a list of
A LIST

OF

MOLLUSCA

AND

OTHER FORMS OF MARINE LIFE

COLLECTED IN THE YEARS 1889-1890, IN

JAPAN

UNITED STATES OF AMERICA

OF DETROIT, MICHIGAN,

BOTH INCLUDED. AFTER THAT EXPECTS TO VISIT THE HAWAIIAN ISLANDS FOR A YEAR.

DETROIT, MAY, 1891.
A LIST

OF

MOLLUSCA

AND

OTHER FORMS OF MARINE LIFE

COLLECTED IN THE YEARS 1889-1890, IN JAPAN

BY

FREDERICK STEARNS,

OF DETROIT, MICHIGAN,

UNITED STATES OF AMERICA.

DETROIT:
John F. Eby & Co., Printers, 65 West Congress Street,
1891.
OF VIMUS
CALIFORNIA
PREFACE.

In 1889-90 I spent nearly a year in Japan and some few weeks in China. I went for health and pleasure, devoting much of my time to making a collection of Japanese art objects, which now is arranged, catalogued and mounted, as a donation to the Detroit Art Museum. I also attempted to make a collection of the Molluscan Fauna of Japan, and was assisted in that purpose by an intelligent Japanese who was in my employ during my entire stay in that country. He visited at intervals the entire east coast from Tokyo along Sagama and Saruga, down along Kii, Awa and Toza, along the north shore of the Inland Sea as far as Bingo, in communication with the fishermen, who gather not only fish but largely mollusks, mostly by dredge nets, in water sometimes as deep as thirty fathoms. This region lies between 33° and 36° north latitude, and between 133° and 141° east longitude, and this collection may be fairly said to represent the Marine Fauna of that limit. It is on this east coast, moreover, that the Kuro-Shiwo, or Gulf Stream of the Pacific, trends to the north east, and which accounts probably for finding occasionally the more strictly tropical species of mollusca.

On arriving home and sending specimens of my shells to the Philadelphia Academy of Natural Sciences for comparison and determination, I have been delighted to find that Prof. H. A. Pilsbry speaks of it in high terms. I quote as follows from his letter to me of November 19th, 1890:

"Your collection is a very valuable one and includes many species not in our Museum. * * * It would be very useful to have a list of these shells published. If you would get up such a list, giving exact localities wherever known, it would form a useful supplement to Dunker's Index Molluscorum Maris Japonici—the most complete summary heretofore published.

94100
You have many forms not found by Dunker or previous observers. * * * A number of your bivalves are probably new. The Scalpellum you sent is a new form which I shall name S. Stearnsii with your permission. It is a very distinct species, more nearly allied to the fossil S. Pfeifferi Weithofer of the Vienna Basin (Miocene) than to any living species. * * *

"Of the Brachiopoda sent, two are new species, and one of them I propose to name Terebratella Stearnsii."

In accordance, therefore, with Prof. Pilsbry's suggestion, I publish this list, which contains all the species obtained by me, over half of which were so rare and found in such limited numbers and at such long intervals that they are retained in my private cabinet; of the others I have abundance for exchange and for sale.

There are in the collection 72 named species not found in Dunker; 32 species remain as yet undetermined, many of which will probably be found to be new to science. In Rotella, Tapes, Cytheria, etc., are many beautiful color varieties which I believe have not been before recorded.

Preliminary descriptions of a number of the new species collected have been published in The Nautilus for December, 1890, and January, 1891. An illustrated paper on the Brachiopoda, by Wm. H. Dall and H. A. Pilsbry, will appear in the Proceedings of the Academy of Natural Sciences of Philadelphia, 1891; and another paper by H. A. Pilsbry, in the same Proceedings, will describe new Gastropoda and Pelecypoda.

Frederick Stearns.
LIST OF JAPANESE MOLLUSCA, ETC.

NOTE.—The numbers preceding the names of the shells are those upon my stock boxes containing my specimens, and correspondents can order by numbers only, or by both number and name.

Those species preceded by a "xx" I have abundance of, and it is not likely that my exchanges will exhaust them.

Those species prefixed by a single "x" are fewer in number, and it is quite likely that within a year or two of the date of this publication the stock of these will be exhausted.

Those species not preceded by "x" or "xx" are limited in finds to one, or at most three, shells; these I retain in my private cabinet, and no attention whatever will be paid to requests for any of these.

I am not a dealer in shells, hence I expect to use this material to obtain in exchange from other and original collectors desirable species not now in my cabinet.

Persons receiving this list and desiring to exchange will send me a list of what they have to offer of the rarer species, not necessarily showy or striking, among which new and undetermined species and varieties will be welcome, so long as they are known to be such and from the hands of the original collectors. I have no lists of desiderata to send to anyone.

Freight or postal charges in all cases to be paid by the sender and not by the receiver, unless under special arrangements to the contrary.

Correspondence will be acceptable in Spanish, German, French, Portuguese, as well as English.

Persons having rare shells which they prefer to sell for cash only will be treated with.

Most of the shells on this list have a fixed value on price lists of dealers where represented on such at all, and these values must be considered in making exchanges, rather than exchange of species for species or shell for shell.

ARGONAUTIDÆ.

349  x  Argonauta gondola, Dillw.; medium and small; loc. Kishu coast and Inland Sea.

MURICIDÆ.

330  xx  Murex (s. s.) tenuispinia, Lam.; loc. Kishu coast, Province Kii.

331  x  Murex (Haustellum) pliciferus, Sby.; = M. Senegalensis, var. calcar, Kiener; loc. Inland Sea.

333  x  Murex (Pteronotus) foliatus, Gmel.; loc. east coast Tokyo to Oshima.

334  xx  Murex (Chicoreus) brevifrons, Lam.; loc. Kamakura coast; dead shells without opercula.

645  x  Murex (Ocinebra) clathratus, Lin; loc. east coast Kii.

