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NEW SPECIES OF POLYCHAETE WORMS FROM THE ATLANTIC OCEAN, WITH A REVISION OF THE DORVILLEIDAE

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The five new species and four new genera of polychaete worms described herein were obtained from four sources:

1. Two species, a hesionid and a dorvilleid, collected by Pierre Brunel and others in the Gulf of St. Lawrence and found in the collections of polychaetes at the Station de Biologie Marine, Grande-Rivière, Gaspé, Province of Quebec, Canada, where I worked during the summer of 1959.

2. One species of polynoid, collected by Roland L. Wigley and others off Massachusetts and found in the collections of polychaetes at the U.S. Fish and Wildlife Station at Woods Hole, Massachusetts, where I worked during the summer of 1960.

3. One species of polynoid from the Gulf of Mexico, a part of a collection from Seahorse Key, Florida, sent to me by John L. Taylor.

4. One species of hesionid (some 200 specimens) from the Middle Congo, West Africa, found in the mantle cavities of *Tellina* and sent to me by Arthur G. Humes.

In working up the new genus and species of dorvilleid, it seemed advisable to revise the genera of Dorvilleidae by erecting another new genus and re-establishing a third. The types are deposited in the United States National Museum, Smithsonian Institution.

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FAMILY POLYNOIDAE

Phyllosheila, new genus

Type species: P. wigleyi new species.

Diagnosis: Prostomium with three antennae, with lateral antennae inserted ventrally, without cephalic peaks. Elytra 15 pairs, inserted on segments 2, 4, 5, 7, 9, . . . 21, 23, 26, 29, 32. Segments less than 50. Parapodia biramous. Notosetae stouter than neurosetae, faintly spinous. Neurosetae smooth, bidentate. Ventral cirri enlarged, leaf-like. Ventral surface densely papillated.

Phyllosheila wigleyi, new species

Fig. 1

The species is based on a single specimen (USNM Cat. No. 30007) collected on muddy bottom south of Marthas Vineyard, Massachusetts, *Delaware* cruise No. 59-10, Station 17, 39° 44′ N, 70° 53′ W, 870–970 fathoms, 28 August 1959, R. Fritz, collector. The specimen was snuggled along the ambulacral groove of a large starfish, *Brisinga* sp. The species is named for Roland L. Wigley, who is carrying on interesting benthic studies in the Georges Bank area.

Description: Length 12 mm, width with setae 3 mm, segments 45 (last three small). Body without color, flattened dorsoventrally, tapered gradually posteriorly. Prostomium (Fig. 1, a,b) wider than long, bilobed, rounded anteriorly, lacking cephalic peaks. Median antenna with ceratophore inserted in anterior median notch, with style short, smooth, clavate, with filiform tip. Lateral antennae with short ceratophores inserted ventrally, with short styles. Palps smooth, long (about three times length of prostomium), tapering to short slender tips. Two pairs eyes very large, contiguous, occupying nearly all the lateral surfaces, darker around the periphery, greyish within.

Cirrophores of tentacular cirri lateral to prostomium. Dorsal pair tentacular cirri missing; ventral pair similar to median antenna, only longer. Elytra missing, 15 pairs, as indicated by the elytrophores. Dorsal cirri mostly missing, the few remaining ones cylindrical, with short filiform tip, not extending beyond the setae (Fig. 1, c). Ventral cirri of first setigerous segment (buccal cirri of segment 2) similar to median antenna; from second setigerous segment on, ventral cirri large, leaf-like, tapering laterally to rounded or slightly pointed tips (Fig. 1, b,d,e). Ventral cirri densely papillated on ventral surface; papillae long, slender, longer toward lateral tips of cirri (Fig. 1, f). Ventral surface of papapodia densely covered with larger papillae (Fig. 1, d,g).

Parapodia biramous (Fig. 1, d,e). Notopodia shorter than neuropodia, with projecting acicular lobes and spreading bundles of relatively few (about 6–10), stout, crystal clear setae. Notosetae about twice as thick as neurosetae, with faint spinous markings, tapering to blunt tips (some may be slightly irregular; Fig. 1, h). Neuropodia with bluntly conical presetal and postsetal lips, with a fan-shaped bundle of very numerous

