

POLYNOIDS COMMENSAL WITH GORGONIAN AND  
STYLASTERID CORALS, WITH A NEW GENUS,  
NEW COMBINATIONS, AND NEW SPECIES  
(POLYCHAETA: POLYNOIDAE: POLYNOINAE)

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*Abstract.*—Some commensal polynoids, living in close association with gorgonian and stylasterid corals, are referred to a new genus, *Gorgoniapolynoe*, including *Polynoe caeciliae* Fauvel, *Harmothoe corralophila* Day, *Polynoe uschakovi* Britayev, and five new species (*G. bayeri*, *G. cairnsi*, *G. galapagensis*, *G. muzikae*, *G. pelagica*). The polynoids invade the corals, resulting in galls and tunnels for the passage of the worms. The anterior few elytral pairs of the polynoids are modified. An additional bathypelagic polynoid from off Bermuda, showing the same type of modified elytra, is also included as a new species in the genus.

Many polynoid species are found living in close association with corals. Among them are some species that invade gorgonian and stylasterid corals, causing the latter to grow around them, and forming galls with open tunnels on their sides for passage of the polynoids. In this group of polynoids, the anterior one to three pairs of elytra are modified, forming translucent chitinous areas with scattered microtubercles and micropapillae. This condition was shown by Day (1960:278, fig. 2a) for *Harmothoe corralophila*, associated with the stylasterid *Allopora bithalamus*, and by Britayev (1981:819, fig. 1:1-9) for *Polynoe uschakovi*, associated with the gorgonian *Callogorgia* sp. The two polynoid species are referred herein to the new genus *Gorgoniapolynoe*. Also included in the new genus are *Polynoe caeciliae* Fauvel, 1913 (which is associated with the gorgonian *Corallium johnsoni*), and five new species. A small bathypelagic polynoid from off Bermuda, possibly a juvenile, is also placed here, based on the same unique type of anterior elytra as found in the species referred to the new genus.

The polynoid commensals were removed

from their gorgonian and stylasterid hosts by Frederick M. Bayer, Katherine M. Muzik, Stephen D. Cairns, Lauren Mullineaux, and Helmut Zibrowius (for Gesa Hartmann-Schröder). In addition to the USNM collections in the Smithsonian Institution, the specimens examined are deposited in the British Museum of Natural History, London (BMNH); the Muséum National d'Histoire Naturelle, Paris (MNHN); the Musée de Monaco, Monaco-Ville (MOM); the Zoologisches Staatsmuseum, Hamburg (ZMH); the Zoological Museum State University, Moscow (ZMSUM); and the Zoological Institute Academy of Sciences, Leningrad (ZIASL).

Family Polynoidae Kinberg, 1856  
Subfamily Polynoinae Kinberg, 1856  
*Gorgoniapolynoe*, new genus

*Type species.*—*Gorgoniapolynoe bayeri*, new species. Gender: feminine.

*Type locality.*—Philippine Islands, with gorgonian *Narella clavata* (Versluys).

*Diagnosis.*—Segments 33-63. Elytra and elythrophones 15 pairs, on segments 2, 4, 5,

7, alternate segments to 23, 26, 29, and 32. Anterior 1–3 pairs of elytra modified, with amber-colored, translucent, chitinous central area furnished with microtubercles and micropapillae; following elytra smooth, without tubercles. Dorsal cirri on non-elytrigerous segments, with cirrophores and long distal styles; dorsal tubercles in line with elytriphores. Prostomium bilobed, with lobes rounded to subtriangular, with or without small cephalic peaks; median antenna with ceratophore in anterior notch, with long distal style; short lateral antennae with distinct ceratophores inserted ventrally, removed from median antenna; palps stout, tapered; 2 pairs of eyes. First segment not distinct dorsally; tentaculophores lateral to prostomium, usually achaetous, with 2 pairs of dorsal and ventral tentacular cirri. Second or buccal segment without nuchal fold, with first pair of elytriphores, biramous parapodia and long ventral buccal cirri, lateral to mouth. Eversible pharynx with 9 pairs of border papillae and 2 pairs of jaws. Parapodia biramous, with notopodia subconical, smaller and shorter than neuropodia; neuropodia with presetal acicular lobe diagonally truncate, with thick, digitiform or bulbous supraacicular process; postsetal lobe shorter, rounded. Notosetae few (0–7), extending only slightly beyond notopodia, smooth, acicular, about as stout as neurosetae. Neurosetae with faint spinose rows, all or mostly all with bifid tips. Ventral cirri extending to about tips of neuropodia. Prominent thickened glandular areas on bases of ventral cirri, beginning about segment 11–18. Commensal with gorgonian and stylasterid hydrocorals, forming mucous tubes and modifying the host, forming tunnels.

Exceptions to the above diagnosis include the following: for *G. corralophila*, notosetae long and numerous, with spinose rows; neurosetae with prominent spinose rows; for *G. pelagica*, bathypelagic, not associated with hydrocorals, 15 segments, 12 pairs of elytra, notosetae long, with spinose rows, forming

radiating bundle. The two species are included in the genus based on the unique modified anterior elytra.

*Etymology.*—The genus name is based on the association of polynoid worms with some gorgonian corals.

1. First pair of elytra modified (Figs. 5A, B, 7A, B, 9A, C, 12A, B, 14A, B, 16A, C; Britayev 1981, fig. 1:5, 7) ..... 2
  - First and 2nd pairs of elytra modified (Figs. 1A, C, D, 3A–C). Notosetae few, short, acicular (Figs. 2B, C, E, F, 4C, D, F) ..... 7
  - First, 2nd, and 3rd pairs of elytra modified (Fig. 15A, B; Day 1960, fig. 2a). Notosetae numerous, long, with spinose rows (Fig. 15D–F). Prostomial lobes wide, subtriangular, with small peaks (Fig. 15A). Commensal with stylasterid *Allopora bithalamus* .....  
 ..... *G. corralophila* (Day), new combination
2. Body with 12 pairs of elytra and 25 segments. Notosetae numerous, long, with spinose rows (Fig. 16E–G). Prostomial lobes rounded, without peaks (Fig. 16A). Bathypelagic ..... *G. pelagica*, new species
  - Body with 15 pairs of elytra and 33–63 segments. Notosetae few, short, smooth, acicular (Figs. 6C, D, 8C, D, 10A–C, E, F, 14E–G, I). Commensal with gorgonian and stylasterid corals ..... 3
3. Chitinous area of modified elytra large, with narrow, clear border (Figs. 5A, B, 7A, B) ..... 4
  - Chitinous area of modified elytra small, with wide, clear, medial border (Figs. 9A, C, 12A, B, 14A, B; Britayev 1981, fig. 1:5) ..... 5
4. Elytral chitinous area with crescent-shaped microtubercles and circular micropapillae (Fig. 5B). Prostomial lobes wide, subtriangular, without

- cephalic peaks (Fig. 5A). Commensal with gorgonians, Primnoidae: *Candidella helminthophora*, Corallidae: *Corallium* sp., and Acanthogorgiidae: *Acanthogorgia* sp. . . . .  
 . . . . . *G. muzikae*, new species
- Elytral chitinous area with oval microtubercles and globular micropapillae (Fig. 7B). Prostomial lobes rounded, with small cephalic peaks (Fig. 7A). Commensal with gorgonian, Primnoidae: *Narella ambigua* . . . . . *G. galapagensis*, new species
5. Elytral chitinous area with conical and round microtubercles and cylindrical micropapillae (Britayev 1981, fig. 1:7a–e). Commensal with gorgonian, Primnoidae: *Callogorgia* sp. . . . . *G. uschakovi* (Britayev), new combination
- Elytral chitinous area with round microtubercles and elongate, globular micropapillae (Figs. 9C, 12B) 6
6. Prostomial lobes truncate, without peaks (Fig. 9B). Commensal with gorgonians, Corallidae: *Corallium imperiale* . . . . .  
 . . . . . *G. guadalupensis*, new species
- Prostomial lobes rounded, without peaks (Figs. 12A, 14A). Commensal with gorgonians, Corallidae: *Corallium johnsoni*, *C. niobe*, *C. tricolor*; Primnoidae: *Candidella imbricata*; Acanthogorgiidae: *Acanthogorgia aspera* . . . . . *G. caeciliae* (Fauvel), new combination
7. Chitinous area of modified elytra with low microtubercles and globular micropapillae (Fig. 1C). Neurosetae with short, stout secondary tooth (Fig. 2D). Prostomial lobes rounded, without peaks (Fig. 1B). Commensal with gorgonian, Primnoidae: *Narella clavata* . . . . .  
 . . . . . *G. bayeri*, new species
- Chitinous area of modified elytra with conical microtubercles and cylindrical micropapillae (Fig. 3B). Neurosetae with long, delicate secondary tooth (Fig. 4G). Prostomial lobes wide, subtriangular, without peaks (Fig. 3A). Commensal with stylasterid *Allopora eguchii* . . . . .  
 . . . . . *G. cairnsi*, new species
- Gorgoniapolynoe bayeri*, new species  
 Figs. 1, 2
- Material examined.*—North Pacific Ocean: Philippine Islands, North Mindanao, Tagolo Light, 8°47'N, 123°35'E, 294 m, *Albatross* sta 5543, 20 Aug 1909, on gorgonian *Narella clavata*, removed by F. M. Bayer, holotype (USNM 80080), paratype (USNM 80081).
- Description.*—Holotype incomplete posteriorly, 7 mm long, 2 mm wide including setae, 35 segments; complete paratype 10 mm long, 2 mm wide, 43 segments. Body elongate, flattened, tapering posteriorly. First 2 pairs of elytra modified: central part amber-colored, chitinous, translucent, with scattered low microtubercles and globular micropapillae; thicker chitinous area on posterior and lateral sides and narrow light border (Fig. 1A, C, D). Following elytra thin, transparent, without tubercles or papillae, denser around place of attachment; elytra becoming smaller posteriorly (Fig. 1E, F). Dorsal cirri with large cylindrical cirrophores on posterior sides of notopodia; styles long, tapering distally, extending far beyond neurosetae, with scattered clavate micropapillae; dorsal tubercles nodular (Figs. 1B, 2A, F).
- Prostomium bilobed, rounded anteriorly, without cephalic peaks; ceratophore of median antenna in anterior notch, with style long, tapered, extending far beyond palps and extended pharynx; lateral antennae with distinct ceratophores inserted on lateroventral part of prostomium, some distance from ceratophore of median antenna, with short, subulate styles; palps stout, tapered; 2 pairs of eyes moderate in size, anterior pair in region of greatest width, posterior pair pos-