446  xx  Purpura (Stramonita) luteostoma, Chem. (var); loc. Seta coast.

447  448  Purpura (Thalessa) tumulosa, Rve; var. Bronni. Lischke; loc. Saruga coast.

306  xx  Rapana bezoar, Lin.; medium and young, clear salmon colored aperture, most with opercula; loc. Tokyo Harbor.

307  x  Rapana bezoar, Lin.; medium or half-grown, aperture slightly streaked with black lines; loc. Tokyo Harbor; with opercula.
Rapana bezoar, Lin.; aperture filled with darker parallel black lines; loc. Tokyo Bay.

Rapana bezoar, Lin.; var. bulbosa Sol.; two only found; Yokohama Bay.

TRITONIDÆ.

Triton (s. s.) nodiferous, Lam; loc. sea coast of Kii.

Triton (s. s.) variegatus, Lin; one only; Inland Sea.

Triton (Simpulum) olearium, Lam; mostly with epidermis and in many stages of growth; and all along the coast from Tokyo to Ojima.

Triton (s. s.) variegatus, Lin; one only; Inland Sea.

Triton (Gutturnium) tuberosus, Lam. (var.); one shell only; Sagama Bay.

Triton (Lampas) lampas, Lin.; Kii coast; three only found; Inland Sea.

Triton (Gutturnium) tuberosus, Lam. (var.); one shell only; Sagama Bay.

Ranella (Bursa) albi-varicosa, Rve.; loc. Kii coast.

Ranella (Eupleura) pulchra, Gray; = R. perca, Perry; loc. Inland Sea.

Ranella sp.; one only found; Inland Sea.

FUSIDÆ.

Fusus (s. s.) inconstans, Lischke; loc. Sagami Bay; with and without opercula.

Fusus nodoso-plicatus, Dkr.; one shell.

Fusus pagoda, Less.; loc. Inland Sea near Awaji.

Fusus colloseus, Lam. I brought home but one shell of this species; abundance of them were seen in the market, Hong Kong, China, where they are kept living, anchored near the market wharf in very large globular open-work bamboo baskets; the animal is considered a great dainty as food, and they are sold at about 30 cents, gold, each. The pinkish aperture is used for inlay and other ornamental work.

Siphonalia fuscolineata, Pease; two only found, very rare; Inland Sea.

Siphonalia fusoides, Rve.; four only found; a very rare shell; loc. southeast coast Kii.

Siphonalia Kellettii, Forbes; three only found; loc. southeast coast Ise.

Siphonalia signum, Rve. (var.); loc. south coast of Kii, on Inland Sea.

Euthria viridula, Dkr.; loc. east coast.
Volutharpa Perryi, Jay; various stages of growth; loc. Tokyo Bay.

Eburna Japonica, Rve.; with epidermis and opercula; from two to four fathoms, both on sandy and muddy bottom; those in the latter, larger and rougher; much used as food by the Japanese; loc. Tokyo Harbor.

Eburna Japonica, Rve.; smaller than No. 300; little or no epidermis; loc. near Enoshima.

Eburna (s. s.) lutosa, Lam.; found in the market, Hong Kong, China, where they are sold ready cooked on the streets, about 20 for one cent; buyers pick out the meats, with their fingers dip in a little soy sauce, and eat them.

Nassaria magnifica, Lischke; very rare, one only found; Inland Sea.

Nassa (Hima) festiva, Powis; loc. Inland Sea.

Nassa (Niotha) gemmulata, Lam; loc. Inland Sea; extraordinarily large if they are of this species.

Nassa livescens, Phil. (typical); one shell only.

Nassa, sp.; one only.

Voluta (Alcithoe) megaspira, Sby.; loc. along Inland Sea.

Mitra Hanleyana, Dkr.; three only found, rare; Inland Sea, Japan.

Oliva (Strephona) erythrostoma, Lam; one only found; Inland Sea.

Oliva (Porphyrea) irisans, Lam; one only found, rare color, variety; loc. Inland Sea.

Oliva (Porphyrea) mustelina, Lam; four only found, very fine color; loc. Inland Sea.

Ancillaria albocallosa, Lischke; three only found; darker than the type, east coast.

Harpa articularis, Lam.; one only found; Inland Sea.

Columbella (Pygmaea) pardalina, Lam.; var. Sagena, Rve.; loc. Inland Sea.

Columbella (Pygmaea) scripta, Lam.; loc. Inland Sea.

Cancellaria (Merica) asperella, Lam.; a rare shell; only four found; Inland Sea.

Cancellaria (Euclia) Spengleriana, Desh.; loc. along the south coast and the Inland Sea, at rare intervals.

Terebra duplicata, Lin.; one shell only; Inland Sea.

Terebra Lischkeana, Dkr.; three shells only; southeast coast Kii.
LIST OF JAPANESE MOLLUSCA

Terebra (s. s.) Loebeckeana, Dkr.; very rare, only one found in a year; Inland Sea.

750 Terebra (Sabula) maculata, Lin.; not common; I found but one.

Terebra (s. s.) triseriata, Gray; very rare, only one found in a year; Inland Sea.

PLEUROTOMIDÆ.

Pleurotoma cingulifera, Lam.; one only found; Inland Sea.

Pleurotoma Indica, Desh; seven only found; east coast.

Pleurotoma Kaderleyi, Lischke; one found only; east coast.

Pleurotoma (sp. undetermined, may be new); three shells only, from near Hiogo.

Pleurotoma (sp. undetermined, may be new); one shell only; Inland Sea.

Pleurotoma (sp. undetermined, may be new); one only found; east coast.

Drillia latisinuata, Smith; two found only; Inland Sea.

CONIDÆ.

Conus (Rhizoconus) mustelinus, Brug.; var. Ceciliae Chemn.; one only found; loc. Inland Sea.

Conus pauperculus, Sby.; one shell.

