

ILLUSTRATIONS OF UNFIGURED TYPES OF SHELLS
IN THE COLLECTION OF THE UNITED STATES NA-
TIONAL MUSEUM

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In past years it has happened that it had been advisable to print preliminary diagnoses of new species in order that established names might be used in reports, or for other reasons.

As opportunity offered, drawings were secured of these species and put aside until publication could be made.

The present paper collects together a large number of these figures. In addition to the figures of types, a few figures of species elsewhere inadequately illustrated, or which are figured in publications difficult of access, have been included.

The earlier of these drawings were made by the late Dr. J. C. McConnell, whose work of this kind has never been surpassed. The figures on plate 9, 19 to 26, and a few scattered ones on other plates are by him, and form probably the final publication of any of his work. Plates 1 to 8, 10 to 14, and 17 to 18 are from photographs artistically retouched by Mrs. E. B. Decker. Plates 27 to 36 are chiefly from drawings by Miss Evelyn Mitchell. Plates 15 and 16 are from untouched photographs by Prof. F. W. Kelsey, of San Diego.

For convenience of reference the species are arranged in alphabetical order, and an index of genera referred to is supplied.

A large proportion of the species included are from the northern waters of the Pacific, from the seas about Japan, northward and eastward to the northwest coast of North America. Nearly two hundred species are illustrated, and it is believed the student of these faunas will find the paper useful.

ACILA CASTRENSIS Hinds

Plate 9, fig. 5

Nucula castrensis HINDS, Proc. Zool. Soc. London, 1843, p. 98; Voy. of the
Sulphur, Zool., Moll., p. 61, 1844.

Puget Sound. U. S. Nat. Mus. Cat. No. 106861.

ACMAEA DIGITALIS Eschscholtz

Plates 15 and 16

Acmaea digitalis ESCHSCHOLTZ, Zool. Atlas, pt. 5, p. 20, 1833.

Southern California. Photographed by Prof. F. W. Kelsey, San Diego.

AGATHOTOMA QUENTINENSIS Dall

Plate 8, fig. 1

Cytharella (Agathotoma) quentinensis DALL, West Amer. Scientist, San Diego,
vol. 19, No. 3, p. 21, 1921.

Pliocene (?) of San Quentin Bay, Lower California. U. S. Nat. Mus. Cat.
No. 333134.

ALIGENA NUCEA Dall

Plate 28, fig. 2

Aligena nucea DALL, Proc. U. S. Nat. Mus., vol. 45, p. 597, 1913.

Gulf of California. U. S. Nat. Mus. Cat. No. 267149.

AMPHISSA (COSMIOCONCHA) PALMERI Dall

Plate 21, fig. 8

Amphissa (Cosmioconcha) palmeri DALL, Proc. U. S. Nat. Mus., vol. 45, No.
2002, p. 589, 1913.

Head of the Gulf of California. U. S. Nat. Mus. Cat. No. 96720.

AMPHISSA (COSMIOCONCHA) PARVULA Dall

Plate 21, fig. 1

Amphissa (Cosmioconcha) parvula DALL, Proc. U. S. Nat. Mus., vol. 45, No.
2002, p. 590, 1913.

Off La Paz Bay, Gulf of California, in 112 fathoms. U. S. Nat. Mus. Cat.
No. 211029.

AMPHISSA (COSMIOCONCHA) PERGRACILIS Dall

Plate 21, fig. 9

Amphissa (Cosmioconcha) pergracilis DALL, Proc. U. S. Nat. Mus., vol. 45, p.
590, 1913.

Off Cape Lobos, Gulf of California, in 58 fathoms. U. S. Nat. Mus. Cat.
No. 211030.

ANATINA (RAETINA) INDICA Dall

Plate 20, fig. 2

Racta (Raetina) indica DALL, Trans. Wagner Inst. Sci. Phila., vol. 3, p.
882, 1898.

Bombay. U. S. Nat. Mus. Cat. No. 90276.

ANCISTROLEPIS BERINGIANUS Dall

Plate 7, fig. 1

Ancistrolepis beringianus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 313, 1919.

Bering Sea, off Staritchkoff Island, in 58 fathoms. U. S. Nat. Mus. Cat. No. 205401.

ANCISTROLEPIS CALIFORNICUS Dall

Plate 3, fig. 9

Ancistrolepis californicus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 313, 1919.

Cortez Bank, off San Diego, Cal., in 984 fathoms. U. S. Nat. Mus. Cat. No. 122667.

ANCISTROLEPIS DAMON Dall

Plate 34, fig. 5

Chrysodomus (Ancistrolepis) damon DALL, Smithsonian Misc. Coll., vol. 50, p. 157, 1907.

South coast of Yesso, Japan, in 175 fathoms. U. S. Nat. Mus. Cat. No. 110474.

ANCISTROLEPIS DECORA, new species

Plate 35, fig. 10

Shell of moderate size, white under an olivaceous furfuraceous periostracum, with six somewhat turritid whorls exclusive of the (lost) nucleus; the periostracum shows projecting hairs at the intersections of the reticulate sculpture; the upper whorls are a good deal eroded in the type specimen; suture distinct, narrow, deep, but not channelled; spiral sculpture of a prominent strong cord at the shoulder, another, somewhat smaller, a little way in front of the suture, and numerous small threads with equal or wider interspaces, over the general surface; axial sculpture only of rather prominent and widely spaced incremental lines forming a minute reticulation with the spirals; aperture ample, outer lip thin, body with a thin wash of enamel, pillar very short, wrinkled over a well marked siphonal fasciole; canal hardly differentiated from the aperture; operculum normal, height 58; diameter, 34 mm. U. S. Nat. Mus. Cat. No. 110775.

Dredged in the Japan Sea at station 4991, in 325 fathoms, mud, by the United States Bureau of Fisheries steamer *Albatross*.

ANCISTROLEPIS GRAMMATUS Dall

Plate 30, fig. 8

Chrysodomus (Ancistrolepis) grammatus DALL, Smithsonian Misc. Coll., vol. 50, p. 158, 1907.

Sugaru Strait, Japan, in 300 fathoms. U. S. Nat. Mus. Cat. No. 110472.

ANCISTROLEPIS OKHOTENSIS, new species

Plate 30, fig. 1

Shell of moderate size, white under a velvety grey periostracum, with seven well rounded whorls exclusive of the (eroded) nucleus; suture deep and very narrow; axial sculpture of incremental lines, indicated by regularly spaced lamellae of the periostracum; spiral sculpture of fasciculated fine threads, with subequal intervals between the fascicles, also spirally threaded; aperture amply rounded, outer lip thin, not reflected, body erased, pillar short, callous, concavely arcuate, shorter than the aperture, distally twisted; base imperforate; operculum normal to the genus; height of shell, 47; of last whorl, 33; maximum diameter, 28 mm. U. S. Nat. Mus. Cat. No. 110777.

Dredged by the United States Bureau of Fisheries steamer *Albatross* at station 5022, off Sakhalin Island, in 109 fathoms, mud, bottom temperature 30° 1 F.

ANTIPLANES BULIMOIDES Dall

Plate 31, fig. 2

Antiplanes bulimoides DALL, Proc. U. S. Nat. Mus., vol. 56, p. 34, 1919.

Bowers Bank, Bering Sea, in 344 fathoms. U. S. Nat. Mus. Cat. No. 111051.

ANTIPLANES PIONA Dall

Plate 21, fig. 5

Antiplanes piona DALL, Proc. U. S. Nat. Mus., vol. 24, p. 514, 1902.

Southwestern Bering Sea. U. S. Nat. Mus. Cat. No. 109179.

ANTIPLANES THALAEA Dall

Plate 22, fig. 1

Pleurotoma (Antiplanes) thalaea DALL, Proc. U. S. Nat. Mus., vol. 24, p. 514, 1902.

Off San Luis Obispo, California, in 252 fathoms. U. S. Nat. Mus. Cat. No. 122568.

ANTIPLANES YESSOENSIS, new species

Plate 21, fig. 3

Shell acute, solid, olivaceous, with a polished periostracum and seven whorls exclusive of the (lost) nucleus; suture closely appressed and constricted; axial sculpture of inconspicuous incremental lines; spiral sculpture of an obscure furrow in front of the anal fasciole, and feeble threading on the base which becomes stronger on the canal; there are also irregular markings which may be due to shrinkage of the periostracum; anal sulcus wide and shallow; outer lip thin sharp and arcuately produced; body erased, pillar attenuated, gyrate, the axis almost pervious; aperture rounded ovate, canal distinct, slightly recurved; height of shell, 38; of last whorl, 23; diameter, 14 mm. U. S. Nat. Mus. Cat. No. 111053.

Dredged by the United States Bureau of Fisheries steamer *Albatross* at station 5036, in 464 fathoms, mud, off the south coast of Yesso (Hokkaido), bottom temperature 37.9° F.

ARCA (NOETIA) MACDONALDI Dall

Plate 17, fig. 9

Arca (Noetia) macdonaldi DALL, Smithsonian Misc. Coll., vol. 59, p. 9, 1912.
Later Tertiary of Costa Rica. U. S. Nat. Mus. Cat. No. 214344.

ARCA (SCAPHARCA) PITTIERI Dall

Plate 17, fig. 7

Arca (Scapharca) pittieri DALL, Smithsonian Misc. Coll., vol. 59, p. 9, 1912.
Later Tertiary of the Canal Zone, Panama. U. S. Nat. Mus. Cat. No. 214343.

ASTRAEA PERSICA Dall

Plate 35, figs. 4, 6

Astraea persica DALL, Smithsonian Misc. Coll., vol. 56, p. 167, 1907.
Off Kagoshima Bay, Japan, in 103 fathoms. U. S. Nat. Mus. Cat. No. 110507.

Genus BASILISSA Watson

Subgenus ORECTOSPIRA, new subgenus

BASILISSA (ORECTOSPIRA) BABELICA Dall

Plate 32, figs. 8, 12

Basilissa babelica DALL, Smithsonian Misc. Coll., vol. 50, p. 168, 1907.

Dredged by the United States Bureau of Fisheries steamer *Albatross* off Hondo, Japan, at station 4973, in 600 fathoms, gravel, bottom temperature 39.8° F. Height of shell, 37 mm.

Watson named no type for his genus and I select his first species *B. lampra*. The present species differs from the typical form by the absence of the sinus where the outer lip joins the body, the elevation of the spire and in other minor features. It is possible that Watson's *B. superba* may belong in this subgenus.

BERINGIUS INDENTATUS Dall

Plate 7, fig. 3

Beringius indentatus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 312, 1919.
Bering Sea, off the Khudubine Islands, in 53 fathoms. U. S. Nat. Mus. Cat. No. 213318.

BERINGIUS MALLEATUS Dall

Plate 6, fig. 5

Strombella malleata DALL, Proc. U. S. Nat. Mus., vol. 7, p. 525, 1884.
Point Barrow, Alaska. U. S. Nat. Mus. Cat. No. 15170.

BERINGIUS STIMPSONI Gould

Plate 7, fig. 2

Buccinum stimpsoni GOULD, Proc. Boston Soc. Nat. Hist., vol. 7, p. 325, Sept. 1860.

Arikamcheche Island, Bering Strait. U. S. Nat. Mus. Cat. No. 225469.

BOLMA BARTSCHI Dall

Plate 36, fig. 9

Bolma bartschi DALL, Proc. U. S. Nat. Mus., vol. 45, p. 591, 1913.

Off Dowarra Island, near Ternate, Molucca Passage, East Indies, in 205 fathoms. U. S. Nat. Mus. Cat. No. 214444.

BOREOSCALA GREENLANDICA Perry

Plate 22, fig. 2

Scalaria greenlandica PERRY, Conchology, pl. 28, fig. 8, 1811.

Cape Espenberg, Arctic Ocean. U. S. Nat. Mus. Cat. No. 122546.

BORSONELLA CALLICESTA Dall

Plate 21, fig. 10

Pleurotoma callicesta DALL, Proc. U. S. Nat. Mus., vol. 24, p. 515, Mar. 1902.

Dredged off Acapulco, Mexico, by the United States Bureau of Fisheries steamer *Albatross* at station 3418, in 660 fathoms, mud, bottom temperature 39° F.

The apex, as in most of these abyssal species, is eroded; the shell remaining measures 20 mm. in length. The ridge on the pillar which is characteristic of the genus *Borsonella* is not visible from the aperture, but half a whorl back is evident.

BUCCINUM ACUTISPIRATUM Dall

Plate 33, fig. 8

Buccinum acutispiratum DALL, Smithsonian Misc. Coll., vol. 50, p. 146, 1907.

Sea of Japan, in 390 fathoms. U. S. Nat. Mus. Cat. No. 110525.

BUCCINUM ANIWANUM Dall

Plate 30, fig. 6

Buccinum anivanum DALL, Smithsonian Misc. Coll., vol. 50, p. 147, 1907.

Aniwa Bay, at the south end of Sakhalin Island, in 40 fathoms. U. S. Nat. Mus. Cat. No. 110528.

BUCCINUM BOMBYCINUM Dall

Plate 30, fig. 7

Buccinum bombycinum DALL, Smithsonian Misc. Coll., vol. 50, p. 149, 1907.

Off east coast of Sakhalin Island, in 29 fathoms. U. S. Nat. Mus. Cat. No. 110531.

BUCCINUM CASTANEUM FLUCTUATUM Dall

Plate 5, fig. 3

Buccinum castaneum, var. *fluctuatum* DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 327, 1919.

Off St. George Island, Bering Sea, in 30 fathoms. U. S. Nat. Mus. Cat. No. 217152.

BUCCINUM CASTANEUM INCISULUM Dall

Plate 3, fig. 7

Buccinum castaneum, var. *incisulum* DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 237, 1919.

Unimak Pass, Aleutian Islands. U. S. Nat. Mus. Cat. No. 213159.

BUCCINUM CHARTIUM Dall

Plate 6, fig. 2

Buccinum chartium DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 325, 1919.

Off Honshu Island, Japan Sea, in 260 fathoms. U. S. Nat. Mus. Cat. No. 224198.

BUCCINUM CNISMATOPLEURA Dall

Plate 4, fig. 4

Buccinum angulosum, var. *cnismatopleura* DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 328, 1919.

Point Barrow, Arctic Ocean, Alaska. U. S. Nat. Mus. Cat. No. 332759.

BUCCINUM ECTOMOCYMA Dall

Plate 33, fig. 9

Buccinum ectomocyma DALL, Smithsonian Misc. Coll., vol. 50, p. 148, 1907.

East coast of Sakhalin in 75 fathoms. U. S. Nat. Mus. Cat. No. 110530.

BUCCINUM EPISTOMIUM Dall

Plate 31, fig. 1

Buccinum epistomium DALL, Smithsonian Misc. Coll., vol. 50, p. 144, 1907.

Off Cape Rollin, Simushir Island, Kuril Islands, in 229 fathoms. U. S. Nat. Mus. Cat. No. 110519.

BUCCINUM LIMNOIDEUM Dall

Plate 32, fig. 7

Buccinum limnoideum DALL, Smithsonian Misc. Coll., vol. 50, p. 149, 1907.

Off Hakodate, Japan, in 47 fathoms. U. S. Nat. Mus. Cat. No. 110532.

BUCCINUM NIPPONENSE Dall

Plate 35, fig. 9

Buccinum nipponense DALL, Smithsonian Misc. Coll., vol. 50, p. 142, 1907.

South coast of Nippon, Japan, in 175 fathoms. U. S. Nat. Mus. Cat. No. 110515.

BUCCINUM OPISTHOPECTUM Dall

Plate 33, fig. 4

Buccinum opisthoplectum DALL, Smithsonian Misc. Coll., vol. 50, p. 142, 1907.
Japan Sea, in 86 fathoms. U. S. Nat. Mus. Cat. No. 110514.

BUCCINUM PEMPHIGUS Dall

Plate 5, fig. 2; plate 31, fig. 7

Buccinum pemphigus DALL, Smithsonian Misc. Coll., vol. 50, p. 151, 1907.
Off Dalnoi Point, Kamchatka, in 682 fathoms. U. S. Nat. Mus. Cat. No. 110537.

BUCCINUM PHYSEMATUM Dall

Plate 4, fig. 5

Buccinum physematum DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 328, 1919.
Bering Sea, in about 30 fathoms. U. S. Nat. Mus. Cat. No. 122555.

BUCCINUM PLANETICUM Dall

Plate 5, fig. 1

Buccinum planeticum DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 326, 1919.
Bering Sea, southwest of Hagmeister Island, in 23 fathoms. U. S. Nat. Mus. Cat. No. 223098.

BUCCINUM POLIUM Dall

Plate 33, fig. 1

Buccinum polium DALL, Smithsonian Misc. Coll., vol. 50, p. 145, 1907.
Aniwa Bay, Sakhalin Island, in 42 fathoms. U. S. Nat. Mus. Cat. No. 110523.

BUCCINUM ROSSICUM Dall

Plate 31, fig. 5

Buccinum rossicum DALL, Smithsonian Misc. Coll., vol. 50, p. 150, 1907.
Aniwa Bay, Sakhalin Island, in 42 fathoms. U. S. Nat. Mus. Cat. No. 110546.

BUCCINUM SAKHALINENSE Dall

Plate 30, fig. 5

Buccinum sakhalinense DALL, Smithsonian Misc. Coll., vol. 50, p. 148, 1907.
Aniwa Bay, Sakhalin Island. U. S. Nat. Mus. Cat. No. 110529.

BUCCINUM SOLENUM Dall

Plate 4, fig. 1

Buccinum solenum DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 325, 1919.
Off Nunivak Island, Bering Sea, in 36 fathoms. U. S. Nat. Mus. Cat. No. 221283.

BUCCINUM SURUGANUM Dall

Plate 33, fig. 5

Buccinum suruganum DALL, Smithsonian Misc. Coll., vol. 50, p. 146, 1907.
Suruga Gulf, south coast of Nippon, Japan, in 29 fathoms. U. S. Nat. Mus. Cat. No. 110526.

BUCCINUM TENUE LYPERUM Dall

Plate 3, fig. 8

Buccinum tenue, var. *lyperum* DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 324, 1919.

Eastern coast of Kamchatka, in 100 fathoms. U. S. Nat. Mus. Cat. No. 225611.

BUCCINUM TENUE RHODIUM Dall

Plate 6, fig. 1

Buccinum tenue rhodium DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 324, 1919.

Bering Sea, at Plover Bay, Eastern Siberia. U. S. Nat. Mus. Cat. No. 224069.

BUCCINUM ZELOTES Dall

Plate 32, fig. 5

Buccinum zelotes DALL, Smithsonian Misc. Coll., vol. 50, p. 141, 1907.

Sea of Japan in 114 fathoms. U. S. Nat. Mus. Cat. No. 110513.

CADULUS CALIFORNICUS Pilsbry and Sharp

Plate 9, fig. 3

Cadulus (Gadila) californicus PILSBRY and SHARP, Man. Conch., vol. 17, p. 180, 1898.

Clarence Strait, Alaska. U. S. Nat. Mus. Cat. No. 122599.

CALLIOSTOMA NEPHELOIDE Dall

Plate 24, figs. 2, 3

Calliostoma nepheloide DALL, Proc. U. S. Nat. Mus., vol. 45, p. 592, 1913.

Panama Bay, in 47 fathoms. U. S. Nat. Mus. Cat. No. 96637.

CALLIOSTOMA TRICOLOR Gabb

Plate 9, fig. 6

Calliostoma tricolor GABB, Proc. Cal. Acad. Sci., vol. 3, p. 186, 1865.

Santa Cruz, Monterey Bay, California. U. S. Nat. Mus. Cat. No. 32508.

CHRYSODOMUS (SULCOSIPHO?) ADELPHICUS Dall

Plate 35, fig. 8

Chrysodomus adelphicus DALL, Smithsonian Misc. Coll., vol. 50, p. 155, 1907.

