

## POLYNOID POLYCHAETES COMMENSAL WITH ANTIPATHARIAN CORALS

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*Abstract.*—Three new genera and new species of commensal Polynoidae: Harmothoinae, having close associations with antipatharian corals, are described: *Antipathipolyeunoa nuttingi* and *Bayerpolynoe floridensis*, from the North Atlantic Ocean off Barbados, Venezuela, and the Gulf Stream off Florida, and *Tottonpolynoe symantipathicola*, from the South Pacific Ocean off New Zealand. Included also in the Key to the Species of Polynoidae associated with antipatharians is the previously described Lepidastheninae, *Benhamipolynoe antipathicola* (Benham, 1927), from off New Zealand.

Many polynoids are found to have close associations with other invertebrates, especially corals, echinoderms, molluscs, and other polychaetes. The group considered herein includes four species of polynoids, three of them represented by new genera and species, collected on five species of antipatharian corals and one gorgonian. This commensal relationship has been noted by some antipatharian coral specialists.

In connection with his study on the fauna of the Gulf Stream at great depths off Florida, de Pourtalès (1867) described a number of antipatharians. Based on collections of the Barbados-Antigua Expedition, Nutting (1919:113) commented on the antipatharians, noting that *Antipathes columnaris* Duchassaing was one of the commonest species collected off Barbados. It resembled a small bottle-brush with stiff-wavy branches thickly implanted on the sides of the straight central stem. Many specimens had hollow tunnels formed by anastomosed twigs, lying along the main stems, induced by the presence of a commensal annelid.

Silberfeld (1911:20-21, pl. 1: figs. 2, 4) described and photographed a new antipatharian from Sagami Bay, Japan, *Parantipathes tenuispina*, with a so-called worm-run on the main stem. In his report on the Antipatharia from the *Terra Nova* voyage

off New Zealand, Totton (1923:106-108, figs. 9-11, pl. 2: fig. 5) identified and described two bottle-brush shaped colonies as *P. tenuispina*, both containing worm-runs, where the branchlets of the main branches united as arches, forming the framework of a worm-run.

As indicated by Benham (1927:64, 67), the worm on *P. tenuispina* was removed from the worm-tunnel by Professor J. Arthur Thomson. He described the latticed tunnel as being about 10 cm long, fitted the worm loosely and was formed by an interlacing, and fusion of numerous serrated branchlets that formed an intricate meshwork along the main axis of the coral. The worm was initially submitted to Professor McIntosh and later to W. B. Benham, while working up the polychaetes of the *Terra Nova* Expedition off New Zealand. Benham (1927:64-67, pl. 1: figs. 11-13) described the worm as a new polynoid species, *Lepidasthenia antipathicola*. Later, Pettibone (1970: 201-205, figs. 1-4) reexamined the holotype and referred the species to a new genus, *Benhamipolynoe*, and added to the species records a specimen from the *Siboga* Expedition in the Malay Archipelago, found in an empty tube of an eunicid polychaete, and a specimen from the North Atlantic in the Gulf Stream off Florida, from a *Fish Hawk*

station, associated with the antipatharian *Antipathes columnaris* Duchassaing. *B. antipathicola* is included in the key to the known species of Polynoidae associated with antipatharian corals.

Key to the Known Species of Polynoidae associated with Antipatharian Corals

1. Prostomium lepidasthenoid, lateral antennae inserted terminally on anterior extensions of prostomium, without distinct ceratophores (Pettibone 1970, figs. 1a, 2a, 3a). Parapodia subbiramous, notopodia short conical acicular lobe, without notosetae; neuropodia deeply cut dorsally and ventrally, with subequal, rounded presetal and postsetal lobes, without projecting acicular lobe (Pettibone 1970, fig. 1b, c). Commensal with *Parantipathes tenuispina* Silberfeld and *Antipathes columnaris* Duchassaing . . . . .  
 . . . . . Lepidastheniinae Pettibone, 1989:  
     *Benhamipolynoe antipathicola*  
         (Benham, 1927)
- Prostomium harmothoid, with cephalic peaks; ceratophores of lateral antennae distinct, inserted ventrally (Figs. 1A, 3A, 5A). Parapodia biramous, notopodia with notosetae; neuropodia with subconical presetal acicular lobe and short, rounded postsetal lobe (Figs. 1F, G, 4A, B, 5B, C) Harmothoinae Willey, 1902 . . . . . 2
2. Notopodia nearly as long as neuropodia; neuropodia without presetal subacicular process (Fig. 5B, C). Elytra 16 pairs, on segments 2, 4, 5, 7, alternate segments to 26, 29, 32, 36, with dorsal cirri on posterior segments. Commensal with *Parantipathes* sp. and gorgonian *Sclerisis macquarina* Bayer & Stefani . . . . .  
 . . . . . *Tottonpolynoe symantipatharia*,  
         n. gen., n. sp.

- Notopodia much shorter than neuropodia; neuropodia with presetal subacicular process (Figs. 1F, G, 4A, B) . . . . . 3
- 3. Elytra 15 pairs, confined to anterior region, on segments 2, 4, 5, 7, alternate segments to 23, 26, 29, 32, with dorsal cirri on posterior segments. Commensal with *Antipathes columnaris* Duchassaing . . . . .  
 . . . . . *Bayerpolynoe floridensis*, n. gen.,  
         n. sp.
- Elytra numerous pairs, on segments 2, 4, 5, 7, alternate segments to 23, 26, 29, 32, 33, 35, continuing on alternate segments. Commensal with *Antipathes tanacetum* Pourtalès . . . . .  
 . . . . . *Antipathipolyeunoa nuttingi*,  
         n. gen., n. sp.

Family Polynoidae Kinberg, 1856  
 Subfamily Harmothoinae Willey, 1902  
*Antipathipolyeunoa*, new genus

*Type species.*—*Antipathipolyeunoa nuttingi*, new species.  
*Diagnosis.*—Body elongate, flattened, with sides nearly parallel, tapering posteriorly; segments numerous (up to 84). Elytra and bulbous elytriphores numerous pairs, on segments 2, 4, 5, 7, alternate segments to 23, 26, 29, 32, 33, continuing on alternate segments to near end of body. Elytra moderate in size, circular to oval, leaving middorsum uncovered, without fringes of papillae or tubercles. Dorsal cirri on non-elytrigerous segments, with short cirrophores and long styles; dorsal tubercles inconspicuous. Prostomium bilobed, with subtriangular anterior peaks, 3 antennae and 2 palps; ceratophore of median antenna in anterior notch of prostomium, with long style; lateral antennae with distinct ceratophores inserted ventrally, with short styles; palps relatively short; 2 pairs of large eyes on posterior half of prostomium. Tentaculophores of segment I lateral to prostomium, achaetous, with 2 pairs of long tentac-

ular cirri; prominent bulbous facial tubercle. Buccal segment (II) without nuchal fold, with first pair of elytra, biramous parapodia, and long ventral buccal cirri; pharynx with 9 pairs of border papillae and 2 pairs of jaws. Parapodia biramous; notopodia small, conical, on anterodorsal face of larger neuropodia; notosetae relatively few (9–2), about as stout as neurosetae, acicular, with faint spinose rows; neuropodia with longer subconical presetal acicular lobe, with projecting subacicular process, and shorter rounded postsetal lobe; neurosetae relatively few (6–11), rather stout, with falcate tips and faint spinose rows. Ventral cirri rather long, extending to tips of neuropodia. Nephridial papillae short, beginning on segment 6. Pygidium with pair of long anal cirri. Comensal with antipatharians.