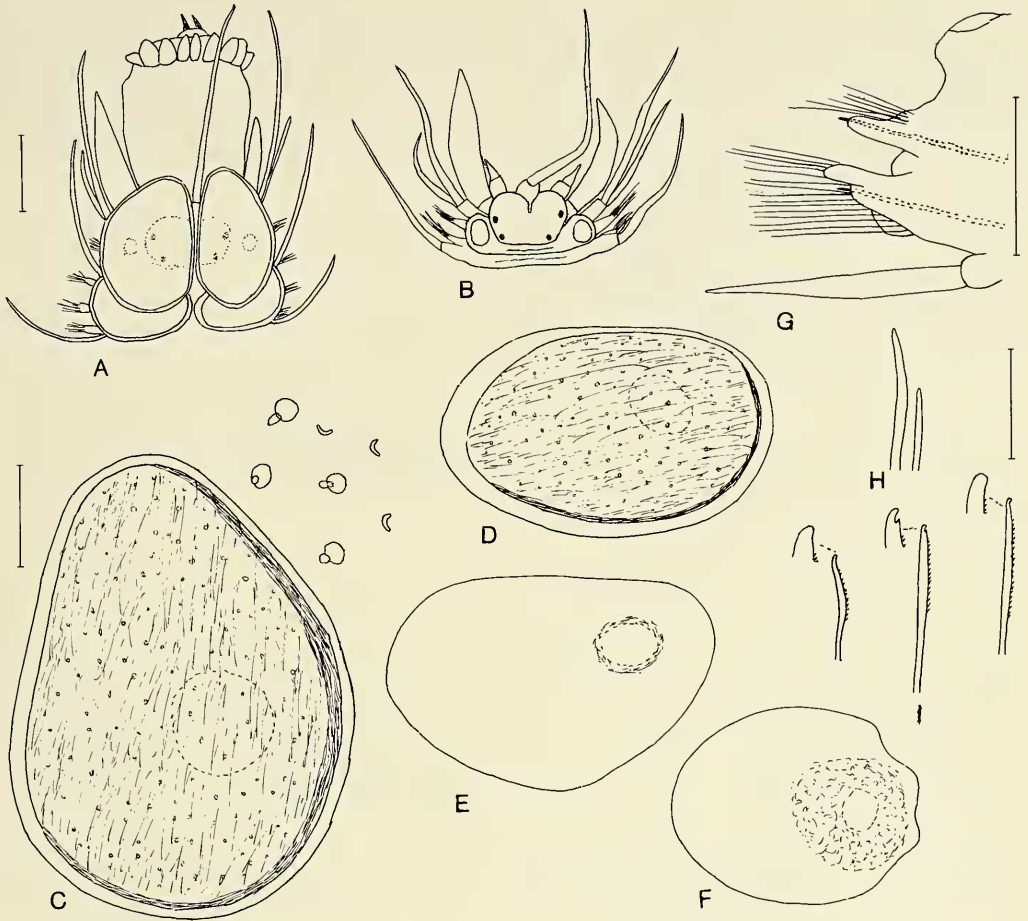


Fig. 1. *Gorgoniapolynoe bayeri*, holotype (USNM 80081): A, Dorsal view of anterior end, pharynx fully extended; B, Same, elytra removed, pharynx not shown; C, Right 1st elytron from segment 2, with detail of micropapillae and microtubercles; D, Right 2nd elytron from segment 4; E, Right 3rd elytron from segment 5; F, Right 6th elytron from segment 11; G, Right elytrigerous parapodium from segment 2, anterior view, acicula dotted; H, Notosetae from same; I, Lower, middle and upper neurosetae from same, with detail of tips. Scales = 0.5 mm for A, B; 0.2 mm for C-F; 0.2 mm for G; 0.1 mm for H, I.

terolateral (Fig. 1A, B). Tentaculophores lateral to prostomium, achaetous, with 2 pairs of tentacular cirri, dorsal pair slightly shorter than median antenna and longer than ventral pair (Fig. 1B). Segment 2 without nuchal fold, with large elytophores, biramous parapodia, and ventral buccal cirri longer than following ventral cirri, similar to tentacular cirri (Fig. 1B, G). Notosetae few (7), smooth, with pointed tips (Fig. 1H); neurosetae slender, finely spinose, upper and lower ones with blunt tips, middle ones with

notched or bifid tips (Fig. 1I). Extended pharynx with 9 dorsal and 9 ventral border papillae and 2 pairs of chitinous jaws (Fig. 1A).

Biramous parapodia with conical notopodium, smaller and slightly shorter than neuropodium; neuropodium with longer, subconical presetal acicular lobe with thick, short, digitiform supraacicular process and shorter, subconical postsetal lobe (Fig. 2A, B). Notosetae relatively few (7 on 2nd, 6-4 on 10th-12th, 2 on mid-body), extending

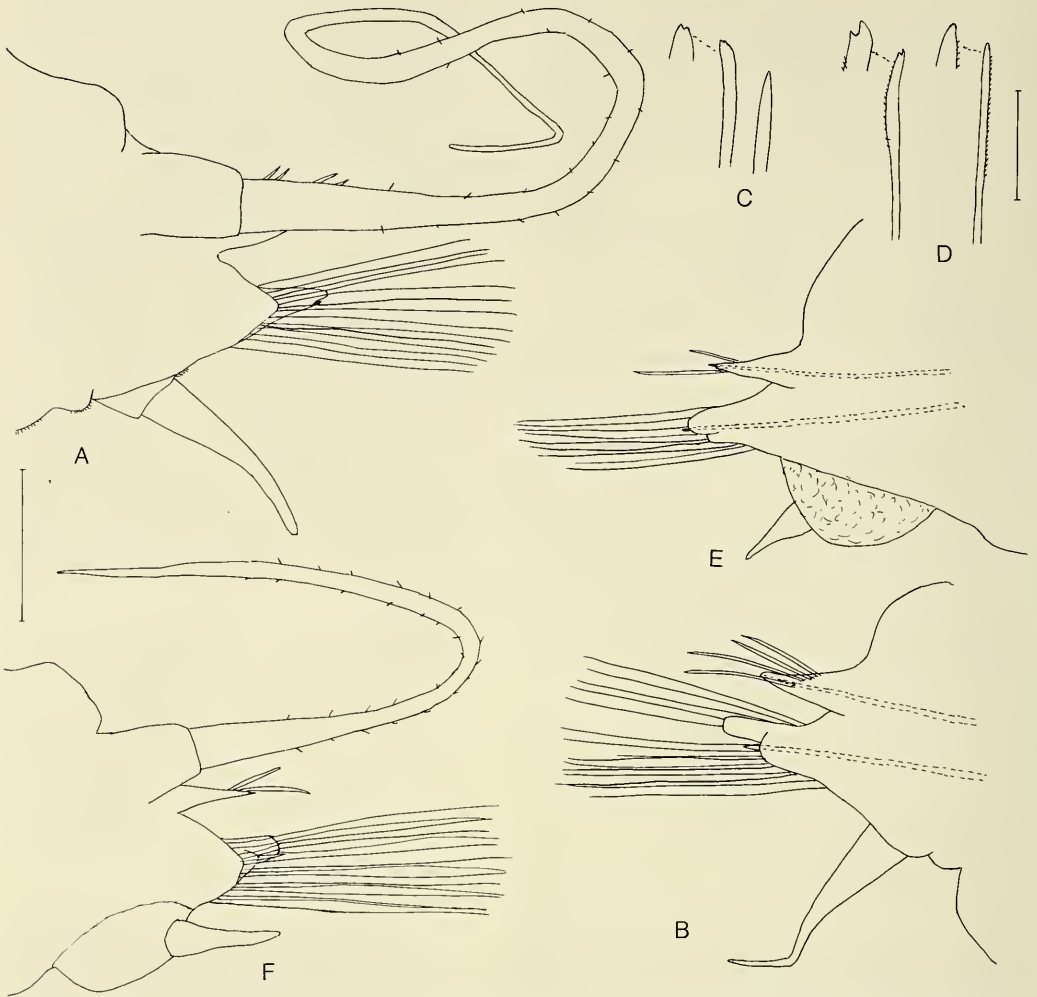


Fig. 2. *Gorgoniapolynoe bayeri*, holotype (USNM 80081): A, Right cirriferous parapodium from segment 10, posterior view; B, Right elytriferous parapodium from segment 11, anterior view, acicula dotted; C, Notosetae from same, with detail of tip; D, Middle and upper neurosetae from same, with detail of tips; E, Right middle elytriferous parapodium, anterior view, acicula dotted; F, Right middle cirriferous parapodium, posterior view. Scales = 0.2 mm for A, B, E, F; 0.1 mm for C, D.

beyond tip of neuropodium, slightly stouter than neurosetae, smooth, with tips pointed, some with slightly notched tips (Fig. 2C). Supraacicular neurosetae slightly more slender, with longer, faint spinose regions, and entire or slightly notched tips; subacicular neurosetae with shorter spinose regions and bifid tips (Fig. 2D). Ventral cirri short, tapering, extending to about tips of neuropodia (Fig. 2A, B). Enlarged glandular areas

on bases of ventral cirri, beginning about segment 18 (Fig. 2E, F). Small nephridial papillae beginning on segment 6. Pygidium with pair of long anal cirri.

*Etymology.*—The species is named for Frederick M. Bayer, who removed the polynoid and identified the gorgonian host.

*Biology.*—*Gorgoniapolynoe bayeri* was collected on the gorgonian *Narella clavata* (Versluys) (Gorgonacea: Primnoidae), where

the enlarged basal scales of the polyps arch over, overlap, and produce tunnels for the passage of the worm.

*Distribution.*—North Pacific Ocean, Philippine Islands, in 294 meters.

*Gorgoniapolynoe cairnsi*, new species  
Figs. 3, 4

*Material examined.*—Southern Ocean: off Auckland Islands, 51°00'S, 162°01'E, 333–371 m, *Eltanin* sta 1411, 8 Feb 1965, in calcareous stem of stylasterid hydrocoral *Allopora eguchii*, holotype (USNM 80082), 3 paratypes (USNM 80084), young paratype (USNM 80083), all removed by S. Cairns.

*Description.*—Holotype 12 mm long, 4 mm wide, 42 segments; paratypes 15 mm long, 4 mm wide, 42 and 45 segments; young paratype 11 mm long, 4 mm wide, 36 segments. Body elongate, linear, flattened dorsoventrally, tapering slightly anteriorly and more so posteriorly. First pair of elytra covering prostomium, rest leaving middorsum uncovered. First 2 pairs of elytra modified: central area amber-colored, chitinous, transparent, with low conical microtubercles and cylindrical micropapillae; surrounding area smooth, except for few micropapillae (Fig. 3A–C). Following elytra smooth, denser around place of attachment to elytophores, with some scattered micropapillae (Fig. 3C, D). Dorsal cirri with cylindrical cirrophores and styles extending far beyond setae, anterior ones mostly thick, bulbous basally, with few micropapillae, posterior ones long, slender, cylindrical; dorsal tubercles inflated, nodular (Fig. 4A, E).

Bilobed prostomium with anterior lobes wide, subtriangular, without distinct peaks; ceratophore of median antenna in anterior notch, style longer than palps; ceratophores of lateral antennae inserted lateroventrally, some distance from ceratophore of median antenna, with styles short, subulate; palps stout, tapered; 2 pairs of rather large eyes,

anterior pair in region of greatest width, larger than posterolateral pair (Fig. 3A). Tentaculophores lateral to prostomium, each with single aciculum, 0–1 setae, and pair of long, tapering tentacular cirri, similar to median antenna; dorsal one longer than ventral one (Fig. 3A, F). Segment 2 with first pair of large elytophores, biramous parapodia, and long ventral buccal cirri, similar to tentacular cirri; notosetae lacking; neurosetae slender, spinose, with bulbous tips and slender secondary tooth (Fig. 3A, G, H).

Biramous parapodia with smaller notopodium, short, subconical; larger neuropodium with subconical presetal acicular lobe with thick supraacicular process; postsetal lobe shorter, subconical to rounded (Fig. 4A, C–E). Notosetae few (0 on segments 2 and 3, 2–5 on following segments), smooth, acicular (Fig. 4F). Upper neurosetae with long spinose regions, and delicate secondary tooth; lower neurosetae with short spinose regions, mostly with delicate secondary tooth (Fig. 4B, G). Ventral cirri short, subulate, rather thick basally (Fig. 4A, C–E). Nephridial papillae small, directed dorsally, beginning on segment 6. Pygidium with pair of anal cirri.

