

Article XVI.—POLYCHÆTOUS ANNELIDS FROM PORTO RICO,
THE FLORIDA KEYS, AND BERMUDA

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PLATES XXIX TO XXXII

This paper contains a list of the old and descriptions of nine new species of polychætous annelids found in a collection from Porto Rico, the Florida Keys, and Bermuda. Unless otherwise designated, all the specimens were collected by the expeditions sent out in 1914 and 1915 by The American Museum of Natural History and the New York Academy of Sciences in cooperation with the Government of Porto Rico. These were submitted to Prof. A. L. Treadwell for identification and through his courtesy I have used them in studying the taxonomy of the Polychætæ.

Drawings such as those of gills and setæ were made with a Leitz compound microscope and camera lucida.

SYLLIDÆ

***Syllis prolifera* McIntosh**

Pionosyllis prolifera McINTOSH, 1900-07-10, p. 161.

Mangrove Island and coral reef, under coral rocks, at entrance of Montalba Bay, Porto Rico. Collected by R. W. Miner.

***Syllis gracilis* Grube**

Syllis gracilis McINTOSH, 1900-07-10, p. 203. WEBSTER, 1879, p. 17.

Rocks off Guanica Harbor, Porto Rico. Collected by R. W. Miner.

HESIONIDÆ

***Hesione proctochona* Schmarda**

Hesione proctochona SCHMARDA, 1861, Neue Wirbellose Thiere, I, part 2.

Bermuda, 1916. Collected by A. L. Treadwell.

***Podarke guanica*, new species**

Plate XXIX, Figures 1 to 4

Three specimens 12 mm. in length and 1 mm. in breadth, not including the parapodia. Body flat ventrally and convex dorsally.

The head is broader than long with angles rounded anteriorly and posteriorly (Fig. 1). There are two pairs of large, dark-brown eyes; the anterior pair situated farther apart than the posterior and provided with lenses. The dorsal margin of the head is convex medianly and anteriorly. A membranous fold stretches across this convexity and covers a part of the basal portion of the median antenna (Fig. 1).

There are five antennæ, the most centrally placed being smaller than the others. It has a short terminal joint. The median pair of antennæ are smooth; the outer pair equal to them in length but jointed in the middle.

There are twelve buccal tentacles. The first somite bears two tentacles on each side supported on a common basal joint (Fig. 1). The third somite is setigerous.

The proboscis was not completely extruded.

The parapodia are biramous. The large dorsal cirrus is borne upon a stout basal portion, and extends to the distal ends of the setæ in most cases. The neuropodium is blunt laterally with an extra conical enlargement anteriorly. The ventral cirrus is short, scarcely extending beyond the base of the setæ bundle (Fig. 2).

The setæ are all compound and resemble each other in form; but the middle ones in each case are longer than the others, being more slender and having a much longer terminal joint (Figs. 3 and 4).

Rocks off Guanica Harbor, Porto Rico. Collected by A. L. Treadwell. Type in Amer. Mus. Nat. Hist.

APHRODITIDÆ

Lepidonotus variabilis Webster

Lepidonotus variabilis WEBSTER, 1879, p. 5.

Porto Rico: outer reef south of Guanica Harbor; near mouth of Guayanilla Harbor; off Guanica Harbor south of bell-buoy, 10 fathoms. Collected by R. W. Miner and R. C. Osburn.

Polynoe polytricha Schmarda

Polynoe polytricha SCHMARDA, 1861, p. 156. EHLERS, 1887, p. 49, Pl. x, figs. 9, 10; Pl. xi, fig. 1. TREADWELL, 1901, p. 186.

On mangrove roots and sandy bottom between Ensenada and Guanica, Porto Rico. Collected by R. W. Miner.

Lepidonotus notata, new species

Plate XXIX, Figures 5 to 10

Polynoid having light-brown, smooth elytra and a row of light-brown pigment-spots on alternate somites in the mid-dorsal line.

Body 16 mm. in length and 4 mm. in breadth, including the setæ. Number of somites 26. Twelve pairs of elytra.

The head is longer than broad, being prolonged into the bases of the antennæ anteriorly. Two prominent eyes occur on the head near the lateral border. A second pair of eyes, situated at the same distance from the mid-line as the others, occur behind them and are completely hidden by the anterior edge of the first setigerous somite (Fig. 5).

Base of tentacle slightly shorter than bases of antennæ. Tentacle almost as long as palps, with filiform termination and dilation below the tip. Narrow band of brown pigment just below the enlargement; broad band of pigment farther back (Fig. 5).

Antennæ slightly more than half as long as tentacle; exact counterpart of tentacle in shape and markings.

Bases of tentacular cirri longer than those of antennæ and pigmented distally. Two cirri in each side exactly like tentacle.

