Color in spirits, olivaceous or brownish, lighter below, especially on belly, lower half of opercles, and snout; sides mottled and blotched much as in other species.

TABLE.

Specimens from Wood's Holl, Mass.

	Rings.	D. rays.	Snout in head.	Head in length.	Rings covered by dorsal.	Length.
						Inches.
1	18+36	36	2	$8\frac{2}{3}$	4 +5	5
2	19+38	40	2	$7\frac{3}{4}$	5 +5	$4\frac{1}{2}$
3	18+36	36	2	$7\frac{1}{2}$	4 +5	$4\frac{3}{4}$
4	19+40	39	2	9	$4\frac{1}{2}$+5	$4\frac{1}{2}$
5	19+38	38	2	$8\frac{1}{2}$	5 +4	$7\frac{1}{4}$
6	20+3	35	$1\frac{1}{2}$	$8\frac{1}{2}$	5 +4	$7\frac{1}{2}$
7	19+37	(?)	$2\frac{1}{8}$	$7\frac{1}{2}$	5 +5	$3\frac{3}{8}$

Catalogue of nominal species, with identifications.

Nominal species.	Date.	Identification.
Syngathus fuscum Storer	1839	Siphostoma fuscum.
Syngathus peckianus Storer	1839	Siphostoma fuscum.
Syngathus fasciatus De Kay	1842	Siphostoma fuscum.
Syngathus viridescus De Kay	1842	Siphostoma fuscum.
Syngathus californiensis Storer	1845	Siphostoma californiense.
Syngathus griseolineatus Ayres	1854	Siphostoma griseolineatum.
Syngathus leptorhynchus Girard	1854	Siphostoma leptorhynchum.
Syngathus brevirostris Girard	1854	Siphostoma leptorhynchum.
Syngathus abboti Girard	1858	Siphostoma griseolineatum.
Syngathus arundinaceus Girard	1858	Siphostoma leptorhynchum.
Dermatostethus punctipinnis Gill	1862	Siphostoma punctipinne.
Syngathus dimidiatus Gill	1862	Siphostoma leptorhynchum.
Syngathus affinis Günther	1870	Siphostoma affine.
Syngathus louisianæ Günther	1870	Siphostoma louisianæ.
Syngathus dekayi Duméril	1870	Siphostoma fuscum.
Syngathus milbertianus Duméril	1870	Siphostoma fuscum.
Syngathus bairdianus Duméril	1870	Siphostoma bairdianus.
Siphostoma zatropis Jor. & Gilb	1882	Siphostoma zatropis.
Siphostoma floridæ J. & G	1882	Siphostoma floridæ.
Siphostoma auliscus Swains	1882	Siphostoma auliscus.

Habitat.—Atlantic coast of the United States, Cape Cod to Virginia; Wood's Holl, Massachusetts; Connecticut; New York; Saint Mary's River, Maryland.

INDIANA UNIVERSITY, *May* 16, 1882.

NOTICE OF RECENT ADDITIONS TO THE MARINE INVERTEBRATA OF THE NORTHEASTERN COAST OF AMERICA, WITH DESCRIPTIONS OF NEW GENERA AND SPECIES AND CRITICAL REMARKS ON OTHERS.

PART IV.—ADDITIONS TO THE DEEP-WATER MOLUSCA, TAKEN OFF MARTHA'S VINEYARD, IN 1880 AND 1881.

By A. E. VERRILL.

The following article contains the species of Mollusca that have been added to our deep-water fauna since the publication of my former article on the same subject in these Proceedings (vol. iii, p. 356). This is

intended as a supplement to that article, and I have, therefore, introduced here a number of the species previously recorded, of which the names have been changed, or which, on more careful study, have proved to be distinct from the European species with which they were, at first, identified. The names of such species are printed in italic type to distinguish them from species now recorded for the first time, which are in black-faced type. I have not given any general summary, because it is expected that dredging will be again carried on in the same region by the United States Fish Commission during the present season.

CEPHALOPODA.

Full descriptions and figures of all our Cephalopods may be found in the Transactions of the Connecticut Academy, vol. v, pp. 177–446, 1880–'81, and in the Report of the U. S. Commission of Fish and Fisheries for 1879, pp. [1–244], pl. i–xlvi, 1882.

DECACERA.

Lestoteuthis Fabricii (Licht.) Verrill.

Gonatus Fabricii Steenstrup, Verrill, Trans. Conn. Acad., v, p. 291.

Lestoteuthis Fabricii Verrill, Trans. Conn. Acad., v, p. 390, pl. 45, figs. 1–2*d*, pl. 49, figs. 1–1*f*, pl. 55, figs. 1–1*d*, 1881.

Verrill, Report on the Cephalopods of the Northeastern Coast of America, in Rep. U. S. Com. of Fish and Fisheries for 1879 [p. 206], pl. 15, figs. 1–1*c*, 2–2*d*, 3–3*f*, pl. 45, figs. 1–1*d*, 1882.

Station 953; 715 fathoms; one rather large and perfect male specimen. Station 1031; 255 fathoms; one young specimen.

Chiroteuthis lacertosa Verrill.

Chiroteuthis lacertosa Verrill, Trans. Conn. Acad., v, p. 408, pl. 56, figs. 1–1*f*, 1881; Rep. on Cephalop. [p. 209], pl. 46, figs. 1–1*f*, 1882.

Off Delaware Bay, station 1048, in 435 fathoms, 1881,—Lieut. Z. L. Tanner.

Brachioteuthis Beanii Verrill.

Brachioteuthis Beanii Verrill, Trans. Conn. Acad., v, p. 406, pl. 55, figs. 3–3*b*, pl. 56, figs. 2–2*a*, 1881; Rep. on Cephalop. [p. 214], pl. 45, figs. 3–3*b*, pl. 46, figs. 2–2*a*, 1882.

Stations 1031 and 1033, in 255 and 183 fathoms, 1881.

Histioteuthis Collinsii Verrill.

Histioteuthis Collinsii Verrill, Amer. Journ. Sci., xvii, p. 241, 1879; Trans. Conn. Acad., v, p. 234, pl. 22, pl. 27, figs. 3–5, pl. 37, fig. 5, 1880; Rep. on Cephalop. [pp. 121, 216], pl. 23, pl. 24, figs. 3–6.

Station 895; 372 fathoms. Jaws only.

Desmoteuthis tenera Verrill.

Desmoteuthis tenera Verrill, Trans. Conn. Acad., v, p. 412, pl. 55, figs. 2–2*d*, pl. 56, fig. 3, 1881; Rep. on Cephalop. [p. 216], pl. 45, figs. 2–2*d*, pl. 46, fig. 3.

Station 952; 388 fathoms. Two specimens.

Stoloteuthis leucoptera Verrill.—Butterfly Squid.

Sepiola leucoptera Verrill, Amer. Journ. Sci., vol. xvi, p. 378, 1878, vol. xix, p. 291, pl. 15, figs. 4 and 5, April, 1880; Trans. Conn. Acad., v, p. 347, pl. 31, figs. 4 and 5, pl. 54, fig. 4, June, 1881.

Stoloteuthis leucoptera Verrill, Trans. Conn. Acad., v, p. 418, Oct., 1881: Rep. on Cephalop. [p. 165], pl. 36, figs. 1, 1*a*, 2, 1882.

Stations 947, 952, 998, 999, 1026 (3 juv.); 182–388 fathoms.

OCTOPODA Leach.

Alloposus mollis Verrill.

Alloposus mollis Verrill, 1880; Trans. Conn. Acad., v, p. 366, pl. 50, figs. 1, 1*a*, 2, 2*a*, pl. 51, figs. 3, 4, 1881; Rep. on Cephalop. [p. 181], pl. 39, figs. 1, 1*a*, 2, 2*a*; pl. 42, fig. 7; pl. 44, fig. 1, 1882.

This has occurred in 197 to 715 fathoms.

Two remarkably large female specimens of this species were taken in 1881, each weighing about 20 pounds. These occurred at stations 937 and 994, in 506 and 368 fathoms. The length was 812mm (32 inches) to the tips of the arms. It was taken by Captain Tanner off Chesapeake Bay and off Delaware Bay, in 300 and in 197 fathoms.

Octopus lentus Verrill.

Trans. Conn. Acad., v, p. 375, pl. 35, figs. 1, 2, ♀, pl. 51, fig. 2♂, 1881; Rep. on Cephalop. [p. 191], pl. 43, figs. 1, 2, ♀, pl. 44, fig. 2, ♂, 1882.

Off the Carolina coasts, 464 to 603 fathoms, Blake Exp.,—A. Agassiz, 1880.

Eledone verrucosa Verrill.

Eledone verrucosa Verrill, Bull. Mus. Comp. Zool., viii, p. 105, pl. 5, 6, 1881; Trans. Conn. Acad., v, p. 380, pl. 52, 53, 1881; Rep. on Cephalop. [p. 183], pl. 44, figs. 3, 3*a*, 1882.

South of George's Bank, 810 fathoms; off Nantucket, 466 fathoms, Blake Exp.,—A. Agassiz, 1880.

GASTROPODA.

RHACHIGLOSSA.

Marginella carnea Storer (?).

Marginella carnea Storer, Journ. Boston Soc. Nat. Hist., i, p. 465, pl. 9, figs. 3, 4, 1837.

Marginella roscida? Verrill, Amer. Journ. Sci., xx, p. 391, Nov., 1880; Proc. U. S. Nat. Mus., iii, p. 369, 1880.

Our shell has a somewhat higher and more acute spire than the one figured by Storer, and the callus does not reach its summit. There are four prominent folds on the columella, the two anterior ones very oblique. The color is not preserved.

A single dead specimen was taken off Martha's Vineyard, at station 865, in 65 fathoms, 1880. Another specimen, also dead, but more perfect, was taken, in 1881, at station 949, in 100 fathoms. Key West, Florida,—Storer.

Buccinum Sandersoni Verrill.

Trans. Conn. Acad., v, p. 490, pl. 58, fig. 9 (nucleus), June, 1882.

Shell elongated, brownish, translucent, rather thin and delicate, with a high spire; well impressed suture; strongly convex, obliquely ribbed and strongly, spirally sculptured whorls; a large, smooth, mammillary nucleus; a small aperture; and a short, nearly straight columella.