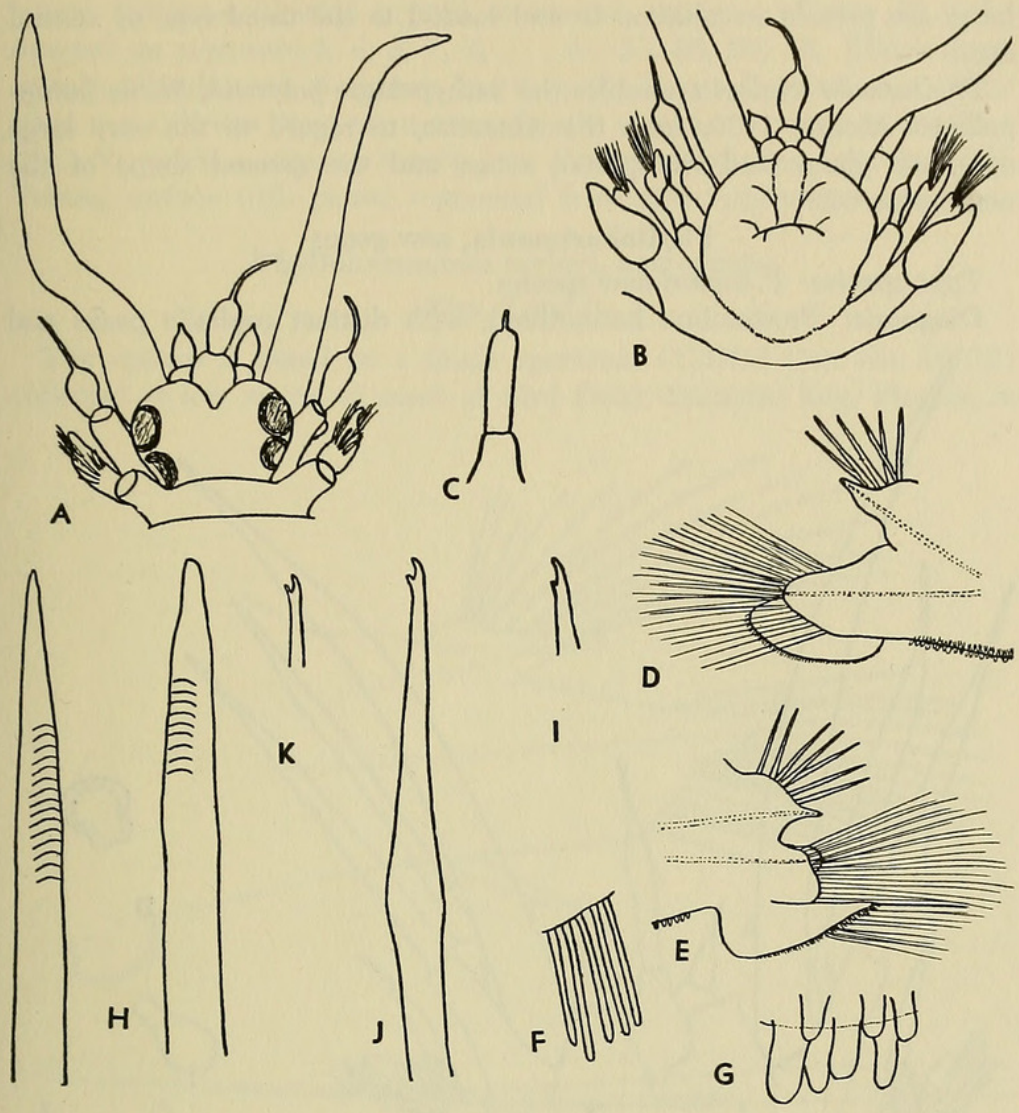

FIG. 1. *Phyllosheila wigleyi* new species: *a*, Dorsal view anterior end (dorsal pair tentacular cirri and elytra missing); *b*, ventral view anterior end (bases of palps only shown); *c*, dorsal cirrus from posterior region; *d*, middle parapodium, anterior view; *e*, same, posterior view; *f*, few papillae from ventral surface of ventral cirri; *g*, few papillae from ventral surface of parapodia; *h*, notosetae; *i–k*, tips of upper, middle and lower neurosetae.

crystal clear setae, suggesting superficially the setal bundles of a heteronereid. Neurosetae with slender stem regions, enlarging distally, then tapering to bidentate hooked tips, without spinous markings (Fig. 1, i–k).

Distribution: Known only from the type locality.

Remarks: Phyllosheila differs from other genera of polynoids in the enlarged ventral cirri, suggestive of the Phyllodocidae. *Gastrolepidia* Schmarda, 1861, and *Phyllohartmania* new genus (see below) are characterized by conspicuous paired ventral foliaceous appendages but the

latter are present in addition to and medial to the usual type of ventral cirri.

Phyllosheila wigleyi resembles the bathypelagic polynoid, *Sheila bathypelagica* Monro, 1930, from the Antarctic, in regard to the very large eyes, the glassy and transparent setae, and the general shape of the neurosetae.

Phyllohartmania, new genus

Type species: P. taylori new species.

Diagnosis: Prostomium harmothoid, with distinct cephalic peaks and

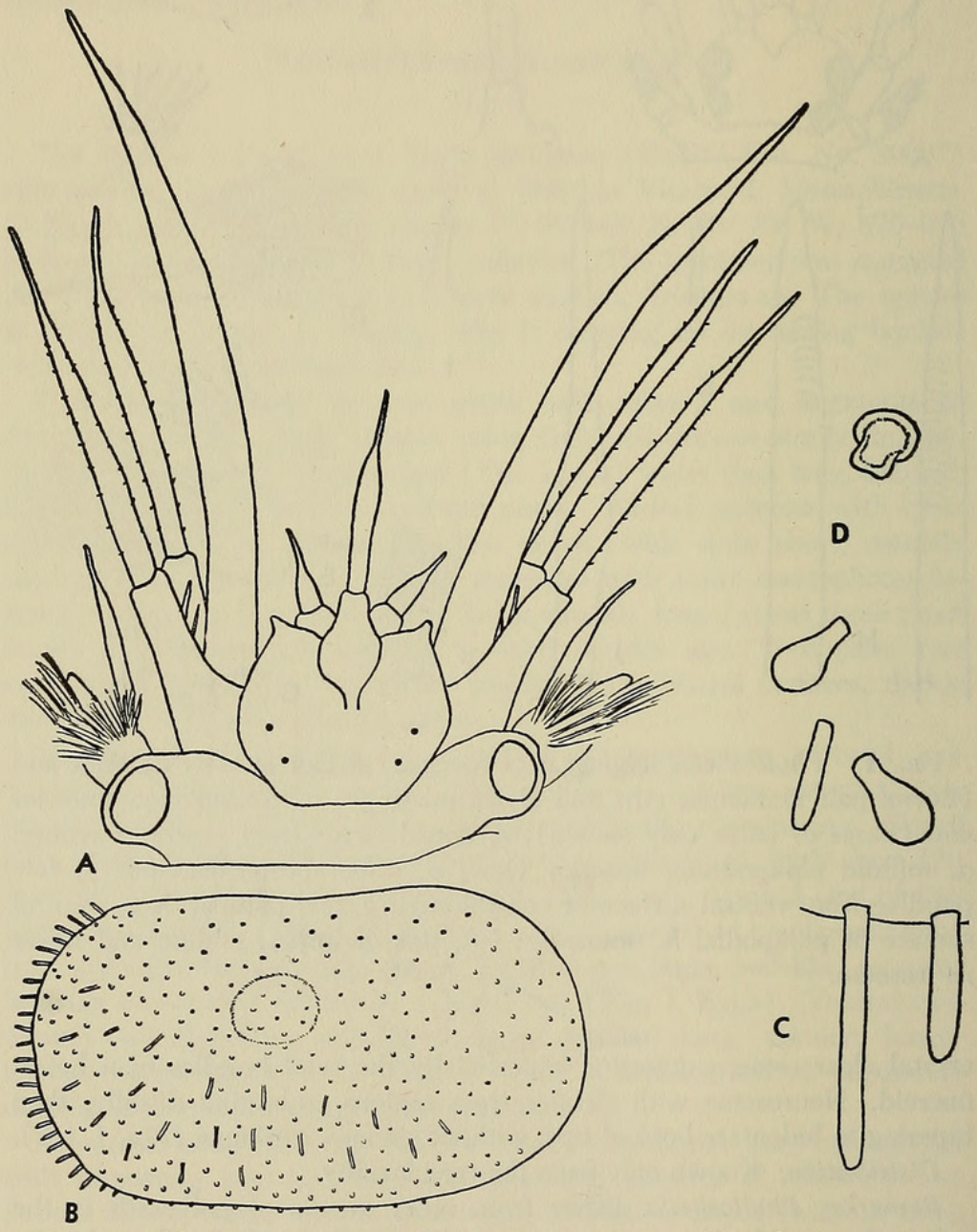

FIG. 2. *Phyllohartmania taylori* new species: *a*, Dorsal view anterior end, elytra removed; *b*, elytron; *c*, few papillae from elytron; *d*, microtubercle from anterior part of elytron.

lateral antennae inserted ventral to median antenna. Elytra 15 pairs, inserted on segments 2, 4, 5, 7, 9, . . . 21, 23, 26, 29, 32. Elytra large, covering the dorsum. Segments less than 40. Parapodia biramous. Notosetae more slender than neurosetae, faintly spinous, tapering to capillary tips. Neurosetae spinous, tapering to slender sharp tips (not hooked). Ventral surface with paired segmental foliaceous appendages.

