arising from the summit of the stout and rather long pedicels.* There are usually five or more main divisions in good-sized specimens, these spread outward from one point, are recurved at the ends, and flexuous and bipinnately branched, the lower pinnæ being longest each time, and the ultimate divisions very numerous, fine, slender, and acute. The branchiæ of the posterior pair, in normal specimens, are considerably smaller, with the divisions less numerous, and the ramuli longer and more delicate. The pedicels of the anterior branchiæ are about as long as the diameter of the body, and are very contractile, as well as the branches, so that the gills can be contracted into a small compass and withdrawn under the dorsal collar, beneath which the pedicels arise. This branchial collar is formed by the prolongation of the margin of the third segment; on each side of the median line above, it is divided into two narrow, lanceolate processes directed forward; exterior to these there are two other wider and usually less prominent angles or lobes; laterally, the collar is prominent, with a broadly rounded, thin margin, which forms another angle on each side beneath; on the ventral side its edge recedes and is but little raised. The tentacular collar, formed by the second segment, expands into a broad, rounded, prominent lobe on each side; and on the ventral surface becomes narrower, though still prominent, and recedes in a broad, rounded sinus behind the posterior lobe of the mouth. The cephalic segment is bordered by a rather broad frontal membrane, emarginate above, and broadly rounded laterally. Tentacles very numerous, long, and slender. Color, light red, brownish red to dark reddish brown; the annulations often darker; the upper surface is usually more or less specked with flake-white; along each side, below, there is usually a row of squarish spots, brighter red than the rest of the body, each pair connected by a narrow, transverse line of red between the ventral shields, which are dull yellowish red; the segments along the sides are often bordered with red; branchiæ usually green, specked on the outer sides of the branches with flake-white, and with internal blood-red vessels, showing distinctly in all the divisions; the pedicel is usually bright red; tentacles, flesh-color.

Length up to 70^{mm}; diameter, 3^{mm}.

Great Egg Harbor to New Haven and Vineyard Sound; low-water mark to one fathom.

LEPRÆA RUBRA Verrill, sp. nov. (p. 382.)

Body elongated, somewhat swollen anteriorly, rapidly tapering to the very long, slender, posterior portion. All the segments posterior to the branchiæ bear small fascicles of slender setæ, as well as uncini; posterior to the twenty-fifth setigerous segment the uncigerous feet become

* In mentioning this species, on page 321, it was stated that it has but three gills, and, in fact, this is the most frequent number. Among the numerous examples examined, I have only recently found a specimen with both pairs of gills in their normal condition.

much narrower and more prominent; anteriorly they are very broad. Ventral plates rather broad anteriorly, those posterior to the seventh or eighth suddenly narrowed. Branchiæ in three pairs, small, finely arborescently divided, the divisions numerous; posterior pair considerably smaller than the others. Cephalic lobe with a somewhat prolonged frontal border, broadly rounded in front, with an entire margin. Color bright red; tentacles flesh-color.

Length, 50^{mm} or more; diameter, 2.5^{mm} to 3^{mm}.

Vineyard Sound; Wood's Hole on piles of wharves just below low-water mark.

POLYCIRRUS EXIMIUS Verrill. Plate XVI, fig. 85. (p. 320).

Torquea eximia Leidy, op. cit, p. 14 (146), Plate 11, figs. 51, 52 (setæ), 1855.

In this species there are twenty-five setigerous segments, bearing small fascicles of long, slender setæ; about seventy posterior segments bear uncini only; anteriorly the uncini commence on the eighth setigerous segment. There are nine ventral shields, divided by a median ventral sulcus. The frontal lobe of the head is large, elongated oval or elliptical. The posterior lobe of the mouth is large, rounded. Body and tentacles bright blood-red; the body is often more or less yellowish posteriorly.

Great Egg Harbor to New Haven and Vineyard Sound; low-water to 10 fathoms.

A species of this genus was also dredged in 19 fathoms off Gay Head, but its identity with the above is uncertain. Another species, remarkable for its brilliant blue phosphorescence, is common in the Bay of Fundy. The *P. eximius* does not appear to be phosphorescent.

CHÆTOBRANCHUS Verrill, genus nov.

Allied to *Polycirrus* and, like the latter, destitute of blood-vessels. Body much elongated, composed of very numerous segments, nearly all of which bear fascicles of setæ. Segments of the middle region bear simple, or more or less branched, branchial cirri, each of their divisions tipped with slender setæ; these cirri are wanting on the anterior and posterior segments, the first and last ones being smaller and more simple than the rest. The cephalic segment expands into a broad, tentacular or frontal lobe, which is rounded or emarginate anteriorly, and often more or less scolloped laterally. Tentacles crowded, very numerous, long and slender in extension, capable of being distended by the blood, as in *Polycirrus*, &c.

CHÆTOBRANCHUS SANGUINEUS Verrill, sp. nov. (p. 320.)

Body greatly elongated, much attenuated posteriorly, more or less swollen anteriorly, but narrowed toward the head, the thickest portion being usually between the tenth and fifteenth segments. The branchial cirri commence at about the ninth segment, those of the first pair being short, simple cirri; those on the next segment are once forked; those on

the next have three or four branches; farther back they divide dichotomously above the base into numerous branches, all of which are supported upon a short basal pedicel, which may be a little elongated in expansion, the total length of the branchiæ being then greater than the diameter of the body; the branches are clustered, slender, delicate, and elongated, and each one is terminated by a small fascicle of slender, sharp, serrate setæ two to four or more in a group, so that the entire appendage may be regarded as a very remarkable enlargement and modification of the setigerous lobes of the "feet."

On the segments anterior to the ninth the setigerous lobes of the feet are short, conical, swollen at base, and bear a small fascicle of setæ; the ventral surface of the anterior segment is somewhat raised, and divided by a series of sulci or wrinkles into several lobes or crenulations, which are somewhat prominent and papilliform at the posterior margin of each segment, and have a granulous surface. There is a distinct median ventral sulcus. Between the adjacent branchial cirri anteriorly there are, on each side, four or more thickened, somewhat raised, squarish organs, with a granulous and apparently glandular structure; farther back these are reduced to two, then to one, and finally disappear on the segments of the posterior region, which is very long, slender, attenuated, composed of very numerous short segments, with only rudimentary appendages; after the branchial cirri become reduced to simple processes they still continue, on about forty segments, gradually decreasing in length and size; beyond this small setæ still exist on the segments, till near the end of the body. Anal segment small and simple, the orifice with slightly crenulated margins. Frontal membrane large and broad, versatile in form, often with a deep emargination in front, each lateral lobe divided into two or three subordinate lobes, or unequal scollops, the edges undulated; at other times the front edge and sides are broadly rounded and entire. The mouth is furnished with a large elongated ovate lobe, which is rounded, free, and prominent posteriorly. Tentacles very long, much crowded, and very numerous; in extension usually as long as the body. Color of body, anteriorly, deep blood-red; posteriorly, more or less mottled or centered with yellow, owing to the internal organs showing through the integument; tentacles and branchial cirri bright blood-red.