Whorls, in our largest example, seven, a little flattened below the suture, strongly convex in the middle; the penultimate whorl with about 13 broadly convex, curved ribs or undulations, strongly excurved at the middle of the whorl; on the body-whorl the ribs are less prominent and fade out below the middle; on the three upper whorls they are absent. The spiral sculpture, on the lower whorls, consists of prominent, narrow, rounded cinguli, unequal in size and separated by narrow grooves; usually there are three or four smaller and lower cinguli between two of the larger ones, and sometimes a narrow groove appears on the larger ridges, dividing them into two; on the anterior part of the body-whorl the cinguli become more uniform in size and more numerous. The whole surface is covered with fine distinct lines of growth, which decussate the cinguli and mostly cross the ribs somewhat obliquely.

The nucleus is rounded and remarkably large for the genus (2^{mm} in diameter), translucent glossy brown, nearly smooth for about one turn and a half; the apex is regular and not obliquely raised.

The aperture is unusually small and short, elliptical, a little contracted posteriorly; outer lip thin, well rounded, the edge receding in a broad curve below the suture; canal short and narrow; columella rather straight, thin, with the folds slightly developed, the anterior end thin, rounded, and projecting quite as far as the lip; the upper part of the columella-lip is not excavated, nor distinctly excurved. The operculum is small, pale yellow, rounded-elliptical, with the nucleus at about the middle of the length, and a little to one side of the center. Epidermis thin and smooth. Color of the shell, with epidermis, yellowish brown to dark reddish brown, sometimes with small whitish spots on the larger spiral ridges; columella whitish, inside of aperture pale orange-brown or light amber.

Our largest example (female) is 46^{mm} long; breadth, 21^{mm}; length of body whorl, 29.5^{mm}; length of aperture, 21.5^{mm}; its breadth (lip broken), 12^{mm}; length of operculum, 11.5^{mm}; its breadth, 9^{mm}. A male has very nearly the same proportions.

Off Martha's Vineyard, station 939, in 258 fathoms; station 1032, in 208 fathoms, 1881, two living examples, male and female.

This species resembles some of the varieties of *B. undatum*, but besides its more slender and elongated form and more delicate texture, it differs decidedly in the character of the spiral sculpture, the shortness and small size of the aperture, and in the operculum; but the most striking differences are in the nucleus and upper whorls, for the nucleus is more

than twice as large as that of *B. undatum*, and different in character; while on the second and third whorls the spiral cinguli are fewer and very much more prominent and coarser. The character of the nucleus and upper whorl will also distinguish it from all the other species of our coast.

I have named this interesting shell in honor of Mr. Sanderson Smith, of the U. S. Fish Commission parties during these explorations.

Sipho pubescens Verrill.

Neptunea propinqua Verrill, Amer. Journ. Sci., xvi, p. 210, 1878.

Neptunea (Sipho) propinqua Verrill, Amer. Journ. Sci., xx, p. 391, Nov., 1880; Verrill, Proc. U. S. Nat. Mus., iii, p. 370, 1880 (*non* Alder, Jeffreys, etc.).

Sipho pubescens Verrill, Tr. Conn. Acad., v, p. 501, pl. 43, fig. 6, pl. 57, fig. 25, June, 1882.

Shell rather stout, fusiform, regularly tapered, obtuse at the tip of the spire, with the suture deep and canaliculate. Whorls about seven, broadly rounded and somewhat flattened, narrowly but distinctly channeled at the suture.

Sculpture over the whole surface, regular and numerous shallow, spiral grooves, or sulci, separated by slightly raised, flat, or somewhat rounded cinguli, usually but not constantly wider than the sulci; on the penultimate whorl there are about 14 to 16 of the sulci; slight but distinct curved lines of growth cover the surface. Aperture narrow ovate-elliptical; outer lip broadly and regularly rounded, the edge receding in the middle in a broad, concave curve; at the base of the canal the lip is decidedly incurved. Canal moderately long, somewhat contracted, spirally curved to the left and strongly bent backward at the tip. Columella very much bent, with a strong sigmoid curvature; portion opposite the middle of the aperture greatly receding. Epidermis thin, but firm, yellowish green to olive-green; when fresh and uninjured covered with fine, short, capillary processes, forming spiral lines along the cinguli.

Color of the shell white; inside of aperture translucent bluish white.

The nucleus is moderately large (diameter 2.15^{mm}), smooth, mammillary; its first whorl is strongly turned up obliquely, and incurved.

The median tooth of the radula is broad, with three denticles, the middle one largest; the lateral teeth are large, with three sharp curved denticles, the outer one much the largest, the middle one smallest; occasionally the inner one bears a small secondary denticle on its outer edge.

Operculum long, ear-shaped, with the nucleus at the tip of the small end, which is but little incurved; inner edge strongly convex beyond the middle; outer edge broadly rounded. A female of the ordinary adult size and form is 65^{mm} long; breadth, 28^{mm}; length of canal and body-whorl, 46^{mm}; breadth of body-whorl, 25^{mm}; length of aperture, 35^{mm}; its breadth, 14^{mm}; breadth of opening of canal at base, 5^{mm}.

An average male is 56^{mm} long; breadth, 26^{mm}; length of body-whorl, 40^{mm}; its breath, 17^{mm}; length of aperture, 31^{mm}; its breadth, 12^{mm}.

This species was first dredged by us, in 1877, on the United States Fish Commission steamer Speedwell, off Cape Sable, Nova Scotia, in 88 to 91 fathoms, fine compact sand, where it occurred in considerable numbers, living; and off Halifax, 42 fathoms, dead.

Off Martha's Vineyard this species is very common in deep water. It occurred at 48 stations in that region in 1880 and 1881; living specimens were taken in 86 to 410 fathoms, but it is most abundant between 200 and 410 fathoms; at station 998, in 302 fathoms, 154 specimens were taken, 140 of them living. Dead shells, inhabited by *Eupaguri*, occurred in 64 to 85 fathoms, and also in 458 fathoms. It was taken by Lieut. Z. L. Tanner, on the Fish Hawk, in 1880, off Chesapeake Bay, in 56 to 300 fathoms; and off Delaware Bay, in 156 and 435 fathoms, in 1881.

This shell is closely allied to *S. propinquus* (Alder) of Europe, to which I formerly referred it, with doubt. Our species is, however, a larger, more robust, and more hairy shell, and its nuclear whorls are totally different, for according to the descriptions, *S. propinquus* always has a regularly spiral nucleus, with the first whorl minute and not turned up; this is, also, the case with an authentic specimen, in my possession, received from the Rev. A. M. Norman.

Sipho Stimpsoni, var. *liratulus* Verrill.

Neptunea (*Sipho*) *arata* Verrill, Proc. Nat. Mus., iii, p. 370, 1880.

Specimens intermediate between this variety and the ordinary, nearly smooth, shallow-water form have been obtained. The name, *aratus*, having been used in this group, I propose to name the strongly spirally sculptured variety, *liratulus*.

Sipho glyptus Verrill.

Tritonofusus latericeus Verrill, Amer. Journ. Sci.: xx, p. 391, Nov., 1880: Verrill, Proc. U. S. Nat. Mus., iii, p. 369, 1880 (*non* Möll., Mörch).

Sipho glyptus Verrill, Trans. Conn. Acad., v. p. 505, pl. 57, fig. 22, pl. 58, figs. 1, 1*a*, June, 1882.

Shell long-fusiform, with a high, tapering, acute spire; with an impressed, oblique, undulated suture; with convex, transversely ribbed and spirally grooved whorls; and with a narrow, rather long, nearly straight canal.

Whorls seven to eight, evenly rounded, crossed by about 13 slightly curved, regular, rounded and prominent ribs, separated by rather wider, regularly concave interspaces; the ribs are lower and a little excurved just below the suture, and fade out before reaching the base of the canal; sometimes they are mostly obsolete on the body-whorl. The raised spiral cinguli are numerous, regular and close, crossing equally the ribs and interspaces; they are mostly alternately larger and smaller, and are separated by narrow impressed grooves; the cinguli are crossed by very fine, close and delicate raised lines of growth, giving them a minutely wavy appearance. Aperture narrow-elliptical; outer lip evenly convex,

incurved at the base of the canal, which is narrow and elongated, and but slightly bent to the left and a very little bent back at the tip; columella slightly sigmoid.

The nucleus is small, consisting of two whorls; the first whorl is minute and turned obliquely upward and inward, with a smooth glossy surface, crossed by a few small transverse grooves; the next whorl is regular, smooth at first, then with fine spiral lines; the normal sculpture begins on the third whorl. Color of shell, grayish white. No obvious epidermis.

The largest specimen is 30^{mm} long; breadth, 10.5^{mm}; length of body-whorl, 19^{mm}; its breadth, 9^{mm}; length of aperture, 15^{mm}; its breadth, 4.5^{mm}.

This species was dredged off Martha's Vineyard, by the United States Fish Commission steamer, Fish Hawk, in 1880 and 1881 (stations 894, 938, 951, 1028, 1029, 1032), in 219 to 458 fathoms.

This shell has a sculpture much like that of *S. cælatus* V., 1880, but it has a longer and more acute spire, a longer canal, narrower aperture, and a different nucleus. In general appearance it resembles *S. latericeus*, but it is a more delicately sculptured shell, with a different nucleus. It also somewhat resembles *S. pellucidus* (Hancock) in general appearance, but the latter has a much shorter and wider canal.

According to the nature of the nucleus this shell would belong to the subgenus, *Siphonorbis* Mörch.

Sipho parvus Verrill and Smith.

Sipho parvus Verrill and Smith, in Verrill, Trans. Conn. Acad., v, p. 504, pl. 57, figs. 20, 20*b*, June, 1882.

Shell small, thin, delicate, translucent, subfusiform, with a rather slender, acute spire; a short, straight canal; and few raised, revolving cinguli.

Whorls six, convex, usually with three (rarely five or six) prominent rounded cinguli or carinæ, separated by much wider, broadly concave interspaces; the uppermost one is usually some distance below the suture, which is impressed; on the last whorl there are about seven to nine principal carinæ, occasionally with a smaller one interpolated, and becoming more crowded anteriorly; delicate and close, raised lines of growth cover the interspaces and cross the raised cinguli.

The nucleus is very small, smooth and glossy; the first turn is minute and regularly spiral, not upturned; three spiral cinguli appear on the second whorl. Aperture elliptical; outer lip thin, rounded, incurved at the base of the canal, which is narrow, but very short and straight; columella nearly straight in the middle. The epidermis is thin, lamellose, but not ciliated.