Young paratype (USNM 80083) of 11 mm long and 26 segments showing some differences from above description: first pair of elytra missing, 2nd and 3rd pairs with chitinous areas; prostomium with small peaks and eyes slightly smaller; notosetae 5–7 in number, with 7–8 spinose rows, instead of smooth.

*Etymology.*—The species is named for Stephen D. Cairns, whose studies on the stylasterid hydrocorals have disclosed and contributed numerous polynoid commensals, including the present ones.

*Biology.*—*Gorgoniapolynoe cairnsi* was found in the calcareous stems of *Allopora eguchii* Boschma (Stylasterina, Stylasteridae), identified by S. Cairns and reported by Cairns (1983:145) as an undescribed genus and species.

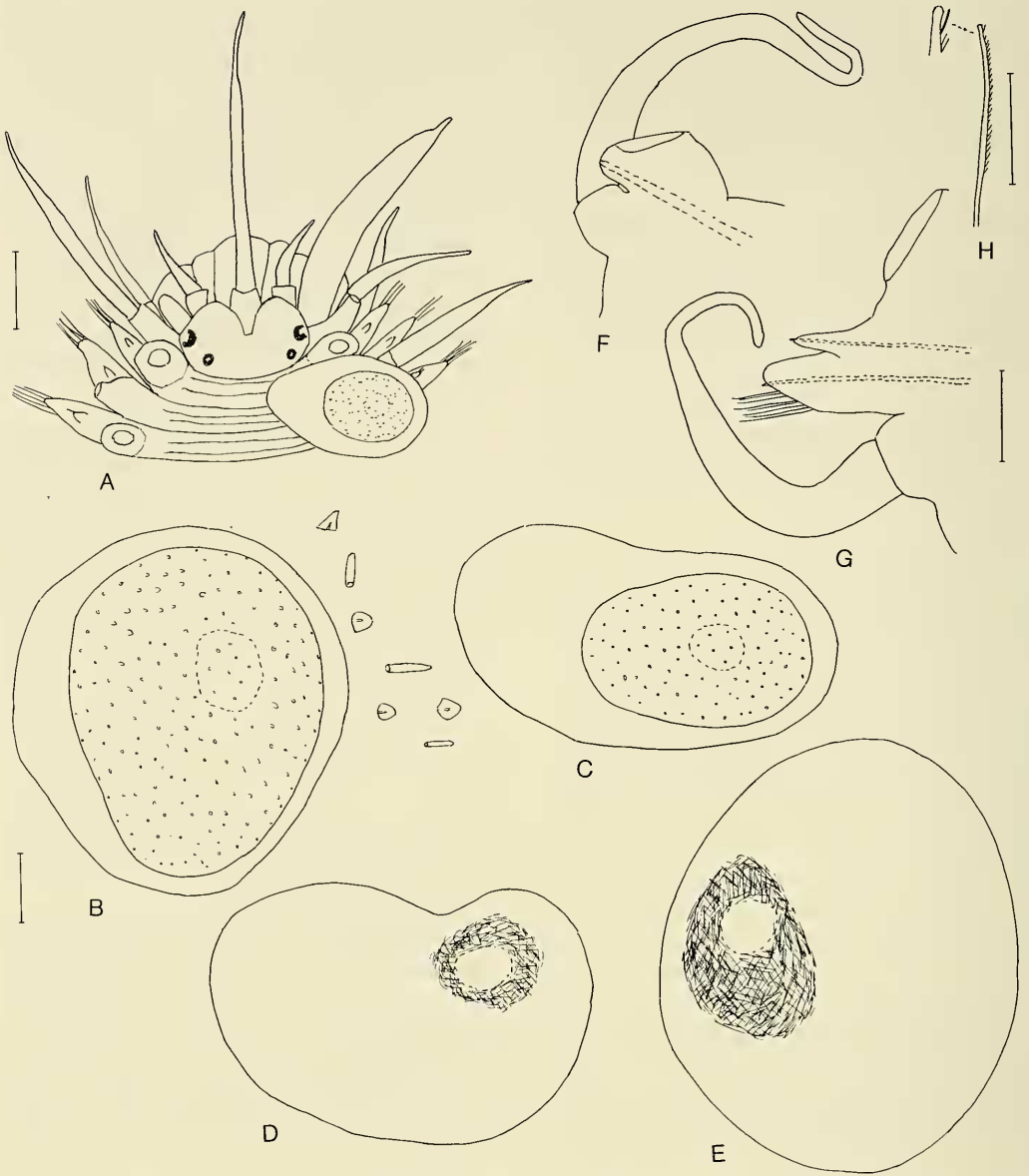


Fig. 3. *Gorgoniapolynoe cairnsi*, holotype (USNM 80082): A, Dorsal view of anterior end, pharynx partially extended, only right 2nd elytron shown; left palp small, regenerating; B, Right 1st elytron from segment 2, with detail of microtubercles and micropapillae; C, Right 2nd elytron from segment 4; D, Right 3rd elytron from segment 5; E, Left 15th elytron from segment 32; F, Right tentaculophore from segment 1, dorsal tentacular cirrus broken off, aciculum dotted; G, Right elytrigerous parapodium from segment 2, anterior view, acicula dotted; H, Neuroseta from same, with detail of tip. Scales = 0.5 mm for A; 0.2 mm for B-E; 0.2 mm for F, G; 0.1 mm for H.

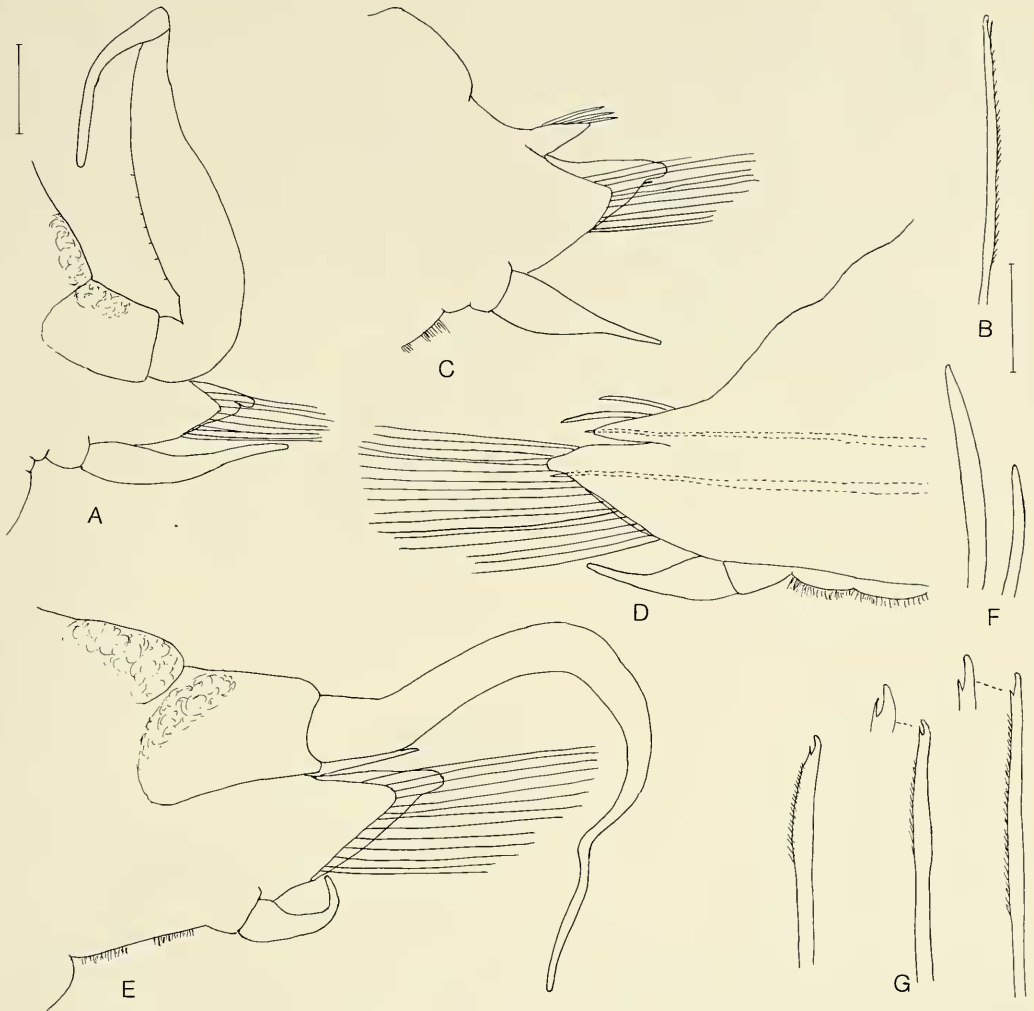


Fig. 4. *Gorgoniapolynoe cairnsi*, holotype (USNM 80082): A, Right cirrigerous parapodium from segment 3, posterior view; B, Neuroseta from same; C, Right elytrigerous parapodium from segment 5, posterior view; D, Right elytrigerous parapodium from segment 23, anterior view, acicula dotted; E, Right cirrigerous parapodium from segment 24, posterior view; F, Notosetae from same; G, Lower, middle and upper neurosetae from same, with detail of tips. Scales = 0.2 mm for A, C–E; 0.1 mm for B, F, G.

*Distribution.* —Antarctic, off Auckland Islands, in 333–371 meters.

*Gorgoniapolynoe muzikae*, new species  
Figs. 5, 6

*Material examined.* —North Pacific Ocean: Hawaiian Islands, French Frigate Shoals, 23°30'N, 164°41'W, 29–311 m, *Al-*

*batross* sta 3975, 31 May 1902, on *Candidella helminthophora*, removed by F. M. Bayer, 8 paratypes (USNM 80095). Off Modu Manu (Bird Island), 22°27'N, 160°40'W, 523–1038 m, *Albatross* sta 4156, 6 Aug 1902, on *Acanthogorgia* sp., removed by K. M. Muzik, holotype (USNM 80093), 2 paratypes (USNM 80094). Kaena Point, Oahu, 377 m, dive 9, 18 Dec 1973, R. Grigg,





Fig. 5. *Gorgoniapolynoe muzikae*, holotype (USNM 80093): A, Dorsal view of anterior end, pharynx partially extended, right first elytron removed; B, Left 1st elytron, with detail of microtubercles and micropapillae; C, Left middle elytron; D, Left posterior elytron; E, Right elytrigerous parapodium from segment 2, anterior view, acicula dotted, elyrophore not shown; F, Notoseta from same; G, Neuroseta from same, with detail of tip. Scales = 0.5 mm for A; 0.2 mm for B-D; 0.2 mm for E; 0.1 mm for F, G.

collector, with *Corallium* sp., removed by K. M. Muzik, 9 paratypes (USNM 80096).

**Description.**—Holotype on *Acanthogorgia* 15 mm long, 2 mm wide with setae, 48 segments; larger paratype 18 mm long, 3 mm wide, 52 segments; young paratype 5 mm long, 2 mm wide, 25 segments. Paratypes on *Candidella* 6–8 mm long, 2 mm wide, 33–40 segments. Paratypes on *Corallium* 8–20 mm long, 2–3 mm wide, 43–62 segments.