Length up to 350^{mm}; diameter 5^{mm} to 7^{mm} or more anteriorly; length of tentacles, in extension, 400^{mm} or more.

Great Egg Harbor to New Haven and Vineyard Sound; common at low-water mark, in mud.

POTAMILLA OCULIFERA Verrill. Plate XVII, fig. 86. (p. 322).

Sabella oculifera Leidy, op. cit., p. 13 (145), Plate 11, figs. 55–61, 1855.

Great Egg Harbor to New Haven; Vineyard Sound, low-water mark to 25 fathoms, off Buzzard's Bay. In the Bay of Fundy from low-water mark to 60 fathoms.

Closely related to *P. reniformis* of Northern Europe, and possibly identical with it.

SABELLA MICROPHTHALMA Verrill, sp. nov. (p. 323.)

Body rather short and stout, narrowed slightly anteriorly, tapering rapidly close to the posterior end, composed of about sixty segment, depressed, moderately convex above, flat below, especially when preserved in alcohol; anterior region composed of eight setigerous segments, having moderately long fascicles of setæ; posterior region composed of about fifty short segments, bearing very small fascicles of setæ; anal segment small, simple, with two very small ocelli-like spots; ventral shields of the anterior segments short, transversely narrow, oblong; median sulcus very distinct in the posterior region, dividing the ventral shields into two nearly rectangular parts, which are broader than long. Branchiæ numerous and long, often half as long as the body, connected by a slight web close to the base; the stalks smooth, with numerous minute ocelli, in two irregular rows; pinnæ numerous, long and slender; tips of the branchiæ without pinnæ. Collar broadly interrupted above, flaring and reflexed at the sides, with rounded upper angles, erect and sinuous at the latero-ventral margins, reflexed below, forming two short, rounded lobes, separated by a narrow but deep central sinus, within which there is a short bilobed organ. Tentacles thin, lanceolate, acute, in preserved specimens not so long as the diameter of the body. The anterior segment is divided by a deep dorsal sulcus, which is not conspicuous on the succeeding segments. Color of body greenish yellow, dull olive-green, or greenish brown; branchiæ pale yellowish, greenish, or flesh-color, often with numerous transverse bands of lighter and darker green, which extend to the pinnæ, and sometimes blotched with brown; collar translucent, specked with flake-white; ocelli dark reddish brown. Specimens, apparently belonging to this species, were taken from wood bored by *Teredo*, near New Haven. These had the body olive-green, specked with flake-white anteriorly, on the ventral side, especially on the first two segments; branchiæ mottled with greenish brown and white and specked with flake-white; ocelli brown, numerous.

Length, 30^{mm}; diameter, 2.5^{mm} to 3^{mm}. Preserved specimens are about 20^{mm} long, 2.5^{mm} broad.

New Haven to Vineyard Sound; low-water mark to 5 fathoms.

EUCHONE ELEGANS Verrill, sp. nov. Plate XVI, fig. 84. (p. 432).

Body rounded, slender, gradually tapered backward; the anterior region, which forms about one-half of the entire length, consists of eight setigerous segments; these are biannulated and divided by a dorsal, longitudinal sulcus, and by a lateral sulcus on each side below the uncigerous lobes. The middle region consists of thirteen shorter biannulated segments, which bear small fascicles of setæ on the lower rami; these are divided by a ventral sulcus, and also by the lateral ones. The caudal region consists of about ten very short segments; all of which, except the last, bear small fascicles of setæ. These segments are margined by a rather broad membrane, wider and rounded

anteriorly, narrowing to the end. Collar broad, with a nearly even margin, often somewhat sinuous at the sides, divided above and below, the lobes rounded at the angles. The collar is a little broader below than above. Branchiæ long, slender, recurved in expansion, connected by a broad and very thin membrane, continued as thin borders of the branchiæ to their tips, which are destitute of pinnæ for some distance. Body pale flesh-color, with a darker median line, reddish anteriorly, darker greenish or brownish, posteriorly; branchiæ pale yellowish or greenish, each with a flake-white spot near the base outside. Other specimens were greenish gray, with green branchiæ. Some were flesh-color, with a bright-red dorsal vessel; the branchiæ flesh-color, without the white spots at the base.

Length, in extension, about 20^{mm}; diameter of body, 1.5^{mm}.

Deep water off the mouth of Vineyard Sound; off Martha's Vineyard, in 21 and 23 fathoms; off Block Island, in 29 fathoms, sandy mud, abundant. Cosco Bay, 7 to 20 fathoms.

This species makes slender tubes, covered with fine sand.

FABRICIA LEIDYI Verrill, sp. nov. (p. 323.)

Body very small and slender, tapering a little to both ends, in extension considerably exsert from the slender tube; eleven segments bear fascicles of setæ; the segments are about as long as broad, slightly constricted at the articulations, with the anterior margin a little prominent; anal segment small, tapered to a blunt point, bearing two small, dark ocelli. Branchiæ six, subequal, forming three symmetrical pairs, each one with five to seven slender pinnæ on each side; the basal pinnæ are about as long as the main stem, the others successively shorter, so that all reach to about the same level. Tentacles short, thick, bluntly rounded at the end, strongly ciliated. At the base of the branchiæ, on each side, is a red, pulsating vesicle, the pulsations alternating in the two; just back of these, on the first segment, are two brown ocelli; a little farther back, and near together, on the dorsal side, are two auditory vesicles, each with a round central corpuscle. The fourth and eleven succeeding segments bear small fascicles of acute, bent setæ, about as long as half the diameter of the body; on the middle segment there are about four or five setæ in a fascicle; on the ninth, three; on the tenth, two; on the eleventh, one or two, in the specimens examined. Intestine rather wide, but narrowed at the eighth setigerous segment, and after that slender, bordered by a red blood-vessel on each side. In the fourth setigerous segment there are three globular granulated organs. color, yellowish white, tinged with red by the circulating fluid.

Length about 3^{mm}; diameter about 0.25^{mm}; expanse of branchiæ, 0.8^{mm}. The specimens measured may be immature.

New Haven to Vineyard Sound, common at and below low-water mark; Cisco Bay.

SERPULA DIANTHUS Verrill, sp. nov. (p. 322.)