Color yellowish or grayish white. Operculum ovate, with the smaller or left end rounded and incurved, forming a small lobe, defined by a notch, and with the nucleus central to this small lobe.

The radula is very slender; the outlines of the median plates are indistinct; they bear three very small, but distinct and nearly equal, denticles; the lateral teeth have only two denticles.

Length, 11^{mm}; breadth, 5^{mm}; length of body-whorl, 7.10^{mm}; length of aperture, 5^{mm}; its breadth, 2.15^{mm}.

Off Martha's Vineyard, in 312 to 506 fathoms (stations 937, 947, 994, 997, 1029), 1881, fourteen specimens.

This delicate species is liable to be confounded with the young of *S. pygmæus*, but it differs decidedly in its dentition, operculum, nuclear whorls, short and straight canal, and in the character of its spiral cinguli. The upper whorls of *S. pygmæus* are much more angular, with coarser and more prominent carinæ or cinguli, which are separated by narrower incised grooves.*

This species, by its regular spiral nucleus, would be referable to the group *Siphonorbis*. It also approaches *Mohnia* Friele, by the characters of its dentition and operculum.

Trophon clathratus (Linné) Möller.

Off Chatham, Mass.; stations 972, 976, in 16 fathoms.

Astyris diaphana Verrill.

Astyris rosacea Verrill, Proc. Nat. Mus., iii, p. 408 (*non* Gould).
Astyris diaphana Verrill, Trans. Conn. Acad., v, p. 513, pl. 58, fig. 2, June, 1881.

Shell thin, delicate, translucent, white, nearly smooth, elongated, with a long, tapering, acute spire. Whorls eight, broadly and evenly rounded; suture somewhat impressed, but not deep, frequently narrowly channelled. Surface, except anteriorly and on the canal, destitute of spiral lines, unless microscopic striations, and of any indication of ribs, but covered with very close, almost microscopic lines of growth, which give the surface a dull appearance, when dry; on the canal and extending to the anterior part of the body-whorl are a number of distinct spiral lines, becoming faint opposite the middle of the aperture. The nucleus is larger than in *A. rosacea*, rounded, depressed, and spiral, but somewhat mammillary. The aperture is small, oblong-ovate; the outer lip is sharp at the edge, but in adult shells has a distinct thickening a little back from the margin; the inner surface is usually smooth, but in a few adult examples it has a row of four or five small, transversely oblong

* There are two varieties of *S. (Siphonorbis) pygmæus* on our coast, which are often well-marked. The larger, typical form, from north of Cape Cod, has well-rounded whorls, covered with strong cinguli and sulci, and with a strongly ciliated epidermis; canal long and much curved. The other variety, which abounds off Martha's Vineyard, etc., in from 20 to 300 fathoms, on muddy bottoms, has the whorls flattened and much smoother, the cinguli often obsolete, in part, except on the upper whorls, and the epidermis dark green or olive, and only slightly ciliated, or often nearly or quite smooth; and the canal is perhaps a little shorter and less curved. This may take the variety name, *S. pygmæus*, var. *planulus*. The nucleus and apical whorls agree well, however, in the two forms. The generic names, *Neptunella* and *Siphonella*, formerly used by me for this shell, are both preoccupied.

tubercles, back from the margin, and a larger conical one at the base of the canal.

Columella signoid, a little excavated in the middle, and with a distinct, raised, spiral fold at its inner edge anteriorly; canal short, open, very slightly curved. Epidermis thin, closely adherent, minutely lamellose along the lines of growth, pale greenish or yellowish white, sometimes with microscopic spiral striations.

Length of one of the largest specimens, 12mm; breadth, 4mm; length of body-whorl and canal, 7mm; length of aperture, 5mm; its breadth, 1.8mm. Some specimens are stouter and shorter.

Off Martha's Vineyard, in 65 to 487 fathoms, 1880 and 1881,—U. S. Fish Commission. Taken at many stations. Off Chesapeake Bay, 300 fathoms,—Lieut. Z. L. Tanner.

It occurred in considerable numbers at stations 870, 876, in 155 and 120 fathoms.

The true *A. rosacea* occurs in shallow water from off Cape Cod northward to Nova Scotia. It differs much from *A. Hölbolli*, of Greenland, and if the latter is not a distinct species, it is, at least, a very marked variety.

Astyris pura Verrill.

Astyris zonalis, pars (white var.), Verrill, Proc. Nat. Mus., iii, p. 408, 1881 (*non* Linsley).

Astyris pura Verrill, Trans. Conn. Acad., v, p. 515, June, 1882.

This shell, formerly supposed to be a white deep-water variety of *A. zonalis* (=*A. dissimilis* St.), proves to be distinct from the latter.

It is a stouter shell with a narrower, blunter spire, a larger nucleus, and a wider aperture. It has a more distinct canal, which is a little curved at the tip. The surface is nearly smooth, except a few faint spiral lines on the canal. Shell pure white or pinkish, translucent, usually with the apex distinctly pink or yellowish. It is very common off Martha's Vineyard, in 100 to 487 fathoms.*

TOXOGLOSSA.

Pleurotoma Dalli Verrill and Smith.

Verrill, Trans. Conn. Acad., v, p. 451, pl. 57, figs. 1, 1*a*, April, 1882.

A slender, transversely ribbed species, remarkable for the deep notch, widest within, and the deeply concave subsutural band.

Whorls ten, somewhat angular and shouldered, crossed by strongly marked, somewhat oblique, angular ribs, which are most elevated at the shoulder, below the strongly marked, concave, subsutural band; they do not extend on this band, and mostly fade out below, before reaching the suture; on the body-whorl the ribs are less distinct and sometimes absent; when present they extend only a little below the suture. The whole surface is covered with fine, wavy, spiral lines;

* The true *A. zonalis* also occurred from near the shore to 120 fathoms. Those from the deeper localities were highly colored and banded like the shore specimens.

fine, but rather conspicuous, lines of growth cover the surface, and recede strongly on the subsutural band.

Aperture small, ovate, rather narrow. Outer lip with a prominent, convex edge, which has a deep notch, situated a short distance below the suture. The notch is usually constricted or even nearly closed up at the edge of the lip, but is broadly rounded at its inner end; this gives it a button-hole like appearance. In some specimens it is but little constricted. Canal short, broad, slightly everted.

Color, brown of various tints; often brown, with one or two spiral bands of yellowish brown, and with streaks of light brown; or the ribs may be pale yellowish brown; aperture brown within; columella whitish in front. Operculum, and animal, not observed.

Length of the largest specimen, 19.5^{mm}; greatest diameter, 6^{mm}; length of body-whorl and canal, 10^{mm}; of aperture, 6^{mm}; breadth of aperture, 2.5^{mm}.

Off Martha's Vineyard, stations 1035, 1036, 1038, 1039, in 94 to 146 fathoms, 1881. Off Delaware Bay, station 1046, 104 fathoms, dredged by Lieut. Z. L. Tanner, Oct. 10, 1881.

Pleurotoma comatotropis Dall.

Pleurotoma (*Mangilia*) *comatotropis* Dall, Bulletin Mus. Comp. Zoöl., ix, p. 58, 1881.

Differs from all our other species in having strong spiral ribs and grooves on the lower whorls.

One dead specimen. Off Martha's Vineyard, station 949, in 100 fathoms. Off Cape San Antonio, 640 fathoms (Dall).

Daphnella limacina Dall.

Pleurotoma (*Bela*) *limacina* Dall, Bull. Mus. Comp. Zoöl., ix, p. 55, 1881.

Pleurotoma (*Daphnella*) *limacina* Verrill, Am. Journ. Sci., xxii, p. 300, 1881.

Daphnella limacina Dall, op. cit., p. 102; Verrill, Trans. Conn. Acad., v, p. 452.

Station 994, 368 fathoms. Gulf of Mexico, 447–805 fathoms, Blake Exp.,—Dall.

Bela Gouldii Verrill.

Trans. Conn. Acad., v, p. 465, pl. 57, figs. 6, 6*a*, April, 1882.

Off Chesapeake Bay, station 898, in 300 fathoms,—Lieut. Z. L. Tanner. Common from Cape Cod to Nova Scotia and the Gulf of St. Lawrence, in 12 to 60 fathoms.

Bela harpularia (Couth.) H. and A. Ad.

Fusus harpularius Couthouy, Boston Jour. Nat. Hist., ii, p. 106, pl. 1, fig. 10, 1838.

Gould, Invertebrata of Mass., ed i, p. 291, fig. 191, 1841.

Bela harpularia H. and A. Adams, Genera of Recent Mollusca, vol. i, p. 92, 1858.

Gould, Invertebrata of Mass., ed. ii, p. 352, fig. 191 (*non* G. O. Sars).

Verrill, Report Invert. Anim. of Vineyard Sd., in 1st Rep. U. S. Fish Com., pp. 508, 636, pl. 21, fig. 108 (after Gould), 1874 (auth. cop., p. 342); Trans. Conn. Acad., v, pl. 43, fig. 14, pl. 57, fig. 9, 1882.

This species ranges from Long Island Sound to Nova Scotia, but is

less common northward. It is the most common species south of Cape Cod, in moderate depths (18 to 30 fathoms), where it is usually unaccompanied by any other species, and occurs of large size and typical form. We took it off Gay Head, Martha's Vineyard, 18 to 29 fathoms, in 1871, 1880, 1881; off Block Island, 20 to 28 fathoms, 1874, 1880; eastern end of Long Island Sound, 1874; Massachusetts Bay, 8 to 29 fathoms, 1873, 1877, 1878, 1879; Cape Cod Bay, and off Cape Cod, 15 to 34 fathoms, 1879; Casco Bay, 1873; Eastport, Me., and Bay of Fundy, 10 to 50 fathoms, 1870, 1872; Halifax harbor, 20 fathoms, and off Halifax 120 miles, 190 fathoms, 1877. Messrs. Smith and Harger, on the "Bache," in 1872, took it at various localities on George's and Le Have Banks, in 25 to 60 fathoms. Off Martha's Vineyard, 104 miles, 368 fathoms, 1881.

Bela pleurotomaria (Couthouy) Adams.

Fusus pleurotomarius Couthouy, Boston Jour. Nat. Hist., ii, p. 107, pl. 1, fig. 9, 1838.