*Remarks.*—Of the genera of Harmothoinae with elongate bodies, numerous segments, and numerous elytra continuing to near end of the body, *Antipathipolyeunoa* is closest to *Polyeunoa* McIntosh, 1885, as emended by Bergström (1916) and Pettibone (1969:45). The new genus differs mainly by having a prominent subacicular process on the presetal acicular lobe of the neuropodium, lacking in *Polyeunoa*.

*Etymology.*—*Antipathipolyeunoa* is based on its close relationship with antipatharians and the polynoid genus *Polyeunoa*. Gender feminine.

*Antipathipolyeunoa nuttingi*,  
new species  
Figs. 1, 2

*Material examined.*—North Atlantic Ocean, Carribean Sea: Barbados, off Payne's Bay Church, 91 m, 31 May 1918, Barbados-Antigua Expedition 1918, sta 65, on antipatharian "A," C. C. Nutting, collector, removed by F. M. Bayer, identified as *Antipathes tanacetum* Pourtalès by D. M. Opresko, holotype (USNM 80097). Venezuela, NE of Farallon Centinela, 10°57'N, 65°59'W, 70 m, R/V *Pillsbury* sta P736, on

*Antipathes tanacetum* Pourtalès, removed by D. M. Opresko, 3 paratypes (USNM 136587).

*Description.*—Holotype 21 mm long, 3 mm wide with setae, 82 segments. Complete paratype 25 mm long, 3 mm wide, 84 segments. Body elongate, slender, slightly flattened, with sides nearly parallel, tapering gradually posteriorly. Coloration with nearly continuous middorsal reddish brown longitudinal band, with some spots on bases of dorsal cirri and some midventral pigmentation. Elytra numerous pairs, on segments 2, 4, 5, 7, alternate segments to 23, 26, 29, 32, 33, 35, continuing on alternate segments to 73, 77, with dorsal cirri on posterior 5 segments (arrangement somewhat variable on posterior region of paratypes). Elytra round, chalky white, opaque, attached eccentrically; moderate in size, leaving mid-dorsum uncovered, larger anteriorly, becoming smaller posteriorly; without papillae or tubercles (Fig. 2G–I).

Dorsal cirri with short, cylindrical cirrophores posterodorsal to notopodia; styles long, extending far beyond setae; dorsal tubercles indistinct (Figs. 1E, G, 2B).

Bilobed prostomium with wide, subtriangular cephalic peaks; eyes rather large, anterior pair on middle of lateral surface, posterior pair posterolateral; ceratophore of median antenna in anterior notch of prostomium, style long, smooth, with long filamentous tip; lateral antennae with ceratophores inserted ventrally, styles short, with filamentous tips; palps stout, tapered, shorter than median antenna; tentaculophores lateral to prostomium, achaetous; dorsal tentacular cirri long, similar to median antenna, longer than ventral tentacular cirri (Fig. 1A); facial tubercle bulbous. Segment 2 without nuchal lobe, with bulbous elytraphores, biramous parapodia, short conical notopodium with moderate number of notosetae (9), similar to following notosetae; larger neuropodium and neurosetae similar to following neurosetae only more slender; ventral buccal cirri much longer than fol-