Body elongated, gradually attenuated to the posterior end; the posterior region considerably flattened; dorsal surface covered with minute papillæ and having a finely pubescent appearance under a lens. Collar broad and long, in living specimens sometimes one-third as long as the body; the posterior portion free dorsally, and in expansion about as long as the attached portion, extending backward and gradually narrowing to the end; the margins thin and undulated; the anterior border is divided into a broad revolute dorsal lobe, with an undulated margin, and two narrower lateral lobes, which are broadly revolute laterally, with the margin rounded and nearly even. Seven segments bear rather large fascicles of long, acute setæ. The first fascicle is remote from the next, and directed downward and forward, with the setæ longer than in the others; the six following fascicles are broad, and are directed downward and backward. The uncinate setæ form long transverse rows anteriorly, but toward the posterior end they form short rows. Operculum funnel-shaped, longitudinally striated externally, with a long, slender pedicel; the upper surface is concave, with about thirty small, acute denticles around the margin; an inner circle of about twelve long, slender papillæ, incurved at tips and united at base, arises from the upper surface of the operculum. On the left side is a small rudimentary operculum, club-shaped at the end, with a short pedicel. Branchiæ are long rather slender, united close to the base, about eighteen on each side, in mature specimens, those toward the ventral border considerably longer, than the upper ones; tips naked for a short distance, slender, and acute; pinnæ very numerous, slender. Colors quite variable, especially those of the branchiæ; the branchiæ are frequently purplish brown, transversely banded with flake-white, alternating with yellowish green, the pinnæ usually having the same color as the portion from which they arise; on the exterior of the branchiæ the purple bands are often divided by a narrow longitudinal line of whitish; operculum brownish green on the outer surface, purplish on the sides, with white longitudinal lines toward the margin, greenish white at base; pedicel purplish, banded with white; collar pale translucent greenish, veined with darker green; body deep greenish yellow, the dorsal surface light yellow. Many other styles of coloration occur, some of which are described on page 322.

Length up to 75^{mm}; diameter about 3^{mm}.

Great Egg Harbor to New Haven and Cape Cod; low-water mark to 8 fathoms.

The tubes are long, variously crooked, and often contorted, sometimes solitary, frequently aggregated into masses four or five inches in diameter. They are nearly cylindrical, with irregular lines of growth, and sometimes with faint carinations.

SERPULA DIANTHUS, var. CITRINA Verrill. (p. 322.)

I have applied this name to a very marked color-variety, in which the

branchiæ are lemon-yellow or orange-yellow, without bands, but usually with a reddish central line; the operculum is usually yellow; collar and base of branchiæ bright yellow; body light yellow.

Found with the preceding, and often in the same cluster of tubes.

VERMILIA (?), species undetermined. (p. 416.)

The species thus indicated forms slender, more or less crooked, angular tubes, with two distinct carinations on the upper surface; they are about half an inch long, attached firmly by one side along their whole length. The branchiæ form a wreath, with about six on each side; pinnæ long and slender; two or more of the branchiæ bear pink, sack-like appendages. The branchiæ are reddish brown, annulated with narrow bands of white.

Diameter of tubes, about 1.25^{mm}; of expanded branchiæ, 4^{mm}. The specimens have been lost, and no observations were recorded concerning the operculum, so that the genus is still uncertain.

Long Island Sound, off New Haven, in 4 to 6 fathoms, on shells.

SPIRORBIS BOREALIS Daudin (?).

Rec. des mém. de mollusques, 1800. *Serpula spirorbis* Linné, Systema Naturæ, ed. xii, p. 1265. (?) *Spirorbis spirillum* Gould, Invertebrata of Mass., ed. i, p. 8, 1841; A. Agassiz, Annals Lyceum Nat. History of New York, vol. viii, p. 318, Plate 7, figs. 20–25 (embryology), 1866 (not of Linné and other European writers).

New Haven to Cape Cod, the Bay of Fundy, and northward; abundant on *Fucus*, *Chondrus crispus*, and other algæ, at low-water mark.

Whether this, our most common species, be identical with the European species known by this name is still uncertain.

The animals of the various species of *Spirorbis* are still very imperfectly known, and many species have been described from the tubes alone. Accurate descriptions or figures of the animals are necessary before the species can be determined satisfactorily.

This species has nine branchiæ, five on one side and four on the other, with the operculum. The branchiæ are large and broad with long pinnæ, the basal ones shorter, the distal ones increasing in length to near the end, so that each branchial plume is somewhat obovate in outline; the tips are naked only for a short distance. The branchial wreath, in full expansion, is about as broad as the entire shell. The operculum is oblique and one-sided, and supported on a long clavate pedicel, which is transversely wrinkled, and expands gradually into the operculum at the end, the enlargement being chiefly on one side; the outer surface is roughly granulous and usually covered with adhering dirt. The collar is broad, and has three fascicles of setæ on each side. The branchiæ are pale greenish white, centered with brighter green, due to the circulating fluid.

This is the species mentioned in the early part of this report (p. 332) under the name of *S. spirillum*. The true *spirillum* of Linné as a translucent tube, and is found in deeper water, on hydroids, &c.

SPIRORBIS LUCIDUS Fleming.

Edinburgh Encyclop., vol. vii, p. 68; Johnston, Catalogue of British Non-Parasitical Worms, p. 349; Malmgren, Annulata polychæta, p. 123. *Serpula lucida* Montagu, Test. Brit., p. 506 (t. Johnston). *Serpula porrecta* Fabricius, Fauna Grœnlandica, p. 378 (*non* Müller). *Spirorbis sinistrorsa* Montagu, op. cit., p. 504; Gould, Invertebrata of Massachusetts, ed. i, p. 9, Plate 1, fig. 4, 1841.

Deeper parts of Vineyard Sound, near the mouth, in 10 to 12 fathoms, on hydroids and bryozoa; off Gay Head, 10 fathoms; off Buzzard's Bay, in 25 fathoms, on *Caberea Ellisii;* off Block Island, in 29 fathoms, on *Caberea;* Casco Bay, 6 to 20 fathoms, on algæ, &c.; Bay of Fundy, 10 to 80 fathoms, on hydroids; Saint George's Bank, 30 to 60 fathoms. Greenland; northern coasts of Europe.

This species forms small, translucent, glossy, reversed spiral tubes, coiled in an elevated spire, the last whorls usually turned up, or even erect and free.

There are six branchiæ, which are large and broad, with long, slender pinnæ, which do not decrease in length till near the end; the naked tips are short and acute. The operculum is sub-circular, somewhat obliquely attached to the slender pedicel, which is about half as long as the extended branchiæ, and enlarges rather suddenly close to the operculum; the outer surface of the operculum appears nearly flat, and is covered with adherent dirt. The collar is broad, with undulated and revolute edges. The three fascicles of setæ are long and slender. Ocelli two, conspicuous. The animal, in expansion, is usually much exsert from the tube. Anterior part of the body bright red; branchiæ pale greenish; their bases and posterior part of the body bright epidote-green.