Conus (Leptoconus) Sieboldi, Rve; = C. fulmen, Rve.; three only found; Inland Sea.

STROMBIDÆ.

Strombus (Conomurex) luhuanus, Lin.; loc. Oshima, Province Kii.

Strombus (Gallinula) Japonicus, Rve.; loc. near Oshima, coast of Kii; dead shells, only fair.

Strombus (Pterocarpus) sp.; one only, young shell; loc.—

CYPÆIDÆ.

Cypræa (s. s.) macula, A. Ad.; loc. Inland Sea; somewhat worn.

Cypræa sp.; loc. Inland Sea; too much worn to identify.

Cypræa guttata, Rump., two shells only.

" Arabica, Lin., three shells only.

" vitellus, L., seven shells (dark var.)

" caput serpentis, Lin., 19 shells.

" tigris, Lin., young and light color, two shells.

" Lamarckii, Gray, two shells.

" helvola, Lin., one shell.

" miliaris, Gmel., two shells.

" caput anguis, Phil., one shell.

All the foregoing Cypræas from various parts of the east coast and Inland Sea.

OVULIDÆ.

Ovulum (Birostra) volva, Lin., loc. Ojima; three varieties of form.
CASSIDIDÆ.

Cassis (Phalium) glauca, Lin. (var. coronulata, Sby.); loc. Oshima, coast of Kii.

Cassis (Semi-cassis) saburon, Lam. and Ad.; full grown; loc. Oshima, coast of Kii.

Cassis (Casmania) vibex, Lam.; one shell only, found; east coast.

DOLIIDÆ.

Dolium costatum, Mke., young shells; loc. Inland Sea.

Dolium luteostoma, Küst, var. Japonica, Dkr.; loc. east coast south of Tokyo; various stages of growth from medium to mature and with varieties in colors and markings.

Dolium zonatum, Green; well-grown, dark variety; loc. east coast, south of Tokyo Bay.

Dolium zonatum, Green; young shells; loc. east coast.

Pyrula reticulata, Lam.; = S. ficoides, Lam.; loc. Matsuyeno-hama coast.

NATICIDÆ.

Natica (Neverita) ampla, Phil.; var. Lamarckiana, Redfield; loc. east coast Tokyo to Enoshima; with opercula, large and fine.

Natica (s. s.) Adamsiana, Dkr.; with opercula; loc. Inland Sea (not quite sure this is the right specific name).

Natica sp.

Velutina cryptospira, Midd. (var.); one shell only found; Inland Sea; very rare species.

CALYPTRÆIDÆ.

Calyptrea, sp.; nine only found; Inland Sea.

Crepidula aculeata, Gmel.; loc. Enoshima.

Hipponyx (Amalthea) Australis, Desh.; loc. east coast south to Ojima.

Hipponyx foliaceous, Quoy; found abundantly as parasites on Haliotis gigantea; loc. Awa coast.

ONUSTIDÆ.

Xenophora (Tugurium) exuta, Rve.; loc. east coast.

Xenophora pallidula, Rve; loc. at intervals along the east coast, fine specimens covered with dead shells.

SCALARIDÆ.

Scalaria lineolata, Sby.; two shells only found, a very rare species; one young, one mature; loc. Inland Sea.

VERMETIDÆ.

Vermiculus imbricatus, Dkr.; four only, worn specimens; Inland Sea.

Vermetus (Siphonium) Medusæ, Pilsbry; Saruga coast; exceedingly fine specimens in large groups; a new species.
LIST OF JAPANESE MOLLUSCA

320 x Same as 319, but smaller groups, but generally attached to dead shells; loc. the same.
321 xx Same as 319, but not so large or perfect.
835 Siliquaria Australis, Quoy; one young shell.

LITTORINIDÆ.

624 xx Littorina (s. s.) Sitchana, Phil.; loc. Inland Sea and along east coast.
626 xx Littorina (s. s.) Sitchana, Phil.; loc. Inland Sea and along east coast.
628 xx Littorina (s. s.) Sitchana, Phil.; loc. Inland Sea and along east coast.
385 xx Littorina (s. s.) Sitchana, Phil.; loc. Inland Sea and along east coast.

CERITHIIDÆ.

436 xx Cerithium humile, Dkr.; = C. variegatum, Quoy, and = C. morus, Lam.; loc. east coast.
423 x Cerithium sp.; fossil in sandstone, brought from Awaji.
424 x Vertagus obeliscus, Brug.; loc. Inland Sea.
421 xx Lampania zonale, Brug.; loc. Tokyo Harbor.
422 xx Lampania zonale, Brug.; loc. Tokyo Harbor.
428 xx Lampania multiformis, Lischke; loc. Inland Sea; very large.
429 xx Lampania multiformis, Lischke; loc. Inland Sea; very large.
433 xx Cerithidea rhizoporarum, A. Ad.; loc. Inland Sea (new to Japan).

MELANIIDÆ.

413 xx Melania (Tarebia) libertina, Gld. (typical); loc. paddy fields near Yokohama.
414 xx Melania (Tarebia) libertina, Gld.; var. ambidextra, Mart.; loc. Kamakura.
412 xx Melania (Tarebia) libertina, Gld.; var. tenuisulcata, Dkr.; loc. paddy fields near Yokohama and Tokyo.
415 xx Melania (Tarebia) libertina, Gld.; var. tenuisulcata, Dkr.; loc. paddy fields near Yokohama and Tokyo.
619 xx Melania (Tarebia) libertina, Gld.; var. tenuisulcata, Dkr.; loc. paddy fields near Yokohama and Tokyo.
619B xx Melania (Tarebia) libertina, Gld.; var. tenuisulcata, Dkr.; loc. paddy fields near Yokohama and Tokyo.

ASSIMINIIDÆ.

404 xx Assiminea Japonica, Mart.; loc. Inland Sea.
732 x Assiminea, sp.; quite distinct from No. 404; loc.?