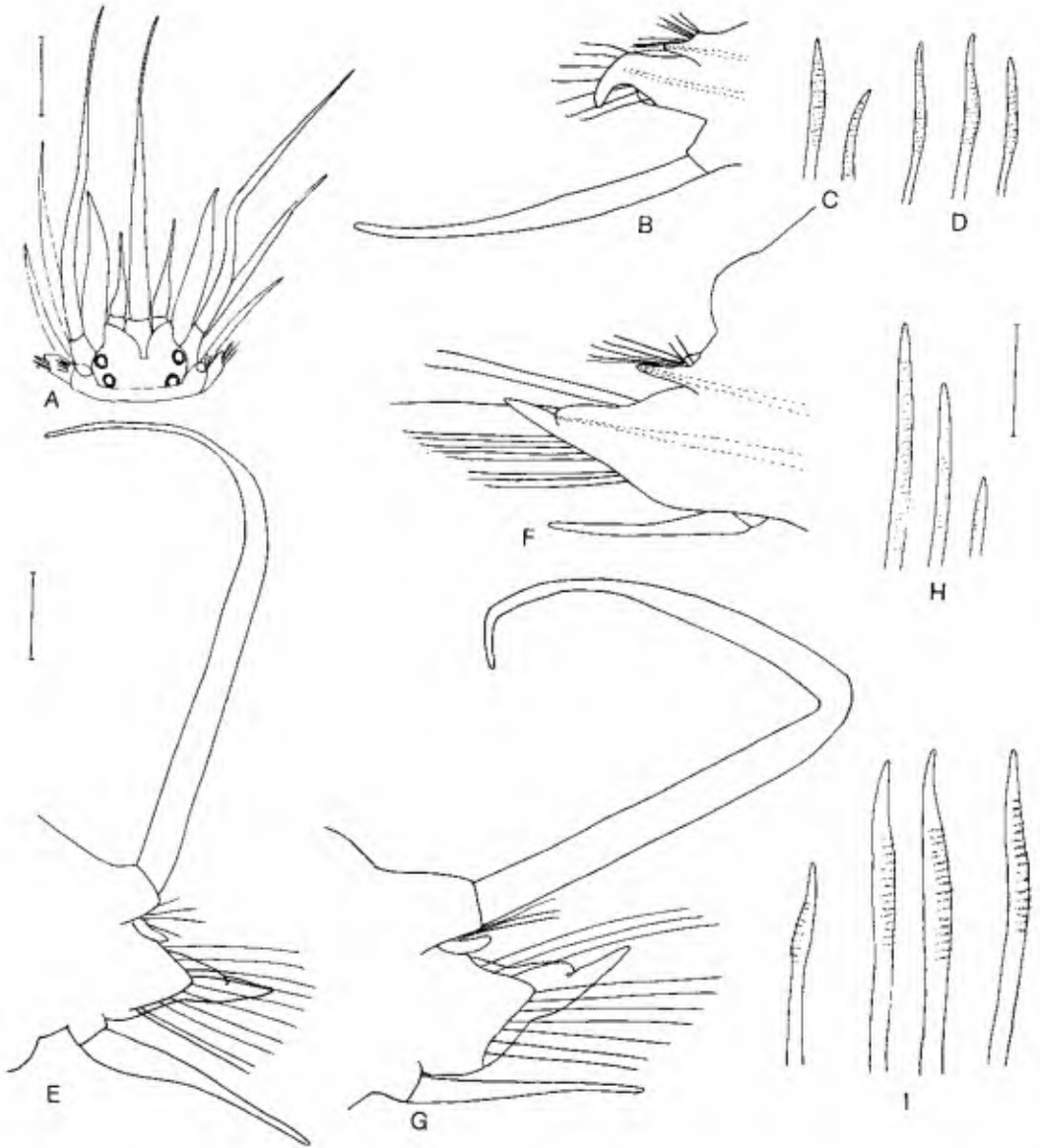


Fig. 1. *Antipathipolyeunoa nuttingi*, holotype: A, Dorsal view of anterior end; B, Right elytrigerous parapodium from segment 2, anterior view, acicula dotted; C, Notosetae from same; D, Lower, middle and upper neurosetae from same; E, Right cirriferous parapodium from segment 3, posterior view; F, Right elytrigerous parapodium from segment 9, anterior view, acicula dotted; G, Right cirriferous parapodium from segment 10, posterior view; H, Long and shorter notosetae from same; I, Lower, middle and upper neurosetae from same. Scales = 0.5 mm for A; 0.2 mm for B, E-G; 0.1 mm for C, D, H, I.

lowing ventral cirri, similar to tentacular cirri (Fig. 1A-D). Pharynx (cut open) with 9 pairs of border papillae and 2 pairs of reddish amber-colored jaws.

Biramous parapodia with short conical

notopodium with longer acicular lobe on lower side; much large neuropodium with longer subconical presetal acicular lobe with projecting digitiform subacicular process and shorter rounded postsetal lobe (Figs.

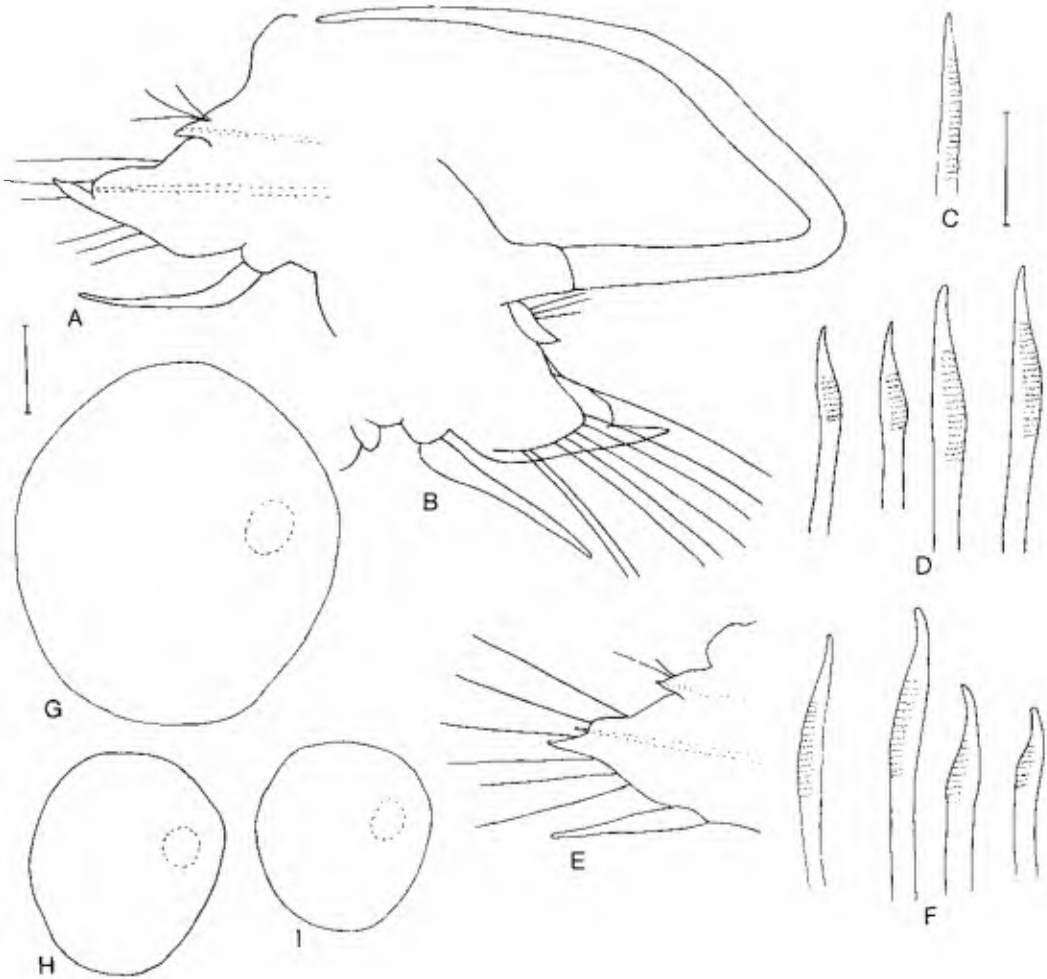


Fig. 2. *Antipathipolyeunoa nuttingi*, holotype: A, Right elytrigerous parapodium from middle region, anterior view, acicula dotted; B, Right cirriferous parapodium from middle region, posterior view; C, Notoseta from same; D, Lower, middle and upper neurosetae from same; E, Right elytrigerous parapodium from posterior region, anterior view, acicula dotted; F, Upper, middle and lower neurosetae from same; G, Right elytron from segment 9; H, Right elytron from middle region; I, Right elytron from posterior region. Scales = 0.2 mm for A, B, E, G-I; 0.1 mm for C, D, F.

1B, E-G, 2A, B, E). Notosetae almost as stout as neurosetae, short, acicular, with faint spinose rows, relatively few (9 on 2nd notopodium, 7 on 9th, 3 on middle, 2 on posterior) (Figs. 1B, C, F-H, 2A-C, E). Neurosetae rather short, acicular, with falcate tips and faint spinose rows; all similar, varying slightly in size and length of spinose regions; relatively few (7 on 2nd neuropodium, 11 on 9th, 8-6 on middle, 6 on pos-

terior) (Figs. 1B, D, F, I, 2A, B, D-F). Ventral cirri tapering, relatively long, extending about to tips of neuropodia or beyond (Figs. 1E-G, 2A, B, E).

Pygidium small, rounded lobe with dorsal anus and pair of anal cirri. Nephridial papillae small, rounded, beginning on segment 6 (Fig. 2B).