Phyllohartmania taylori, new species

Figs. 2 and 3

The species is based on a single specimen (USNM Cat. No. 30010) collected at low water, in sand, at Bird Point, Seahorse Key, Florida, in

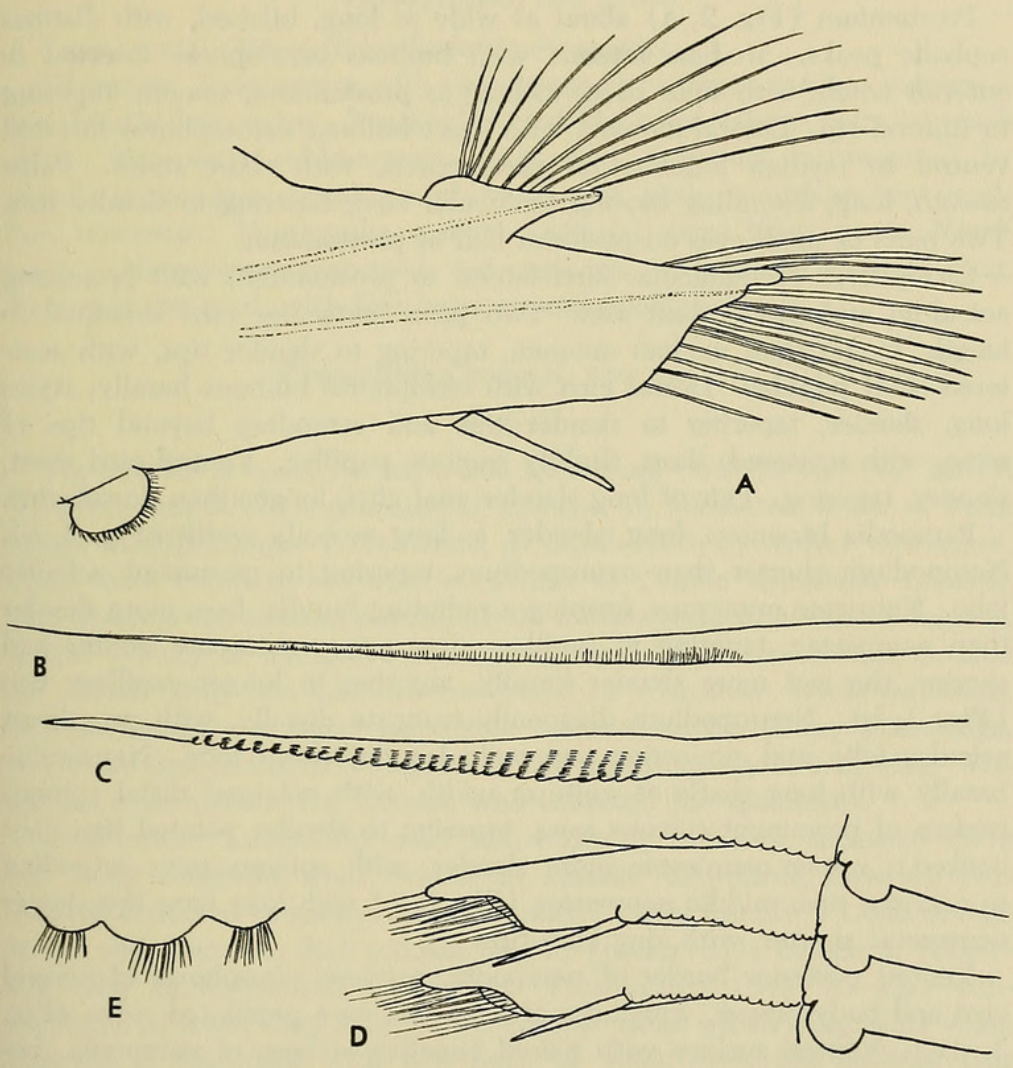

FIG. 3. *Phyllohartmania taylori* new species: *a*, Middle left parapodium and ventral ciliated lamella at base of parapodium, anterior view; *b*, notoseta from same; *c*, middle neuroseta from same; *d*, ventral view of portion of right half of body showing position of ventral lamellae, segmental papillae, papillated ciliated ridges, ventral cirri, parapodia 13 and 14; *e*, portion of ciliated papillated ridge.

the Gulf of Mexico by E. Lowe Pierce, 20 July 1958. The species is named for John L. Taylor, who is working on the polychaetes from Seahorse Key.

Description: Length 21 mm, width with setae 8 mm, segments 37 (last one small). Body widest in the middle third, tapering anteriorly and posteriorly, flattened dorsoventrally. Body iridescent tannish in color, setae yellowish. Elytra 15 pairs, rather large, imbricated, covering the dorsum, oval to subreniform in shape, colorless, thin, transparent. Exposed part of elytra (Fig. 2, b,c) papillate, with papillae of two kinds: 1) slender, filiform, on external border and scattered on surface; 2) short, capitate, on posterior border and scattered on surface. Anterior part of elytra with few scattered microtubercles (Fig. 2, d).

Prostomium (Fig. 2, a) about as wide as long, bilobed, with distinct cephalic peaks. Median antenna with bulbous ceratophore inserted in anterior notch, with style about as long as prostomium, smooth, tapering to filiform tip. Lateral antenna with short bulbous ceratophores inserted ventral to median antenna on prostomium, with short styles. Palps smooth, long, extending beyond tentacular cirri, tapering to slender tips. Two pairs of small eyes on posterior half of prostomium.

Cirrophores of tentacular cirri lateral to prostomium, with projecting aciculum and single stout seta. Two pairs tentacular cirri subequal in length, longer than median antenna, tapering to slender tips, with scattered short papillae. Dorsal cirri with cirrophores bulbous basally; styles long, slender, tapering to slender tips and extending beyond tips of setae, with scattered, short, slightly capitate papillae. Ventral cirri short, slender, tapering. Pair of long slender anal cirri, longer than dorsal cirri.

Parapodia biramous, long, slender, as long as body width (Fig. 3, a). Notopodium shorter than neuropodium, tapering to prominent acicular lobe. Notosetae numerous, forming a radiating bundle, fine, more slender than neurosetae, tapering to capillary tips; upper notosetae stouter and shorter, the rest more slender basally, tapering to longer capillary tips (Fig. 3, b). Neuropodium diagonally truncate distally, with prominent acicular lobe and projecting supraacicular digitiform lobe. Neurosetae basally with long shafts of uniform width, with enlarged distal spinous regions of prominent spinous rows, tapering to slender pointed tips (not hooked); upper neurosetae more slender, with spinous rows extending to near the tips; middle neurosetae (Fig. 3, c) with long bare tips; lower neurosetae shorter, with long bare tips.