Body slender, linear, flattened dorsoventrally, tapering posteriorly. First pair of el-

yttra large, nearly covering prostomium, modified: central part chitinous, yellowish amber-colored, translucent, with scattered crescent-shaped microtubercles and circular micropapillae with stems penetrating chitinous layer; outer rim thicker, dense, non-chitinous (Fig. 5A, B). Following elytra smaller, attached eccentrically, smooth, transparent, with denser central area around place of attachment (Fig. 5C, D). Dorsal cirri with cylindrical cirrophores postero-dorsal to notopodia, with long styles extending far beyond neurosetae, with scat-

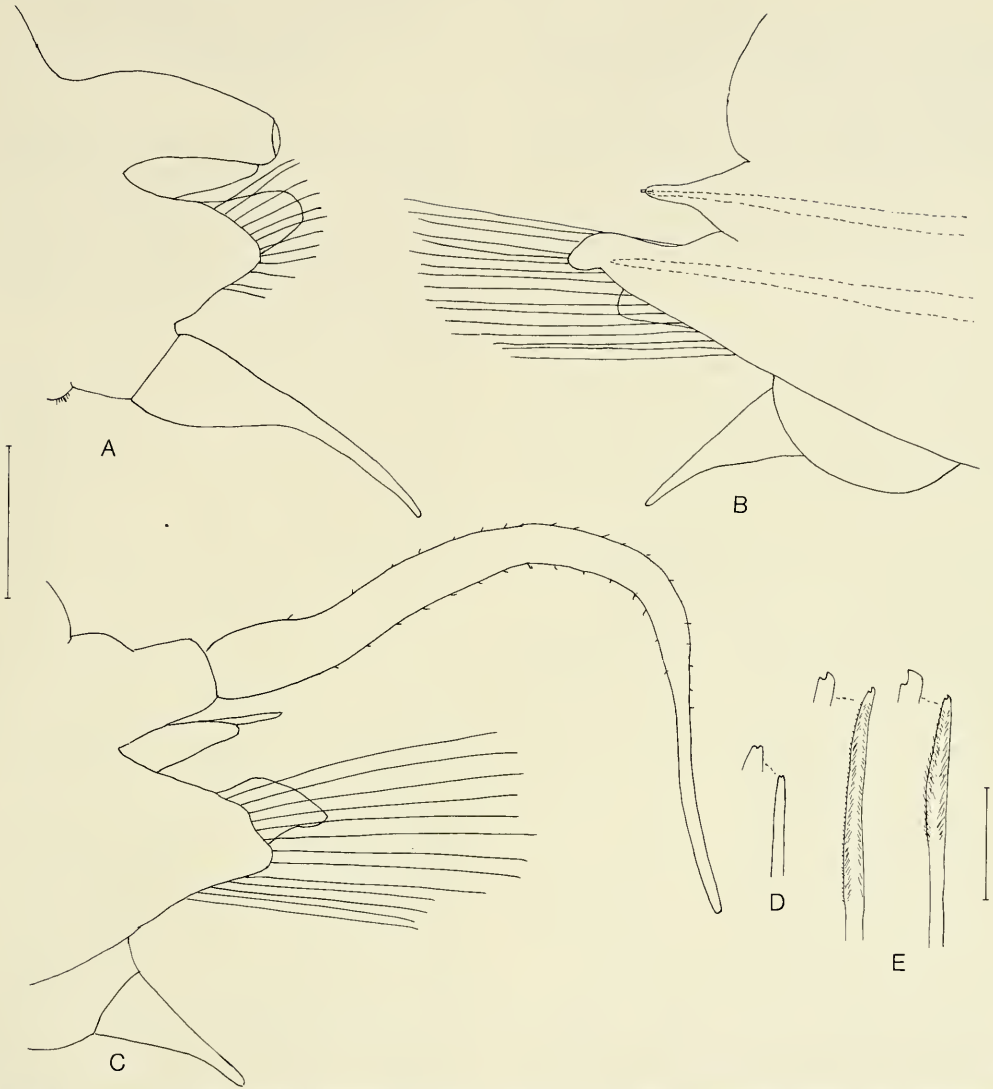


Fig. 6. *Gorgoniapolynoe muzikae*, holotype (USNM 80093): A, Right cirriferous parapodium from segment 3, posterior view, style of dorsal cirrus missing; B, Right middle elytriferous parapodium, anterior view, acicula dotted; C, Right middle cirriferous parapodium, posterior view; D, Notoseta from same, with detail of tip; E, Upper and middle neurosetae, with detail of tips. Scales = 0.2 mm for A–C; 0.1 mm for D, E.

tered clavate micropapillae, and filamentous tip; dorsal tubercles bulbous (Figs. 5A, 6A, C).

Bilobed prostomium with anterior lobes subtriangular, without distinct cephalic peaks; ceratophore of median antenna in anterior notch, style long, with filamentous tip; lateral antenna with ceratophores in-

serted lateroventrally, removed from median antenna, with styles short, subulate; palps stout, tapered, about as long as median antenna; eyes rather large, anterior pair in region of greatest width, slightly larger than posterodorsal pair (Fig. 5A). Tentaculophores lateral to prostomium, achaetous; dorsal and ventral tentacular cirri similar to

but shorter than median antenna (Fig. 5A). Segment 2 with first pair of large elytophores, biramous parapodia, and long ventral buccal cirri, similar to tentacular cirri (Fig. 5A, E); notosetae few, smooth, acicular (Fig. 5F); neurosetae slender, with long spinose region and knobbed tips (Fig. 5G). Pharynx with 9 dorsal and 9 ventral border papillae and 2 pairs of light amber-colored jaws.

Biramous parapodia with notopodium subconical, smaller and shorter than neuropodium; larger neuropodium subconical, diagonally truncate, presetal acicular lobe with thick, digitiform supraacicular process; postsetal lobe shorter, rounded (Fig. 6A–C). Notosetae few (0–4), extending only slightly beyond tips of notopodia, smooth, acicular, with tips pointed or minutely notched (Fig. 6D). Neurosetae relatively few (about 12), upper few with long spinose regions, middle and lower ones with short spinose regions, all with bifid hooked tips (Fig. 6E). Ventral cirri rather large, subulate; prominent bulbous areas on bases of ventral cirri, beginning about segment 11 (Fig. 6B, C). Nephridial papillae small, beginning on segment 6. Pygidium with pair of anal cirri.

*Etymology.*—The species is named for Katherine M. Muzik, who removed the polynoids and identified the gorgonian hosts of the holotype and some of the paratypes.

*Biology.*—All the host species produce tunnels for the passage of the polynoids, including Primnoidae: *Candidella helminthophora* (Nutting), identified by F. M. Bayer; Acanthogorgiidae: *Acanthogorgia* sp. and Corallidae: *Corallium* sp., identified by K. M. Muzik. In the primnoid *Candidella*, the enlarged basal scales arch over, overlap, and produce tunnels. In *Corallium* and *Acanthogorgia*, the tunnels are formed by lateral coenenchymal expansions that arch over the branch, often meeting and fusing along the midline of the branch. In *Corallium*, the axis may also be expanded (more or less), within the coenenchymal flaps.

*Distribution.*—North Pacific Ocean, Hawaiian Islands, in 29–1038 meters.

*Gorgoniapolynoe galapagensis*,  
new species  
Figs. 7, 8

*Material examined.*—Eastern Central Pacific Ocean: Galapagos Islands, 0°29'S, 89°54'W, 417 m, *Albatross* sta 2818, 15 Apr 1885, with gorgonian *Narella ambigua*, holotype (USNM 80085), paratype (USNM 80086), 5 paratypes (USNM 80087), all removed by F. M. Bayer.

*Description.*—Holotype 17 mm long, 3 mm wide with setae, 49 segments; paratype 13 mm long, 2.5 mm wide 49 segments. Body linear, flattened, tapering posteriorly. First pair of elytra large, elongate-oval, modified: chitinous central part with scattered microtubercles and globular papillae, and enclosed in thickened, dense, colorless part (Fig. 7A, B); following elytra smaller, oval, transparent, denser around place of attachment to elytophore (Fig. 7A, C–E). Dorsal cirri with cylindrical cirrophores and styles extending far beyond neurosetae; dorsal tubercles nodular (Figs. 7A, 8A, B).

Bilobed prostomium with small cephalic peaks; ceratophore of median antenna in anterior notch; style long, with filamentous tip; ceratophores of lateral antennae inserted lateroventrally, removed from median antenna, with styles short, subulate; palps stout, tapered, shorter than median antenna; eyes rather large, anterior pair in region of greatest width of prostomium, slightly larger than posterior pair (Fig. 7A). Tentaculophores lateral to prostomium, acaetous; dorsal and ventral tentacular cirri similar to median antenna, dorsal ones slightly longer than ventral ones (Fig. 7A). Segment 2 with first pair of large elytophores, biramous parapodia, and long ventral buccal cirri, similar to tentacular cirri (Fig. 7A, F); notosetae few (2), acicular (Fig. 7G); neurosetae spinose, upper ones with slightly curved, entire, bare tips, lower ones with clubbed tips (Fig. 7H).

Biramous parapodia with smaller, conical notopodia, extending almost as far as larger neuropodia; neuropodia with diagonally

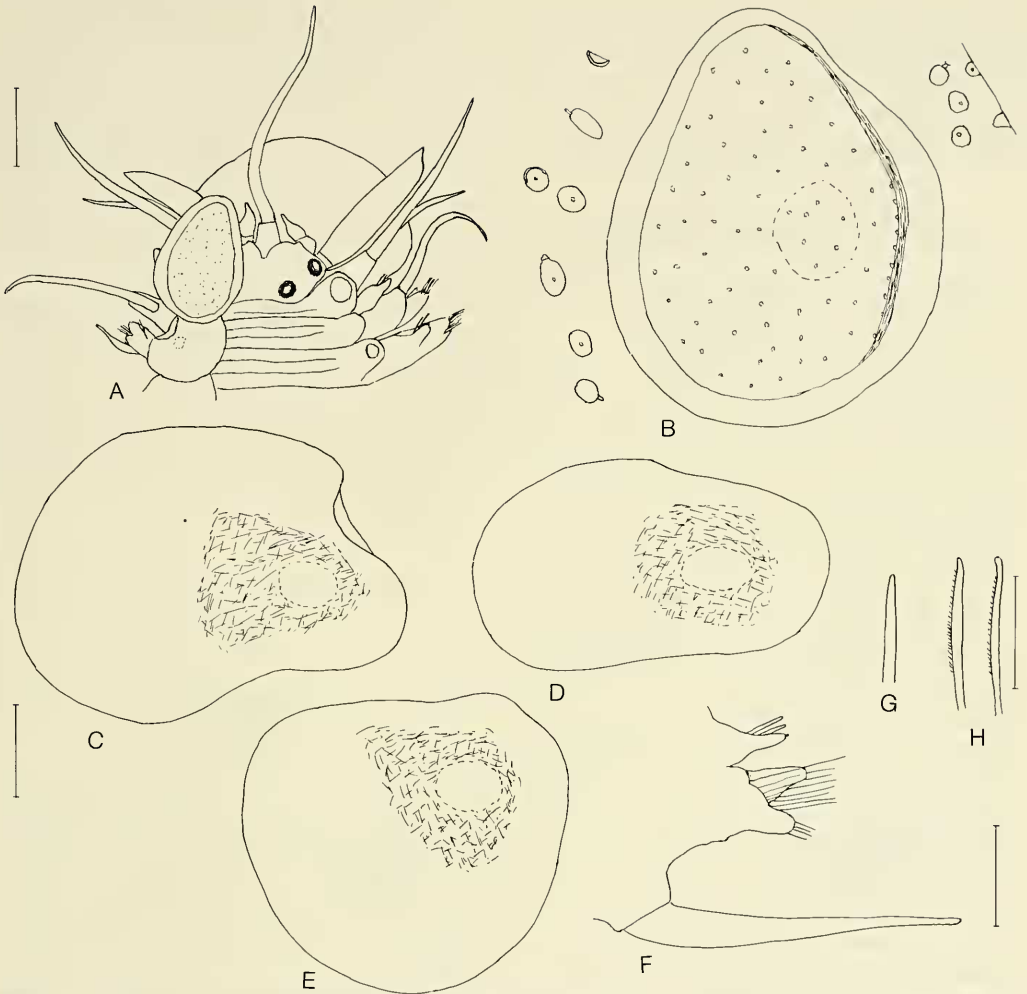


Fig. 7. *Gorgoniapolynoe galapagensis*, holotype (USNM 80085): A, Dorsal view of anterior end, pharynx partially extended, right elytra removed; B, Right 1st elytron from segment 2, with detail of microtubercles and micropapillae; C, Right 2nd elytron from segment 4; D, Right 3rd elytron from segment 5; E, Right 5th elytron from segment 9; F, Right elytrigerous parapodium from segment 2, posterior view; G, Notoseta from same; H, Upper and lower neurosetae from same. Scales = 0.5 mm for A; 0.2 mm for B-E; 0.2 mm for F; 0.1 mm for G, H.