PALUDINIDÆ.

408 xx Paludina Ingallsiana, Rve; with opercula; loc. near Kobe.
409 xx Paludina Ingallsiana, Rve; with opercula; loc. near Kobe.
411 xx Paludina Japonica, Mart.; with opercula; loc. paddy fields near Tokyo.
411A xx Paludina Japonica, Mart.; with opercula; loc. paddy fields near Tokyo.
411B xx Paludina Japonica, Mart.; with opercula; loc. paddy fields near Tokyo.
407 xx Paludina Japonica, Mart.; var. Sclateri, Ffld.; with opercula; loc. paddy fields near Tokyo.
405 xx Paludina Japonica, Mart.; var. stelmaphora, Bourg.; with opercula and with some very young shells; paddy fields near Tokyo.
406 xx Paludina Japonica, Mart.; var. stelmaphora, Bourg.; with opercula and with some very young shells; paddy fields near Tokyo.

NERITIDÆ.

734 Nerita (Thelicostyla) albicella, Lin. (var.); seven only found; Inland Sea.
383 xx Nerita (s. s.) pica, Gld.; loc. Inland Sea.
733 x Neritina (Neripteron) auriculata, Lam. (var.); Inland Sea.
TURBINIDÆ.

317 xx Turbo (s. s.) marmoratus, Lin.; medium and full-grown, with opercula; loc. Sagami Bay.

Note.—The animal of this Turbo is considered by the Japanese a great delicacy. The animal is first removed from the shell, cut into little squares like dice, replaced in the shell again, with a little soy, and cooked therein over a charcoal fire.

633 Turbo (s. s.) petholatus, Lin.; loc. Inland Sea; four only found.

631 Turbo (Marmorostoma) coronatus, Gml.; loc. east coast; three only found.

354 xx Turbo (Marmorostoma) granulatus, Gml.; var. Coreënsis, Reclus., with opercula; loc. Enoshima.

452 x Astralium (Guilfordia) triumphans, Phil.; loc. southeast coast Kii.

451 x Astralium (Pomaulax) Japonicum, Dkr.; loc. southeast coast Kii.

451B Astralium (Pomaulax) Japonicum, Dkr.; southeast coast Kii; one shell of this sp. very large, 160 mm. diameter, against 95 mm., the size of the largest previously reported; with its operculum (not hitherto known).

450 x Astralium (Bolma) Modestum, Rve.; loc. southeast coast.

TROCHIDÆ.

623 Delphinula distorta, Lin.; loc. Inland Sea; only two found.

387 x Pyramidea Mauritianus, Gml.; sea coast, Kii; worn shells.

358 xx Monodonta labio, Lin.; Seta coast; with opercula.

359 xx Monodonta neritoides, Phil.; with opercula; southeast coast Kishu.

621 Calliostoma consors, Lischke; only two found; loc. Inland Sea.

851 Calliostoma Sowerbyi, Pilsbry; two shells only.

619 Calliostoma unicum, Dkr.; loc. Inland Sea; only five found.

449 x Turcica argenteonitens, Lischke; loc. Inland Sea.

833 Turcica imperialis, A. Ad.; one shell, rare.

386 x Chlorostoma argyrostromum, Gmel.; with opercula; Kii sea coast.

356 x Chlorostoma argyrostromum, Gmel.; dead shells covered with Serpula, sp.; Province Kii; no opercula.

831 Chlorostoma argyrostromum, Gmel.; var. distinguenda, Dkr.; only one shell.

357 xx Chlorostoma Carpenteri, Dkr.; loc. south east coast Kii; no opercula.

620 Chlorostoma Pfeifferi, Phil.; loc. south east coast Japan; only one found.

627 x Chlorostoma unicolor, Lischke; loc. Inland Sea.

457 xx (Trochidae) gen. and sp.? loc. Inland Sea.

392 xx Umbonium (syn. Rotella) gigantea, Less.; color var. A.

393 xx Umbonium (syn. Rotella) gigantea, Less.; color var. B (typical).

394 x Umbonium (syn. Rotella) gigantea, Less.; col var. C.
LIST OF JAPANESE MOLLUSCA

395 x Uombonium (syn. Rotella) gigantea, Less.; D.
396 x Uombonium (syn. Rotella) gigantea, Less.; E (atra, Pilsbry).
397 x Uombonium (syn. Rotella) gigantea, Less.; F.
398 x Uombonium (syn. Rotella) gigantea, Less.; G (olivacea, Pilsbry).
399 x Uombonium (syn. Rotella) gigantea, Less.; H; rare.
400 x Uombonium (syn. Rotella) gigantea, Less.; I; rare.
401 xx Uombonium (syn. Rotella) gigantea, Less.; J; very rare; all numbers from 392 to 401 inclusive, from along Kii coast.
402 xx Uombonium (syn. Rotella) gigantea, Less.; mostly gray; not so large as previous varieties, and so far as my observation goes this should be the typical variety rather than No. 393, though it is considerably smaller than the more rare color varieties.
403 xx Uombonium (syn. Rotella) superbum, Gld.; color var. C; Inland Sea.
635 x Uombonium (Rotella) superbum, Gld. (typical variety); loc. near Enoshima.
636 x Uombonium (Rotella) superbum, Gld.; color var. B.
637 x Uombonium (Rotella) superbum, Gld.; color var. D.
638 x Uombonium (Rotella) superbum, Gld.; color var. E.; (nigrum, Pilsbry).
639 x Uombonium (Rotella) superbum, Gld.; color var., F.
640 x Uombonium (Rotella) superbum, Gld., color var., G.; only four of these two last found; loc. near Enoshima.

STOMATELLIDÆ.

869 Stomatella articulata, A. Ad.; one shell only.
767 Stomatia rubra, Lam.; three only found; Inland Sea.

HALIOTIDÆ.