Ventral posterior border of parapodia, between cirrophores of ventral cirri and body proper, with tufts of long cilia on a papillated ridge (Fig. 3, d,e). Ventral surface with paired lamellae at base of parapodia, beginning on setigerous segment 3 and continuing posteriorly; lamellae semicircular, equipped with long cilia (Fig. 3, a,d). Segmental papillae (Fig. 3, d) short, globular, inconspicuous, lateral to ventral lamellae, beginning on segment 7, continuing posteriorly. Proboscis of usual polynoid type, with two pairs of interlocking jaws and eleven pairs of papillae around opening, some papillae splotched with black pigment.

Distribution: Known only from the type locality.

Remarks: Phyllohartmania resembles *Hartmania* Pettibone, 1955, in most respects. It differs in the presence of the paired foliaceous appendages on the ventral surface, similar in position to the ventral lamellae characteristic of *Gastrolepidia* Schmarda, 1861.

Phyllohartmania taylori resembles *Hartmania moorei* Pettibone, 1955, in regard to the small eyes, the capillary notosetae, the neurosetae ending in slender sharp tips. It differs in the presence of the paired ventral lamellae (lacking on *H. moorei*) and elytra with papillae (elytra smooth in *H. moorei*).

FAMILY HESIONIDAE

Parasyllidea, new genus

Type species: Parasyllidea humesi new species.

Diagnosis: Prostomium with two antennae (without median antenna), two biarticulate palps. Tentacular cirri six pairs (three pairs on each side). Parapodia subbiramous. Notopodia indistinct, represented by acicula in elongate cirriphores of dorsal cirri, with or without few capillary notosetae. Neuropodia conical (without extra lobes, as in *Nereimyra*). Neurosetae compound, heterogomph, with blades short to long. Proboscis unarmed, with fine hairs around opening.

Parasyllidea humesi, new species

Fig. 4

The species is based on some 200 specimens (USNM Cat No. 30011, holotype, and 30012), collected at Loango, 19 kilometers north of Point Noire, Middle Congo, West Africa, 27 April 1955, by Arthur G. Humes. They were found in the mantle cavities of *Tellina nymphalis* Lamark. The bivalves were found intertidally in muddy sand in estuarine regions, in the vicinity of mangrove swamps where fresh-water streams entered the ocean. Only one hesionid was found in a bivalve. While hesionids, like polynoids, are rather frequently commensalistic, to my knowledge, this is the first record of a hesionid in the mantle cavity of a bivalve. The species is named for Dr. Humes, who collected the specimens.

Description: Length up to 25 mm, width up to 5 mm, segments up to 74. Body relatively short, widest in anterior two-thirds, tapering posteriorly, flattened ventrally, arched dorsally. Color (in life): Light orange to tan with intestine dark reddish brown; (preserved): Cream to yellowish with amber-colored neurosetae. Prostomium (Fig. 4, a,b) subrectangular, wider than long, with a median ridge which disappears when pharynx is extended, with two pairs of black eyes, the anterior pair larger than the posterior pair; lateral antennae and biarticulate palps on anterior margin of prostomium subequal in length, about as long as prostomium, the palps lateral and slightly ventral to antennae.

Tentacular cirri with cylindrical basal cirrophores, three pairs on each side, first pair lateral to prostomium, next two pairs lateral and posterior to prostomium, with 1–2 tentacular segments distinct dorsally; styles of