truncate presetal acicular lobe, with thick, digitiform supraacicular process and shorter, truncate postsetal lobe, longer on lower part (Figs. 7F, 8A-C, F, G). Notosetae few (0-2), short, acicular (Fig. 8D). Neurosetae with faint spinose rows, upper ones with slightly longer spinose regions and entire tips; middle ones with distinct or slight indication of secondary tooth; lower ones with entire tips (Fig. 8E). Ventral cirri enlarged

basally, extending to about tips of neuropodia (Fig. 8A-C); beginning about segment 14, enlarged bulbous region below ventral cirri (Fig. 8F, G).

*Etymology.* — The species is named for the collecting site, the Galapagos Islands.

*Biology.* — *Gorgoniapolynoe galapagensis* was found with *Narella ambigua* (Studer), Gorgonacea: Primnoidae, where the enlarged basal scales of the polyps arch over,

overlap, and produce tunnels for the passage of the polynoids. The gorgonians were identified by F. M. Bayer.

*Distribution.*—Eastern Central Pacific Ocean, Galapagos Islands, in 417 meters.

*Gorgoniapolynoe uschakovi*

(Britayev, 1981), new combination

*Polynoe uschakovi* Britayev, 1981:819, fig. 1:1–9 (part).

*Material examined.*—Central Pacific Ocean: Vityaz Ridge, 18°02'N, 173°35'E, 1360–1500 m, R/V *Dmitriy Mendeleev* sta 1722, 2 Sep 1978, 1360–1500 m, with gorgonian *Callogorgia* sp., paratype of *Polynoe uschakovi* (ZIASL 2/44391).

*Remarks.*—The species was based on specimens from two areas in the Central Pacific: the Vityaz Ridge, commensal with the gorgonian *Callogorgia* sp. (including the holotype and 7 paratypes) and the Guyot Ridge, commensal with the pink coral *Corallium* sp. (as *Allopora* sp.), including 22 paratypes. As indicated by Britayev, the two groups differed in some respects. The description and figures of the holotype from the Vityaz Ridge (fig. 1:1–3a, c, 4–8) are referred herein to *Gorgoniapolynoe uschakovi*; the discussion of the differences and figures of the paratypes from the Guyot Ridge (fig. 1:3b, 9) are referred to *G. guadalupensis*.

The paratype examined is complete, 9 mm long, 2 mm wide with parapodia, and 42 segments, with the pharynx extended, compared with the holotype stated as being 16 mm long, 1.3 mm wide, and 43 segments. The characteristic first pair of elytra are now missing. As originally described, they are modified, the chitinous part with conical and oval microtubercles and cylindrical micropapillae, and with a large non-chitinous part on the inner side (fig. 1:5, 7a–e). The bilobed prostomium has the anterior lobes wide, subtriangular, without peaks, 2 pairs of large eyes, median antenna with the ceratophore in the anterior notch, with long

style, and short lateral antennae with prominent ceratophores inserted ventrally (fig. 1:1). The tentaculophores lateral to the prostomium have long dorsal and ventral tentacular cirri, similar to the median antenna. The extended pharynx has 9 pairs of border papillae and 2 pairs of jaws. The biramous parapodia have small notopodia with few, smooth, acicular notosetae (usually 2, 1–7, according to Britayev, fig. 1:3a); the larger neuropodia end in a presetal acicular process (fig. 1:2); the neurosetae have faint, oblique striations or toothed scales and bifid notched tips (fig. 1:3c, 4). They are found on branches of the gorgonian along the main stem, partly hidden by the sclerites of the polyps (fig. 1:8).

*Gorgoniapolynoe guadalupensis*,

new species

Figs. 9–11

*Polynoe uschakovi* Britayev, 1981:819 (part, fig. 1:3b, 9; not holotype).

*Material examined.*—Eastern Central Pacific Ocean: SW of Guadalupe Island off west coast of Baja California, 27°23'N, 119°19'W, 1000–2000 m, Robert H. Parker Scripps Pelagic Studies Cruise, 24 Apr 1954, on holotype of *Corallium imperiale*, holotype (USNM 80088); 3 paratypes (USNM 80089), removed by F. M. Bayer; 32 specimens (USNM 133354), removed by M. Pettibone. Fieberling Guyot seamount, 32°23'N, 127°47'W, about 600 m, Aug 1989, L. Mullineaux, collector, in tube of pink coral *Corallium imperiale*, identified by F. M. Bayer, 12 specimens (USNM 133355). Guyot Ridge on Markus Nekar Chain, 13°27'N, 173°27'W, 1220–1300 m, R/V *Vityaz* sta 3789, 24 Nov 1957, with pink coral *Corallium imperiale*, 2 paratypes of *Polynoe uschakovi* (USNM 134352, from ZMSUM).

*Description.*—Holotype 17 mm long, 2.5 mm wide with setae, 55 segments; 3 paratypes 10–16 mm long, 2–3 mm wide, 41–47 segments; longest specimen 23 mm long, 3 mm wide, 63 segments. Paratype of *Poly-*



Fig. 8. *Gorgoniapolynoe galapagensis*, A–E, holotype (USNM 80085); F, G, paratype (USNM 80086): A, Right cirriferous parapodium from segment 3, posterior view; B, Right cirriferous parapodium from segment 10, posterior view; C, Right elytriferous parapodium from segment 11, anterior view, acicula dotted; D, Notoseta from same; E, Lower, middle and upper neurosetae from same, with detail of tips; F, Right middle cirriferous parapodium, posterior view, style of dorsal cirrus missing; G, Right middle elytriferous parapodium, anterior view, acicula dotted. Scales = 0.2 mm for A–C, F, G; 0.1 mm for D, E.

*noe uschakovi*, removed from pink coral, 10 mm long, 3 mm wide, 39 segments, plus small posterior regenerating region; other paratype (no. 12) 13 mm long, 3 mm wide, 43 segments.

Body elongate, linear, flattened dorso-ventrally, tapering posteriorly. First pair of elytra large, covering prostomium, modi-

fied: oval chitinous area on lateral half, with scattered oval microtubercles and bottle-shaped micropapillae, and enclosed in wide, medial and narrow, lateral non-chitinous areas (Fig. 9A, C). Following elytra smaller, oval, attached eccentrically, denser around place of attachment (Fig. 9A, D–F). Dorsal cirri with cylindrical cirrophores on poste-

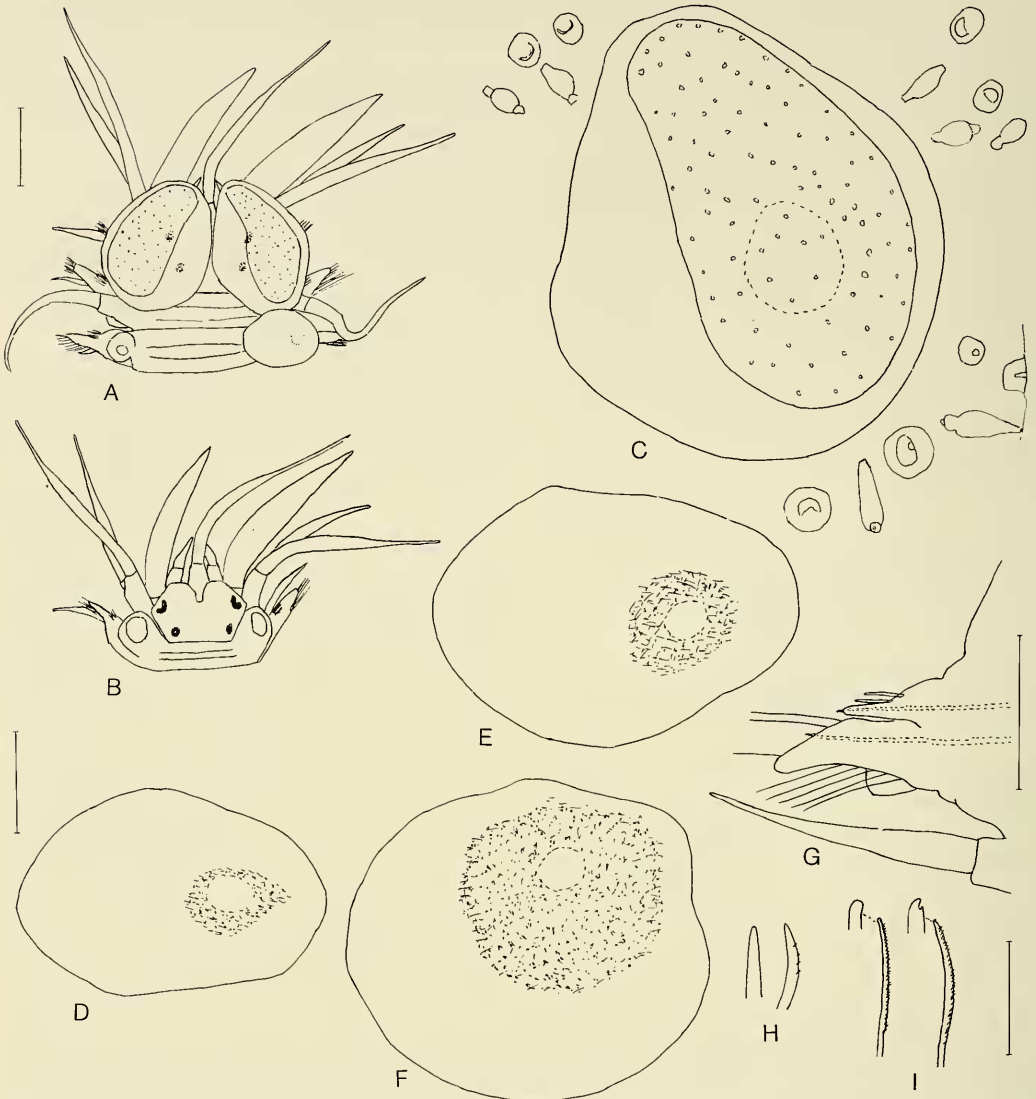


Fig. 9. *Gorgoniapolynoe guadalupensis*, holotype (USNM 80088): A, Dorsal view of anterior end, left 2nd elytron missing; B, Dorsal view of anterior end, elytra removed; C, Right 1st elytron from segment 2, with detail of microtubercles and micropapillae; D, Right 2nd elytron from segment 4; E, Right 3rd elytron from segment 5; F, Right middle elytron; G, Right elytrigerous parapodium from segment 2, anterior view, acicula dotted; H, Notosetae from same; I, Lower and upper neurosetae from same, with detail of tips. Scales = 0.5 mm for A, B; 0.2 mm for C-F; 0.2 mm for G; 0.1 mm for H, I.

rior sides of notopodia and long styles extending far beyond neurosetae, with scattered, clavate micropapillae, and filamentous tips; dorsal tubercles nodular (Figs. 10A, 11B).