*Associations.*—*Antipathipolyeunoa nuttingi* was found living commensally on the

antipatharian *Antipathes tanacetum* Pourtalès. In his study on the antipatharians of the Barbados-Antigua Expedition 1918, C. C. Nutting (1919:113) reported that the commensal annelids were found in hollow tubes lying along the main stems of the antipatharians.

*Etymology.*—The species is named for Professor Charles Cleveland Nutting, leader of the Barbados-Antigua Expedition of 1918 and specialist on hydroids and the Alcyonaria.

*Bayerpolynoe*, new genus

*Type species.*—*Bayerpolynoe floridensis*, new species.

*Diagnosis.*—Body elongate, flattened, with sides nearly parallel, tapering posteriorly; segments numerous (up to 85). Elytra and bulbous elytophores 15 pairs, on segments 2, 4, 5, 7, alternate segments to 23, 26, 29, 32. Elytra large, elongate-oval, covering dorsum in anterior region, leaving large posterior region uncovered, without fringes of papillae or tubercles. Dorsal cirri on non-elytrigerous segments, with short cirrophores and long styles; dorsal tubercles inconspicuous. Prostomium bilobed, with distinct cephalic peaks, 3 antennae and 2 palps; ceratophore of median antenna in anterior notch of prostomium; lateral antennae with ceratophores inserted ventrally; 2 pairs of large eyes on posterior half of prostomium. Tentaculophores of segment I lateral to prostomium, each with few setae and pair of dorsal and ventral tentacular cirri; prominent bulbous facial tubercle. Buccal segment (II) without nuchal fold, with first pair of elytra, biramous parapodia, and long ventral buccal cirri; pharynx with 9 pairs of border papillae and 2 pairs of jaws. Parapodia biramous; notopodia small, conical, on anterodorsal face of larger neuropodia; notosetae moderate in number, about as stout as neurosetae, acicular, with faint spinose rows; neuropodia with longer subconical presetal acicular lobe, with projecting

subacicular process, and shorter rounded postsetal lobe; neurosetae moderate in number, acicular, with faint spinose rows and tapered bare tips. Ventral cirri rather long, extending to tips of neuropodia. Nephridial papillae short, cylindrical, beginning on segment 6. Pygidium damaged. Commensal with antipatharians.

*Remarks.*—*Bayerpolynoe* agrees with *Antipathipolyeunoa* in having a prominent subacicular process on the presetal acicular lobe of the neuropodia. It differs in having only 15 pairs of elytra confined to the anterior part of the body, instead of numerous pairs, continuing to near the posterior end.

*Etymology.*—The genus is named for Frederick M. Bayer, in recognition of his studies on the Octocorallia and who has discovered and contributed numerous polynoid commensals to me for study. Gender feminine.

*Bayerpolynoe floridensis*, new species  
Figs. 3, 4

*Material examined.*—North Atlantic Ocean, Gulf Stream off Key West, Florida, 24°17'N, 81°58'W, 237 m, *Fish Hawk* sta 7280, 14 Feb 1902, on antipatharian *Antipathes columnaris* Duchassaing, removed by F. M. Bayer, identified by D. M. Opresko, holotype (USNM 80079).

*Description.*—Holotype 27 mm long, 3.5 mm wide with setae, 85 segments. Body elongate, slender, with sides nearly parallel, tapering posteriorly. Coloration with mid-dorsal brownish longitudinal band and pigment spots on cirrophores of dorsal cirri, ventrally with midventral and lateral longitudinal bands. Elytra 15 pairs, on segments 2, 4, 5, 7, alternate segments to 23, 26, 29, 32, with long region with dorsal cirri only. Elytra rather large, elongate-oval, covering anterior part of body, delicate, without papillae or tubercles; light brownish pigmented rings near border, except on anterior part (Fig. 3F, G). Dorsal cirri with short cylindrical cirrophores and long styles ex-

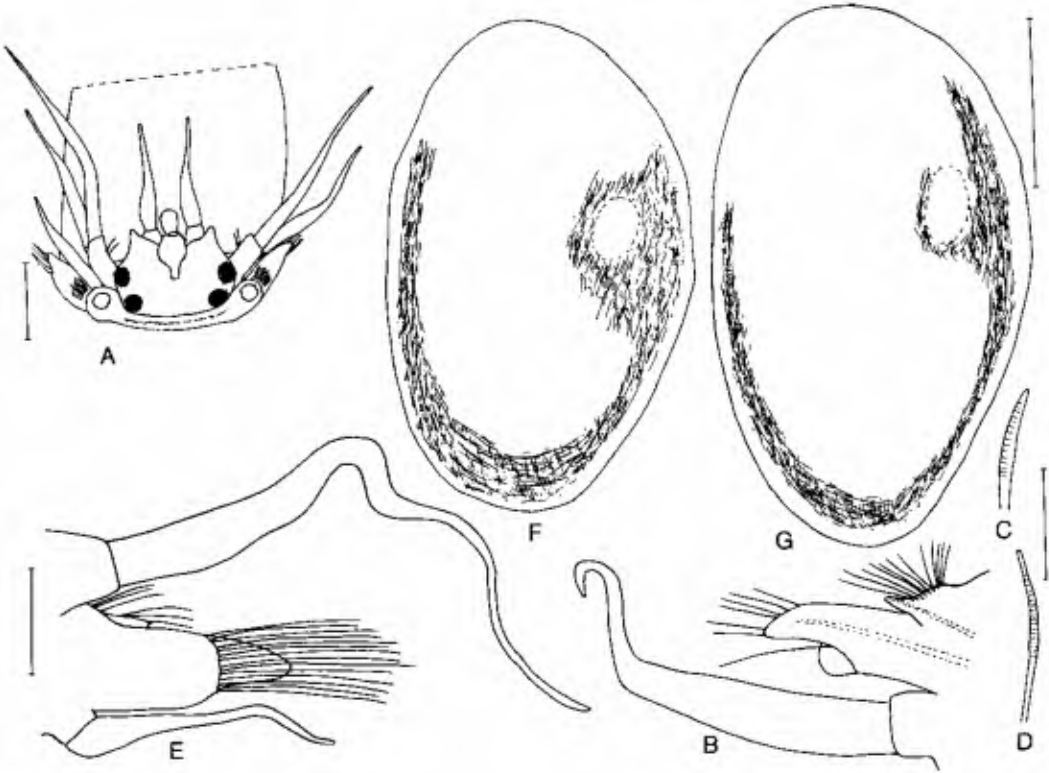


Fig. 3. *Bayerpolynoe floridensis*, holotype: A, Dorsal view of anterior end, pharynx fully extended (only basal part shown), style of median antenna and palps missing; B, Right elytrigerous parapodium of segment 2, anterior view, acicula dotted; C, Notoseta from same; D, Neuroseta from same; E, Right cirriferous parapodium of segment 3, posterior view; F, Right 6th elytron from segment 11; G, Right 15th elytron from segment 32. Scales = 0.5 mm for A; 0.2 mm for B, E; 0.1 mm for C, D; 0.5 mm for F, G.

tending far beyond setae; dorsal tubercles indistinct (Figs. 3E, 4A, H).