Yokohama, Japan. U. S. Nat. Mus. Cat. No. 109247.

CHRYSODOMUS EULIMATUS Dall

Plate 14, fig. 1; plate 34, fig. 3

Chrysodomus culimatus DALL, Smithsonian Misc. Coll., vol. 50, No. 1727, p. 156, 1907; Proc. U. S. Nat. Mus., vol. 45, No. 2002, p. 537, 1913.

Aniwa Bay, Sakhalin Island, U. S. Nat. Mus. Cat. No. 110541. The specimen figured on Plate 34 is the type originally described, but that on plate 14 represents the adult shell.

CHRYSODOMUS NUCEUS Dall

Plate 4, fig. 3

Chrysodomus nuceus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 322, 1919.
Cook's Inlet, Alaska. U. S. Nat. Mus. Cat. No. 151429.

CHRYSODOMUS PRIBILOFFENSIS Dall

Plate 7, fig. 4

Chrysodomus pribiloffensis DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295,
p. 323, 1919.

Bering Sea, off the Pribilof Islands in 50 to 100 fathoms. U. S. Nat. Mus.
Cat. No. 224085.

CHRYSODOMUS SATURUS TABULARIS Dall

Plate 4, fig. 6

Chrysodomus saturus MARTYN, var. *tabularis* DALL, Proc. U. S. Nat. Mus., vol.
56, No. 2295, p. 323, 1919.

Bering Sea, near Nunivak Island. U. S. Nat. Mus. Cat. No. 31350.

CHRYSODOMUS SMIRNIUS Dall

Plate 4, fig. 2

Chrysodomus smirnius DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 322,
1919.

Straits of Fuca, in 114 fathoms. U. S. Nat. Mus. Cat. No. 130418.

CHRYSODOMUS VINOSUS Dall

Plate 6, fig. 3

Chrysodomus vinosus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 323, 1919.
Avacha Bay, Kamchatka, in 16 fathoms. U. S. Nat. Mus. Cat. No. 225608.

CIRSOTREMA PLEXIS, new species

Plate 21, figs. 12, 12a

Shell slender, whitish, with 10 moderately rounded whorls exclusive of the (lost) nucleus; with five or six irregularly placed major varices, and numerous minor ones which bridge by slender projections the invisible suture; on the last whorl there are 20 minor and 3 major varices; the spiral sculpture, imbedded in the minor varical sculpture is obscurely indicated as a cord in front of the suture, 4 obscure ones, which form projections on the major varices, between the former and the base which is indicated by a deep furrow in front of which is a very strong cord around a marked concavity; both the furrow and the concavity are bridged by slender extensions of the minor varices; the minor varices are externally flattened and obliquely sculptured as indicated in figure 12a.; the axis is imperforate, the aperture circular, the final varix heavy and crenulated; height

of shell, 46; maximum diameter, 14mm. U. S. Nat. Mus. Cat. No. 110769.

Dredged by the United States Bureau of Fisheries Steamer *Albatross*, at station 3707, off Honshu Island, Japan, in 63 to 70 fathoms, volcanic sand.

This belongs to the group of *C. varicosum* Lamarck, to which many species have been inadvisably referred though discriminable by their minor sculpture.

COCCULINA JAPONICA Dall

Plate 26, figs. 3, 5

Cocculina japonica DALL, Smithsonian Misc. Coll., vol. 50, p. 169, 1907.

Off Sado Island, Japan, in 200 fathoms. U. S. Nat. Mus. Cat. No. 110544.

COCCULINA RHYSSA, new species

Plate 32, figs. 10, 11

Shell small, translucent white, ovate, with a nearly smooth flattened apical area with the protoconch showing as a small opaque white spot in the center; outside of this area the concentric sculpture rises as sharp-edged laminae, about 10 on the type specimen, with wider interspaces and their edges crenulated by the radial sculpture; the radial sculpture consists of numerous threads which do not divide distally and are separated by narrower interspaces; the interior of the shell is smooth and white; the apex is about one-third of the length from the anterior edge, both slopes are somewhat convex; the margin of the shell is very slightly crenulate by the radial sculpture; height of shell, 3; length 7.6; width 5 mm. U. S. Nat. Mus. Cat. No. 110782.

Dredged at station 3721, in 250 fathoms, off Hondo, Japan, bottom temperature 64° F. This is the first species of the genus to show pronounced sculpture.

COLUS (ANOMALOSIPHO) ADONIS Dall

Plate 1, fig. 8

Colus (Aulacofusus) adonis DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 316, 1919.

Suruga Gulf, Japan, in 503 fathoms. U. S. Nat. Mus. Cat. No. 205212. Also found in Alaskan waters.

COLUS (LATISIPHO) APHELUS Dall

Plate 1, fig. 3

Chrysodomus aphelus DALL, Proc. U. S. Nat. Mus., vol. 12, 1889, p. 323.

Off Santa Barbara, California, in 414 fathoms. U. S. Nat. Mus. Cat. No. 206449.

COLUS (AULACOFUSUS) BARBARINUS Dall

Plate 2, fig. 5

Colus (Aulacofusus) barbarinus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 316, 1919.

Off Khudubine Island, Bering Sea, in 53 fathoms. U. S. Nat. Mus. Cat. No. 334438.

COLUS (AULACOFUSUS) BRISTOLENSIS Dall

Plate 2, fig. 8

Colus (Aulacofusus) bristolensis DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 316, 1919.

Bristol Bay, Alaska, in 29½ fathoms. U. S. Nat. Mus. Cat. No. 213254.

COLUS (AULACOFUSUS) CAPPONIUS Dall

Plate 3, fig. 2

Colus (Aulacofusus) capponius DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 317, 1919.

Bering Strait near Port Clarence, in about 30 fathoms. U. S. Nat. Mus. Cat. No. 108980.

COLUS (LATISIPHO) CLEMENTINUS Dall

Plate 2, fig. 9

Colus (Latisipho) clementinus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 321, 1919.

Between Santa Catalina and San Clemente Islands, Calif., in 654 fathoms. U. S. Nat. Mus. Cat. No. 208912.

COLUS (LATISIPHO) DALMASIUS Dall

Plate 1, fig. 9

Colus (Latisipho) dalmasius DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 322, 1919.

Off British Columbia in 238 fathoms. U. S. Nat. Mus. Cat. No. 122631.

COLUS (AULACOFUSUS) DIMIDIATUS Dall

Plate 2, fig. 3

Aulacofusus (Limatofusus) dimidiatus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 319, 1919.

Off Tillamook Bay, Oreg., in 786 fathoms. U. S. Nat. Mus. Cat. No. 213338.

COLUS (LATISIPHO) ERRONES Dall

Plate 3, fig. 6

Colus (Latisipho) erroneus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 321, 1919.

Bering Sea. U. S. Nat. Mus. Cat. No. 122620.

COLUS (AULACOFUSUS) HALIDONUS Dall

Plate 1, fig. 12

Colus (Aulacofusus) halidonus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 318, 1919.

Off Destruction Island, coast of Washington, in 516 fathoms. U. S. Nat. Mus. Cat. No. 213250.

COLUS (AULACOFUSUS) HALIMERIS Dall

Plate 2, fig. 7

Aulacofusus (Limatofusus) halimeris DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 320, 1919.

Eastern Passage, near the Stikine River, southeastern Alaska, in 70 fathoms. U. S. Nat. Mus. Cat. No. 207192.

COLUS (LIMATOFUSUS) MORDITUS Dall

Plate 1, fig. 1

Colus (Limatofusus) morditus DALL, Proc. U. S. Nat. Mus., vol. 56, p. 319, 1919. Gulf of Georgia, British Columbia. U. S. Nat. Mus. Cat. No. 222462.

COLUS (AULACOFUSUS) NOBILIS Dall

Plate 5, fig. 4

Colus (Aulacofusus) nobilis DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 315, 1919.

Bering Sea near the Pribiloff Islands in 60 fathoms. U. S. Nat. Mus. Cat. No. 222983.

COLUS (AULACOFUSUS) OMBRONIUS Dall

Plate 3, fig 5

Colus (Aulacofusus) ombronius DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 315, 1919.

Bering Sea, between Bristol Bay and the Pribiloff Islands in about 30 fathoms. U. S. Nat. Mus. Cat. No. 213239.

COLUS (AULACOFUSUS) PULCIUS Dall

Plate 3, fig. 1

Aulacofusus (Limatofusus) pulcius DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 318, 1919.

Arctic Ocean, north of Bering Strait, in about 50 fathoms. U. S. Nat. Mus. Cat. No. 223799.

COLUS (AULACOFUSUS) ROSEUS Dall

Plate 26, fig. 2

Chrysodomus roseus DALL, Proc. Cal. Acad. Sci., vol. 7, p. 7, 1877.

Bristol Bay, Bering Sea, in 10 to 15 fathoms. U. S. Nat. Mus. Cat. No. 122664.

COLUS (AULACOFUSUS) SAPIUS Dall

Plate 2, fig. 10, plate 26, fig. 9

Colus (Aulacofusus) sapius DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 317, 1919.

Southwest of Sitka, Alaska, in 1,569 fathoms. U. S. Nat. Mus. Cat. No. 122597.

COLUS (AULACOFUSUS) SEVERINUS Dall

Plate 1, fig. 11

Aulacofusus (Limatofusus) severinus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 320, 1919.

Monterey Bay, Calif., in 278 fathoms. U. S. Nat. Mus. Cat. No. 225225.

COLUS (LIMATOFUSUS) TIMETUS Dall

Plate 1, fig. 2

Colus (Limatofusus) timctus DALL, Proc. U. S. Nat. Mus., vol. 56, p. 318, 1919. Unalaska, Aleutian Islands. U. S. Nat. Mus. Cat. No. 213337.

COLUS (AULACOFUSUS) TROMBINUS Dall

Plate 2, fig. 6

Aulacofusus (Limatofusus) trombinus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 321, 1919.

Off the Pribilof Islands, Bering Sea, in 36 fathoms. U. S. Nat. Mus., Cat. No. 213332.

COLUS (AULACOFUSUS) TROPHIUS Dall

Plate 1, fig. 10

Aulacofusus (Limatofusus) trophius DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 319, 1919.

Off Sea Lion Rock, coast of Washington, in 685 fathoms. U. S. Nat. Mus., Cat. No. 122632.

CORALLIOPHILA SPINOSA, new species

Plate 36, figs. 5, 8

Shell dirty white, elevated, with a minute smooth nucleus of one, and eight subsequent whorls; suture obscure, appressed; spiral sculpture on the spire of a row of spines on the periphery, on the last whorl with an added row of smaller ones at the edge of the base; the last whorl carries about 10 subtriangular recurved peripheral spines; in front of the periphery and on the base are numerous small close scabrous threads; the axial sculpture is low, sublamellose imbricating and more or less irregular; aperture rounded, modified by the sculpture, the canal open, strongly recurved, the siphonal fasciole spinose with five or six old canals, and forming a narrow funicular umbilicus; height of shell, 38; maximum diameter, 25 mm. U. S. Nat. Mus. Cat. No. 111045.

Dredged by the United States Bureau of Fisheries steamer *Albatross* at station 3700, off Honshu Island, Japan, in 63 fathoms, volcanic sand.

This has the form of some of the *Murices* but the surface texture of *Coralliophila*, and its umbilical pit.

CORBICULA (CYRENODONAX) FORMOSANA Dall

Plate 29, fig. 3

Corbicula (Cyrenodonax) formosana DALL, Trans. Wagner Inst. Sci. Phila., vol. 3, p. 1450, footnote, 1903.

Mouth of Tamsui River, Formosa. U. S. Nat. Mus. Cat. No. 47964.

CORBICULA (CYANOCYCLAS) OLEANA Marshall

Plate 35, fig. 2

Corbicula (Cyanocyclas) oleana MARSHALL, Proc. U. S. Nat. Mus., vol. 66, No. 2552, p. 8, Nov. 3, 1924.

Collected by Don Severiano de Olea at the Arroyo de Malvin, Department of Montevideo, Uruguay. U. S. Nat. Mus. Cat. No. 109261.

Height of shell, 14; breadth, 13; diameter, 9 mm.

CORBULA MACDONALDI Dall

Plate 17, figs. 1, 3

Corbula macdonaldi DALL, Smithsonian Misc. Coll., vol. 59, No. 2, p. 3, Mar., 1912.

Pleistocene of the Canal Zone, Panama. U. S. Nat. Mus. Cat. No. 214358.

CRENELLA COLUMBIANA Dall

Plate 9, fig. 1

Crenella columbiana DALL, Bull. Nat. Hist. Soc. Brit. Col., No. 2, p. 4, 1897.

Nazan Bay, Atka Island, Aleutians, in 12 fathoms. U. S. Nat. Mus. Cat. No. 107641. A young shell.

CRYPTOMYA MAGNA Dall

Plate 13, figs. 3, 4

Cryptomya magna DALL, West Amer. Scientist, vol. 19, No. 2, p. 17, 1921.

Pliocene (?) of San Quentin Bay, Lower California. U. S. Nat. Mus. Cat. No. 333127.

CUMINGIA DENSILINEATA Dall

Plate 8, fig. 5, plate 11, fig. 2

Cumingia densilineata DALL, West Amer. Scientist, vol. 19, No. 3, p. 22, 1921.

Pliocene (?) of San Quentin Bay, Lower California. U. S. Nat. Mus. Cat. No. 333115.

CUSPIDARIA GLACIALIS Sars

Plate 20, fig. 4

Neaera glacialis G. O. SARS, Moll. Reg. Arct. Norv., p. 88, 1878.

Off San Diego, Calif., in deep water. U. S. Nat. Mus. Cat. No. 122587.

CUSPIDARIA TROSAETES, new species

Plate 29, fig. 5

Shell large, thin, greyish, with a velvety periostracum, equivalve, inequilateral, inflated; beaks low, rather anterior; posterior end compressed, pointed, attenuated; anterior end evenly rounded; posterior dorsal slope descending, nearly straight, base roundly arcuated; hinge with an internal resilium inclined posteriorly, and a single long lateral tooth in the right valve; length of shell, 25; beaks before posterior end, 15; height, 16; diameter, 11 mm. U. S. Nat. Mus. Cat. No. 110770.

Dredged at station 4992, in the Japan Sea, in 325 fathoms, mud, by the United States Bureau of Fisheries steamer *Albatross*.

This belongs to the typical section of the genus, and is notable for its thick velvety periostracum.

CYMATIUM ADAIRENSE Dall

Plate 35, fig. 1

Cymatium adairense DALL, Nautilus, vol. 24, p. 33, 1910.

Off Adair Bay, Gulf of California. U. S. Nat. Mus. Cat. No. 214103.

DENTALIUM CROCINUM Da'l

Plate 27, fig. 8

Dentalium crocinum DALL, Smithsonian Misc., Coll., vol. 50, p. 169, 1907.

Gulf of Tokio, Japan, in 88 fathoms. U. S. Nat. Mus. Cat. No. 110508.

EMARGINULA CHORISTES, new species

Plate 26, figs. 1, 4

Shell thin, very elevated, tapering to an acute apex, which stands vertically above the posterior margin; slit about one fifth of the length of the anterior convex slope, its fasciole narrow and inconspicuous; posterior slope beneath the curved apex, nearly vertical; color of the shell pale brownish; axial sculpture of about 16 major threads with from 3 to 7 (often alternated) smaller threads between them, closely reticulated by rather uniform small concentric threads: the sculpture is rounded rather than sharp or laminate; base ovate; height, 18; anteroposterior diameter, 17; transverse diameter, 12 mm. U. S. Nat. Mus. Cat. No. 110781.

Dredged in the Eastern Sea of Japan, in 361 fathoms, sand, at station 4917, by the United States Bureau of Fisheries steamer *Albatross*.

ERYCINA COLPOICA Dall

Plate 27, fig. 2

Erycina colpoica DALL, Proc. U. S. Nat. Mus., vol. 45, p. 596, 1913.

Gulf of California. U. S. Nat. Mus. Cat. No. 267403.

EUCALODIUM (ANISOSPIRA) ORCUTTI Dall

Plate 23, figs. 8, 11

Eucalodium (Anisospira) orcutti DALL, Nautilus, vol. 24, p. 34, July, 1910.
Oaxaca, Mexico. U. S. Nat. Mus. Cat. No. 212319.

EUSPIRA BAHAMENSIS, new species

Plate 9, fig. 2

Shell small, white, rather depressed, of three and a half well rounded whorls, the suture deep; surface smooth except for two or three weak spiral striae, directly in front of the suture and more or less obsolete on the later whorls; aperture ovate, narrow behind, outer lip sharp, inner lip nearly straight, not callous, but united by a layer of enamel over the body with the outer lip; umbilicus large, funicular, alt. 6.3; diameter, 8 mm. U. S. Nat. Mus. Cat. No. 107447.

Dredged by the United States Fish Commission at station 2324, on the Great Bahama Bank in 33 fathoms.

This is nearly the size of *Natica leptalea* Watson, but more depressed and with a much larger umbilicus.

EXILIA KELSEYI Dall

Plate 1, fig. 6

Tritonofusus (Plicifusus) kelseyi DALL, Proc. U. S. Nat. Mus., vol. 34, p. 249, 1908.

Off San Diego, Calif., in 124 to 359 fathoms (young) and in 50 fathoms (adult) by Prof. F. W. Kelsey. U. S. Nat. Mus. Cat. No. 224346.

FUSINUS DIMINUTUS Dall

Plate 2, fig. 1

Fusinus diminutus DALL, Nautilus, vol. 29, p. 56, 1915.

San Pedro Bay, Calif., beaches. U. S. Nat. Mus. Cat. No. 185958.

FUSINUS TRASKI Dall

Plate 3, fig. 4

Fusinus traski DALL, Nautilus, vol. 19, p. 54, 1915. (*Fusus rugosus* Trask, 1855, not of Lamarck, 1804).

San Pedro, Calif. U. S. Nat. Mus. Cat. No. 124761.

GALEODEA LEUCODOMA Dall

Plate 34, fig. 4

Galeodea leucodoma DALL, Smithsonian Misc. Coll., vol. 50, p. 166, 1907.

Off Kagoshima, Japan, in 391 fathoms. U. S. Nat. Mus. Cat. No. 110503.

GYRINOPSIS COWLITZI Dall

Plate 18, figs. 4, 6

Eocene of Washington, near the Cowlitz River, alt. 65 mm. U. S. Nat. Mus. Cat. No. 333539. Collected by Ralph Arnold.

ISCHNOCHITON CONSPICUA Carpenter

Plate 18, fig. 7

Ischnochiton (Stenoplax) conspicua CARPENTER in Pilsbry, Man. Conch., vol. 14, p. 63, 1892.

Abnormal specimen with only six valves, collected by Hemphill. Photographed by Prof. F. W. Kelsey, San Diego, Calif.

LACUNA SOLIDULA Lovèn

Plate 34, fig. 2

Lacuna solidula LOVÈN, Index Moll. Scand., p. 21, 1846.

Lacuna carinata GOULD, Proc. Boston Soc. Nat. Hist., vol. 3, p. 75, 1848.
Neah Bay, Wash. U. S. Nat. Mus. Cat. No. 15530.

LACUNA UNIFASCIATA Carpenter

Plate 31, fig. 4

Lacuna unifasciata CARPENTER, Proc. Zool. London, 1856, p. 205.
Monterey, Calif. U. S. Nat. Mus. Cat. No. 60675.

The color markings are not indicated on the figure.

LIMA HAMLINI Dall

Plate 29, fig. 6

Lima hamlini DALL, Nautilus, vol. 14, p. 16, 1900.

Pliocene clays of Los Angeles, Calif. Collection of R. E. C. Stearns.

LIOCYMA ANIWANA Dall

Plate 28, figs. 4, 6; plate 29, figs. 1, 2

Liocyma aniwana DALL, Smithsonian Misc. Coll., vol. 50, No. 1727, p. 172, July, 1907.