Ventral cirri short and pale in color, shaped like the rest.

Cirri, tentacle, and antennæ all smooth.

Palps greater in circumference and longer than other appendages and of a yellowish brown color. Surface papillose.

Somites 2, 4, etc. (elytra-bearing somites) have, in the dorsal mid-line, a large, light-brown pigment-spot.

Parapodia large (Fig. 7), bearing ventrally bundles of stout, yellowish, toothed setæ (Fig. 8), dorsally radiate bundles of fine, smooth setæ (Fig. 9) with saw-like setæ at their base (Fig. 10).

The dorsal cirrus (somites 3-5-7-, etc.) is like the tentacle and antennæ in shape and has one pigment-band some distance below the dilation. The cirrus extends to the distal end of the dorsal setæ.

A little over a mile south of Cano Gorda Island, near Guanica Harbor. Porto Rico. Collected by R. W. Miner. Type in Amer. Mus. Nat. Hist.

The specimen described has only the first left elytron, the seventh right, and the ninth and eleventh pairs of elytra. The elytra overlap dorsally. They are light brown in color, rolling up on the outer edge apparently on account of the pressure of the large dorsal setæ bundles. The first elytron is white anteriorly and dark brown posteriorly. The elytra are devoid of marginal fringe (Fig. 6).

There is some resemblance between this form and *Lepidonotus wahlbergi* Kinberg, described by McIntosh (1885). The differences lie in the character and position of the elytra, and of the dorsal setæ. *L. wahlbergi* is a Cape form.

PHYLLODOCIDÆ

Phyllodoce papillose Ehlers

Phyllodoce papillose EHLERS, 1887, p. 140, Pl. XL, figs. 7-9.

On piles, Guanica Harbor, Porto Rico. Collected by R. W. Miner.

NEREIDÆ

Nereis acuminata Ehlers

Nereis acuminata EHLERS, 1864-1869, p. 552.

Dry Tortugas, Florida. Collected by Prof. A. L. Treadwell, 1910.

Ehlers reports this annelid from Naples. Two specimens were examined in this collection. They agree in all essential points with Ehlers' description of *N. acuminata*, especially in the arrangement of the paragnaths—an important specific character. For these reasons I have placed this Florida form in this species.

***Nereis antillensis* McIntosh**

Nereis antillensis MCINTOSH, 1885, p. 224.

Dredged in red algæ, entrance to Guanica Harbor, Ensenada, Porto Rico. Collected by R. W. Miner.

***Nereis arroyensis* Treadwell**

Nereis arroyensis TREADWELL, 1901, p. 193.

Reef outside Cayo Maria Langa, Porto Rico. Collected by R. W. Miner.

***Nereis diversicolor* O. F. Müller**

Nereis diversicolor MCINTOSH, 1900-07-10, p. 312.

Diagnosis based on paragnaths. Rocks south of Ensenada, Porto Rico. Collected by R. W. Miner.

***Nereis dumerillii* Audouin and Edwards**

Nereis dumerillii EHLERS, 1864-1869, p. 535. MCINTOSH, 1900-07-10, p. 302. WEBSTER, 1879, p. 34.

Various preserved specimens best identified by the paragnaths. Entrance to Guanica Harbor, Condado Rocks opposite Fort Geronimo, Porto Rico. Collected by R. W. Miner and R. C. Osburn.

***Nereis limbata* Ehlers**

Nereis limbata EHLERS, 1864-1869, p. 567. VERRILL, 1874, p. 590. WEBSTER, 1879, p. 35.

On mangroves between Ensenada and Guanica, Porto Rico. Collected by R. W. Miner.

***Nereis bairdii* Webster**

Nereis bairdii WEBSTER, 1884, p. 312.

Guanica Harbor, Porto Rico. Collected by R. W. Miner.

***Nereis versipedata* Ehlers**

Nereis versipedata EHLERS, 1887, p. 116.

Mouth of Guanica Harbor, Porto Rico. Collected by R. W. Miner.

***Nereis glandulata*, new species**

Plate XXX, Figures 1 to 6

Seventeen specimens ranging from 20 mm. to 90 mm. in length. Differentiated from other members of the genus by the arrangement of the paragnaths, and the gradual but very marked increase in the posterior parapodia due to accumulation of skin glands.

The species is further characterized by brown markings (Fig. 1). These occur on the dorsal surface of the peristomium, of which the posterior three-fourths is brown; on the dorsal posterior margin of each somite; on the part of the head which is prolonged anteriorly; and on the parapodia which, on this account, appear uniformly darker than the rest of the body. In large specimens, where the accumulation of skin-glands is greater, this color is more pronounced in the posterior segments. This description refers to specimens preserved in formalin. Those preserved in alcohol were more completely decolorized.