It is the species catalogued as *S. porrecta (?)* on pages 498 and 504.

OLIGOCHÆTA.

CLITELLIO IRRORATA Verrill, sp. nov. (p. 324.)

Body very slender, the largest about 60^{mm} long, 0.75^{mm} in diameter, distinctly annulated. Head conical, a little elongated, subacute; setæ commencing on the first segment; those on the anterior segments in fascicles of two or three, very short, small, in length not one-third the diameter of the body, more or less curved like an italic *f*, obtusely pointed at the end; some of them are but slightly bent at the tip, others are strongly hooked; farther back there are three or four setæ in the fascicles, and they are somewhat longer, and two or more in many of the fascicles are forked, the others simple, spinous, more or less curved; in the upper fascicles posteriorly, and sometimes throughout the whole length, there are two or three much longer, very slender, hair-like, flexible bristles, but these are often absent from most of the segments, perhaps accidentally. The intestine is voluminous, slightly constricted at the articulations; two bright red blood-vessels, distinctly visible through the integuments, run along the intestine, one above and one below, following its flexures, without contractile lacunæ.

New Haven to Wood's Hole and Casco Bay, under stones in the upper part of the fucus-zone, and nearly up to high-water mark.

The above description was made from living specimens taken at Savin Rock, near New Haven.

Some of the specimens obtained at Wood's Hole appear to differ somewhat from this description, but the differences may be chiefly due to their being taken in the breeding season. In these the anterior fascicles consist of two short setæ, which are slightly curved in the form of an italic *f*, and are subacute, not bifid at tips. At the ninth to twelfth setigerous segments a thickening occurs, forming a clitellus; on the ninth segment the setæ are replaced by a small mammiform, bilobed organ; on the tenth there is a pair of prominent obtuse papillæ, swollen at base. On the posterior segments only two setæ were observed in each of the four fascicles, but they were longer, more slender, and more curved at the tip than the anterior ones. In each of the segments slender cæcal tubes, forming about two loops on each side, were noticed. Length, about 35^{mm}.

LUMBRICULUS TENUIS Leidy.

Marine Invertebrate Fauna of Rhode Island and New Jersey, p. 16 (148), Plate 11, fig. 64, 1855.

Point Judith, Rhode Island, abundant about the roots of grasses on the shore of a sound (Leidy). We did not obtain this species.

HALODRILLUS Verrill, genus nov.

Body long and slender. Blood white or colorless. Setæ small, acute, in four fan-shaped fascicles on each segment. The alimentary canal consists of a pyriform pharynx, followed by a portion from which several (five to seven) rounded or pyriform cæcal lobes, of different sizes, arise on each side and project forward and outward; these are followed by a large two-lobed portion, beyond which the intestine is constricted then thickened and convoluted, and covered with polygonal, greenish, glandular cells, which become fewer farther back, where the intestine becomes a long, narrow, convoluted tube. In the anterior part of the body, around the stomach and cæcal lobes, there are numerous convolutions of slender tubes. The blood-vessels running along the intestine contain a colorless fluid.

HALODRILLUS LITTORALIS Verrill, sp. nov. (p. 324.)

Body round, slender, moderately long, tapering to both ends, but thickest toward the anterior end, tapering more gradually posteriorly. Head small, conical, moderately acute, or obtuse, according to the state of contraction; mouth a transverse, slightly sinuous slit beneath. The setæ commence with four fascicles on the first segment behind the buccal; the setæ are slightly curved, forming rounded, fan-shaped fascicles of four to six setæ, the middle setæ being longer than the upper and lower ones; posteriorly the setæ are less numerous. Caudal segment

tapered, obtuse, or slightly emarginate at the end, with a simple orifice. The blood contains minute, oblong corpuscles. Color milk-white. Length, 25^{mm} to 40^{mm}; diameter, 0.5^{mm} to 1^{mm}.

New Haven; Wood's Hole; Casco Bay, Maine; very common under dead sea-weeds and stones near high-water mark.

ENCHYTRÆUS TRIVENTRALOPECTINATUS Minor.

American Journal of Science, vol. xxxv, p. 36, 1863.

In this species, according to Minor, there are three pairs of ventral fascicles of setæ before the dorsal ones commence; the pharynx extends to the fourth pair of ventral fascicles, from which a narrow œsophagus extends to a little back of the sixth pair; here a gradual enlargement of the alimentary canal occurs, ending abruptly just back of the eighth in a narrow, twisted tube, and this gradually enlarges at the ninth ventral fascicle into a moderate sized alimentary canal. No eyes. Length, about 10^{mm}.

New Haven, near high-water mark (Minor).

BDELLODEA.

Comparatively few leeches have hitherto been met with in this region. Many additional species, parasitic on fishes, undoubtedly remain to be discovered.

BRANCHIOBDELLA RAVENELII Diesing. Plate XVIII, fig. 89. (p. 458.)

Sitzungsberichte der kais. Akad. der Wissenschaften, Wien, xxxiii, p. 482, 1859. *Phyllobranchus Ravenelii* Girard, Proceedings of the American Association for the Advancement of Science for 1850, vol. iv, p. 124, 1851. (?) *Branchellion Orbiniensis* Quatrefages, Annals des sci. natur., sér. 3, vol. xviii, pp. 279–325, Plate 6, figs. 1–13, Pl. 7–8, 1852 (anatomy).

In describing this species Mr. Girard mistook the anterior for the posterior end, and described the large posterior sucker, or acetabulum, as the head. The color is dark brown, purplish, or dark violaceous, specked with white.

Vineyard Sound, on a stingray (*Myliobatis Freminvillei*), in several instances; a number usually occurred together. Charleston, South Carolina, on a "skate," species unknown (Girard). Atlantic Ocean, on a torpedo (Quatrefages).

CYSTOBRANCHUS VIVIDUS Verrill. (p. 458.)

American Journal of Science and Arts, ser. 3, vol. iii, p. 126, fig. 1, 1872.

New Haven, on the minnow (*Fundulus pisculentus*), both in fresh and brackish water; November and December.

ICHTHYOBDELLA FUNDULI Verrill. (p. 458.)

American Journal of Science and Arts, loc. cit., p. 126.

New Haven, on *Fundulus pisculentus*, with the last.

PONTOBDELLA RAPAX Verrill, sp. nov. Plate XVIII, fig. 91. (p. 458.)