335 336 xx Haliotis diversicolor, Rve.; var. Gruneri, Phil.; loc. Awa and Kii coasts.
459
461 460
798 xx Haliotis gigantea, Chemn.; various ages, and at least two well defined varieties; along the east coast from many localities.

859 Pearls obtained in the province of Kii, from Awabi shells, Haliotis, sp.; 17 pieces.

PATELLIDÆ.

372 xx Acmaea concinna, Lischke; loc. Yokohama Bay.
373 xx Acmaea Heroldi, Dkr.; var. conulus, Dkr.; loc. Enoshima.
368 xx Acmaea saccharina, Lin.; var. lanx, Rve; sea coast of Kii.
381
374 x Acmaea Schrenckii, Lischke; loc. Ojima east coast.
375 xx Patella amussitata, Rve; loc. Enoshima.
376 x Patella nigrolineata, Rve; loc. Enoshima.
COLLECTED BY FREDERICK STEARNS.

366  
377  
378  
379  
380  
382  
xx Patella toreuma, Rve; loc. Enoshima.

- 371  x Patella Stearnsii, Pilsbry; loc. coast of Province Kii (a new species). See The Nautilus for January, 1891, for description and engraving of this species.

CHITONIDÆ.

324  xx Chiton, sp. undetermined; loc. near Enoshima.
325  xx Chiton, sp. undetermined; loc. Enoshima; very near No. 324.

BULLIDÆ.

655  Bulla ampulla, Lin.; two only found; Inland Sea.

APLUSTRIDÆ.

704  Hydatina physis, Lin.; loc. Inland Sea; four only found.

HELICIDÆ.

391  xx Helix (Euhadra) peliomphala, Pfr.; full grown and young in many stages of growth; loc. near Yokohama.
390  xx Helix (Euhadra) quaesita, Desh.; both full grown and young, a sinistral Helix; loc. near Yokohama.

PUPIDÆ.

388  xx Clausilia (Phaedusa) eurystoma, Mart.; loc. near Yokohama.
389  xx Clausilia (Hemiphædusa) platyauchen, Mart.; loc. near Yokohama.

LIMNÆIDÆ.

351  
352  
456  
xx Limnæa pervia, Martens; loc. near Tokyo.

DENTALIIDÆ.

350  xx Dentalium octagonum, Lam.; loc. Kii coast south.
802  Dentalium Vernedei, Hanley; three found only, at long intervals.

SIPHONARIDÆ.

720  Siphonaria cochleariformis, Rve; seven only found; near Enoshima.
369  x Siphonaria sipho, Sby.; loc. southeast coast of Kii.

SOLENIDÆ.

811  Solen grandis, Dkr.; three shells only found; very fine.
601  xx Solen Krusensternii, Schrenk; loc. Akashi Bay.
503  x Machæra (syn. Aulus, syn. Siliqua) pulchellus, Dkr.; loc. east coast Tokyo to Oshima.
779  Solecurtus (syn. Macha) divaricata, Lischke; one specimen only; Inland Sea.
MYACIDÆ.

578 (579 580) xx Mya arenaria, Lin.; loc. east coast; various stages of growth.

CORBULIDÆ.

507 xx Corbula erythrodon, Lam.; loc. along east coast s. to Kii.

MACTRIDÆ.

576 xx Mactra sachalinensis, Schrenk; loc. east coast.

821 Mactra spectabilis, Lischke; two shells only; southeast coast and Inland Sea.

561 (562) xx Mactra (syn. Trigonella) veneriformis, Desh.; loc. near Awaji, Inland Sea.

575 xx Mactra sp. (a new species); loc. Yokoska Harbor.

577 xx Mactra sp. (a new species); loc. Sagama Bay.

529 xx Tresus (Schizothœrus) Nuttalli, Conrad; loc. Yokohama Bay.

TELLINIDÆ.

801 Soletellina (s. s.) Boeddinghausi, Lischke; five shells only found; Inland Sea.

804 (805) x Soletellina olivacea, Jay; loc. near Sakai, Inland Sea.

514 xx Tellina inquinata, Desh.; loc. Inland Sea.

808 Tellina (Tellinella) perna, Spengler; one shell only found.

807 Tellina (Tellinella) vulsella, Chemn.; two shells only found.

517 xx Tellina, sp. (a new species); loc. Inland Sea.

513 xx Tellina, sp. (a new species); loc. Inland Sea.

800 Macoma nasuta, Conrad; one shell only.

516 xx Macoma praetexta, Martens; loc. east coast.

616 (805) xx Macoma secta, Conrad; loc. Sakai, Inland Sea.

PETRICOLIDÆ.

799 Venerupis (syn. Rupellaria) semi-plicaria, Dkr.; one shell only found.

560 xx Venerupis (syn. Rupellaria) semi-purpurea, Dkr.; loc. Inland Sea.

508 xx Saxidomus purpuratus, Sby. = S. Nuttalli, Conrad; loc. Tokyo Harbor.

VENERIDÆ.

586 x Gomphina (Venus) melanægis, Roemer; color var. E.

591 x J.

592 x K.

593 x L.

595 x N.

596 x O.

598 xx Q.

599 x R.

600 x S.

597 x P.