Fusus rufus Gould, Invert. of Mass., ed. i, p. 290, fig. 192 (*non* Montagu).

Defrancia Vahlii (Beck) Möller, 1842 (t. Lovèn).

Mangelia pyramidalis Stimpson, Shells of New England, p. 49, 1851 (*? non* Ström, sp.).

Bela pleurotomaria H. and A. Adams, Genera Recent Mollusca, i, p. 92, 1858.
Gould, Invert. of Mass., ed. ii, p. 355, fig. 625.
Verrill, Report Invert. Anim. of Vineyard Sd., in 1st Rep. U. S. Fish Com., p. 637, 1874 (auth. cop., p. 343); Trans. Conn. Acad., v, p. 478.

This species is found from off Martha's Vineyard to Labrador! It is not uncommon in Eastport harbor and the Bay of Fundy, where I dredged it in 1864, 1865, 1868, 1870, in 15 to 80 fathoms. By the U. S. Fish Com. it has been dredged in Halifax harbor in 20 to 25 fathoms, 1877; George's Bank, 45 fathoms, 1872; Gulf of Maine, at Cashe's Ledge, 30 to 40 fathoms, 1874; off Cape Ann, 38 to 40 fathoms, 1874; Casco Bay, 1873; Massachusetts Bay, 31 to 48 fathoms, 1877, 1879; off Cape Cod, 30 to 122 fathoms, 1879; off Chatham, Mass., 16 fathoms, 1881.

Off Martha's Vineyard, 255 fathoms, 1881. It appears to occur on the coast of Greenland.

Whether it can be identified accurately with any European species is doubtful. Many writers have considered it identical with *B. pyramidalis* (Ström). But the shell figured under that name by Prof. G. O. Sars appears to be quite different.

Bela cancellata (Mighels) Stimpson.

Fusus cancellatus Mighels, Proc. Boston Soc. Nat. Hist., i, p. 50, 1841; Boston Jour. Nat. Hist., iv, p. 52, pl. 4, fig. 18, Jan., 1842.

Bela cancellata Stimpson, Check List, 1862.
Gould, Invert. Mass., ed. ii, p. 355, description (but not the figure, 924), (*non* G. O. Sars).
Verrill, Proc. U. S. Nat. Mus., iii, p. 364, 1881; Trans. Conn. Acad., v, p. 475, pl. 43, figs. 10, 11; pl. 57, fig. 13.

This shell extends from off Martha's Vineyard, in 126 and 312 fathoms (stations 877, 947), north to Nova Scotia and Labrador; and probably

to Greenland and Northern Europe. It is one of the most common species in the cold waters of the Bay of Fundy, near Eastport, Me., and Grand Menan I., in 10 to 100 fathoms, where I have often dredged it, in 1861, 1863, 1864, 1865, 1868, 1870, 1872. We have also taken it, on the various U. S. Fish Com. expeditions, off Nova Scotia; in the Gulf of Maine; Casco Bay; Massachusetts Bay; off Cape Cod, etc., in 12 to 92 fathoms.

Bela decussata (Couth.) H. and A. Adams.

Pleurotoma decussata Couthouy, Boston Jour. Nat. Hist., ii, p. 183, pl. 4, fig. 8, 1839 (*non* Lam., *nec* McGilv.).

Gould, Rep. on Invert. of Mass., 1st ed., p. 280, fig. 185, 1841.

Mangelia decussata Stimpson, Shells New Eng., p. 49, 1851.

Bela decussata Gould, Rep. on Invert. of Mass., Binney's ed., p. 354, fig. 623, 1870.

Verrill, Trans. Conn. Acad., v, p. 472, pl. 43, fig. 13.

This shell is not uncommon on the New England coast, in moderate depths, mostly in 25 to 75 fathoms. Its range is from off Martha's Vineyard (station 991), in 34 fathoms, northward to Labrador. In the Bay of Fundy, where it is not rare, I have taken it in 20 to 100 fathoms, in 1868, 1870, 1872.

Bela pygmæa Verrill.

Bela tenuicostata (*pars*) Verrill, Proc. Nat. Mus., iii, p. 365, 1880 (*non* Sars).

Bela pygmaea Verrill, Trans. Conn. Acad., v, p. 460, pl. 57, fig. 8, May, 1882.

Shell very small, fusiform, or subovate, with four or five convex whorls, a very short spire, and a large body-whorl; sculpture very finely cancellated or reticulated. The whorls are usually rather evenly rounded, moderately convex, but often have a very slightly marked, rounded shoulder; suture somewhat impressed, rather oblique. The nucleus is relatively not small, with the apex not prominent, so that it appears to be obtuse, or rounded, smooth, glassy. The whole surface below the nucleus is covered by fine, raised, revolving cinguli, separated by slight grooves of about the same width, and by equally fine, slightly sinuous, transverse riblets, coincident with the lines of growth, and receding in a distinct curve on the subsutural band; the crossing of these two sets of lines produces a finely cancellated sculpture over the whole surface, but the transverse lines are usually more evident on the convexity of the whorls, while the spiral lines are more conspicuous anteriorly, and on the siphon. Aperture relatively large, oblong-elliptical, slightly obtusely angled posteriorly; sinus shallow, but distinct, evenly concave; outer lip elsewhere evenly convex. Canal short and broad, not constricted at base by any incurvature of the outer lip. Columella strongly concave or excavated, in the middle, sigmoid anteriorly. Color of shell, pale greenish white, covered by a thin epidermis of similar color.

One of the largest shells is 5.5^{mm} long; 2.75^{mm} broad; length of body-whorl, 4^{mm}; of aperture, 3^{mm}.

Only a few specimens have been taken off Martha's Vineyard, at stations 892 and 894, in 487 and 365 fathoms, 1880; station 947, in 312 fathoms, 1881.

This little species bears some resemblance to *B. decussata*, but can be readily distinguished by the much finer and more uniform sculpture.

Bela incisula Verrill.

? Pleurotoma Trevelyana, var. *Smithii* Jeffreys, Ann. and Mag. Nat. Hist., 1876, p. 332 (*non Smithii* Forbes).

Bela impressa? Verrill, Proc. U. S. Nat. Mus., iii, pp. 365, 1880 (*non* Mörch.).

Bela incisula Verrill, Trans. Conn. Acad., v, p. 461, pl. 43, fig. 12; pl. 57, fig. 14.

The shell is small, subfusiform to short ovate, with about five or six turreted, flattened whorls, which are angularly shouldered just below the suture. The subsutural band arises abruptly from the suture, nearly at right angles, and its surface is flat or slightly concave, marked by strongly recurved lines of growth, but mostly without spiral lines. The shoulder is often nearly right-angled. The whorls are decidedly flattened in the middle. There are, on the last whorl, about twenty rather broad, flattened or rounded ribs, which are nearly straight, a little prominent and usually slightly nodose at the shoulder, but they disappear a short distance below it. They are separated by well excavated, concave grooves, deepest close to the shoulder.

The most characteristic feature of the sculpture is that the surface is marked by rather fine, but regular and distinct, sharply incised, narrow, revolving grooves, which are rather distant, with flat intervals. Of these there are usually about three to five on the penultimate whorl, and about twenty to twenty-eight on the last, the greater number being below the middle, on the siphon, where they become coarser and closer, with narrower rounded intervals. One of the sulci, just below the shoulder, is usually more distinct, and cuts the ribs so as to give their upper ends a subnodulous appearance; below this there is usually a rather wide zone, without grooves; usually no revolving lines above the shoulder. The apex is usually eroded; when perfect it is acute. The nucleus has a very small and slightly prominent, smooth apex; its first turn is marked with fine spiral lines; the next whorl has, at first, about three stronger, spiral, raised cinguli, which soon begin to be crossed by thin transverse riblets.

Aperture about half the length of the shell, narrow ovate, or elliptical, angulated above. Canal short, nearly straight, a little narrowed at the base by an incurvature of the lip. The outer lip has a decided angle at the shoulder, below which the edge is well rounded, and projects strongly forward, in the middle; the sinus, above the shoulder, is rather deep, wide, and evenly rounded within. Columella strongly excavated in the middle, obliquely receding at the end.

The shell is commonly greenish white and covered by a thin, close, greenish epidermis; but some specimens are clear white, rarely pinkish.

Ordinary specimens are about 6.5^{mm} long; 3.5^{mm} broad; aperture,

3mm long. One of the largest, having six whorls, is 8mm long; 4.5mm broad; body-whorl, 6mm long; aperture, 4.5mm long.

This is one of the most common and generally distributed species of *Bela* found on the New England coast. It inhabits both muddy and sandy bottom, and sometimes is found among gravel and rocks. It occurs from the region off Newport, R. I., northward to Labrador, and from very shallow water, in the Bay of Fundy and Casco Bay, to 500 fathoms, off Martha's Vineyard. It is very common from Massachusetts Bay to the Bay of Fundy and Halifax, N. S., in 10 to 50 fathoms.

Bela concinnula Verrill.

Bela exarata (*pars*) Verrill, Proc. Nat. Mus., iii, p. 366, 1880.

Bela concinnula Verrill, Trans. Conn. Acad., v, p. 468, pl. 43, fig. 15; pl. 57, fig. 11.

Shell rather small and delicate, long-ovate, regularly turreted, with about six whorls, which rise almost at right angles from the suture, and have an angular, or squarish, nodulous shoulder, usually distinctly carinated by a thin, raised, spiral keel, which forms small, but prominent nodules where it crosses the ribs; below the shoulder the whorls are abruptly flattened. The subsutural band is usually little convex, or nearly flat.

The ribs are numerous (often 20 to 25), regular, nearly straight below the shoulder, separated by concave intervals of equal or greater width; they extend entirely across the upper whorls; above the shoulder they are slightly excurved on the subsutural band. Whole surface covered with regular and rather strong, rounded, elevated, revolving cinguli, which cross the ribs and produce on them small, rounded nodes, and give a pretty regularly and strongly cancellated appearance to the whole surface. On the penultimate whorl there are four or five cinguli below the angle. Aperture rather short, narrow-ovate, angulated posteriorly; sinus broad and shallow. Canal narrow, a little produced, and slightly curved; columella decidedly sigmoid, its inner edge excurved at the end.

Color of the shell white, or pale greenish white, covered with a thin, pale green epidermis.

A rather large male is 11.5mm long; breadth, 5.25mm; length of body-whorl, 7mm; its breadth, 5mm; length of aperture, 5mm; its breadth, 2mm. An ordinary specimen measures, in length, 10mm; breadth, 4.5mm; length of aperture, 5.5mm.