Body, in extension, long and slender, rounded, thickest behind the middle, attenuated anteriorly. Acetabulum nearly circular, not much wider than the body. Head small, obliquely truncated, rounded. Color dark olive, with a row of square or oblong white spots along each side; head and acetabulum whitish, tinged with green. The young are reddish brown.

Length, 30^{mm} to 40^{mm}; diameter, 1.5^{mm} to 2^{mm}.

Vineyard Sound, on the ocellated flounder, (*Chœnopsetta ocellaris*).

PONTOBDELLA, species undetermined. (p. 458.)

Body slender, cylindrical, strongly annulated; the largest seen was about 12^{mm} long and 0.75^{mm} in diameter when extended. Head obliquely campanulate, attached by a narrow pedicel-like neck. Acetabulum oblique, round, only a little wider than the body. Color pale greenish or greenish white, with scattered microscopic specks of blackish. No distinct ocelli, but there are several dark stellate pigment-spots on the head, similar to those on the body. Perhaps all the specimens are immature.

Savin Rock, New Haven, on *Mysis Americanus*, below low-water mark.

MYZOBDELLA LUGUBRIS Leidy. (p. 458.)

Proceedings of the Academy of Natural Sciences of Philadelphia, vol. v, p. 243, 1851; Diesing, op. cit., p. 489.

Parasitic on the edible crab (*Callinectes hastatus*), attached about the bases of the legs. We have not obtained this species on the coast of New England, but it may be expected to occur here.

MALACOBDELLA OBESA Verrill, sp. nov. Plate XVIII, fig. 90. (p. 458.)

Body stout, broad, thick, convex above, flat below, broadest near the posterior end, narrowing somewhat anteriorly; the front broadly rounded, with a median vertical slit, in which the mouth is situated. Acetabulum large, rounded, about as broad as the body. Intestine convoluted posteriorly, visible throug the integument. Between the intestine and lateral margins, especially posteriorly, the skin is covered with small stellate spots, looking like openings, within and around which are large numbers of small round bodies, like ova. Color yellowish white. Length, 30^{mm} to 40^{mm}; breadth, 12^{mm} to 15^{mm}.

Salem, Massachusetts; Long Island Sound; parasitic in the branchial cavity of the long clam (*Mya arenaria*).

MALACOBDELLA MERCENARIA Verrill, sp. nov. (p. 458.)

Malacobdella grossa Leidy, Proceedings Academy Natural Sciences of Philadelphia, vol. v, p. 209 (*non* Blainville).

Body, in extension, elongated, oblong, with nearly parallel sides, or tapering slightly anteriorly; anterior end broad, obtusely rounded,

emarginate in the center, but not deeply fissured. In contraction the body is broader posteriorly. Dorsal surface a little convex; lower side side flat. Acetabulum round, rather small, about half the diameter of the body in the contracted state, but nearly as broad when the body is fully extended. The intestine shows through the integument distinctly; it is slender, and makes about seven turns or folds. Color pale yellow, with minute white specks beneath and on the upper surface anteriorly, giving it a hoary appearance; middle of the dorsal surface irregularly marked with flake-white; laterally reticulated with fine white lines.

Length in extension, 25^{mm}; breadth, 4^{mm}; in partial contraction, 18^{mm} long; 5^{mm} to 6^{mm} wide.

New Haven, parasitic in the branchial cavity of the round clam (*Venus mercenaria*), October, 1871. Philadelphia, in the same clam (Leidy).

GYMNOCOPA.

TOMOPTERIS, species undetermined. (p. 453.)

Young specimens of a species of this genus were taken in the evening in Vineyard Sound. They are too immature for accurate identification.

A large and fine species of *Tomopteris* was taken by Mr. S. I. Smith, in Eastport harbor, in July, 1872. This was about 40^{mm} in length. An excellent drawing of it was made by Mr. Emerton from the living specimens. It is, perhaps, the adult state of the Vineyard Sound species.

CHÆTOGNATHA.

SAGITTA ELEGANS Verrill, sp. nov. (p. 440.)

Body slender, thickest in the middle, tapering slightly toward both ends. Head somewhat broader than the neck, and about equal to the body where thickest, slightly oblong, a little longer than broad, obtuse, rounded in front or sub-truncate, sometimes with a slightly prominent small central lobe or papilla; the anterior part of the head rises into a crest-like median lobe considerably higher than the posterior part; ocelli two, minute, widely separated, on the posterior half of the head; the anterior lateral borders of the head are slightly crenulated. The fascicles of setæ or spinules on the sides of the head each contain about eight setæ, which are considerably curved, with acute tips, and reach as far as the anterior border of the head. Caudal fin ovate; its posterior edge broadly rounded. The posterior lateral fins commence just in advance of the ovaries, and extend back considerably beyond them, so as to leave a naked space somewhat less than their length between their posterior ends and the caudal fin; on this naked part, just in advance of the caudal fin, are two small, low, lateral papillæ connected with the male organs; two other smaller papillæ are situated at about the posterior third of the lateral fins. The median lateral fins are about equal in length to the posterior ones, and separated from them by a

naked space less than their own length; the distance from the anterior end of the middle fins to the anterior border of the head is equal to twice the length of the fins; the length of the latter is about one-sixth of the entire length of the body. The color is translucent whitish, nearly diaphanous.

Length, about 16^{mm}; diameter, about 0.9^{mm}.

Wood's Hole and Vineyard Sound, at surface, July 1; off Gay Head, among *Salpæ*, September 8, in the day-time.

SAGITTA, species undetermined. (p. 440.)

A much larger and stouter species than the preceding was taken in abundance by Mr. Vinal N. Edwards, in Vineyard Sound, at various dates, from January to May.

Its length is generally 25^{mm} to 30^{mm}. I have not seen it living.

GEPHYREA or SIPUNCULOIDS.

PHASCOLOSOMA CÆMENTARIUM. Verrill Plate XVIII, fig. 92. (p. 416.)

Sipunculus cæmentarius Quatrefages, op. cit., vol. ii, p. 628, 1865. *Phascolosoma Bernhardus* Pourtales, Proceedings American Association for Advancement of Science for 1851, p. 41, 1852. *Sipunculus Bernhardus* Stimpson, Invertebrata of Grand Manan, p. 28 (*non* Forbes.)

Deeper parts of Vineyard Sound, 10 to 15 fathoms; off Block Island, 29 fathoms; Bay of Fundy, 2 to 90 fathoms, abundant; near Saint George's Bank, 45 to 430 fathoms.

PHASCOLOSOMA, species undetermined. (p. 353.)

A species similar to the last in size and form, with a thick integument, thickly covered throughout with small rounded papillæ or granules, but without the dark chitinous hooks seen on the posterior part of the latter.

Vineyard Sound.

PHASCOLOSOMA GOULDII Diesing. Plate XVIII, fig. 93. (p. 353.)