The prostomium (Fig. 1) is six-angled and at its greatest width, just anterior to the eyes, is just as broad as it is long.

There are four eyes which are provided with lenses, and which in most specimens are much less regular in outline than in the specimen figured.

Tentacles two; moderately long.

Palps longer than the tentacles, with terminal joint long and rounded or short and bluntly pointed according to the preservation.

Tentacular cirri four on each side; the longest reaching to the posterior border of the second setigerous somite (Fig. 1).

Pharynx (Figs. 2, 3) retracted in all specimens. In describing the paragnaths the conventional diagram of pharynx found in McIntosh, 'British Annelids,' II, part 2, p. 249, was used. I, two points, one in front of the other. II, oblique, crescent-shaped group—roughly three rows deep. III, large group—roughly three rows deep. IV, similar to II. V, lacking. VI, small rounded groups. VII and VIII, single row of from five to seven large teeth.

Jaws with four teeth below the terminal fang.

The tenth parapodium is figured (Fig. 4). Others essentially the same in proportion, except for the antero-posterior thickening in the posterior parapodia due to accumulation of skin glands. All rami blunt and thick, of almost equal length. Dorsal cirrus arising at base of notopodium and extending one-third of its length beyond the parapodium. Ventral cirrus very short, arising at base of neuropodium.

Setæ of two kinds. Those of dorsal ramus with long terminal joint finely toothed (Fig. 5). Dorsal setæ of ventral ramus the same; ventral setæ with short terminal joint, hooked at end and with spines on side (Fig. 6).

Rocks off Guanica Harbor, Porto Rico, 1915. Collected by A. L. Treadwell. Also collected in Guanica Harbor; entrance to Guaynilla Harbor; Salinas Cove; and Parguera, Porto Rico, by R. W. Miner. Type in Amer. Mus. Nat. Hist.

AMPHINOMIDÆ***Amphinome jamaicensis* Schmarda**

Amphinome jamaicensis SCHMARDA, 1861, p. 143.

Near Guanica Harbor, Porto Rico. Collected by R. W. Miner.

Eurythoe complanata (Pallas) Ehlers

Eurythoe complanata EHLERS, 1887, p. 29.

Rocks off Guanica Harbor, Porto Rico. Collected by A. L. Treadwell.

CHRYSOPETALIDÆ**Bhawania goodei** Webster

Bhawania goodei WEBSTER, 1884, p. 308.

Bermuda, 1916. Collected by A. L. Treadwell.

EUNICIDÆ**Nicidion kinbergi** Webster

Nicidion kinbergi WEBSTER, Bull. No. 25, U. S. Nat. Mus., p. 320.

Under flat coral reefs, Mangrove Island at Parguera, Porto Rico.

Lumbrinereis floridana Ehlers

Lumbrinereis floridana EHLERS, 1887, p. 103.

Surface of the sea, Bermuda, 1898.

ARICIDÆ**Aricia rubra** Webster

Aricia rubra WEBSTER, 1879, p. 53.

Mangrove Key, Key West, Florida. Collected by A. L. Treadwell, 1916.

SPIONIDÆ**Aonides cirrata** Sars

Aonides cirrata Sars, FAUVEL, 1914, p. 220.

Porto Rico. Collected by A. L. Treadwell.

TEREBELLIDÆ**Loimia bermudensis** Verrill

Loimia bermudensis VERRILL, 1900, p. 664.

Cane Wharf, Guanica Harbor, Porto Rico. Collected by R. C. Osburn.

AMPHARETIDÆ***Amage inhamata*, new species**

Plate XXX, Figures 7 to 9

Specimen mutilated; measuring 14 mm. in length exclusive of tentacles. Width, 1.5 mm.

Two pairs of tentacles are borne on the cephalic lobe, the most anterior of which are crenated along their anterior edges; the posterior smooth. The following four segments (all setigerous) bear tentacles similar to the posterior pair on the cephalic lobe (Fig. 7). Only one side of the animal is figured. The tentacles all taper from base to apex but are not sharply attenuated. They take their origin on the dorsal-lateral sides of the somites. The first pair extends back as far as the tenth somite.

In the type specimen the first four somites are equal in length, all being as wide as the diameter of the tentacles which they bear. Beginning with the fifth there is gradual increase in width, the thirteenth being five times as broad as the fourth.

The spinulæ are very stout and long, light yellow in color, and have a blunt tip with subterminal concavity like a spoon (Fig. 9). These occur on the posterior margins of the somites and are directed posteriorly.

The capillary setæ (Fig. 8) are very slender and attenuated and occur in the same setæ-bundle with the spinulæ. They are inconspicuous and few in number.