Bilobed prostomium with anterior lobes

truncate, without cephalic peaks; ceratophore of median antenna in anterior notch, with long, tapering style; ceratophores of lateral antennae inserted lateroventrally, removed from median antenna; styles short, subulate; palps stout, tapered, slightly short-

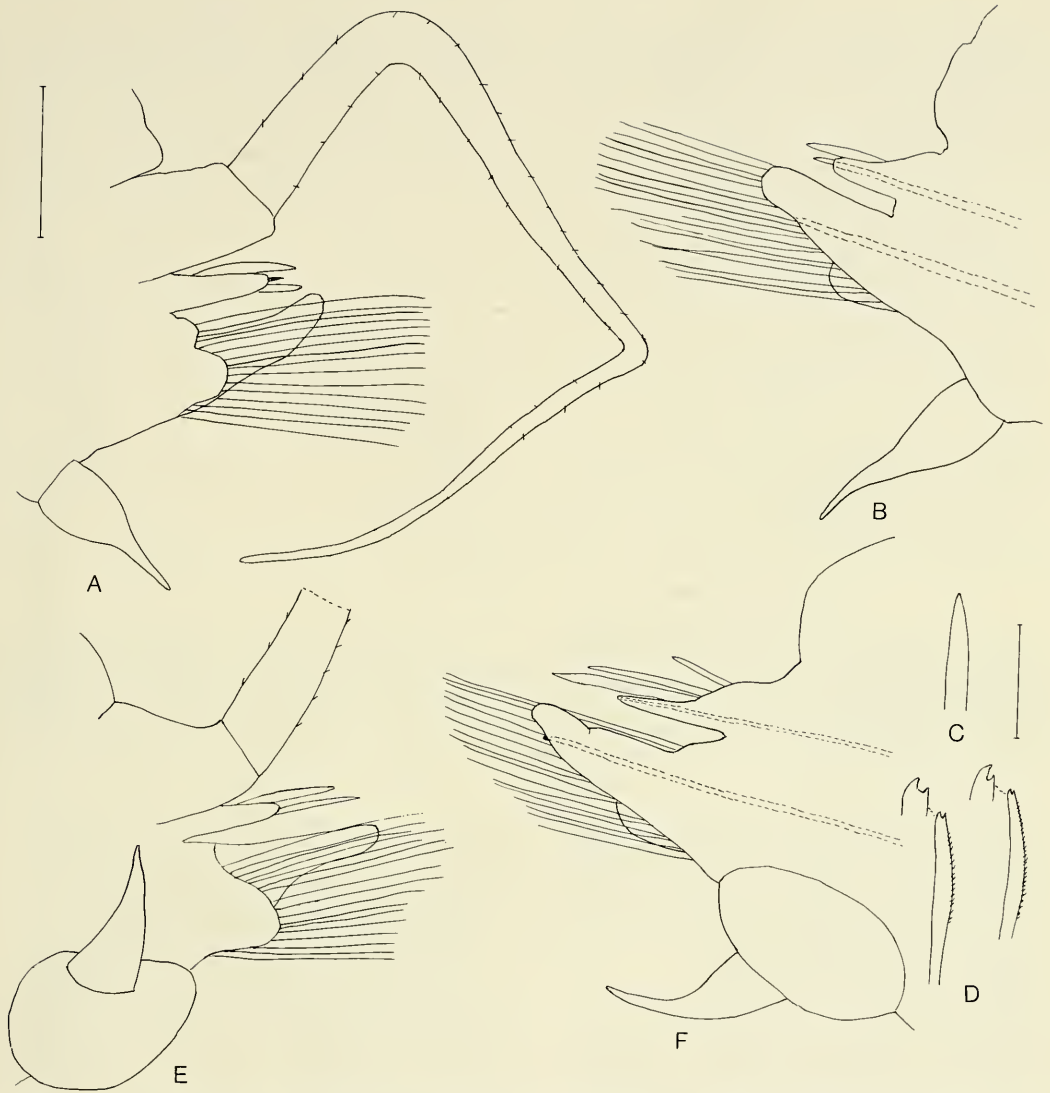


Fig. 10. *Gorgoniapolynoe guadalupensis*, holotype (USNM 80088): A, Right cirriferous parapodium from segment 8, posterior view; B, Right elytriferous parapodium from segment 9, anterior view, acicula dotted; C, Notoseta from same; D, Middle and upper neurosetae from same, with detail of tips; E, Right middle cirriferous parapodium, posterior view, long style of dorsal cirrus incompletely shown; F, Right middle elytriferous parapodium, anterior view, acicula dotted. Scales = 0.2 mm for A, B, E, F; 0.1 mm for C, D.

er than median antenna; 2 pairs of moderately sized eyes, anterior pair in region of greatest width of prostomium, larger than posterolateral pair (Figs. 9B, 11A). Tentaculophores lateral to prostomium, achaetous; dorsal and ventral tentacular cirri similar to median antenna, dorsal ones slightly longer

than ventral ones (Figs. 9B, 11A). Segment 2 with first pair of large elytriphores, biramous parapodia, and long ventral buccal cirri, similar to tentacular cirri (Fig. 9B, G); notosetae few (2), extending to tip of notopodium; 1 smooth, acicular, 1 curved with 4 spinose rows (Fig. 9H); neurosetae with



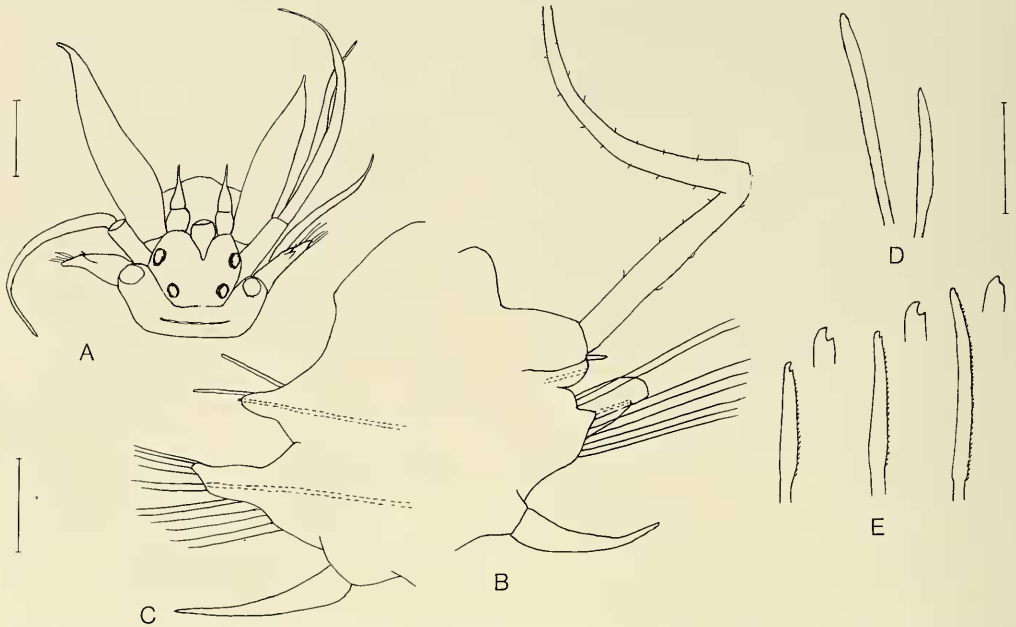


Fig. 11. *Gorgoniapolynoe guadalupensis*, paratype of *Polynoe uschakovi* (USNM 134352): A, Dorsal view of anterior end, styles of median antenna, left dorsal tentacular and buccal cirri missing; B, Right cirriferous parapodium from segment 10, posterior view, 3 of 4 notosetae hidden from view, tip of dorsal cirrus broken; C, Right elytrigerous parapodium from segment 19, anterior view, acicula dotted; D, Notosetae; E, Lower, middle and upper neurosetae, with detail of tips. Scales = 0.5 mm for A; 0.2 mm for B, C; 0.1 mm for D, E.

spinose rows, upper and middle ones with notched tips, few lower ones with bulbous tips (Fig. 9I). Extended pharynx with 9 dorsal and 9 ventral border papillae and 2 pairs of light amber-colored jaws.

Biramous parapodia with notopodium subconical, shorter and smaller than neuropodium; neuropodium with prominent presetal conical acicular lobe and stout projecting supraacicular process; postsetal lobe shorter, rounded (Figs. 10A, B, E, F, 11B, C). Notosetae few (1–3), extending to about tips of neuropodia, smooth, acicular (Figs. 10C, 11D); some notosetae with few spinous rows (Britayev 1981, fig. 1:3b). Neurosetae with faint spinose rows, upper ones with slightly longer spinose regions, all with bifid or notched tips (Figs. 10D, 11E). Ventral cirri short, thick basally, subulate (Fig. 10A, B); beginning about segment 11, with thickened area below ventral cirri (Fig. 10E, F). Nephridial papillae small, beginning on

segment 6. Pygidium with pair of long anal cirri.

*Etymology.*—The species is named for the collecting area, Guadalupe Island.

*Biology.*—*Gorgoniapolynoe guadalupensis* was found in tunnels formed by coenenchymal expansions of *Corallium imperiale* Bayer (Gorgonacea: Corallidae), Britayev 1981, fig. 1:9, removed by F. M. Bayer, M. H. Pettibone, and L. Mullineaux.

*Distribution.*—Eastern Central Pacific Ocean, off Baja California, Guyot Ridge, in 600–2000 meters.

*Gorgoniapolynoe caeciliae*  
(Fauvel, 1913), new combination  
Figs. 12–14

*Polynoe caeciliae* Fauvel, 1913:24, fig. 7A–D; 1914:69, pl. 4:figs. 1–6, 18–19; 1923:82, fig. 31a–h.—Belloc, 1953:4.—Hartmann-Schröder, 1985:31, figs. 1–11 (part, not Indian Ocean).

*Material examined.*—Eastern North Atlantic Ocean: Gulf of Gascony, 45°05'N, 9°54'W, 1241 m, Prince de Monaco sta 2743, 27 Jul 1908, on *Corallium johnsoni*, 2 syntypes of *Polynoe caeciliae* (MOM; parapodia only, USNM 80098). Off Portugal, 40°33'N, 9°26'W, 1170 m, *Thalassa* sta Y405, 1 Sep 1972, on *Corallium niobe*, ident. by M. Grasshoff, from G. Hartmann-Schröder, 1 specimen (USNM 133356).

Western North Atlantic Ocean: Caribbean Sea, West Indies, off St. Vincent, Lesser Antilles, 13°34'N, 61°03'W, 512 m, *Albatross* sta 2753, 4 Dec 1886, on *Candidella imbricata*, 2 specimens, removed by F. M. Bayer (USNM 21123); 8 specimens, removed by M. Pettibone (USNM 80091). Straits of Florida, east of St. Lucie Inlet, 27°06'N, 79°32'W, 677–659 m, R/V *Gerda* cruise 6333, sta G170, 29 Jun 1963, on holotype of *Corallium niobe*, 3 specimens, removed by F. M. Bayer (USNM 133357). Off Georgia, 30°44'N, 79°26'W, 805 m, *Albatross* sta 2415, 1 Apr 1885, on *Acanthogorgia aspera*, 2 specimens, removed by F. M. Bayer (USNM 80090).