Revision der Rhyngodeen, op. cit., p. 764, 1859. *Sipunculus Gouldii* Pourtales, Proceedings of American Association for the Advancement of Science for 1851, vol. v, p. 40, 1852; Keferstein, Zeitschrift für wissenschaftliche Zoologie, vol. xv, p. 434, Plate 33, fig. 32, 1865, and vol. xvii, p. 54, 1867.

New Haven to Massachusetts Bay, at Chelsea Beach; common in sand and gravel at low-water mark.

SCOLECIDA.

TURBELLARIA.

RHABDOCŒLA or NEMERTEANS.

BALANOGLOSSUS AURANTIACUS Verrill. (p. 351.)

Stimpsonia aurantiaca Girard, Proceedings Academy of Natural Sciences of Philadelphia, vol. vi, p. 367, 1854. *Balanoglossus Kowalevskii* A. Agassiz, Memoirs American Academy of Arts and Sciences, vol. ix, p. 421, Plates 1–3, 1873.

Fort Macon, North Carolina, to Naushon Island. Charleston, South

Carolina (Girard). Newport, Rhode Island, to Beverly, Massachusetts (A. Agassiz). In sand between tides.

A reexamination of living specimens of the southern form will be necessary before their identity with the northern one can be positively established. I am unable to separate them with preserved specimens. See page 351; also American Journal of Science, ser. 3, vol. v, p. 235.)

NEMERTES SOCIALIS Leidy. (p. 324.)

Marine Invert. Fauna of Rhode Island and New Jersey, p. 11 (143), 1855.

Great Egg Harbor to New Haven and Vineyard Sound. Very common under stones, between tides.

NEMERTES VIRIDIS Diesing.

Sitzungsberichte der kais. Akad. der Wissenschaften, vol. xlv, p. 305, 1862. *Planaria viridis* Müller, Zoöl. Dan. Prodromus, 2684, 1776 (t. Fab.); Fabricius, Fauna Grœnlandica, p. 324, 1780. *Notospermus viridis* Diesing, Syst. Helminth, vol. i, p. 260, 1850. *Nemertes olivacea* Johnston, Mag. of Zoology and Botany, vol. i, p. 536, Pl. 18, fig. 1. *Borlasia olivacea* Johnston, Catalogue British Non-parasitical Worms, p. 21, Pl. 2[b], fig. 1, 1865. *Nemertes obscura* Desor, Boston Journal of Natural History, vol. vi, pp. 1 to 12, Plates 1 and 2, 1848. *Polia obscura* Girard in Stimpson's Marine Invertebrata of Grand Manan, p. 28, 1853.

Body very changeable in form; in full extension long and slender, sub-terete, tapering toward both ends, the length being sometimes 150^{mm} to 200^{mm}, while the diameter is 2^{mm} to 3^{mm}; in contraction the body becomes much shorter and stouter, more or less flattened, and obtuse at the ends, large specimens often being only 30^{mm} or 40^{mm} long and 4^{mm} to 5^{mm} broad. The head is flattened, more or less bluntly rounded, and is furnished with a row of small dark ocelli on each side, which vary in number and size according to the age, the large specimens often having six or eight on each side, while the small ones have but three or four, and the very young ones have only a single pair. The lateral fossæ of the head are long and deep, in the form of slits, and extend well forward to near the terminal pore. The latter in some states of contraction appears like a slight vertical slit or notch, but at other times appears circular; the proboscis is long, slender toward the base, clavate toward the end, the terminal portion transversely wrinkled. The ventral opening or mouth is situated opposite to or a little behind the posterior ends of the lateral fossæ; it is ordinarily small and elliptical, with a distinct lighter colored border, but is capable of great dilation when the creature is engaged in swallowing some annelid nearly as large as itself.

In alcoholic specimens the body is usually thickened and rounded anteriorly, more slender and somewhat flattened farther back, often acute at the posterior end; head obtusely rounded or sub-truncate, with a small terminal pore and two lateral fossæ, which are short and extend forward very near to the terminal pore; ventral opening or mouth small and round, situated slightly behind the posterior ends of the lateral fossæ; ocelli not apparent. The color, when living, is very variable,

most commonly dark olive-green or blackish green above, and somewhat lighter below, the head margined with lighter; frequently the color is dark liver-brown or reddish brown, and the back is usually crossed by faint pale lines, placed at unequal distances.

Buzzard's Bay and Vineyard Sound, under stones, between tides, and in 4 to 6 fathoms, rocky bottoms, very common; Casco Bay and Bay of Fundy; and northward to Labrador and Greenland. Also on the northern coasts of Europe to Great Britain. Abundant under stones between tides, and in shallow water.

The specimens referred to on page 324 as probably belonging to *Cerebratulus*, were most likely identical with this species.

NEMERTES (?) species undetermined (*a*). (p. 498.)

Body elongated, moderately stout; head not distinct from the body. Color uniform bright brownish red.

Length, 25^{mm}.

Off Watch Hill, Rhode Island, among rocks, in 4 to 6 fathoms. A species, apparently the same, also occurred in 25 fathoms off Buzzard's Bay.

This was red with two dark red spots anteriorly. No ocelli were detected.

NEMERTES, (?), species undetermined (*b*).

Body slender, sub-terete; head not distinct from body. Ocelli inconspicuous, apparently about three in a row on each side of front of head. Color of head and body, above, brownish red, with a whitish ring around the neck, which recedes in the middle, above.

Length, 8^{mm}.

Off Watch Hill, with the preceding.

This is, perhaps, a species of *Cosmocephala*.

NEMERTES, species undetermined (*c*).

Body slender; head not separated by a constriction. Ocelli very numerous, arranged in a long cluster on each side of the head. Color uniform olive-green above and below.

Length, 35^{mm}; breadth, 1.3^{mm} to 2^{mm}.

New Haven Harbor, on the piles of a wharf, in brackish water.

TETRASTEMMA ARENICOLA Verrill, sp. nov. Plate XIX, fig. 98. (p. 351.)

Body sub-terete, long, slender, slightly depressed, of nearly uniform width; the head is very versatile, usually sub-conical or lanceolate, flattened, occasionally becoming partially distinct from the body by a slight constriction at the neck. Ocelli four, those in the anterior pair nearer together. The lateral fossæ are long and deep slits on the sides of the head; mouth or ventral pore small, often sub-triangular, situated just back of the posterior ends of the lateral fossæ. Body deep flesh-color or pale purplish. Length, about 100^{mm}, in extension.

Savin Rock, near New Haven, in sand at low-water mark.

This species is, perhaps, not a true *Tetrastemma*. It is here only provisionally referred to that genus.