The specimen had only thirteen somites. In these there was no trace of hooks. The specimen has been placed here tentatively, the absence of hooks being a puzzling factor. More complete specimens are necessary for accurate determination.

Bermuda, 1901. Collected by A. L. Treadwell. Type in Amer. Mus. Nat. Hist.

SABELLIDÆ***Branchiomma lobiferum* Ehlers**

Branchiomma lobiferum EHLERS, 1887, p. 254.

Guanica Harbor, Porto Rico. Collected by R. W. Miner.

***Dasychone conspersa* Ehlers**

Dasychone conspersa EHLERS, 1887, p. 266.

Guanica Harbor, Porto Rico. Collected by R. W. Miner.

***Sabella melanostigma* Schmarda var.**

Plate XXX, Figures 10 to 15; Plate XXXI, Figures 1, 2

Sabella melanostigma SCHMARDA, 1861, p. 36. EHLERS, 1887, p. 263.

Length 65 mm. of which the gills represent 10 mm., the thorax 5 mm. Width 5 mm. in thoracic region, tapering very slightly toward the posterior end.

Number of somites 113 of which 8 are thoracic.

Color of specimen in alcohol pinkish purple shading into purple.

Gills 10 pairs: in color a pale pinkish lavender, the rachises having 3 or 4 pairs of fairly large pigment-spots along the outer edges (Plate XXX, fig. 10). No outer appendages. Pinnules decrease gradually to just proximad of rachis tip which is free. Bases of rachises connected by a delicate low membrane. Basal portions of gills form prominent rounded structures on each side (Fig. 11).

Collar high, prominent, and recurved having ventral and ventro-lateral fissures, conspicuously marked by pigment-spots (Fig. 12). Collar widely separated dorsally with two large and prominent pigment-spots in the posterior-median angles (Fig. 11).

Four pigment-spots in each somite; two dorso-laterally and two ventro-laterally.

Ventral shields lighter in color than rest of body; rectangular in shape (Fig. 12) and having the same proportions throughout the body.

Small faecal groove ending almost imperceptibly in the mid-ventral line of the first abdominal somite.

Thoracic setæ lanceolate, of the winged variety (Fig. 13). Setæ of collar fascicle similar.

Uncini of both thorax and abdomen with crest of six or seven coarse denticulations (Fig. 14).

Pennoned setæ from thoracic torus small and unjointed (Fig. 15).

Capillary setæ of abdomen similar to those of thorax but more slender and pointed (Plate XXXI, fig. 1).

As the specimen described differed from Ehlers' account of *Sabella melanostigma* only in the number of thoracic somites, the length of the gills, and the coloration, it seemed best to regard it as a variety of *melanostigma*, since the differences found were not sufficiently great to regard it as a new species. That the species described by Schmarda is variable is further illustrated by other specimens in this collection from the same region.

The specimens were preserved separately and the pink coloring had disappeared, the purple markings remaining the same. The number of gills was greater than in the specimen described.

Four specimens were examined. Number of thoracic somites, 12-13 in three specimens. The fourth showed considerable variation in that it had 14 thoracic somites while the 15th was thoracic on the right side and abdominal on the left. Ehlers describes 15 thoracic somites for *S. melanostigma*.

There are 15-18 pairs of gills present.

The antennæ are about one-third of the gills in length and are recurved, Plate XXXI, fig. 2).

Porto Rico: tide pools and sheltered side of rocks at entrance of Condado Bay, off Fort Geronimo; Coral reef in bay, west of entrance to Guanica Harbor, inner side of reef—flat coral rocks, Ensenada. Collected by R. W. Miner. Specimen in Amer. Mus. Nat. Hist.

***Parasabella fonticula*, new species**

Plate XXXI, Figures 3 to 9

Length of body of type specimen 30 mm., 5 mm. of which is represented by the gills. Width 1 mm. Number of somites 79, of which 20 comprise the thorax. Posterior end of body mutilated.

There are eight pairs of white gills which curve outward at their distal ends and arise from a basal portion which is separated from the rest of the head by a slight demarcation. A short terminal portion of each rachis is naked. The bases of the rachises are united by a very delicate, low web. There are no eyes.

Tentacles slender, 1 mm. in length.

On the dorsal side the collar is low with ends widely separated (Fig. 3). On the ventral surface it is high with triangular recurved lobes nearly in contact in the mid-line. There is a thickened prominence on the head at the base of each lobe (Fig. 4).

Thoracic setæ: superior slender and regularly tapered (Fig. 5). Inferior ob lanceolate with extra median point (Fig. 6). Tori have avicular uncini with single tooth and basal bar (Fig. 7). Pennoned setæ (Fig. 8) with rather long terminal point accompany the uncini.