Dredged by the United States Bureau of Fisheries steamer *Albatross*, in Aniwa Bay, Sakhalin Island, Japan, in 43 fathoms, muddy bottom, at station 5013.

Related to *L. beckii* Dall, but coarser, more irregularly sculptured and of a dark yellow brown color. Length of the shell 24 mm. U. S. Nat. Mus. Cat. No. 110511.

LIOMESUS BISTRIATUS Dall

Plate 34, fig. 6

Liomesus bistriatus DALL, Smithsonian Misc. Coll., vol. 50, p. 165, 1907.

Off Hakodate, Japan, in 205 fathoms. U. S. Nat. Mus. Cat. No. 110500.

LIOTIA LURIDA Dall

Plate 36, fig. 3

Liotia lurida DALL, Proc. U. S. Nat. Mus., vol. 45, No. 2002, p. 590, June 11, 1913.

Collected at San Joseph Island, Gulf of California, on the beach by Dr. Paul Bartsch, in 1911. Diameter of shell 5 mm.

LITTORINA GRÖNLANDICA Menke

Plate 25, fig. 2

Littorina grönlandica MENKE, Synopsis, p. 45, 1830.

Middleton Island, Alaska. U. S. Nat. Mus. Cat. No. 206044.

This may perhaps be regarded as a variety of Menke's species.

LITTORINA SITKANA Philippi

Plate 25, fig. 7

Littorina sitkana PHILIPPI, Proc. Zool. Soc. London, for 1845, p. 140.

Sitka, Alaska. U. S. Nat. Mus. Cat. No. 206054.

LYONSIA MAGNIFICA Dall

Plate 23, fig. 2

Lyonsia magnifica DALL, Proc. U. S. Nat. Mus., vol. 45, p. 595, 1913.

Off Mazatlan, Mexico, in deep water. U. S. Nat. Mus. Cat. No. 266802.

MACOMA ACOLASTA Dall

Plate 8, figs. 2, 3

Macoma acolasta DALL, West Amer. Scientist, vol. 19, No. 3, p. 21, 1921.

Pliocene (?) of San Quentin Bay, Lower California. U. S. Nat. Mus. Cat. No. 333113.

MACTRA (MACTROTOMA) CALIFORNICA Conrad

Plate 20, fig. 1

Mactra californica CONRAD, Journ. Acad. Nat. Sci. Phila., vol. 7, p. 340, pl. 18, fig. 12, 1837.

San Diego, Calif. U. S. Nat. Mus. Cat. No. 46912.

MARGARITES ALBOLINEATUS E. A. Smith

Plate 23, figs. 3, 6

Valvatella albolineata SMITH, Proc. Malac. Soc. London, vol. 3, p. 206, fig. 2, 1898.

Attu Island, Alaska. U. S. Nat. Mus. Cat. No. 109463.

MARGARITES BERINGENSIS E. A. Smith

Plate 36, figs. 4, 6

Valvatella beringensis E. A. SMITH, Proc. Malac. Soc. London, vol. 3, p. 206, 1899.

Petrel Bank, Bering Sea. U. S. Nat. Mus. Cat. No. 111048.

MARGINELLA MACDONALDI Dall

Plate 17, figs. 4, 5

Marginella macdonaldi DALL, Smithsonian Misc. Coll., vol. 59, p. 7, 1912.
Later Tertiary of Costa Rica. U. S. Nat. Mus. Cat. No. 214348.

MELANELLA MICANS BOREALIS Bartsch

Plate 9, fig. 4

Eulima micans CARPETER, Proc. Acad. Nat. Sci. Phila. for 1865, p. 63; Puget Sound.

Melanella micans borealis BARTSCH, Proc. U. S. Nat. Mus., vol. 53, No. 2207, p. 305, pl. 35, fig. 7, Aug., 1917. Comox, B. C.

The specimen figured is from Kodiak, Alaska. U. S. Nat. Mus. Cat. No. 160084. Collected by W. H. Dall. This is the most northern locality yet known. The variety differs from the typical *M. micans* according to Bartsch by being constantly more slender.

MELANELLA RANDOLPHI Vanatta

Plate 9, fig. 7

Eulima randolphi VANATTA, Proc. Acad. Nat. Sci. Phila., for 1899, p. 256, pl. 11, figs. 13, 14, 1899. Unalaska, Alaska.

Melanella randolphi BARTSCH, Proc. U. S. Nat. Mus., vol. 53, No. 2207, p. 312; pl. 37, fig. 4, Aleutian Islands to Puget Sound.

The specimen figured is from Kyska Harbor, Aleutian Islands. U. S. Nat. Mus. Cat. No. 160085. Collected by W. H. Dall.

METULA ELONGATA Dall

Plate 23, fig. 4

Metula elongata DALL, Smithsonian Misc. Coll., vol. 50, p. 166, 1907.

Suruga Gulf, Japan, in 57 fathoms. U. S. Nat. Mus. Cat. No. 110502.

METZGERIA CALIFORNICA Dall

Plate 2, fig. 4

Metzgeria californica DALL, Nautilus, vol. 17, p. 52, 1903.

Santa Barbara Channel, Calif. U. S. Nat. Mus. Cat. No. 172694.

MICROGAZA FULGENS Dall

Plate 36, figs. 2, 10

Microgaza fulgens DALL, Smithsonian Misc. Coll., vol. 50, p. 168, 1907.

Sea of Japan, in 181 fathoms. U. S. Nat. Mus. Cat. No. 110543.

MITRA DOLOROSA Dall

Plate 21, fig. 6

Mitra dolorosa DALL, Proc. Biol. Soc. Wash., vol. 16, p. 173, Dec. 1903.

Gulf of California. U. S. Nat. Mus. Cat. No. 109009.

MOHNIA BUCCINOIDES Dall

Plate 33, fig. 10

Mohnia buccinoides DALL, Proc. Acad. Nat. Sci. Phila. for 1913, p. 503.
Off Hondo, Japan, in 905 fathoms. U. S. Nat. Mus. Cat. No. 110778.

MOHNIA CLARKI Dall

Plate 30, fig. 2

Mohnia clarki DALL, Smithsonian Misc. Coll., vol. 50, p. 163, 1907.
Okhotsk Sea, in 682 fathoms. U. S. Nat. Mus. Cat. No. 110497.

MOHNIA JAPONICA Dall

Plate 32, fig. 6

Mohnia japonica DALL, Proc. Acad. Nat. Sci. Phila. for 1913, p. 503.
Off Sado Island, Japan, in 225 fathoms. U. S. Nat. Mus. Cat. No. 205244.

MOHNIA HONDOËNSIS Dall

Plate 32, fig. 4

Mohnia hondoënsis DALL, Proc. Acad. Nat. Sci. Phila. for 1913, p. 504.
Off Hondo, Japan, in 76 fathoms. U. S. Nat. Mus. Cat. No. 205253.

MOHNIA KURILANA Dall

Plate 34, fig. 1

Mohnia kurilana DALL, Proc. Acad. Nat. Sci. Phila. for 1913, p. 503.
Off the Kuril Islands, in 229 fathoms. U. S. Nat. Mus. Cat. No. 205224.

MOHNIA MICRA Dall

Plate 30, fig. 9

Mohnia micra DALL, Smithsonian Misc. Coll., vol. 50, p. 162, 1907.
Off Sado Island, Japan Sea, in 200 fathoms. U. S. Nat. Mus. Cat. No. 110499.

MOHNIA SORDIDA Dall

Plate 30, fig. 3

Mohnia sordida DALL, Smithsonian Misc. Coll., vol. 50, p. 162, 1907.
Sugaru Strait, Japan, in 300 fathoms. U. S. Nat. Mus. Cat. No. 110496.

MOHNIA VERNALIS Dall

Plate 2, fig. 2; plate 30, fig. 4

Mohnia vernalis DALL, Proc. Acad. Nat. Sci. Phila. for 1913, p. 502.
Off Tillamook Bay, Oreg. in 786 fathoms. U. S. Nat. Mus. Cat. No. 213334.

MUREX (PTEROPURPURA) ESYCHUS, new species

Plate 32, fig. 9, plate 33, fig. 6

Shell small, short, with three sharp varices, a smooth blunt nucleus of nearly two, and three rapidly enlarging subsequent whorls; suture distinct, not deep or appressed; axial sculpture of three broad,

sharp, thin varices, crenulate at the edge, guttered and produced at the shoulder; there is one small hump between the varices, but the rest of the axial sculpture is obscure; spiral sculpture of the ridge at the shoulder and eight minor ridges between the shoulder and the canal, chiefly noticeable on the varices; aperture subovate, with no tooth at the margin; canal closed, short, strongly recurved: height, 32; maximum diameter, 25 mm. U. S. Nat. Mus. Cat. No. 110773.

Dredged by the United States Bureau of Fisheries steamer *Albatross* in Kagoshima Gulf, Japan, in 103 fathoms, at station 4935.

This species belongs to the group of *M. speciosa* Adams and Reeve, and not to the group with toothed aperture like *M. burnetti*.

NEPTUNEA ALASKANA Dall

Plate 22, fig. 3

Boreotrophon alaskanus DALL, Proc. U. S. Nat. Mus., vol. 24, p. 545, 1902.
Bering Sea, north of Unalaska, in 225 fathoms. U. S. Nat. Mus. Cat. No. 122594.

NEPTUNEA GORGON Dall

Plate 23, fig. 1

Boreotrophon gorgon DALL, Proc. U. S. Nat. Mus., vol. 45, No. 2002, p. 588;
June, 1913.

Dredged by the United States Bureau of Fisheries steamer *Albatross*, off Hondo, Japan, at station 3698, in 153 fathoms, mud, bottom temperature 65° F.

The shell is 42 mm. in length and of a waxen white color. U. S. Nat. Mus. Cat. No. 110771.

NEPTUNEA (TROPHONOPSIS) MACLAINI Dall

Plate 21, fig. 11

Boreotrophon maclaini DALL, Proc. U. S. Nat. Mus., vol. 24, p. 538, 1902.
Baffin Bay, off Greenland. U. S. Nat. Mus. Cat. No. 126974.

This shell is immature.

NEPTUNEA PANAMENSIS Dall

Plate 21, fig. 4

Boreotrophon panamensis DALL, Proc. U. S. Nat. Mus., vol. 24, p. 546, 1902.
Off Panama Bay, in 1,270 fathoms. U. S. Nat. Mus. Cat. No. 123021.

NUCULA MIRIFICA Dall

Plate 29, figs. 4, 10

Nucula mirifica DALL, Smithsonian Misc. Coll., vol. 50, p. 170, 1907.

Off the south coast of Yesso, Japan, in 269 fathoms. U. S. Nat. Mus. Cat. No. 110463.

This is probably the largest smooth recent *Nucula* known, though the Japanese species of *Acila* reaches a still greater size.

OSTREA CRISTATA Born

Plate 28, figs. 7, 8

Ostrea cristata BORN, Mus. Caes., pl. 7, fig. 3, 1780.

Florida, on Gorgonians. U. S. Nat. Mus. Cat. No. 95934.

OSTREA EQUESTRIS Say

Plate 28, figs. 1, 3

Ostrea equestris SAY, Amer. Conch., vol. 6, pl. 58, 1834.

Florida. U. S. Nat. Mus. Cat. No. 95935.

OSTREA FRONS Linnaeus

Plate 28, fig. 5

Mytilus frons LINNAEUS, Syst. Nat., ed. 10, p. 704, 1758.

Florida. U. S. Nat. Mus. Cat. No. 207000.

OSTREA PERMOLLIS Sowerby

Plate 27, fig. 9, 10

Ostraea permollis SOWERBY, in Conch. Iconica, *Ostraea*, pl. 10, figs. 18a, 18b, Jan. 1871.

Florida. U. S. Nat. Mus. Cat. No. 173264.

PECTEN (LYROPECTEN) PITTIERI Dall

Plate 17, fig. 6

Pecten (Lyropecten) pittieri DALL, Smithsonian Misc. Coll., vol. 59, p. 10, 1912.

Later Tertiary of Moen Hill, near Limon, Costa Rica. U. S. Nat. Mus. Cat. No. 214368.

PHACOIDES (PARVILUCINA) TENUISULPTA Carpenter

Plate 20, fig. 5

Lucina tenuisculpta CARPENTER, Suppl. Rep. Brit. Assoc., p. 642, 1864.

Puget Sound. U. S. Nat. Mus. Cat. No. 122581.

PHENACOPTYGMA CORTEZI Dall

Plate 1, fig. 7

Daphnella (Surculina) cortezi DALL, Bull. Mus. Comp. Zool., vol. 43, No. 6, p. 292, 1908.*Phenacoptygma cortezi* DALL, Proc. Biol. Soc. Wash., vol. 31, p. 138, 1918; Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 308, 1919.

Cortez Bank, off San Diego, Calif., in 984 fathoms. U. S. Nat. Mus. Cat. No. 204050.

PSAMMOBIA (GOBRAEUS) EDENTULA Gabb

Plate 19, fig. 1

Psammbia edentula GABB, Pal. Cal., vol. 2, p. 53, pl. 15, fig. 11, 1869.

San Pedro, Calif.; recent specimen. U. S. Nat. Mus. Cat. No. 107787.

PSEUDAMUSIUM ARCES Dall

Plate 27, fig. 4

Pseudamusium arces DALL, Proc. U. S. Nat. Mus., vol. 45, p. 593, 1913.

Off Santa Cruz Island, Calif., in 534 fathoms. U. S. Nat. Mus. Cat. No. 267169.

PUNCTURELLA CUCULLATA Gould

Plate 26, fig. 6, 8

Puncturella cucullata GOULD, Proc. Boston Soc. Nat. Hist., vol. 2, p. 159, 1846.

Off the coast of Washington in 66 fathoms. U. S. Nat. Mus. Cat. No. 106866.

PUPILLARIA ROSSICA Dall

Plate 25, fig. 1

Margarites (Pupillaria) rossicus DALL, Proc. U. S. Nat. Mus., vol. 56, p. 365, 1919.

Aniwa Bay, Sakhalin Island. U. S. Nat. Mus. Cat. No. 111046.

PUPILLARIA STRIATA Broderip and Sowerby

Plate 25, fig. 6

Margarita striata BRODERIP and SOWERBY, Zool. Journ., vol. 4, p. 371, 1829.

Walter Thymen's fiord, Spitsbergen. U. S. Nat. Mus. Cat. No. 109460a.

PHOLADOMYA PACIFICA Dall

Plate 29, figs. 8, 9

Pholadomya pacifica DALL, Smithsonian Misc. Coll., vol. 50, p. 115, 1907; Nautilus, vol. 22, pp. 115, 142, 1909.

Off Hakodate, Japan, in 44 fathoms. U. S. Nat. Mus. Cat. No. 110545.

PLICATULA GIBBOSA Lamarck

Plate 27, figs. 6, 7

Plicatula gibbosa LAMARCK, Syst. An. s. Vert., p. 132, 1801.*Plicatula ramosa* LAMARCK, Anim. s. Vert., vol. 6, p. 182, 1819.

Florida. U. S. Nat. Mus. Cat. No. 102895.

PLICIFUSUS ARCTICUS Philippi

Plate 22, fig. 4

Fusus arcticus PHILIPPI, Abb. u. Besch., vol. 3, p. 119, pl. 5, fig. 5, 1850.

Bering Sea. U. S. Nat. Mus. Cat. No. 122678.

PLICIFUSUS (HELICOFUSUS) AURANTIUS Dall

Plate 32, fig. 1

Tritonofusus (Plicifusus) aurantius DALL, Smithsonian Misc. Coll., vol. 50, p. 160, 1907.

Sea of Japan, in 390 fathoms. U. S. Nat. Mus. Cat. No. 110490.

PLICIFUSUS CROCEUS Dall

Plate 32, fig. 2

Tritonofusus (Plicifusus) croceus DALL, Smithsonian Misc. Coll., vol. 50, p. 161, 1907.

Sea of Japan, in 390 fathoms. U. S. Nat. Mus. Cat. No. 110491.

PLICIFUSUS (RETIFUSUS) INCISUS Dall

Plate 1, fig. 5

Plicifusus (Retifusus) incisus DALL, Proc. U. S. Nat. Mus., vol. 56, p. 314, 1919.
Western Bering Sea, in 100 fathoms. U. S. Nat. Mus. Cat. No. 224118.

PLICIFUSUS LATICORDATUS Dall

Plate 1, fig. 4

Tritonofusus aurantius, var. *laticordatus* DALL, Smithsonian Misc. Coll., vol. 50, p. 161, 1907.

Bristol Bay, Alaska, in 41 fathoms. U. S. Nat. Mus. Cat. No. 210801.

PLICIFUSUS (RETIFUSUS) OCEANODROMAE Dall

Plate 3, fig. 3

Plicifusus (Retifusus) oceanodromae DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 314, 1919.

Petrel Bank, Bering Sea, in 52 fathoms. U. S. Nat. Mus. Cat. No. 205924.

PLICIFUSUS POLYPLEURATUS Dall

Plate 34, fig. 7

Tritonofusus (Plicifusus) polypleuratus DALL, Smithsonian Misc. Coll., vol. 50, p. 159, 1907.

Japan Sea in 88 fathoms. U. S. Nat. Mus. Cat. No. 110476.

PLICIFUSUS RHYSSUS Dall

Plate 33, fig. 7

Tritonofusus (Plicifusus) rhyssus DALL, Smithsonian Misc. Coll., vol. 50, p. 160, 1907.

Aniwa Bay, Sakhalin, in 43 fathoms. U. S. Nat. Mus. Cat. No. 110489.

PYRULOFUSUS HARPA Mörch

Plate 24, fig. 1

Neptunca harpa MÖRCH, Novit. Conch. Moll. Marina, p. 5, pl. 1, figs. 3, 4, 1858
Shumagin Islands. U. S. Nat. Mus. Cat. No. 221750.

RECLUZIA PALMERI Dall

Plate 17, fig. 8

Lymnaca (?) palmeri DALL, Amer. Journ. Conch., vol. 7, p. 135, 1871.

Delta of the Yaqui River. Gulf of California. U. S. Nat. Mus. Cat. No. 56411.

This should be compared with *R. rollandiana* Petit, 1853.

SANGUINOLARIA (NUTTALLIA) ORCUTTI Dall

Plate 12, figs. 1, 2

Sanguinolaria (Nuttallia) orcutti DALL, West Amer. Scientist, vol. 19, No. 2, p. 17, 1921.

Pliocene (?) of San Quentin Bay, Lower California. U. S. Nat. Mus. Cat. No. 333118.

SEMELE QUENTINENSIS Dall

Plate 8, fig. 4

Semele quentinensis DALL, West Amer. Scientist, vol. 19, No. 3, p. 22, 1921.

Pliocene (?) of San Quentin Bay, Lower California. U. S. Nat. Mus. Cat. No. 333114.

SEMELE RUBROPICTA Dall

Plate 18, figs. 1, 2

Semele rubropicta DALL, Amer. Journ. Conch., vol. 7, p. 144, pl. 14, fig. 10, 1871.

Beach at Soquel, Monterey Bay, Calif. U. S. Nat. Mus. Cat. No. 101960.

SERRIPES LAPEROUSII Deshayes

Plate 20, fig. 3

Cardium laperousii DESHAYES, Rev. Zool. Soc. Cuv., 1839, p. 360; Mag. de Zool., 1841, pl. 48.

Unalaska, Alaska. U. S. Nat. Mus. Cat. No. 221603.

SILIQUA PATULA Dixon

Plate 19, fig. 3

Solen patulus DIXON, Voyage, p. 355, fig. 2, 1788.

Bering Island, Bering Sea. U. S. Nat. Mus. Cat. No. 106876.