MECKELIA INGENS Leidy. Plate XIX, figs. 96, 96*a*. (p. 349.)

Marine Invertebrate Fauna of Rhode Island and New Jersey, p. 11 (143), 1855. (?) *Meckelia Pocohontas* Girard, Proceedings of Academy of Natural Sciences of Philadelphia, vol. vi, p. 366, 1854.

Fort Macon, North Carolina; Great Egg Harbor to New Haven and Vineyard Sound. Low-water mark to 8 fathoms. Charleston, South Carolina (Girard).

MECKELIA LACTEA Leidy. (p. 350.)

Proceedings of Academy of Natural Sciences of Philadelphia, vol. v, p. 243, 1851.

Great Egg Harbor to New Haven and Vineyard Sound. Low-water mark to 10 fathoms. Perhaps the young of the preceding species.

MECKELIA ROSEA Leidy. (p. 350.)

Proceedings Academy Natural Sciences of Philadelphia, vol. v, p. 244, 1851.

Great Egg Harbor to New Haven and Vineyard Sound. Common in sand at low-water mark.

MECKELIA LURIDA Verrill, sp. nov. (p. 508.)

Body long, large, stout, much depressed throughout, and thin posteriorly, somewhat thickened anteriorly. Head changeable in form, often acute; lateral fossæ long. Ventral opening large, elongated. Proboscis long, slender, emitted from a terminal pore. In some specimens there was a slender, acute, caudal papilla. Color deep chocolate-brown, with lighter margins. Length, 150^{mm} to 250^{mm}; breadth up to 10^{mm} or more.

Off Gay Head, 19 fathoms, soft mud; off Buzzard's Bay, 25 fathoms; off Block Island, 29 fathoms, sandy mud; Casco Bay, 10 to 68 fathoms.

CEREBRATULUS (?), species undetermined (*a*). (p. 508.)

This is a dark olive-green species, with paler margins, the anterior part darkest.

Off Block Island, in 29 fathoms; off Gay Head, in 19 fathoms, soft mud.

COSMOCEPHALA OCHRACEA Verrill, sp. nov. Plate XIX, figs. 95, 95*a*. (p. 325.)

Body elongated, moderately slender, somewhat flattened but thick, and with the margins rounded, obtuse at both ends or subacute posteriorly; broadest and often swollen anteriorly; gradually and slightly tapering posteriorly; the integument is translucent and the internal median organs show quite distinctly; lateral organs voluminous, extending the whole length of the body along each side, and showing through as dull yellowish white mottlings. Head continuous with the

body, obtuse; a slight groove, usually appearing as a whitish line on each side, runs obliquely across the ventral and lateral surface of the head, diverging from the mouth and curving somewhat forward at the sides; terminal pore small and inconspicuous; mouth, or ventral pore, small. Ocelli numerous, arranged as in the figure, but varying somewhat in number. (See p. 325.) Color dull yellowish, or yellowish white, often tinged with deeper yellow or orange anteriorly, with the median line lighter; a reddish internal organ shows through as an elongated red spot between the posterior ocelli.

Length, 50^{mm} to 70^{mm}; breadth, 2.5^{mm} to 3^{mm}.

New Haven to Vineyard Sound; under stones, between tides.

POLINA GLUTINOSA Verrill, sp. nov. Plate XIX, fig. 97. (p. 324.)

Body rather slender and elongated in extension, usually broadest in the middle and tapering to both ends, but quite versatile in form; head not distinct, usually obtuse; posterior end narrower, usually obtuse or slightly emarginate; integument soft, secreting a large quantity of mucus; the lateral organs extend to the head. Ocelli numerous, variable in number, usually eight or ten on each side, arranged in three pairs of short, oblique, divergent rows, two to four in each; terminal pore of the head moderately large; no lateral fossæ could be detected. There appears to be a terminal opening at the posterior end. Color dull yellow or pale orange yellow, sometimes brighter orange, especially anteriorly; posteriorly usually lighter, with a faintly marked dusky or greenish median line.

Length, 25^{mm} to 30^{mm} in extension; breadth, 1.3^{mm} to 2^{mm}.

Great Egg Harbor to New Haven and Vineyard Sound; low-water mark to 6 fathoms.

MONOCELIS AGILIS Leidy. (p. 325.)

Marine Invert. Fauna of Rhode Island and New Jersey, p. 11 (143), 1855. *Monops* (?) *agilis* Diesing, Sitzungsberichte der kais, Akad. der Wissenschaften, vol. xlv, p. 232, 1862 (*non Monops agilis* Schultze, sp.)

New Haven; Point Judith, Rhode Island, at low-water, creeping on *Mytilus edulis* (Leidy).

ACELIS CRENULATA Diesing.

Op. cit. p. 206. *Acmostomum crenulatum* Schmarda, Neue wirbell. Th., vol. i, p. 1, 3, Pl. 1, fig. 2 (t. Diesing).

Hoboken, New Jersey, in brackish water (Schmarda).

GENUS UNDETERMINED.

Body very long and slender, almost filiform, slightly flattened, with rounded sides; the flat sides are longitudinally striated, the narrower rounded sides are marked with numerous short, distinct, separate, transverse lines or depressions, corresponding to opaque internal organs. In one of the smaller specimens one end is acute conical, terminated by a

slender incurved point; the other end is obtusely rounded, depressed and translucent at the end, apparently with a transverse orifice beneath. The largest specimen, and one of the smaller, has one end corresponding in form to that last described; the other is rounded, a little enlarged, subtruncate, apparently with a terminal orifice. A yellowish internal organ, with transverse divisions, runs along each side internally. In life the color was grayish white, with four very slender double longitudinal lines of dark slate-color.

Length of largest specimens, in alcohol, 80^{mm}; diameter, 0.7^{mm}; smallest ones, 40^{mm}; diameter, 0.5^{mm}.

Wood's Hole, swimming very actively at the surface in the evening, June 29 and July 13, 1871.

This species was taken by Mr. S. I. Smith, who recorded the color. I did not observe it myself in the living state. The above description was made from preserved specimens. Its characters cannot all be made out satisfactorily with alcoholic specimens, and its generic and family affinities are uncertain. In general appearance, when living and moving, it resembles *Gordius* and *Rhamphogordius*.

DENDROCŒLA or PLANARIANS.

STYLOCHOPSIS LITTORALIS Verrill, sp. nov. Plate XIX, fig. 99. (p. 325.)