Abdominal setæ: inferior slender with flask-like terminal portion and long pointed termination (Fig. 9). Avicular uncini like those of thorax (Fig. 7).

Outer reef south of entrance to Guanica Harbor, Porto Rico. Collected by R. W. Miner. Type in Amer. Mus. Nat. Hist.

***Parasabella midoculi*, new species**

Plate XXXI, Figures 10 to 14; Plate XXXII, Figures 1, 2

Body 40 mm. in length, 2 mm. in width in thoracic region, tapering gradually to 1 mm. in width at end of abdomen.

Characteristic feature, two groups of brown pigment-spots on each gill at the middle of the outer surface of the rachis.

Nine pairs of branchiæ joined at base by a small membranous web (Fig. 10). Pigment on rachises confined to two spots at middle of shaft. Figure 11 is a side view showing one side of the rachis only. Paired pinnæ. Tip of rachis naked for some distance.

Collar with only one incision (two-lobed); low, with ends separated on back (Fig. 10). Ventral ends elongated into blunt lobes which may be recurved (Fig. 12).

Avicular uncini without denticulations (Fig. 13), and pennoned setæ in tori on thorax (Fig. 14).

Avicular uncini in tori on abdomen.

The first torus is arranged obliquely just lateral to the dorsal free end of the collar. On the next seven somites the torus is ventral to the seta tuft. Throughout the remainder of the body the torus is dorsal to the seta tuft.

Setæ from third or fourth thoracic somite of two kinds: one slender and pointed with indication of lateral wing (Plate XXXII, fig. 1); the other form is heavier and rounded with a small low terminal point (Fig. 2).

Loggerhead Key, Florida. Collected by A. L. Treadwell. Type in Amer. Mus. Nat. Hist.

Parasabella fecata, new species

Plate XXXII, Figures 3 to 8

Two specimens in good condition, the longer measuring 25 mm. of which 5 mm. belong to the gills. Width, 2.5 mm.

Number of somites 67. Not counting the collar fascicle, there are 7 thoracic setigerous somites. The tori on these are long, extending from the dorsal setæ-bundle, which is situated dorso-laterally, as far as the ventral shield.

The fæcal groove passes laterally between the seventh and eighth somites, cutting off the posterior corner of the eighth ventral shield.

Beginning with the eighth somite and passing throughout the remainder of the body, the tori are dorsal to the setæ-bundles.

The collar is moderately high, two-lobed, with ends separated dorsally (Fig. 3.) Ventrally the ends are bluntly triangular and almost in contact. Between the ends, the bases of the labial palps are seen. These are one-half mm. in height, triangular and situated between the gills (Fig. 4).

The head bears 16 pairs of branchiæ 5 mm. in length. The gills are connected above the base by a very low, delicate web. On the base between the rachises there are longitudinal groups of pigment-spots. These are immediately below the connecting membrane (Figs. 3 and 4). Each gill has a naked terminal portion about one-half mm. in length. In both specimens the ends of the gills were curled over medianly throughout 2.5 mm. of their length. The outer surface of each rachis is regularly marked with small light-brown pigment-spots throughout two-thirds of the length. In addition there are from 3 to 6 pigment-spots on the median side of each rachis and extending on the base of the pinnules.

Thoracic setæ: superior setæ lanceolate in form, with tapering end (Fig. 5). Setæ in tori of two kinds: avicular uncini (Fig. 6) and small pennoned setæ (Fig. 7).

Abdominal setæ lanceolate but with much longer tapering end than is found on lanceolate setæ on thorax (Fig. 8). Avicular uncini in tori the same as those in tori on thorax, but unaccompanied by pennoned setæ.

Porto Rico. Collected by A. L. Treadwell. Type in Amer. Mus. Nat. Hist.

SERPULIDÆ**Protis torquata**, new species

Plate XXXII, Figures 9 to 13

A small serpulid of a faint pink color and with green spots on the branchiæ in alcoholic specimen.

Total length 15 mm. of which 3 mm. belong to the gills and 3 mm. to the thorax (not counting the upper part of the collar which covers the base of the gills). Width, 1 mm.

There are 6 setigerous somites in the thorax not counting the collar fascicle. The tori in each are ventral to the setæ-bundles and are on the posterior edge of the somite in each case. They meet in the mid-ventral line.

The edge of the sixth setigerous somite is free ventrally and slightly recurved in the median line (Fig. 9).

The collar (Figs. 9, 10) is very high compared to that of *Protis simplex* described by Ehlers in his Florida Anneliden. It is one-lobed with a slight indication of division in the mid-ventral line. Dorsally its ends are separated and thrown into irregular folds along their median edges.