Bilobed prostomium with distinct cephalic peaks; eyes large, anterior pair in region of greatest width, slightly larger than posterolateral pair; ceratophore of median antenna in anterior notch of prostomium, style missing (probably long); lateral antennae with ceratophores inserted ventrally, with short, subulate styles; palps missing; tentaculophores lateral to prostomium, each with 2 setae on inner side and pair of longer dorsal and shorter ventral tentacular cirri; facial tubercle bulbous, between ceratophores of lateral antennae (Fig. 3A). Segment 2 without nuchal lobe, with bulbous elytriphores and biramous parapodia; short conical notopodium with notosetae similar

to following; larger neuropodium with neurosetae more slender than following, with rounded tips; ventral buccal cirri much longer than following ventral cirri, similar to tentacular cirri (Fig. 3A-D). Pharynx with 9 pairs of border papillae and 2 pairs of amber-colored jaws.

Biramous parapodia with short conical notopodia with longer acicular lobe on lower side; much larger neuropodia with longer subconical presetal acicular lobe, with projecting digitiform subacicular process, and shorter rounded postsetal lobe (Figs. 3B, E, 4A, B, E, H). Notosetae almost as stout as neurosetae, acicular, short, slightly curved and longer, straight, with faint spinous rows; moderate in number (12 on 2nd notopodium, 14 on 11th, 11 on 32nd, 10 on pos-

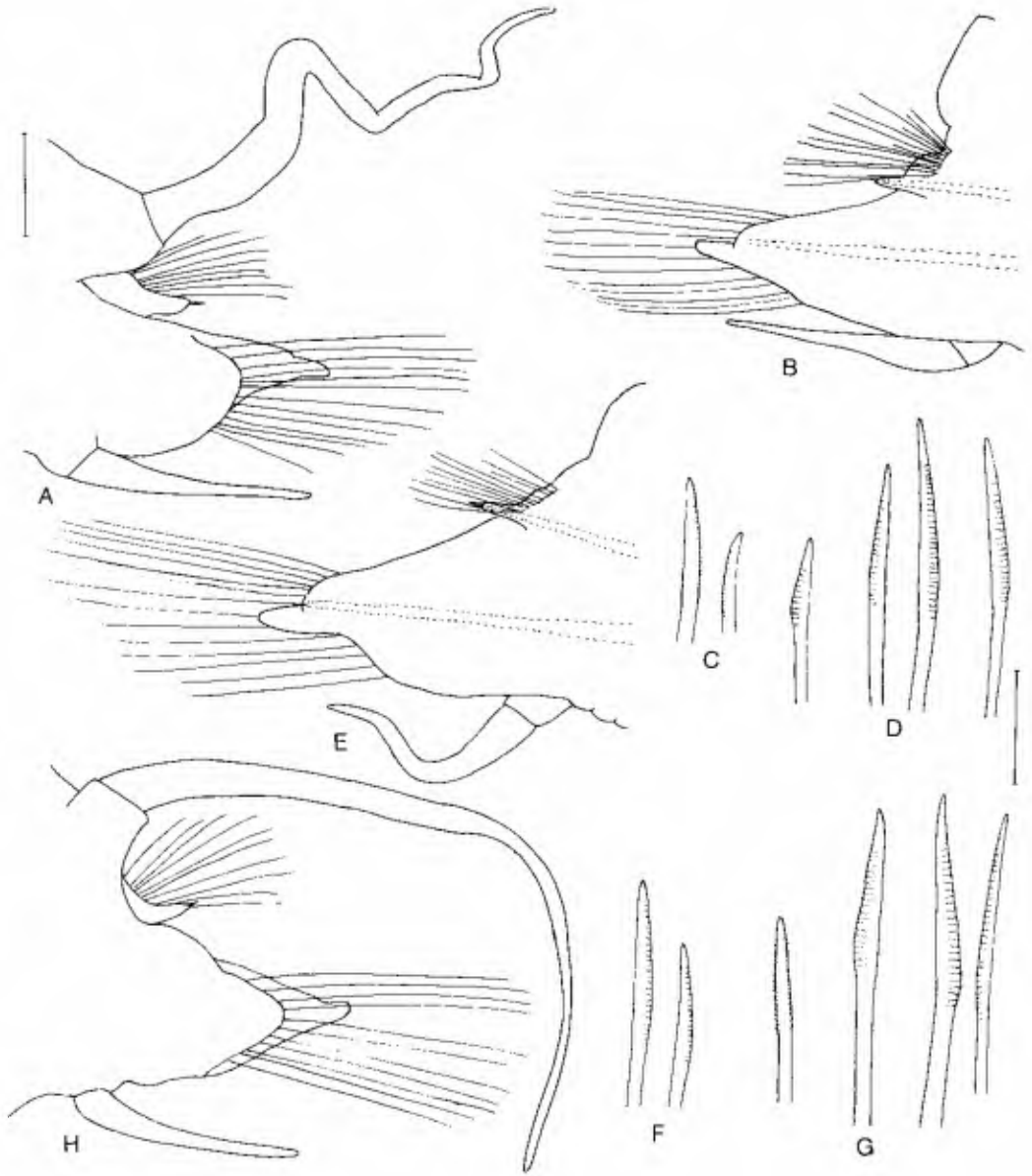


Fig. 4. *Bayerpolynoe floridensis*, holotype: A, Right cirrigerous parapodium from segment 10, posterior view; B, Right elytrigerous parapodium from segment 11, anterior view, acicula dotted; C, Notosetae from same; D, Lower, middle and upper neurosetae from same; E, Right elytrigerous parapodium from segment 32, anterior view, acicula dotted; F, Notosetae from same; G, Lower, middle and upper neurosetae from same; H, Right cirrigerous parapodium from posterior region, posterior view. Scales = 0.2 mm for A, B, E, H; 0.1 mm for C, D, F, G.

terior) (Figs. 3B, C, 4B, C, E, F, H). Neurosetae long, acicular, with tapered blunt tips, all same type, varying slightly in width and length of faint spinose regions; mod-

erate in number (7 on 2nd neuropodium, 13 on 11th, 14 on 32nd, 10 on posterior) (Figs. 3B, D, 4B, D, E, G, H). Ventral cirri tapering, rather long, extending almost to



tips of neuropodia (Figs. 3E, 4A, B, E, H). Pygidium damaged. Nephridial papillae small, beginning on segment 6.

*Biology.*—*Bayerpolynoe floridensis* was found living commensally on the antipatharian *Antipathes columnaris* Duchassaing.

*Etymology.*—The species is named for the collecting site off Florida.

*Tottonpolynoe*, new genus

*Type species.*—*Tottonpolynoe symantipatharia*, new species.

