, employed 263 boats, with a tonnage of 8963. Belgium is famous for its horses, and in one year contained 294,537 of these animals, 1,203,891 horned cattle, and 662,568 sheep.

Wool is the object of an immense industry, the woolen manufactures of Verviers and its environs alone employing a population of 50,000 operatives. Flannels, serges, camlets, carpets, flax fabrics, silks, velvets, fine laces, ribbons, hosiery, hats, paper, etc., are extensively and profitably manufactured. The working of metals, as iron, copper, and tin, is very important; the manufacture of cannon, firearms, and locomotive engines being an especial feature of the metallurgical industry of Belgium.

The foreign trade of Belgium is officially divided into "general commerce," including the sum total of all international mercantile intercourse, and "special commerce," comprising such imports as are consumed within and such exports as have been produced in the country. The following table gives the value of both the general and special exports for the year 1873:

<table>
<thead>
<tr>
<th>Description</th>
<th>Value (in francs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General imports</td>
<td>2,424,800,000</td>
</tr>
<tr>
<td>Special imports</td>
<td>1,422,700,000</td>
</tr>
<tr>
<td>General exports</td>
<td>2,154,900,000</td>
</tr>
<tr>
<td>Special exports</td>
<td>1,158,600,000</td>
</tr>
</tbody>
</table>
The statistics of the Belgian merchant navy for 1873, are—

<table>
<thead>
<tr>
<th>Type</th>
<th>No.</th>
<th>Tonnage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sailing vessels</td>
<td>41</td>
<td>10,434</td>
</tr>
<tr>
<td>Steam</td>
<td>28</td>
<td>30,005</td>
</tr>
<tr>
<td>Total</td>
<td>69</td>
<td>46,439</td>
</tr>
</tbody>
</table>

Belgium is a constitutional, representative, and hereditary monarchy. The legislative power is vested in the King, the Chamber of Representatives, and the Senate. The Chamber of Representatives is composed of deputies chosen directly by all citizens paying a small amount of direct taxes. The number of deputies is fixed according to the population, and cannot exceed one for every 40,000 inhabitants. The Senate is composed of exactly one-half the number of members composing the other chamber, and are elected by the same citizens who appoint the deputies. The public expenditures of Belgium, for 1875, were 238,281,441 francs; receipts during the same year, 243,032,600 francs. The total public debt, in 1875, was 1,127,040,000 francs. The standing army is formed by conscription, to which every able-bodied man, who has completed his nineteenth year, is liable. Substitution is permitted. The actual number of soldiers under arms, on the 1st of January, 1875, was 103,893.

In Belgium the State is a great railway proprietor, and the State railway is one of the largest sources of national revenue. As each conceding railway lapses gratuitously to the State in 90 years from the period of its construction, the entire system will in time become national property. There were, at the end of 1875, 1537 kilometres of railways owned by the State, and 1479 worked by companies; in all 3432 kilometres. (The kilometre = 1093 yards.)

The work of the post office for 1874, was—

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of offices</td>
<td>479</td>
</tr>
<tr>
<td>Private letters</td>
<td>58,036,628</td>
</tr>
<tr>
<td>Official</td>
<td>6,035,861</td>
</tr>
<tr>
<td>Newspapers</td>
<td>58,825,598</td>
</tr>
<tr>
<td>Packets (printed matter, etc.)</td>
<td>30,094,027</td>
</tr>
</tbody>
</table>

There were, on the 1st of January, 1875, telegraph lines of a length of 4909 kilometres; length of telegraph wires, 20,512 kilometres; telegraph stations, 574.

Elementary education is not yet generally diffused among the people. The schools are supported by the communes, the provinces, and the State combined. Education is not compulsory. In the budget for the year 1874, the sum voted by the Chamber of Representatives for public education amounted to 9,701,628 francs.

Commission from Belgium to the International Exhibition:

His Royal Highness, the Comte de Flandre, Honorary President.
Baron Gustave de Woelmont, Senator, President.
Alexander Robert, Historical Painter, Member of the Belgium Academy of Fine Arts, Letters, and Sciences, Vice-President.
Ch. de Smet-de Smet, Manufacturer, President of the Industrial and Commercial Society, Vice-President.
Alfred Ancion, Manufacturer of Arms.
Jean Beco, Mining Engineer.
A. J. Belpaire, Inspector-General of Railways and Telegraphs.
L. de Curte, Architect, Member of the Royal Commission of Monuments and Council for the Improvement of the Arts of Design.
Félix DuHayon, Lace Manufacturer, Judge of the Tribunal of Commerce.
E. Duisberg, Director of the Paper Manufactories of Messrs. Godin & Co., at Huy, Member of the Chamber of Commerce.
Jos. Fayn, Mining Engineer, Consul of the Netherlands.
P. F. Ghys-Bruneel, Lace Manufacturer.
Jules Havenith, Shipowner, Consul of Austria-Hungary.
J. Kindt, Inspector-General of Industry, Minister of the Interior.
Eugene Meeus, Manufacturer, Member of the Chamber of Representatives.
Alph. Morel, Director of the Glass Works, Lodelinsart.
Henri Morel, Flax Manufacturer.
Remy Paquot, Director of the Company of Bleyburg-es-Montzen.
Edm. Parmentier, Manufacturer.
Ferdinand Pauwels, Historical Painter.
E. Sadoine, Director-General of the Company "John Cockerill."
Jules Sauveur, Director-General of Public Instruction, Ministry of the Interior.
E. E. A. Scharr, Chief Engineer, Director of the Arsenal and Railways of the State.
Alfred Simonis, Cloth Manufacturer, Member of the Chamber of Representatives.

Resident Commissioners in Philadelphia.

Count d'Oultremont, Director-General.
Mr. J. Beco, Delegate of the Belgian Government.
Mr. J. van Bree, Chief of Fine Art Department.
Mr. J. Gody, State Architect, Chief of the Commissioner's Office.
Mr. Julian Deby.
NETHERLANDS.

The Kingdom of the Netherlands lies between 50° 43' and 53° 36' north latitude and 3° 22' and 7° 16' east longitude, is bounded on the north by the North Sea, east by Hanover and the western part of Prussia, south by Belgium, west by the North Sea. Its greatest length, from north to south, is 193 English miles; its greatest breadth from the west, on the North Sea to the extremity of Overysel, on the east, 110 English miles. It contains 12,637 square miles, including the grand duchy of Luxembourg (which, although possessed of a separate administration, is connected with the kingdom in the person of the sovereign). The entire population, in 1872, was 3,835,111.

The following table gives the population (1872) and area of the provinces, including the reclaimed Haarlem Lake:

<table>
<thead>
<tr>
<th>Province</th>
<th>Area in square miles</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Brabant</td>
<td>1,983</td>
<td>435,262</td>
</tr>
<tr>
<td>Gelderland</td>
<td>1,972</td>
<td>436,029</td>
</tr>
<tr>
<td>South Holland</td>
<td>1,176</td>
<td>700,499</td>
</tr>
<tr>
<td>North Holland</td>
<td>966</td>
<td>591,338</td>
</tr>
<tr>
<td>Zeeland</td>
<td>642</td>
<td>181,532</td>
</tr>
<tr>
<td>Utrecht</td>
<td>531</td>
<td>1,985</td>
</tr>
<tr>
<td>Friesland</td>
<td>1,267</td>
<td>300,257</td>
</tr>
<tr>
<td>Overysel</td>
<td>1,308</td>
<td>256,681</td>
</tr>
<tr>
<td>Groningen</td>
<td>907</td>
<td>228,883</td>
</tr>
<tr>
<td>Drenthe</td>
<td>1,029</td>
<td>106,713</td>
</tr>
<tr>
<td>Limburg</td>
<td>854</td>
<td>225,352</td>
</tr>
<tr>
<td>Grand Duchy of Luxembourg</td>
<td>990</td>
<td>3,637,583</td>
</tr>
<tr>
<td>Total</td>
<td>13,627</td>
<td>3,835,111</td>
</tr>
</tbody>
</table>

The land is generally low, much of it being under the level of the sea, rivers, and canals, especially in North and South Holland, Zeeland, the southern part of Gelderland, and Friesland. Along the west coast the low lands are protected from the sea by a line of sand-hills, or dunes, and where that natural defence is wanting strong dykes have been constructed to keep back the waters, and are maintained at great expense. The greatest of these dykes are those of the Helder and of West Kapell, on the east coast of Walcheren. Engineers, called the officers of the Waterstaat, take special charge of the dykes and national hydraulic works. A hilly district stretches from Prussia through Drenthe, Overysel, the Veluwe, or Arnhem district of Gelderland, the eastern part of Utrecht, into the Betuwe or country between the Maas and the Waal. This tract has many pretty spots, is of a light sandy soil, well watered, and when not cultivated, is covered with heath or oak-coppice. The greater portion of the north is very fertile, the low lands and drained lakes, called Polders, being adapted for pasturing cattle, and the light soils for cereals and fruits; but in some districts there are sandy heath-clad plains, extensive peat-lands, and undrained morasses, which industry is rapidly bringing under cultivation.

The islands may be divided into two groups, of which the southern, formed by the mouths of the Schelde and Maas, contains Walcheren, South and North Beveland, Schouwen, Duiveland, Tholen, St. Philipsland, Gocree, Voorne, Putten, Beyerd, Ysselmonde Rozenburg, and the island of Dordrecht. The northern group
contains the islands at the entrance of the Zuyder Zee and along the coast of Groningen and Friesland, as Wieringen, Texel, Vlieland, Terschelling, Ameland, Schiermonnikoog, and Rotter. In the Zuyder Zee are Marken, Urk, and Schokland. The chief rivers are the Rhine, Maas, and Scheldt. Important branches of these are the Waal, Lek, Yssel, Roer, etc.

Water ways are more numerous than in any other European country, the immense tracts of meadow-land and the fertile polders being girdled by large canals, and cut in all directions by smaller ones for drainage and communication. Those of most importance to the national trade are, the North Holland canal, constructed 1819-1825, to connect the port of Amsterdam with the North Sea; the Voorne canal, from the north side of Voorne to Hellevoetsluis, which shortens the outlet from Rotterdam; the South Willemsvaart, through North Brabant, Dutch and Belgian Limburg, from Hertogenbosch to Maastricht, being 71⅔ English miles in length, and having 24 locks. Besides these, there are numerous important canals, connecting rivers, and cutting the kingdom into a network of water-courses. To improve the entrances to the Maas, the Hock, of Holland, has lately been cut. The new canal through the Y will be nowhere less than 80 yards broad, with sluices nearly 400 feet in length, ar 1 a depth of nearly 23 feet. It will reduce the distance from Amsterdam to the sea to about 15 miles, and gives a safe way for large ships.

The climate of the Netherlands is variable, chilly colds often closely succeeding high temperatures, inducing various forms of fever and ague, and requiring peculiar care as to clothing, etc. In summer, the thermometer sometimes rises above 80°, and even to 90° F. in the shade, and a winter of great severity usually occurs every fifth year, when carriages and heavily laden wagons cross the rivers and the Y on the ice, and thousands enjoy the national pastime of skating.

The farms are generally small and well cultivated. The leading agricultural products of Zeeland are wheat and madder; in South Holland, madder, hemp, butter, and cheese; in North Holland, butter and cheese are extensively made, and cattle, sheep, and pigs reared and exported. The horses of Friesland, Zeeland, and Gelderland are of first-rate quality. The exportation of butter from Holland and Friesland, and of Edam, Leyden, Gonda, and Frisian cheese, is quite large. Fruit is abundant, and in several provinces, as Gelderland, Utrecht, and Drenthe, much attention is paid to bees. In Haarlem and neighborhood, tulips and hyacinths are much cultivated, realizing a large annual amount. Wild ducks, snipes, plovers, and hares are plentiful; and there are also conies, partridges, pheasants, and deer—game forming an article of export.

The Netherlands are of recent formation, and consist of an alluvial deposit, chiefly of a deep, rich clayey soil, superimposed on banks of sand, marine shells, and beds of peat and clay. It appears that at some distant period there has been a depression of the land below its former level, enabling the sea to burst through its sand-banks, submerge the land, and form new deposits. The higher districts are composed of sand-drift mingled with fertile earths, and resting on a bed of clay. Coal is worked in Limburg; and a soft sandstone, which becomes fit for building purposes after having been some time exposed to the atmosphere, is quarried in the southern part of that province, which has also pipe and other clays. Valuable clays for pottery, tile, and brick making, abound in the various provinces.

The chief manufactures are linen, woolen, cotton, and silk fabrics; paper, leather, glass, etc. Leyden and Tilburg are famed for woolen blankets, wool-dyed pilot, fine cloths, and friezes; Hertogenbosch for linens and rich damasks; calicoes, shirtings, drills, tablecloths, striped dimities are made at Almelo, Amersfort, and in the leading towns of Overyssel. Good imitation Smyrna and Scotch carpets, and carpets of hair and wool, are manufactured at Deventer, Delft, Arnhem, Hilversum, Utrecht, and Breda; Turkey-red yarns, dyed silks, and silk stuffs at Roermond, Utrecht, Haarlem, etc.; leather, glass, firearms, at Maastricht and Delft; iron-founding, rolling and hammering of lead and copper, cannon-founding are carried
on at the Hague, etc.; and powder-mills at Muiden; Oudenkerk, Middelburg, Hertogenbosch, Amsterdam, Nymegen, etc., have important breweries. Waalwyk, Heusden, and surrounding districts, manufacture boots and shoes, of which Heusden sends to North and South Holland 1,000,000 pairs annually. Gin is distilled at Schiedam, Delft, Rotterdam, and Weesp. Amsterdam has the largest diamond-cutting trade in the world, 10,000 persons depending on that branch of industry. Sugar refining is largely carried on at Amsterdam, Rotterdam, and Dordrecht, from all of which sugar is exported to Russia, the Levant, and countries of Europe. Paper is chiefly made in Holland and Gelderland. The leading letter-type founders are at Amsterdam and Haarlem. Manufactures of every kind are being rapidly increased in number, and adding to the material prosperity of the Netherlands. The chief motive power is the windmill, which forms a never-falling element in the scenery; but of late years steam is becoming more general.

Fishing, not only in the inland waters, the coasts and bays of the North Sea, but also on the coast of Scotland, is vigorously pursued. In 1872 the total value of the herrings taken in the North Sea was about $450,000, 108 vessels having been employed; on the Netherland coasts, to the value of about $250,000, and in the Zuyder Zee, additional, 18,052,000 herrings were taken. The anchovy take, almost exclusively in the Zuyder Zee, amounted to 9000 anker, valued at about $90,000. There are productive oyster beds, besides extensive fishings of cod, ling, turbot, flounders, soles, shrimps, haddock, etc.; and from the rivers, salmon, eels, perch, etc.

The foreign commerce of the Netherlands, during the year 1873, was as follows:

<table>
<thead>
<tr>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>353,390,000</td>
</tr>
<tr>
<td>America</td>
<td>39,838,000</td>
</tr>
<tr>
<td>Asia</td>
<td>23,207,000</td>
</tr>
<tr>
<td>Africa</td>
<td>2,747,000</td>
</tr>
<tr>
<td>Other countries</td>
<td>298,000</td>
</tr>
<tr>
<td></td>
<td>599,480,000</td>
</tr>
</tbody>
</table>

**Colonial Possessions.**

| Java     | 82,485,000 | 45,083,000 |
| West Indies | 119,000   | 302,000    |
|          | 682,684,000 | 514,635,000 |

The Guinea coast is not included in the above, the statistics for 1873 not being at command. During 1872, the imports 26,000, the exports 137,000 gilders. At the end of 1874 the merchant navy numbered 1827 vessels of 511,982 tons.

The constitution vests the whole legislative authority in a parliament composed of two chambers, called the States-General. The Upper House, or First Chamber, consists of 39 members, elected by the provincial states, from among the most highly assessed inhabitants of the various counties. The Second Chamber of the States-General, elected by ballot, at the rate of one deputy to every 45,000 souls, numbered 80 members in 1875. All citizens, natives of the Netherlands, not deprived of civil rights, and paying assessed taxes to the amount of not less than 20 guilders, are voters. Clergymen, judges of the High Court of Justice, and governors of provinces, are debarred from being elected. Every two years one-half the members of the Second Chamber, and every three years one-third of the members of the Upper House, retire by rotation. The Second Chamber has the initiative of new laws, and the functions of the Upper House are restricted to either approving or rejecting them, without the right of inserting amendments. The king has full veto power, but it is rarely, if ever, exercised. The executive authority is, under the

* The guilder equals 40 cents gold.
sovereign, exercised by a responsible council of ministers. The budget estimates for
the year 1874, were as follows: Total revenue, 93,742,144 guilders; total expenditure,
93,742,144; estimated deficit, 6,244,749 guilders. The financial estimates are
always framed with great moderation, generally showing a deficit, which, in the final
account, becomes a surplus. There is a separate budget for the great colonial pos-
sessions in the East Indies. The Netherlands East India estimates, for 1874, are
thus summarized:

<table>
<thead>
<tr>
<th>Description</th>
<th>Guld.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue from receipts in the Netherlands</td>
<td>48,958,967</td>
</tr>
<tr>
<td>in India</td>
<td>74,639,232</td>
</tr>
<tr>
<td></td>
<td><strong>123,598,199</strong></td>
</tr>
<tr>
<td>Expenditure in the Netherlands</td>
<td>17,956,922</td>
</tr>
<tr>
<td>in India</td>
<td>95,069,698</td>
</tr>
<tr>
<td></td>
<td><strong>113,053,620</strong></td>
</tr>
<tr>
<td>Contribution in aid of the Home Government, for 1874</td>
<td>10,544,579</td>
</tr>
<tr>
<td></td>
<td><strong>123,598,199</strong></td>
</tr>
</tbody>
</table>

At the commencement of the year 1874, the national debt was represented by a capi-
tal of 927,320,076 guilders. The regular army stationed in the Netherlands comprised,
on the 1st of July, 1875, 1935 officers and 59,491 men. The colonial army, on the 1st
of January, 1875, comprised 27,475 men, 12,310 of whom were Europeans, and 15,165
natives. The navy, on the 1st of July, 1875, consisted of 88 steamers, carrying 474
guns, and 27 sailing vessels, with 195 guns. At the beginning of the year 1875, there
were 1668 kilometres of railway opened for traffic. Of these, 853 belonged to private
companies and 815 to the State. The number of post offices at the commencement
of 1875 was 1241; the number of letters carried during the year, 44,396,339. The
length of telegraph lines, January 1st, 1875, was 3431 kilometres; the length of
wires, 12,365 kilometres; the number of offices, 328. During the year 1874 the
number of telegrams carried was 2,084,121. Under the working of the primary
instruction law, there were, in January, 1871, according to government returns,
2608 public schools, with 6538 schoolmasters and 477 schoolmistresses, and 1119
private schools with 2332 schoolmasters and 1565 schoolmistresses. At the same
date the pupils in the public schools numbered 390,129, and the pupils in the private
schools, 111,762. There were, also, in 1871, 81 schools of middle instruction, with
7047 pupils, and 55 Latin schools, with 1128 pupils. There are three universities,
Leyden, Groningen, and Utrecht, with 1339 students in January, 1871, and a
polytechnic institution, at Delft, with 171 pupils.

**Colonies.**

The colonial possessions of the Netherlands embrace an area of 666,756 English
square miles. The total population, according to the last returns, was 24,336,991.

The East Indian island of Java, possessing, with the adjoining Madura, an area of
51,336 English square miles, and a population, at the end of 1872, of 17,298,200, is
by far the most important of the colonial possessions of the Netherlands. The whole
of the other Netherlands possessions in the East Indies are administered as depend-
cencies of Java.

Almost the entire trade of Java and Madura is with the Netherlands, and there is
comparatively little commercial intercourse with other countries. The total imports,
including specie, for 1873, were 108,304,000 guilders; total exports, including specie,
153,881,000 guilders. The principal articles of export from Java are sugar, coffee,
rice, indigo, and tobacco. The imports of the other East Indian possessions, during
1873, were 42,426,000 guilders; the exports, 41,869,000 guilders.
The Dutch West India Islands, of which Curacoa is the most important, have a total population of 36,160, and an area of about 400 square miles. Surinam, with an area of about 45,000 square miles has a population of 69,834.

Commission from the NETHERLANDS to the International Exhibition:

Dr. E. H. von Bomhauer, Honorary Professor, Secretary of the Dutch Society of Sciences, Director of the Society for the Advancement of Industry in the Netherlands, President.

F. de Casembroot, Rear Admiral, Aid-de-camp in Extraordinary Service to His Majesty the King of the Netherlands, and member of the States-General, 2d Chamber.

A. H. Eigeman, Industrial President of the Society of Dutch Industrials.

P. Hartsen, Chairman of the Amsterdam Board of Commerce.

J. E. van Heemskerck van Beest, Artist.

Dr. W. T. A. Jonckbloet, President of the Committee of Superintendence of the Academy of Imitative Arts.

D. van der Kellen, Jr., Member of Administration Society Arti et Amicitiae.

L. C. van Kerkwyk, Pensioned Lieutenant-colonel, Corps of Engineering, Member of the Council of Administration of the Royal Institute of Engineers.

M. M. de Monchy, President of the Board of Commerce.

Dr. J. Th. Moulton, Vice-President of the Society to Promote Manufactures and Trade Industry in the Netherlands.

C. T. van der Oudermeulen, President of the Dutch Society of Agriculture.

Baron W. G. Brantsen van de Zyp, LL.D., Lord in Waiting to His Majesty the King of the Netherlands.

Dr. M. W. C. Gori, Doctor of Medicine, late Medical Officer of the Netherlands Army, Ophthalmic Surgeon.

R. C. Burlage, Consul-general of the Netherlands.

L. Westergaard, Consul of the Netherlands.

D. D. Kruseman van Elten.

C. Muysken, Civil Engineer, Secretary.
DENMARK.

DENMARK is situated between 54° 23' and 57° 54' 50" north latitude, and 8° 5' and 12° 45' east longitude, excepting the small island of Bornholm in the Baltic, about ninety miles east of Seeland, which lies in 15° east longitude. Denmark is bounded on the north by the Skager Rack, a gulf of the North Sea; on the east by the Cattegat, the Sound, and the Baltic; on the south by the German Empire; and on the west by the North Sea, which the Danes call the "Western Ocean."

The kingdom of Denmark has an area of 14,553 English square miles, and a population (in 1874) of about 1,860,000

<table>
<thead>
<tr>
<th>Island</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faroe Islands</td>
<td>34,000</td>
</tr>
<tr>
<td>Greenland</td>
<td>23,000</td>
</tr>
<tr>
<td>Danish possessions in the West Indies</td>
<td>30,000</td>
</tr>
</tbody>
</table>

Total, 1,988,000

The chief pursuits are agriculture, cattle-breeding, navigation, and fishing, about one-half of the population being engaged in these industries.

The annual yield of grain may be calculated at about 100,000,000 bushels, beside 200,000,000 barrels of potatoes, beans, etc. About three-fourths of the whole country is under cultivation. The raising of horses and cattle is quite an important interest; the statistics of live stock are, approximately, as follows: horses, 350,000; cattle, 1,250,000; sheep, 1,900,000; hogs, 450,000.

The exports consist mainly of grain, flour, horses, cattle, hogs, meat, pork, butter, wool, hides and skins, beer, brandy, train oil, etc. The principal imports are iron, coal, salt, sugar, coffee, tea, wood, cotton cloth, tobacco, rice, etc.

Of manufactures, the most important are china ware, terra cotta, tiles, crockery, glass, tobacco, linen, cloth, paper, and soap. There are large woolen mills, sugar refineries, iron foundries, machine shops, dockyards, distilleries, tanneries, etc.; flour mills can be found in all sections of the country. The commerce is not inconsiderable, and Danish joiners' work, gold and silver ware, watches, gloves, terra cotta, etc., find ready sale abroad.

The merchant navy consisted, in 1875, of 2766 sailing vessels of 183,740 registered tons; 114 steamships of 24,323 registered tons, making a total of 2880 vessels of 208,063 registered tons.

The national wealth of Denmark is estimated at 4500 millions of crowns, of which 3400 millions is real estate and 1100 millions capital, or about 2200 crowns to each individual.

In the 350 savings banks of the country, there were deposited, at the end of 1874, 194,308,902 crowns.

The army numbers, in all, 52,000 men. The navy consists of three iron-clad frigates and eight iron-clad corvettes, carrying 79 guns; three frigates, three corvettes, and five schooners, carrying 136 guns; twelve iron gunboats, carrying 17 guns. Also, transports, etc.

The budget for 1876-77 estimated the revenue at 50,008,843 crowns against an expenditure of 49,885,045 crowns. The public debt, April 1st, 1876, was 181,117,700 crowns against 262,034,396 crowns in 1869. The debt has, in five years, been reduced by more than 80,000,000 crowns.

(The foregoing statistics are furnished by the Danish Commission.)

* The Danish crown = 26.45 cents, gold.
The length of railways in the kingdom, at the end of 1874, was 1024.5 kilometres, of which 665 belonged to the State and 359.5 to companies.

The work of the post office for the year 1873-74 was 16,487,777 letters, and 15,134,812 newspapers.