All the foregoing are beautiful cabinet shells with much variety of marking, and are found in the shallow bays on the east coast and in the Inland Sea.
Cytheria divaricata, Chemn.; seven shells found; Inland Sea.
Cytheria (Meretrix) impudica, Lin.; var. castanea, Lam.; loc. shallow bays east coast.
Cytheria (Meretrix) lusoria, Chemn.; small shells.
Cytheria (Meretrix) lusoria, Chemn.; color var. A; full grown.
Cytheria (Meretrix) lusoria, Chemn.; color var. B; small shells.
Cytheria (Meretrix) lusoria, Chemn.; color var. C; not far from typical and full grown.
Cytheria (Meretrix) lusoria, Chemn.; color var. D; full grown and young.
Cytheria (Meretrix) lusoria, Chemn.; color var. F.
Cytheria (Meretrix) lusoria, Chemn.; color var. G (typical).
These were found along the east coast from Tokyo to Idzumi; are all beautiful cabinet shells.
Callista Chinensis, Chemn.; color var. A; loc. south coast of Kii.
Callista Chinensis, Chemn.; color var. B; loc. south coast of Kii.
Sunetta (syn. Meroe) excavata, Hanley; loc. Seta coast, Kamayama.
Young shells, same as No. 511.
Dosinia bilunulata, Gray; mature shells; loc. Sagama coast.
Dosinia bilunulata, Gray; young shells, various ages; loc. Sagama coast.
Dosinia Troscheli, Lischke; loc. Inland Sea.
Cyclina Orientalis, Sby. (var.); loc. coast near Yokohama.
Cyclina Orientalis, Sby. (typical); loc. Yokohama Harbor.
Tapes (Textrix) amabilis, Phil.; color var. A; loc. Shidaka coast.
Tapes (Textrix) amabilis, Phil.; color var. B; loc. same.
Tapes (Textrix) euglypta, Phil.; loc. shallow bays on east coast to Inland Sea; a spotted variety.
Tapes (Amygdala) Philippinarum, Ads. st. Rve; color var. A.
Tapes (Amygdala) Philippinarum, Ads. st. Rve; color var. B.
Tapes (Amygdala) Philippinarum, Ads. st. Rve; color var. C.
Tapes (Amygdala) Philippinarum, Ads. st. Rve; color var. D.
Tapes (Amygdala) Philippinarum, Ads. st. Rve; color var. E.
Tapes (Amygdala) Philippinarum, Ads. st. Rve; color var. F.
Tapes (Amygdala) Philippinarum, Ads. st. Rve; color var. G.
Tapes (Amygdala) Philippinarum, Ads. st. Rve; color var. H.
Tapes (Amygdala) Philippinarum, Ads. st. Rve; color var. I.
These are beautiful cabinet shells, and were found along the east coast from Tokyo to Ojima; No. 524 came from Seta coast.
Tapes (a new species); loc. near Sakai, in Inland Sea; a handsome cabinet shell.

CYRENIDÆ.

Cyrena (Corbicula) Martensisii, Cless.; found at fish market, Tokyo; Japanese name, Shijime-Kai.
Cyrena Martensii, Cless.; loc. Yokohama tide flats; these shells smaller than No. 417.

Cyrena (Corbicula) fluminea, Müll.; found in the market, Hong Kong, China; some of these shells are purple inside, others are white and purple.

Cyrena (Corbicula) fluminea, Müll.; Hong Kong, China; somewhat smaller size.

Cyrena (Corbicula) straminea, Reinhart; loc. mud flats Kishu coast.

Cyrena sp.; Kanagawa mud flats; only six found.

Cypricardia lirata, Rve.; loc. Awa in Bishu.

Cardium (Cerastoderma) Californiensis, Desh.; loc. along east coast Tokyo to Ojima.

Cardium (Serripes) muticum, Rve.; loc. Tokyo Harbor.

Chama ambigua, Lischke; one shell only found, young; Inland Sea.

Loripes Philippinarum, Rve.; two shells only; Inland Sea.

Unio Japanensis, Lea; loc. paddy fields near Tokyo.

Unio Nipponensis, Martens; loc. paddy fields near Kamakura.

Dipsas pictorum, two half shells, painted with landscapes inside as they are sold at the shrine of Benten, on the Island of Enoshima.

Dipsas plicatus, Sol.; loc. rice paddy fields, near Yokohama, various stages of growth.

Dipsas Reinianus, Mart.; loc. paddy fields near Yokohama.

Anodonta cellensis, Schrot; loc. Odelawara.

Anodonta Japonica, Martens; loc. paddy fields near Sagama.

Anodonta Woodiana, Lea.: various stages of growth; loc. rice paddy fields near Yokohama.

Arca compacta, Rve.; loc. Yokohama Harbor.

Arca (Barbatia) decurvata, Lischke; loc. Inland Sea.

Arca (Anomalocardia) pulchella, Dkr.; loc. east coast.

Arca (Scapharca) inflata, Rve.; loc. Tokyo Harbor; four only found.

Arca Kraussii, Phil.; (varieties) loc. east coast Tokyo to Awaji, very near to A. navicularis Brug.

Arca nodosa-crenata, Lischke; loc. Inland Sea.

Arca setosa, Dkr.; loc. Sagama coast.

Pectunculus albo-lineatus, Lischke; loc. coast of Kii; these seem to be gigantic shells of this species.
MYTILIDÆ.

- 615 | x Mytilus atratus, Lischke; loc. south coast Province Ise.

- 781 | x Mytilus crassitesta, Lischke (or it may be a variety of mytilus giganteus Holmgb.); this is a very large species; many are loaded with barnacles, all more or less cracked in drying; loc. Akashi coast.

- 536 | xx Mytilus hirsutus, Lam.; two only; Inland Sea.

- 573 | x Mytilus Dunkeri, Rve.; loc. Inland Sea.

- 790 | Mytilus giganteus, Holmberg (typical); three shells only; Inland Sea.

- 785 | Mytilus hirsutus, Lam.; two only; Inland Sea.

- 574 | x Mytilus rostratus, Dkr.; loc. Kii coast.

- 786 | Mytilus sinuatus, Dkr.; (var.) one only; Inland Sea.

- 791 | Modiola modiolus, Lin.; three shells; Inland Sea.

- 793 | Modiola modiolus, Lin.; var. Philippinarum, Hanley; one shell only found.

- 604 | x Modiola nitida, Hanley; very large; Inland Sea.

- 571 | xx Modiola senhausii, Rve.; a very small but beautiful species found near Enoshima.