This species is common and widely distributed on this coast. It ranges from the region south of Martha's Vineyard, in deep water, to Labrador. By the U. S. Fish Com. it was dredged, off Newport, R. I., and Martha's Vineyard, in 252 to 487 fathoms (stations 880, 892, 947, 994, 1038), 1880 and 1881; Cape Cod Bay and off Cape Cod, 25 to 122 fathoms, 1879; Massachusetts Bay, 20 to 29 fathoms, 1877; Gulf of Maine, many stations, 25 to 88 fathoms, 1873, 1874, 1878; 150 fathoms, 1872; Casco Bay, 1873; George's Bank, 50 to 65 fathoms, 1872; south

of George's Bank, 430 fathoms, 1872; Halifax Harbor, 16 to 21 fathoms, and off Halifax, 42 fathoms, 1877.

Bela tenuilirata Dall.

Dall, Am. Journ. Conch., vii, p. 98, 1871.

Bela simplex Verrill, Proc. U. S. Nat. Mus., iii, p. 367, 1880 (*non* Middendorff).

A single immature specimen, referred to this species by Mr. Dall, was taken in 1880.

The nucleus, consisting of nearly three apical whorls, is chestnut-brown; the surface is finely decussated by equal lines running obliquely in opposite directions.

The shell is pale flesh-color, covered with a thin, smooth, glossy, pale yellowish brown epidermis. Length, 9mm; breadth, 5mm; length of body-whorl, 7mm; of aperture, 6mm.

One dead, but fresh, specimen, from station 894, in 365 fathoms, off Martha's Vineyard. Alaska,—Dall.

The nucleus of this shell is not like that of a *Bela*. It more nearly resembles *Pleurotomella*, in several respects.

TÆNIOGLOSSA.

Dolium Bairdii Verrill and Smith.

Dolium Baridii Verrill and Smith, in Verrill, Amer. Jour. Sci., xxii, p. 299, Oct., 1881 (description).

The apical or nuclear whorls are regularly spiral, yellowish brown, smooth, showing only faint lines of growth, and consist of nearly four turns. The color and character of the surface change abruptly beyond the nucleus, the normal sculpture suddenly appearing. The largest specimen taken (♂) is 68mm long; breadth, 56mm; length of aperture, 53mm.

Off Martha's Vineyard, station 945; 202 fathoms, one large living ♂. Stations 1032, 1036, 1038, 1040, 94 fathoms; young specimens and fragments of several large specimens.

Of Delaware Bay, station 1046, 104 fathoms, one living (♂), 1881,—Lieut. Z. L. Tanner.

Amaurpsis Islandica (Gmelin) Mörch.

Amauropsis helicoides Gould, Binney's ed., p. 348, fig. 161.

Off Chatham, Mass.; stations 965, 969, in 15 to 18 fathoms.

Lamellaria pellucida, var. **Gouldii** Verrill.

This liffers from the original *L. pellucida* in having the mantle thicker, with more or less numerous, low verrucæ on the dorsal surface; color pale yelow or yellowish white, more or less blotched or specked with flake-wlite and bright yellow, and often wirh brown blotches. The verge appears to be different in form, the lateral papilla being larger and longer, and not so near the end, the portion beyond it forming a spatulate or olovate lobe, rounded at the end, but this may be due partly to

the state of contraction. The shell, in the specimens examined, is very thin, delicate, and transparent, as in *L. pellucida*, but differs in being somewhat shorter, broader, with the spire a little lower, the apex less elevated, and the suture less impressed. In alcohol, a specimen is 18mm long; breadth, 12mm; height, 10mm.

Off Martha's Vineyard, stations 925, 938, 939, 946, 1029, in 224 to 458 fathoms.

Several specimens of both sexes occurred at some of these localities. Off Delaware Bay, station 1047, 1881,—Lieut. Z. L. Tanner. It is usually associated with the smooth form originally described, and intermediate states, as to the number and size of the dorsal verrucæ occur, some being strongly verrucose, others nearly smooth.

Capulus Hungaricus (Linné).

Capulus hungaricus Jeffreys, Brit. Conch., iii, p. 269, pl. 6, fig. 5; v, pl. 59, figs. 6, 6*a*.

G. O. Sars, Moll. Arct. Norvegiæ, p. 145, pl. v, figs. 2*a*, 2*b* (dentition).

Stations 922, 1029, in 69 and 458 fathoms, off Martha's Vineyard, 1881; two living specimens.

On the European side of the Atlantic, this species is found from Iceland to the Mediterranean.

Torellia fimbriata Verrill and Smith.

Torellia fimbriata Verrill and Smith, in Verrill, Trans. Conn. Acad., v, p. 520, p. 57, figs. 27, 27*a*, June, 1882.

Shell thin, fragile, translucent, broader than high, with a short, depressed spire, the apex small and a little prominent, the last whorl large and ventricose, with spiral carinæ, bearing divergent epidermal hairs. Whorls five, very convex, rapidly enlarging; suture deep, slightly channeled; nuclear whorls smooth and glossy, regularly spiral, the first whorl minute. Sculpture, several raised, angular, spiral carinæ separated by unequal intevals, on which are finer spiral lines, and numerous evident, thin, raised flexuous lines of growth, which cross both the intervals and carinæ, rendering the latter finely nodulous. On the last whorl there are about ten carinæ, each of which usually supports a spiral row of long epidermal hairs; the uppermost of these is just below the suture, and its epidermal processes are long and appressed against the preceding whorl; the next is separated by a wider space, while those on the convex part of the whorl are nearer together; the last defines the border of the umbilicus, which is deep, but not broad. Aperture large, roundish, the lip continuous in adult shells; in the umbilical region the lip is somewhat reflected, so as to partially conceal the umbilicus; within the lip the columella has a very obtuse lobe, projecting inward.

Epidermis thick, pale yellowish or greenish yellow, more or less lamellose along the lines of growth, and rising into long and large divergent hair-like processes along the spiral carinæ.

Shell yellowish white.

Length of the largest specimen (♂), 14.5mm; breadth, 17mm; length of body-whorl, 13mm; length of aperture, 10mm; breadth, 10.2mm; length of hairs, 2–3mm.

Variety, tiarella Verrill.

A variety occurred in company with the typical form, at station 1026, 182 fathoms, in which the subsutural carina is well developed and crowned by its row of long hairs, but the other carinæ are nearly obsolete, and only bear rows of short, inconspicuous hairs; the epidermis is elsewhere thick and lamellose, not hairy. The spire is a little more elevated.

Off Martha's Vineyard, stations 869, 878, 939, 1025, 1026, 1033, 1038, in 142 to 258 fathoms, 1880 and 1881,—U. S. Fish Commission. A small specimen was taken in 1873, at station 21 B, 52 to 90 fathoms, near Cashe's Ledge, off the coast of Maine, by the party on the Bache.

Fossarus elegans Verrill and Smith.

Verrill, Trans. Conn. Acad., v, p. 522, pl. 57, fig. 28, June, 1882.

Shell small, ovate, with a short, acute, turreted spire, and five angulated and sharply carinated whorls, elegantly latticed between the carinæ. The whorls increase rapidly, the last being relatively large. On the last whorl there is a sharp angular carina at the shoulder, often with a smaller one just below it, a larger and more prominent one around the periphery, and three or four smaller ones on the anterior slope, besides a spiral fold around the umbilical region; on the larger specimens there are, sometimes, two or three strong, raised varices on the last whorl, and the edge of the lip is thickened. The intervals between the carinæ are concave. On the preceding whorls the two larger carinæ are visible, often with a small intermediate one. The nucleus is minute, regular, smooth, a little prominent. The rest of the shell is covered, between the carinæ, with numerous, close, thin, oblique, raised lamellæ, or lines of growth; those on the subsutural band are flexuous. Aperture nearly round; lip continuous; outer lip thickened, and with denticles externally, where the carinæ terminate. Umbilicus spiral, very narrow, sometimes closed. Color white.

Length, 5.3mm; breadth, 4mm; length of aperture, 2mm.

Off Martha's Vineyard, station 949, 100 fathoms, 1881; eight specimens, none living.

Velutina lævigata (L.) Gould.

Off Martha's Vineyard, stations 940, 949; in 100 to 130 fathoms.

Cerithiella Whitearesii Verrill.

Trans. Conn. Acad., v, p. 522, pl. 42, fig. 7, July, 1882.
Lovenella Whitearesii Verrill, these Proc., p. 375, 1880.

Cingula areolata (Stimp.) Verrill.

Amer. Journ. Sci., xvii, p. 311, 1879.

Off Martha's Vineyard, station 940, in 130 fathoms.

Litiopa bombyx Rang.

Station 1038, clinging to floating *Sargassum*

Scalaria (Opalia) Andrewsii Verrill.

Scalaria, undetermined sp., Verrill, Proc. Nat. Mus., iii, p. 376, 1880.

Scalaria (Opalia) Andrewsii Verrill, Trans. Conn. Acad., v, p. 526, pl. 57, fig. 35, July, 1882.

Shell small, slender, elongated, with well-rounded whorls and deep suture. Whorls seven, crossed by about thirteen regular ribs, which are moderately elevated and evenly rounded, and, on the lower whorls, a little thickened, most so in the middle; their interstices are crossed by several distinct spiral cinguli, which also render the ribs a little nodulous; on the penultimate whorl there are about five cinguli; on the last whorl a strong, round, spiral carina surrounds the base or umbilical region, starting from under the upper margin of the outer lip and enclosing a space, on which two or more faint spiral grooves can be detected. Aperture round; lip continuous; margin of outer lip thickened by a rib; inner lip with the edge reflected in the umbilical region; no umbilicus.

Color white. Length, 5.5^{mm}; breadth, 2^{mm}; diameter of aperture, 1^{mm}.

Station 873, off Newport, R. I., 109 fathoms, 1880. One specimen.

Dedicated to Mr. E. A. Andrews, of the U. S. Fish Commission parties, in 1880 and 1881.

Scalaria (Cirsotrema) Leeana Verrill.

Trans. Conn. Acad., v, p. 526, pl. 57, fig. 34, July, 1882.