The gills are spiral consisting of 18 rachises on each side. On the inner surface of each rachis there are three or four irregular olive-green pigment-spots extending over the bases of the pinnules. The terminal portion of each rachis is free from pinnules for a short distance.

There is no operculum.

Setæ: superior setæ of the collar not simple, tapered blades, but having an expansion some distance from the tip (Fig. 11). Beyond the expansion, the setæ are toothed. Superior setæ below the collar fascicle regularly tapered (Fig. 12). Thoracic uncini (Fig. 13) similar to those of *Eupomatus uncinatus* figured by Ehlers (1881, p.285) but with more teeth than those of *E. uncinatus*. Abdominal setæ similar to those in the thorax.

The specimen is referred to the genus *Protis* on account of the absence of operculum, and the character of the collar setæ. (Cf. Bush, 1904, pp. 226-227.)

In crevices on outer side of rocks at entrance to Condado Bay, opposite Fort Geronimo, Porto Rico. Collected by R. W. Miner. Type in Amer. Mus. Nat. Hist.

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PLATE XXIX

Figs. 1-4. *Podarke guanica*.

1. Dorsal view of head $\times 60$.
2. Parapodium $\times 50$.
3. Typical dorsal and ventral seta $\times 350$.
4. Typical middle seta $\times 350$.

Figs. 5-10. *Lepidonotus notata*.

5. Dorsal view of head $\times 25$.
6. Elytron from 18th somite $\times 30$.
7. Elytra bearing parapodium from middle of body $\times 25$.
8. Ventral seta $\times 350$.
- 9-10. Dorsal setæ $\times 350$.

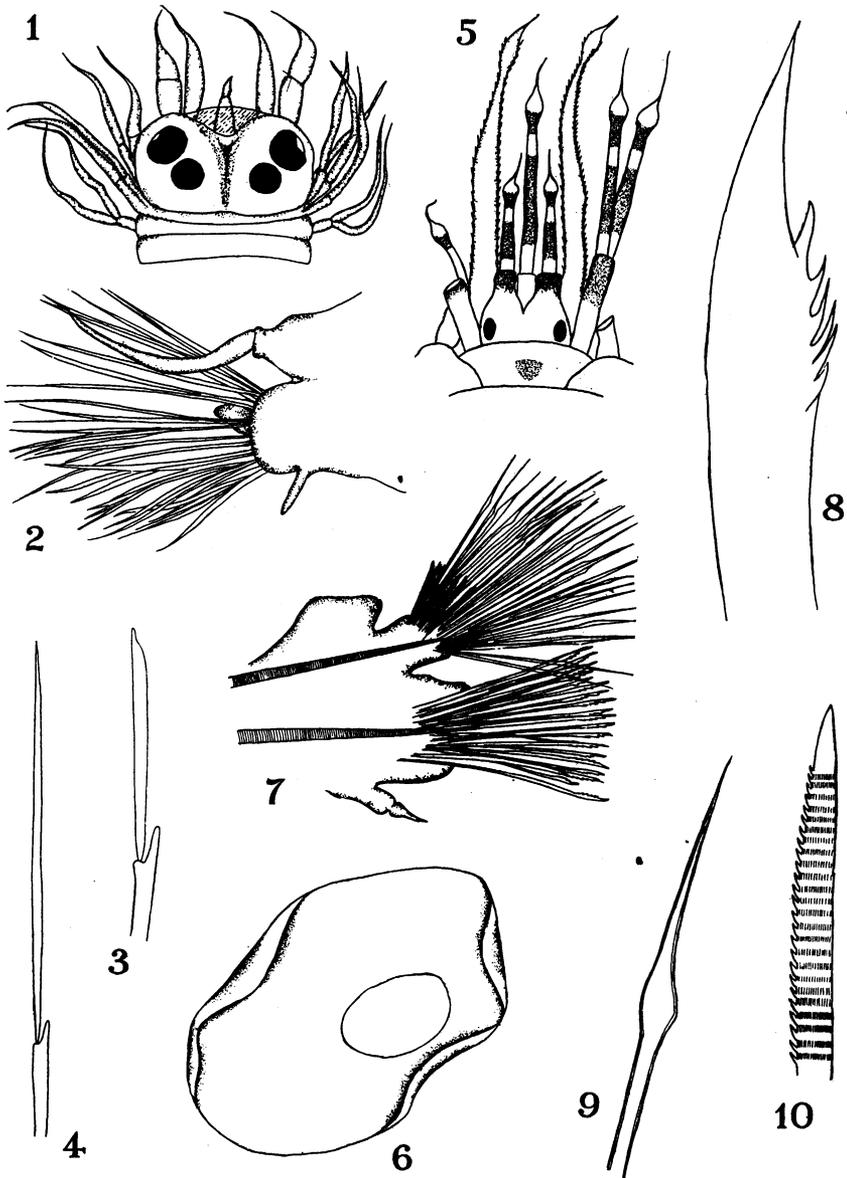


PLATE XXX

Figs. 1-6. *Nereis glandulata*.