The length of telegraph lines, 2545 kilometres; length of wires, 7049 kilometres; number of offices, 174; messages in 1874, 762,609.

Elementary education is widely diffused in Denmark, attendance at schools being obligatory from the age of seven to fourteen. Instruction is furnished gratuitously in the public schools to children whose parents cannot afford to pay for their teaching. Besides the university of Copenhagen, there are thirteen public gymnasias in the principal towns of the kingdom, which afford a classical education, and under them are a large number of middle schools, for the children of the trading and higher working classes. Instruction at the public expense is given in the parochial schools, of which there were, in August, 1869, 28 in Copenhagen, 132 in the towns, and 2780 in the rural districts.

Denmark is a constitutional monarchy. The people are efficiently represented, and have a voice in all public matters. The press is virtually free, and only answerable to law. The national assembly consists of the Folksting and Landsting, and is invested with very extensive powers; it meets annually for two months, but the deputies are elected triennially, and receive a fixed allowance during their sittings. The several colonies are governed by governors or high bailiffs, nominated by and alone responsible to the crown. The king has a privy council, in which there are associated with him the heir-apparent and eight members.

Commission from Denmark to the International Exhibition:

JACOB HOLMLBLAD, Manufacturer, President.
OLAF HANSEN, United States Vice-Consul, Vice-President.
JOH HANSEN, Austrian Consul-General, Treasurer.
TH. GREEN, Secretary.
C. C. BURMEISTER, Manufacturer.
V. CHRISTENSEN, Manufacturer.
V. FIELDSKOV, Sculptor.
CHAS. HANSEN, Manufacturer.
WM. HAMMER, Artist.
CHR. HETSCH, Artist.
THOMAS SCHMIDT, Commissioner.
SWEDEN.

SWEDEN and Norway (Sverige and Norge), two independent kingdoms, but under a common king, form the Scandinavian peninsula, whose shores are washed by the waters of the Gulf of Bothnia, the Baltic, the Sound, the Kattegat, the Skager-Rack, the North Sea, the Atlantic and Arctic Oceans, and is thus completely separated from the mainland, with the exception of its northeastern part. The length of its coast, which is indented with numerous bays and fiords, and protected from the brunt of the sea by innumerable islands and rocks, may be estimated at about 5200 English miles, each kingdom possessing about one-half. The Scandinavian peninsula, of which Sweden forms the eastern and southern part (58 per cent.), while Norway makes up the rest (42 per cent.), embraces an area of 13,830 geographical square miles (294,000 English square miles). The united kingdoms have a population of rather more than six millions, of which 70 per cent. belong to Sweden, and 30 per cent. to Norway. The statistics of Norway are given elsewhere in this catalogue.

Although Sweden extends northward to latitude 69° 3' 21.1", thus passing beyond the Arctic circle, it reaches southward to latitude 55° 20' 18", coming within the latitude of its neighboring state, Denmark, and even further south than that part of Prussia which projects northward along the eastern shore of the Baltic. The total length of Sweden, from north to south, is about 950 English miles, and the width from 200 to 250 English miles. The observatory of Stockholm lies 18° 3' 29.85" east of Greenwich.

The läns (governments or departments) are the largest administrative divisions of the country, and frequently have two names, one of which is derived from the seat of government, the other usually from the old division of the provinces. The geographic division of the kingdom into three parts stands in intimate relation with the old provincial division. The three geographical divisions are as follows: Svealand (the central), Götaland (the southern), and Norrland (the northern); and though the boundaries of the läns and the provinces do not quite correspond, the following may on the whole be stated as correct:

Svealand has six provinces: Uppland, Södermanland, Westmanland, Nerike, Värmland, and Dalecarlia (or Dalarna).

Görland has nine provinces: Östergötland, Westergötland, Dalsland, Småland, Götland, Blekinge, Scania or Skåne, Halland, and Bohuslän.

Norrland comprises Gestrickland, Helsingland, Medelpad, Angermanland, Jemtland, Herjedalen, and Westerbotton, together with Lapland.

Lapland, the most northern part of Sweden, bordering on Norway, has an area of about 49,000 English square miles, and, together with Norrland, forms more than one-half the whole area. This vast territory is, of all the Swedish provinces, the least adapted to agriculture, and is but sparsely populated.

In 1874, the population of Sweden was divided among the different läns, as follows:

<table>
<thead>
<tr>
<th>NAMES.</th>
<th>POPULATION.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The town of Stockholm,</td>
<td>150,446</td>
</tr>
<tr>
<td>Län of Stockholm,</td>
<td>134,020</td>
</tr>
<tr>
<td>Uppsala,</td>
<td>103,822</td>
</tr>
<tr>
<td>Södermanland,</td>
<td>139,216</td>
</tr>
<tr>
<td>Östergötland,</td>
<td>262,872</td>
</tr>
<tr>
<td>Jönköping,</td>
<td>186,841</td>
</tr>
<tr>
<td>Kronoberg,</td>
<td>163,793</td>
</tr>
<tr>
<td>Kalmar,</td>
<td>233,999</td>
</tr>
<tr>
<td>Gottland,</td>
<td>54,499</td>
</tr>
<tr>
<td>Blekinge,</td>
<td>130,021</td>
</tr>
<tr>
<td>Kristianstad,</td>
<td>228,498</td>
</tr>
<tr>
<td>Malmöhus,</td>
<td>330,115</td>
</tr>
<tr>
<td>Halland,</td>
<td>130,802</td>
</tr>
<tr>
<td>Göteborg and Bohus,</td>
<td>241,936</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NAMES.</th>
<th>POPULATION.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Län of</td>
<td>285,817</td>
</tr>
<tr>
<td>Östergötland,</td>
<td>250,857</td>
</tr>
<tr>
<td>Skaraborg,</td>
<td>266,362</td>
</tr>
<tr>
<td>Värmland,</td>
<td>177,084</td>
</tr>
<tr>
<td>Örebro,</td>
<td>121,018</td>
</tr>
<tr>
<td>Westmanland,</td>
<td>184,330</td>
</tr>
<tr>
<td>Kopparberg,</td>
<td>150,497</td>
</tr>
<tr>
<td>Gefleborg,</td>
<td>147,212</td>
</tr>
<tr>
<td>Jemtland,</td>
<td>74,758</td>
</tr>
<tr>
<td>Tillerbotten,</td>
<td>96,507</td>
</tr>
<tr>
<td>Norrbotten,</td>
<td>81,987</td>
</tr>
</tbody>
</table>

Total, | 4,341,559 |
The area is stated at 171,749 English square miles.

Sweden is generally less mountainous than Norway, and the highest mountains are found just on the border of that country. The boundary line itself is supposed to run along a mountain chain, which is called by geographers the Kölen, though in reality there is no mountain of that name. The highest mountain in Sweden, Sulitjejma (6315 Swedish feet above the level of the sea), lies in Lapland, and is the only alpine elevation in Sweden where, as far as is known, glaciers are found, but there are other mountains in these districts, and still further south along the frontier of the kingdom, in Jemtland and Herjedalen, with an elevation of from 4000 to 5000 feet, whose peaks are dotted with patches of snow the whole year round.

About eight per cent. of the area of Sweden is considered to lie upwards of 2000 feet above the level of the sea. Those parts which sometimes extend beyond the tree-line are exclusively in Norrland and Dalarne, and border upon Norway. The coast-line along the Gulf of Bothnia, and the whole of the central and southern parts of Sweden, lie, with few exceptions, lower than 500 feet above the level of the sea. Of the whole area of the kingdom, a third part does not lie 300 feet above the level of the sea, and it is within these lower lying districts that the most highly cultivated parts of the country are found, as well as the largest plains, such as the Uppland, the Ostgöta, the Westgöta, and the Skane plains. With the exception of these, the plains are neither numerous nor large, for, though there are extensive tracts of land which attain a height of only a few hundred feet above the level of the sea, these are generally intersected by numerous hills and valleys.

Sweden, next to Finland, is the best irrigated country in Europe, as her lakes and rivers cover an area of 14,428 English square miles, or 8.4 per cent. of her whole territory, while she has a sea coast of 1500 English miles. The water of the Swedish lakes, as well as that of the rivers, is generally clear and drinkable. Lake Wetter is especially known for its clear, but at the same time turbulent, body of water, as well as for its great depth—420 feet. Of the numerous rivers (or elves) which flow into the Gulf of Bothnia, the Angerman elf is the best known, not only for its volume, but for its natural beauty. The Dal elf, which is usually considered as the dividing line between Norrland and the southern part of Sweden, empties further to the south. On the west coast flows the Göta elf, the outlet of Lake Wener, famed for the Trollhätta waterfall.

Almost every river or stream forms a foaming current or roaring cataracts, and there are thousands of them. Even the Trollhätta finds a rival in the Njommelsaska (Hare's Leap), in Lapland. One of the peculiarities of these lakes is that they are sometimes interrupted by an almost perpendicular fall—the water then spreading out, forming a second part of the lake. The nation possesses in these numerous falls an almost inexhaustible water power, which has not, as yet, been utilized to that extent which it might be. This character of the Swedish rivers carries with it, however, the disadvantage of rendering them innavigable, many of the rivers (the Dal elf, for instance) being barred at their very mouths by a fall; and, as a rule, they are navigable only for a mile or two, except for rafts and small boats, unless, as in the case of the Göta elf, they are provided with canals.

The climate of Sweden is mild in comparison to its high latitude, a fact which is attributed to the influence of the Gulf Stream. There are dense forests; and barley and rye mature in the province of Norrland, while its most southern part lies in the same latitude as the ice fields of Greenland, and its northern in that of barren Iceland. The country, extending through so many degrees of latitude, has a great variety of climate. The mean yearly temperature of the northern parts along the coast is 34° F., while that of the southern is 44° to 46° F. The mean yearly temperature of Stockholm is 47° F. The wells which serve as a measure of the earth's temperature, give about the same figures, the average temperature of a deep well in central Sweden being 43° F., while it is not unusual in Lapland to find a deep well covered with ice in midsummer, or a bog, 5 to 6 feet deep, frozen at its bottom; nevertheless,
the cereals and potatoes mature in these districts, for although the summer is short, it is very warm and clear. There can scarcely be said to be any night here during the summer, only a twilight, so that vegetation, even in this high latitude, receives the light and heat necessary for its ripening. The temperature of the southern parts is also subject to very great changes.

The farmers' worst enemy in Sweden is the frost, which in a single clear night, perhaps, after a warm summer day, will destroy his brightest prospects; but it is hoped that the increase of tillage, the draining of the bogs, and like causes, will at least mitigate its severity, if not altogether prevent it. Such severe frosts are very rare in the central and southern parts of Sweden.

(The greater portion of the foregoing was furnished by the Swedish commission.)

Mining is one of the most important departments of Swedish industry, and the working of the iron mines in particular is making constant progress by the introduction of new machinery. There were raised, in the year 1873, 19,458,339 hundredweight of iron ore from mines, besides 126,147 hundredweight from lake and bog. The pig iron produced amounted to 7,987,646 hundredweight, the cast goods to 501,350 hundredweight, the bar iron to 4,125,915 hundredweight, and the steel to 1,290,907 hundredweight. There were also raised, in the same year, 1,660 pounds of silver, 26,152 hundredweight of copper, and 645,631 hundredweight of zinc ore. There are large veins of coal in various parts of Sweden, but no systematic working of them has as yet taken place.

The principal articles of cultivation are, in addition to the various cereals, potatoes, hemp, flax, tobacco, and hops, which are generally grown in sufficient quantities for home consumption. The forests are of great extent, covering nearly one-fourth of the whole surface, and, in some spots, rising to an elevation of 3000 feet above the level of the sea. The birch, fir, pine, and beech are of great importance, not only for the timber, tar, and pitch which they yield, but also for their supplying charcoal and firewood. The common fruit trees, as cherries, apples, and pears, grow as far north as 60°, but the fruit seldom comes to great perfection except in the southern provinces; cranberries and other berries abound in all parts of the country.

In 1870, there were in Sweden, 428,446 horses, 1,965,800 horned cattle, 1,780,000 sheep and goats, and 354,303 swine.

In 1873, there were 2519 factories, with a production valued at 145,869,000 crowns. Mines and mining establishments are not included in these figures. Ship building forms an extensive branch of industry.

According to the "Statesman's Year Book for 1876," the commercial navy of Sweden, at the end of 1873, numbered 1865 registered vessels for foreign trade, of a total burthen of 366,370 tons. The total imports, for the same year, were 271,440,-000 riksdalers, and the exports, 221,904,000.

Sweden is a constitutional monarchy, based on the fundamental law of 1809, by which it was decreed that the succession should be in the male line; that the sovereign should profess the Lutheran faith, and have sworn fidelity to the laws. The diet, which meets every year, and remains sitting for three or four months, is composed of two chambers, which are both elected by the people. The members of the first chamber serve for nine years, and those of the second for three. The diet exercises a strict control over the expenditure of the revenue, fixes the budget, and has power to take cognizance of the acts of the ministers and crown officers. The king's person is inviolable, and he can exercise a veto on the decrees of the diet. He is assisted by a Council of State, composed of ten members, who are responsible to the diet.

The budget estimates for 1875 place the receipts at 64,725,900, and the expenditures at 71,885,798 riksdalers. At the end of October, 1875, the public liabilities of the kingdom were 130,477,920 riksdalers.

* The Swedish crown equals 26.8 cents. | † One riksdaler equals one crown.
The total strength of the armed forces of Sweden, at the end of September, 1875, was 132,775. The navy consists of 131 vessels, of 3183 horse-power, carrying 394 guns, and with crews aggregating 4693.

At the end of September, 1875, the total length of railways opened for traffic was 2297 English miles, of which 938 miles belonged to the State. All the telegraphs, with the exception of those of private railway companies, belong to the State. The total length of telegraph lines, at the end of 1874, was 4951 English miles; the total length of wires, 10,980 English miles. The total number of dispatches sent, in the year 1874, was 926,397.

The Swedish post office carried 16,711,100 letters in the year 1873. The number of post offices, at the end of the year, was 641.

Education is well advanced in Sweden. Public instruction is gratuitous and compulsory, and children not attending schools under the supervision of the government must furnish proofs of having been privately educated. In the year 1871 nearly 97 per cent. of all the children between eight and fifteen years visited the public schools.

Commission from Sweden to the International Exhibition:

P. A. Berghström, late Minister of Interior, President Board of Domains, President.
C. O. Troilius, Director-General of Public Railways, Vice-President.
F. L. von Dardel, Director-General Board of Public Buildings
Ch. Dickson, M.D.
Baron A. H. E. Fock, Chief of Board of Controls.
F. W. Scholander, Professor, Academy of Fine Arts.
C. F. Lundström, Manufacturer.
N. H. E. Elving, Consul-General.
S. Stenberg, Professor, Carolinian Medico-Chirurgical Institution.
A. R. Akerman, Professor School of Mines.
J. Bolinder, Manufacturer.
J. Lenning, Manufacturer.
C. L. Lundström, Manufacturer.
C. G. Breitholtz, Colonel of Artillery.
K. Peyron, Captain in the Navy, Chamberlain.
F. Wiikmark, Chief of the Board of Public Education.
H. Widegren, Superintendent of Fisheries.
P. E. Sidenbladh, Secretary of the Central Board of Statistics.
V. Norman, Captain of Engineers, Secretary.

Resident Commissioners in Philadelphia.

C. Juhlin Dannfelt, Commissioner-General.
Charles Bildt, Chamberlain, Assistant Commissioner.
L. Westergaard, Consul, Assistant Commissioner.
Dr. J. Lindahl, Ph., Secretary.
Dr. Wm. P. Headden, Ph., Assistant Secretary.
W. Hoffstedt, Engineer, Secretary of the Judges.
M. Isæus, Architect.
Count Fr. Posse, Engineer.

Special Commissioners.

G. W. Bergman, Captain of Artillery, Army Department.
E. Brusewitz, Engineer, Metallurgical Department.
Baron O. Hermelin, Fine Art Department.
A. E. Jacobi, Engineer, Machinery Department.
C. J. Meijerberg, Professor Educational Department.
NORWAY.

NORWAY, the western portion of the Scandinavian peninsula, is situated between 57° 58' and 71° 10' north latitude, and between 5° and 28° east longitude. It is bounded to the east by Sweden and Russia, and on every other side is surrounded by water, having the Skagerrak to the south, the German Ocean to the west, and the Arctic Sea to the north. Its length is about 1100 miles, and its greatest width about 250 miles; but between the latitudes of 67° and 68° it measures little more than 25 miles in breadth. The area is given as 121,779 square miles, and the population as 1,800,000. Only 1.6 per cent. of the whole area can be cultivated; natural pastures occupy about 1.5 per cent.; forests, about 20.2 per cent.; mountains, glaciers, lakes, rivers, and land, etc., about 76.7 per cent. The whole of the Scandinavian peninsula consists of a connected mountain mass, which, in the southern and western parts of Norway, constitutes one continuous tract of rocky highlands, with steep declivities dipping into the sea, and only here and there broken by narrow tracts of arable land. South of Trondjem (63° north latitude) the rocky ridge expands nearly the entire breadth of Norway. The northern portions of the range, known as the Kiollen Fielle, occupy a space of about 25 miles in width, and form, as far north as 69°, the boundary line between Sweden and Norway. South of 63° north latitude the range of the Scandinavian mountains is known as the Norska, or Dovre Fielle, although the latter name belongs properly only to the part immediately in contact with the Kiollen. This range, about 360 miles in length, attains its greatest elevation at the Sogne Fjord, where it is known as the Hurungerne. Here the highest summits are 8000 and 8400 feet above the sea, while the contiguous snowfields of Justedal, the largest in Europe, and covering an area of 600 square miles, have probably an elevation of nearly 7000 feet. From these and other vast snowfields, averaging more than 10 miles in width, vast glaciers descend to within 2000 feet above the sea, where they often terminate in deep lakes, some of which are very extensive. The upper valleys of this range, although generally too high for cultivation, contain the best timber that is exported from Norway, and afford good pasturage in the height of the summer, when the flocks and herds are driven thither from the lowlands near the entrance of the fjords. The general elevation of the Norska Fielle does not rise above the line of perpetual snow, whose average height in these latitudes is 5000 feet, but it ranges above that of the growth of trees, which may be stated to lie 1000 feet lower. The most northern part of the Norska Fielle, which is known as the Dovre-field, and includes Sneehatten, nearly 7500 feet above the sea, presents a broken surface, rent with ravines and narrow valleys, which admit of cultivation, but are difficult of access from the configuration of the land around them.

The Scandinavian range consists principally of primitive and transition rock, and exhibits almost everywhere the effect of glacial action, the glaciers and moraines presenting the same appearances as in the Swiss alpine district. The numerous islands which skirt the coast of Norway, and must be regarded as portions of the range, present the same characters as the continental mass. Some of these, as the islands of Alsten and Dunnoe, rise perpendicularly from the sea with peaks penetrating beyond the snowline, which lies here at an elevation of 4000 feet. Norway abounds in lakes and streams; according to some topographers, there are upwards of 30,000 of the
former, of which the majority are small, while none have an area exceeding 400 square miles. The chief rivers of Norway are the Glommen, Lougen, Louven, Drammen, Otter, and Wormen. The first of these has a course of 400 miles, but the majority of the Norwegian streams, all of which rise at great elevations, have a comparatively short course, and are unfit for navigation, although they are extensively used to float down timber to the fjords, whence the wood is exported in native ships to foreign ports. These fjords, or inlets of the sea, which form so characteristic a feature of Norwegian scenery, and give with their various sinuosities a coast-line of upwards of 8000 miles, form the outlet to numerous rapid streams and waterfalls, which leap or trickle down the edges of the treeless fields or mountain flats above.

The peculiar physical character of Norway necessarily gives rise to great varieties of climate in different parts of the country. The influence of the sea and of the Gulf Stream, and the penetration into the interior of deep inlets, greatly modify the severity of the climate on the western shores, and render it far superior to that of the other Scandinavian countries in the same latitude. In Norway proper, the winters, as a rule, are long and cold, and the summers, which rapidly follow the melting of the snows in April and May, are warm and pleasant. On the islands, however, the heats of summer are often insufficient to ripen corn.

Norway had, in 1875, 150,000 horses, 950,000 oxen and cows, 1,710,000 sheep and goats, 110,000 pigs, and 102,000 reindeer. The value of the annual product is about $25,000,000.

The principal cereals cultivated in Norway are oats, barley, corn, rye, and wheat; the yearly produce is about 11,150,000 bushels, besides 14,100,000 bushels of potatoes. The value of the harvest amounts to about $16,000,000 per annum.

The products of agriculture and cattle-breeding being insufficient to supply the wants of the country, considerable quantities are imported.

Forestry is of great importance. As stated above, the forests of Norway cover more than one-fifth of its entire area. They supply considerable quantities of timber, both for home consumption and exportation. The average annual exports of timber amount to about $16,000,000.

The fisheries of Norway employ about 27,000 men, and yield about $16,000,000 per annum. They are of great importance, and not only yield one of the most important articles of home consumption, but at the same time constitute one of the most profitable sources of foreign export. Fish are caught in almost every stream and lake of the interior, as well as in the fjords of the coast, and in the bays and channels which encircle the numerous islands skirting the long sea-line of Norway. These fish are principally cod and herring. Cod, prepared as stock-fish or dried salt fish, is exported to Spain and Italy; herring to the Baltic ports.

The merchant marine of Norway had, in 1875, a tonnage of 1,220,000, and was manned by 53,000 seamen.

The following statistics apply to the exports and imports of Norway in 1873:

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of goods exported</td>
<td>$33,000,000</td>
</tr>
<tr>
<td>Gross freight of goods carried in Norwegian</td>
<td></td>
</tr>
<tr>
<td>vessels</td>
<td>28,400,000</td>
</tr>
<tr>
<td>Receipts from various sources</td>
<td>800,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$62,200,000</td>
</tr>
<tr>
<td>Value of goods imported</td>
<td>$45,800,000</td>
</tr>
<tr>
<td>Expenses of Norwegian vessels in foreign countries</td>
<td>11,400,000</td>
</tr>
<tr>
<td>Other expenses</td>
<td>2,400,000</td>
</tr>
<tr>
<td><strong>Balance</strong></td>
<td>$2,600,000</td>
</tr>
</tbody>
</table>

The principal articles of export were, in 1873: Products of the fisheries, $11,600,000; of forestry, $15,500,000; of agriculture and cattle-breeding, $1,300,000; metals and minerals, $1,800,000; textile fabrics, $660,000.
The imports were principally: Articles of food, $13,500,000; coffee, $3,500,000; liquors, $1,000,000; textile fabrics and dry goods, $8,300,000; hardware, $3,300,000; hides, $1,200,000; coal, $1,700,000; vessels, $4,400,000.

Manufactures have made some progress during the last few years, but are, as yet, inconsiderable. About 32,000 persons are employed, mainly in sawmills, planing mills, brick factories, shipbuilding, and metallurgical and textile industries.

The mineral products comprise silver, copper, cobalt, iron, chrome, ironstone, etc., and yield an annual income of nearly $1,000,000.

Education is compulsory, parents being bound to let their children, between the ages of seven and fourteen, receive public instruction; 241,000 children attend the common schools, and 16,500 receive a higher instruction. The expenses of the higher schools were, in 1873, $827,000.

The public revenue, in 1873, was $6,870,000, and the expenditures $7,277,000, of which amount $865,000 was for the construction of railways. The public debt amounts to $9,200,000.

Norway has 12,432 miles of highways and district roads, 304 miles of railways, and 147 miles of canals. There are 719 post offices, which distribute 7,500,000 letters per annum.

(The foregoing statistics are furnished by the Norwegian Commission.)

According to "Martin's Year Book," there were, at the end of 1873, telegraph lines of the length of 3745 miles, and wires of the length of 5845 miles.

The government of Norway is a constitutional monarchy. The executive is represented by the king, who exercises his authority through a Council of State, composed of one minister of state and nine councillors. The legislative power of the realm is the Storthing, or Great Court, the representative of the sovereign people.

On the 1st of January, 1874, the troops of the land numbered 13,000 men. The reserve forces at the same time numbered 19,000, and the landwaern 11,000 men. The naval force comprised, at the same date, twenty vessels, all steamers, with an armament of 149 guns.

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Commission from Norway to the International Exhibition:

Herman Baars.
Wm. C. Christophersen.
Gerhard Gade, U. S. Consul.
ITALY.

The geographical territory comprised under the name of Italy consists of a considerable stretch of peninsular mainland, besides several islands, situated in Southern Europe, between latitude 36° 35' and 47° north, and between longitude 6° 35' and 18° 35' east. From the southern extremity of Sicily to the Alps its maximum length is about 600 miles, its utmost breadth being 300 miles. Its boundaries on the north are Austria and Switzerland, on the south the Mediterranean, on the west France and the Mediterranean, and on the east the Ionian and Adriatic seas, while its natural limits are strongly defined by the Alps and the sea.

The first general census of the kingdom of Italy was taken by the government on the 31st of December, 1871, on which date the population numbered 26,795,073 souls, living on an area of 296,013 square chilos, or 112,677 English square miles. The density of population was 237 per English square mile.