Body flat with thin margins, very changeable in form, broad oval, elliptical or oblong, rounded or sub-truncate at the ends, often with the margins undulated. The tentacles are small, round, obtuse, translucent, each containing an elongated group of about ten or twelve minute black ocelli on the anterior surface. The tentacles are situated at about the anterior fourth of the body, and are separated by about one-fourth of its breadth. Dorsal ocelli about eight, forming four groups of two each, in advance of the tentacles; marginal ocelli numerous, small, black, most conspicuous beneath, and most numerous on the anterior portion, arranged in two or more irregular rows near the margin, extending back to the middle of the sides or beyond. Color pale greenish or brownish yellow, veined or reticulated with lighter, and with a light median stripe posteriorly; beneath flesh-color, with a median elongated light spot, narrowest in the middle, due to internal organs.

Length, 8^{mm}; breadth, about 6^{mm}.

New Haven to Vineyard Sound; under stones, between tides.

PLANOCERA NEBULOSA Girard. Plate XIX, fig. 100. (p. 325.)

Proceedings of the Academy of Natural Sciences of Philadelphia for 1853, vol. vi, p. 367, 1854.

Savin Rock near New Haven, under stones at low-water. Charleston, S. C. (Girard).

LEPTOPLANA FOLIUM Verrill, sp. nov. (p. 487.)

Body very flat, with the margin thin and undulated; outline versatile, usually cordate or leaf-like, broadest and emarginate posteriorly, the

posterior borders well rounded, and the side a little convex, narrowing to an obtuse point at the anterior end; sometimes oblong or elliptical, and but little narrowed anteriorly; the posterior emargination is usually very distinct, often deep, and sometimes in contraction has a small projecting angular point in the middle, but at times the emargination nearly disappears. Ocelli in four groups, near the anterior end; the two posterior clusters are smaller than the anterior and wider apart; the anterior clusters are very near the others, and close together, almost blending on the median line, and are composed of numerous very minute crowded ocelli, less distinct than those of the other clusters. Color pale yellowish flesh-color, veined with dentritic lines of darker flesh-color, or with whitish; an indistinct pale reddish spot behind the anterior ocelli; an interrupted longitudinal whitish stripe in the middle, due to the internal organs, and a small median whitish stripe posteriorly.

Length, 20^{mm} to 25^{mm}; breadth, 10^{mm} to 15^{mm}.

Off Watch Hill, 4 to 6 fathoms, among rocks and algæ; off Block Island, in 29 fathoms; off Buzzard's Bay, in 25 fathoms.

PLANARIA GRISEA Verrill, sp. nov. (p. 487.)

Body elongated and usually oblong in extension, often long oval or somewhat elliptical, obtusely pointed or rounded posteriorly; head subtruncate in front, often a little prominent in the middle; the angles are somewhat prominent, but not elongated. Ocelli two, black, each surrounded by a reniform, white spot. Color yellowish green or grayish, with a central whitish stripe in the middle of the back, surrounded by darker; head margined with whitish.

Length, in extension, 12^{mm}; breadth, 3^{mm}.

Watch Hill, Rhode Island, under stones, between tides.

PROCERODES WHEATLANDII Girard. (p. 325.)

Proceedings Boston Soc. Natural History, vol. iii, p. 251, 1851; Stimpson, op. cit., p. 6, 1857. *Planaria frequens* Leidy, Marine Invert. Fauna of Rhode Island and New Jersey, p. 11, 1855. *Procerodes frequens* Stimpson, op. cit., p. 6; this Report, p. 325.

New Haven to Casco Bay. Point Judith (Leidy). Manchester, Massachusetts (Girard). Abundant under stones, between tides.

FOVIA WARRENII Girard. (p. 480.)

Proceedings of the Boston Society of Natural History, vol. iv, p. 211, 1852; Stimpson, Prodromus, p. 6, 1857. *Vortex Warrenii* Girard, op. cit., vol. iii, pp. 264 and 363, 1851; Diesing, op. cit., vol. xiv, p. 229, 1862.

A small, narrow, oblong, red Planarian, apparently belonging to this species, was collected at Wood's Hole, among eel-grass, and also in Casco Bay. Chelsea, Massachusetts (Girard).

BDELLOURA CANDIDA Girard. (p. 460.)

Proceedings Boston Society Natural History, vol. iv, p. 211, 1852. *Vortex candida* Girard, op. cit., vol. iii, p. 264, (for 1850), 1851. *Bdelloura parasitica* Leidy, Proceedings Academy Natural Sciences of Philadelphia for 1851, vol. v, p. 242, 1852; Stimpson, Prodromus, p. 6, 1857.

Great Egg Harbor; New Haven; Massachusetts Bay. Parasitic on the gills of the "horseshoe-crab" (*Limulus Polyphemus*).

BDELLOURA RUSTICA Leidy.

Proceedings Acad. Natural Sciences of Philadelphia, vol. v, p. 242, 1852; Stimpson, Prodromus, p. 6, 1857.

Great Egg Harbor, on *Ulva latissima* (Leidy).

NEMATODES.

PONTONEMA MARINUM Leidy. Plate XVIII, fig. 94. (p. 325.)

Marine Invertebrate Fauna of Rhode Island and New Jersey, p. 12 (144), 1855.

Great Egg Harbor to New Haven and Vineyard Sound; very abundant from above low-water mark to 10 fathoms.

PONTONEMA VACILLATUM Leidy. (p. 326.)

Marine Invertebrate Fauna of Rhode Island and New Jersey, p. 12 (144), 1855.

Great Egg Harbor to Vineyard Sound, with the preceding.

Various other small, free Nematodes are frequently met with, but they have not been carefully examined.

Numerous species are also parasitic in the stomach, intestine, muscles and other organs of fishes, crustacea, worms, &c. (See page 456.)

MOLLUSCA.

CEPHALOPODA.

DIBRANCHIATA.

OMMASTREPHES ILLECEBROSA. (p. 441.)

Loligo illecebrosa Lesueur, Journal Acad. Natural Sciences, Philadelphia, vol. ii, p. 95, Plate 10, 1821; Gould, Invertebrata of Massachusetts, ed. i, p. 318, 1841; Dekay, Natural History of New York, Mollusca, p. 4, 1843. *Ommastrephes sagittatus* Binney,* in Gould's Invertebrata of Mass., ed. ii, p. 510, 1870, but *not* Plate 25, fig. 339 (*non* Lamarck, sp.)

A large specimen, taken at Eastport, Maine, was ten inches long, exclusive of the arms. When preserved in alcohol the caudal-fin was rather more than one-third of the length of the head and body together; its width was equal to about three-fourths of its length. The colors of this specimen were described on page 442. A small specimen from Newport, R. I., agrees in color and most other respects with the larger specimens, but differs somewhat in the proportions, especially of the caudal fin, probably owing to its immaturity. This specimen, in alcohol,

* Binney's, Plate xxvi, Figs. 341–344, erroneously referred to *Loligopsis pavo*, apparently represents this species.