Shell small, slender, elongated, with well-rounded whorls and deep, oblique suture (apex truncated). Whorls crossed by numerous small, little-elevated, oblique ribs, and on each whorl one large, strong, oblique varix-like rib, those on the three lower whorls nearly in one line, the last forming the greatly thickened margin of the lip. Both the ribs and the wider intervals between them are crossed by very numerous and fine spiral striæ. Aperture small, round-ovate, surrounded by a much thickened, continuous margin close to the edge; this rim around the outer lip is crossed by oblique striæ; base with spiral striæ, but without a distinct carina; no umbilicus. Size about the same as the preceding species.

Off Martha's Vineyard, station 1038, 146 fathoms, 1881.

Named in honor of Prof. L. A. Lee, of Bowdoin College, and of the U. S. Fish Commission party in 1881.

Acirsa costulata (Mighels) Verrill.

Turritella costulata Mighels, Proc. Boston Soc. Nat. Hist., i, p. 50, 1841; Boston Journal Nat. Hist., vol. iv, p. 50, pl. 4, fig. 20, 1842.

Gould, Invert. Mass., ed. ii, p. 318, fig. 587.

Scalaria Eschrichtii Möller, Kröyer's Tidsskr., iv, p. 83, 1842.

Acirsa borcalis (Mörch) Verrill, Amer. Journ. Sci., iii, pp. 210, 281, 1872.

Crab Ledge, off the southern part of Cape Cod, stations 965 and 984, in 15 and 32 fathoms. Previously known from the Bay of Fundy, and northward to Greenland.

Aclis tenuis Verrill.

Trans. Conn. Acad., v, p. 528, pl. 58, fig. 19, July, 1882.

Eulimella ventricosa (pars) Verrill, these Proc., iii, p. 380, 1880 (*non* Forbes sp.)

Shell very slender, smooth, white, acute. Whorls nine, evenly rounded; surface with few, faint, microscopic, raised, spiral lines; suture impressed; aperture elliptical, a little effuse in front. Nucleus small, regularly spiral, not upturned. Length, 3.8mm; breadth, 1mm.

Station 873, in 100 fathoms, 1880.

RHIPIDOGLOSSA.

Machæroplax obscura, var. **bella** (Verk.).

Machæroplax bella Friele; Verrill, Proc. Nat. Mus., iii, p. 378, 1880.

Station 1032, off Martha's Vineyard, 208 fathoms.

Doubtless this is only a strongly sculptured variety of *M. obscura*.

Machæroplax cinerea (Couth.) Friele.

Margarita cinerea Gould, Invert. Mass., ed. ii, p. 279, fig. 539.

This species, which had not occurred south of Cape Cod previously, was taken at station 981, in 41 fathoms, off Chatham, Cape Cod.

Cyclostrema Dalli Verrill.

Trans. Conn. Acad., v, p. 532, pl. 57, fig. 39, July, 1882.

Cyclostrema trochoides Verrill, these Proc., iii, p. 378, 1880 (*non* Jeffr., Sars).

This shell differs from *C. trochoides* in having the base covered around the umbilical region with six to eight very distinct, incised, spiral lines. The umbilicus is closed, or represented only by a slight and narrow pit. The surface of the shell has only a little luster, and is slightly roughened by very faint and close lines of growth.

Color, yellowish white. Height, 2mm; breadth, 2.25mm.

Station 892, in 487 fathoms.

Cyclostrema rugulosum (Jeffreys, MSS.) Sars.

G. O. Sars, Moll. Reg. Arct. Norvegiæ, p. 129, pl. 21, figs. 1, *a*, *b*.

Station 894, in 365 fathoms, 1880.

Northern Norway, 80–200 fathoms,—Sars.

Fissurella Tanneri Verrill, sp. nov.

Shell large, ovate, rather thin, with regularly and finely decussated sculpture. Apex nearer the anterior (smaller) end, moderately elevated. Perforation not large, round-ovate, conformable with the outline of the shell, but more rounded. Whole surface covered with rather fine, raised, radiating lines, with interstices of similar width or narrower; these are decussated by numerous concentric raised lines, which rise into nodules, or, towards the margin, form small, arched lamellæ in crossing the radii. Shell, externally, pale yellowish gray, internally lustrous bluish white; edge finely crenulated. Length, 46mm; breadth, 31mm; height, 16mm; longest diameter of apical foramen, 4mm; its breadth, 3mm.

Off Delaware Bay, station 1046, in 104 fathoms,—Lieut. Z. L. Tanner, 1881; one living specimen.

Scissurella crispata Fleming.

A single specimen was found by Mr. Dall in the aperture of a *Margarita*, from off Martha's Vineyard, 238 to 365 fathoms. Gulf of St. Lawrence,—Dawson.

Cocculina Beanii Dall.

This volume, p. 403.

Acmæa rubella? Verrill, Proc. Nat. Mus., iii, p. 391, 1880 (*non* Fabr., Sars).

Cocculina Rathbuni Dall.

This volume, p. 403.

Off Martha's Vineyard, 100 to 365 fathoms. Several living young specimens were taken at station 997, in 335 fathoms. Mr. Dall, in a recent letter, informs me that he has received the same species from Mr. Jeffreys, taken by the "Porcupine" expedition, off the European coast. West Indies, 399 to 502½ fathoms (t. Dall).

Off Martha's Vineyard, 506 fathoms. West Indies, 399 and 502½ fathoms (t. Dall).

Addisonia paradoxa Dall.

This volume, p. 405.

Off Martha's Vineyard, 69 to 130 fathoms, 1881.

Mr. Dall has recently informed me that he has received from Mr. Jeffreys a shell belonging to this genus, and perhaps identical with this species, judging from the shell only. Mr. Jeffreys identifies the shell referred to with *Gadinia excentrica* Tiberi.

POLYPLACOPHORA.

Chætopleura apiculata (Say) Carpenter.

Chiton apiculatus Say; Gould, Invert. Mass., ed. ii, p. 258, fig. 522.

Off Martha's Vineyard, station 938, in 310 fathoms. One young specimen. Common in shallow water. Possibly the apparent occurrence in deep water was due to the accidental lodgment of the specimen in the seive, from some previous dredging.

GYMNOGLOSSA.

Stilifer Stimpsonii Verrill, 1872.

A living specimen of this species occurred at station 1028, in 410 fathoms, 1881. In 1880 it was taken in considerable numbers at stations 814, 823, 824, in 13 to 27 fathoms, off Block Island. These were living on the upper surface of the common sea-urchin (*Strongylocentrotus Drö-bachiensis*). New Jersey to Nova Scotia!

Stilifer curtus Verrill.

Trans. Conn. Acad., v, p. 535, July, 1882.

Shell broader than high, with a very low spire, nearly concealed by the ventricose body-whorl, which nearly envelopes the preceding whorls;

nucleus minute, only a little prominent. Aperture large, nearly as long as the shell, lunate; surface smooth, white.

Station 1028, in 410 fathoms; one living example. Host not known.

Turbonilla Emertoni Verrill.

Verrill, Trans. Conn. Acad., v, p. 536, pl. 58, figs. 14, 14*a*.

Shell small, white, lustrous, elongated, with a very slender, acute spire. Whorls eleven, not very oblique, broadly rounded, a little flattened at the periphery; suture strongly impressed; surface very smooth and glossy, without any spiral lines, but with slight, rather indistinct and irregular longitudinal furrows, which are often absent. Apical whorl small, strongly upturned.

Aperture small; outer lip flattened, projecting a little anteriorly (more or less broken in all my specimens). Columella nearly straight, with no trace of a fold.

Length, 4.8^{mm}; breadth, 1.2^{mm}.

Off Martha's Vineyard, station 895, in 238 fathoms, 1880.

This shell resembles *T. nivea* Stimpson, which also occurs in the same region, but the latter is a longer and larger shell, with a decidedly smaller and more prominent upturned nucleus, and is strongly and regularly longitudinally ribbed.

Named in honor of Mr. J. H. Emerton, for several seasons zoological artist of the Fish Commission.

Turbonilla Bushiana Verrill.

Trans. Conn. Acad., v, p. 537, pl. 58, fig. 16.
Turbonilla formosa Verrill and Smith, in Verrill, Amer. Jour. Sci., xx, p. 398, 1880; Proc. Nat. Mus., iii, p. 380, 1880 (*non* Jeffreys, Ad.).

The name *formosa* having been previously used, I propose to name this species *Bushiana*, in honor of Miss K. J. Bush, an excellent assistant in the conchological work of the U. S. Fish Commission.

Eulimella Smithii Verrill.

Trans. Conn. Acad., v, p. 538, pl. 58, fig. 18.
Turbonilla Smithii Verrill, Proc. Nat. Mus., iii, p. 380, 1880.

This species seems to belong to *Eulimella* rather than to *Turbonilla*, if the two groups be kept apart.

Menestho striatula (Couthouy) Verrill.
Menestho albula Gould, Invert. Mass., ed. ii, p. 333, fig. 604 (*non* Fabr., sp.).

Crab Ledge, off south side of Cape Cod, 10 to 15 fathoms.

Menestho Bruneri Verrill.

Menestho Bruneri Verrill, Trans. Conn. Acad., v, p. 539, July, 1882.

Shell small, white, with an elongated, acute-conical spire, the apical whorl very small, upturned, and incurved. Whorls six, with a rounded shoulder close to the suture, the portion next the suture rising abruptly, nearly at a right angle; periphery flattened or very slightly rounded;

suture little oblique, impressed, or subcanaliculate. Aperture narrowly contracted posteriorly, narrow ovate anteriorly; outer lip little convex, slightly produced anteriorly; columella excurved, flattened, with no fold nor tooth. Sculpture delicate, incised, spiral grooves, separated by wider intervals, and covering the anterior two-thirds of the body-whorl, extending a little back of the aperture, but mostly absent on the preceding whorls. No umbilicus.

Length, 5^{mm}; breadth, 2.5^{mm}; length of body-whorl, 3.5 ^{mm}; of aperture, 2.5^{mm}; its breadth, 1^{mm}.

Off Newport, R. I., station 892, in 487 fathoms, 1880.

Named for Mr. H. L. Bruner, an assistant, during the season of 1881, in the conchological work of the Fish Commission.

TECTIBRANCHIATA.

Actæon nitidus Verrill.

Auriculina insculpta Verrill, these Proc., iii, p. 381, 1880 (*non* Mont., sp.)
Actæon nitidus Verrill, Trans. Conn. Acad., v, p. 540, pl. 58, fig. 21.