The kingdom of Italy is administratively divided in 69 provinces, as follows:

<table>
<thead>
<tr>
<th>Province</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piedmont and Liguria</td>
<td></td>
</tr>
<tr>
<td>1. Alessandria</td>
<td>683,361</td>
</tr>
<tr>
<td>2. Cuneo</td>
<td>617,232</td>
</tr>
<tr>
<td>3. Genoa</td>
<td>716,284</td>
</tr>
<tr>
<td>4. Novara</td>
<td>624,969</td>
</tr>
<tr>
<td>5. Porto Maurizio</td>
<td>127,042</td>
</tr>
<tr>
<td>6. Turin</td>
<td>972,938</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,741,376</strong></td>
</tr>
</tbody>
</table>

| Island of Sardinia        |            |
| 7. Cagliari               | 392,981    |
| 8. Sassari                | 243,274    |
| **Total**                 | **636,255** |

| Lombardy                 |            |
| 9. Bergamo               | 368,152    |
| 10. Brescia               | 456,023    |
| 11. Como                  | 477,642    |
| 12. Cremona               | 300,595    |
| 13. Milan                 | 1,009,794  |
| 14. Pavia                 | 448,357    |
| 15. Sondrio               | 111,240    |
| **Total**                 | **3,171,803** |

| Emilia                    |            |
| 17. Ferrara               | 216,545    |
| 18. Forli                 | 234,090    |
| 19. Massac Carrare        | 161,944    |
| 20. Modena                | 273,231    |
| 21. Parma                 | 264,509    |
| 22. Placencia             | 225,775    |
| 23. Ravenna               | 220,801    |
| 24. Reggio                | 240,635    |
| **Total**                 | **2,276,762** |
**ITALY.**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>25. Ancona</td>
<td>262,369</td>
</tr>
<tr>
<td>26. Ascoli Piceno</td>
<td>203,008</td>
</tr>
<tr>
<td>27. Macerata</td>
<td>236,994</td>
</tr>
<tr>
<td>28. Pesaro e Urbino</td>
<td>213,072</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Umbria.</th>
<th>Population.</th>
</tr>
</thead>
<tbody>
<tr>
<td>29. Perugia</td>
<td>549,333</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tuscany.</th>
<th>Population.</th>
</tr>
</thead>
<tbody>
<tr>
<td>31. Arezzo</td>
<td>234,645</td>
</tr>
<tr>
<td>32. Grosseto</td>
<td>107,457</td>
</tr>
<tr>
<td>33. Leghorn</td>
<td>118,851</td>
</tr>
<tr>
<td>34. Lucca</td>
<td>230,399</td>
</tr>
<tr>
<td>35. Pisa</td>
<td>265,959</td>
</tr>
<tr>
<td>36. Sienna</td>
<td>206,446</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>37. Aquila</td>
<td>332,782</td>
</tr>
<tr>
<td>38. Avellino</td>
<td>375,237</td>
</tr>
<tr>
<td>39. Bari</td>
<td>604,540</td>
</tr>
<tr>
<td>40. Benevento</td>
<td>232,012</td>
</tr>
<tr>
<td>41. Campobasso</td>
<td>354,843</td>
</tr>
<tr>
<td>42. Caserta</td>
<td>695,754</td>
</tr>
<tr>
<td>43. Catanzaro</td>
<td>412,226</td>
</tr>
<tr>
<td>44. Chisti</td>
<td>349,299</td>
</tr>
<tr>
<td>45. Cosenza</td>
<td>449,272</td>
</tr>
<tr>
<td>46. Foggia</td>
<td>322,754</td>
</tr>
<tr>
<td>47. Lecce</td>
<td>493,574</td>
</tr>
<tr>
<td>48. Naples</td>
<td>908,029</td>
</tr>
<tr>
<td>49. Potenza</td>
<td>509,202</td>
</tr>
<tr>
<td>50. Reggio</td>
<td>353,606</td>
</tr>
<tr>
<td>51. Salerno</td>
<td>541,739</td>
</tr>
<tr>
<td>52. Teramo</td>
<td>245,684</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sicily.</th>
<th>Population.</th>
</tr>
</thead>
<tbody>
<tr>
<td>53. Caltanissetta</td>
<td>230,066</td>
</tr>
<tr>
<td>54. Catania</td>
<td>455,240</td>
</tr>
<tr>
<td>55. Girgenti</td>
<td>280,018</td>
</tr>
<tr>
<td>56. Messina</td>
<td>420,649</td>
</tr>
<tr>
<td>57. Palermo</td>
<td>617,660</td>
</tr>
<tr>
<td>58. Siracusa</td>
<td>294,915</td>
</tr>
<tr>
<td>59. Trapani</td>
<td>236,388</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Venetia.</th>
<th>Population.</th>
</tr>
</thead>
<tbody>
<tr>
<td>60. Belluno</td>
<td>175,370</td>
</tr>
<tr>
<td>61. Mantua</td>
<td>288,942</td>
</tr>
<tr>
<td>62. Padua</td>
<td>364,355</td>
</tr>
<tr>
<td>63. Rovigo</td>
<td>200,935</td>
</tr>
<tr>
<td>64. Treviso</td>
<td>354,538</td>
</tr>
<tr>
<td>65. Udine</td>
<td>481,787</td>
</tr>
<tr>
<td>66. Venezia</td>
<td>337,539</td>
</tr>
<tr>
<td>67. Verona</td>
<td>367,426</td>
</tr>
<tr>
<td>68. Vicenza</td>
<td>363,161</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>69. Rome</td>
<td>836,291</td>
</tr>
</tbody>
</table>
According to the old political division, the population is divided as follows:

<table>
<thead>
<tr>
<th>Region</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piedmont and Liguria</td>
<td>3,741,876</td>
</tr>
<tr>
<td>Island of Sardinia</td>
<td>2,276,762</td>
</tr>
<tr>
<td>Lombardy</td>
<td>3,171,803</td>
</tr>
<tr>
<td>Emilia</td>
<td>2,171,803</td>
</tr>
<tr>
<td>The Marches</td>
<td>915,443</td>
</tr>
<tr>
<td>Umbria</td>
<td>549,833</td>
</tr>
<tr>
<td>Tuscany</td>
<td>1,980,368</td>
</tr>
<tr>
<td>Neapolitan Provinces</td>
<td>7,171,553</td>
</tr>
<tr>
<td>Sicily</td>
<td>2,583,936</td>
</tr>
<tr>
<td>Venice</td>
<td>2,931,953</td>
</tr>
<tr>
<td>Rome (States of the Church)</td>
<td>836,291</td>
</tr>
<tr>
<td></td>
<td>26,796,073</td>
</tr>
</tbody>
</table>

The physical aspect presented by the surface of Italy is diversified in the extreme. Northern Italy is, for the most part, composed of one great plain—the basin of the Po, comprising all Lombardy and a considerable portion of Piedmont and Venice, bounded on the northwest and partly on the south by different alpine ranges. Throughout Central Italy, the great Apennine chain gives a picturesque irregularity to the physical configuration of the country, which in the southern extremity of Italy assumes still wilder forms. In the highland districts of Naples in which the Apennine ridge reaches its maximum elevation (10,000 feet), the scenery exhibits a savage grandeur. Along the extensive coast plains, as well as in the sub-Apennine valleys, the rural charms of this portion of Italy are extreme, while the brilliant flora and vegetation impart to it a novel character of beauty. The chief mountain system of Italy is the frontier ridge of the Alps, and their noble continuation, the Apennines.

Italy likewise comprises a considerable stretch of volcanic zone, which traverses the peninsula from the centre to the south in a line parallel with that of the Apennines, and of which the most remarkable active summits are Vesuvius, adjoining Naples, Aetna in Sicily, and Stromboli in the Lipari Isles.

The great plains of Italy are those of Lombardy, which stretch from the Mincio to the Ticino and the Po; of Piedmont; the Venetian plains; the plain of the Roman legations; the plain of the Campo Felice, on which stands Vesuvius; the Apulian plain; the long, narrow Neapolitan plain of the Basilicata, 100 miles in length, and 24 miles in breadth, stretching along the Gulf of Tarento.

The great majority of the rivers of Italy are only navigable for small coasting boats or barges. By far the most important is the Po, which rises on the borders of France, and flows into the Adriatic. It has numerous tributaries. Among the others may be mentioned the Adige, Brenta, Piave, Tagliamento, Aterno, Sangro, Metauro, Ofanto, Bradano, also belonging to the Adriatic basin; the Arno, the Tiber, the Ombrone, the Garigliano, and the Volturno, which belong to the Mediterranean basin.

The canal system of Italy is most extensive in the north. Nine principal canals in Lombardy administer to the irrigation of the plains and to the purposes of commercial communication, contributing in no small degree to the prosperity of the district. The Naviglio Grande or Ticinello is the finest hydraulic construction in Italy; it communicates between the Ticino and Milan, and has a course of 28 miles, navigable for vessels of large size. It was begun in 1179. The Naviglio Martesana, 38 miles long, unites Concesa on the Adea with Milan; the Naviglio di Pavia is 18 miles in length; the bifurcated Naviglio d'Ostiglia unites the Po with the Adige. 253 canals intersect Piedmont, extending over a length of 1932 kilometres. Venice comprises 203 navigable, and 49 minor canals. Numerous canals have been constructed for the drainage of the Pontine Marshes. This system of water communication was early carried to a high degree of efficiency in Italy, and is of incalculable service in the agricultural districts.
The mountain lakes of Italy are famed for their picturesque beauty. They are mostly in the northern provinces of Lombardy and Venetia. The principal are Maggiore, Lugano, Como, Iseo, and Garda. The Roman lakes of Perugia, Bolseno, and Bracciano, that of Castiglione in Tuscany, and Celano in Naples, also deserve mention.

The mineral and thermal springs of Italy are innumerable, and possess a great variety of curative and sanitary properties.

In the northern provinces, the climate is temperate, salubrious, and frequently severe in winter; in the centre, it assumes a more genial and sunny character; while the heat of the southern extremity is almost of a tropical intensity. The singular clearness of the atmosphere sets off the landscape and monumental beauties of Italy with brilliant effect. The drawbacks of Italy's climate are the piercing tramontana or mountain winds; the deadly sirocco, which blights all nature at seasons along the western coast; and the malaria or noxious miasmata which issues from the Maremma of Tuscany, the Pontine Marshes, and the Venetian lagoons, generating pestilential fevers and aguish diseases in the summer season. The mean temperature of the leading divisions of the country throughout a whole year was as follows: Milan, 55° 4' of Fahrenheit's scale; Rome, 59°; Palermo, 62° 5'; and in Sardinia, 60° 5'. The highest temperature at Rome rises to 95°, and in Sicily from 97° to 104°.

The staple products of Italy are corn, wine, oil, raw silk, rice, olives, and fruits. Hemp, flax, and cotton are also largely grown. The sugar-cane is successfully cultivated in the two Sicilies. Agriculture, except in the north, is in a very backward condition. It is calculated that only two-thirds of the area of the kingdom capable of production are cultivated, and that the rest lies waste. The superficial extent of the productive soil of Italy is 23,017,096 ellaras,* divided thus:

<table>
<thead>
<tr>
<th></th>
<th>Ellaras</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arable land</td>
<td>11,003,061</td>
</tr>
<tr>
<td>Meadow land</td>
<td>1,173,436</td>
</tr>
<tr>
<td>Rice ground</td>
<td>144,903</td>
</tr>
<tr>
<td>Olive plantations</td>
<td>554,767</td>
</tr>
<tr>
<td>Chestnut plantations</td>
<td>555,132</td>
</tr>
<tr>
<td>Woods and forests</td>
<td>4,158,349</td>
</tr>
<tr>
<td>Pastures</td>
<td>5,397,448</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>23,017,096</strong></td>
</tr>
</tbody>
</table>

There are, besides, 3,997,059 ellaras of rock and marsh. Of the land capable of cultivation, more than half is devoted to the growth of cereals, mainly wheat. The average crop is insufficient for the supply of the country. The wines of Naples are esteemed the best, small quantities of the famous Lachrima Christi and the Vind d' Asti being exported, while the Sicilian wines of Marsala form a considerable item of export. The best oil and olives are furnished by Tuscany, Lucca, and Naples. Silk is chiefly manufactured in the northern provinces, the cultivation of the mulberry and the rearing of the silkworm forming, in Lombardy, a most important interest. The best manufactured silk comes from Piedmont, Tuscany, and the Roman provinces. The fruits of the two Sicilies are exquisite in flavor, and embrace several tropical species. Oranges, lemons, almonds, figs, dates, melons, and the pistachio nut, are common to all orchards, and are largely exported. A considerable cheese trade exists in the northern provinces.

The sea and fresh water fisheries of Italy are considerable, the Mediterranean furnishing immense quantities of tunny, anchovies, sardines, mullets, pelchards, and mackerel. The export of anchovies and of sardines is of immense extent. The

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* One ella equals 2.47 acres.
river fisheries yield salmon, trout, sturgeon, lampreys, tench, barbel, etc. The crustaceans and shell fish of the Italian seas are of great variety and delicate flavor, and are a favorite article of Italian consumption.

The total exports of the kingdom, during the year 1874, were 1,304,994,328 lire; the imports, during the same year, 985,498,532 lire.

The number and tonnage of merchant vessels belonging to the kingdom, on January 1st, 1874, were as follows: 17,562 sailing vessels, aggregating 925,337 tons burden; and 103 steamers, of a total burden of 24,476 tons. Of the sailing vessels, 9074 were under 6 tons each.

According to the present constitution of Italy, the executive power belongs exclusively to the sovereign, and is exercised by him through responsible ministers. The legislative authority vests conjointly in the king and parliament, the latter consisting of two chambers, a Senate and a Chamber of Deputies. The Senate is composed of the princes of the royal house who are of age, and of an unlimited number of members, above forty years old, who are nominated by the king for life; a condition of the nomination being that the person should either fill a high office, or have acquired fame in science, literature, or any other pursuit tending to the benefit of the nation: or, finally, should pay taxes to the annual amount of 3000 lire. The members of the Chamber of Deputies are elected by a majority of all citizens who are twenty-five years of age and pay taxes to the amount of 40 lire. A deputy must be thirty years old, and must have the requisites demanded by the electoral law, among them a slight property qualification. Neither senators nor deputies receive any salary.

The following are the budget estimates for 1875:

- Estimated revenue, ........................................ 1,344,164,158 lire.
- Estimated expenditures, .................................. 1,575,487,130 lire.

The entire public debt, at the end of 1873, was 9,757,613,267 lire.

The actual strength of the army, at the end of December, 1873, was:

- Number of men under arms (peace footing), .............. 199,557
- Number of men on unlimited furlough, .................... 244,952

Total (war footing), ........................................ 444,509

The navy, at the commencement of 1875, consisted of 95 ships of war, carrying 1256 guns. Of these, 9 were ironclads, carrying 346 guns, 46 were screw steamers, carrying 693 guns, and 32 paddle steamers, carrying 113 guns.

The total length of railways opened for traffic, at the end of 1874, was 4607 English miles.

The number of post offices at the commencement of 1874 was 2709. In the year 1873 the post office carried 504,402,431 letters and 94,402,596 printed parcels.

The length of telegraphic lines, on the 1st of January, 1874, was 12,622 English miles, nearly two-thirds of the whole belonging to the government. There were, at the same date, 1408 telegraphic offices. The number of private telegrams during 1873 was 4,670,090, and of official telegrams, 163,852.

Under the new Italian government, a great part of the property confiscated from the monastic establishments has been devoted to the cause of public education. In addition to this, the Parliament votes an annual credit of 15,000,000 lire for the same purpose. Since the commencement of the year 1860 there were opened throughout the kingdom thirty-three model schools. Notwithstanding these important aids to instruction, education still stands very low. According to the census of 1864, out of a total population of 21,703,710 souls, there were about 17,000,000 who could neither read nor write. Piedmont occupied the first place, Sicily the last, on the register of knowledge. In the Basilicata, Calabria, and Sicily, more than nine-tenths of the population could neither read nor write.

* One lire equals 19.3 cents gold.
There are twenty-two universities in Italy, many of them of ancient foundation. By a decree of the Minister of Public Instruction, issued in 1871, six high-schools—Naples, Pavia, Turin, Bologna, Florence, and Parma—were declared first-class universities of the kingdom. The number of students at all the universities was returned as 10,524 in 1871.

Commission from Italy to the International Exhibition:

H. E. Baron Blanc, Minister Plenipotentiary.
Count B. Litta, First Secretary of Legation.
Chevalier Alonzo M. Viti, Vice-Consul.
A. Padovani, President of the Central Committee.
Joseph Dassi.
N. Cantalamessa Papotti.
Pio Baccarani.
G. Vigna del Ferro.
G. Conari.
Angelo Gianello, General Agent.
EGYPT.

The territories under the rule of the sovereign of Egypt, including those on the Upper Nile and Central Africa, are vaguely estimated to embrace an area of 4,777,830 square kilometres, and to be inhabited by a population of 16,952,000, of whom about one-third are in Egypt proper. The following tabular statement gives the area and population of the various divisions of the kingdom, and its recent annexation, according to government estimate, of the year 1875:

<table>
<thead>
<tr>
<th>DIVISIONS</th>
<th>AREA, SQ. KILOMETRES</th>
<th>POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt proper,</td>
<td>550,630</td>
<td>5,252,000</td>
</tr>
<tr>
<td>Nubia,</td>
<td>864,500</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Former kingdom of Ethiopia,</td>
<td>2,918,000</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Darfur, and other annexed territories,</td>
<td>444,700</td>
<td>5,700,000</td>
</tr>
<tr>
<td></td>
<td>4,777,830</td>
<td>16,952,000</td>
</tr>
</tbody>
</table>

The great physical peculiarity of Egypt is the absence of rain, the land being only irrigated by the annual overflow of the Nile. The climate is remarkably mild and sound, especially south of the Delta; and in the desert, from Cairo to Alexandria, the air contains more moisture than to the south. From the middle of August to December, west winds prevail; east winds from that time till March; after that, unhealthy south winds or Khamsin till June; and from June till August the north or Etesian winds. Earthquakes are occasionally felt, and the temperature varies from 84° F. to 32°. The most remarkable phenomenon is, however, the regular increase of the Nile, fed by the fall of the tropical rains, which commence in 11° north latitude, in the spring; and falling first into the White, and then Blue Nile, reach Egypt in the middle, and the Delta in the end of June. In the middle of July, the red water appears, and the rise may be dated from that time; it attains its maximum at the end of September, and begins to decline visibly in the middle of October, and subsides to its minimum in April. At the end of November, the irrigated land has dried, and is sown, and is covered with green crops, which last till the end of February. In March is the harvest. The state of the Nile, in fact, marks the season more accurately than the variation of temperature. Egypt is by no means remarkably healthy, as, in addition to the visitations of plague and cholera, opthalmia, diarrhoea, dysentery, and boils often prevail, and European, and even Nigritic races cannot be acclimatized.

Many of the European trees and plants are found in Egypt; the date-palm, the doom-palm, the sycamore, acacias, tamarisks, etc., are among its more peculiar botanical productions. The extensive culture of papyrus has been, in modern times, replaced by that of the sugar-cane, cotton, indigo, and tobacco, and the plant has almost disappeared. Gourds and melons have always abounded. To the wheat and barley of antiquity have been added maize and durra. Egypt is very deficient in timber trees. The rocks of Egypt afforded the stones used in its edifices and sculptures; granite, syenite, breccia (in the Cossier Rood), porphyry (from the quarries of Gebel Dokhan, opened in the reign of the Emperor Claudius).
sandstone, and limestone. Alabaster (found at Middle Egypt) has been used from the earliest periods to the present day. Emeralds are produced by the mines of Gebel Zabara; salt, natron, and—since 1850—sulphur, are among the other mineral productions of Egypt.

Egypt proper is divided into three great districts, namely: Masr-el-Bahri, or Lower Egypt; El-Wustani, or Middle Egypt; and El-Said, or Upper Egypt—designations drawn from the course of the river Nile. These three geographical districts, subdivided into eleven administrative provinces, had, according to an enumeration made by the government in March, 1872, a rural population of 4,603,660, and an urban population of 648,340, dispersed over six towns, as follows:

<table>
<thead>
<tr>
<th>City</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cairo</td>
<td>349,983</td>
</tr>
<tr>
<td>Alexandria</td>
<td>212,054</td>
</tr>
<tr>
<td>Damietta</td>
<td>29,383</td>
</tr>
<tr>
<td>Tanta</td>
<td>28,500</td>
</tr>
<tr>
<td>Rosetta</td>
<td>15,000</td>
</tr>
<tr>
<td>Suez</td>
<td>13,498</td>
</tr>
</tbody>
</table>

The Khedive is absolute sovereign or king. The administration is carried on by a Council of State of four military and four civil dignitaries.

The revenue of Egypt for the financial year ending September 10th, 1874, was calculated in the official budget at 1,982,394 purses;* the expenditures at 1,763,128 purses.

The public debt of Egypt consists chiefly of foreign loans. These are divided into two classes, namely, general loans, contracted by the State, and loans of the Khedive, as greatest of land-owners, raised on his individual responsibility.

The following table shows the actual state of the debt:

<table>
<thead>
<tr>
<th>Debt Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funded debt</td>
<td>£49,270,380</td>
</tr>
<tr>
<td>Floating debt</td>
<td>7,600,000</td>
</tr>
<tr>
<td>Personal debt of the Khedive</td>
<td>13,174,360</td>
</tr>
<tr>
<td>Total</td>
<td>£70,044,740</td>
</tr>
</tbody>
</table>

The army is raised by conscription. It consisted, in January, 1875, of four regiments of infantry, of 3000 men each; of a battalion of chasseurs, of 1000 men; of 3500 cavalry, 1500 artillery, and two battalions of engineers, of 1500 each. There are, besides, two regiments of black troops, of Sudan, numbering 5000 men.

The Egyptian navy comprised, in 1875, 7 ships of the line, 6 frigates, 9 corvettes, 7 brigs, 18 gunboats and smaller vessels, and 27 transports.

The commerce of Egypt is very large, but consists, to some extent, of goods carried in transit. The total exports for the year 1873 amounted to about 1,450,000,000 piastres; the imports to about 600,000,000 piastres. The merchant navy, in 1872, comprised 585 vessels of a total burthen of 59,874 tons.

The commerce of the world has been greatly benefited by the Suez Canal, which connects the Mediterranean with the Red Sea. Starting from Port Said, forty miles east of the Damietta mouth of the Nile, it proceeds across the isthmus and through lakes Menzaleh, El Ballah, and Timsah, on the shores of which latter stands the new town of Ismailia, and through the Bitter lakes to Suez. Its total length is 92 miles. Its actual width over the greater part of its length, does not permit of two vessels passing or crossing each other in the canal itself; but there are numerous sidings, by which vessels are enabled to cross one another; vessels measuring 430 feet in length and drawing 25 feet 9 inches of water have passed safely through the canal. Its actual cost, according to the report for the year 1875, was £17,518,729, exclusive of £1,360,000 bonds issued to pay for coupons on shares in arrear during part of the period of construction.

* 1 purse = 300 piastres = £25 gold
The number and tonnage of vessels which passed through the canal in each of the five years, 1870 to 1874, were as follows:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>VESSELS</th>
<th>TONNAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1870</td>
<td>491</td>
<td>436,618</td>
</tr>
<tr>
<td>1871</td>
<td>761</td>
<td>761,875</td>
</tr>
<tr>
<td>1872</td>
<td>1,082</td>
<td>1,439,169</td>
</tr>
<tr>
<td>1873</td>
<td>1,171</td>
<td>2,085,270</td>
</tr>
<tr>
<td>1874</td>
<td>1,264</td>
<td>2,423,672</td>
</tr>
</tbody>
</table>

Egypt had, on the 1st of January, 1875, a railway system of a total length of 955 English miles, open for traffic, with 502 miles under construction. With the exception of a short line of about 5 miles, all of the Egyptian railways are State property.

The telegraphs of Egypt were, at the commencement of 1875, of a total length of 4094 miles, the length of wires being 8690 miles. The whole of the telegraphs are State property.

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Commission from Egypt to the International Exhibition:

**His Highness, Prince Mohammed Tawfic Pacha**, President.

**His Excellency, Raghib Pacha**, Minister of Commerce, Vice-President.

**H. Brugsch Bey**, Commissioner-General.

**Commissioners**.

**General Stone.**

M. Mahmoud Bey, Astronomer.

M. Mariette Bey, Director of the Museums of Antiquities.

M. Gastinel Bey, Professor in the Medical School.

M. Rogers, Director in the Ministry of Public Instruction.

M. Acton, Chief of Division, Ministry of Commerce.

M. Baudry, Architect.

M. Delchevalerie, Attache.

**Resident Members in Philadelphia.**

H. Brugsch Bey, Commissioner-General.

E. Brugsch, Chief of Transportation and Installation.

A. Behmersd, Attache, Secretary.

Edward Elias, Secretary and Interpreter.