- 570 | xx Modiola (s. s.) traillii, Rve.; loc. Idzu coast.

- 611 | xx Lithodomus curtus, Lischke; loc. Joga-shima.

- 789 | Modiolaria cumingiana, Dkr.; one only found; Inland Sea.

AVICULIDÆ.

- 512 | x Avicula (Meleagrina) Martensii, Dkr.; loc. Province Kii, south coast.

- 797 | x Pearls from Meleagrina Martensii, from the Province of Kii, where young girls are trained to dive for the shells.

- 773 | Malleus albus, Chemn.; two fine large specimens; Inland Sea.

- 780 | Avicula brevialata, Dkr.; two shells only; Inland Sea.

PINNIDÆ.

- 674 | Pinna assimilis, Hanley and Dkr.; one shell only, loc. west part Inland Sea.


- 535 | xx Pinna, sp. (a new species), this is a very large Pinna, many of them have at the lip large Balanus sp.; loc. Tokyo Harbor; these and the various species of Mytilus are very apt to split and crack when dry, and most of those in my collection are in that condition.

SPONDYLIDÆ.

- 813 | x Spondylus cruentus, Lischke.

- 827B | Spondylus regius, Gml.; one only found; Inland Sea.

- 827 | x Spondylus Sinensis, Sby.; Inland Sea.

LIMIDÆ.

- 809 | Lima excavata, Chemn.; one very large shell, on which were two specimens of Scalpellum Stearnsii, Pilsbry.

- 810 | Lima squamosa, Lam.; one shell (var).

PECTINIDÆ.

- 694 | Pecten crassicostatus, Sby.; two shells only found; east coast.
695 Pecten crassicostatus, Sby. (var.); one shell only found.
694 x Amussium Japonicica, Gml.; loc. various parts of east coast and Inland Sea.
565 xx Pecten lætus, Gld.; color var. A.
565B x Pecten lætus, Gld.; covered with groups of Balanus amphitrite; loc. Ikai coast Joga-shima.
566 x Same as No. 565; color var. B; loc. as 565B.
567 Pecten lætus, Gld.; color var. C; greenish.
568 x Pecten lætus, Gld.; small shells; loc. foregoing numbers Sagama Bay and coast of Joga-shima.
569 x Pecten (Vola) laqueata, Sby.; loc. east coast.
692 Pecten (Vola) puncticulata, Dkr.; one shell only; Prof. Pilsbry states that this is so much larger and finer than Dunker's type that it ought to be figured.

700 } Pecten squamatus, Gml.; three only found; Inland Sea.

ANOMIIDÆ.

500 xx Anomia sp.; var. A.
501 x Anomia sp.; var. B.
502 xx Anomia sp.; var. C.
724 to } Anomia, 6 species; but two or three of each.
728 B } Note—These nine species Anomia are yet undetermined, so much confusion existing in this genus that it is almost impossible to determine with accuracy the oriental forms; they are, however, very distinct and perfect; loc. Kishu coast and Joga-shima coast. Prof. Pilsbry writes me that these are unlike any forms hitherto described as far as he knows.

OSTREIDÆ.

774 Ostraea gigas, Thunb.; var. Goliath, Pilsbry; a half shell; the largest on record, 17 3/8 inches long by 3 3/8 inches wide; length of ligament area 3 3/4 inches; form straight, parallel sided; very thick but comparatively light; found at Enoshima.
839 Ostraea gigas, Thunberg; var. Talienwhanensis Cross; one shell only.
530 xx Ostraea (Alectryonia) cucullata, Born.; form var. A.
531 x " " " " " B.
533 x " " " " " C.
608 xx " " " " " D.
776 " " " " " E.
777 " " " " " F.

Foregoing varieties from east coast Sagama.
532 xx Ostraea (Alectryonia) plicata, Chemn.; two form varieties A and B; loc. Kishu coast.
534 x Ostraea denselamellosa, Lischke; loc. Tokyo Bay.

BRACHIOPODA.

713 Terebratula Stearnsii, Pilsbry; a new and distinct species, named after me, and figured by Prof. H. A. Pilsbry, in the Proceedings of the Academy Natural Sciences, Philadelphia, for 1891 (see Plate I, Figs. 4, 5, 6); only two specimens found; east coast, near Kii.
Terebratulina Crossei, Davidson; two specimens only found, attached to a bit of silicious substance which may have been part of a glass sponge; loc. Inland Sea.

Terebratella Gouldii, Dall.; (see Plate I, Figs. 2, 3); one shell only found, in the adult form (not before seen); east coast, dredged.

Terebratella Coreanica, A. Ad.; three specimens only found, attached to a piece of rock; dredged; loc. Inland Sea.

Laqueus Blanfordi, Dkr; loc. east coast.

Laqueus rubella, Sby.; loc. Joga-shima.

Lingula anatina, Lam.; loc. vicinity of Enoshima; some are dried and some brought home in alcohol and since dried.

Scalpellum Stearnsii, Pilsbry; this is a new and distinct species named after me by Prof. Pilsbry, who states it to be more nearly allied to the fossil S. Pfeifferi Weithofer of the Vienna Basin (Miocene), than to any living species. (See Plate I, Fig. 1.) I only obtained twelve of these at long intervals, during a year, from the fishermen who dredged them in six to ten fathoms along the east coast of Tokyo to Inland Sea. None of these can be had in exchange, as they will be sent to Public Institutions only. In all cases I found them attached to other shells.

Balanus amarylis, mixed with B. amphitrite Darwin; four groups; Inland Sea.

Balanus amphitrite, Darwin; a white variety in groups; dead shells; loc. Akashi coast.

Balanus cepa, Darwin; a group on a Cancellaria nodulifera, Sby; Inland Sea.

Balanus tintinabulum, Lin; (typical) loc. Awaji coast; dead shells.