Shell small, white, translucent, glossy, elongated, apex obtuse. Nuclear whorl rather large, regular. Whorls six, flattened at the periphery, gradually increasing, slightly roundly shouldered. Sculpture delicate, wavy, incised spiral lines, more distant and distinct on the anterior part of the body-whorl, becoming finer, closer, and more wavy behind the middle, obsolete near the suture, except one fine subsutural groove; suture impressed or slightly canaliculate. Aperture narrow-ovate, much contracted posteriorly, a little produced anteriorly; columella spirally twisted, the inner edge forming a slightly raised fold.

Length, 8^{mm}; breadth, 3^{mm}; length of body-whorl, 5.5^{mm}; length of aperture, 3.5^{mm}; its breadth, 1.8^{mm}.

Stations 892 and 947, in 487 and 312 fathoms, 1880 and 1881, south of Martha's Vineyard.

Cylichna Gouldii (Couth.) Verrill.

Bulla Gouldii Couthouy, Bost. Jour. Nat. Hist., ii, p. 181, pl. 4, fig. 6, 1838.
Utriculus Gouldii Stimpson; Gould, Invert. Mass. (ed. ii), p. 217, fig. 508.
Cylichna Gouldii Verrill, Proc. U. S. Nat. Mus., iii, p. 383, 1880.

Crab Ledge, off Chatham, Cape Cod, station 973. Stellwagen's Bank, Massachusetts Bay, in 15 to 25 fathoms, 1879.

Cylichna? Dalli Verrill.

Trans. Conn. Acad., v, p. 542, July, 1882.

Shell white, somewhat thickened when full grown, translucent when younger, elongated, broadest about the middle, narrowed to both ends, most so posteriorly; apex with a distinct pit, showing volutions within; no umbilicus; whole surface covered with fine, regular, wavy spiral lines, visible with a lens. Outer lip with a free, sharp edge, rising slightly above the body-whorl posteriorly, and separated from it by a deep, narrow slit; it is very slightly convex and a little flaring along the

middle, anteriorly rounded and sharp to its union with the inner margin. Aperture very narrow posteriorly, suddenly enlarging to an ovate form anteriorly, by the decided excurvature of the inner margin. Animal unknown.

Length of largest example, 10^{mm}; breadth, 5.25^{mm}.

Stations 997 and 999, in 335 and 266 fathoms.

Philine tincta Verrill.

Trans. Conn. Acad., v, p. 544, July, 1882.

Shell very thin, rather large, irregularly oblong, broad, widest in the middle, not polished, tinged with smoky brown; surface without distinct spiral lines, covered with very evident, close, raised, wavy lines of growth. Apex rounded, neither spiral nor depressed. Outer lip rising a little above the body-whorl, and separated from it by a simple wide sinus, flaring, convex, and slightly angulated in the middle, a little narrowed and well-rounded anteriorly; a spiral fold where the inner lip passes into the shell, in front of the prominent body-whorl.

Length, 10.75^{mm}; breadth, 8^{mm}; breadth of aperture, 7^{mm}.

Station 921, in 65 fathoms; two living specimens.

Choristidæ Verrill.

The peculiar structure of the animal of the following species, and of its radula, will not allow it to be placed in any established family. Therefore, I propose to make it the type of a new family, *Choristidæ*.

This family may be characterized by the heliciform shell, with the periostraca continuous between the whorls; lip continuous; columella without a fold; operculum horny, paucispiral. Animal with frontal tentacles united by a fold, and with simple posterior tentacles. Jaws well developed; pharynx large, retractile.

Radula with three rows of rachidian teeth, the central ones small; with broad, bilobed, inner lateral teeth; and two rows of small, hook-shaped outer lateral ones. Gill composed of numerous lamellæ, attached to the inner surface of the mantle on the left side and over the neck.

The position of this family is doubtful. Its head, tentacles, pharynx, &c., resemble those of many *Tectibranchs*. Its dentition is, apparently, unique.

Choristes elegans Carp., var. **tenera** V.

Verrill, Trans. Conn. Acad., v, p. 541, pl. 58, figs. 27, 27*a*.

Choristes elegans Carpenter, Canadian Nat., p. 392, pl. 7, fig. 13, 1872.

Shell thin, fragile, short, heliciform, with a low spire, and a very large, ventricose body-whorl. Whorls, in our largest examples, four to five, very convex, evenly rounded; apical whorl small, spiral, oblique; suture impressed; surface smooth (the epidermis is destroyed and the surface of the shell is eroded in all the living examples). The whorls are in contact and united, but the epidermis continues around the whorls between

or in the sutures. Aperture large, forming more than a half-circle; outer side well rounded, nearly straight on the columella-margin; lip continuous all around, raised up and with the edge slightly everted, in the umbilical region, so as to partially conceal the umbilicus, which is rather large and deep, nearly circular. Operculum spiral, thin, horny, round-ovate, with the nucleus excentric and with two to three rapidly increasing whorls.

The animals of several alcoholic specimens were examined. Head large, short, thick, rounded or truncate, with two short, flat, obtuse anterior tentacles, wide apart, but connected together by a transverse fold; posterior tentacles short, thick, conical, smooth; no eyes visible. Pharynx short, thick, retractile; jaws crescent-shaped, strong, black. Verge situated just below the right posterior tentacle, small, papilliform, swollen at base; below this and farther back, a larger and thicker papilla, with basal swelling; on each side, between the mantle and foot, at about mid-length of the foot, a small mammiform papilla; two small, flat cirri behind and beneath the operculum. Foot broad, ovate, with two tentaculiform processes in front.

The largest specimens are badly broken; some of them were about 10^{mm} in length; greatest diameter of operculum, 6^{mm}; its breadth, 4.5^{mm}. A perfect, but small, specimen is 6^{mm} long; breadth, 6^{mm}; length of body-whorl, 5.2^{mm}; length of aperture, 4^{mm}; its breadth, 3.2^{mm}.

Station 1031, off Martha's Vineyard, in 255 fathoms, 1881. About a dozen specimens, all living, were taken from the interior of an old egg-case of a skate (*Raia*, sp.). Most of them were badly broken.

I have compared these specimens directly with original specimens of the fossil *Choristes elegans*, found in the post-pliocene of Canada by Principal J. W. Dawson, who very kindly sent me specimens, both adult and young.

Our specimens agree very closely with the smaller fossil ones in form and structure. The principal difference is in the much thinner and more fragile texture of the recent shells. This may be due to mere local conditions. Therefore, until more specimens of the recent shells are obtained, I prefer to consider it a thin and delicate variety of the ancient type.

Koonsia Verrill.

Trans. Conn. Acad., v, p. 545.

Allied to *Pleurobranchæa*, with which it agrees in the character of the head, tentacles, proboscis, and gill. It differs in having the back swollen and overhanging, both on the sides and posteriorly, with a distinct mantle-edge all around, and with a wide groove between it and the foot posteriorly, as well as laterally; the foot is narrower and prolonged posteriorly, with a specialized glandular groove near the end, beneath, and a conical papilla above, near the tip.

The external reproductive organs appear less complicated than in *Pleurobranchæa*.

The verge is armed with small hooks, but the spicule, present in the latter genus, is not protruded in any of our specimens of *Koonsia*, if present.

Koonsia obesa Verrill.

Trans. Conn. Acad., v, p. 545, July, 1882.

Body large, stout, broad, with a large swollen back, smooth and white in the preserved specimens, and defined by the mantle-edge, which forms a rim along the lateral and posterior borders. Head large and broad, with two short, flat, posteriorly grooved, anterior tentacles, one at each corner; the anterior mantle-border runs between them, and supports a row of small papillæ. Posterior tentacles short, stout, flattened, ear-like, with the outer edges incurved, forming a large groove.

Foot broad and rounded anteriorly, with small auricles; long, tapered and acute posteriorly, extending some distance beyond the mantle; a conical papilla, near the tip, above; under side, near the end, with a narrow, elongated, depressed, glandular area, surrounded by a raised border; this is sometimes tinged with bright red, in alcohol; the rest of the foot is usually tinged with chocolate-brown.

Gill large, bipinnate, deep purple.

This species grows to a great size. One, from station 939, was over 5 inches (128^{mm}) long; 4 inches (102^{mm}) wide; and about 2 inches (50^{mm}) high, even after preservation in alcohol.

Off Martha's Vineyard, stations 895, 939, 946, 1025, in 216 to 258 fathoms. Off Delaware Bay, station 1045, in 312 fathoms. At station 946, in 241 fathoms, seven young specimens were taken, some of them not over 1 inch long; these were associated with *Pleurobranchæa tarda*.

This genus is dedicated to Mr. B. F. Koons, of the U. S. Fish Commission, in 1880 and 1881.

NUDIBRANCHIATA.

Issa ramosa Verrill and Emerton.

Verrill, Amer. Journ. Sci., xxii, p. 301, 1881; Trans. Conn. Acad., v, p. 547, pl. 58, figs. 36, 36*a*.

Stations 940 and 949, in 130 and 100 fathoms.

Heterodoris robusta Verrill & Emerton.

Heterodoris robusta Verrill and Emerton, Verrill, Trans. Conn. Acad., v, p. 549, pl. 58, figs. 35, 35*a*, 35*b*.

Off Martha's Vineyard, station 1029, in 458 fathoms.

Dendronotus arborescens Alder & Hancock.

Verrill, Proc. Nat. Mus., iii, p. 385, 1880.

Station 1038, in 146 fathoms, 1881; several specimens.

Fiona nobilis Alder & Hancock.

Verrill, Amer. Journ. Sci., xxii, p. 301, 1881.

Abundant at stations 935, 995, among *Anatifers*, adhering to pieces of floating timber.

Eolis papillosa (Linné).

Station 1032, in 208 fathoms, 1881.

Coryphella, sp. nov.

Station 1038, in 146 fathoms.

PTEROPODA.

Triptera columnella Rang.

Station 947, about 89 miles south of Martha's Vineyard, 1881.

LAMELLIBRANCHIATA.

Xylophaga dorsalis (Turton) Forbes & Han.

Verrill, these Proc., ii, p. 197, 1879; Trans. Conn. Acad., v, p. 559, pl. 44, fig. 9, July, 1882.

Off Martha's Vineyard, stations 880, 998, in 252 and 302 fathoms. North of Cape Cod, in 20 to 110 fathoms.

Mya truncata Linné.