M. Daninos, Attache for Special Mission.
TUNIS.

TUNIS, a country of Africa, and one of the Barbary States, is bounded on the north by the Mediterranean, on the west by Algeria, on the south by the Desert, and on the east by Tripoli and the Mediterranean. Its greatest length from north to south is about 440 miles; its average breadth, 160; area, upwards of 75,000 square miles; population, according to latest authorities, 1,200,000. Tunis is traversed by branches of the great Atlas range, which, in fact, has its proper termination here. The northern coast is rocky and steep, with numerous bays, of which the largest is the Gulf of Tunis; and two of its promontories, Capes Blanco (Ras-el-Abid) and Bon, are the most northern in Africa. The eastern coast, on the other hand, is flat, sandy, and infertile, like that of Tripoli, but has two large gulfs, Hammamet and Cabes. The southern part of Tunis belongs to the desert steppe known as Belud-el-Jerid. There is only one fresh water lake of any consequence, that of Biserta or Bensart, near the north coast. The brooks and torrents of Tunis either lose themselves in the sand, or find their way to the sea after a short course. None are navigable. The longest is the Mejerdah, which flows in a generally northeastern direction into the Gulf of Tunis. Other streams are the Ved-el-Milianah and the Ved-el-Kebir. There are several mineral springs in the country. The climate of Tunis is fine, and the soil exceedingly fertile, so that, in spite of a very poor knowledge of agriculture, wheat, barley, maize, dhurra, pulse, olives, oranges, figs, grapes, pomegranates, almonds, and dates are abundantly produced. The culture of oil is more attended to, and is very lucrative. Great herds of cattle are fed on the plains; the sheep are famous for their wool; and the horses and dromedaries are no less celebrated. The chief mineral products are sea-salt, saltpetre, lead ore, and quicksilver. In the vicinity of the sea-coasts, considerable manufacturing and trading industry is manifested, more particularly in the cities of Tunis and Susa. Wool, olive oil, wax, honey, soap, hides, coral, sponges, dates, wheat, and barley are the principal exports. Cloth, leather, silks, muslins, spices, cochineal, and arms are transported by means of caravans to the interior of Africa, whence in exchange are brought for exportation to European and other countries, senna, gums, ostrich feathers, gold, and ivory. Total exports in 1874, valued at 28,815,358 francs; imports, 25,193,785 francs. During the same year the entries at the port of Tunis (Goulette) were 779 vessels, 116,927 tons burthen; departures, 763, of 108,031 tons burthen.

The Bey of Tunis receives his investiture from Constantinople; without the Sultan's authority he can neither declare war, conclude peace, nor cede territory; the Sultan's name must appear on all the coinage; the army must be at the disposal of the Sublime Porte. In internal matters the power of the Bey remains absolute.

The Tunisian army comprises about 4000 regulars, 5000 Karougis (descendants of the Turkish janissaries), 5000 Zouaves (infantry), and 1500 spahis (cavalry). In time of war the irregular cavalry can be increased to about 3000. The navy consists of two vessels, carrying 10 guns, and crews aggregating 250 men. The merchant navy comprises 300 vessels, ranging from 10 to 150 tons burthen.

There are about forty miles of railways in operation. There is at Tunis, a French, and also an Italian post office.

French telegraph lines connect the city of Tunis with various towns within the borders of the regency, as well as with Algiers and Europe.

Commission from TUNIS to the International Exhibition:

His Excellency Sidi Heussein, General of Division, Minister of Instruction and Public Works, President.

G. H. Heap, U. S. Consul, Resident Commissioner.
ORANGE FREE STATE.

The republic of the Orange Free State is situated on the northeast boundary of Cape Colony, and is bounded as follows: On the west and northwest by the territory claimed for the chief, Nicholas Waterboer, under the name of Griqualand West, and by Betsuanaoland, respectively, on the north and northeast by the Transvaal republic, on the east by the colony of Natal, and on the south by British Basuto-land, the Native Reserve Lands, and the Cape Colonial divisions of Albert and Colesberg.

Its area is roughly taken to be about 70,000 square miles, but no accurate computation has hitherto been made, and the probability is that the actual extent will be found considerably greater.

The country consists of extensive undulating plains, which slope from the great Watershed, northward and westward, respectively, to the Vaal and Orange rivers, and is intersected at varying intervals by the Wilge, Rhenoster, Vaal, Vet, and Riet rivers, all of which empty their waters into the Vaal river, and the Caledon river, which empties into the Orange river. The courses of the large rivers are extremely tortuous and hollow, their banks being for the greater part very precipitous, and generally lined with water-willow, mimosa, and other trees indigenous to this country. The streams are usually fordable; during the rainy season, however, they become swollen and impassable.

The Orange Free State is, for the greater part, a grazing country, and though agriculture is everywhere attended to on a larger or smaller scale, according to the natural capabilities of the farms, still it is chiefly in the southern and eastern districts that it is carried on as the principal source of production, and it is almost exclusively from the districts of Rouxville, Lady Brand, Winburg, Bethlehem, and Harrismith, that grain is brought into the markets of the other districts.

Neither is it altogether without mineral wealth, as diamonds, rubies, and other precious stones have been discovered in various parts of the country. Coal also of a very good quality, and in paying quantities, has been found in the Winburg district, as well as on farms in the Lady Brand and Harrismith districts.

In the early days of this republic the distribution of animal life was a subject of great interest, from the fact of the immense variety of wild animals inhabiting the country. Even now the lion still frequents some sections of it. But, owing to the advance of civilization and human industry, all the larger animals, as the elephant, rhinoceros, hippopotamus, and giraffe, have retreated far away. Upon its vast undulating plains, however, a large and splendid variety of the antelope tribe roams in countless numbers. The country being favorable for the rearing of horses, cattle, and woolled sheep, the number of the latter contained therein may be estimated by millions.

Birds abound in great variety, particularly those of the larger kinds, among which might be enumerated the ostrich, eagle, vulture, pelican, hawk, and various species of crane.

The staple articles of export from the Orange Free State are wool and skins, and of late years diamonds and other precious stones, while owing to the mining population in the disputed territories along the Vaal river, a large trade in grain and other agricultural produce has been productive of great wealth to the country.

From the same cause, although more indirectly, trade in all articles of import, such as ironware implements, and manufactures in woolen, cotton, and silk goods, and articles for consumption, either as necessaries or luxuries, has received a great stimulus, and the commercial community is to all appearance in a healthy and prosperous condition.
The average height of the Orange Free State above the level of the sea is about 5000 feet, and the climate is generally salubrious. The winter here is cold but dry, the summer usually warm and moist, though droughts are sometimes experienced in the summer months. The air, however, is healthy and dry, as a rule, and this is particularly felt at Bloemfontein and its vicinity; consequently numbers of invalids suffering from pulmonary affections resort to Bloemfontein, and experience much benefit from a residence is this part of the country.

In other respects it has been noticed that the changes of the seasons are to a greater or less degree, according to their duration, accompanied by a greater liability to colds and fevers, generally of a typhoid type, and inflammatory affections, especially amongst children.

The government of the Orange Free State is republican, and its constitution vests the legislative powers in the Volksraad, the members of which are elected by their constituents for four consecutive years. The whole number of representatives (there being one for each chief town of a district, and one for each field cornetcy) is fifty-two. Of this number, the half retire by rotation every two years, and a new election takes place to fill up the vacancies.

The educational department of the country is only now receiving that vital attention which a subject of so vast importance to any country ought to have; and the legislature has only of late years been impressed with the absolute necessity of placing this department on the best possible footing. Accordingly, a fund is gradually being raised for educational purposes, which in 1876 will place at the disposal of the government an amount of £36,000.

Meantime, in accordance with an order made in 1872, an inspector of education has been appointed, who has already entered upon the task of remodeling the whole educational system. It is only right, nevertheless, to state that a government allowance of £50 a year has for years past been given to each district town, on condition of its subscribing at least one-half more, and attempts to establish good schools have everywhere been made by the district school committees, comprising the Landdrost, Dutch Reformed Church, and three elected members, with varying success in some places, but in others only to meet with failure, which is principally to be attributed to the defective system hitherto pursued.

The principal support hitherto afforded by the government consists in the liberal allowances made for the salaries of teachers in the Grey College; but owing to the short time that has elapsed since the arrival of one of them, and various other circumstances beyond the control of the government, the desired results are still to be looked for. Very praiseworthy efforts have also been made on behalf of education by the Anglican Church, in schools established at Bloemfontein and at Smithfield, and this latter has already shown very satisfactory results.

The revenue of the State, for the year 1874-75, was £190,958; the expenditure, during the same year, £98,242.

The government lands of the Orange Free State are still very considerable, though as nought compared with their original size, owing to the sales of farms which have been held from time to time. The value of fixed property of all kinds has increased greatly within the last few years. Even in the districts of Harrismith and Kroonstad, where land formerly was almost valueless, farms are now eagerly sought after, and change hands at very high rates. The average price of land throughout the whole State may now be fixed at 10s. per morgen. A rough estimate fixes the number of farms throughout the country as between 6000 and 7000. Fixed property changes ownership by registration. The population of the State is estimated at about 75,000 white, and 25,000 colored or native.

Commission from Orange Free State to the International Exhibition:

CHARLES W. RILEY, Consul-General.
LUXEMBOURG.

The Grand Duchy of Luxembourg is connected with the Netherlands in the person of the sovereign, but has a constitution and administration of its own. The King of Holland, as Grand Duke, appoints a deputy-governor. Dutch Luxembourg was a part of the Germanic Confederation from its formation, in 1815, till its dissolution, in 1866. In 1867 its neutrality was guaranteed by the great powers. Its present constitution dates from 1868. The chamber of deputies consists of 40 members chosen for 6 years by direct vote in the electoral districts. Area, 990 Eng. sq. miles. Population (1871) 197,528, the most of whom are engaged in agriculture. The chief products are wine, corn, hops, hemp, and flax. In the eastern districts there are iron mines, and lime and slate quarries. The majority of the inhabitants are Walloons, the rest mainly Germans. The capital is Luxembourg. By the law of 1868, the army consists of 13 officers, 500 under-officers and privates, besides 110 gendarmes.

CHINA.

The following table gives the area and population of the various divisions comprising the Chinese empire:

<table>
<thead>
<tr>
<th>Area in English Sq. Miles</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,534,953</td>
<td>405,213,152</td>
</tr>
<tr>
<td>362,313</td>
<td>3,000,000</td>
</tr>
<tr>
<td>1,283,035</td>
<td>2,000,000</td>
</tr>
<tr>
<td>643,734</td>
<td>6,000,000</td>
</tr>
<tr>
<td>90,300</td>
<td>8,000,000</td>
</tr>
<tr>
<td>2,310</td>
<td></td>
</tr>
<tr>
<td>2,982</td>
<td>1,000,000</td>
</tr>
</tbody>
</table>

Total 3,924,727 425,213,152

China proper is included between 18° 15' and 43° 15' north latitude and 98° and 120° 40' east longitude. Its coast-line exceeds 2500 miles, and its land frontier 4400 miles. It is divided into eighteen provinces, and includes the two large islands of Formosa and Hainan. The administration of the empire is parceled out into separate governments, corresponding with the provincial divisions, each of which has a complete organization, exchequer, army, and naval force of its own. Besides providing for the cost of its own administration, each province is required to remit annually to Peking a certain portion of its revenue to meet the expenses of the court, central government, and garrison of Peking, as well as to provide for exigencies arising in other provinces, and for the requirements of the garrisons in Turkestan, Mongolia, and Manchuria, which are administered by military governors.

According to the latest reports, the imperial army comprises a total of 850,000 men, including 678 companies of Tartar troops, 211 companies of Mongols, and native Chinese infantry, a kind of militia, numbering 120,000 men. The native soldiers do not live in barracks, but in their own houses, mostly pursuing some civil occupation.

The Chinese are pre-eminent for their indefatigable industry. Of the immense
territory peopled by them, there is scarcely a rood of arable ground that is not assiduously cultivated. Unfortunately, however, their husbandry is, to a great extent, nullified by the rude and ill-adapted implements employed. Therefore scientific agriculture is but slightly advanced in China, although the Chinese system of land irrigation is superior to that of any other people. As a manufacturing nation the Chinese are highly distinguished; porcelain originated entirely with them, and the art of spinning silk they also gave to the West. The lacquered ware produced in China, though very beautiful, must be considered inferior to that of Japan, but in the more minute arts of carving and inlaying, the Chinese have no superiors. Their ivory and mother of pearl industry is too well known to need description. Gunpowder, though a Chinese invention, is little manufactured, and that little of indifferent quality. Paper is ingeniously made of various materials; it is, in general, thin, silky, and highly absorbent of ink.

Chinese trade has the peculiarity of being, for the most part, internal, the country supplying most articles of subsistence or luxury, and is carried on by means of canal and river navigation. The principal exports are tea, porcelain, raw and spun silk, sugar, rhubarb, embroidery, lacquered wares, and carved articles of domestic ornament. The imports consist mainly of cotton and woolen goods, opium, raw cotton, furs, and edible birds' nests, which form an expensive luxury, and are held in high esteem. The total value of commodities exported from China, in 1865, reached the figure of $173,699,085, as against imports of $238,504,520. Of the exports, tea is the chief, showing a total quantity of 223,679,182 pounds shipped. The export of raw silk for the same year aggregated 40,726 bales, and of cotton, 35,855,792 pounds.

The grand canal, about 700 miles in length, has greatly facilitated the internal trade of the country. China is traversed in all directions by 20,000 imperial roads, most of which are badly kept. There is a postal service, but of a very rude kind.

Education, as the high road to official employment, to rank, wealth, and influence, is eagerly sought by all classes. Literary proficiency commands everywhere respect and consideration, and primary instruction penetrates to the remotest villages. Self-supporting day-schools are universal throughout the country, and the office of teacher is followed by a great number of the literati. Government provides state examiners, but does not otherwise assist in the education of the people.

The Chinese executive system is based on those noteworthy competitive examinations which are intended to sift out from the millions of educated Chinese the best and ablest for the public service.

Commission for CHINA to the International Exhibition:
ROBERT HART, ESQ., Inspector General of Imperial Maritime Customs.
G. DETRING, ESQ., Commissioner of Customs.
E. B. DREW, ESQ., Commissioner of Customs.
W. SCOTT FITZ, ESQ.
H. SEYMOUR GEARY, ESQ.

Resident Commissioners in Philadelphia.
JAMES H. HART, ESQ., Commissioner of Customs.
ALFRED HUBER, ESQ., Commissioner of Customs.
J. L. HAMMOND, ESQ., Commissioner of Customs.
EDWARD CUNNINGHAM, ESQ.
W. W. PARKIN, ESQ.
F. P. KNIGHT, ESQ.
W. NOYES MOREHOUSE, ESQ., Imperial Maritime Customs, Secretary.
JAPAN.  

JAPAN proper comprehends four large islands, viz.: Niphon (the Japanese mainland), Sikok or Skopf, Kiusiu, and Yesso, and extends from 31° to 45° 30' north latitude. The empire of Japan includes about 3800 small islands and islets besides the four larger ones, and is situated between 26° and 52° north latitude, and 128° and 151° east longitude. It is bounded on the north by the Sea of Okotsk, on the east by the north Pacific Ocean, on the south by the eastern Sea of China, and on the west by the Sea of Japan. The islands of Japan appear to be of volcanic origin, and that part of the Pacific on which they rest is still intensely affected by volcanic action. Earthquakes occur very frequently in Japan, although certain parts of the country are exempt. Japan has been called the land of mountains: but though these are very numerous, and many of them volcanic, they are of moderate elevation, and rarely attain the limits of perpetual snow. The country generally is of moderate elevation, with fertile valleys, picturesque landscapes, and a coast indented with magnificent harbors; the soil is productive, rich in mineral wealth, and teeming with every variety of agricultural produce. Springs, lakes, and rivers are numerous; but the last, being sand-choked, are valuable chiefly for the purposes of irrigation.

Our knowledge of the climate of Japan is yearly increasing. June, July, and August are the months of rain, which sometimes descends in unceasing torrents. The months of October and November are the pleasantest and most genial of the twelve, when fine weather is enjoyed without the scorching heat of summer. The summers are very hot, and the winters in the northern parts almost Siberian; the thermometer rising to 56° in the shade in the former, and sinking to 18° below zero in the latter season. Alcock says: "The thermometer in the shade (during the summer) ranges from 70° to 85°, and averages 80° between the morning and the evening, while it is sometimes below 70° at night." Hurricanes and waterspouts are frequent; dense fogs hide the sun, sometimes for four or five days together; and about the change of the monsoons, typhoons and equinoctial gales frequently sweep the Japanese seas.

The following figures are furnished by the Japanese commission:

<table>
<thead>
<tr>
<th>Category</th>
<th>Figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>23,740 ris (the ri equals 2½ miles).</td>
</tr>
<tr>
<td>Population</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>16,891,729</td>
</tr>
<tr>
<td>Female</td>
<td>16,408,946</td>
</tr>
<tr>
<td>Total</td>
<td>33,300,675</td>
</tr>
<tr>
<td>Imports</td>
<td>22,841,166,93 yen.*</td>
</tr>
<tr>
<td>Exports</td>
<td>18,367,259.29</td>
</tr>
<tr>
<td>Revenue</td>
<td>81,552,294.</td>
</tr>
<tr>
<td>Expenditure</td>
<td>79,881,820.</td>
</tr>
<tr>
<td>Army</td>
<td>42,073 men</td>
</tr>
</tbody>
</table>

The navy consists of 20 vessels, manned by 3757 men.

The country is rich in minerals, gold, silver, iron, sulphur, and especially copper abound. There are also large quantities of coal. Amongst the most remarkable of its vegetable productions is the camphor tree, the varnish or lacquer tree, the paper mulberry tree, the vegetable wax tree, the tea shrub, the tobacco plant, and the rice plant. The principal manufactures are those of silk and cotton. The internal trade is very extensive, and rigid regulations are in force to protect and encourage home industry. In the mechanical arts the Japanese have attained great excellence, especially in metallurgy, and in the manufacture of porcelain, lacquer ware, and silk fabrics. In some of these departments works are produced so exquisite in design and execution, as to more than rival the best products of Europe.

* The yen equals 99.7 cents gold.
The Japanese government is organized on a basis which is partly European. The Mikado is supreme in temporal and spiritual matters, but the work of government is carried on by the Great Council, which is divided into three sections, denominated Centre, Right, and Left. The Centre is composed of the Prime Minister, Vice Prime Minister, and five advisers. The Left is made up exclusively of the Council of State, the functions of which are analogous to those of the French Conseil d'Etat, so far as the preparation and discussion of laws is concerned. The Right includes all the ministers and vice-ministers of eight departments into which the administration is divided. The ministers, either individually or united in a Cabinet, decide all ordinary questions; but points of real importance are reserved for the Great Council, presided over by the Mikado. The local administration in the provinces is in the hands of prefects, one of them residing in each of the 75 districts into which Japan is divided.

Education is very general in Japan. In 1871 a Ministry of Instruction was created, and as a result of its efforts, public primary schools are increasing rapidly, especially in the towns; but the movement is far more marked in the western provinces and on the coast than in the interior. Private schools are more abundant still, and any person being at liberty to establish them,—subject to a permission, which is always given,—they spring up with facility wherever wanted. In order to facilitate the acquisition of foreign languages, the government has engaged European professors, and has also sent, at public expense, a large number of students to America and Europe. The first line of railway, from Yokahama to Yeddo, 17 miles long, was opened for traffic on the 12th of June 1875, and other lines were in progress at that date.

The post office carried 17,095,842 letters in 1874. The number of post offices at that date was 3244.

Commission from the JAPANESE EMPIRE to the International Exhibition:

HIS EXCELLENCY OKUBO TOSHIMICHI, Minister of the Interior and Privy Councillor, President,

HIS EXCELLENCY LIEUTENANT-GENERAL SAIGO TSUKUMICHI, Imperial Army, Vice-President,

MR. KAWASE HIDEHARU, Vice-President Bureau of Agriculture and Industry, Commissioner-General.

MR. TANAKA YOSHIIO, Ministry of the Interior.
MR. SEKIZAWA AKEKIO, Bureau of Agriculture and Industry.
MR. YAMATAKA NOBUAKIRA, Bureau of Agriculture and Industry.
MR. SHIODA MASASHI, Bureau of Agriculture and Industry.
MR. SUZUKI TOSHINOBU, Bureau of Agriculture and Industry.
MR. SUGIYAMA KADZUNARI, Bureau of Agriculture and Industry.
MR. HIDAKA LIRO, Lieutenant Imperial Army.
MR. AMORI KORENKA, Bureau of Agriculture and Industry.
MR. ISHIHARA TOYOSURI, Bureau of Agriculture and Industry.
MR. ISHIDA TAMETAKE, Bureau of Agriculture and Industry.
MR. YAMAO TSUNETARO, Bureau of Agriculture and Industry.
MR. KUBO HIROMICHI, Bureau of Agriculture and Industry.
MR. FUKUI MAKOTO, Bureau of Agriculture and Industry.
MR. SHIBATA HIROSHI, Bureau of Agriculture and Industry.
MR. MAKIYAMA KOHEI, Bureau of Agriculture and Industry.
MR. ASMI TCHUGA, Bureau of Agriculture and Industry.
MR. ISHII YOSHITAKA, Bureau of Agriculture and Industry.
MR. ASAHI SUSUMU, Bureau of Agriculture and Industry.
MR. YOSHIIO NAGAMASA, Bureau of Agriculture and Industry.
MR. SASASE MOTOAKIRA, Bureau of Agriculture and Industry.
MR. TSUCHIYA SHIGENAO, Attache.
MR. YOSHIRAWA NISUKE, Attache.
MR. AKUSAWA SUSUMU, Attache.
MR. SANDA TADASHI.
MR. TAWARA WAKICHIRO, Attache.
HAWAII.

The islands forming the kingdom of Hawaii are eight in number, exclusive of one or two small islets. The chain runs from southeast to northwest, and lies in the middle of the Pacific Ocean, in latitude 19°—22° north, and longitude 155°—160° west. Area 7400 square miles; population (1872), 56,897, of whom 2539 were Europeans. The names, with the areas, of the respective islands are: Hawaii (formerly Ogyhee), 4210 square miles; Maui, 760; Oahu, 600; Kauai, 590; Molokai, 270; Lanai, 150; Nihau, 97; and Kahoalawe, 65 square miles.

Situated near the middle of the Pacific Ocean, about half the distance from San Francisco in North America that they are from Melbourne in Australia and Canton in China, the Sandwich Islands form an oasis in the middle of a wide ocean waste, and offer convenient stations for the refreshment and repair of the merchantmen and whalers that traverse the Pacific. They are of volcanic origin, and contain the largest volcanoes, both active and quiescent, in the world. The most prominent physical features of the group are the two lofty mountain peaks of Hawaii, Mauna Kea and Mauna Loa, each of which is 14,000 feet in height, or within 1860 feet of the loftiest of the Alps. Besides those two chief peaks, which stand apart from each other, and one of which is covered with perpetual snow, the island is traversed by other mountains, which give it a rugged and picturesque outline, and in some cases front the sea in bold, perpendicular precipices, from 1000 to 2000 feet in height. In general, the islands are lofty—the small islet of Lehua is 109 feet high, and the upland regions of Kauai are, on an average, 4000 feet above sea level. Within the coral reefs, which, in single, and more rarely in double ridges, skirt portions of the coasts, sandy shores, leading up to rich pasture-lands, and occasionally to productive valleys, are frequently seen. Everywhere, however, the configuration of the surface betrays the volcanic origin of the islands. Extinct volcanoes occur in most of the islands. Kilauea, on the Mauna Loa mountain in Hawaii, the largest active volcano in the world, has an oval-shaped crater nine miles in circumference, and is 6000 feet above sea level. In the centre of this immense caldron is a red sea of lava, always in a state of fusion. At intervals, the lava is thrown to a great height, and rolls in rivers down the mountain sides. On Maui, the crater of Mauna Haleakala (House of the Sun), by far the largest known, is from 25 to 30 miles in circumference, from 2000 to 3000 feet deep, and stands 10,000 feet above sea level. Within this huge pit, about 16 basins of old volcanoes, whose ridges formed concentric circles, have been counted. Good harbors are few. The chief is that of Honolulu, in Oahu, with 22½ feet of water in its shallowest parts. On the same island is Puu-loa, an immense basin, with 12 feet of water on the bar at low tides. During the prevalence of the trade wind, which blows southwest for about nine months of the year, the south shores of the islands afford safe anchorage almost everywhere.