*Diagnosis.*—Body elongate, flattened, tapering posteriorly; segments numerous (up to 71). Elytra 16 pairs, on segments 2, 4, 5, 7, alternate segments to 23, 26, 29, 32, 36, with dorsal cirri on following segments. Elytra large, oval, covering dorsum of anterior part of body, without papillae, with or without microtubercles on anterior part. Dorsal cirri on non-elytrigerous segments, with short cirrophores and long styles; dorsal tubercles nodular. Prostomium bilobed, with subtriangular cephalic peaks, 3 antennae and 2 palps; ceratophore of median antenna in anterior notch of prostomium, with long style; lateral antenna with ceratophores inserted ventrally, with short styles; palps relatively short; 2 pairs of large eyes on posterior half of prostomium. Tentaculophores of segment I lateral to prostomium, achaeous, with 2 pairs of long tentacular cirri; without facial tubercle. Buccal segment (II) without nuchal fold, with first pair of elytra, biramous parapodia, and long ventral buccal cirri. Parapodia biramous; notopodia almost as long as neuropodia, with projecting acicular lobe; notosetae moderate in number, acicular, about as stout as neurosetae, appearing smooth; neuropodia with subconical presetal acicular lobe and shorter, rounded postsetal lobe; neurosetae moderate in number, stout, with slightly hooked bare tips and prominent to faint spinose rows. Ventral cirri rather long, extending about to tips of neuropodia. Nephridial pa-

pillae short, beginning on segment 6. Commensal with antipatharians and gorgonians.

*Etymology.*—*Totton*, named for A. Knyvett Totton (1923:97–120, pls. I, II), who reported on commensal polychaetes in connection with his study on the Antipatharia from off New Zealand, plus *polynoe*, from polynoid worm. Gender feminine.

*Remarks.*—Of the genera in Harmothoinae, with elongate bodies and numerous segments, *Tottonpolynoe* differs by having 16 pairs of elytra, not the usual 15 pairs, confined to the anterior part of the body. The parapodia resemble *Polyeunoa* McIntosh in having the neuropodia with prominent presetal subconical acicular lobes and lacking both supraacicular and subacicular digitiform processes.

*Tottonpolynoe symantipatharia*,  
new species  
Figs. 5–7

*Material examined.*—South Pacific Ocean, off New Zealand, 53°45'W, 159°09'E, 787–842 m, *Eltanin* sta 1416, 9 Feb 1965, in groove on main stem of antipatharian *Parantipathes* sp., removed by S. D. Cairns and identified by D. M. Opresko, holotype (USNM 136585). Off Macquarie Island, south of New Zealand, 56°21'S, 158°28'E, 1684 m, *Eltanin* sta 1423, 12 Feb 1965, in runway on gorgonian *Sclerisis macquariana* Bayer & Stefani, removed by F. M. Bayer, paratype (USNM 136586).

*Description.*—Holotype 30 mm long, 7 mm wide with setae, 71 segments. Incomplete paratype 21+ mm long, 5 mm wide, 55+ segments. Body elongate, greatly flattened, widest anteriorly, tapering posteriorly. Dorsum brownish banded on segments 12–34. Elytra 16 pairs, on segments 2, 4, 5, 7, alternate segments to 23, 26, 29, 32, 36, with dorsal cirri on posterior segments. Elytra large, oval, covering dorsum in anterior part, leaving posterior segments uncovered, attached eccentrically, delicate, with “veins,” without papillae, with few to

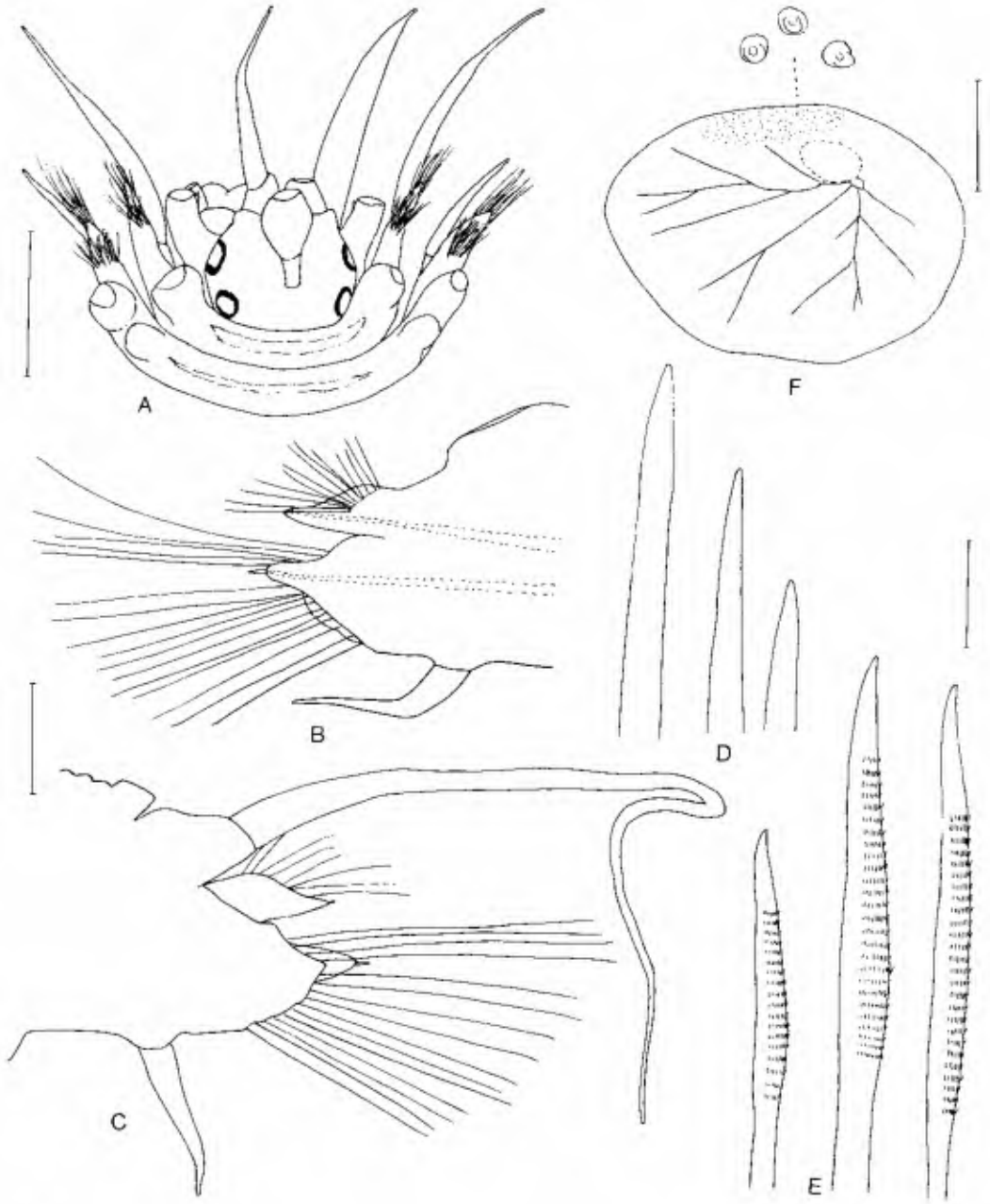


Fig. 5. *Tottonpolynoe symantipatharia*, holotype: A, Dorsal view of anterior end, styles of median antenna, right and left dorsal and ventral tentacular cirri, left palp, and dorsal cirri of segment 3 missing; B, Right elytrigerous parapodium, anterior view, acicula dotted; C, Right cirriferous parapodium, posterior view; D, Long and shorter notosetae; E, Lower, middle and upper neurosetae; F, Right elytron, with detail of microtubercles. Scales = 1.0 mm for A; 0.5 mm for B, C; 0.1 mm for D, E; 1.0 mm for F.