Off Martha's Vineyard, station 991, in 34 fathoms; one, dead.

Pholadomya arata Verrill & Smith.

Verrill, Amer. Journ. Sci., xxii, p. 301, 1881; Trans. Conn. Acad., v, p. 567, pl. 58, fig. 37.

Stations 871, 940, 949, 950, in 69 to 130 fathoms, 1880, 1881.

Mytilimeria flexuosa Verrill & Smith.

Verrill, Amer. Journ. Sci., xvii, p. 302, 1881; Trans. Conn. Acad., v, p. 567, pl. 58, fig. 38.

Station 947, in 312 fathoms, 1881.

Neæra perrostrata (Dall).

Neæra ornatissima (D'Orbigny), var. *perrostrata* Dall, Bulletin Mus. Comp. Zool., ix, p. 110, 1881.

This shell has been examined by Mr. Dall and identified with those from the "Blake" expedition.

Stations 871, 874, 876, 1880, in 85 to 120 fathoms. Gulf of Mexico, 339 fathoms,—Dall.

Neæra obesa Lovén.

G. O. Sars, Moll. Reg. Arct. Norvegiæ, p. 87, pl. 6, figs. 4, *a–c*, 1878.

Off Martha's Vineyard, stations 869, 891 to 895, 898, in 192 to 500 fathoms; stations 938, 947, 994, 997, 998, 1028, in 302 to 410 fathoms, 1881. Bay of Fundy, 1872; Gulf of Maine, 52 to 92 fathoms, 1873, 1874; off Cape Cod, 106 fathoms, 1879.

Verticordia cælata Verrill.

Trans. Conn. Acad., v, p. 566, July, 1882.

Station 949, in 100 fathoms, 1881.

Syndosmya lioica Dall.

Bulletin Mus. Comp. Zool., ix, p. 133, 1881.

Station 871, in 115 fathoms, 1880, one broken specimen; station 949,

100 fathoms, three specimens. Gulf of Mexico, 30 to 805 fathoms, "Blake" exp. (t. Dall).

I have compared our shell with specimens sent to me by Mr. Dall.

Spisula ovalis (Gould).

Stations 941, 950, off Martha's Vineyard, in 69 to 76 fathoms, dead; also at stations 965, 975, 976, 978, 981 to 983, off the south side of Cape Cod, in 15 to 41 fathoms.

Cardium (*Fulvia*) *peramabilis* Dall.

Dall, Bulletin Mus. Comp. Zool., ix, p. 132, 1881.

Cardium, sp. Verrill, Proc. Nat. Mus., iii, p. 407, 1880.

Station 871, in 115 fathoms, 1880; one valve. Gulf of Mexico 50 to 119 fathoms, "Bache" and "Blake" exp. (t. Dall).

I have identified our shell by direct comparison with specimens sent to me by Mr. Dall.

Diplodonta turgida Verrill & Smith.

Verrill, Amer. Journ. Sci., xxii, p. 303, 1881; Trans. Conn. Acad., v, pl. 58, fig. 42.

Station 950, in 69 fathoms, 1881.

Cryptodon subovatus? (Jeffr.). V.

Axinus suboratus Jeffreys, Proc. Zool. Soc. London, for 1881, p. 704, pl. 61, fig. 8, 1882.

A single specimen, from station 891, in 500 fathoms, appears to be this species. It is very thin and delicate, and very inequilateral.

Montacuta ovata Jeff.

Jeffreys, Proc. Zool. Soc. London, for 1881, p. 698, pl 61, fig. 4, 1882.

Verrill, Trans. Conn. Acad., v, p. 571, July, 1882.

Off Martha's Vineyard, 100 to 153 fathoms, living. These shells are encrusted with a thick coat of iron oxide. Perhaps the encrusted shells, recorded by me in 1880 as *Tellimya ferruginosa*, was the same species. The specimens were too much eroded for accurate determination.

Solemya velum (Say), var. *borealis* (Totten).

Off Chesapeake Bay, station 898, in 300 fathoms; one living specimen.

Dead shells of *S. velum* were taken off Martha's Vineyard, station 871, in 115 fathoms. I regard *S. borealis* as the adult of *S. velum*.

Leda unea Gould.

Verrill, these Proc., iii, p. 401, 1880.

Mr. Dall has identified our shells with those taken in the Gulf of Mexico by the Blake exp., in 54 to 640 fathoms.

He refers them to *L. Jamaicensis* D'Orbigny. I am not satisfied that this identification is correct, for D'Orbigny's figure is not very like our shells, of which we have taken large numbers.

Additional localities, in 1881, were stations 921, 949, 951, 1038, in 65 to 219 fathoms.

Leda tenuisulcata (Couth.) Stimpson.

Station 973, in 17 fathoms, off south side of Cape Cod. Off Chesapeake Bay, station 898, in 300 fathoms.

Leda pernula (Müller).

Station 1025, in 216 fathoms. Off Halifax, 59 fathoms.

Nucula tenuis (Mont.) Turton.

Stations 895, 943, 997 to 999, in 153 to 335 fathoms.

Modiolaria nigra (Gray) Lovén.

Station 921, in 65 fathoms, 73 miles south of Martha's Vineyard; also at stations 985, 986, 991, 993, off Martha's Vineyard, in 26 to 39 fathoms. Off Chesapeake Bay, station 900, in 31 fathoms.

Modiolaria corrugata (Stimpson) Mörch.

Station 918, in 45 fathoms, 61 miles south of Martha's Vineyard.

Modiolaria polita Verrill and Smith.

Modiola polita Verrill and Smith, in Verrill, Amer. Journ. Sci., xx, pp. 392, 400, Nov., 1880; Verrill, Proc. U. S. Nat. Mus., iii, p. 402, Jan., 1881; Trans. Conn. Acad., v, p. 578, July, 1882.

Dall, Bulletin Mus. Comp. Zool., ix, p. 116, 1881.

Mytilus luteus Jeffreys, French Expl. in Bay of Biscay, in Rept. Brit. Assoc., 1880 (no description); Ann. and Mag. Nat. Hist., Oct., 1880, p. 315 (no description).

Modiola lutea Fischer, Jour. de Conchyl., iii, vol. xxii, p. 52, Jan., 1882.

Two living specimens were taken at station 895, in 238 fathoms. Gulf of Mexico, 339 fathoms, "Blake" Exp. (t. Dall). Mr. Dall has compared his specimens with our original types. Bay of of Biscay, 677 to 960^{m},—Jeffreys, Fischer.

Mr. Dall has suggested that this species belongs to *Modiolaria*, rather than to *Modiola*. In this opinion I am disposed to concur. It forms a large nest of byssus-fibers and mud. The largest examples show fine radiating lines.

Idas argenteus Jeff., var. **?lamellosus** Verrill.

Trans. Conn. Acad., v. p. 579, July, 1882.

Idas argenteus Jeffreys, Annals and Mag. Nat. Hist., Nov., 1876, p. 428; Proc. Zool. Soc. London, 1879, p. 570, pl. 45, fig. 3.

This shell is thin, translucent, covered with a yellowish epidermis; umbos and hinge reddish brown; inner surface iridescent; sculpture, distinctly raised thin concentric lamellæ, which are not crowded; no radiating lines. Some of the specimens have several horny, sharp, stiff, beard-like processes projecting from the posterior and dorsal surfaces. One of the largest specimens is 5.5^{mm} long; greatest height, 2.2^{mm}.

Station 997, in 335 fathoms; several living specimens.

Pecten glyptus Verrill.

Trans. Conn. Acad., v, p. 580, July, 1882 (description).

Pecten, sp., near *opercularis* Verrill, Proc. Nat. Mus., iii, p. 403, 1881.

Amussium fenestratum (Forbes) Jeffreys.
Jeffreys, Proc. Zool. Soc. London, 1879, p. 561.
Verrill, Trans. Conn. Acad., v, p. 582, July, 1882 (description).
Pecten fenestratus Forbes, Rept. Brit. Assoc. for 1843, pp. 146, 192, 1844.
Verrill, Proc. Nat. Mus., iii, p. 403, Jan., 1881 (description).
Pecten inæquisculptus Tiberi (t. Jeffreys).

This elegant species has been dredged, living, at several stations off Martha's Vineyard, in 86 to 310 fathoms. It was most numerous at stations 949 and 1040, in 100 and in 93 fathoms.

It occurs on the European coasts, off Portugal and in the Mediterranean Sea; from 50 to 250 fathoms.

DESCRIPTIONS OF SOME NEW NORTH AMERICAN BIRDS.

By ROBERT RIDGWAY.

1. Catherpes mexicanus punctulatus, subsp. nov.

CH.—In coloration, somewhat intermediate between *C. mexicanus* (*typicus*) and *C. conspersus* (paler than the former, darker than the latter), but in dimensions agreeing best with the latter.

Adult: Above dull rusty brown, less reddish anteriorly, the whole top of head, nape, back, and scapulars distinctly speckled with white, each white dot immediately preceded by an equally distinct one of dusky; rump and outer surface of wings ferruginous, the former nearly immaculate, the latter rather coarsely barred with black; upper tail-coverts chestnut-rufous, each feather with a white terminal and black subterminal dot. Tail clear rusty rufous, crossed by about seven or eight narrow, irregular bars of black, these less than .05 of an inch broad on the middle feathers, and about .10 of an inch wide on the outer pair. Chin, throat, and jugulum silky white (more or less tinged with ochraceous), passing gradually on the breast into soft ochraceous, this changing to rich ferruginous on sides, abdomen, and remaining lower parts, the parts thus colored marked, more or less distinctly, with black dots or bars, and, in some specimens, white terminal specks. Bill dusky, the mandible paler; iris brown; legs and feet brownish black or dark brown. Wing 2.25–2.40 (2.32), tail 2.00–2.20 (2.12). culmen .75–.85 (.81), bill from nostril .52–.65 (.60), tarsus .68–.72 (.70), middle toe .50–.58 (.53). (Five specimens.)

Hab.—California, north to San Francisco and the Calaveras River.

The Californian specimens of this species appear to differ uniformly from examples obtained in the Interior, in the characters indicated above. They are all decidedly darker in coloration, approaching in this respect the typical *C. mexicanus* of Mexico, but they are much smaller than the latter race. Compared with a series of seven examples of *C. conspersus*, as to dimensions, five examples of *punctulatus* average the same in length of wing, .05 of an inch less in length of tail, the middle toe and tarsus