1. Anterior end $\times 15$.
2. Diagrammatic dorsal view of pharynx $\times 10$.
3. Diagrammatic ventral view of pharynx $\times 10$.
4. Parapodium from 10th somite $\times 50$.
5. Dorsal seta $\times 350$.
6. Ventral seta $\times 350$.

Figs. 7-9. *Amage inhamata*.

7. Side view of anterior end $\times 33$.
8. Capillary seta $\times 350$.
9. Spinula $\times 350$.

Figs. 10-15. *Sabella melanostigma* var.

10. End of rachis showing eye-spot.
11. Dorsal view of anterior end $\times 8$.
12. Ventral view of anterior end $\times 8$.
13. Thoracic seta.
14. Thoracic uncinus.
15. Pennoned seta.

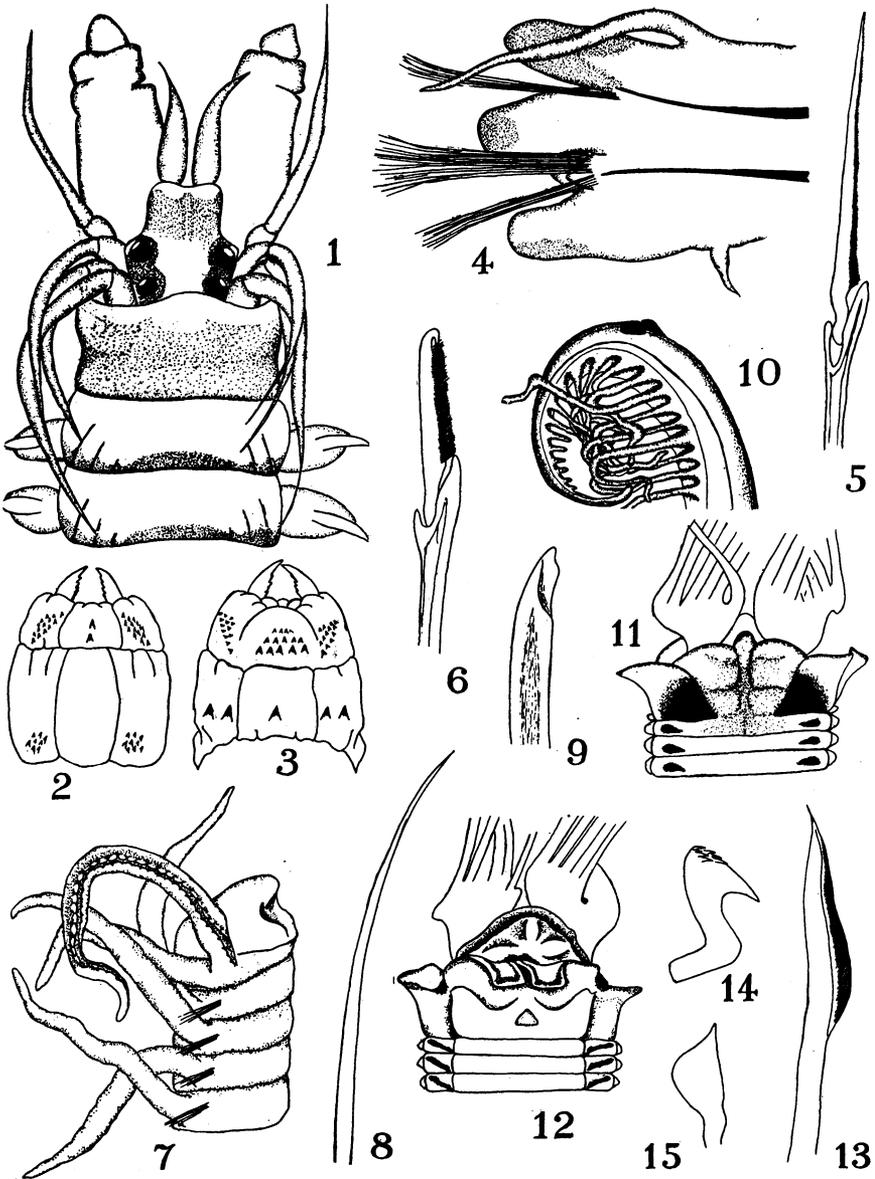


PLATE XXXI

Figs. 1-2. *Sabella melanostigma* var.

1. Abdominal seta.
2. Antenna $\times 7.5$.

Figs. 3-9. *Parasabella fonticula*.