At Honolulu, the extremes of temperature in the shade during the 12 months are 90° and 50°, and the diurnal range is 12°. Rains brought by the northeast trade wind are frequent on the mountains; but on the leeward side of the islands little rain falls, and the sun is rarely obscured by the clouds. The soil, the constituent parts of which are mainly scoria, decomposed lava, and sand, is generally thin and poor. This, however, is not universally the case. At the bases of the mountains and in the valleys, where abrasion, disintegration, and the accumulation of vegeta-
ble mould have gone on for ages, there are extensive tracts as fertile as they are beautiful. The islands produce fine pasturage in abundance, and large herds are bred and fattened to supply meat to the whalers and merchant ships. The upland slopes of the mountains are clothed with dense forests; and lower down are grassy plains and sugar and coffee plantations. Basalt, compact lava, coral rock, and sandstone are used for building purposes. No metals occur. Several of the islands, especially Hawaii and Kauai, are well supplied with rivers, which, from the size and conformation of the group, are necessarily small, but afford great facilities for irrigation. Vast numbers of semi-wild horses roam the islands, and while they consume the pasturage and break down the fences, are of little use. The indigenous fauna is small, and consists mainly of swine, dogs, rats, a bat that flies by day, birds of beautiful plumage, but for the most part songless. Among the indigenous trees and plants are the sugar-cane, banana, plantain, cocoanut, candle-nut, various palms, the taro, a succulent root which formed the staple of the food of the natives, and is still generally used, the cloth-plant, and the ti, the roots of which were baked and eaten, while the leaves were used for thatching huts. Cattle and other useful and foreign animals and plants were introduced by Vancouver and other navigators. In 1860 there were 30,000 mules and semi-wild horses in the kingdom.

The government of Hawaii is a constitutional monarchy.

The public revenue during the biennial period ending March 31, 1874, was $1,136,524 dollars; the public expenditure, $1,192,512 dollars. The public debt, at the same date, $355,050 dollars.

The principal exports during the year 1874 were: Sugar, 24,567,000 pounds; rice, 1,188,000 pounds; coffee, 75,000 pounds; pulu, 418,000 pounds; tallow, 126,000 pounds; wool, 400,000 pounds; hides, 94,575. Total value, $1,839,000 dollars. The imports during the same year amounted in value to $1,310,000 dollars.

Of 115 vessels that entered the port of Honolulu during 1874, 64 were American, 30 English, 15 Hawaiian, etc.

Commission from The Hawaiian Islands to the International Exhibition:

W. L. Moehonua, Minister of the Interior and President of the Commission.
Hon. S. G. Wilder, Privy Councillor of State.
Hon. J. U. Kawainui, Privy Councillor of State.
Elisha H. Allen, Jr., Hawaiian Consul General, New York.
Rev. Samuel C. Daman.
Mr. William Tufts Brigham.
BRAZIL.

BRAZIL is the most extensive state of South America. Towards the interior, it borders on all the other states of that continent except Chili and Buenos Ayres—on Uruguay, the Argentine Confederation, Paraguay, Bolivia, Peru, Ecuador, New Granada, Venezuela, and English, Dutch, and French Guiana; while its seaboard, beginning about 200 miles to the north of the Amazon, and reaching to within the same distance of the Plata, projects into the Atlantic fully 1000 miles to the east of the direct line between its two extremes. This immense country extends between latitude 5° 10' north and 46° 10' south, and between longitude 35° and 70° west, being, in round numbers, 2600 miles long and 2500 broad. The area, according to official accounts, is 3,100,000 square miles, with a population, in 1872, of 12,000,000, including 1,683,684 slaves, and consisting of aboriginals, Africans, and Europeans, the first being proportionately fewer than in most parts of America.

Brazil differs in many respects from most of the other divisions of the new continent. It knows nothing of the volcanoes and earthquakes of the Pacific coast; with winds blowing constantly from the Atlantic Ocean, it is exempted from those droughts which are always blighting one or other of the slopes of the Andes, the remoter slope in Peru and Chili, and the nearer in Buenos Ayres and Patagonia; its mines, again, are as famous for gold and diamonds as those of the western Cordilleras for silver. In its hydrography, Brazil contrasts unfavorably with the other divisions. While the Amazon and the Plata, the Mississippi and the St. Lawrence—not to mention countless rivers of inferior magnitude on both shores—are for the most part practicable almost to their sources, the streams of Brazil, with the exception of the Amazon, are mostly impeded throughout by cataracts and shallows, thus counterbalancing, as it were, its matchless seaward facilities by the deficiencies of its inland communications. Further, the most navigable of these streams, instead of entering the open sea, mingle their waters with those of the Plata or of the Amazon—the Parana and the Uruguay joining the former, and the Madeira, the Tapojos, the Zingu, and the Tocantins, the latter; and even among those that do send their tribute at once to the ocean, a similar direction is sometimes impressed by the dividing ridges—the San Francisco, for instance, by far the largest of them, running to the northward parallel with the southeast coast through 11° of latitude, and leaving only 4° of longitude for its remaining course to the Atlantic. These hydrographic peculiarities must be the more strongly felt, inasmuch as a humid surface and a luxuriant vegetation conspire to render ordinary roads all but impossible.

Among the mineral treasures, besides gold and diamonds, already mentioned, iron of superior quality is abundant; and salt, also, is extensively produced in saline marshes by the alternate processes, according to the season, of inundation and evaporation. The productions of the soil are, of course, equally various and rich. The cotton is naturally excellent, and the tea-plant of China has been introduced, though hitherto with indifferent success. The exports necessarily vary in different sections of the country. From the north, they are coffee, cotton, cocoa, sugar, and tobacco; from the south, hides, tallow, horns, etc.; and from the middle, drugs, diamonds, gold dust, dyes, rice, manioc, tapioca, spirits, and rosewood.

The total value of the imports into Brazil, including bullion and specie, averaged about $91,000,000 in the five years 1869—1873, and that of the exports, during the same period, likewise including bullion and specie, about $110,000,000.
The executive authority is vested in the Emperor, who, besides being aided by a council of state, must act through responsible ministers. The legislature consists of two chambers, which sit four months every year. Both the deputies and the senators, who must have annual incomes respectively of 800 milrees and 1600, are indirectly elected by voters who must possess 200 milrees per annum—the former for four years, and the latter for life. The senate, however, appears to represent the crown as well as the people, inasmuch as each constituency merely nominates three individuals for his majesty's choice of one. Justices of the peace, also, are appointed by the respective communities; and in the courts generally, whether civil or criminal, there prevails trial by jury.

The budget for the year ending June 30th, 1876, calculates the receipts at 107,133,070 milrees, and the expenditures at 102,634,053 milrees.* The public debt, on the 1st of April, 1875, was, including paper money, 664,739,395 milrees.

In a vote passed by the House of Congress, June, 1869, the strength of the standing army was fixed at 30,000 on the peace footing, and at 60,000 on the war footing. There were actually under arms, according to official reports, at the end of April, 1874, 28,933 troops, of which number 2397 were in garrison in Paraguay.

The imperial navy consisted, in 1875, of 61 men-of-war, carrying 230 guns, and crews aggregating 4136.

The empire possessed, at the end of 1873, railways of a total length of 714 English miles, open for traffic. There were railways of an aggregate length of 397 miles in course of construction at the end of June, 1874. There were, at the beginning of the year 1874, telegraph lines to the extent of 3375 miles. The number of offices was 74 at the same date. The post office carried 12,251,000 letters in the year 1873, of which number 6,548,000 came from or to Rio de Janeiro, the capital.

Commission from Brazil to the International Exhibition:

His Highness, Gaston d'Orleans, Conde d' Eu, Marshal of the Army, President.
Viscount de Jaguay, 1st Vice-President.
Viscount de Bonn-Retiro, 2d Vice-President.
Viscount de Souza Franco.
Joaquim Antonio de Azevedo.
His Excellency, A. P. de Carvalho Borges, Envoy Extraordinary and Minister Plenipotentiary of His Majesty the Emperor of Brazil.
Fellipe Lopes Netto, Vice-President.
Dr. Jose de Saldanha.
Dr. Nicolas Joaquim Moreiro.
Pedro Paes Leme.
Capt. Luiz de Saldanha, Naval Attaché.
Dr. J. M. de Silva Coutinha.
Mr. B. F. Torrejas de Banos, Secretary of Legation.

* The milreis = 1000 reis, 54 ½ cents.
ARGENTINE REPUBLIC.

The Argentine Republic—the confederation of the Rio de la Plata, or River of Silver, South America—is a federal union of fourteen provinces and three large territories, covering an almost unbroken plain of 1,200,000 square miles, with a population of about 2,000,000 inhabitants. It extends from 24° south latitude to the straits of Magellan, and from 59° west longitude to the Andes.

Each province has its own legislature, courts of justice, and political government; but civil, penal, and commercial laws are common to all the provinces, codes of such laws having been issued by the congress of the confederation.

The President of the republic is elected for a term of six years by the representatives of the provinces, and is not eligible for re-election. The Vice-president, elected in the same manner, fills the office of chairman of the Senate, but has otherwise no political power. The President is commander-in-chief of the troops, and appoints to all civil, military, and judicial offices; but he and his ministers are responsible for their acts, and liable to impeachment before the Senate by accusation of the House of Representatives. Legislative power is vested in a Senate, of members elected by the provincial legislatures, two from each province, and a House of Representatives, elected by the people, and apportioned to each province according to population. The senators hold their office for nine years, and the representatives for three.

The chief exports of the country are wool, hides, salt beef, and tallow; but its resources embrace all the products of the tropical and temperate zones, as may be seen by the catalogue of its exhibits.

The farming stock of the republic is estimated at 15,000,000 horned cattle, 4,000,000 horses, and 80,000,000 sheep, whose aggregate value cannot fall short of $200,000,000, gold, yielding about $50,000,000 of export produce per annum.

The total trade may be estimated at $100,000,000 per annum. In 1874 the imports amounted to $55,991,117, against over $71,000,000 in the previous year. The exports amounted to $431,047,112, against $145,869,314 in 1873. The decrease in imports and exports was caused by a severe commercial crisis, from which the country is just recovering.

The annual revenue amounted to $20,217,231 in 1873, but the crisis reduced it in 1874 to $16,090,661, or over $2,000,000 less than in 1872, and nearly $4,500,000 less than in 1873. The general expenditures in 1874 reached the sum of $28,596,006. The total debt in January, 1875, was $38,416,043.

The regular army numbers 10,897 men, divided as follows: cavalry 4800, infantry 4400, artillery 400, and 1173 special troops. The navy is composed of 26 vessels, among them 2 ironclads and 6 gunboats, with crews amounting in all to 900.

The capital of the republic is provisionally situated at the city of Buenos Ayres, capital of the province of the same name.

(The statistics given above have been furnished by the commission of the Argentine Republic.)

A network of railways, constructed mainly at the expense of the State, has been in progress for several years. At the end of the year 1873 there were 664 miles open for traffic, and 642 miles of State railways in course of construction. There were
besides, at the end of 1873, railways of a total length of 1997 miles, sanctioned by the government, including an international line from Buenos Ayres to Chili, of 894 miles.

At the end of September, 1873, there were 4170 miles of telegraph lines in operation. The total length of telegraph wires at the same date was 8267 miles. The number of telegraphic dispatches during the same year was 170,079.

The post office, in the year 1873, carried 1,493,700 parcels and packets, and 4,574,188 letters. The number of letters carried doubled in the five years from 1869 to 1873.

Commission from the ARGENTINE REPUBLIC to the International Exhibition:

CARLOS CARRANZA, President.
EDWARD SHIPPEN, Vice-President.
EDW. T. DAVISON, Treasurer, Consul-General.
DIEGO DE CASTRO, Secretary.
E. M.ARA DAVISON, Deputy Member.

Central Committee.

ERNesto OLLendorF, President.
JULIO VICTORICA, Secretary.

EDUARDO OLIVERA,  
ONESIMO LEGUIZAMON,  
DIEGO DE LA FUENTE,  
LINo PALCOIS,  

RICARDO NEWTON,  
LEONARDO PEREYRA,  
JOSE M. JURAFDO,  
EMILIO DUPORTAL.
CHILI.

CHILI lies wholly between the water-shed of the Andes and the shores of the Pacific, stretching coastwise from Bolivia to Patagonia, in latitude 25° 30' to 43° 20' south, and longitude 69° to 74° west, having an extreme length of about 1240 miles and an average breadth of fully 120. Within these limits, however, lies the virtually independent Araucania, comprising most of the mainland to the left of the Biobio, while the southern portion is confined chiefly to Chiloe and its archipelago. Chili is divided into thirteen provinces, of which, including certain outlying dependencies in Patagonia, the aggregate area has been officially stated at nearly 140,000 square miles, and the population in 1874 at 2,068,447. Chiloe, the insular province of Chili, is separated from the rest of the republic, or rather from Patagonia, by the Gulf of Ancud, extending in south latitude from 41° 40' to 43° 20', and in west longitude from 73° to 74°. The province, which, in 1874, numbered 64,536 inhabitants, contains, in addition to Chili proper, about 60 islets, of which some 30 are uninhabited. The predominant rocks of Chili are crystalline and metamorphic. They form the range of the Andes, except in those districts in which active volcanoes exist, where they are covered with recent volcanic rocks. They occupy also the whole of the level ground between the mountain range and the shores of the Pacific, with the exception of a narrow stretch of palæozoic fossiliferous strata which run along the coast south from Santiago for a distance of 300 miles. The coast-line of Chili is being continually altered from the elevation of the whole country to an extent of at least 1200 miles along the Pacific shores, produced by volcanic agency.

Physically, the continental portion of the republic presents many singularities. Of all the maritime regions on the globe, it is perhaps the most isolated. On every side but the sea, and that sea very remote from the main thoroughfares of commerce, it is beset by difficulties of communication. With the, lonely wilderness of Patagonia to the south, and the dreary desert of Atacama on the north, it is bounded on the east by a mountain chain which, altogether impracticable in winter, can be crossed, even in summer, only by a few passes ranging between 12,450 feet and 14,370 feet in elevation. Moreover, this strip between the Andes and the Pacific is broken into plateaus in the interior, and valleys on the coast, by two longitudinal ranges, with numerous lateral spurs; while, throughout the length and breadth, the general level gradually descends, as well to the south as to the west. In point of mere temperature, so rugged a surface, covering fully 15° of latitude, and attaining an altitude of more than four miles within about 2° of longitude, must present nearly every possible variety. Through the reciprocal action of the Andes and the prevailing winds, the rain-fall graduates itself, with something of mathematical regularity, from the parching skies of the north to the drenching clouds of the south, a graduation which, disturbed merely by the melting of the mountain snows, is, in a great measure, necessarily reflected in the condition and magnitude of the countless water-courses. Hence the rivers to the north of the Maypo, which enters the Pacific near latitude 34°, are but inconsiderable streams; while, further to the south, the Maule, the Biobio, and the Calacalla are all to some extent navigable.

From the cause last mentioned, different districts vary remarkably in their productions. To the north of the Coquimbo, about latitude 30°, is chiefly an and
waste, redeemed, however, from being valueless by its mines; and to the south of
the Biobio, about latitude 37°, timber and pasturage divide the soil between them.

The intermediate centre alone is fitted for agriculture, yielding, besides maize and hemp, European grains and fruits in abundance. Notwithstanding all the varieties and vicissitudes of climate, the country may claim to be, on the whole, extremely healthy. The manufactures are earthenwares, copperwares, linens, cordage, soap, leather, and brandy; and, in addition to the wheat and metals already specified, the exports, especially from the south, embrace tallow, hides, jerked beef, and live stock.

The public debt of Chili, at the beginning of 1874, was 48,149,850 pesos (or dollars). The budget for 1875 stated the expenditures at 16,474,890, and the receipts at 16,440,000 pesos.

The army consisted, in 1874, of 3516 men, the force comprising 2000 infantry, 712 cavalry, and 804 artillery. The navy numbered 10 vessels, carrying 34 guns.

The imports, for 1874, were 38,810,000 pesos, and the exports, during the same year, were 36,510,000 pesos. The commercial navy of Chili consisted, in 1872, of 250 vessels of 58,230 tons burthen, with 2900 sailors.

In 1875 there were 991 kilometres of railway in operation; of these, 628.6 belonged to the State and 362.4 to companies.

The work of the post office, for 1873, was 5,116,797 letters and 6,233,916 newspapers, etc.

There were, at the same time, 55 telegraph offices. The length of lines was 3729 kilometres; of wires, 4909 kilometres. Number of despatches, in 1873, 265,318.

Commission from CHILI to the International Exhibition:

Resident Commissioners.

Sr. Don Adolfo Ybanez, Envoy Extraordinary and Minister Plenipotentiary of Chili.

Edward Shippen, Esq., Consul and President.

Dr. J. Patterson Burd, Secretary and Treasurer.

Sr. Francisco Gonzalez Errazuriz, Secretary of Chilian Legation.

Special Commissioners.

Sr. Don Eduardo Seve, Sr. E. Gerra,
Sr. Rafael Maseulli, Sr. Louis Buffe.

Home Commission.

Sr. Rafael Larraín, President. Francisco Solano Asta Buruago.
Sr. Maximiano Errazuriz. Sr. Ramon Barros.
Sr. Ignacio Domeyko. Sr. Eugenio Figueora.
Sr. Armando Phillippi.
PERU.

PERU is an important maritime republic in South America, bounded on the N., by Ecuador, on the W., by the Pacific, on the S. and S.E. by Bolivia, and on the E. by Brazil. It lies in lat. 3° 25' to 21° 30' S., and in long. 68° to 81° 20' W. The general outline resembles a triangle, the base of which is formed by the boundary-line between Peru and Ecuador on the north. Its area is estimated at upward of 500,000 square miles, and its population at 2,500,000. The area of Peru, however, can only be given approximately, as, on the east side of the Andes and between the Amazon and the Purus, there is a wide and unexplored expanse of country, upon which both Peru and Brazil have claims which have not yet been determined. The country is 1,100 miles in length, 780 miles in extreme breadth along the northern boundary, but is little more than 50 miles wide in the extreme south. Following the general direction, and not including windings, the coast-line is 1,660 miles in length. The shores are in general rocky and steep; in the south lofty cliffs rise from the sea, and in some places the water close inshore has a depth of from 70 to 80 fathoms. Farther north, however, sandy beaches occur, and in the extreme north the shores are often low and sandy and covered with brushwood. Owing to the comparative unfrequency of bays and inlets along the coast, the harbors are few and unimportant. Those of Callao (the port of Lima) and Payta afford the most secure anchorage, and the others are Trujillo, Cañete, Pisco, Camaná, Islay, Ilo, Arica and Inquique.

The islands on the Peruvian coast, although valuable, are extremely few in number and small in extent. In the north are the Lobos Islands; on their eastern and more sheltered sides they are covered with guano. The Chincha Islands, famous as a source of supply for guano, also form a group of three, and are situated in the Bay of Pisco, about twelve miles from the mainland, and in lat. 13° to 14° S., long. 76° and 77° W. They lie in a line running north and south, and are called the North, Middle, and South Islands, respectively. Each island presents, on the eastern side, a wall of precipitous rock, with rocky pinnacles in the centre, and with a general slope toward the western shore. The cavities and inequalities of the surface are filled with guano, and this material covers the western slopes of the islands to within a few feet of the water's edge. There is no vegetation.

The surface of Peru is divided into three distinct and well-defined tracts or belts, the climates of which are of every variety from torrid heat to arctic cold, and the productions of which range from the stunted herbage of the high mountain-slopes to the oranges and citrons, the sugar-canes and cottons, of the luxuriant tropical valleys. These three regions are the Coast, the Sierra, and the Montaña. The Coast is a narrow strip of sandy desert between the base of the Western Cordillera and the sea, and extending along the whole length of the country. This tract, varying in breadth from thirty to sixty miles, slopes to the shore with an uneven surface, marked by arid ridges from the Cordillera, and with a rapid descent. It is, for the most part, a barren waste of sand, traversed, however, by numerous valleys of astonishing fertility, most of which are watered by streams that have their sources high on the slopes of the Cordillera. In the coast-region, properly so called, rain is unknown. This is caused by the coast of Peru being within the region of perpetual south-east trade-winds. The want of rain is compensated for, to some extent, by abundant and refreshing dews which fall during the night. The climate of the coast is modified by the cool winds. In the valleys the heat, though considerable, is not oppressive. The highest temperature observed at Lima in summer is 85°, the lowest in winter is 61° Fahr.
The Sierra embraces all the mountainous region between the western base of the maritime Cordillera and the eastern base of the Andes, or the Eastern Cordillera. The principal physical features of the Sierra are: 1. The plain of Titicaca, partly in Peru and partly in Bolivia. It is enclosed between the two main ridges of the Andes, and is said to have an area of 30,000 miles. In its centre is the great Lake Titicaca, 12,846 feet above sea-level, or 1600 feet above the loftiest mountain pass (the Col of Mont Cervin) of Europe. The lake is 115 miles long, from 30 to 60 miles broad, from 70 to 180 feet deep, and 400 miles in circumference. Its shape is irregular; it contains many islands, and several peninsulas abut upon its waters. 2. The Knot of Cuzco. The mountain-chains which girdle the plain of Titicaca trend toward the north-west, and form what is called the Knot of Cuzco. The Knot comprises six minor mountain chains, and has an area thrice larger than that of Switzerland. Here the valleys enjoy an Indian climate and are rich in tropical productions; to the north and east of the Knot extend luxuriant tropical forests, while the numberless mountain slopes are covered with waving crops of wheat, barley, and other cereals, and with potatoes, and higher up extend pasture-lands, where the vicuña and alpaca feed.

The Montaña or central region has an elevation of 12,000 feet above the sea-level, and forms a portion of the great central plain of South America. The virgin soil of the Montaña is of amazing fertility, while its climate, though not oppressively hot, is healthy. The forests consist of huge trees, of which some are remarkable for the beauty of their wood, others for their valuable gums and resins, and others as timber trees. A rank undergrowth of vegetation covers the country, and the trees are often chained together and festooned with parasites and closely-matted creepers. In this region, for the most part undisturbed by the voice of man, civilized or savage, animal life flourishes in endless variety, and birds of the brightest plumage flit among the foliage. Among the products which are yielded here in spontaneous abundance are the inestimable Peruvian bark, India-rubber, gum-copal, vanilla, indigo, copaiba, balsam, cinnamon, sarsaparilla, ipecacuanha, vegetable wax, etc. On the western fringe of the Montana, where there are still a few settlements, tobacco, sugar, coffee, cotton, and chocolate are cultivated with complete success.

The hydrography of Peru may be said to be divided into three systems—those of Lake Titicaca, the Pacific, and the Amazon. The streams that flow into Lake Titicaca are few and inconsiderable. The rivers, which, having their sources in the Western Cordillera, flow west into the Pacific, are about sixty in number; but many of them are dry in summer, and even the more important are rapid and shallow, have a short course, are not navigable even for canoes, and are mainly used for the purpose of irrigation. All the great rivers of Peru are tributaries of the Amazon. The Marañon, rising between the Eastern and Western Cordilleras, and flowing tortuously to the north-north-west, is generally considered to be the headwater of the Amazon. The Huallaga rises near the town of Huanuco, and flows northward to the Amazon. It is navigable for 600 miles, the head of its navigation (for canoes) being at Tingo Maria, within 100 miles of its source. The Yucayali, or Ucayali, an immense river, enters the Amazon 210 miles below the Huallaga. Its tributaries and upper waters, among which are the Pampas and the Apurimac, drain the greater portion of the Peruvian Sierra. The Purus, which reaches to the valleys of Pucartambo, within sixty miles of Cuzco, has not yet been explored. The Andes abound in mines of gold, silver, copper, lead, bismuth, etc.; and in the Montaña gold is said to exist in abundance in veins, and in pools on the margins of rivers.

But besides the precious metals, Peru possesses other most important mineral resources. In addition to the guano, to which allusion has already been made, another important article of national wealth is nitrate of soda, which is found in immense quantities in the province of Tarapaca. This substance, which is a powerful fertilizer, is calculated to cover, in this province alone, an area of fifty square
leagues. Here, also, great quantities of borax are found. The trade in guano, nitre, and borax is entirely in the hands of the government.

The vegetable productions of Peru are of every variety, embracing all the products both of temperate and tropical climes. The European cereals and vegetables are grown with perfect success, together with maize, rice, pumpkins, tobacco, coffee, sugar-cane, cotton, etc. Fruits of the most delicious flavor are grown in endless variety. Cotton, for which the soil and climate of Peru are admirably adapted, is now produced here in gradually increasing quantity. The land suited to the cultivation of this plant is of immense extent, and the quality of the cotton grown is excellent. The animals comprise those of Europe, together with the lama and its allied species.

The principal items of export in 1870 were: Guano, 482,299 tons; nitrate of soda, 147,200 quintals, valued at 6,624,000 sole;* quinine, 11,921 quintals, valued at 810,641 sole; silver, 1,120,118 sole; hides and skins valued at 530,493 sole; wool valued at 396,610 sole.

The merchant navy in 1869 comprised 95 vessels, aggregating 9596 tons burden; included in this were 11 steamers of a total burden of 435 tons.

The constitution of Peru is modeled on that of the United States, the legislative power being vested in a Senate and House of Representatives, the former composed of deputies of the provinces, two for each, and the latter of representatives nominated by the electoral colleges of provinces and parishes, at the rate of one member for every 20,000 inhabitants. The parochial electoral colleges choose deputies to the provincial colleges, who in turn send representatives to Congress. In the session of 1875 the Senate was composed of 44 and the House of Representatives of 110 members.

The executive power is entrusted to a president, assisted by a vice-president, both elected by popular vote and serving for a term of four years.

By the terms of the constitution of 1867 there exists absolute political but not religious freedom, the charter prohibiting the public exercise of any other religion than the Roman Catholic, which is declared the religion of the State.