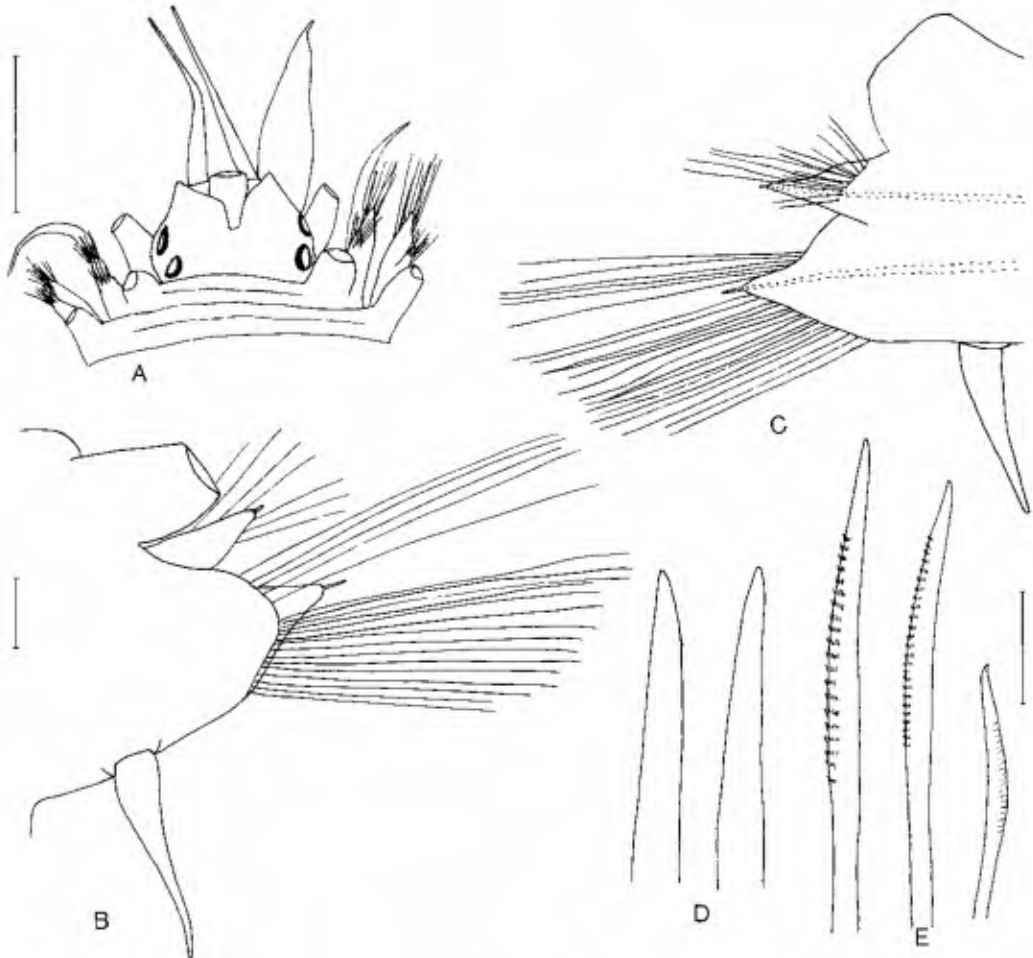


Fig. 6. *Tottonpolynoe symantipatharia*, paratype: A, Dorsal view of anterior end, style of median antenna, right and left tentacular cirri, left palp, and dorsal cirri of segment 3 missing; B, Right cirrigerous parapodium of segment 16, posterior view, dorsal cirrus missing; C, Right elytrigerous parapodium of segment 17, anterior view, acicula dotted; D, Notosetae; E, Upper, middle and lower neurosetae. Scales = 1.0 mm for A; 0.2 mm for B, C; 0.1 mm for D, E.

numerous microtubercles on anterior part of some elytra (Figs. 5F, 7D-F). Dorsal cirri with cylindrical cirrophores dorsal to notopodia, styles very long, tapering to slender tips and extending far beyond setae; dorsal tubercles nodular (Figs. 5A, C, 6A, B, 7A).

Bilobed prostomium with wide, subtriangular anterior peaks; eyes large, anterior pair in region of greatest width of prostomium, slightly larger than posterolateral pair; ceratophore of median antenna in anterior

notch of prostomium, style missing (probably long); ceratophores of lateral antennae inserted ventrally, styles rather long, tapered, with filamentous tips; palps stout, tapered; tentaculophores lateral to prostomium, with small acicular lobe on inner side, achaetous; dorsal and ventral tentacular cirri missing (probably long); without facial tubercle (Figs. 5A, 6A). Segment 2 without nuchal lobe, with bulbous elytriphores, biramous parapodia, and long ven-