SIPHONARIA (LIRIOLA) THERSITES Carpenter

Plate 33, figs. 2, 3

Siphonaria thersites CARPENTER, Ann. Mag. Nat. Hist., ser. 3, vol. 14, p. 425, 1864.

Southeastern Alaska. U. S. Nat. Mus. Cat. No. 55802.

SOLARIELLA ELEGANTULA Dall

Plate 23, figs. 5, 9

A single specimen was dredged by the U. S. Bureau of Fisheries steamer *Albatross* in the Gulf of California, off La Paz, in 26½ fathoms. The height of the specimen is 5.5 mm. U. S. Nat. Mus. Cat. No. 111384.

SPISULA CAMERONIS Dall

Plate 10, fig. 2, plate 11, fig. 4

Spisula cameronis DALL, West Amer. Scientist, vol. 19, No. 3, p. 22, 1921.

Pliocene (?) of San Quentin Bay, Lower California. U. S. Nat. Mus. Cat. No. 333117.

SPISULA LONGA Dall

Plate 10, fig. 1, plate 11, fig. 3

Spisula longa DALL, West Amer. Scientist, vol. 19, No. 3, p. 22, 1921.

Pliocene (?) of San Quentin Bay, Lower California. U. S. Nat. Mus. Cat. No. 333116.

STHENORYTIS TOROËNSE Dall

Plate 18, fig. 5

Epitonium (Sthenorytis) toroënsis DALL, Smithsonian Misc. Coll., vol. 59, p. 6, 1912.

Pliocene of Toro Point, Canal Zone, Panama. U. S. Nat. Mus. Cat. No. 214340.

STROMBINA LILACINA Dall

Plate 35, fig. 5

Strombina lilacina DALL, Nautilus, vol. 30, p. 28, 1916.

Gulf of California. U. S. Nat. Mus. Cat. No. 219764.

SUAVODRILLIA SAGAMIANA, new species

Plate 21, fig. 2

Shell large, solid, biconic, grayish white, with 8 whorls exclusive of the (lost) nucleus; suture closely appressed, the anal fasciole in front of it incrementally striated and slightly constricted; spiral sculpture of a strong axially wrinkled cord forming the anterior boundary of the fasciole, and in front of the cord numerous inconspicuous threads with equal or narrower interspaces extending to the end of the canal; axial sculpture only of incremental lines, emphasized on the ridges at the suture and shoulder; aperture ample, anal sulcus wide, outer lip sharp and arcuately produced, body erased, throat smooth, pillar attenuated, canal short and wide; height of shell, 37; of last whorl, 25; diameter, 15 mm. U. S. Nat. Mus. Cat. No. 110780.

Dredged by the United States Bureau of Fisheries steamer *Albatross* at station 5088, in 369 fathoms, mud, off Hondo in Sagami Bay, bottom temperature 41.8° F.

This is larger and stouter than *S. kennicottii* Dall, of Alaska, but of the same general type.

TEREBRA CONCAVA Say

Plate 9, fig. 8

Turritella concava SAY, Journ. Acad. Nat. Sci. Phila., vol. 5, p. 207, Feb. 1826. Charleston, S. C. U. S. Nat. Mus. Cat. No. 87155.**TEREBRATALIA LATA** Dall

Plate 13, figs. 1, 2

Terebratalia lata DALL, West Amer. Scientist, vol. 19, p. 18, 1921.

Pliocene (?) of San Quentin Bay, Lower California. U. S. Nat. Mus. Cat. No. 333150.

THRACIA QUENTINENSIS Dall

Plate 11, fig. 1

Thracia quentinensis DALL, West Amer. Scientist, vol. 19, No. 3, p. 21, 1921.
Pliocene (?) of San Quentin Bay, Lower California. U. S. Nat. Mus. Cat. No. 333112.

TRICHODISCINA VERDENSIS Dall

Plate 23, figs. 7, 10, 12

Epiphragmophora (Trichodiscina) verdensis DALL, Nautilus, vol. 24, p. 35,
July, 1910.

Oaxaca, Mexico. U. S. Nat. Mus. Cat. No. 212318.

TRITONALIA CIRCUMTEXTA Stearns

Plate 25, fig. 4

Ocenebra circumtexta STEARNS, Conch. Memo., No. 6, p. 1, 1871.

Santa Rosa Island, Calif. U. S. Nat. Mus. Cat. No. 59385.

TROMINA UNICARINATA Philippi

Plate 21, fig. 7

Fusus unicarinatus PHILIPPI, Malak. Blätt., vol. 15, p. 223, 1868.

Trophon unicarinatus TRYON, Man. Conch., vol. 2, p. 151, 1880.

Tromina unicarinata DALL, Proc. U. S. Nat. Mus. vol. 24, p. 536, 1902.

Magellan Straits, in 20 fathoms. U. S. Nat. Mus. Cat. No. 96193.

TROPHON PINNATUS Dall

Plate 22, fig. 5

Trophon pinnatus DALL, Proc. U. S. Nat. Mus. vol. 24, p. 549, 1902.

Magdalena Bay, Lower California, in 21 to 74 fathoms. U. S. Nat. Mus. Cat. No. 124689.

TURBO ASTERIOLA, new species

Plate 36, figs. 1, 7

Shell small, pinkish above, creamy white below, with a minute depressed nucleus of 3 and 3 subsequent whorls; suture distinct, not appressed; spiral sculpture of, on the early whorls, 1; on the next whorl, 2; and on the last whorl, 3 rows of small nodules, the largest near the suture; these are followed at the periphery by a series of (on the last whorl 12) slender spines, and on the edge of the base by a low nodulous keel; there is a minute row of pustules just behind the pillar; there is practically no axial sculpture except faint lines of growth; the base is flattish, the aperture rounded but slightly angulated by the sculpture; the pillar is short, simple; the operculum externally granular; height of shell, 14; diameter, including spines, 20 mm. U. S. Nat. Mus. Cat. No. 205733.

Dredged in Colnett Strait, Eastern Sea of Japan, at station 4924, by the United States Bureau of Fisheries steamer *Albatross*, in 159 fathoms, rocky bottom, temperature 58.8° F. Caught on the tangles. This little species is very distinct and extremely elegant.

TURRICULA JAPONICA, new species

Plate 36, fig. 11

Shell small for the genus; as only dead specimens were obtained the original color is uncertain; they are now grayish white; apex acute, the nucleus eroded, but there are about 6 subsequent whorls; suture distinct, minutely crenulated; axial sculpture of minutely imbricate sharp incremental lines over the whole surface; above the periphery there are 3 spiral rows of subspinose nodules; on the base behind the pillar are 4 spiral rows of minute nodules and 2 minor threads immediately behind the pillar; aperture subcircular, pearly; lips simple, pillar convexly arcuate, smooth; base impervious; height of shell, 28; diameter, 17 mm. U. S. Nat. Mus. Cat. No. 205752.

Dredged by the United States Bureau of Fisheries steamer *Albatross*, at station 5093, in Uruga Strait, off Hondo, Japan, in 302 fathoms, sand, bottom temperature 43.9° F. Other specimens were obtained at station 5088, off Hondo, in 369 fathoms, mud, temperature 41.8° F.

The largest of the latter lot, though broken, was 30 mm. high. This species is much like the typical form from the West Indies.

TURRICULA (SURCULA) HONDOANA, new species

Plate 31, fig. 6

Shell acute, biconic, of a dull grayish white with a polished periostracum, and seven angular whorls exclusive of the (lost) nucleus; suture inconspicuous, closely appressed; axial sculpture only of incremental lines; spiral sculpture of a strong cord at the anterior edge of the anal fasciole which angulates the whorl, in the middle of the fasciole is an obscure ridge; in front of the shoulder the whorl is sharply sculptured with narrow channelled grooves, with wider flattish interspaces, except on the canal where they are replaced by finer close striation; aperture narrow, anal sulcus wide and deep, outer lip thin, strongly produced arcuately; body with a thin wash of enamel; pillar straight, attenuated in front, canal narrow; height of shell, 58; of last whorl, 39; maximum diameter, 21 mm. U. S. Nat. Mus. Cat. No. 111052.

Dredged by the United States Bureau of Fisheries steamer *Albatross* at station 5087, off Hondo, Sagami Bay, Japan, in 614 fathoms, mud, bottom temperature 37.5° F.

This has much the aspect of *Aforia circinata* Dall, from the Bering Sea, but shows no indication of the anterior furrow in the outer lip.

TURRIS? SIMPLICISSIMA Dall

Plate 35, fig. 7

Pleurotomella simplicissima DALL, Smithsonian Misc. Coll., vol. 50. p. 140, 1907.

Okhotsk Sea, 1,800 fathoms. U. S. Nat. Mus. Cat. No. 110542.

UROSALPINX PERRUGATUS Conrad

Plate 26, fig. 7

Fusus perrugatus CONRAD, Amer. Journ. Sci., n. ser. vol. 2, p. 397, 1846.

Cedar Keys, Florida. U. S. Nat. Mus. Cat. No. 36151.

VESICOMYA SUAVIS Dall

Plate 27, fig. 1

Vesicomya suavis DALL, Proc. U. S. Nat. Mus., vol. 45, p. 597, 1913.

West coast of Lower California, off Animas, in 735 fathoms. U. S. Nat. Mus. Cat. No. 266881.

VOLUTA ALFAROI Dall

Plate 17, fig. 2

Voluta alfaroi DALL, Smithsonian Misc. Coll., vol. 59, No. 2, p. 8, 1912.

Later Tertiary of Costa Rica. U. S. Nat. Mus. Cat. No. 214347.

VOLUTHARPA AMPULLACEA ACUMINATA Dall

Plate 35, fig. 3

Volutharpa ampullacea MIDDENDORFF, var. *acuminata* DALL, Amer. Journ. Conch., vol. 7, p. 104, 1871.

Sitka, Alaska, in shallow water. U. S. Nat. Mus. Cat. No. 87862.

VOLUTOPSIUS HIRASEI Pilsbry

Plate 31, fig. 3

Volutopsius hirasei PILSBRY, Proc. Acad. Nat. Sci. Phila. for 1907, p. 243, pl. 19, fig. 2.

Off Cape Clonard, Japan Sea. U. S. Nat. Mus. Cat. No. 110776.

VOLUTOPSIUS MINOR, new species

Plate 32, fig. 3

Shell small for the genus, slender, acute, pale chestnut brown with a smooth periostracum, and five and a half whorls exclusive of the nucleus which is blunt and includes a whorl and a half; suture well defined, not appressed, whorls moderately rounded; axial sculpture only of faint incremental lines; spiral sculpture of obscure striae, about three to a millimeter, with wider flattish interspaces over the whole

surface; aperture narrow, outer lip thin, sharp; body erased; pillar slightly concavely arcuate, attenuated in front, the axis pervious; canal hardly differentiated from the aperture; height of shell, 41; of last whorl, 27; diameter, 14 mm. U. S. Nat. Mus. Cat. No. 110779.

Dredged in Aniwa Bay, Sakhalin Island, by the United States Bureau of Fisheries steamer *Albatross*, at station 5009, in 25 fathoms, mud, bottom temperature 38.5° F.

The operculum has a slightly coiled nucleus approaching that of *Mohnia*, but the habit of the shell is that of the elongate *Volutopsius*.

VOLUTOPSIUS ROTUNDUS Dall

Plate 6, fig. 4

Volutopsius rotundus DALL, Proc. U. S. Nat. Mus., vol. 56, No. 2295, p. 310, 1919.

Kodiak Island, Alaska. U. S. Nat. Mus. Cat. No. 206350.

VOLVULA ASPINOSA Dall

Plate 25, fig. 5

Volvula aspinosa DALL, Bull. Mus. Comp. Zool., vol. 18, p. 51, 1889.

Off Cape Hatteras, N. C. U. S. Nat. Mus. Cat. No. 95302.

VOLVULA BUSHII Dall

Plate 25, fig. 3

Volvula bushii DALL, Bull. Mus. Comp. Zool., vol. 18, p. 51, 1889.

Off Cape Hatteras, N. C. U. S. Nat. Mus. Cat. No. 95301.

WILLIAMIA VERNALIS Dall

Plate 27, figs. 3, 5

Siphonaria vernalis DALL, Amer. Journ. Conch., vol. 6, p. 38, 1870.

Monterey, Calif., on kelp. U. S. Nat. Mus. Cat. No. 32596.

YOLDIA (CNESTERIUM) EXCAVATA, new species

Plate 19, fig. 2

Shell rather large, olivaceous in darker and lighter concentric zones, with a brilliant periostracum; inequilateral, equivalve, somewhat attenuated posteriorly and slightly rostrate; surface except on the dorsal aspect of the rostrum, deeply and sharply sculptured with oblique groovings; beaks inconspicuous, the lunule compressed and vertically produced; the anterior slope gently curved, the anterior end rounded, the base evenly arcuate, the posterior dorsal slope slightly concave, the posterior end pointed and slightly recurved; posterior hinge teeth about 15, anterior series about 27; the resilifer large, the pallial sinus large and rounded; total length, 40; beaks in front of the posterior end, 17; altitude at the beaks 20; diameter, 8 mm. U. S. Nat. Mus. Cat. No. 249337.

Otaru, Japan; University of Tokio. Collected by Prof. E. S. Morse.

This species compared with *Y. johanni* is more equilateral, more completely and much more strongly obliquely sculptured and, when full grown, larger.

YOLDIA (CNESTERIUM) JOHANNI, new species

Plate 29, fig. 7

Shell olivaceous, compressed, inequilateral, equivalve, polished, smooth except for incremental lines and fine oblique rather widely spaced striae which occupy the middle part of the disk, stopping abruptly at about the anterior third and leaving a smaller space near the posterior end also vacant; the beaks are inconspicuous, the lunular area is compressed and vertically produced, the anterior slope nearly straight, the posterior end slightly rostrate and recurved, the basal margin evenly arcuate; there are about 16 posterior and 32 anterior hinge teeth, the ligament rather large and strong, the pallial line with a large rounded free sinus; total length, 30; the beaks in front of the posterior end, 12; altitude at the beaks, 13.5; diameter, 5 mm. U. S. Nat. Mus. Cat. No. 107694.

North Japan, in 7 fathoms, Captain St. John, R. N.

This belongs to the same group as *Y. seminuda* Dall, of the N. W. American coast, and can be distinguished from its nearest relative by the bare anterior portion. The artist, deceived by the brilliant surface, has carried the oblique grooves too far forward in the figure.

YOLDIA PERPROTRACTA Dall

Plate 18, fig. 3

Yoldia perprotracta DALL, Smithsonian Misc. Coll., vol. 59, p. 1, 1912.

Later Tertiary of the Canal Zone, Panama. U. S. Nat. Mus. Cat. No. 214350.

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PLATE 35

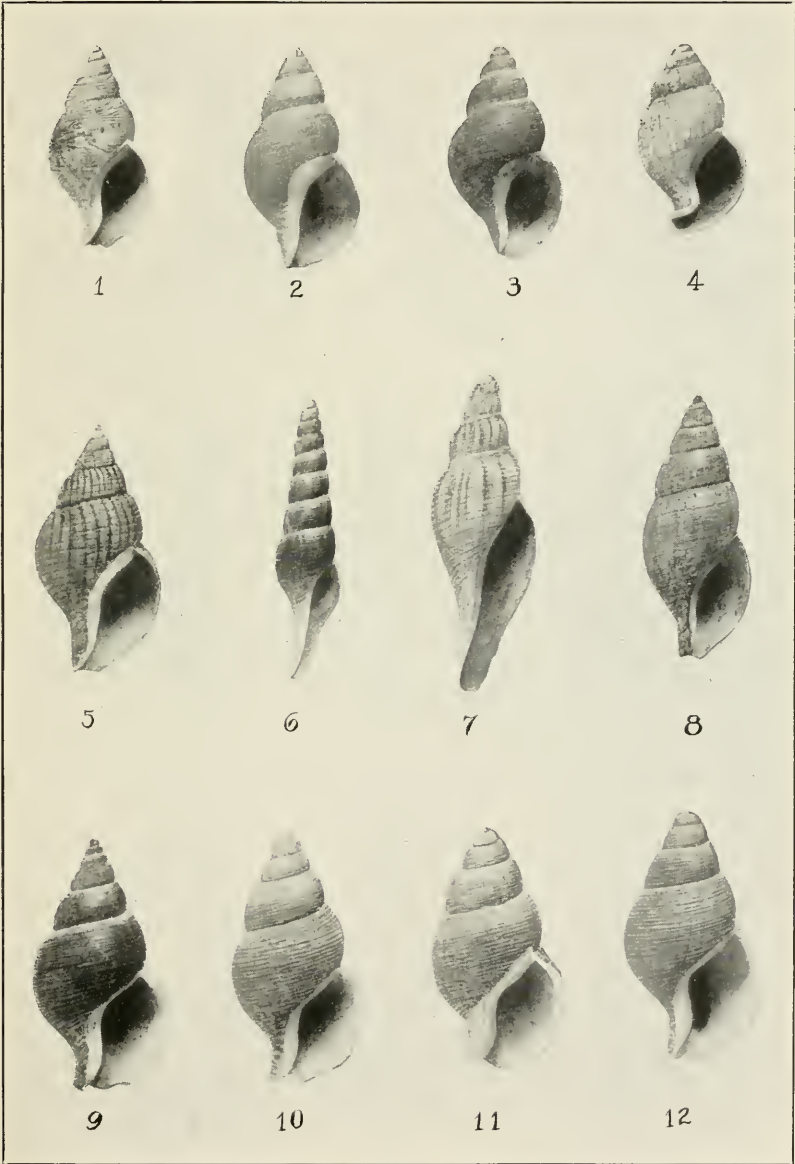
FIG. 1. <i>Cymatium adairense</i> Dall, alt. 34 mm-----	16
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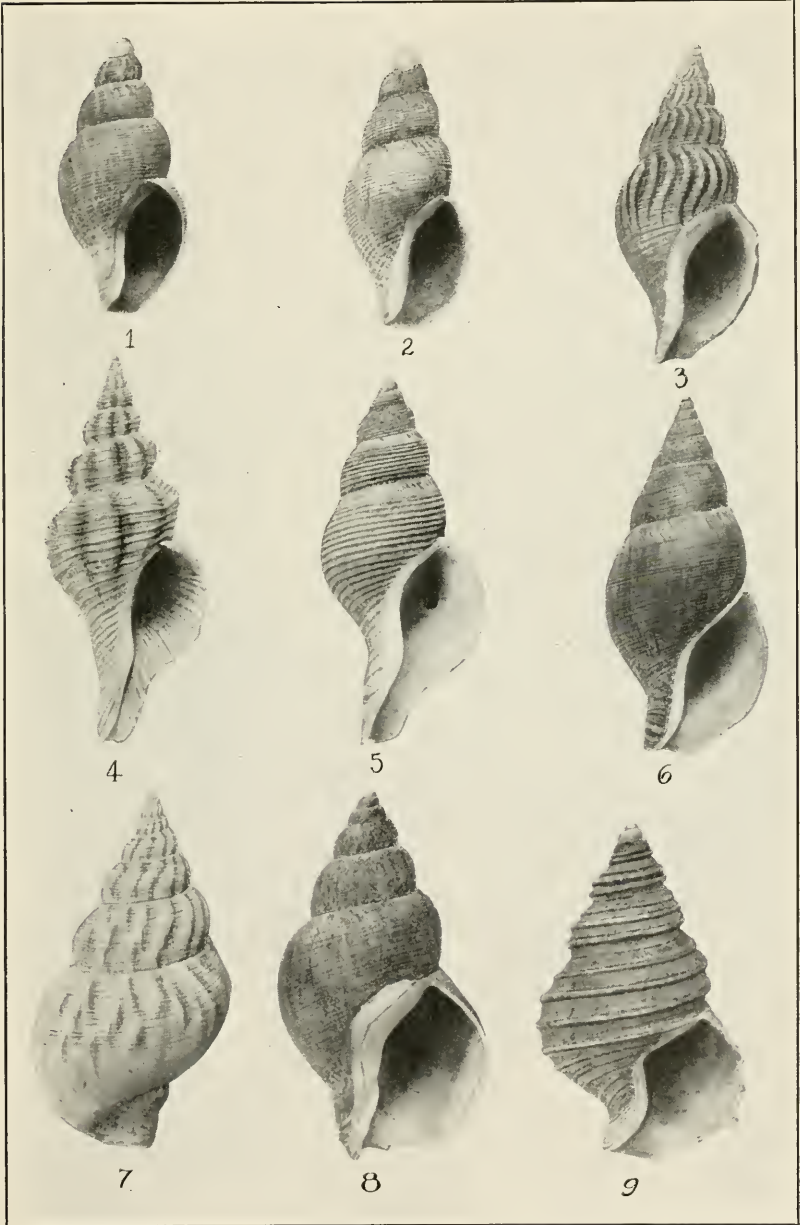
ILLUSTRATIONS OF TYPES