The public debt is divided into an internal debt, which in 1872 was about £2,500,000, and the foreign debt, which in 1875 amounted to £34,713,980. The public income during 1872 was 58,982,851 sole; the public expenditures during the same year 57,913,764 sole.

The army comprises: Infantry, 5600; cavalry, 1200; artillery, 2000; total, 8800 men.

The navy consists of 6 iron-clads, one of which is a 14-gun frigate, 2 monitors of 3 guns each, and 3 other vessels of 2, 2, and 14 guns respectively; besides which there are 6 steamships of 2, 2, 4, 4, 14, and 30 guns.

A system of railways designed mainly to develop the exploitation of the mineral wealth of the country, including important mines of nitrate of soda, has been in course of construction for several years. At the end of June, 1875, there were open for traffic or in course of construction lines of State railways of a total length of 1007 English miles. There were also in course of construction at the end of June, 1875, railways of a total length of 600 English miles, to be completed in 1877-80. The most important of these are a line from Lima to Oroya, 222 miles in length, and another, offering vast engineering difficulties, 187 miles long, from Arequipa to Puno, across the summit of the Cordillera de los Andes.

There were in 1874 telegraph lines of a total length of 608 miles.

Commission from PERU to the International Exhibition:

**JOSE CARLOS TRACY, President.**
**JUAN JOSE BARRIL.**
**WILLIAM RUSSELL GRACE.**

**ANTONIO HERNANDEZ, Chief of Installation.**
**ENRIQUE VALIENTE, Secretary.**

* One sol = 96½ cents, gold.
MEXICO.

The Mexican Republic extends between latitude $15^\circ$ to $32^\circ$ 42' north, and from $88^\circ$ 54' 30" to $119^\circ$ 25' 30" west longitude (meridian of Paris), or from $12^\circ$ 21' on the east to $18^\circ$ on the west of the City of Mexico, and is bounded on the north by the United States, on the south by Guatemala, on the east by the Gulf of Mexico, and on the west by the Pacific Ocean.

The country measures in its greatest length, from the conflux of the Gila and Colorado Rivers to the bar of Ocos, which is the lower end of the State of Chiapas, 2933 kilometres, by 1733.2 kilometres in width, from the mouth of the Rio Grande to that of the Rio del Fuerte. Its coast-line embraces 8272.47 kilometres. The area of the Mexican territory amounts to 1,972,648 square kilometres.

Mexico is a mountainous country. The Cordillera, which can be considered as a development of the Andes, that start in Patagonia, South America, occupies all the country, forming, in its gradual descent toward the coasts, large table-lands and fertile valleys. At the point where this Cordillera reaches the territory of New Mexico it is divided into two ramifications, the eastern one parallel to that of Lower California, its principal summits being the Pico de Orizaba and Cofre de Perote, and the western one, which becomes entangled with the other chains running toward the Nevado de Toluca. This point of intersection is marked by the volcano of Colima. The eastern chain has its nucleus in the Zempoaltepec, whose several ramifications extend over the State of Oaxaca, with the exception of the principal branch, which stretches over the State of Guerrero. Between these two mountainous chains there is another of no less importance, which includes the beautiful mountains Popocatepetl and Ixtacihuatl. The latter, the Cofre de Perote, and the White Pick of Toluca are the highest peaks of the Mexican Andes.

The northern part of the republic, between latitude $23^\circ$ 30' and $32^\circ$ 42' north, belongs to the temperate zone, and the southern portion, included between $15^\circ$ and $32^\circ$ 30', to the torrid zone. Owing partially to this division and to the difference in the level of the soil, there is in Mexico a great variety of climate. The warm temperature is observed in the region extending from the coast to the height of 3000 feet; the temperate, from the height of 3000 feet to 5000 feet; and the cold climate, from 5000 feet to the highest summits.

The population of Mexico amounts to 8,743,000, in the following proportions:

- European, ........................................ 2,331,000
- Indigenous, ....................................... 1,750,000
- Of a mixed origin, .................................. 4,662,000

Total, .................................................. 8,743,000

The following list shows which are the principal centres of population:

<table>
<thead>
<tr>
<th>Cities</th>
<th>States</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>District of Mexico,</td>
<td>200,000</td>
</tr>
<tr>
<td>Leon</td>
<td>Guanajuato,</td>
<td>90,000</td>
</tr>
<tr>
<td>Guadalajara</td>
<td>Jalisco,</td>
<td>75,000</td>
</tr>
<tr>
<td>Puebla</td>
<td>Puebla,</td>
<td>65,000</td>
</tr>
<tr>
<td>Guanajuato</td>
<td>Guanajuato,</td>
<td>63,000</td>
</tr>
<tr>
<td>Queretaro</td>
<td>Queretaro,</td>
<td>48,000</td>
</tr>
<tr>
<td>Celaya</td>
<td>Guanajuato,</td>
<td>37,000</td>
</tr>
<tr>
<td>Orizaba</td>
<td>Vera Cruz,</td>
<td>37,000</td>
</tr>
<tr>
<td>San Miguel Allende</td>
<td>Guanajuato,</td>
<td>35,000</td>
</tr>
</tbody>
</table>
A more complete idea of the manner in which the population is distributed can be arrived at by the following statistical table:

<table>
<thead>
<tr>
<th>NAME OF STATES IN THEIR GEOGRAPHICAL ORDER.</th>
<th>SQUARE LEAGUES.</th>
<th>POPULATION.</th>
<th>INHABITANTS PER SQUARE LEAGUE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Souvra,</td>
<td>11.953</td>
<td>147,133</td>
<td>12</td>
</tr>
<tr>
<td>Chihuahua,</td>
<td>15.534</td>
<td>179,971</td>
<td>11</td>
</tr>
<tr>
<td>Coahuila,</td>
<td>8.692</td>
<td>67,691</td>
<td>8</td>
</tr>
<tr>
<td>Nuevo Leon,</td>
<td>2.119</td>
<td>171,000</td>
<td>81</td>
</tr>
<tr>
<td>Tamaulipas,</td>
<td>4.228</td>
<td>108,514</td>
<td>26</td>
</tr>
<tr>
<td>San Luis Potosi,</td>
<td>4.262</td>
<td>397,735</td>
<td>93</td>
</tr>
<tr>
<td>Zacatecas,</td>
<td>3.922</td>
<td>398,977</td>
<td>101</td>
</tr>
<tr>
<td>Aguas Calientes,</td>
<td>327</td>
<td>86,576</td>
<td>264</td>
</tr>
<tr>
<td>Durango,</td>
<td>6.921</td>
<td>173,942</td>
<td>27</td>
</tr>
<tr>
<td>Sinaloa,</td>
<td>3.825</td>
<td>161,157</td>
<td>42</td>
</tr>
<tr>
<td>Jalisco,</td>
<td>7.224</td>
<td>924,580</td>
<td>128</td>
</tr>
<tr>
<td>Colima,</td>
<td>353</td>
<td>48,649</td>
<td>137</td>
</tr>
<tr>
<td>Michoacan,</td>
<td>3.188</td>
<td>618,072</td>
<td>193</td>
</tr>
<tr>
<td>Guanajuato,</td>
<td>1.642</td>
<td>874,000</td>
<td>532</td>
</tr>
<tr>
<td>Queretaro,</td>
<td>506</td>
<td>166,643</td>
<td>329</td>
</tr>
<tr>
<td>Mexico,</td>
<td>1.418</td>
<td>599,810</td>
<td>323</td>
</tr>
<tr>
<td>Hidalgo,</td>
<td>1.251</td>
<td>404,207</td>
<td>323</td>
</tr>
<tr>
<td>Morelos,</td>
<td>280</td>
<td>121,499</td>
<td>423</td>
</tr>
<tr>
<td>Guerrero,</td>
<td>3.574</td>
<td>279,000</td>
<td>79</td>
</tr>
<tr>
<td>Puebla,</td>
<td>1.735</td>
<td>830,000</td>
<td>478</td>
</tr>
<tr>
<td>Taxacala,</td>
<td>221</td>
<td>117,941</td>
<td>533</td>
</tr>
<tr>
<td>Vera Cruz,</td>
<td>4.047</td>
<td>380,076</td>
<td>94</td>
</tr>
<tr>
<td>Oaxaca,</td>
<td>4.035</td>
<td>601,850</td>
<td>149</td>
</tr>
<tr>
<td>Tabasco,</td>
<td>1.846</td>
<td>83,707</td>
<td>44</td>
</tr>
<tr>
<td>Chiapas,</td>
<td>2.474</td>
<td>103,878</td>
<td>78</td>
</tr>
<tr>
<td>Campeche,</td>
<td>3.848</td>
<td>86,453</td>
<td>22</td>
</tr>
<tr>
<td>Yucatan,</td>
<td>4.818</td>
<td>282,634</td>
<td>59</td>
</tr>
<tr>
<td>Federal District,</td>
<td>12.56</td>
<td>225,000</td>
<td>27</td>
</tr>
<tr>
<td>Lower California Territory,</td>
<td>8.709</td>
<td>21,000</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>112,362.56</strong></td>
<td><strong>8,743,614</strong></td>
<td><strong>2</strong></td>
</tr>
</tbody>
</table>

The sugar and coffee culture, and the industries of which the agave plant is a basis, deserve particular mention. Numerous metalliferous veins are found in the mountains of the Sierra Madre and its different ramifications. These mineral districts contain not only the precious ores for which Mexico has been particularly noted, but also iron, tin, copper, and some other metals of great industrial value. Bismuth, having become scarce in former years, was found at last in the States of San Luis Potosi, Sinaloa, Queretaro, and Zacatecas. Discoveries of coal, precious opals, and quicksilver ores have also been made, the former in the States of Puebla and Vera Cruz, the latter in the States of Queretaro and Guerrero. The district of Huiztulco has proved the most abundant in mercury, and during the last year has supplied the Mexican market with large quantities of this useful metal.

The geological formations which are found in the mineral veins of Mexico consist chiefly of the three following classes of rocks:
1. Compact mesozoic limestone.
2. Slate and sandstone.
3. Metalliferous porphyry, which probably corresponds to the Tertiary period.

As types of these three formations should be mentioned those found respectively in the States of Queretaro, Guanajuato, and Hidalgo. Many mountains of the above-mentioned types, and containing metalliferous veins, can be seen in almost all the States of the Republic. The argentiferous galenite and tetrahedrite prevail in the first of the aforesaid formations; the polybasite and the pyargirite in the second; and sulphuret of silver, argentiferous galenite, and blende in the third. The collections exhibited in the Mexican Department of the Main Building include some
samples of these mineral compounds, and of rocks useful as building and ornamental materials, among which the beautiful calcareous slates from the District of Tecali (State of Puebla) are worthy of especial mention.

Among the advantages which industry and trade have secured in Mexico, the double line of railroad from the principal port to the capital, and the exceptional and liberal tariffs established for goods intended for exportation, ought to be considered as the most beneficial. One of the aforesaid lines (via Orizaba) is complete, and has been in operation for several years; the other, which connects Vera Cruz with the town of Jalapa and with some of the agricultural districts of the State of Puebla, will soon be completed. The Mexican Congress has made very liberal grants for the construction of three railways intended to connect the city of Mexico with the northern frontier, and the districts more abundant in tropical products with the city of Puebla. Between this city and the trunk line of the Vera Cruz Railroad there is a branch line in operation. Another railroad connecting the capital with the city of Toluca is under construction, and in operation as far as the town of Tlapaepantla. Another line connects the port of Vera Cruz with the town of Medellin. The capital is connected by electric wires with the principal cities and with the ports and coasts of the republic.

The United States of Mexico maintain an active trade with the following nations, viz.: England, France, United States, Germany, Spain and Cuba, New Granada, Guatemala, Nicaragua, and on smaller scale with Belgium, Ecuador, and Italy.

The imports of foreign goods during the fiscal year ending June, 1873, amounted to $29,062,406.94, taking as a basis the market value of the articles. All the articles are registered in the custom-house tariff of duties under eleven heads, viz.:

| 1. Cottons, | $7,311,646.03 | $10,531,970.15 | $4,734,340.87 |
| 2. Groceries, | 3,437,525.43 | 5,191,788.62 | 2,012,590.30 |
| 3. Articles free from duty, | 2,411,593.73 | 3,354,259.77 | 763,908.87 |
| 4. Mercury, | 1,356,000.31 | 2,184,014.56 | 1,055,828.05 |
| 5. Miscellaneous, | 1,434,216.56 | 2,035,609.63 | 564,125.89 |
| 6. Linen and hemp, | 993,362.76 | 1,452,978.28 | 644,496.77 |
| 7. Wools, | 1,038,044.31 | 1,427,867.58 | 605,146.49 |
| 8. Mixtures, | 998,831.81 | 1,417,427.61 | 267,404.71 |
| 9. Silks, | 419,017.10 | 588,911.92 | 206,547.31 |
| 10. Earthenware, crystal, and glass | 344,936.45 | 577,510.82 | 131,011.33 |
| 11. Drugs, | 173,852.32 | 300,069.05 | 10,980,319.64 |

$19,919,632.81 $29,062,406.94 $10,980,319.64

The value of goods exported amounts to $31,473,607.24. The exports are arranged under two heads:

Minerals and metals, $25,373,673.78
Agricultural and industrial products, 6,317,477.06

Total, $31,691,150.84

Under the first heading are:

Silver coin, $22,602,493.33
Solid silver, 1,512,616.94
Gold coin, 640,270.97
Solid gold, 288,578.21
Ores and mineral earths, 222,854.00
Silver amalgam, 39,251.78
Lead, 30,831.00
Copper, 17,127.94
Under the second heading:

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skins</td>
<td>$1,546,869.43</td>
</tr>
<tr>
<td>Henequen</td>
<td>1,049,202.58</td>
</tr>
<tr>
<td>Building and color woods</td>
<td>1,042,586.31</td>
</tr>
<tr>
<td>Coffee</td>
<td>532,912.86</td>
</tr>
<tr>
<td>Vanilla</td>
<td>414,038.40</td>
</tr>
<tr>
<td>Cochineal</td>
<td>276,699.30</td>
</tr>
<tr>
<td>Cattle</td>
<td>209,960.00</td>
</tr>
<tr>
<td>Tobacco</td>
<td>132,984.75</td>
</tr>
<tr>
<td>Orchilla (Rocsella tintorea)</td>
<td>128,450.09</td>
</tr>
<tr>
<td>Precious pearls</td>
<td>109,300.00</td>
</tr>
<tr>
<td>Caoutchouc</td>
<td>93,052.83</td>
</tr>
<tr>
<td>Sarsaparilla</td>
<td>90,862.18</td>
</tr>
<tr>
<td>Wool</td>
<td>88,635.72</td>
</tr>
<tr>
<td>Indigo</td>
<td>80,229.87</td>
</tr>
<tr>
<td>Jalap</td>
<td>77,517.40</td>
</tr>
<tr>
<td>Coconuts</td>
<td>46,000.00</td>
</tr>
</tbody>
</table>

The revenue of the General Government and the expenses of the Federal Administration amount to a yearly average of 20,000,000 dollars.

There have been 8103 schools established by the Government for the primary instruction of the people. In eighteen of the States attendance has been made compulsory.

The official data in regard to secondary and higher instruction are condensed in the following figures relating to the institutions of these two degrees, maintained by the Mexican government:

26 Preparatory Schools.
18 Colleges of Jurisprudence.
12 " " Engineering.
11 " " Medicine.
9 " " Pharmacy.
2 " " Navigation.
2 " " Agriculture.
2 " " Mining.
2 Conservatories of Art.
3 " " Music.
15 Ladies’ Colleges.

The above list does not include a large number of establishments conducted by the clergy, benevolent societies, or private teachers.

Commission from MEXICO to the International Exhibition:

Commissioners.

MANUEL M. DE ZAMAcona.
MARIANO BARCENA.
ELENTERIO AVILA.
MANUEL CORELLA, Attache.
AURTRO YBANEZ, Engineer.

EDITH BORZELL, Engineer.
LLUTARCO ORNELAS, Acting Sect’y.
FERNANDO CAMACHO, Employe.
J. LEON CALDERON, Employe.
Liberia.

The Republic of Liberia is situated on the West Coast of Africa, between the fourth and eighth degrees of north latitude, and extends along five hundred and twenty miles of the coast, from the English colony of Sierra Leone to the mouth of the San Pedro River. Its most interior settlement is some thirty miles from the sea-board. The land has been purchased in an open and honorable manner from the aboriginal owners, and there is no obstacle to the acquisition of additional territory inland until the heart of the great continent is reached.

Immediately on the sea-shore the land is generally low, but very soon becomes elevated, rising in gentle undulations or swells. The whole country is well wooded and watered. Timber suitable for building purposes, cabinet-work, and shipbuilding is abundant, as is also good water.

All tropical productions are readily raised in Liberia, many of them the entire year, and dug from the earth every month for use. The Lima bean, tomato, and egg-plant are indigenous and of several varieties, and yield abundantly. Fruits grow in a wild state and under cultivation. Oranges are especially fine. Nowhere is a better quality of sugar-cane produced. Liberia coffee is the richest known, always commanding the highest market price. Cotton, ginger, ground-nuts, arrow-root, pepper, and indigo are mainly raised by the American settlers. Palm-oil, made by the natives, ivory, canwood, gums, and hides are valuable articles of commerce exported from Liberia. Horses are little used on the coast, but are plentiful in the interior. Cows, goats, hogs, ducks, turkeys, and fowls are abundant. The rivers abound in shell and other fish.

The climate is uniformly sultry and moist, but the heat is not excessive; the thermometer in the wet season stands at about 71°, and in the dry at about 82°.

A very great impulse is perceptible in Liberian industry during the last thirteen years. The greatest success has, however, resulted from a natural capacity for agriculture, which is growing rapidly and promises at an early day to make the whole territory a vast coffee grove. A very superior quality of iron ore is found in all parts of the country and worked by the natives, and will be of great use in manufacture and trade. Three years ago a volcanic eruption disclosed many valuable minerals.

The American Colonization Society, to which Liberia owes its origin, was founded in Washington, D.C., December 21st, 1816. It has given passage more or less every year for the last fifty-five years to 15,098 persons of color, and it induced the government of the United States to settle in Liberia 5722 recaptured Africans, making a grand total of 20,820 persons to whom the society has given homes in that republic. Monrovia, at the mouth of the river Mesurado, is the capital, and has about 7000 inhabitants.

Some 600,000 natives residing on the territory of Liberia live mostly in their own towns, subject to their own headmen and their own laws, yet amenable to Liberian authority and having all the protection and privileges of citizens. Not a few have become such and creditably fill various public offices, while all are gradually acquiring the arts, comforts, and conveniences of civilized life.

The last tabular statement issued shows the previous year's imports of Liberia to have reached $209,423.88, and the exports $171,351.47. Since then Edward S.
Morris & Co., of Philadelphia, Pa., have introduced improved and patented coffee-hulling machinery and a steamer, the first on the St. Paul's River, thus greatly stimulating not only the production and transportation of coffee, but other valuable articles, for export. They have also there begun the manufacture of palm-oil soap and indigo. The commercial statistics of Liberia would therefore, if presented now, appear far more advantageously.

There are two Liberia newspapers, the “Liberia Advocate” and the “Interior.” The former aims to discuss principles and point facts that will be useful to the country in every particular; the other is especially devoted to assisting intercourse and amity with the strange interior tribes, most of whom can read, while all are anxious for an English education. By a law of Liberia all parents are required to send their children to school. In some of the settlements the schools are good. A college, the materials and erection of which cost $20,000, is in operation at Monrovia. All the professors are colored men.

The State has good patent laws, hospitals, and saw-mills and lighthouses. All religious denominations are allowed, and there are several in each of the settlements. Quite a number of vessels have been built in the country and are owned, manned, and managed wholly by Liberians. Some of these have appeared in American and European ports loaded with Liberian and other African products.

The Constitution of Liberia very closely resembles that of the United States, and was adopted in convention on the 26th of July, 1847. The powers of government are vested in three departments, legislative, executive, and judicial. The legislative authority consists of a House of Representatives and a Senate, each of which has a negative on the other. The election of representatives is for two years. Two members from each county constitute the Senate, and are elected for four years. The executive power is vested in a President, chosen every two years. He is commander-in-chief of the army and navy, and makes treaties, two-thirds of the Senate concurring. With the advice and control of the Senate he appoints all public officers for whose appointment special provision is not made by law. There is also a Vice-president elected in the same manner, who is president of the Senate. The judicial power is placed in a Supreme Court and such subordinate courts as the legislature may from time to time establish.

Among the miscellaneous provisions of this Constitution is the following: “Section 13. The great object of founding these colonies being to provide a home for the despised and oppressed children of Africa, and to regenerate and enlighten that benighted continent, none but persons of color shall be admitted to citizenship in this republic.”

Liberia has an earnest hope that this exhibition of her products will attract the attention of colored Americans and draw the large immigration needed. The country needs this more than anything else, and with it could be powerful and rich in ten years.
SPAIN.

SPAIN occupies the larger portion of the great peninsula which forms the southwest corner of the European continent, reaching farther south than any other European country, and farther west than any except Portugal. It is bounded on the north by the Bay of Biscay and by France, from which it is separated by the mountain ridge of the Pyrenees, on the east and south by the Mediterranean and Atlantic, and on the west by the Atlantic and Portugal. Greatest length, from Fuenterrabia on the north to Tarifa on the south, 560 miles; greatest breadth, from Cape Finisterre (Land's End), the extreme point on the west, to Cape Creuze, the extreme point on the east, about 650 miles; average breadth about 380 miles. Area, including the Balearic and Canary Isles, 196,031 English square miles; population (1870), 16,835,506. The country, including the Balearic and Canary Isles, was divided, in 1834, into 49 modern provinces, though the former division, into 14 kingdoms, states, or provinces, is still sometimes used.

The entire perimeter of the country is 2080 English miles, and the coast line, exclusive of windings, is 1317 miles long, of which 712 miles are formed by the Mediterranean, and 605 miles by the Atlantic. The north coast, from Fuenterrabia west to Cape Ortegal, is unbroken by any considerable indentation. A wall of rocks, varying in height from 30 to 300 feet, runs along this shore; but the water, which retains considerable depth close to the beach, is not interrupted to any unusual extent by islands or rocks. The northwest coast, from Cape Ortegal south to the mouth of the river Minho—which separates the Spanish province of Galicia from Portugal—though rock-bound, is less elevated, and is much more broken than the shores washed by the Bay of Biscay; and the indentations, the chief of which are Noya Arosa and Vigo Bays, form secure and spacious harbors. From the mouth of the Guadiana, on the south, to the Strait of Gibraltar, the coast line, though well defined, is low, sandy, and occasionally swampy. From Gibraltar to Cape Palos the shores, which are backed in part by the mountain range of the Sierra Nevada, are rocky and high (though flats occur at intervals), are unbroken by indentations, and comprise only two harbors, those of Cartagena and Malaga. A low, and for the most part sandy, coast extends north from Cape Palos, rising into rocky cliffs and bluffs in the vicinity of Denia, but extending in sandy flats from Denia to the mouth of the Ebro. From the mouth of this river north to the frontier of France the coast is alternately high and low, and its principal harbors are Barcelona and Roses. The compactness and the isolation of this country, and its position between two seas, the most famous and commercially the most important in the world, are not more in its favor than the character of its surface, which is more diversified than that of any other country in Europe of equal extent. An immense plateau, the loftiest in the continent, occupies the central regions of Spain, and is bounded on the north and west by mountainous tracts, and on the northeast by the valley of the Ebro; on the east by tracts of land frequently low, but in some parts traversed by hill ranges; on the south by the valley of the Guadalquivir, which intervenes between it and the Sierra Nevada. This great plateau rises to the height of from 2000 to 3000 feet, and occupies upward of 90,000 square miles, or about half of the entire area of the country. The whole of the Pyrenean peninsula is divided by Spanish geographers into seven mountain ranges, of which the chief are: 1. The Cantabrian mountains and the Pyrenees, forming the most northern range; 2. The
Sierra de Guadarrama, separating Leon and Old Castile from Estremadura and New Castile, and rising in the peak of Penalara 7764 feet above sea level; 3. The Montes de Toledo, forming a part of the water-shed between the Tagus and the Guadiana; 4. The Sierra Morena, between the upper waters of the Guadiana and Guadalquivir; 5. The Sierra Nevada, running parallel with the shores of the Mediterranean, through Southern Murcia and Andalucia, and rising in its chief summits to loftier elevations than are found in any mountain system of Europe except that of the Alps. The several mountain ridges, or as they are called Cordilleras, of Spain, have a general east and west direction, and between them run, in the same direction, the nearly parallel valleys or basins of the great rivers of the country, the Douro, Tagus, Guadiana, and Guadalquivir, each of which is described in its proper place.