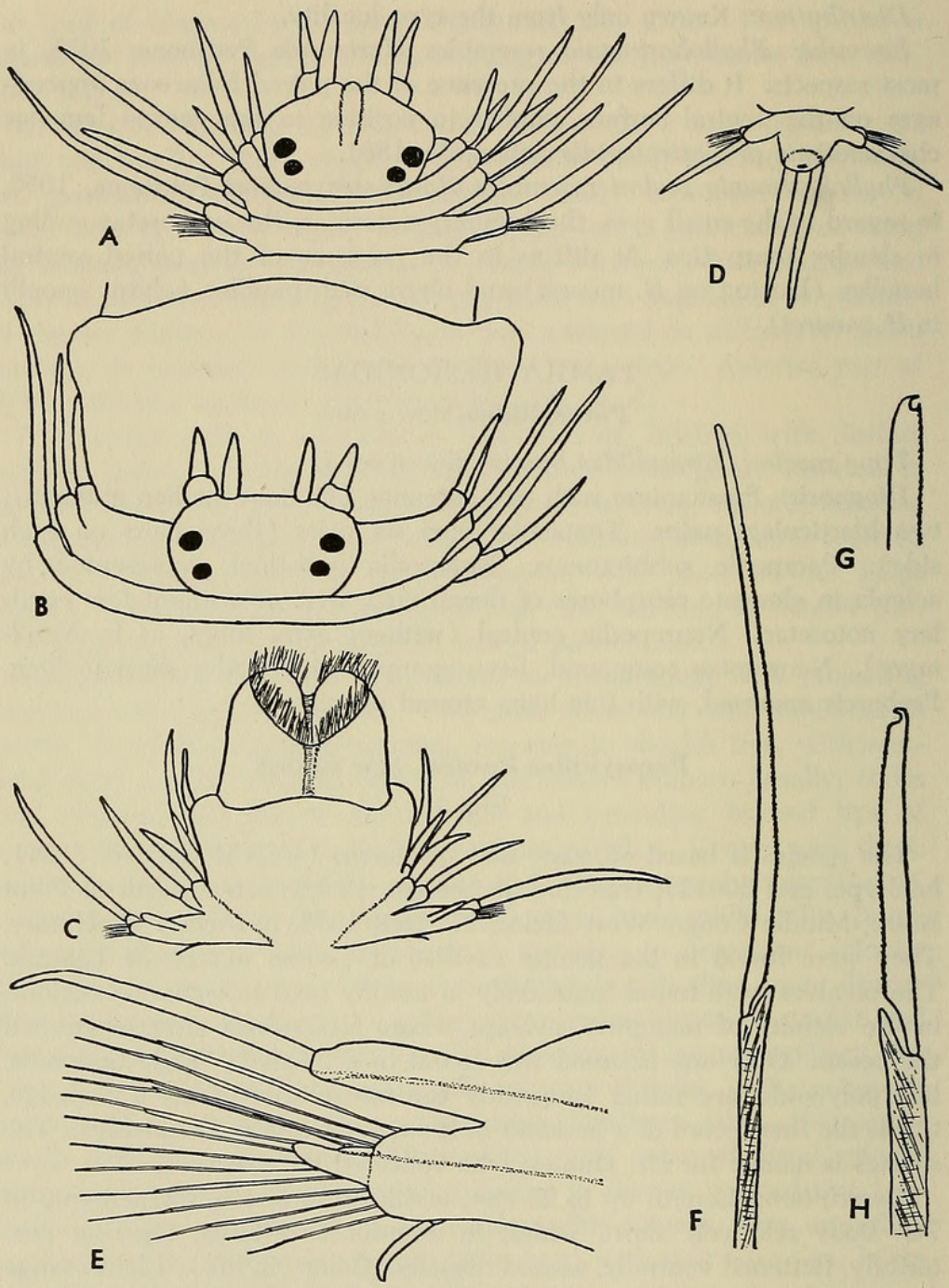

FIG. 4. *Parasyllidea humesi* new species: *a*, Dorsal view anterior end; *b*, same, with pharynx extended, basal part of pharynx only shown; *c*, ventral view anterior end with pharynx extended; *d*, dorsal view posterior end; *e*, middle right parapodium, anterior view; *f*, middle neuroseta; *g*, tip of same, enlarged; *h*, lower neuroseta.

tentacular cirri slender, tapering, upper pairs longer than lower pairs, all shorter than dorsal cirri.

Parapodia (Fig. 4, e) prominent, about as long as width of body, subbiramous, the notopodia represented by few slender curved acicula within the prominent, elongated dorsal cirrophores, without notosetae; styles of dorsal cirri tapering gradually, extending slightly beyond setal tips. Neuropodia elongated, subconical, postsetal lip rounded, presetal lip extending beyond tips of acicula into a digitiform acicular lobe, with 1–2 acicula which are dark amber-colored distally. Neurosetae (Fig. 4, f–h) numerous, forming fan-shaped bundles, light to dark amber-colored, compound, with heterogomph stems, with blades finely pectinate and tips blunt, hooked (may be finely bidentate); middle neurosetae with long blades, upper neurosetae with slightly shorter blades and lower neurosetae with still shorter blades. Ventral cirri slender, digitiform, extending to about length of acicular lobes. Anal end (Fig. 4, d) rounded, with pair of anal cirri slightly longer than the dorsal cirri. Pharynx or proboscis (Fig. 4, c) thick, muscular, with wider basal part and narrower distal ring which is thinner middorsally and midventrally. Opening of pharynx encircled by ring of very fine filmy hairs, without jaws. Some specimens were filled with developing eggs or sperm.

Distribution: Known only from the type locality.

Remarks: Parasyllidea resembles the hesionid genera *Nereimyra* Blainville, 1828 (= *Castalia* Savigny, 1820, preoccupied), *Syllidea* Quatrefages, 1865 (= *Magalia* Marion and Bobretzky, 1875), *Micropodarke* Okuda, 1938, and *Parahesione* Pettibone, 1956, in having two antennae (no median antenna) and two palps on the prostomium and six pairs of tentacular cirri. The five genera can be distinguished as indicated in the following key:

KEY TO THE HESIONID GENERA WITH TWO ANTENNAE, TWO PALPS, AND SIX PAIRS TENTACULAR CIRRI

1.—Parapodia biramous or subbiramous 2

Parapodia uniramous. Without notoacicula. Neuropodia with bilobed presetal lips and rounded postsetal lips. Proboscis unarmed, with filiform papillae ..... *Micropodarke* Okuda

2.—Parapodia subbiramous. Notopodia represented by acicula in cirrophores of dorsal cirri, with or without few capillary notosetae 3

Parapodia biramous. Notopodia form distinct lobes, smaller than or subequal to neuropodia, with notoacicula and numerous capillary notosetae. Neuropodia subconical, without extra lobes. Proboscis unarmed, with numerous fine papillae ..... *Parahesione* Pettibone

3.—Neuropodia subconical, without extra lobes 4

Neuropodia with three conical lobes. Proboscis with ten or more papillae, with or without pair of ventrolateral ridges ..... *Nereimyra* Blainville (= *Castalia* Savigny)

4.—Proboscis bordered with papillae and hairs, with two lateral horny jaws and median stylet ---------- *Syllidea* Quatrefages (= *Magalia* Marion and Bobretzky)

Proboscis without papillae, with fine hairs around opening, without jaws ---------- *Parasyllidea* new genus

According to the above revision, *Nereimyra blacki* Knox, 1960, dredged off New Zealand, is referred to *Parasyllidea*. *Parasyllidea humesi* is close to *P. blacki*. The latter lacks eyes (two pairs in *P. humesi*) and has about six capillary notosetae projecting from the dorsal cirrophores (notosetae lacking in *P. humesi*).

Genus *Parahesione* Pettibone, 1956, emended

Type species (original designation): *P. luteola* (Webster, 1880).

Diagnosis: Prostomium with two lateral antennae, without median antenna, with two unjointed (typically) or biarticulate palps, two pairs eyes (typically) or eyes lacking. Tentacular segments three, somewhat fused; tentacular cirri six pairs (three pairs on each side). Parapodia biramous. Notopodia forming distinct lobes below cirrophores of dorsal cirri (typically) or notopodia subequal to neuropodia, with numerous capillary notosetae. Neurosetae compound, with blades long and slender. Proboscis with numerous papillae around opening, without jaws.

Parahesione bruneli, new species

Fig. 5

The species is known from a single incomplete specimen (USNM Cat. No. 30009), dredged on muddy bottom in the Gulf of St. Lawrence, 10 miles off Grande-Rivière, Gaspé South, 48° 18′ N, 64° 18′ W, 60 fathoms, 16 July 1959. It is named for Pierre Brunel, who collected the specimen.

Description: Length for 22 segments 7 mm, width including setae up to 3 mm. Body widest in middle, tapering gradually anteriorly (incomplete posteriorly), flattened dorsoventrally. With wide brownish bands dorsally (in life), colorless (preserved). Prostomium (Fig. 5, a) subrectangular, wider than long, with lateral antennae digitiform, about as long as prostomium, with palps slightly shorter, thicker than and lateral to antennae, distinctly biarticulate, with eyes and median antenna lacking. First tentacular segment indistinct dorsally, cirrophores of the first pairs tentacular cirri lateral to prostomium. Second and third tentacular segments distinct dorsally. Tentacular cirri six pairs, variable in length (easily broken), some long, the upper pairs longer than lower pairs.