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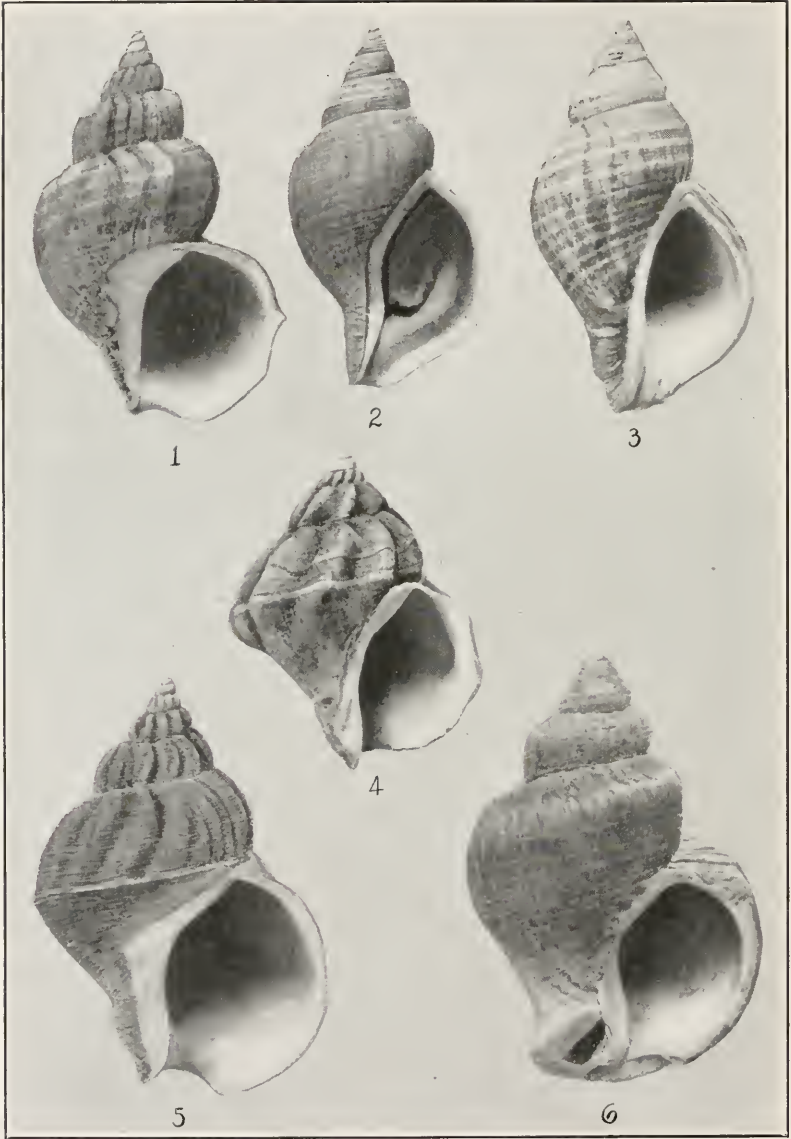
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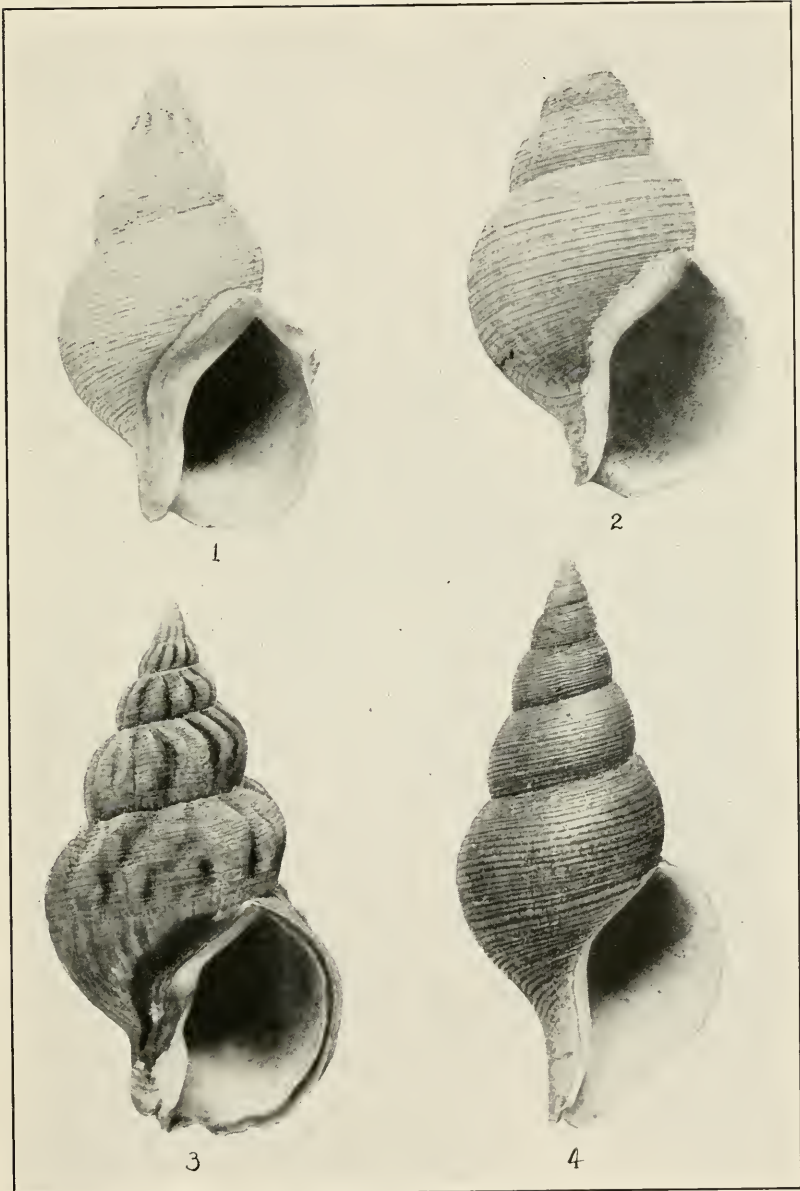
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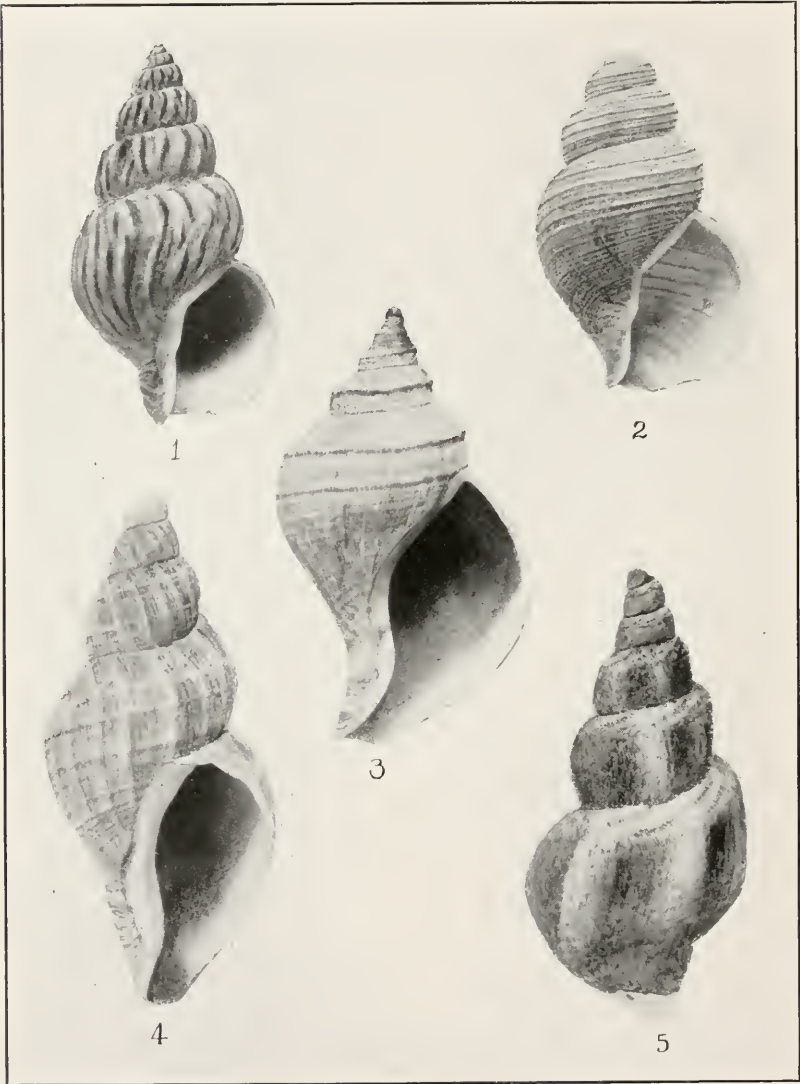
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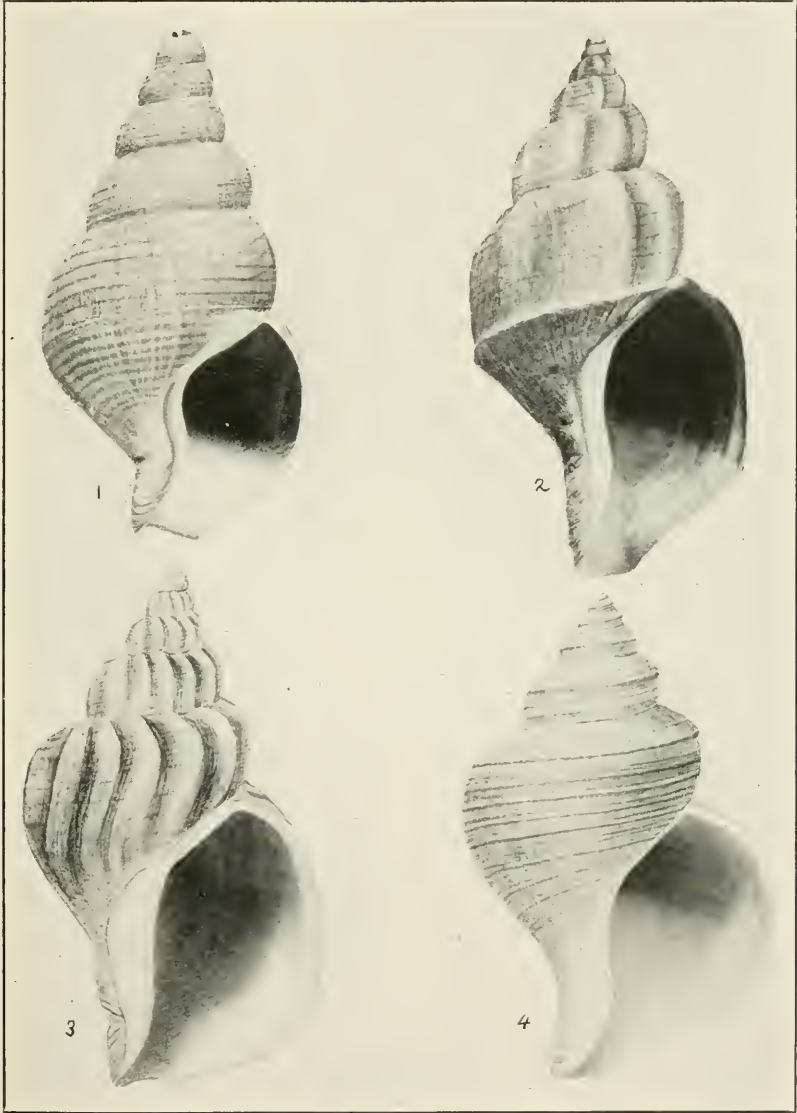
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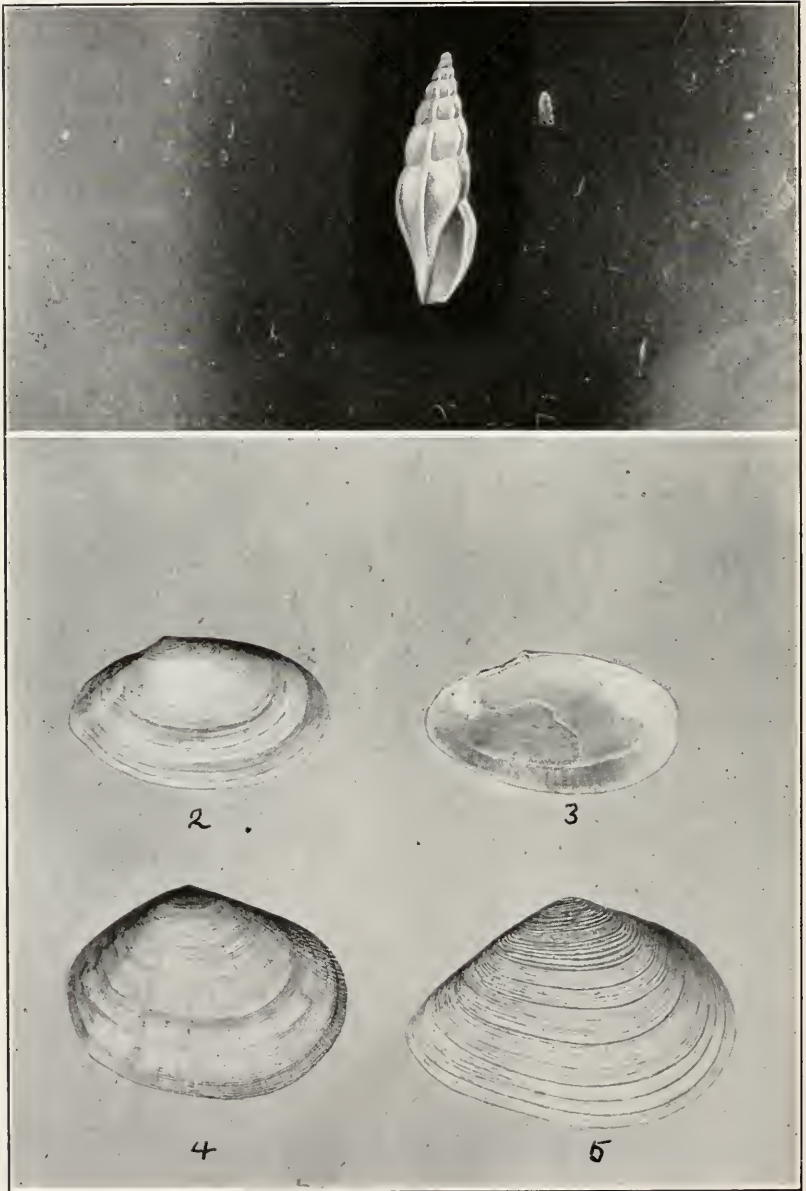
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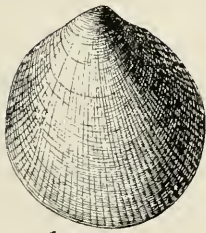
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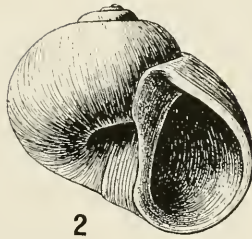