The climate of Spain, owing to extent and configuration of the country, is exceedingly various. In the northwest (maritime) provinces it is damp and rainy during the greater part of the year; at Madrid, which is situated about 41° south of London, and only 5° north of the shores of Africa, winters have occurred of such severity that sentinels while on duty have been frozen to death, while the south and east provinces are warm in winter, and are exposed to burning winds from the south, and to an almost tropical heat, in summer. Both ancient and modern geographers have adopted difference of climate as the rule for dividing the peninsula into tracts distinct as well in soil and vegetation as in temperature. Of these tracts or zones the first and most northern may be considered as embracing Galicia, Asturias, the Basque Provinces, Navarre, Catalonia, and the northern districts of Old Castile and Aragon. In this tract the winters are long and the springs and autumns rainy, while north and northeast winds blow cold from the snow-covered Pyrenees. The middle zone is formed mainly by the great central plateau, and embraces Northern Valencia, New Castile, Leon, and Estremadura, with the south parts of Old Castile and Aragon. The climate of the great part of this region is pleasant only in spring and autumn. The soil is generally fertile, and corn and wine are most abundantly produced. The southern or Betican zone, comprising the rich country that extends between the southern wall of the central plateau and the Mediterranean shores, includes Andalucia, Murcia, and Southern Valencia. The stony rampart on the north protects it from the chilly winds of the central zone; but it is unprotected against the hot winds which in summer blow north from Africa and render this season intolerable to northern Europeans. Here the winter is temperate, and the spring and autumn delightful beyond description. The soil, which is artificially irrigated, is well adapted to agriculture and the cultivation of heat-loving fruits. The products comprise sugar, cotton, and rice, and the orange, lemon, and date.

The vast mountains of the country, affording, for the most part, only scanty crops of herbage, are utilized as pasture-grounds and are divided into large farms. But in the warm and fertile plains, especially where water is abundant, the farms are small. In 1860 there were 3,425,083 farms of all sizes, of which 750,000 were occupied by tenants, and the others by proprietors.

The cotton manufactures of Spain have been making considerable progress, and silk stuffs are largely fabricated. The principal cotton factories are at Barcelona. Excellent paper is made at Tolosa and Valladolid, and in the last-named town there are a few minor manufactures. The manufactures of tobacco, arms, and gunpowder are carried on by the government exclusively. Though neither the agricultural nor mineral resources of Spain are properly developed, a great advance has been evident within the last ten years, chiefly in mining, and more especially so in the working of lead and copper mines. Lead, copper, and tin are abundant, and there are large deposits of good coal and iron ore. The quicksilver mines of Almaden have been long celebrated and are still worked.

The merchant navy consisted in 1873 of 3069 vessels, of a total burden of 678,886 tons. Of these 202 were steam-vessels, 138,670 tons burden. The imports during
the year 1874 amounted to 382,000,000 pesetas, the exports to 403,000,000 pesetas. The principal imports are sugar, yarn, woolen fabrics, raw cotton, iron, machinery, coals, and dried fish; the principal exports are wine, metals, dried fruit, flour, bullion, green fruits, olive-oil, minerals, wool, grain, vegetation, and seeds, cork, and salt.

At the end of 1875 Spain had no constitution, but it was resolved by the government of King Alfonso XII, that a charter should be drawn up by a Cortes Constituyentes, to be called together in the spring of 1876. As a preliminary measure a committee of senators and deputies of the last Cortes, dissolved in 1874, had been called together July, 1875, at Madrid, which meeting resulted in the production of a constitutional scheme which was adopted by the government, and from which are to spring the future fundamental laws of Spain. The projected constitution provides that the power to make laws shall reside 'in the Cortes with the king,' and that the Cortes shall be composed of a Senate and Congress equal in faculties.

The various provinces of Spain, districts and communes, are governed by their own municipal laws, with strongly pronounced local administration. Neither the national executive nor the Cortes have the right to interfere in the established municipal and provincial self-government, except in case the action of the provincial parliaments or municipal councils (ayuntamientos) goes beyond the locally limited sphere to the injury of general and permanent interests.

The public debt, June 1, 1874, was 10,120,285,220 pesetas; the estimated public receipts for the financial year 1874-75, 609,541,141; estimated expenditures for the same year, 605,125,569. The army statistics are as follows:

<table>
<thead>
<tr>
<th></th>
<th>ON A PEACE FOOTING</th>
<th>ON A WAR FOOTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infantry</td>
<td>56,000</td>
<td>173,000</td>
</tr>
<tr>
<td>Cavalry</td>
<td>10,900</td>
<td>10,900</td>
</tr>
<tr>
<td>Artillery</td>
<td>9,300</td>
<td>11,900</td>
</tr>
<tr>
<td>Engineers</td>
<td>2,200</td>
<td>2,200</td>
</tr>
<tr>
<td>Carabineers</td>
<td>13,000</td>
<td>13,000</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>91,400</strong></td>
<td><strong>216,000</strong></td>
</tr>
</tbody>
</table>

The navy consists of 123 steam-vessels, carrying 755 guns and aggregating 21,161 horse-power. Besides these, there are 3 school-ships, carrying 54 guns, and 2 sailing-vessels. The Spanish fleet is manned by 14,000 seamen and 5500 marines.

The length of railways in operation January, 1875, was 3810 English miles, and 1,265 English miles were in course of construction. The whole of the Spanish railways belong to private companies, but nearly all have obtained guarantees or subventions from the government.

The post-office carried 75,300,000 letters in the year 1874. There were 2365 post-offices on the 1st of January, 1875.

The length of lines of telegraph on the 1st of January, 1875, was 7510 English miles, and the total length of wires 16,950 English miles. In the year 1874 the number of messages was 937,845.

**COLONIES.**

<table>
<thead>
<tr>
<th></th>
<th>AREA IN ENGLISH SQ. MILES.</th>
<th>POPULATION.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AMERICA.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cuba</td>
<td>43,225</td>
<td>1,400,000</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>3,544</td>
<td>625,000</td>
</tr>
<tr>
<td><strong>ASIA.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philippine Islands and adjacent archipelago</td>
<td>66,423</td>
<td>6,034,410</td>
</tr>
<tr>
<td><strong>AFRICA.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fernando Po, Annobon, etc.,</td>
<td>483</td>
<td>35,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>113,675</strong></td>
<td><strong>8,094,410</strong></td>
</tr>
</tbody>
</table>

* The peseta = 19.3 cents.
The following figures show the production of sugar and molasses and amount exported from Cuba during the year 1873:

<table>
<thead>
<tr>
<th></th>
<th>PRODUCTION.</th>
<th>EXPORTED.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar</td>
<td>796,179 tons</td>
<td>714,960 tons</td>
</tr>
<tr>
<td>Molasses</td>
<td>242,308</td>
<td>189,333</td>
</tr>
<tr>
<td>Total</td>
<td>1,038,487</td>
<td>904,293</td>
</tr>
</tbody>
</table>

About two-thirds of the sugar and about nine-tenths of the molasses are sent to the United States.

The exports from the port of Havana during the year 1873 included 1,412 tierces of honey, 19,574 pipes of rum, 46,216 lbs. of wax, 13,387,652 lbs. of tobacco, and 224,765,000 cigars. The number of vessels entered at the port of Havana during 1873 was 2,194, with a total tonnage of 921,632.

During the same year Porto Rico exported 2,032,913 quintals of sugar, 6,082,539 gallons of molasses, 270,895 quintals of coffee, 51,766 quintals of tobacco, 2484 quintals of cotton, and 32,782 gallons of rum.

The exports of the Philippine Islands are principally sugar, hemp, tobacco, cigars, and coffee, and amounted in 1873 to 15,216,000 pesos.*

(The above statistics were furnished in part by the Spanish Commission.)

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Commission from Spain to the International Exhibition:

**Colonel F. Lopez Fabra**, Royal Commissioner-General.

**Colonel Juan J. Marin**, Engineer Corps, Royal Spanish Commissioner.

**Don Joaquin Oliver**, Secretary.

**Don Alvaro de la Gandara**, Director of the Industrial Department.

**Count del Donadio**, Director of the Department of Fine Arts.

**Don Jose Jordana y Morera**, Director of the Agricultural Department.

**Don Juan Morphy**, Consul-General of Spain, Member of the Commission.

**Don Julian A Principe**, Vice-Consul, Attaché.

**Don Miguel Gonzalez**, Attaché.

**Don Jose Fonrodona**, Attaché.

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**Chiefs of Bureaus.**

**Don Enrique Brotons.**

**Don Alfredo Escobar.**

---

**Chiefs of Installation.**

**Don Bernardo Forzano.**

**Don Francisco Forzano.**

**Don Francisco Parody**, Interpreter.

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*The peso = 92½ cent.*
PORTUGAL.

PORTUGAL, the most westerly kingdom of Europe, is a part of the great Spanish peninsula, and lies in 36° 55' to 42° 8' N, lat., and 6° 15' to 9° 30' W, long. Its greatest length from north to south is 368 miles, and its average breadth from east to west about 100 miles. It is bounded by the Atlantic on the south and west, and by Spain on the north and east.

Portugal is divided into six provinces, the area of which and population, according to the last census (1868), is given in the subjoined table:

<table>
<thead>
<tr>
<th>Provinces</th>
<th>Area in English sq. miles</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minho</td>
<td>2,671</td>
<td>983,985</td>
</tr>
<tr>
<td>Tras-os-Montes</td>
<td>4,065*</td>
<td>379,144</td>
</tr>
<tr>
<td>Beira</td>
<td>8,585</td>
<td>1,288,994</td>
</tr>
<tr>
<td>Estremadura,</td>
<td>8,834</td>
<td>837,451</td>
</tr>
<tr>
<td>Alemtejo</td>
<td>10,455</td>
<td>332,237</td>
</tr>
<tr>
<td>Algarve</td>
<td>2,099</td>
<td>177,342</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36,510</strong></td>
<td><strong>3,995,153</strong></td>
</tr>
</tbody>
</table>

The insular appendages of Portugal are, the Azores, 1133.79 sq. miles, pop. (1868) 252,480; Madeira, etc., 330.75 sq. miles, pop. 113,341. The total area of the home possessions of Portugal is, therefore, 37,510.83 sq. miles, and the population 4,360,674.

Portugal must be regarded as essentially a littoral country, forming the Atlantic or western part of the Spanish peninsula, from which it is separated by political rather than physical boundaries. Its mountains and rivers are, with few exceptions, mere western prolongations of those of Spain. The principal mountain ranges lie about halfway inland, leaving almost the whole of its 500 miles of coast-line a flat sandy tract, with few rocky headlands, and hence there are scarcely any harbors or places of safe anchorage, except at the embouchures of the larger rivers. The highest range is the Serra de Estrella, which, passing from north-north-east to south-south-west, through Beira and Estremadura, terminates in the steep acclivities of Cinta and Cap la Rocca, near Lisbon. The principal chain, which is also known as the Serra da Junto, merges in a series of ridges, which cover a tract thirty miles in length between the Tagus and the sea. Another mountain range, named the Serra de Calderia and the Serra de Monchique, but constituting a mere continuation of the Spanish Sierra Morena, crosses the southern part of Portugal from east to west, and terminates in its most southern promontory of Cape St. Vincent. These ranges, with the numerous mountain-spurs that intersect the northern districts in every direction, so thoroughly occupy the area of Portugal that there are only two or three plains of any extent in the whole country, and these are situated to the west of the Guadiana, in Alemtejo, and in Beira and Estremadura, near the Tagus and Vouga. The valleys are very numerous, and by their great fruitfulness present a striking contrast to the barren and rugged mountains by which they are enclosed. The principal rivers enter Portugal from Spain. Of these, the largest are the Guadiana, which, leaving Spain near Badajoz, forms in part the boundary between the southern provinces of the neighboring kingdom, while the Minho and Douro, flowing west, form a part of the boundary in the north and north-east. The Tagus, or Tejo, intersects Portugal from its northern frontier to the southern termination of the Estrella Mountains, where it enters the sea a little below Lisbon. The Mondego, the largest river belonging entirely to Portugal, after receiving numerous affluents in its course, falls into the sea about midway between the Douro and the Tagus. The larger rivers, although obstructed at their mouth with dangerous bars, afford admirable means of internal navigation, together with the numerous lesser streams, and might through
canals be connected into one great system of water routes; but hitherto nothing has been done to improve these great natural advantages. Except a few mountain tarns, Portugal has no lakes. It has salt marshes on the coast near Sctubal, in Estremadura, and Aveiro, in Beira, whence large quantities of salt are annually obtained by evaporation. Mineral springs are abundant in many parts of the country, but hitherto they have been almost wholly neglected.

The vicinity to the western ocean tempers the climate of Portugal and exempts it from the dry heat by which Spain is visited. The great inequalities of the surface produce, however, great diversities of climate; for while snow falls abundantly on the mountains in the northern provinces, it is never seen in the lowlands of the southern districts, where spring begins with the new year and harvest is over by midsummer. Rain falls abundantly, especially on the coast, from October to March, and as a general rule the climate is healthy in the elevated districts even of the southern provinces; but malaria and fever prevail in low, flat lands and near the salt marshes. The mean annual temperature at Lisbon is 61° Fahr.

The natural products correspond to the diversity of the physical and climatic conditions; for while barley, oats and wheat, maize, flax, and hemp are grown in the more elevated tracts, rice is cultivated in the lowlands, the oak thrives in the northern, the chestnut in the central, and the cork, date, and American aloe in the southern parts, while every species of European and various kinds of semi-tropical fruits and vegetables are grown in different parts of the country. The soil is generally rich, but agriculture is everywhere neglected, and is scarcely made subservient to the wants of the population. The cultivation of the vine and that of the olive are almost the sole branches of industry; from the former is derived the rich red wine familiarly known to us as Port, from its being shipped at O Porto, "the port." The mineral products include gold, antimony, lead, copper, marble, slate, coal, iron, and salt, but of these the last is alone worked in sufficient quantity for exportation, and is in eager demand for the British market on account of its superior hardness, which adapts it specially for the salting of meat for ships. The commercial industry of the country falls very far below its physical capabilities, and Oporto and Lisbon are the only centres of manufacture and trade, the former of which has important silk and glove manufactories, and produces an inconsiderable quantity of linen, cotton, and wool fabrics, metal and earthenware goods, tobacco, cigars, leather, etc.

The external trade of Portugal is as follows: Imports 34,047,000 milreis, exports 23,609,000 milreis. (The milreis equals $1.08 in gold.)

The commercial navy of Portugal consisted on the 1st of January, 1872, of 813 vessels, of a total burden of 85,510 tons.

The fundamental law of the kingdom is the "Carta Constitucional," granted by King Pedro IV. April 29th, 1826, and altered by an additional act, dated July 5th, 1852. The crown is hereditary in the female as well as male line, but with preference of male in case of equal birthright. The constitution recognizes four powers in the state, the legislative, the executive, the judicial, and the "moderating" authority, the last of which is vested in the sovereign. There are two legislative chambers, the "Camera dos Pares," or House of Peers, and the "Camera dos Deputados," or House of Commons, which are conjunctively called the Cortes Geraes. The peers, unlimited in numbers, but actually comprising 133, are named for life by the sovereign, by whom also the president and vice-president of the first chamber are nominated. The members of the second chamber are chosen in direct election by all citizens having a clear annual income of 133 milreis. The deputies must have an income of at least 390 milreis, but lawyers, professors, physicians, or the graduates of any of the learned professions need no property qualification. Continental Portugal is divided into ninety-four electoral districts, returning as many deputies. The General Cortes meet and separate at specified periods, without the intervention of the sovereign, and the latter has no veto on a law passed twice by both Houses. All laws
relating to the army or general taxation must originate in the Chamber of Deputies. The executive authority vests, under the sovereign, in a responsible ministry.

The budget of the financial year 1875-76 gives the estimated revenue at 23,152,000 milreis, and the expenditure at 24,129,000 milreis.

About one-half of the total liabilities of Portugal rank as an external debt, contracted for mainly in Great Britain, the rest being a home debt. The entire public debt amounted November 30, 1873, to £72,833,000. The army, in time of peace, numbers 31,826 men.

The navy of Portugal comprised, at the end of 1875, 21 steamers and 11 sailing-vessels, most of the latter laid up in harbor. The steamers comprise 9 corvettes, 8 sloops, and 7 gunboats, with a total of 170 guns and 4906 horse-power. The navy is officered by 1 vice-admiral, 5 rear-admirals, and 31 captains, and manned by 3493 sailors and marines.

The total length of railways in Portugal at the commencement of 1875 was 523 English miles. All the railways receive subventions from the state.

The number of post-offices in the kingdom at the beginning of 1872 was 599, and the number of telegraph offices 121. There were at the same time 1944 miles of telegraph lines. The number of telegrams despatched in the year 1871 was 698,700, nearly one-fifth for foreign countries. An international service by submarine cables was opened June 11, 1870.

Public education is entirely free from the supervision and control of the Church. By a law enacted in 1844 it is compulsory on parents to send their children to a place of public instruction, but this prescription is far from being enforced.

There are at present—

Scientific establishments for higher education, 9
For secondary education, 19
Elementary schools, 2445
For especial instruction, 6

The sum voted in 1875 for public instruction amounted to 902,730 milreis. The sum expended by private persons is estimated at about 300,000 more.

Colonies.

The colonial possessions of Portugal, situated in Asia and Africa, embrace a total area of 713,225 English square miles, or 34,820 geographical square miles. The latest official returns, based mainly on estimates, state the area and population as follows:

<table>
<thead>
<tr>
<th>AREA IN GEOG. SQ. MILES</th>
<th>POPULATION.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. POSSESSIONS IN ASIA:</td>
<td></td>
</tr>
<tr>
<td>Settlements at Goa, Salcete, etc., 68.60</td>
<td>474,233</td>
</tr>
<tr>
<td>Damas and Diu, 7.45</td>
<td>53,284</td>
</tr>
<tr>
<td>Indian Archipelago, 260.</td>
<td>850,300</td>
</tr>
<tr>
<td>Macao, .56</td>
<td>100,000</td>
</tr>
<tr>
<td>Total Asia, 336.61</td>
<td>1,477,817</td>
</tr>
<tr>
<td>2. POSSESSIONS IN AFRICA:</td>
<td></td>
</tr>
<tr>
<td>Cape Verde Islands, 77.64</td>
<td>67,347</td>
</tr>
<tr>
<td>Settlements in Senegambia and Guinea, 1,687,</td>
<td>8,500</td>
</tr>
<tr>
<td>Islands of St. Thomas and Principe, 21.36</td>
<td>19,205</td>
</tr>
<tr>
<td>Angola, Benguela, and Mossamedas, 14,700</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Mozambique and Sofala, 18,000</td>
<td>300,000</td>
</tr>
<tr>
<td>Total Africa, 34,486</td>
<td>2,395,142</td>
</tr>
<tr>
<td>Total Possessions, 34,822</td>
<td>3,872,959</td>
</tr>
</tbody>
</table>
Although of small extent, the Cape Verde Islands are estimated as the most important colonial possession of Portugal, politically and commercially. There are nine principal or inhabited islands that form the archipelago of the Cape de Verdes. Five of these islands—viz., St. Nicholas, Bona Vista, San Antonio, St. Vincent, and Sal—compose the Windward, and the four remaining islands—St. Jago, Fogo, Brava, and Maio—the Leeward, group. The island of St. Vincent, 70 English square miles in extent, but with not more than 1700 inhabitants, is possessed of a deep and excellent harbor, affording a secure anchorage at all seasons for vessels of the largest size. In the year 1871 there entered St. Vincent harbor 317 vessels of all nations. These islands, being in the direct route of European steamers bound to the coast of Brazil, the river Plate, and the west coast of South America, are of great value as affording a convenient resting-place for coaling and renewing provisions and water.

By the terms of a law passed by the Cortes Geraes of Portugal in 1858, domestic slavery is to cease in all the Portuguese colonies and settlements on the 29th of April, 1878.

Commission from Portugal to the International Exhibition:

The preliminary works of the International Exhibition of Philadelphia were committed by the Portuguese Government to different corporations, these being helped by the authorities of the country.

EXECUTIVE COMMITTEES IN PORTUGAL.

DEPARTMENT I.

Bureau of Mines. JOAO BAPTISTA SCHIAPPA D'AZEVEDO, Chief.

Mining Engineers.

JOAO FERREIRA BRAGA.
LOURENCO MALHEIRO.

| FRANCISCO FERREIRA ROQUETTE. |
| PEDRO VICTOR DA COSTA SEQUEIRA. |

DEPARTMENTS II., III., IV., AND V.

Committee of the Society for the Encouragement of Manufacturing Industry.

ANTONIO AUGUSTO D'AGUIAR, Director of the Industrial Institute of Lisbon, President.

DANIEL CORDEIRO FEIO.
JOAQUIM MOREIRA MARQUES.
MANUEL DE CARVALHO RIBEIRO VIANNA.
IZIDORO THOMAZ DE MOURA CARVALHO.
MANUEL GOMES DA SILVA.
JOSE CAETANO D'ALMEIDA NAVARRO.
ANTONIO ADRIANO DA COSTA.
FIRMINO SEIXAS.
FRANCISCO JOSE LOPES FERREIRA.
MATEUS FERREIRA.
ANTONIO DOS SANTOS MIGUEIS.
JULIO JOSE PIRES.
HENRIQUE PEREIRA TAVEIRA.

AT OPORTO.

GUSTAVO ADOLPHO GONCALVES E SOUZA, Director of the Industrial Institute of Oporto.

DEPARTMENTS VI., AND VII.

Committee of the Royal Central Society of Portuguese Agriculture.

VISCOUNT OF CARNIDE, President.

MANUEL JOSE RIBEIRO.
CAETANO DA SILVA LUZ.
JAYME BATALHA REIS.
ALFREDO DE QUEIROZ GUEDES, Treasurer.
LUI S AUGUSTO MARTINS D’ANDRADE, Secretary.
Committee of the Agricultural Society of Oporto.
BENTO DE FREITAS SOARES, President.
BARON OF ROEDA.
VISCOUNT OF VILLARINHO DE S. ROMAO.
VISCOUNT OF VILLAR ALLEN.
CONSTANTINO VANZELLER.
ARNALDO AMANDIO PEREIRA DE FARIA.
ALFREDO CARLOS LE COCQ.
JOAQUIM TAIBNER DE MORAES, Secretary.

COMMISSION IN PHILADELPHIA.
BARON OF SANT’ ANNA, Royal General Commissioner.

DEPARTMENTS I., II., III., IV., AND V.

LOURENCO MALHEIRO, Commissioner.
ANTONIO JOSE ANTUNES NAVARRO.
FORGE CANDIDO BERKELEY COTTER.
THOMAZ VICTOR DA COSTA SEQUEIRA.

DEPARTMENTS VI. AND VII.

JAYME BATALHA REIS, Commissioner,
ALFREDO CARLOS LE COCQ,
MEM RODRIGUES DE VASCONCELLOS,
CAETANO OLYMPIO ROVERE.
TURKEY.

Turkey, or the Ottoman Empire, includes large portions of the continents of Europe, Asia, and Africa, and consists of Turkey Proper, which is under the direct rule of the sultan, and of numerous dependent and tributary states, governed by their own princes. Turkey Proper is partly in Europe and partly in Asia, and is divided into a number of provinces, or eyalets.

The total area of the empire comprises 1,812,048 square miles, divided as follows:

<table>
<thead>
<tr>
<th>Area</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey in Europe</td>
<td>207,438</td>
</tr>
<tr>
<td>&quot; &quot; Asia</td>
<td>660,870</td>
</tr>
<tr>
<td>&quot; &quot; Africa</td>
<td>943,740</td>
</tr>
<tr>
<td>1,812,048</td>
<td></td>
</tr>
</tbody>
</table>

The states dependent upon Turkey are either subject to hereditary chiefs—as in Egypt, Servia, and Montenegro—to elective rulers, or to viceroy's appointed by the Sultan; and these chiefs, of whatever sort, must, on their accession, be approved of by the sultan, must acknowledge his suzerainty, and pay tribute; in all other respects they are on the footing of independent rulers.

Turkey Proper, as the immediate possessions of the sultan are called, is bounded by the Austrian dominions, Roumania, and the Black Sea on the north; by Persia, the Persian Gulf, and the Arabian Desert on the east; and by the Red Sea and its outlet, Egypt, the Mediterranean, Greece, the Adriatic Sea, and the Austrian empire on the south and west.

Turkey in Europe, the smaller of the two divisions of Turkey Proper, is generally hilly and undulating, traversed by a mountain system which has its origin in the Alps, whose eastern extension, the Julian Alps, enters the country at its north-west corner, runs in a south-west direction as the Dinaric Alps, keeping parallel to the coast-line, and after entering Albania, where it becomes Mount Findus, assumes an almost southern direction till it reaches the Greek frontier. This range, which forms the water-shed between the Adriatic and Ægean Seas, has its culminating point in Mount Dinara (7458 feet), and sends out numerous offshoots over Montenegro and Albania.

The great river of Turkey is the Danube, which, with its tributary, the Save, forms the northern boundary, and receives in Turkey the Bosna and Drin from Bosnia, the Morava from Servia, and the Isker and Osma from Bulgaria. The Maritza, whose basin is formed by the Great Balkan and its two south-eastern branches, and the Strumo and Vardar, in Macedonia, are also considerable rivers, but those which are situated to the west of the Dinaric-Pindus range are, from the proximity of that water-shed to the sea-coast, insignificant in size; chief of them are the Narenta, Drin, and Voyutza. The Primitive rocks predominate in Macedonia, the Secondary group in the western provinces and to the north of the Balkan, and Tertiary deposits in the basins of the Save and Maritza, and in Sull.