Parapodia biramous (Fig. 5, b), with both notopodia and neuropodia well developed, subequal, both with projecting acicular lobes from which 2–3 transparent acicula may project. Both notosetae and neurosetae numerous, arranged in radiating bundles, slender, subequal in diameter basally (some neurosetae slightly stouter than the notosetae), transparent,

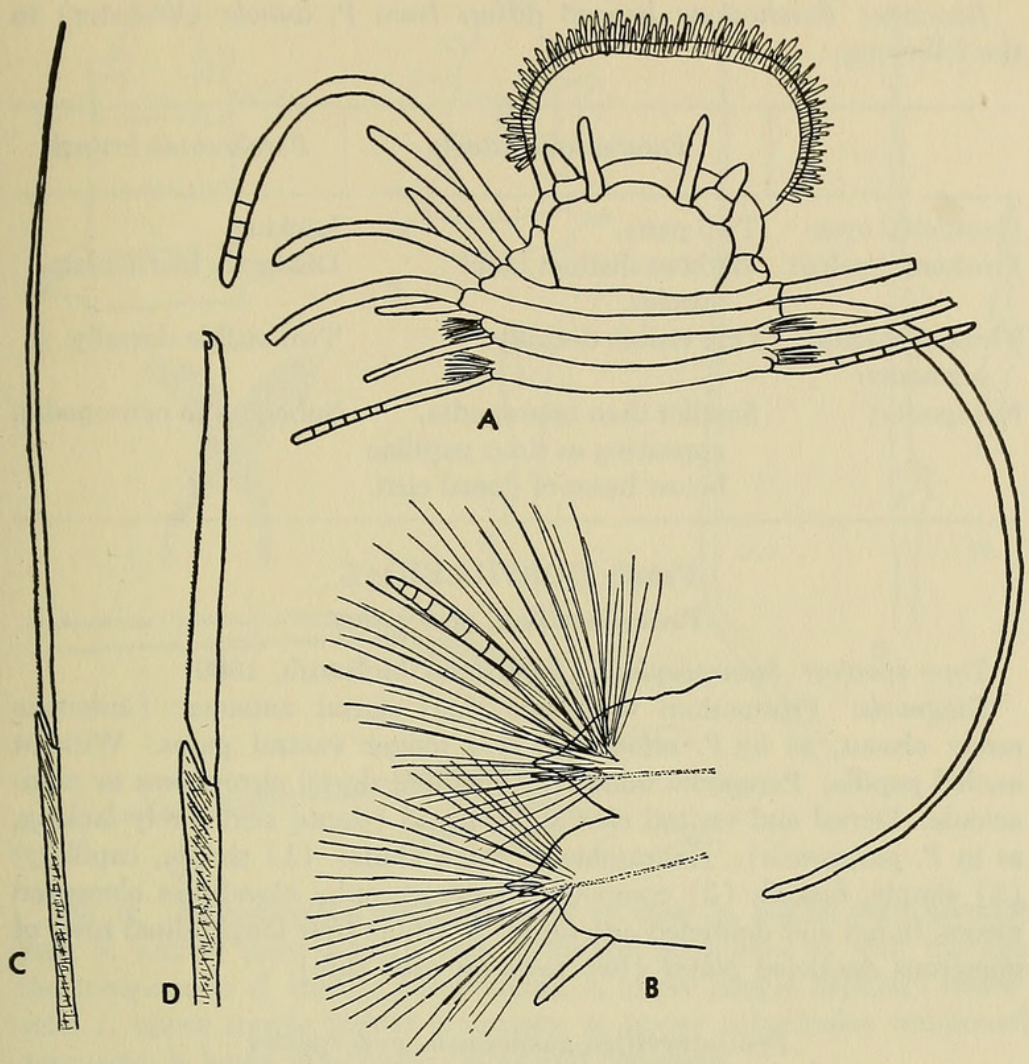

FIG. 5. *Parahesione bruneli* new species: *a*, Dorsal view anterior end, with proboscis extended, first right pair tentacular cirri missing and some of dorsal and tentacular cirri broken; *b*, right parapodium from segment 15, anterior view; *c*, compound neuroseta with long blade; *d*, same, with shorter blade.

iridescent, transversely striated microscopically. Notosetae simple, tapering to capillary tips. Neurosetae (Fig. 5, c,d) compound, finely spinous, the majority with blades long, tapering to fine tips; some of lower neurosetae with blades shorter, with tips hooked, faintly bidentate. Dorsal cirri on posterior faces of notopodia, slender, tapering, sometimes articulate, especially distally, variable in length (easily broken), at least some extending beyond tips of setae. Ventral cirri digitiform, extending slightly beyond parapodial lobes. Proboscis (Fig. 5, a) somewhat flared distally, with numerous papillae around opening, arranged in about 4–5 rows, the papillae tapering to pointed tips.

Distribution: Known only from the type locality.

Remarks: Parahesione bruneli differs from *P. luteola* (Webster) in the following:

	Parahesione luteola	*Parahesione bruneli*
Prostomial eyes:	Two pairs.	Lacking.
Prostomial palps:	Without distinct basal articles.	Distinctly biarticulate.
Three tentacular segments:	One visible dorsally.	Two visible dorsally.
Notopodia:	Smaller than neuropodia, appearing as stout papillae below bases of dorsal cirri.	Subequal to neuropodia.

Family DORVILLEIDAE

Protodorvillea, new genus

Type species: Staurocephalus kefersteini McIntosh, 1869.

Diagnosis: Prostomium with two short dorsal antennae (antennae rarely absent, as in *P. atlantica*), two longer ventral palps. Without nuchal papilla. Parapodia uniramous, without dorsal cirrophores or notoacicula. Dorsal and ventral cirri short, ovoid (dorsal cirri rarely lacking, as in *P. gaspeensis*). Neurosetae of three kinds: (1) simple, capillary; (2) simple, forked; (3) compound, heterogomph. Mandibles elongated pieces, flared and denticled anteriorly. Maxillae four longitudinal rows of numerous denticled plates (two rows on each side).

Protodorvillea gaspeensis, new species

Fig. 6

The species is known from a single incomplete specimen (USNM Cat. No. 30008), collected intertidally among rocks and algae in the Gulf of St. Lawrence at Grande-Rivière, Gaspé South, 2 December 1955, by Pierre Brunel.

Description: Length more than 7 mm (incomplete posteriorly), width up to 0.5 mm, segments more than 27. Body slender, threadlike, having general appearance of a syllid, such as *Exogone,* without color (in alcohol). Prostomium (Fig. 6, a,b) subconical, with faint transverse groove, without eyes, with two short clavate dorsal antennae and two short biarticulate ventral palps. First two tentacular segments apodous and achaetous, first slightly longer than following. Dark mandibles (Fig. 6, b,c) visible ventrally through thin integument, wider, flared, and denticled anteriorly. Dark maxillae visible more dorsally (not dissected out).