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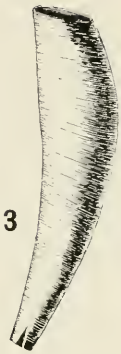
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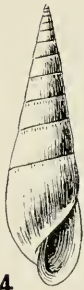
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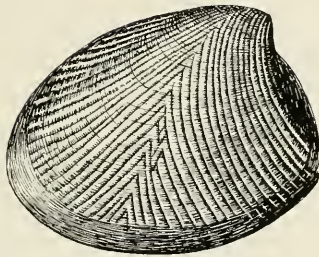
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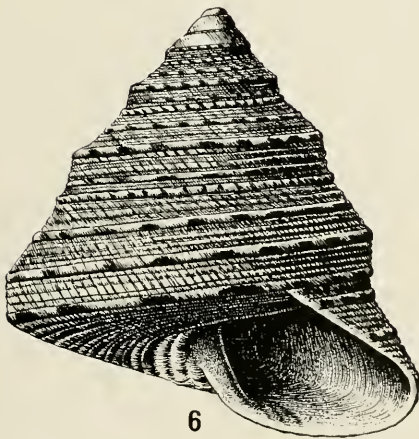
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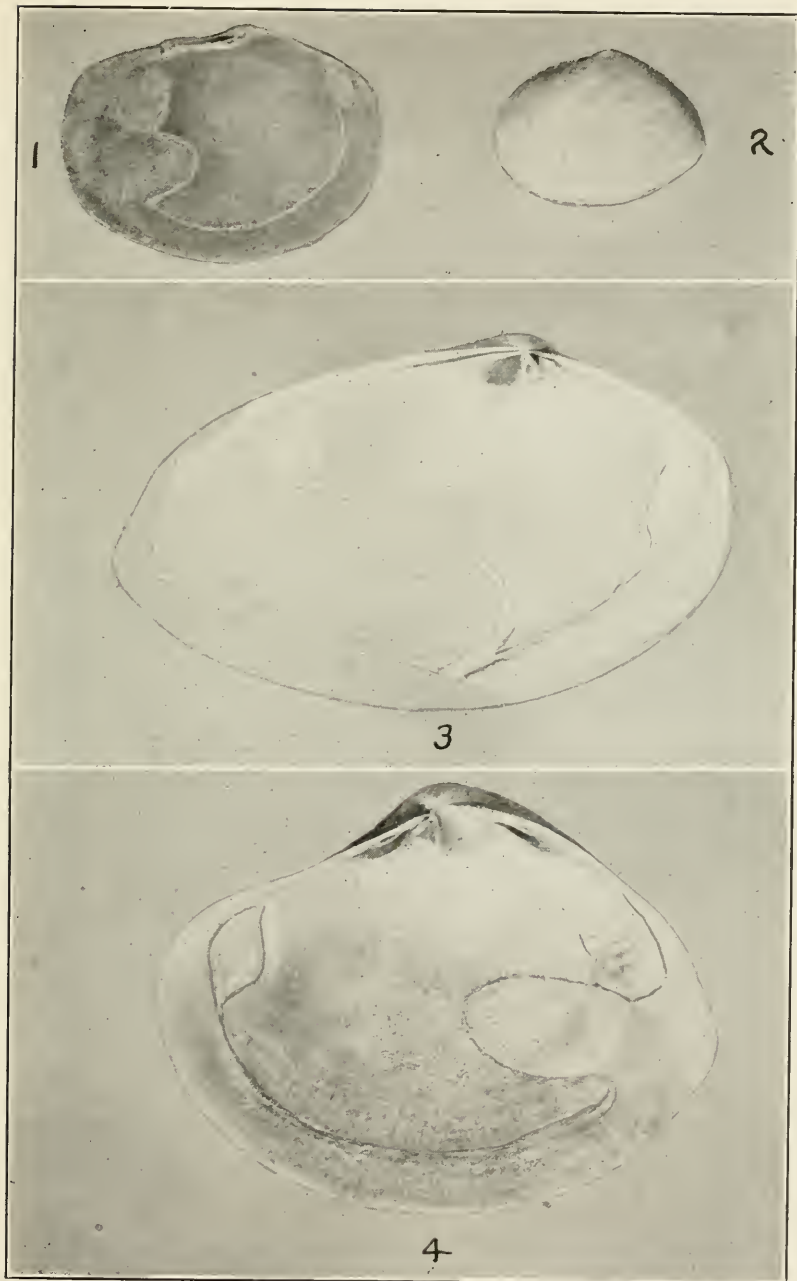
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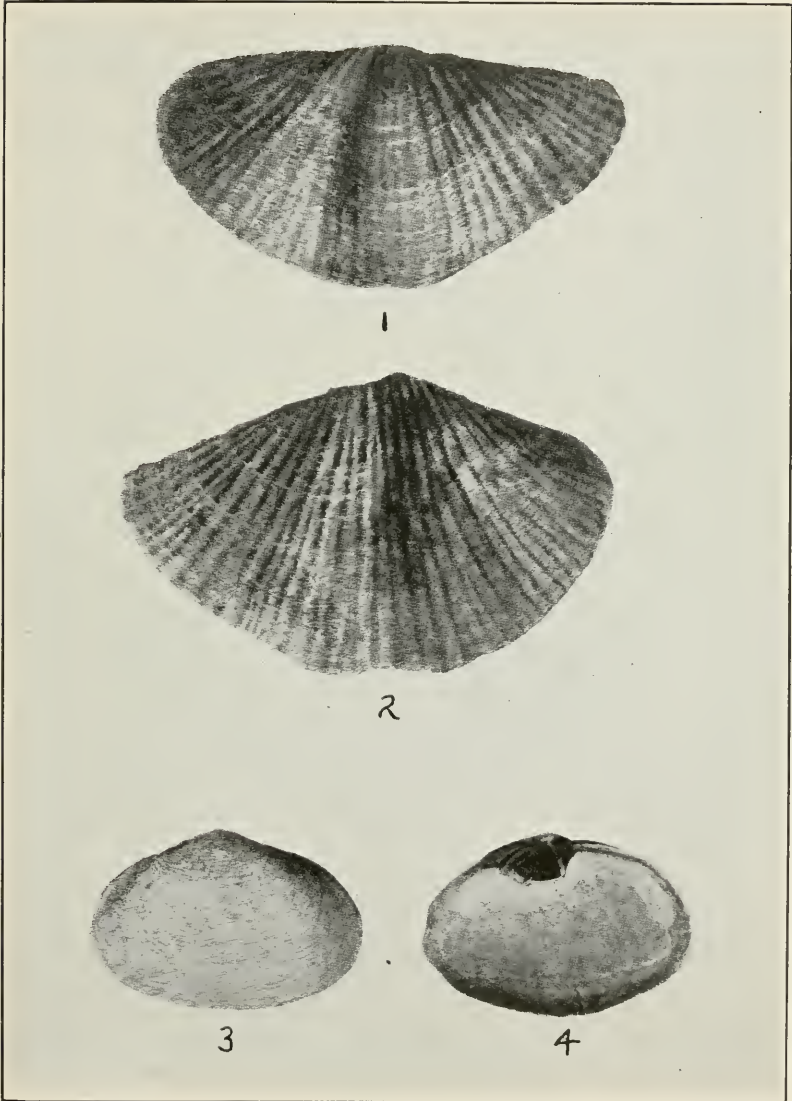
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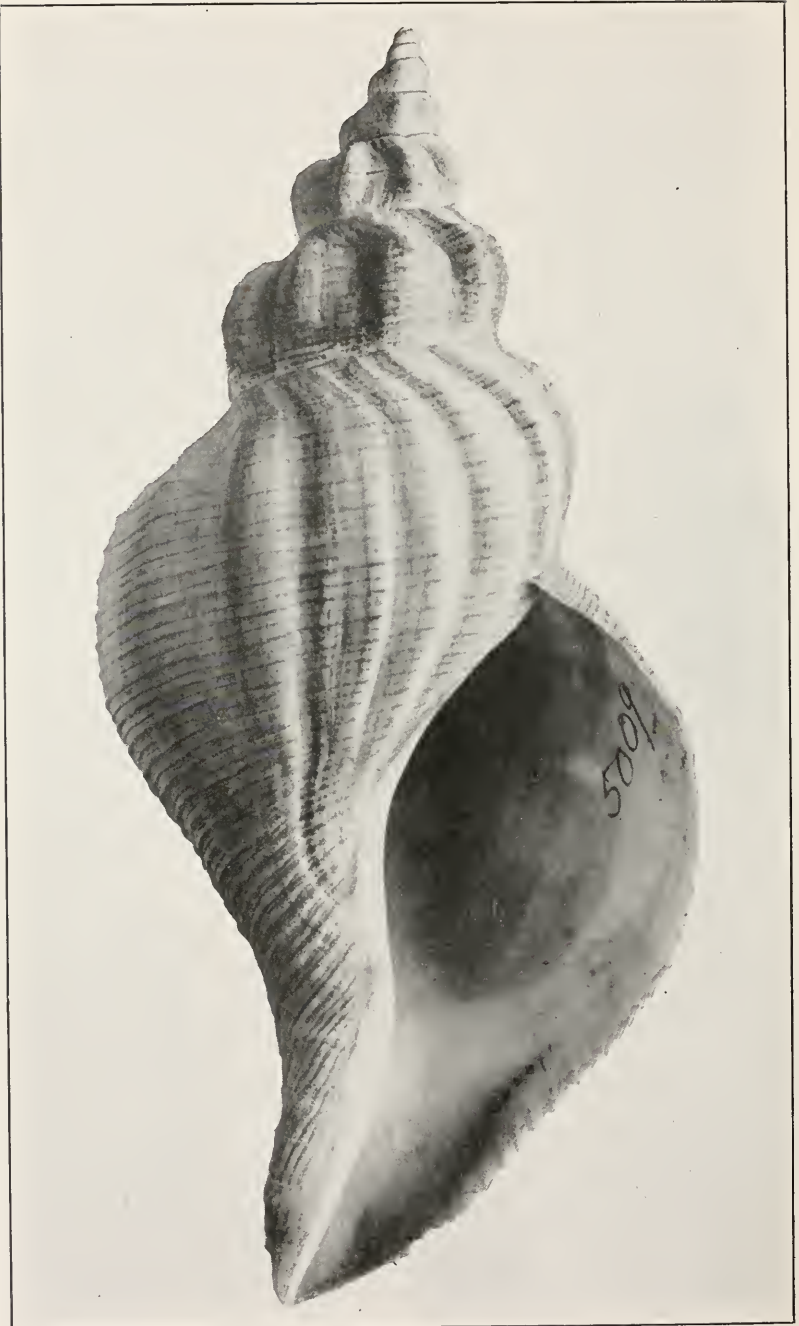
SANGUINOLARIA ORCUTTI DALL

FOR EXPLANATION OF PLATE SEE PAGE 36



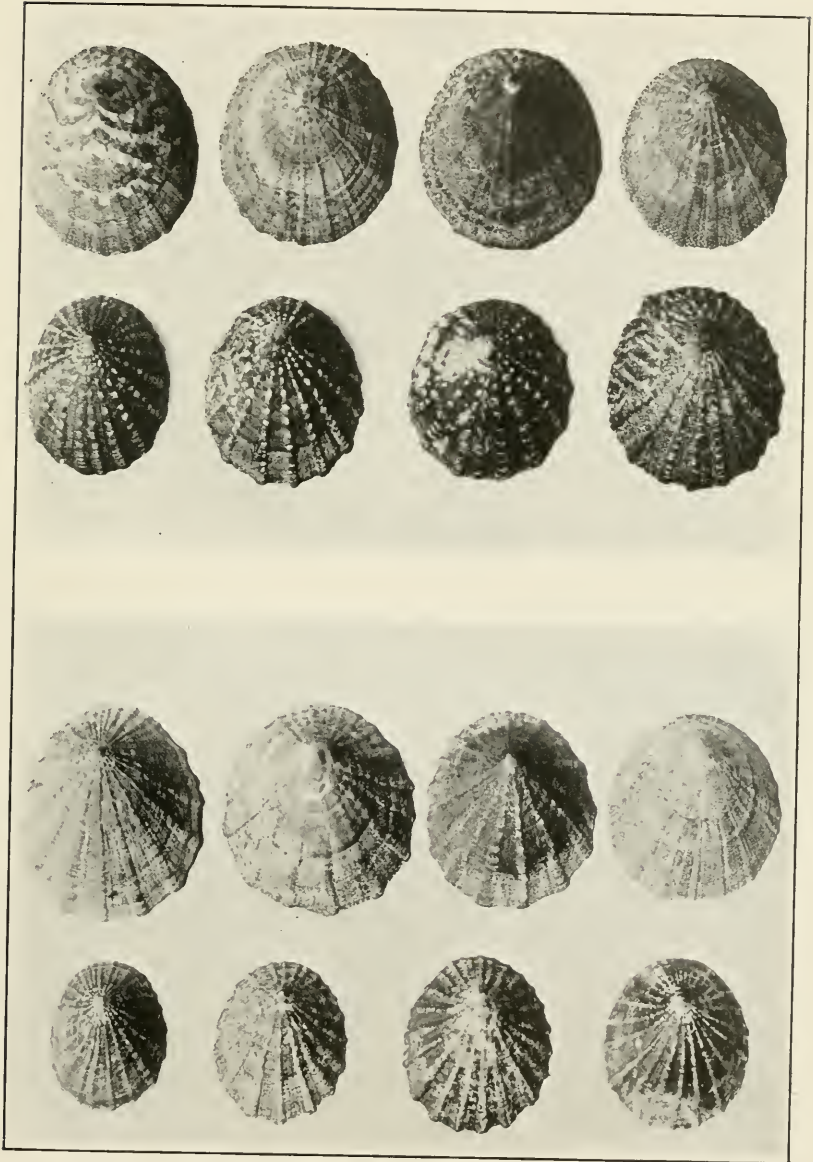
ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 36



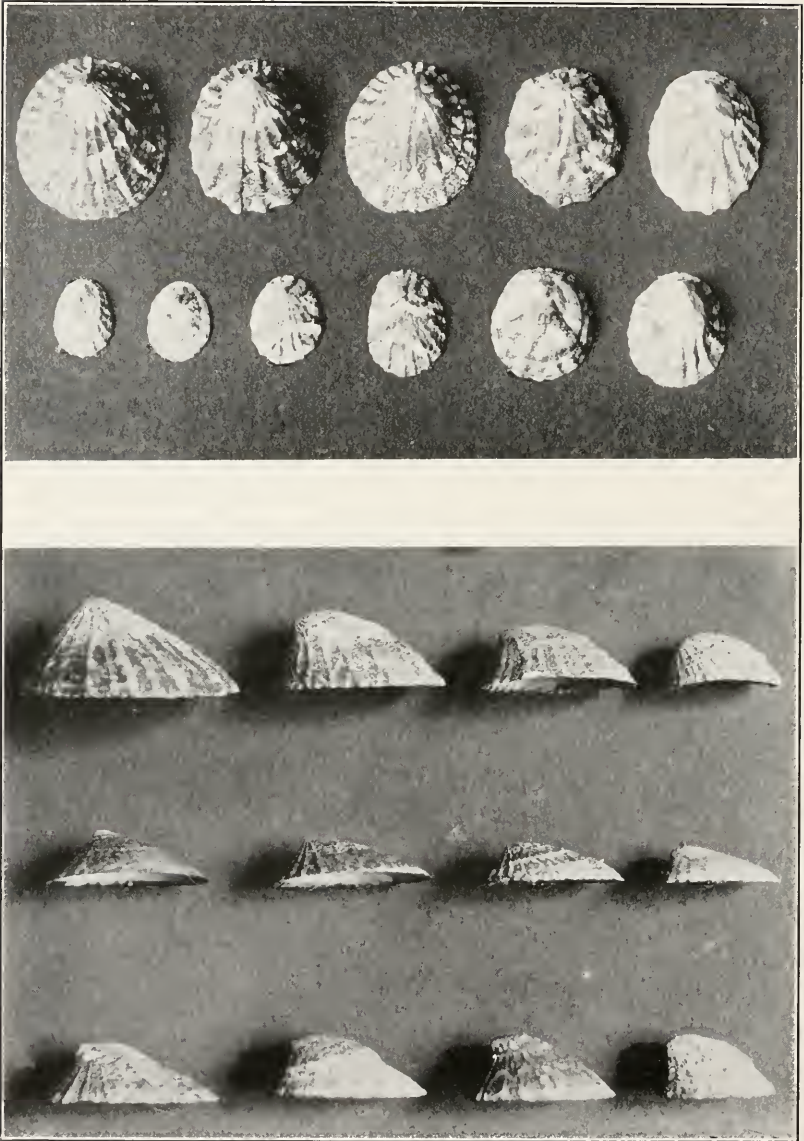
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FOR EXPLANATION OF PLATE SEE PAGE 9



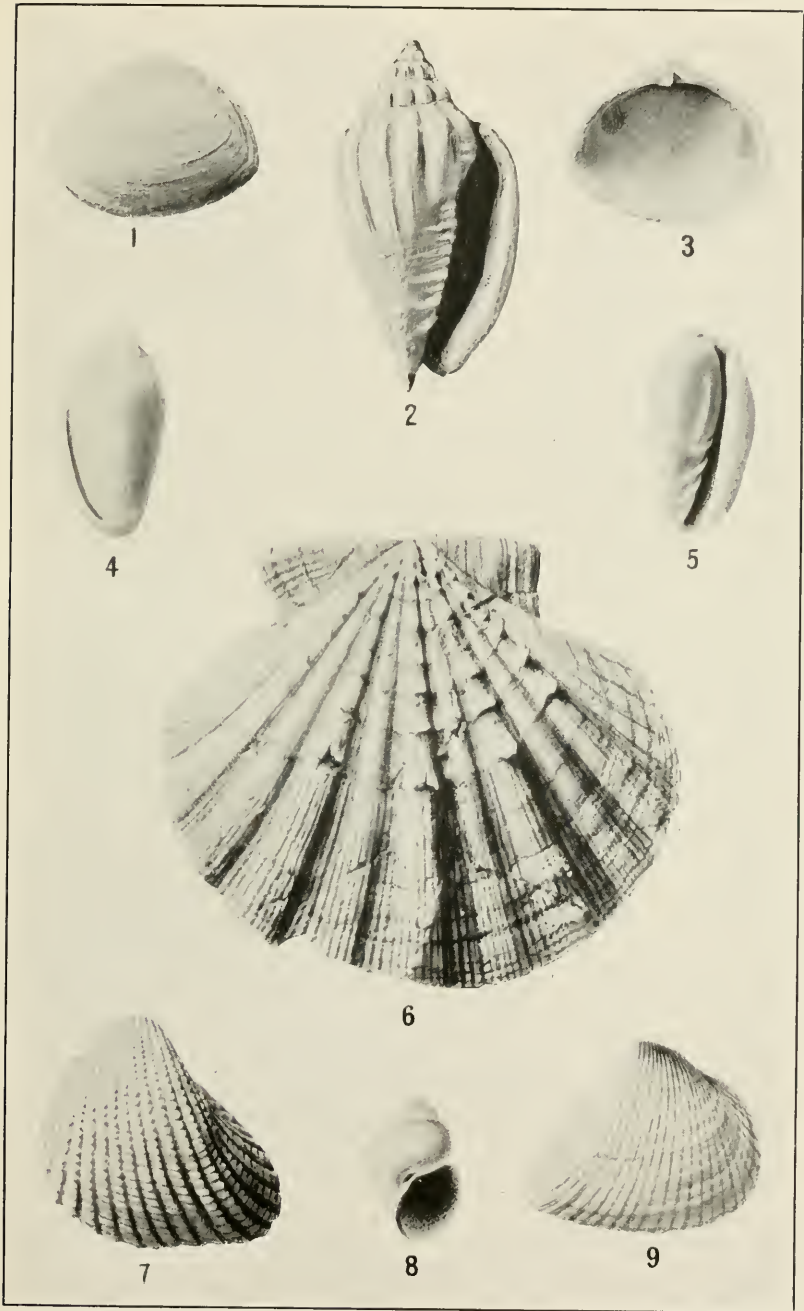
ACMAEA DIGITALIS ESCHSCHOLTZ

FOR EXPLANATION OF PLATE SEE PAGE 2



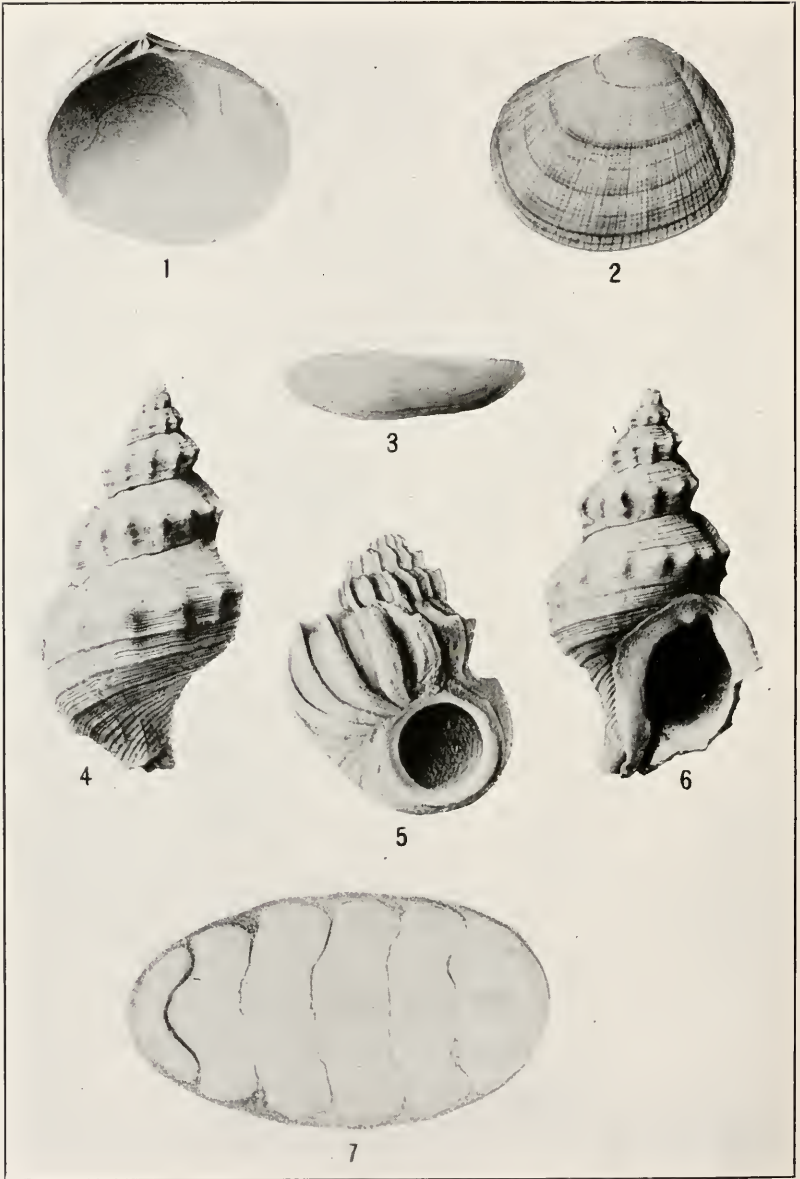
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FOR EXPLANATION OF PLATE SEE PAGE 2