3. Ventral view of head $\times 30$.
4. Dorsal view of head $\times 30$.
5. Superior thoracic seta $\times 175$.
6. Inferior seta $\times 175$.
7. Avicular uncinus (Thor.) $\times 350$.
8. Pennoned seta $\times 350$.
9. Inferior abdominal seta $\times 350$.

Figs. 10-14. *Parasabella midoculi*.

10. Dorsal view of anterior end $\times 30$.
11. Rachis with pigment-spots and pinnules.
12. Ventral view of anterior end $\times 30$.
13. Avicular uncinus (Thor.) $\times 350$.
14. Pennoned seta (Thor.) $\times 350$.

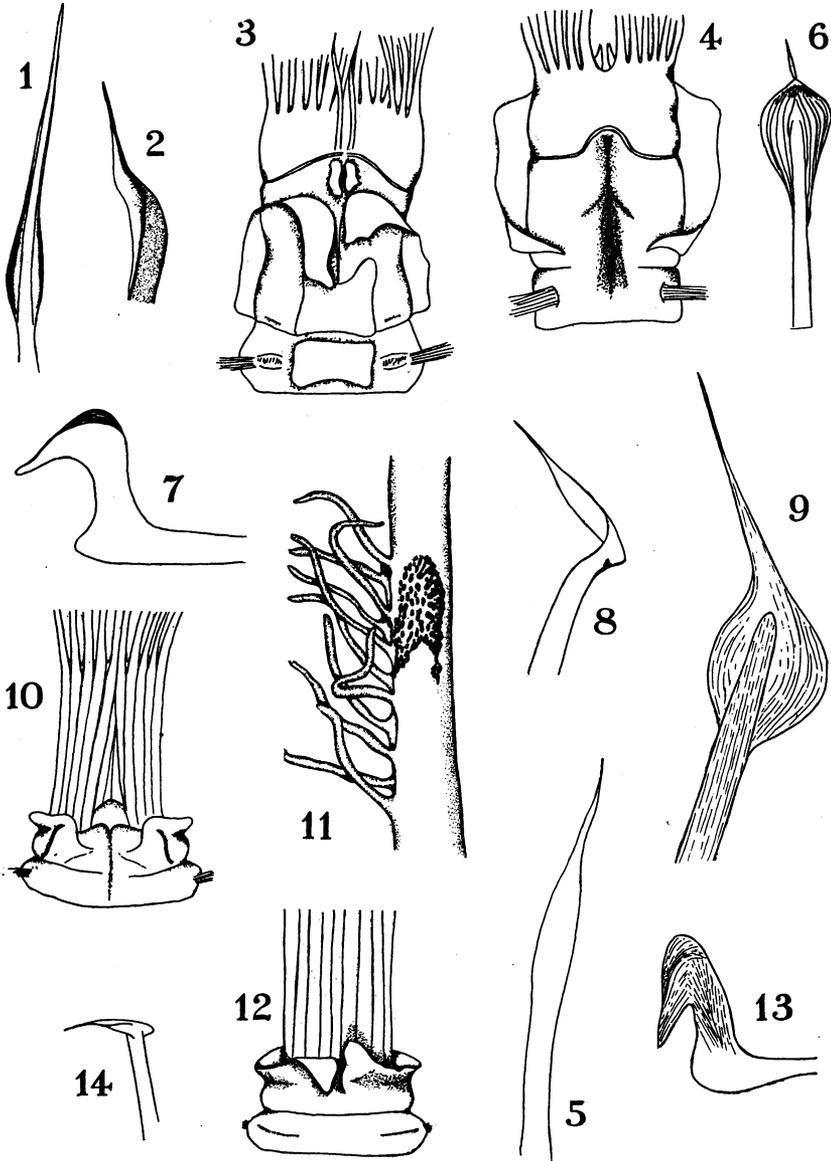


PLATE XXXII

- Figs. 1-2. *Parasabella midoculi*.
1. Thoracic seta $\times 350$.
 2. Rounded seta $\times 350$.
- Figs. 3-8. *Parasabella flecata*.
3. Dorsal view of anterior end $\times 30$.
 4. Ventral view of anterior end $\times 30$.
 5. Superior thoracic seta $\times 350$.
 6. Thoracic uncinus $\times 350$.
 7. Pennoned seta (Thor.) $\times 350$.
 8. Abdominal seta $\times 350$.
- Figs. 9-13. *Protis torquata*.
9. Ventral view of anterior end $\times 30$.
 10. Dorsal view of anterior end $\times 30$.
 11. Seta from collar fascicle $\times 350$.
 12. Superior thoracic seta.
 13. Thoracic uncinus.