Parapodia (Fig. 6, d) uniramous, with single neuroaciculum, without indication of dorsal cirrophores, notoacicula or dorsal cirri. Neuropodia cylindrical. Ventral cirri short, cylindrical. Neurosetae of three kinds: (1) upper ones (1–2 in number, Fig. 6, d,e) simple, slender, arched,

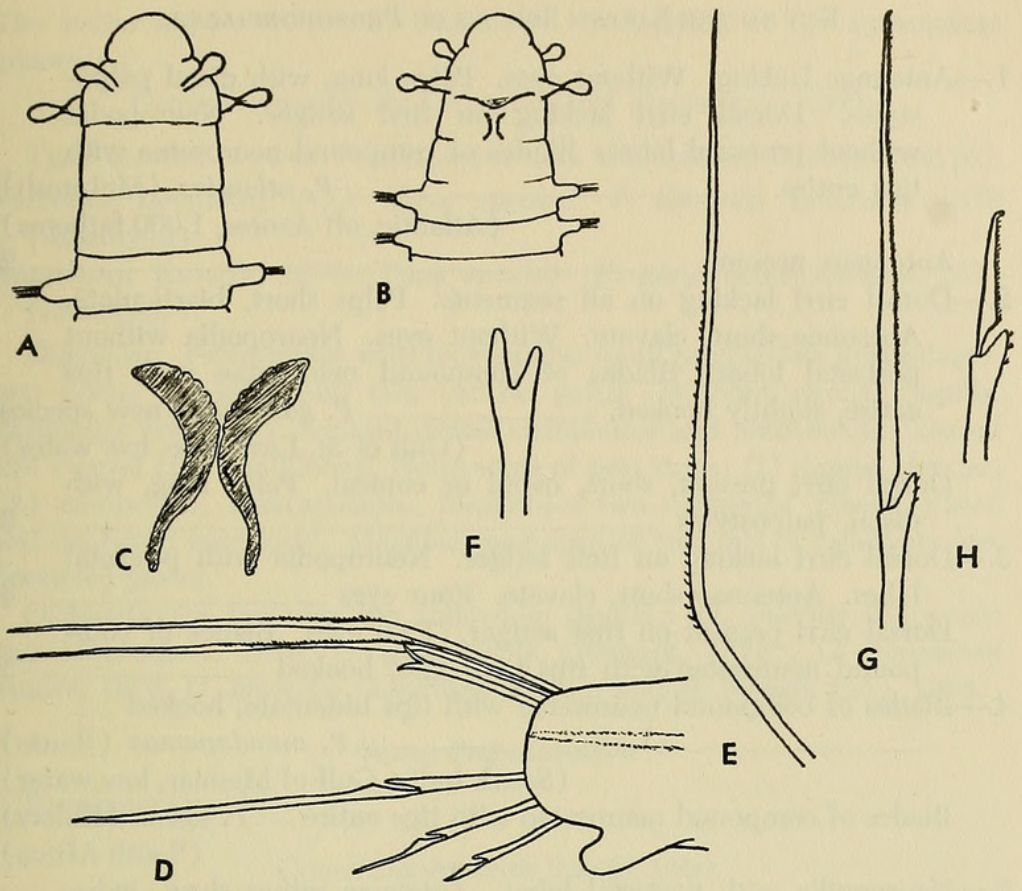

FIG. 6. *Protodorvillea gaspeensis* new species: *a*, Dorsal view anterior end; *b*, ventral view anterior end; *c*, ventral mandibles as seen through the integument; *d*, middle parapodium; *e*, upper simple capillary neuroseta; *f*, upper simple forked neuroseta; *g*, upper subacicular compound neuroseta; *h*, lower subacicular compound neuroseta.

finely spinous; (2) upper one (1 in number, Fig. 6, f) simple, forked, with branches smooth, nearly equal; (3) subacicular ones (3–4 in number, Fig. 6, g,h) compound, heterogomph, with blades long to short, finely spinous, with tips entire, slightly hooked; stems with few spines distally. The single specimen found in December contained very large yolky eggs, beginning in setigerous segment 11, about 2–3 eggs per segment.

Distribution: Known only from type locality.

Remarks: Protodorvillea, as herein defined, includes the following species:

P. kefersteini (McIntosh, 1869), *P. atlantica* (McIntosh, 1885), *P. egena* (Ehlers, 1913), *P. gracilis* (Hartman, 1938), and *P. mandapamae* (Banse, 1959).

Protodorvillea gaspeensis differs from the other species of *Protodorvillea* by lacking dorsal cirri and by having short biarticulate palps. The distinguishing characters of the different species of *Protodorvillea* are indicated in the following key:

KEY TO THE KNOWN SPECIES OF *PROTODORVILLEA*

1.—Antennae lacking. Without eyes. Palps long, with distal palpostyles. Dorsal cirri lacking on first setiger. Neuropodia without postsetal lobes. Blades of compound neurosetae with tips entire. ---------- *P. atlantica* (McIntosh)
(Atlantic, off Azores, 1,000 fathoms)

Antennae present ---------- 2

2.—Dorsal cirri lacking on all segments. Palps short, biarticulate. Antennae short, clavate. Without eyes. Neuropodia without postsetal lobes. Blades of compound neurosetae with tips entire, slightly hooked. ---------- *P. gaspeensis* new species
(Gulf of St. Lawrence, low water)

Dorsal cirri present, short, ovoid or conical. Palps long, with distal palpostyles ---------- 3

3.—Dorsal cirri lacking on first setiger. Neuropodia with postsetal lobes. Antennae short, clavate. Four eyes ---------- 4

Dorsal cirri present on first setiger. Two eyes. Blades of compound neurosetae with tips bidentate, hooked ---------- 5

4.—Blades of compound neurosetae with tips bidentate, hooked ---------- *P. mandapamae* (Banse)
(South India, Gulf of Mannar, low water)

Blades of compound neurosetae with tips entire ---- *P. egena* (Ehlers)
(South Africa)

5.—Neuropodia with postsetal lobes. Antennae rather short, indistinctly articled ---------- *P. kefersteini* (McIntosh)
(Scotland, low water)

Neuropodia without postsetal lobes. Antennae short, clavate ---- ---------- *P. gracilis* (Hartman)
(Central California, low water)

Revision of the Family Dorvilleidae Chamberlin, 1919
(Staurocephalidae Kinberg, 1865; Stauronereidae Verrill, 1900)

The family Dorvilleidae is usually recognized through two genera, *Dorvillea* Parfitt and *Ophryotrocha* Claparède and Mecznikow. *Dorvillea* has included a heterogeneous grouping of species. Crossland (1924) and Hartman (1944) have indicated some of the characters that could be used in separating the dorvilleid species. They, as well as others, have hesitated to establish different genera, since a number of species are poorly known and inadequately described. The species of *Dorvillea sensu lata* have herein been separated into four genera, *Dorvillea* Parfitt, *Stauronereis* Verrill, *Papilliodorvillea* new genus and *Protodorvillea*. The revision has been based mainly on external characters. The mandibles and maxillae have not been used in separating the genera, since the species are characteristically very small, making it extremely difficult to dissect out the jaw pieces and describe them adequately. Synonymies and diagnoses for the five genera of the Dorvilleidae are given below.