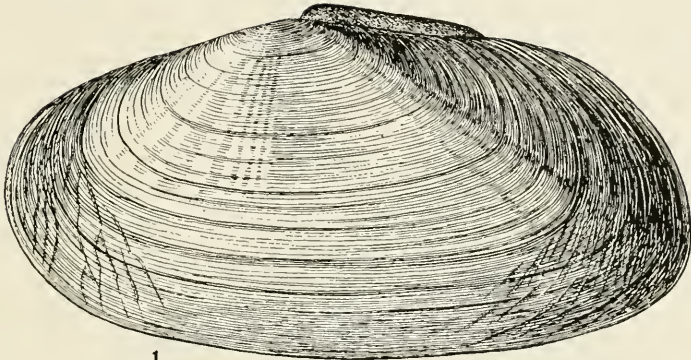
ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 37

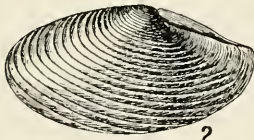


ILLUSTRATIONS OF TYPES

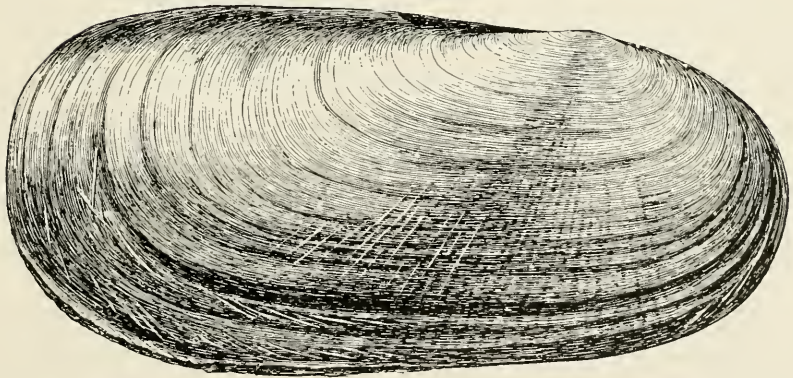
FOR EXPLANATION OF PLATE SEE PAGE 37



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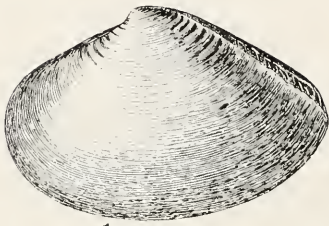
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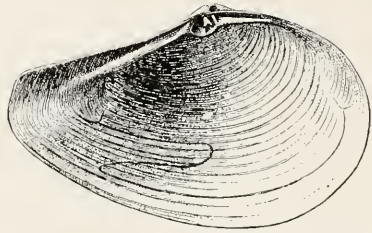
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ILLUSTRATIONS OF TYPES

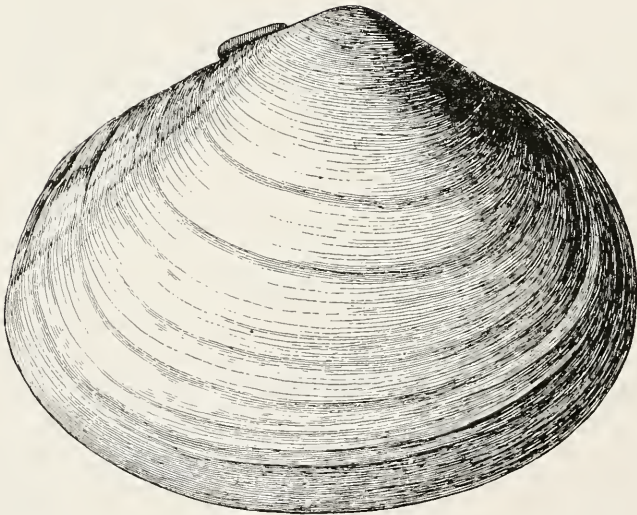
FOR EXPLANATION OF PLATE SEE PAGE 37



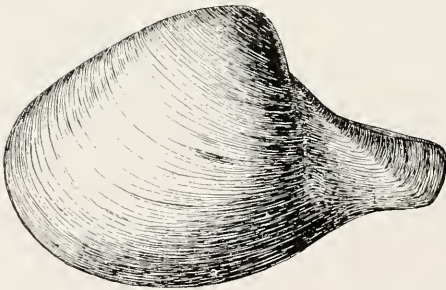
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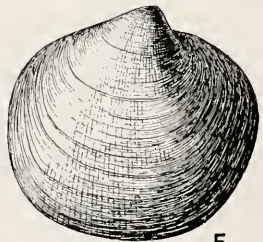
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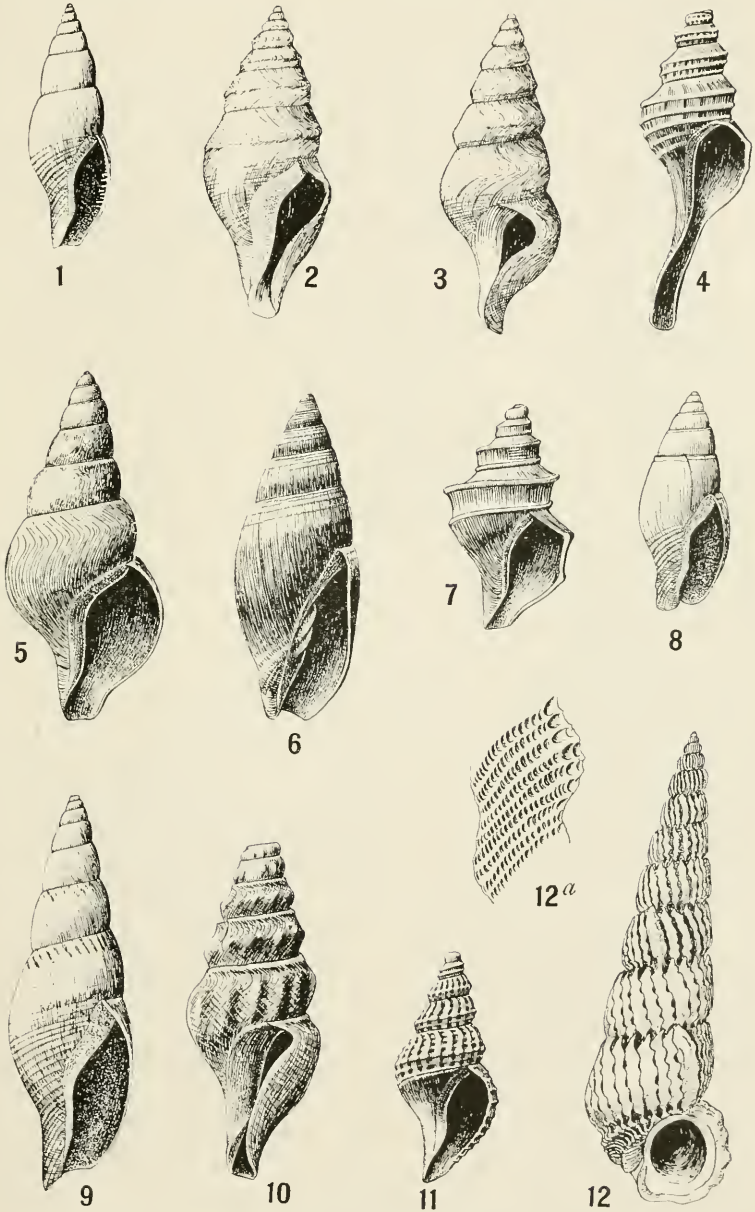
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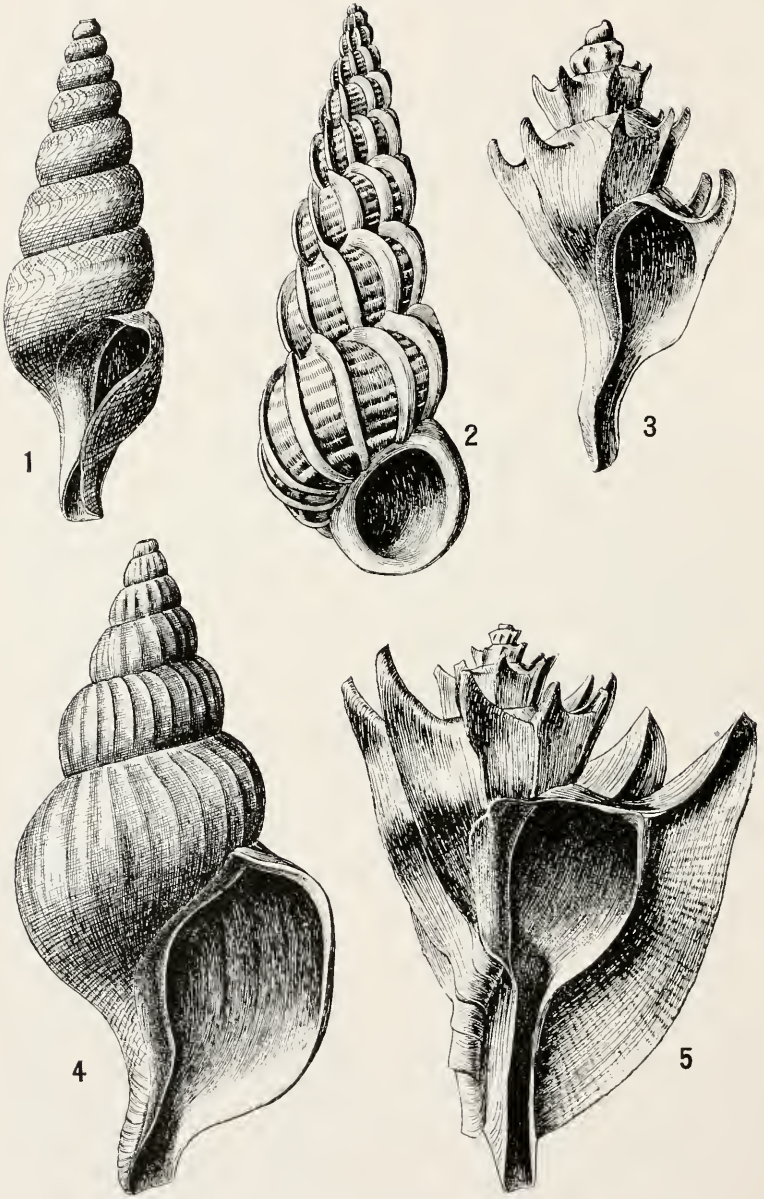
ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 37



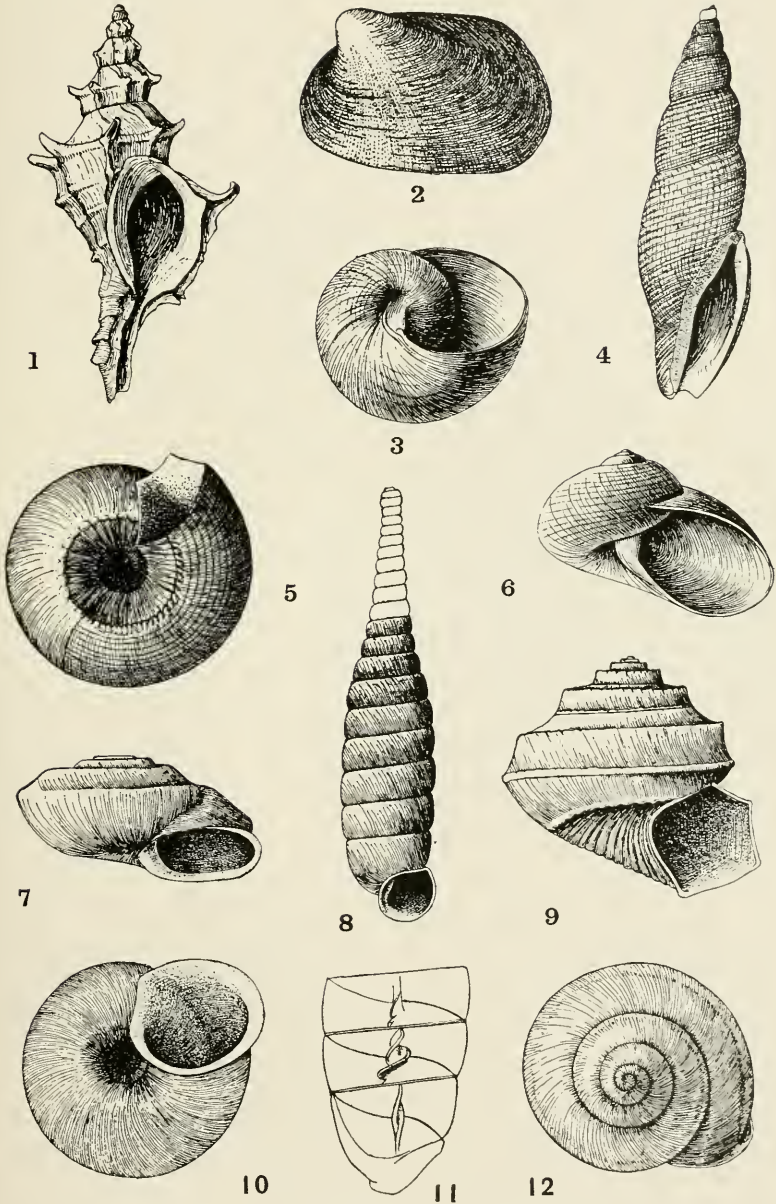
ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGES 37 AND 38



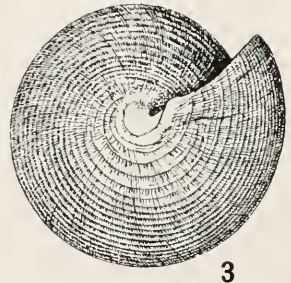
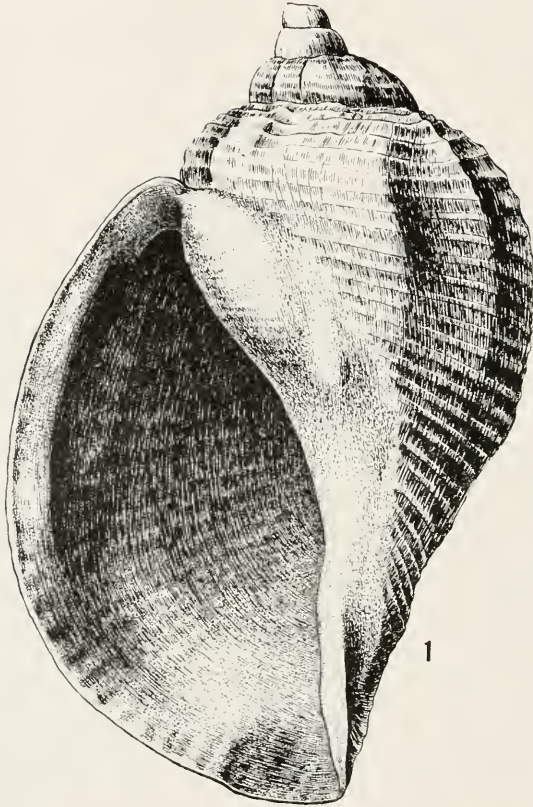
ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 38



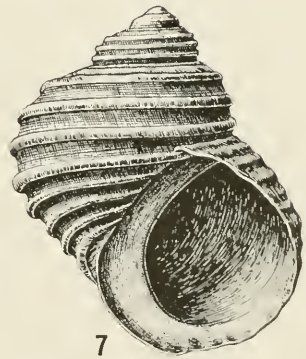
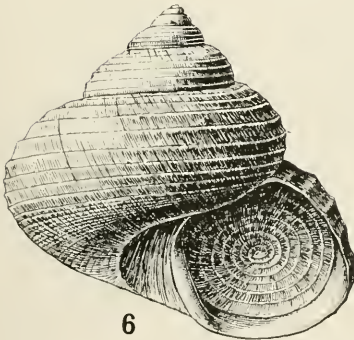
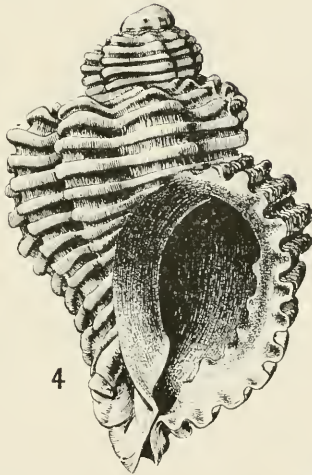
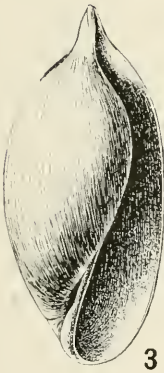
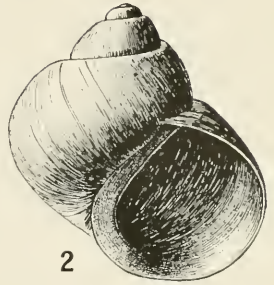
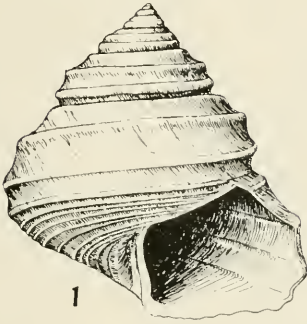
ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 33



ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 38

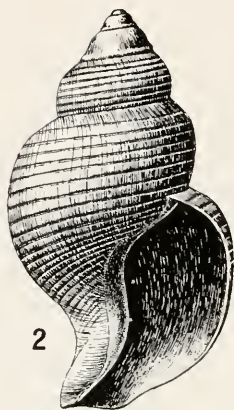


ILLUSTRATIONS OF TYPES

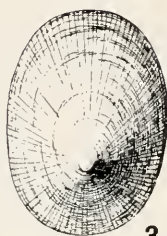
FOR EXPLANATION OF PLATE SEE PAGE 38



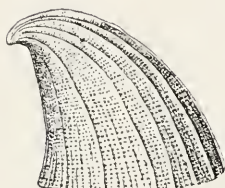
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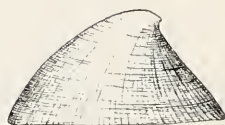
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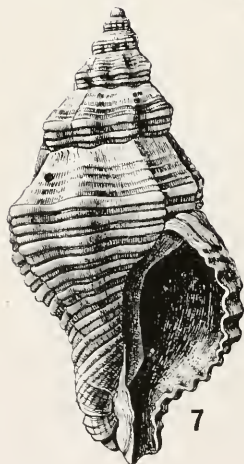
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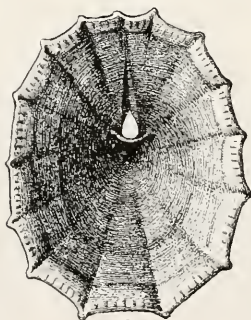
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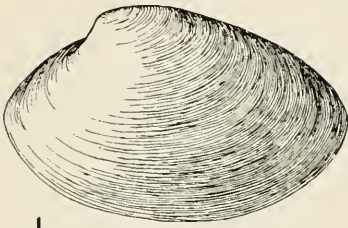
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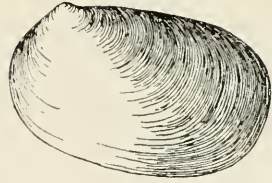
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ILLUSTRATIONS OF TYPES

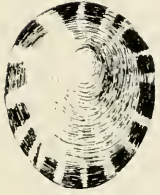
FOR EXPLANATION OF PLATE SEE PAGES 38 AND 39