Lepas anatifera, Lin.; east coast near Yokohama; a lot of groups.

Pollicipes mitella, Lin; loc. near Enoshima.

Pollicipes mitella, Lin; loc. near Enoshima; fine groups.

Tetraclita porosa, Gmel.; three only found; Inland Sea.

Serpula, undetermined species; loc. east coast between Tokyo and Ojima.

Serpula, undetermined species; loc. unknown.

Nos. 506, 629, 634, 646, 803 are species of shells of which only one or two each were found, but are as yet not determined.
MOLLUSCA OF THE BAHAMA ISLANDS.

I spent the winter of 1887-8 at Nassau, the capital of Bahama Islands, and while there made an excursion covering several weeks to the various sponge fishing banks around Andros Island, and to other islands in the vicinity. I collected nearly 200 species, of which I yet have the following in sufficient number to offer them in exchange.

AURICULIDÆ.

9 xx Melampus sp.; loc. Mayport, Florida.
65 xx Melampus coffeus L.; var. coniformis, mft., loc. Andros, n. side.

CASSIDIDÆ.

110 x Cassis (s. s.) tuberosa, Lin.; well grown and finely marked.
110 B x Cassis flammea, Lin.; fine.
110 C x Cassis varians, Mke.; fine.
166 x Cassis cameo Stimp.
82 x Cassis (Cassidea) testiculus, Lin.; not very fine.

NOTE.—Large shells like these cannot be sent by mail.

CERITHIDÆ.

28 xx Cerithium nigrescens, Mke.

CHITONIDÆ.

92 x Chiton (s. s.) Piceus Gmel.

COLUMBELLIIDÆ.

163 xx Columbella (Pygmaea) mercatoria, Lin.; very fine color varieties.

CYPRIDÆ.

89 xx Cyprea (s. s.) exanthesma, Lin.; various sizes; maculated and reticulated.

FASCIOLARIIDÆ.

72 x Fasciolaria tulipa, L.; various sizes.

HELICIDÆ.

111 xx Helix (Hemitrochus) varians, Mke.; very finely banded. Lot B same in alcohol with the animal; Lot C, ditto faded; Lot D, ditto bleached.
113 xx Helix Stearnsianella, Pilsbry, discovered at Granitown, back of Nassau, and named after me by Prof. H. A. Pilsbry (a new species).
112 x Helix (Thelodonus) proviricia, Pfr. (var.)

LITTORINIDÆ.

10 x Littorina (Melaraphe) scabra L.; var. Lineata, Gmel. (= var. angulifera Lam.); a variety of fine colors and with opercula.
16 x Littorina (Melaraphe) ziczac, Chemn., with opercula.
17 xx Tectarius dilatatus, D’orb.; with opercula.
18 xx Tectarius muricatus, D’orb.; with opercula.

MARGINELLiDÆ.

43 xx Marginella (Cryptospira) flavida, Redfield, beautiful shells, bright glossy yellow.
71 xx Marginella (G a b e l l a) opalina, Stearns.

MURICIDÆ.

12 xx Murex (Chicoreus) Salleanus A. ad (= M. pudicolor); with opercula.
13 xx Purpura (s. s.) patula, Lin.; fine, with opercula.

NATICIDÆ.

44B xx Natica (s. s.) Marochiensis, Gmel.; var. livida Phil.; in alcohol, with animal and opercula.
159 xx Natica (mamma) porcellana, D’orb.

NERITIDÆ.

19 xx Nerita (Peleronata) peleronata, Lin.; fine and large, with opercula.
20 xx Nerita Listeri Reclus; (var.) fine, with opercula.
21 xx Nerita (Peleronata) tessellata, Gmel.; with opercula.
21B xx Nerita (Peleronata) versicolor, Lam.; with opercula.
39 xx Neritina Virginica L.; very fine; requires many specimens to exhaust the varieties of markings.
158 xx Neritina vita-pupa, Say; a very beautiful shell.

OLIVIDÆ.

7 x Oliva (Strephona) fusiformis, Lam.; only fair.
7B x Oliva (Strephona) fusiformis, a tessellate variety, Lam.
7D x Oliva (Strephona) fusiformis, Lam.; yellowish and white variety, fine. Oliva biplicata, Sowb. (these are from Alaska).

PUPIDÆ.

23 x Strophia marmorata, Pfr.
26 Strophia glans, Kästler.

STROMBIDÆ.

86 x Strombus gigas, L.; with opercula.
86B x Strombus, gigas, L.; opercula only.
85 xx Strombus gigas; young; several stages of growth; quite unlike the adult shell and in good colors.
50 x Strombus costatus, Gmel.
84 xx Strombus bituberculatus, Lam.

TEREBRIDÆ.

35 x Terebra (Myurella) dislocata, Say.; color varieties.

TROCHIDÆ.

22 xx Trochus (Livona) pica L.; with opercula various ages.

BIvalves.

AVICULIDÆ.

25 xx Perna (Isognomon) epiphiium, Lin.

LUCINIDÆ.

3 x Lucina Pennsylvanica, Lin.
6 xx Lucina (Codakia) tigrina, Desh.; several stages of growth, the inner lip and hinge being tinged either with pink, yellow or purple, forming three color varieties.

TELLINIDÆ.

611 x Tellina lavigata, Lin.
1 xx Asaphis sanguinolaria; var. coccea, Martyn.
Asaphia sanguinolaria; yellow color variety.
Asaphia sanguinolaria; purple color variety.

MISCELLANEOUS.

In addition to the foregoing, I have a number of Star Fishes; Sea Urchins, among them Cidaris tubuloides; Fish Scales, about fifteen varieties for microscopic study; Sponges, about twenty species undetermined, having only scientific value.
1, Scalpellum Stearnsii, Pilsbry.

2, 3, Terebratella Gouldii, Dall, Adult.

4, 5, 6, Terebratula Stearnsii, Dall and Pilsbry.