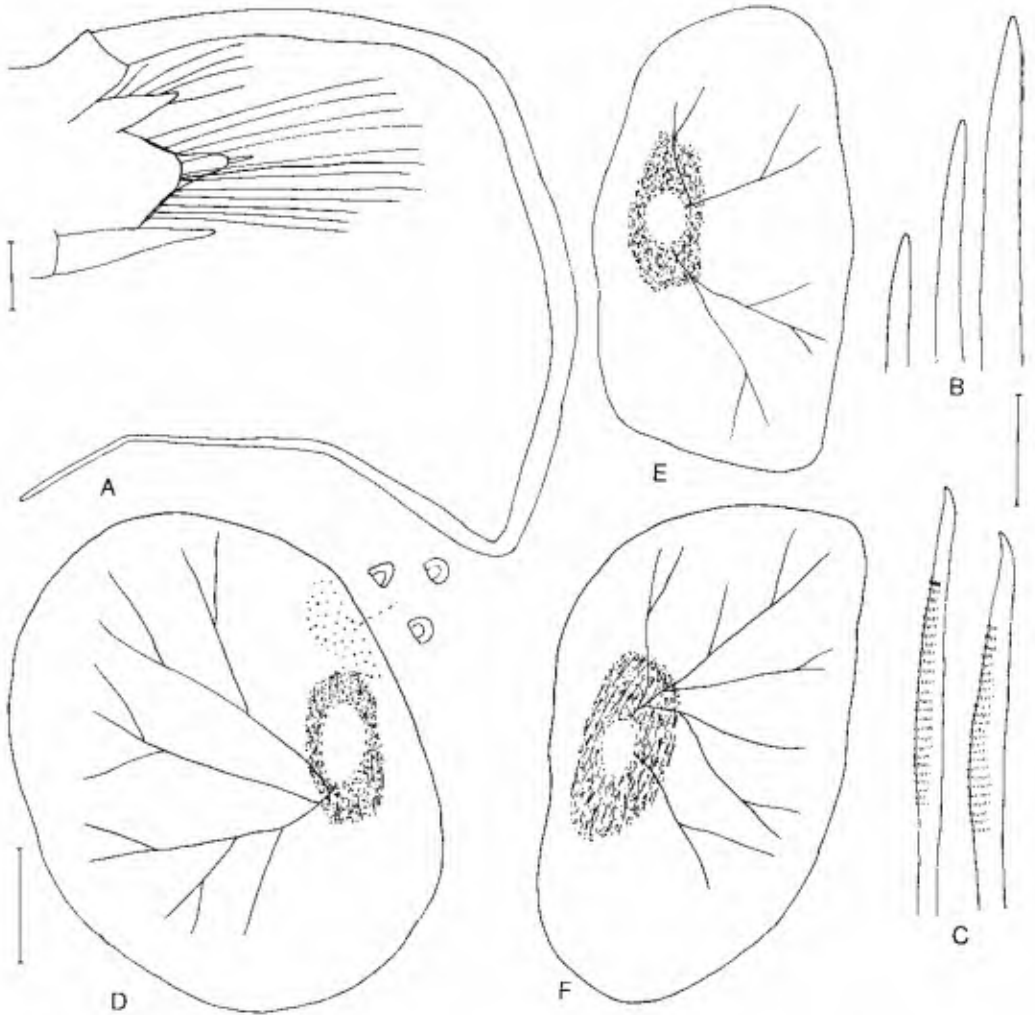


Fig. 7. *Tottonpolynoe symantipatharia*, paratype: A, Right cirriferous parapodium from segment 40, posterior view; B, Short and longer notosetae; C, Upper and middle neurosetae; D, Right 9th elytron from segment 17, with detail of microtubercles; E, Left 15th elytron from segment 32; F, Left 16th elytron from segment 35. Scales = 0.2 mm for A; 0.1 mm for B, C; 0.5 mm for D-F.

tral buccal cirri (Figs. 5A, 6A). Pharynx not extended.

Biramous parapodia with notopodia almost as long as neuropodia, rounded, with digitiform acicular lobe on lower side; larger neuropodia with longer subconical presetal acicular lobe and shorter rounded to subtriangular postsetal lobe (Figs. 5B, C, 6B, C, 7A). Notosetae moderate in number (about 15), short to long, forming radiating bundle,

acicular, about as stout as neurosetae, appearing smooth, with faint close-set striations (Figs. 5B, D, 6C, D, 7A, B). Neurosetae moderate in number (about 16), forming fan-shaped bundle, stout, with slightly hooked bare tips, upper ones slightly more slender, with longer and more prominent spinose rows, middle and lower ones with very faint close-set spinose rows (Figs. 5B, E, 6C, E, 7A, C). Ventral cirri rather

long, tapered, extending almost to tips of neuropodia (Figs. 5B, C, 6B, C, 7A).

Pygidium small, rounded lobe with pair of anal cirri (missing). Nephridial papillae small, beginning on segment 6.

*Biology.*—*Tottonpolynoe symantipatharia* was found in a groove along the main stem of the antipatharian *Parantipathes* sp. and in a runway on the gorgonian *Sclerisis macquariana* Bayer & Stefani, 1987.

*Etymology.*—Greek *sym* = with + *antipatharia*, in reference to its association with antipatharians.

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### Literature Cited

- Bayer, F. M., & J. Stefani. 1987. Isididae (Gorgonacea) de Nouvelle-Calédonie nouvelle clé des genres de la famille.—Bulletin du Muséum National d'Histoire Naturelle, Paris ser. 4, 9A(1): 47–106.
- Benham, W. B. 1927. Polychaeta.—British Antarctic "Terra Nova" Expedition, 1910.—Natural History Report, Zoology 7(2):47–182.
- Bergström, E. 1916. Die Polynoiden des schwedischen Südpolarexpedition 1901–1903.—Zoologiska Bidrag från Uppsala 4:269–304.
- Kinberg, J. G. M. 1856. Nya släkten och arter af Annelider.—Öfversigt af Kongliga Vetenskaps-Akademiens Förhandlingar (Stockholm) 12:381–388.
- McIntosh, W. C. 1885. Annelida Polychaeta.—Report on the Scientific Results of the H.M.S. Challenger . . . 1873–76 . . . Zoology 12(34):1–554.
- Nutting, C. C. 1919. Barbados-Antigua Expedition, narrative and preliminary report of a zoological expedition from the University of Iowa to the Lesser Antilles under the auspices of the graduate college.—University of Iowa Studies in Natural History 8(3):1–274.
- Pettihone, M. H. 1969. The genera *Polyeunoa* McIntosh, *Hololepidella* Willey, and three new genera (Polychaeta, Polynoidae).—Proceedings of the Biological Society of Washington 82:43–62.
- . 1970. Polychaeta errantia of the Siboga Expedition. Part 4: Some additional polychaetes of the Polynoidae, Hesionidae, Nereidae, Goniadidae, Eunicidae, and Onuphidae, selected as new species by the late Dr. Hermann Augener with remarks on other related species.—Siboga-Expedition 24, 1d:199–270.
- . 1989. A new species of *Benhamipolynoe* (Polychaeta: Polynoidae: Lepidastheniinae) from Australia, associated with the unattached stylasterid coral *Conopora adeta*.—Proceedings of the Biological Society of Washington 102:300–304.
- Pourtalès, L. F. de. 1867. Contributions to the fauna of the Gulf Stream at great depths.—Bulletin of the Museum of Comparative Zoology at Harvard College in Cambridge 1(6):103–120.
- Silberfeld, E. 1911. Japanische Antipatharien.—Abhandlungen der Mathematisch-Physikalischen Klasse Akademie der Wissenschaften, München 1 Suppl. Bd. 7:1–30.
- Totton, A. K. 1923. Coelenterata. Part III. Antipatharia (and their cirripede commensals).—British Antarctic ("Terra Nova") Expedition, 1910 Natural History Report, Zoology 5(3):97–120.
- Willey, A. 1902. Polychaeta.—Report on the collections of natural history made in the Antarctic regions during the voyage of the *Southern Cross*, London 12:262–283.

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