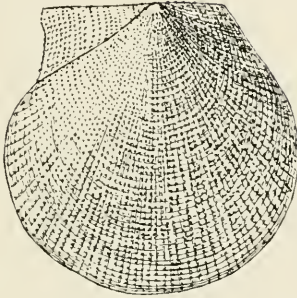
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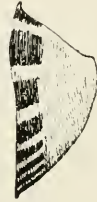
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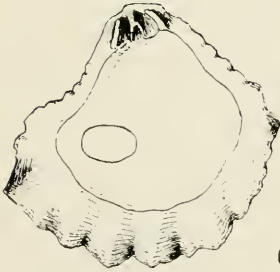
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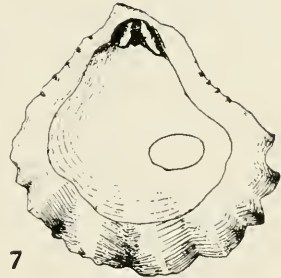
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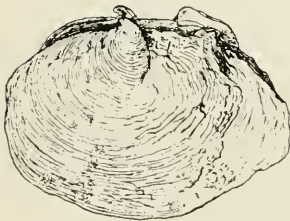
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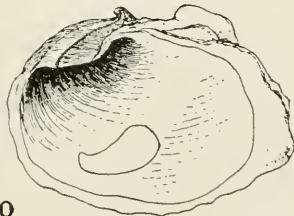
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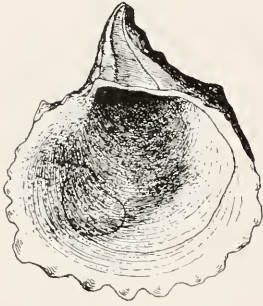
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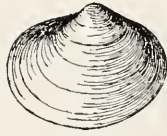
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ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 39



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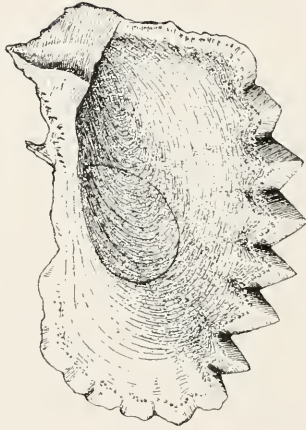
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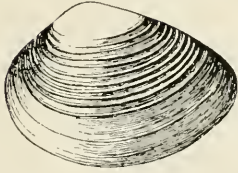
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8

ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 39



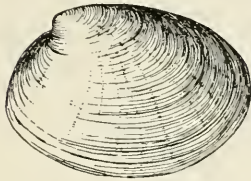
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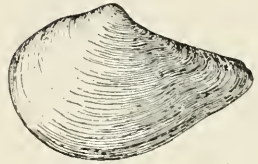
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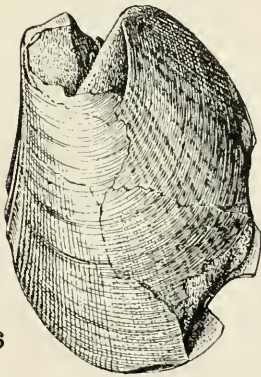
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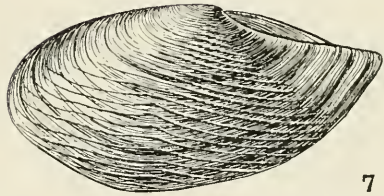
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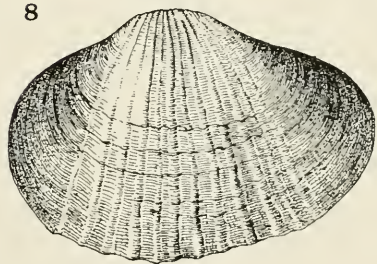
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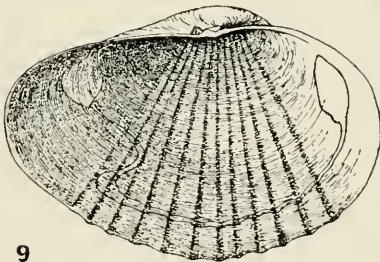
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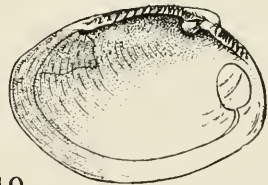
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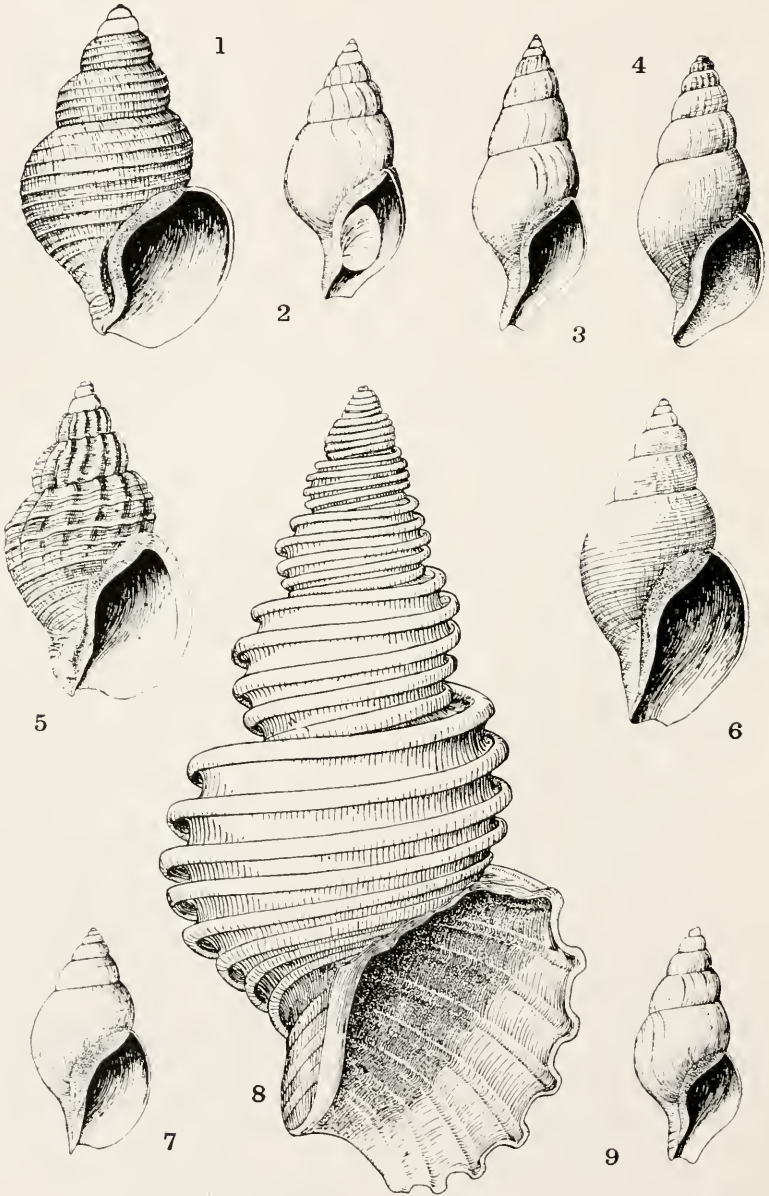
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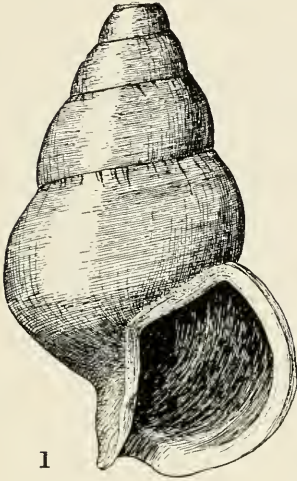
ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 39



ILLUSTRATIONS OF TYPES

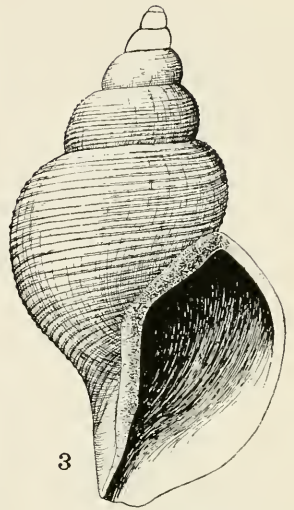
FOR EXPLANATION OF PLATE SEE PAGE 39



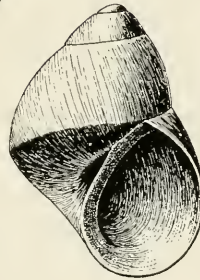
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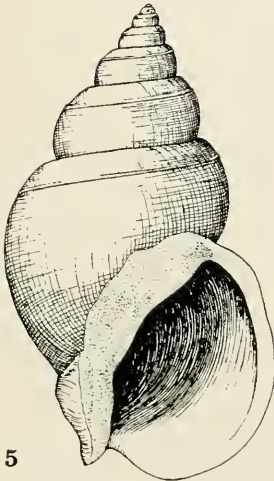
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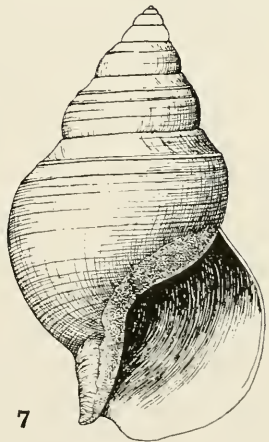
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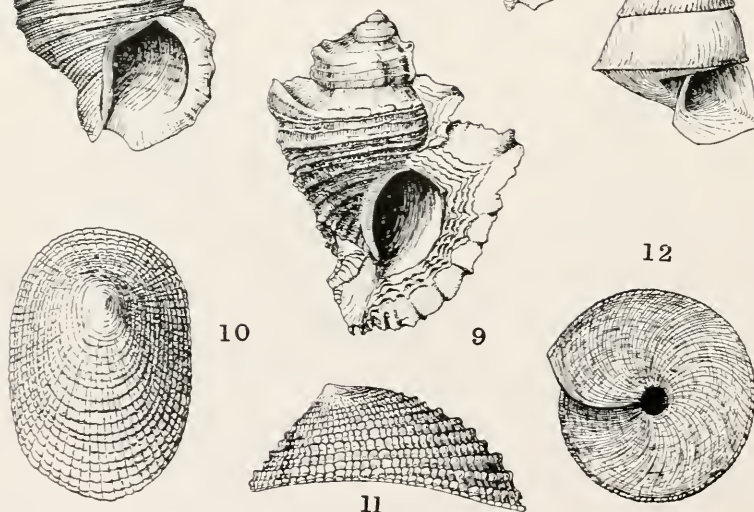
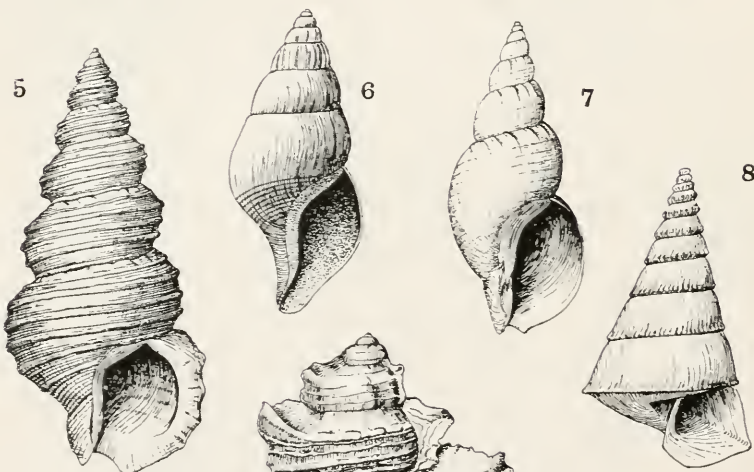
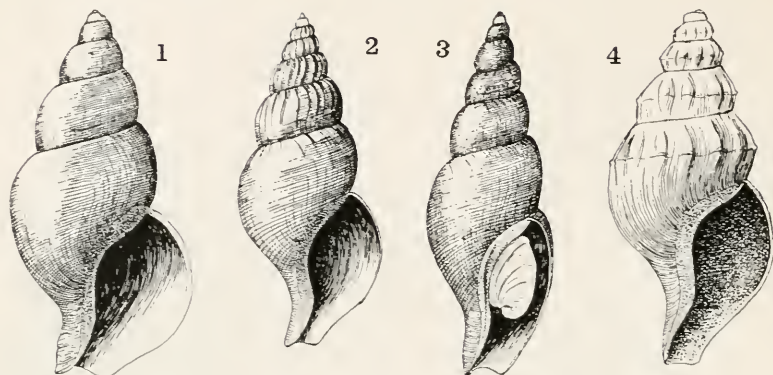
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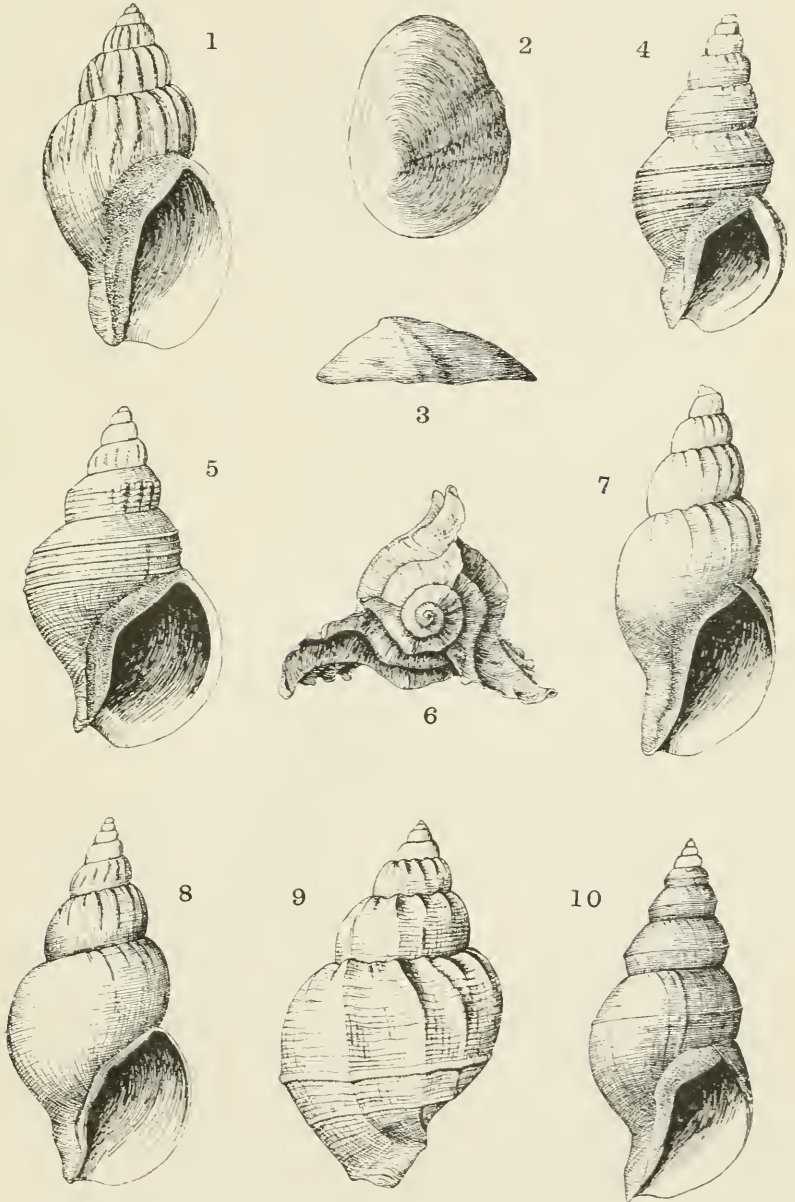
ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 40



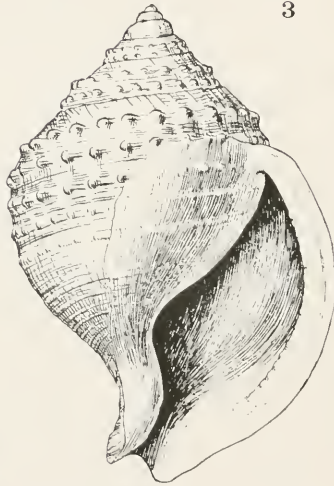
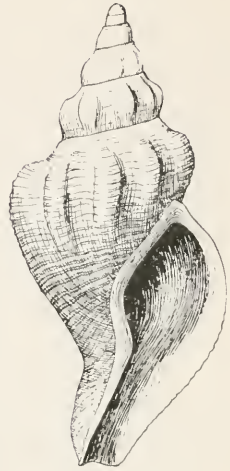
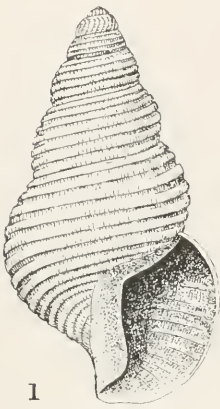
ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 40



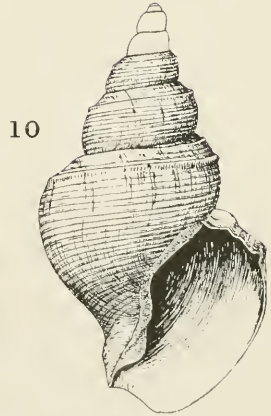
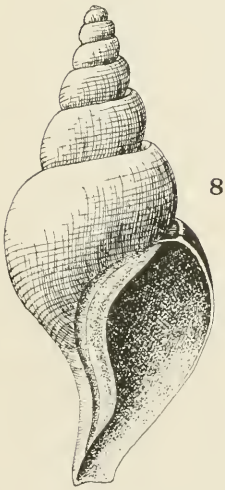
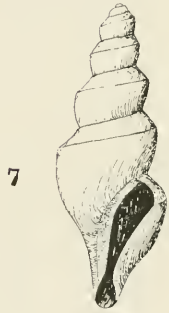
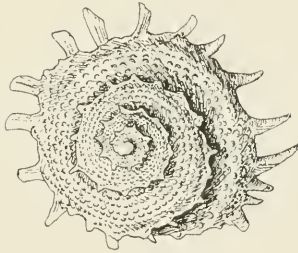
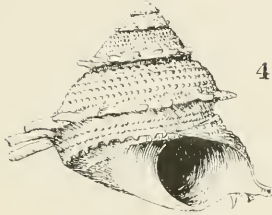
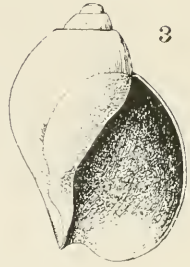
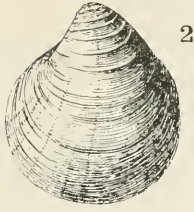
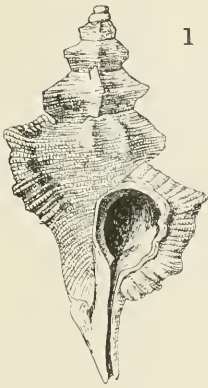
ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 40



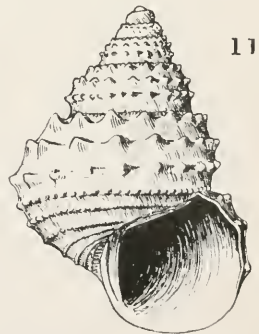
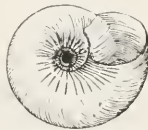
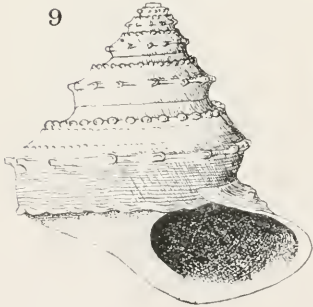
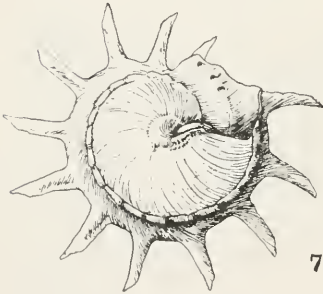
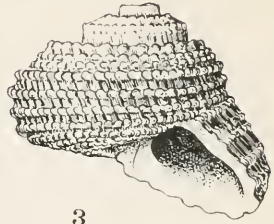
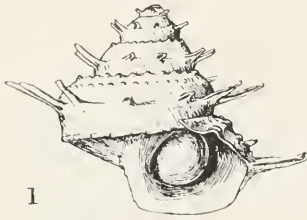
ILLUSTRATIONS OF TYPES

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ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGES 40 AND 41



ILLUSTRATIONS OF TYPES

FOR EXPLANATION OF PLATE SEE PAGE 41