The better known species of dorvilleids are referred to the appropriate genera.

Genus *Ophryotrocha* Claparède and Mecznikow, 1869

Type species: O. puerilis Claparède and Mecznikow, 1869 (monotypy).

Paractius Levinsen, 1879. *Type species: P. littoralis* Levinsen, 1879 (monotypy).

Eteonopsis Esmark, 1874. *Type species: E. geryonicola* Esmark, 1874 (monotypy).

Diagnosis: Prostomium with four similar small papilla-like appendages, two dorsal antennae and two ventral palps. Without nuchal papilla. Parapodia uniramous, without dorsal cirrophores and notoacicula. Dorsal and ventral cirri small lobes. Neurosetae of two kinds: (1) simple, slender; (2) compound, heterogomph. Mandibles two elongated pieces, flared and denticled anteriorly. Maxillae consisting of two sets of relatively few denticled pieces.

Ophryotrocha includes the following species: *O. puerilis* Claparède and Mecznikow, 1869, *O. geryonicola* (Esmark, 1874), *O. claparedii* Studer, 1878, *O. littoralis* (Levinsen, 1879), and *O. minuta* Levi, 1954.

Genus *Protodorvillea*

See above (p. 178).

Genus *Stauronereis* Verrill, 1900

Type species: Nereis rudolphi Delle Chiaje, 1828 (original designation).

Prionognathus Keferstein, 1862 (preoccupied by Laferté, 1851, in Coleoptera). *Type species: P. ciliata* Keferstein, 1862 (monotypy); = *Stauronereis rudolphi* (Delle Chiaje, 1828).

Diagnosis: Prostomium with two long antennae, two long palps. Without nuchal papilla. Parapodia subbiramous, with elongate dorsal cirrophores with enclosed notoacicula. Dorsal and ventral cirri short. Neurosetae of three kinds: (1) simple, capillary; (2) simple, forked; (3) compound, heterogomph. Mandibles elongated pieces, flared and denticled anteriorly. Maxillae consisting of four longitudinal rows of numerous denticled plates (two rows on each side).

Stauronereis includes the following species: *S. rudolphi* (Delle Chiaje, 1828), *S. incertus* (Schmarda, 1861), *S. caecus* (Webster and Benedict, 1884), *S. neglectus* (Fauvel, 1923), *S. japonicus* (Annenkova, 1937), and *S. furcatus* (Hartman, 1953).

Genus *Papilliodorvillea* new genus

Type species: Staurocephalus (*Dorvillea*) *gardineri* Crossland, 1924.

Anisoceras Grube, 1856 (preoccupied by Dejean, 1833, in Coleoptera). *Type species* (here designated): *A. rubra* Grube, 1856.

Diagnosis: Prostomium with two long antennae, two long palps. With nuchal papilla. First tentacular segment enlarged, nearly encircling pro-

stomium. Parapodia subbiramous, with elongate dorsal cirrophores with enclosed notoacicula. Dorsal and ventral cirri short. Neurosetae of two kinds: (1) simple, slender; (2) compound, heterogomph. Mandibles elongated pieces, flared and denticled anteriorly. Maxillae consisting of four longitudinal rows of numerous denticled plates (two rows on each side).

Papilliodorvillea includes the following species: *P. rubra* (Grube, 1856), *P. australiensis* (McIntosh, 1885), *P. crassa* (Chamberlin, 1919), and *P. gardineri* (Crossland, 1924).

Genus *Dorvillea* Parfitt, 1866

Type species: D. lobata Parfitt, 1866 (monotypy); = *D. rubrovittata* (Grube, 1855).

Staurocephalus Grube, 1855 (preoccupied by Barrande, 1846, in Crustacea). *Type species: S. rubrovittatus* Grube, 1855 (monotypy).

Teleonereis Verrill, 1900. *Type species: Staurocephalus rubrovittatus* Grube, 1855 (original designation).

Stauroceps Verrill, 1900. *Type species: Staurocephalus erucaeformis* Malmgren, 1865 (original designation); = *D. rubrovittata* (Grube, 1855).

Diagnosis: Prostomium with two long antennae, two long palps. Without nuchal papilla. First tentacular segment about twice as long as following segment, partly surrounding prostomium. Parapodia subbiramous, with elongate dorsal cirrophores with enclosed notoacicula. Dorsal and ventral cirri short. Neurosetae of two kinds: (1) simple, slender; (2) compound, heterogomph. Mandibles elongated pieces, flared and denticled anteriorly. Maxillae consisting of four longitudinal rows of denticled plates (two rows on each side).

Dorvillea contains the following species: *D. rubrovittata* (Grube, 1855), *D. vittata* (Grube, 1856), *D. sociabilis* (Webster, 1879), *D. cerasina* (Ehlers, 1901), *D. moniloceras* (Moore, 1909), *D. romeri* (Augener, 1912), *D. angolana* (Augener, 1918), *D. similis* (Crossland, 1924), *D. pseudorubrovittata* Berkeley, 1927, and *D. matsushimaensis* (Okuda, 1954).

The differences among the dorvilleid genera may be summarized in the following key:

Key to the Known Genera of Dorvilleidae

1.—Parapodia uniramous, without elongate dorsal cirrophores and notoacicula 2

Parapodia subbiramous, with elongate dorsal cirrophores and enclosed notoacicula. Prostomium with two long antennae and two long palps. Maxillae consisting of four longitudinal rows (two on each side), each with numerous denticled plates 3

2.—Neurosetae of two kinds: (1) simple, slender; (2) compound, heterogomph. Prostomium with four similar small papilla-like appendages, two dorsal antennae and two ventral palps. Max-

illae consisting of two series of plates, each consisting of less than 16 plates ..... *Ophryotrocha* Claparède and Mecznikow

Neurosetae of three kinds: (1) simple, capillary; (2) simple, forked; (3) compound, heterogomph. Prostomium with two short antennae, two palps longer than antennae. Maxillae consisting of four longitudinal rows (two on each side), each with numerous denticled plates ..... *Protodorvillea*

3.—Neurosetae of three kinds: (1) simple, capillary; (2) simple, forked; (3) compound, heterogomph ..... *Stauronereis* Verrill

Neurosetae of two kinds: (1) simple, slender; (2) compound, heterogomph 4

4.—With nuchal papilla. First achaetous tentacular segment enlarged, nearly encircling prostomium ..... *Papilliodorvillea*

Without nuchal papilla. First achaetous tentacular segment somewhat enlarged, partly encircling prostomium ..*Dorvillea* Parfitt

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