*Description.*—Syntype of *P. caeciliae* 15 mm long, 2 mm wide, 47 segments. Figured specimen from off Portugal 16 mm long, 3.2 mm wide, 51 segments. Body elongated, almost cylindrical, wider in anterior half, tapering posteriorly. First pair of elytra (not described by Fauvel or Hartmann-Schröder) large, covering prostomium, modified: crescent-shaped area on lateral side transparent, chitinous, with scattered rounded microtubercles and oval micropapillae (Figs. 12A, B, 14A, B); following elytra smaller, oval, leaving middorsum uncovered, smooth or with some scattered micropapillae, denser on large area around place of attachment to elythrochore (Figs. 12C, D, 14A, C; Fauvel 1914, pl. 4:figs. 6, 18). Dorsal cirri with cylindrical cirrophores on posterior sides of notopodia, with styles long, extending far beyond tips of parapodia (Figs. 12A, 13A, E, 14A, F, I). Dorsal tubercles inflated.

Bilobed prostomium much wider than long, with lobes rounded anteriorly, without cephalic peaks; ceratophore of median antenna in anterior notch, with long, tapering style; ceratophores of lateral antennae inserted lateroventrally, removed from median antenna; styles short, subulate; palps stout, about as long as median antenna; 2 pairs of large eyes (Figs. 12A, 14A; Fauvel 1914, pl. 4:fig. 5). Tentaculophores lateral to prostomium, achaetous; dorsal and ventral tentacular cirri long, similar to median antenna, dorsal longer than ventral (Figs. 12A, 14A). Segment 2 with first pair of large elythrochores, biramous parapodia, and long ventral buccal cirri, similar to tentacular cirri (Figs. 12A, 14A). Extended pharynx with 9 dorsal and 9 ventral border papillae and 2 pairs of jaws (Fig. 14A).

Biramous parapodia with notopodium in form of subconical acicular lobe; neuropodium longer and wider than notopodium, with diagonally truncate presetal acicular lobe, projecting dorsally and shorter, rounded postsetal lobe projecting ventrally, thus appearing bilobed (Figs. 12E, F, 13A, B, D, E, 14E, F, I; Fauvel 1914, pl. 4:fig. 19; Hartmann-Schröder 1985, figs. 1, 2). Notosetae few (2–3, rarely missing), stout, acicular (Figs. 12E–G, 14E–G, I; Fauvel 1914, pl. 4:figs. 4, 19); Hartmann-Schröder 1985, figs. 1–3). Neurosetae about as stout as notosetae, with fine spinose rows and slightly hooked tips, mostly with small or rudimentary secondary tooth (Figs. 12H, 13C, 14H; Fauvel 1914, pl. 4:figs. 1–3; Hartmann-Schröder 1985, figs. 4, 5). Ventral cirri stout, subulate, nearly as long as or longer than tips of neuropodia (Figs. 12E, F, 13A, B, D, E; Fauvel 1914, pl. 4:fig. 19); enlarged bulbous areas medial to ventral cirri, beginning about segment 10, with ventral cirri directed posteriorly (Figs. 13D, 14D, F, I). Nephridial papillae small, cylindrical, beginning on segment 6. Pygidium with pair of long anal cirri.

*Biology.*—Fauvel (1913:24) reported the syntypes of *G. caeciliae* from the Gulf of

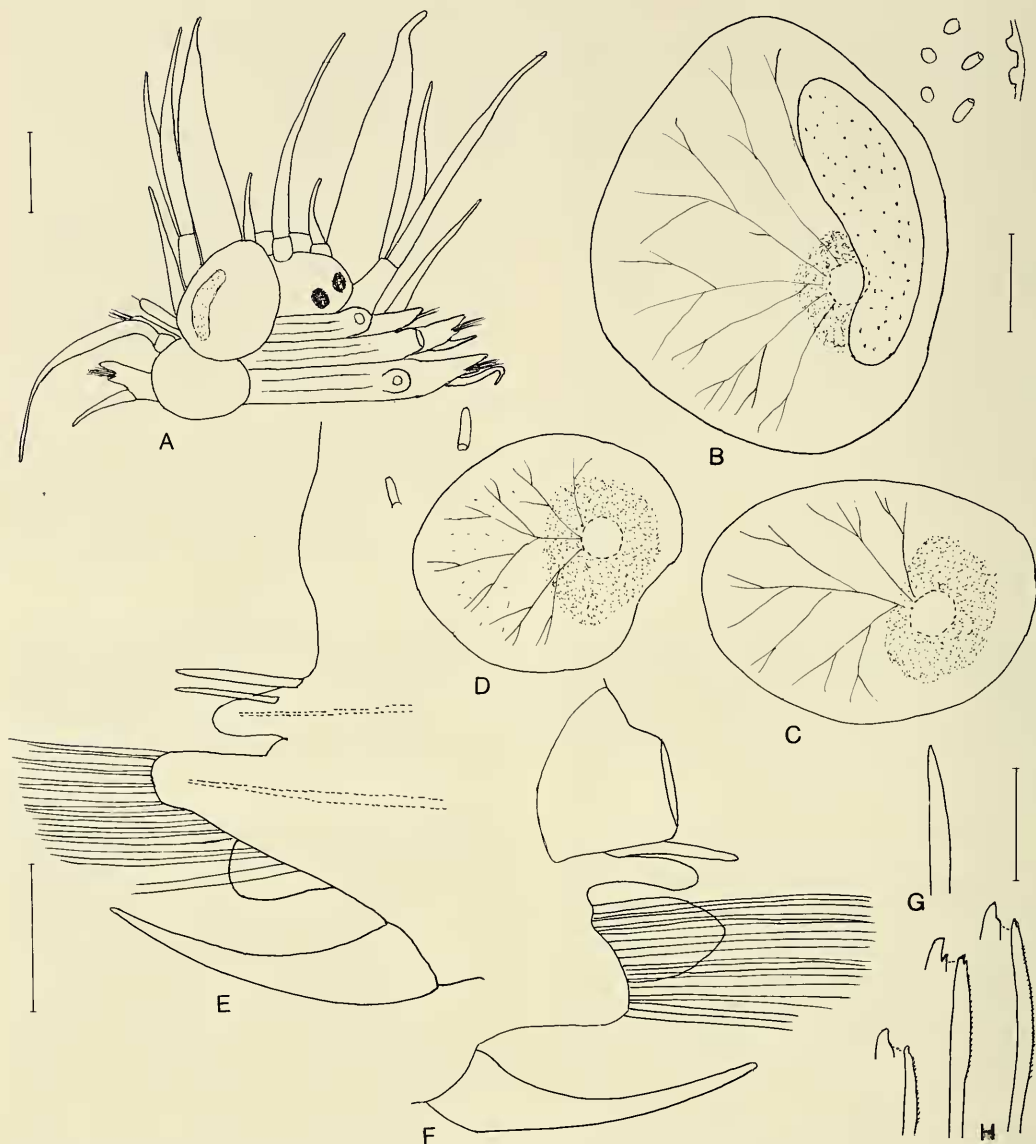


Fig. 12. *Gorgoniapolynoe caeciliae*, A–D, specimen from off Portugal (USNM 133356); E–H, parapodia of syntype of *Polynoe caeciliae* (from MOM, USNM 80098): A, Dorsal view of anterior end, right elytra of segments 2 and 4 and style of dorsal cirrus of segment 3 not shown, left parapodia of segment 2 not developed, right parapodia small, crowded; B, Right 1st elytron from segment 2, with detail of microtubercles and micropapillae; C, Right 2nd elytron from segment 4; D, Right 7th elytron from segment 13, with detail of micropapillae; E, Right elytrigerous parapodium from anterior region, anterior view, acicula dotted; F, Right cirriferous parapodium from anterior region, posterior view, style of dorsal cirrus broken off; G, Notoseta from same; H, Lower, middle and upper neurosetae from same, with detail of tips. Scales = 0.5 mm for A; 0.2 mm for B–D; 0.2 mm for E, F; 0.1 mm for G, H.

Gascony on *Corallium johnsoni* Gray (as *Pleurocorallium johnstonii*) (Gorgonacea: Coralliidae). Hartmann-Schröder (1985:33) identified numerous specimens of the spe-

cies from the Gulf of Gascony, off Portugal, Cape Verde Islands, Canary Islands, and Madeira, with *Corallium niobe* Bayer and *C. tricolor* (Johnson); the polynoids were

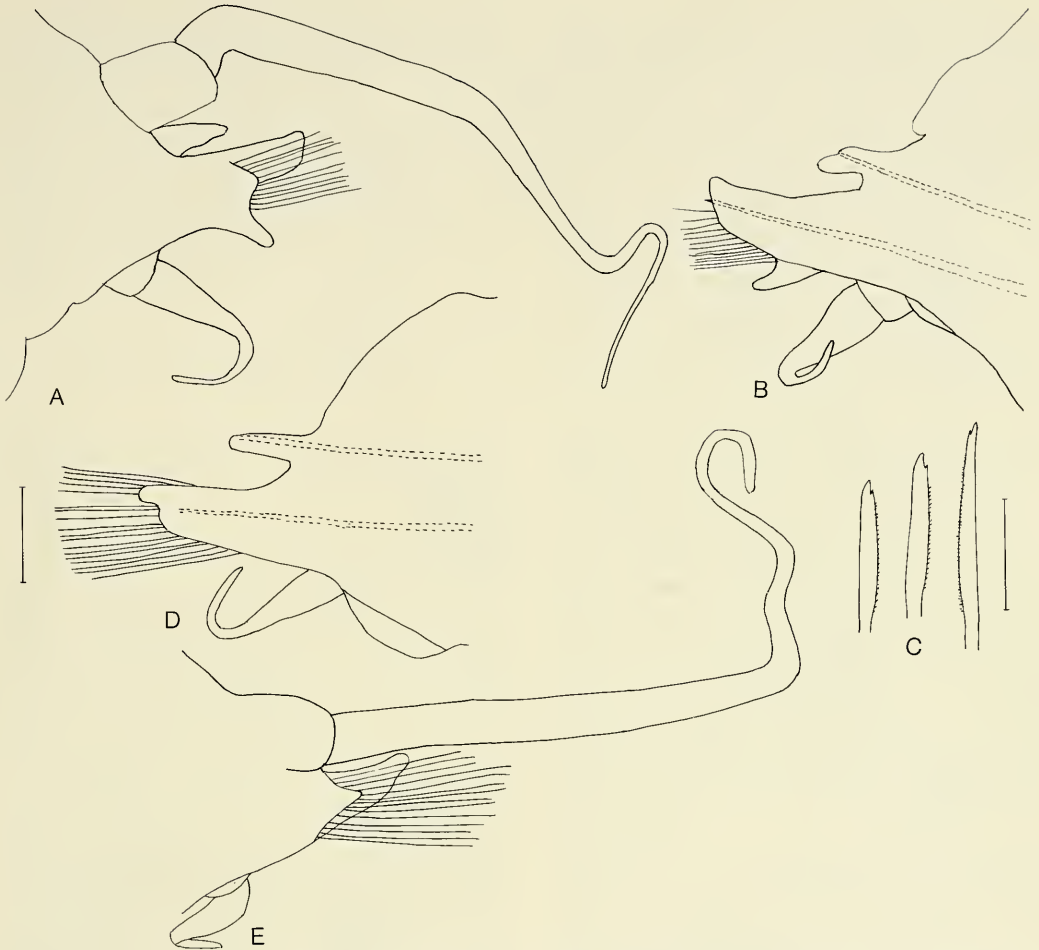


Fig. 13. *Gorgoniapolynoe caeciliae*, specimen from off Portugal (USNM 133356): A, Right cirriferous parapodium from segment 12, posterior view; B, Right elytrigerous parapodium from segment 13, anterior view, acicula dotted; C, Lower, middle and upper neurosetae from same; D, Right elytrigerous parapodium from segment 29, anterior view, acicula dotted; E, Right cirriferous parapodium from segment 30, posterior view. Scales = 0.2 mm for A, B, D, E; 0.1 mm for C.

removed by H. Zibrowius and the corals were identified by M. Grasshoff.