On the high lands the cold is excessive in winter, owing to the north-east winds, which blow from the bleak and icy steppes of Southern Russia; and the heat
of summer is almost insupportable in the western valleys. Violent climatic change is, on the whole, the rule in European Turkey; but those districts which are sheltered from the cold winds, as the Albanian valleys, enjoy a comparatively equable temperature. Although the soil is for the most part very fertile, but little progress has been made in the art of agriculture, and the most primitive implements are in common use. The cultivated products are maize in the south; rice, cotton, rye, barley in the centre, and millet in the north; the natural products are the pine, beech, oak, lime, and ash, with the apple, pear, cherry, and apricot in the Danube basin; the palm, maple, almond, sycamore, walnut, chestnut, carob, box, myrtle, laurel, etc., in the provinces south of the Balkan; large forests of fir and pine in the north-west; the olive, orange, citron, vine, peach, plum, and other fruit trees in Albania; and abundance of roses in the valley of the Maritta. The mineral products are, iron in abundance, argentiferous lead ore, copper, sulphur, salt, alum, and a little gold, but no coal. The wild animals are the wild boar, bear, wolf, wild dog, civet, chamois, wild ox, and those others which are generally distributed in Europe. The lion was formerly an inhabitant of the Thessalian Mountains.

TURKEY IN ASIA.—This portion of the Turkish Empire is more hilly than the other; the two almost parallel ranges Taurus and Anti-Taurus, which are the basis of its mountain system, cover almost the whole of the peninsula of Asia Minor or Anatolia, with their ramifications and offshoots, forming the surface into elevated plateaux, deep valleys, and enclosed plains. From the Taurus chain the Lebanon range proceeds southward parallel to the coast of Syria, and diminishing in elevation in Palestine terminates on the Red Sea coast at Sinai. Besides the Euphrates, Tigris, and Orontes, the only important rivers of Turkey in Asia are the Kizil-Ermak, which rises on the borders of Cilicia, and after a devious course across the peninsula falls into the Black Sea near Samsoun; the Maeander and Sarabat, which flow to the Aegean; and the Sakaria, which empties itself into the Euxine. On the whole, Turkey in Asia is ill-supplied with water; and though the mountain slopes afford abundance of excellent pasture, the plains and many of the valleys, especially those of the Euphrates, Tigris, and Jordan, are reduced by the parching droughts of summer to the condition of sandy deserts.

The fertile portions produce abundance of wheat, barley, rice, maize, tobacco, hemp, flax, and cotton; the cedar, cypress, and evergreen oak flourish on the mountain slopes; the sycamore and mulberry on the lower hills; and the olive, fig, citron, orange, pomegranate, and vine on the low lands. The mineral products are iron, copper, lead, alum, silver, rock salt, coal (in Syria), and limestone. The fauna includes the lion (east of the Euphrates), the hyena, lynx, panther, leopard, buffalo, wild boar, wild ass, bear, wolf, jackal, jerboa, and many others; and the camel and dromedary increase the ordinary list of domestic animals.

Notwithstanding the primitive state of agriculture in Turkey, the extreme fertility of the soil, which returns from twenty-five fold to one hundred fold, makes ample amends for this defect, and supplies materials for the comparatively unimportant manufactures and industries of the country. The products are wax, raisins, dried figs, olive oil, silks, red cloth, dressed goat-skins, excellent morocco, saddlery, swords of superior quality, shawls, carpets, dye-stuffs, embroidery, essential oils, attar of roses, plum brandy, etc. The commerce of Turkey is extensive and important, and under the influence of judicious regulations is rapidly increasing. Detailed statistics are not obtainable. The average annual value of the imports of Turkey in Europe is estimated at £15,500,000; and of the exports at £10,000,000. The exports are the surplus of the above-mentioned natural and manufactured products of the country, also wool, goats' hair, meerschaum clay, honey, sponges, drugs, madder, gall-nuts, various gums and resins, and excellent wines; the imports are manufactured goods of all kinds, glass, pottery, arms, paper, cutlery, steel, amber, etc.

The merchant navy included, in 1873, 224 sailing-vessels of a total burden of
34,711 tons, and 9 steamers, aggregating 3049 tons. The total tonnage of the merchant navy is estimated at 180,000.

The sovereign is commonly styled sultan, but has also the titles padishah, grand seignior, khan, and hunkiar; though nominally absolute, his power is much limited by the sheikh-ul-islam, the chief of the Ulemas, who has the power of objecting to any of the sultan's decrees, and frequently possesses more authority over the people than his sovereign. The supreme head of the administration, and the next in rank to the sultan, is the grand vizier (sadrit-azam), under whom are the members of the cabinet or divan (menasybi-divanies), namely, the presidents of the supreme council of state (alkiami-adlies) and of the Tanzimat, the Seraskier, the capudan pasha, or high-admiral, and the other heads of departments of the administration. The governors of the eyalets, or provinces, are styled walis; each eyalet is divided into sanjaks or livas, ruled by kaimakams, each liva containing a number of cazas, or districts, and each caza a number of naftiyeks, composed of villages and hamlets.

According to the budget for 1875-76 (the year 1291, according to the Turkish calendar), the estimated public revenue was 4,776,588 purses\(\textsuperscript{a}\) of 500 piasters each; the expenditure, 5,785,819 purses. The foreign debt of Turkey amounted in 1875 to L184,981,783; the internal and floating debt has been estimated variously at from L13,000,000 to L30,000,000.

The military forces of Turkey were officially estimated as follows in 1875: on a peace footing, 157,667 men; on a war footing, 586,100.

The navy consisted at the end of 1875 of 20 iron-clad ships and 70 other steamers. In addition to these there were 4 steam transports and a number of old sailing-vessels not fit for service. The total length of railways open for traffic on January 1st, 1875, was 825 English miles, of which 654 were in Europe and 171 in Asiatic Turkey. The length of telegraph lines on the 1st of January, 1875, was 17,597 miles. The total number of despatches carried in the year 1874 was 910,130, of which number 102,987 were international messages.

Education was long neglected, but in 1847 a new system was introduced; and since then schools for elementary instruction have been established throughout Turkey, and middle schools for higher education and colleges for the teaching of medicine, agriculture, naval and military science, etc. In 1870, Constantinople had 415 public schools, which were attended by 24,000 pupils.

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Commission from TURKEY to the International Exhibition:

His Excellency G. D'Aristarchi Bey, Minister Plenipotentiary, President.
Baltaazzi Effendi, First Secretary of Legation.
Rustem Effendi, Second Secretary of Legation.
Count Della Sala, Acting Consul of Turkey.
Mr. Edward Sherer.
Mr. Auguste Giese, Honorary Member.

\(\textsuperscript{a}\) One purse of 300 piasters = $25, gold.
RUSSIA.

The empire of Russia, extending over a large proportion of the northern regions of the globe, includes the eastern part of Europe, the whole of Northern Asia, and a part of Central Asia. Lat. 38° 30' to 78° N.; long. 17° 19' E. to 190° E. (170° W.). Russia is bounded on the N. by the Arctic Ocean; on the E. by the Pacific Ocean; on the S. by the Chinese Empire, Turkestan, Caspian Sea, Persia, Asiatic and European Turkey, and the Black Sea; on the W. by Austria, Prussia, the Baltic, and Sweden.

The following table, showing the area and population of the Russian empire, is from the Almanach de Gotha for 1876:

<table>
<thead>
<tr>
<th>Area in Square Kilometres</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>4,909,104</td>
</tr>
<tr>
<td>Poland</td>
<td>127,316</td>
</tr>
<tr>
<td>Grand Duchy of Finland</td>
<td>373,536</td>
</tr>
<tr>
<td>Lieutenancy of Caucasus</td>
<td>447,645</td>
</tr>
<tr>
<td>Siberia</td>
<td>12,500,683</td>
</tr>
<tr>
<td>Central Asia</td>
<td>3,307,953</td>
</tr>
<tr>
<td>Total</td>
<td>21,665,727</td>
</tr>
</tbody>
</table>

The northern shores of the Russian territories, which are washed by the Arctic Ocean, are deeply indented. The White Sea, an immense arm of the Arctic Ocean, penetrates 350 miles into the mainland, and is subdivided into the gulfs of Onega and Archangel or Dwina. The other chief inlets on the north of Russia are the Kara Sea and the gulfs of Obi and Yenisei. Westward from Nova Zembla the Arctic Ocean is navigable for three months of the year; east from that island the sea, even at the mildest season, is encumbered with floating icebergs. The chief islands in this ocean are the Kolguef, Waigatz, Nova Zembla, and Spitzbergen isles. The eastern shores of Russia are washed by the Pacific, subdivided into the Behring, Okhotsk, and Japan Seas, and the islands belonging to this country in these seas are Sakhalin and the northern part of the Kuriles. On the south are the Black Sea and the Sea of Azov, the latter communicating with the former by the Strait of Kertch, and so shallow that it is navigable for small craft only. Of the Caspian Sea, Russia commands the whole, with the exception of the south shore, which belongs to Persia. The northern and eastern banks of the Caspian are the seats of the chief fisheries of the empire. On the north-west of Russia are the Baltic Sea, with the gulfs of Riga, Finland, and Bothnia; and in these waters the islands of Aland, Esel, and Dago belong to the empire. The freezing of the water near the shores of the Baltic renders the navigation of this sea impracticable during five months of the year, although a few ports are accessible throughout the whole year. Possessing means of easy communication with the most fertile governments of the interior, and sustaining chiefly the commerce of the Russian empire with the other parts of Europe and with America, the Baltic is of the highest commercial importance.

European Russia consists of a vast plain bordered with mountains. On the east are the Ural Mountains, forming a broad range of no great elevation, ending on the
north on the shores of the Arctic Ocean, and on the south in a range of elevated plains on the left bank of the Volga. On the south-east of the great plain is the lofty range of the Caucasus, crossed by the Pass of Derbend and the so-called Military Georgian Road. The Crimean Mountains, a continuation of the Caucasian chain, rise to 5000 feet in their highest summit. The districts in the south-west of Russia, between the Vistula and the Pruth, are covered by hilly ranges from the Carpathian Mountains, which in Poland are known as the Sandomir Mountains. The Finland Mountains, on the north-west, are ranges of granite rocks, embracing numerous lakes, and not rising higher than 600 feet. The Alaunsky table-land, which connects itself with the Ural Mountains by a chain of hills in latitude about 62° N., is the key to the configuration of European Russia. From this table-land, with an elevation of about 1200 feet, the country, with gradually declining slopes, falls away in four directions—north to the Arctic, north-west to the Baltic, south to the Black, and south-east to the Caspian Seas. The sloping country on the north of the Alaunsky heights is called, from its eastern and western limits, the Ural-Baltic table-land; that on the south of the same dividing heights is called, for the same reason, the Ural-Carpathian table-land. The Alaunsky heights form the great water-shed, and regulate the course of all the great rivers of the Russian empire. To the north they throw off the Petchora, the Northern Dwina, and the Onega; to the south, the Dniester, Bug, Dnieper, Don, and Kouban; to the south-east, the Volga, with its great affluent the Oka and Kama. The Western Dwina, the Niemen, and the Vistula fall into the Baltic Sea. At the foot of the north-west slope from the central terrace is the lake country of European Russia, and the great lakes are Ladoga, Onega, Ilmen, Peipus, and Pskov. The plain of European Russia naturally divides itself into three tracts or zones, each of which differs from the others in the nature and quality of its soil. The northern zone extends between the Arctic Ocean and the Ural-Baltic table-land, the middle zone between the Ural-Baltic and the Ural-Carpathian table-lands, and the southern zone between the Ural-Carpathian table-land and the Black and Caspian Seas. The soil of the northern zone is marshy and the climate inclement. In its middle part, between the rivers Onega and Mezen, and especially along the banks of the Northern Dwina, forests of fir-wood and large tracts of fodder-grass occur. Toward the east of this tract the woods disappear, and vast marshes, frozen the greater part of the year, cover the country. The middle zone reaches south-west to the government of Volhynia and the South of Poland, and north-east to the Ural Mountains. In the west it consists of an extensive hollow, covered with woods and with marshes, the chief of which are those of Pinsk. In the middle part of this zone the soil is partly heavy and covered with mould, and toward the north sandy. Beyond the Oka luxuriant meadows abound, and on the east, beyond the Volga, this tract forms an extensive valley, covered with a thick layer of mould, abounding in woods, and rising into hills in the vicinity of the Ural range. The southern zone consists of steppes extending along the shores of the Black and Caspian Seas. The steppes of the Black Sea have mostly a mouldy soil covered with grass, but in the south-east shifting sands and salt marshes predominate. The steppes of the Caspian consist of sand, salt marshes, and salt lakes, the Elton lake, yielding nearly 4,000,000 poods (about 1,200,000 hundred weights) of salt annually, being the most remarkable. Owing to its vast extent, the Russian empire presents great varieties of climate. At Archangel the mean temperature of the year is 32° Fahr.; at Yalta, in the Crimea, 52°; and at Kutais, in the Caucasus, 58°. Consisting of an immense area of dry land, the climate of the empire is essentially continental, and the climate of localities in its interior is much more rigorous than that of places on the western shores of Europe in the same latitudes. The rigor of the climate of the empire increases not only with the latitude, but as you advance eastward; thus, the mean winter temperature of the town of Abo, on the Gulf of Bothnia, is the same as that
of Astrakhan, viz., 23° Fahr., although the former is in lat. 61° and the other in lat. 47°, or 14° nearer the equator. The difference of the mean summer temperature under the same latitudes is, on the contrary, not very considerable. The isothermal line of Astrakhan (60° Fahr.) passes through Lublin, in Poland, and Ekaterinoslav. In the east the maximum heat is even greater than in the west, and such heat-loving plants as the watermelon are grown more successfully in the south-east of Russia than in the west of Europe under the same latitude. The dryness of the atmosphere increases in the direction from north-west to south-east. On the banks of the Baltic the average number of rainy and snowy days is 150 and the annual rainfall is 20 inches, while near the Caspian the number of such days is 70 and the rainfall only 4 inches. The climate of Russia is in general healthy, but there are several places where diseases seem to be localized, as the shores of the Frozen Ocean, where scurvy is common, the marshes along the Niemen and Vistula, where the pica polonica is the chief disease, and the marshy lands on the Black, Azof, and Caspian Seas, where ague always prevails.

Russia is an eminently agricultural country, although only a comparatively small portion is under cultivation. In the central zone the soil is almost entirely black mould, extremely fertile, and hardly ever requiring manure. The system of husbandry most extensively practiced is what is called the "three-field system," in the working of which one-third of the land is always in fallow. In the south and south-east a system of agriculture peculiar in Russia is in operation; it is called the "fallow system," and consists in raising three or four consecutive crops from the same land, and afterward allowing it to lie fallow for five or six years, after which time it begins to grow feather-grass (Stipa pennata), which is considered a token of returning fertility. A great drawback to the development of agriculture is the want of proper means of communication, and consequently the low price of corn in the locality in which it is grown. Fodder-grass is rarely cultivated, as a sufficient supply of fodder is afforded by the extensive natural meadows. The chief cereals are wheat, which is grown as far north as lat. 62°, rye, barley, and oats. Buckwheat and millet are grown in the south, and from these, but specially from rye, the staple food of the inhabitants is made. Hemp and flax are extensively cultivated, and the oil extracted from the seeds of the former is an indispensable article of the peasant's household, as it is used for food during the fasts, which, taken together, extend over about half the year. Tobacco crops cover about 16,000 acres. Beet-root and maize are also cultivated, and there are numerous vineyards in the Crimea, Bessarabia, and along the Don. Gardening is an important branch of industry, the products being cucumbers, onions, cabbages, and other vegetables and fruits. An area of 486,000,000 acres is covered with woods, but the quantity of timber, from which material the peasant supplies almost all his wants, is at present suffering diminution. Coniferous trees are the chief in the northern districts, but in the central tracts oaks, limes, maples, and ashes are the chief. Timber is the chief article of internal commerce, and is floated down the rivers from the well-wooded districts to those which are destitute of wood.

ANIMALS AND ANIMAL PRODUCTS.—In the northern and central provinces cattle are kept chiefly for the purpose of obtaining manure, but in other parts cattle-breeding is an important branch of industry. On an average there are 30,000,000 head of cattle in Russia. Of horses the best, chiefly trotters, are reared in breeding-stables in the southern central governments, but the great bulk of the horses are obtained from the half-wild studs of the Cossacks, Kalmucks, and Kirghiz. The horses of Viatka, Kazan, and Finland are strong and hardy. The total number of the horses in Russia is about 18,000,000. Sheep-breeding is carried on extensively on the southern steppes. The sheep number 10,000,000, of which upward of 1,000,000 are of the fine merino breed. Besides these animals, there are camels in the south of Russia, reindeer in the north, and hogs and poultry in
great abundance everywhere. A breed of the urus—a huge and rare animal which does not occur in any other country—is preserved in a forest of the government of Grodno. Among the wild animals are (chiefly in the north) the bear, wolf, elk, fox, and marten; on the northern coasts are found the seal and walrus and the eider-duck and other wild-fowl. The more expensive kinds of furs are procured from Siberia.

The most important Russian fisheries are those of the Caspian and Black Seas and the Sea of Azof and their tributaries. The Baltic Sea is not remarkably rich in fish, but the produce of the adjoining lakes is much more considerable. The herrings, cod-fish, and salmon, caught in abundance in the White Sea, constitute the chief resources of the inhabitants of the adjoining districts. Bee-culture is very general in Russia. Silkworms are reared chiefly in the Caucasus.

During the year 1874, according to official returns, the state foundries smelted 1,225,000 Russian pounds* of bronze, 557,000 pouds of iron, and 1000 pouds of steel; 89,000 pouds weight of articles in bronze were cast, and 508,000 pouds weight of ammunition, 9000 pouds weight of steel cannon and 15,000 pouds weight of iron cannon, besides which 15,000 pouds of lead and 6600 pouds of zinc were smelted. There were also made 7800 pouds weight of iron articles, 10,000 pouds sheet-iron, and 7500 roubles† worth of iron for use in shipbuilding, and 46,700 side-arms, 20,000 blades, and 5725 gun-barrels. The amount of metal passing through private factories is given approximately in the same official returns. They state the estimated products of the smelting establishments of the Ural at 13,200,000 pouds of bronze, 1,017,000 pouds of iron, 69,000 pouds of steel, and 100,000 pouds of copper. Those around Moscow are supposed to have produced 3,360,000 pouds of bronze and 1,830,000 pouds of iron. South Russian produce is estimated at 430,000 pouds of bronze and 440,000 pouds of iron; that of the Polish provinces at 1,370,000 pouds of bronze, 800,000 of iron, and 120,000 of copper. Lastly, 44,000 pouds of copper is estimated as the return from the Caucasus. During 1874 gold to the amount of 1866 pouds was extracted, without reckoning the districts of Altai and Nerchinsk, which yield an annual average of 165 pouds. The total amount of coal raised in 1874 was 83,375,000 pouds. The extraction of mineral oils in the Caucasus shows a great increase, and oil-wells have lately been discovered in the government of Kielce, Poland. Small handicraft manufacturing establishments abound in all the central governments, especially in the neighborhood of Moscow, where whole villages during the winter season are employed in some special industry, as weaving, tanning, fur-dressing, joiners’ work, shoemaking, etc. The chief manufacture is spinning and weaving flax and hemp. Linen is manufactured to the value of 100,000,000 roubles, chiefly in hand-loom, although the finer qualities are manufactured by power-loom. Most in the governments of Jaroslav and Kostroma and the capitals. Hemp is manufactured into sailcloth and ropes, which articles are largely exported. Woolen and worsted stuffs are made to the value of 50,000,000 roubles, and the quantity is on the increase. Fine cloths and mixed fabrics are made in the capitals, and in the governments of Livonia and Tchernigov. Silk-spinning and weaving are carried on in the factories of Moscow, which is renowned for its brocades and gold and silver embroideries.

In 1870 there were 158 cotton-spinning mills, producing goods to the value of 53,350,000 roubles, and weaving establishments with an annual product of 13,000,000 roubles. The next most important branch of industry is tanning, the products of which amount to 20,000,000 roubles. Other important branches of industry are cutlery, pottery, and glass-works. The produce of the machine-factories in 1870 did not exceed 15,000,000 roubles; of the sugar-refineries 27,250,000 roubles; of the paper-mills 5,750,000 roubles.

The following table shows the imports and exports during the year 1873:

* The pud or poud = 36 lbs. avoirdupois. † One rouble = 77 cents, gold.
<table>
<thead>
<tr>
<th>Imports Roubles</th>
<th>Exports Roubles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baltic ports</td>
<td>232,900,000</td>
</tr>
<tr>
<td>White Sea ports</td>
<td>981,000</td>
</tr>
<tr>
<td>Southern Sea ports</td>
<td>61,070,000</td>
</tr>
<tr>
<td>Land frontier</td>
<td>117,524,000</td>
</tr>
<tr>
<td>Total, Europe</td>
<td>412,475,000</td>
</tr>
<tr>
<td>&quot; Asia</td>
<td>20,958,000</td>
</tr>
<tr>
<td>Total</td>
<td>433,433,000</td>
</tr>
</tbody>
</table>

By far the largest portion of exports consisted of cereals.

The merchant navy of Russia consisted, at the end of the year 1874, of 2512 sea-going vessels, of an aggregate burden of 521,008 tons. Included in the total were 621 ships engaged in trading to foreign countries, and 1672 coasting-vessels, many of them belonging to Greeks, but sailing under the Russian flag. Not included in the return were 385 river and lake steamers.

The government of Russia is an unlimited monarchy, the head of which is the emperor, who unites in himself every authority and power—that is to say, is the head of the military, the legislative, and the judicial systems, and is also the ecclesiastical chief of the orthodox Greek Church. The order of succession is by primogeniture, hereditary in heirs-male, and in females in default of males. Every military or civil officer of the crown is required to take an oath of allegiance. The council of state is the highest branch of the executive, and comprehends the legislative, judicial, and administrative powers. The president and members—among whom are always included the ministers of the crown—are appointed by the emperor. A secretary of state, whose duty it is to report the opinion of the council to the emperor, is attached to this body. The estimates of expenditure and income, and every proposition introducing an addition to or a modification of the laws, are considered and revised by this council.

European Russia is divided into 50 provinces, over each of which is a governor appointed by the emperor. Some of these provinces, although administered by governors, are united under a governor-general. The governor-generalships are generally the remote frontier regions.

The nominal strength of the various divisions of the Russian army, according to the returns of the ministry of war, was as follows in 1874:

<table>
<thead>
<tr>
<th>Peace footing.</th>
<th>War footing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular army</td>
<td>559,361,193</td>
</tr>
<tr>
<td>Army of first reserve</td>
<td>180,740</td>
</tr>
<tr>
<td>Army of second reserve</td>
<td>207,812</td>
</tr>
<tr>
<td>Total</td>
<td>846,424</td>
</tr>
</tbody>
</table>

The navy comprised, in 1875, 223 vessels, of 188,120 tons burden, and carrying 561 guns. This included an iron-clad fleet of 29 vessels, of 9210 horse-power, 74,793 tons burden, and carrying 184 guns.

In the budget for 1875, the revenue is estimated at 559,361,193 roubles, and the expenditure at 556,105,410 roubles.

In 1875 the public debt was stated at 2,409,739,956 roubles, against which there was a credit, consisting of advances made to railway companies, etc., of 634,489,942 roubles.

The total length of railways at the end of the year 1874 was 13,227 English miles. Nearly one-half of the railway property was held by the government.

The post-office, in the year 1874, conveyed 59,529,000 letters, 1,300,000 post-cards, 2,218,000 wrappers, 1,493,000 parcels, and 29,020,000 newspapers. There were 3191 post-offices. The total receipts for the year 1874 did not cover the expenditure.
The length of telegraph lines, Jan. 1st, 1875, was 31,459 English miles, and the length of wires 58,675 miles. About five-sixths of the total belonged to the state. The total number of telegrams in 1874 was 3,512,003.

The following table shows, after official returns, the number of educational establishments in Russia, maintained either wholly or in part by the government, and placed under the Minister of Public Instruction, at the end of the year 1870:

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>PUPILS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities,</td>
<td>8</td>
</tr>
<tr>
<td>Lyceums,</td>
<td>2</td>
</tr>
<tr>
<td>Veterinary schools,</td>
<td>2</td>
</tr>
<tr>
<td>Gymnasia and progymnasia, (for males,</td>
<td>153</td>
</tr>
<tr>
<td>for females,</td>
<td>173</td>
</tr>
<tr>
<td>Training schools for teachers,</td>
<td>39</td>
</tr>
<tr>
<td>District schools,</td>
<td>419</td>
</tr>
<tr>
<td>Primary schools,</td>
<td>22,827</td>
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<tr>
<td>Total,</td>
<td>23,623</td>
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OTTO KITZING, Special Secretary.

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