From the Straits of Florida, specimens were found on the holotype fragments of *Corallium niobe* Bayer. They were reported by F. M. Bayer (1964:476, figs. 5, 7) as follows: "The polychaete worms live among the polyps on the front of the branches, where they induce abnormal growth of the branchlets which produce covered tunnels through which the worms travel. The covered galleries begin as small branchlets arching upward from the sides of the branches,

which meet and ultimately fuse, forming almost solid tunnels with only a few small openings along the sides (Fig. 7). The terminal parts of the branches inhabited by worms are flattened on the front surface and have raised margins (Fig. 5)." The specimens are identified herein as *G. caeciliae*.

From the Lesser Antilles, *G. caeciliae* was found on *Candidella imbricata* (Johnson) (Gorgonacea: Primnoidae), in tunnels formed by enlarged basal scales of the polyps. From off Georgia, the polynoids were found with *Acanthogorgia aspera* Pourtales



Fig. 14. *Gorgoniapolynoe caeciliae*, specimen from Lesser Antilles (USNM 21123): A, Dorsal view of anterior end, pharynx fully extended, left 1st elytron removed; B, Left 1st elytron from segment 2, with detail of microtubercles and micropapillae; C, Left middle elytron; D, Ventral view of left side of segments 9-14, showing bulbous areas near bases of ventral cirri; E, Right elytrigerous parapodium from anterior region, anterior view, acicula dotted; F, Right cirriferous parapodium from anterior region, posterior view; G, Notosetae from same; H, Upper, middle and lower neurosetae from same; I, Right cirriferous parapodium from posterior region, posterior view. Scales = 0.5 mm for A, D; 0.2 mm for B, C; 0.2 mm for E, F, I; 0.1 mm for G, H.

(Gorgonacea: Acanthogorgiidae), in tunnels formed by expanded bases of the polyps and expansions of the coenenchyme.

*Distribution.*—Eastern North Atlantic Ocean, from Gulf of Gasgony, off Portugal, Cape Verde, Canary, and Madeira islands; Western North Atlantic Ocean, from Caribbean Sea, Straits of Florida, and off Georgia, in 512–1543 meters.

*Gorgoniapolynoe corralophila*  
(Day, 1960), new combination  
Fig. 15

*Harmothoe corralophila* Day, 1960:278, fig. 2a–e; 1967:72, fig. 1.11.a–f.—Stock, 1986:71, 72.

*Material examined.*—South Atlantic Ocean: off south coast of Cape Province, South Africa, 34°51'N, 23°41'E, 183 m, South Coast Dredging sta 207, 20 Nov 1960, on *Allopora bithalamus*, J. H. Day, collector, 2 specimens (BMNH 1961.19.5/6; elytra and parapodia, USNM 53531).

*Description.*—Length 15 mm, with 37 segments. Body broad, tapering posteriorly. Elytra 15 pairs, covering dorsum. First 3 pairs of elytra modified: large chitinous area with conical microtubercles and micropapillae; first pair circular, with narrow, bare margin (Day 1960, fig. 2a; 1967, fig. 1.11.b); 2nd pair elongate oval, with narrow, bare margin (Fig. 15A, B); 3rd pair with wider, bare margin. Following elytra large, elongate oval, smooth, except for few papillae, denser around place of attachment to elytophore (Fig. 15C; Day 1960, fig. 2b; 1967, fig. 1.11.c). Dorsal cirri with large cylindrical cirrophores on posterior sides of notopodia, bulbous basally, with long styles extending beyond tips of neurosetae; dorsal tubercles bulbous (Fig. 15A, E; Day 1960, fig. 2c; 1967, fig. 1.11.d).

Bilobed prostomium wider than long, anterior lobes wide, subtriangular, with small peaks; median antenna with large ceratophore in anterior notch, style long, with fil-

amentous tip; lateral antennae with ceratophores inserted lateroventrally, removed from median antenna, styles short, subulate; palps stout, tapered, about as long as median antenna; 2 pairs of eyes rather large, anterior pair in region of greatest width of prostomium, much larger than posterior pair (Fig. 15A; Day 1967, fig. 1.11.a). Tentaculophores lateral to prostomium, achaetous (2 setae shown by Day); dorsal and ventral tentacular cirri similar to median antenna (Fig. 15A; Day 1967, fig. 1.11.a). Segment 2 with first pair of large elytophores, biramous parapodia, and long ventral buccal cirri, similar to tentacular cirri (Fig. 15A; Day 1967, fig. 1.11.a). Pharynx not extended.

Biramous parapodia with notopodia subconical, almost as long as neuropodia; neuropodia with long conical presetal acicular lobe, with small digitiform supraacicular process, and shorter, rounded postsetal lobe (Fig. 15D, E; Day 1960, fig. 2c; 1967, fig. 1.11.d). Notosetae numerous, forming spreading bundle, short and longer, with widely-spaced spinose rows and rather long, bare, tapered, blunt tips (Fig. 15D–F; Day 1960, fig. 2d; 1967, fig. 1.11.e). Neurosetae very numerous, with spinose rows and bifid, hooked tips, upper ones more slender, with longer spinose regions (Fig. 15D, E, G; Day 1960, fig. 2e; 1967, fig. 1.11.f). Ventral cirri short, subulate (Fig. 15D, E; Day 1960, fig. 2c). Nephridial papillae short, bulbous, beginning on segment 11.

*Biology.*—*Gorgoniapolynoe corralophila* was reported by Day (1960) in the South Atlantic Ocean off South Africa, in 183 m, on *Allopora bithalamus* Brock (Stylasterina: Stylasteridae), in galls in the shape of open tunnels on the sides of the coral. The species was reported by Stock (1986:71.72, identified by G. Hartmann-Schröder), associated with the stylasterid corals *Stylaster* sp. and *Conopora* sp., near Réunion Island in the Indian Ocean, in 350–750 m, and with *Cryptohelia* sp. (Stylasteridae) near New Caledonia, SW Pacific Ocean, in 585–600 m.

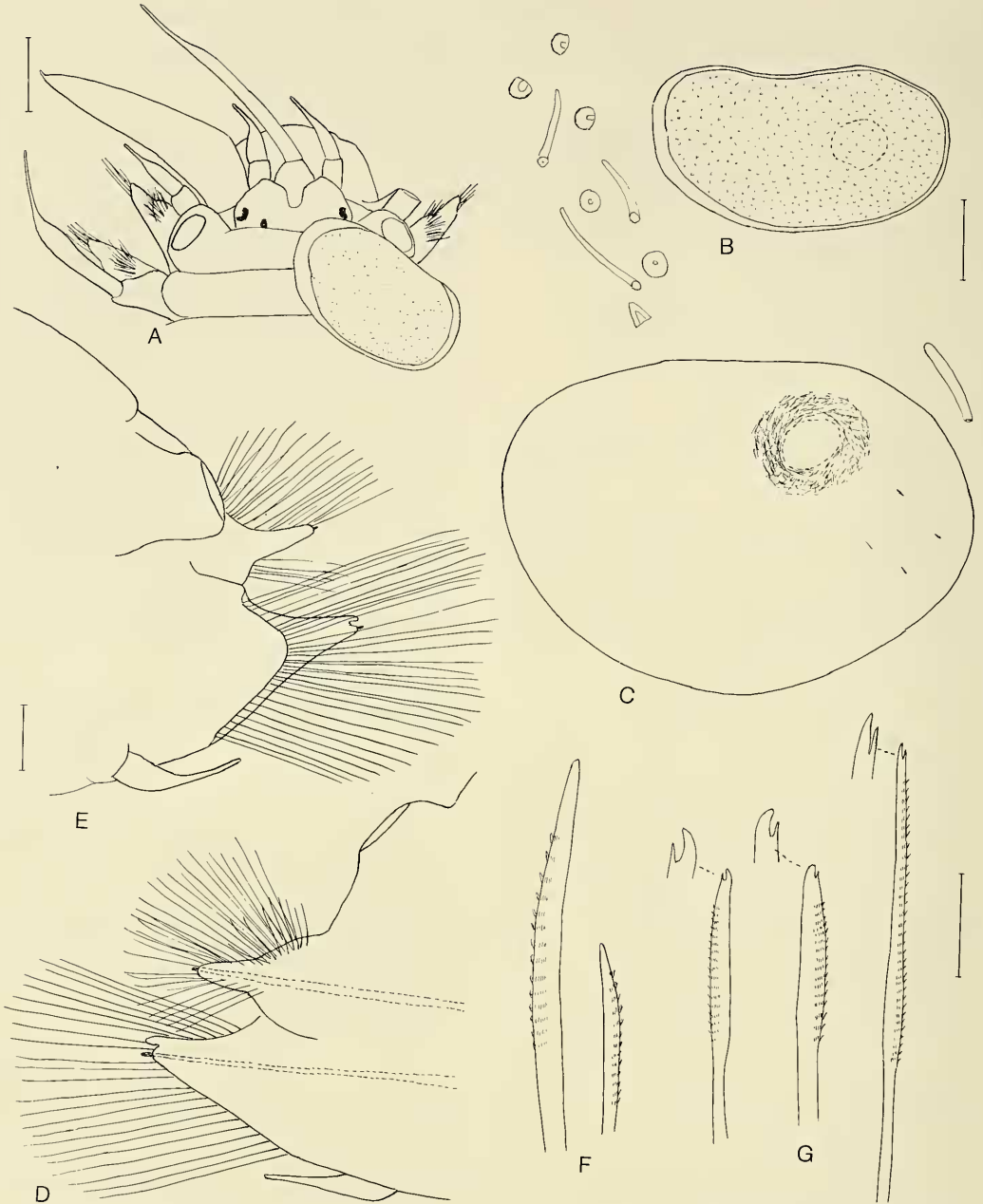


Fig. 15. *Gorgoniapolynoe corralophila*, specimens from South Africa (BMNH 1961.19.5/6; USNM 53531): A, Dorsal view of anterior end, pharynx partially extended, right palp, 1st pair of elytra and right dorsal and ventral and left ventral tentacular cirri missing, left dorsal tentacular cirrus small, regenerating, 2nd right elytron from segment 4 shown; B, Right 2nd elytron from segment 4, with detail of microtubercles and papillae; C, Right middle elytron, with detail of papilla; D, Right middle elytrigerous parapodium, anterior view, acicula dotted; E, Right middle cirriferous parapodium, posterior view, style of dorsal cirrus missing; F, Long and short notosetae; G, Lower, middle and upper neurosetae, with detail of tips. Scales = 0.5 mm for A; 0.5 mm for B, C; 0.2 mm for D, E; 0.1 mm for F, G.

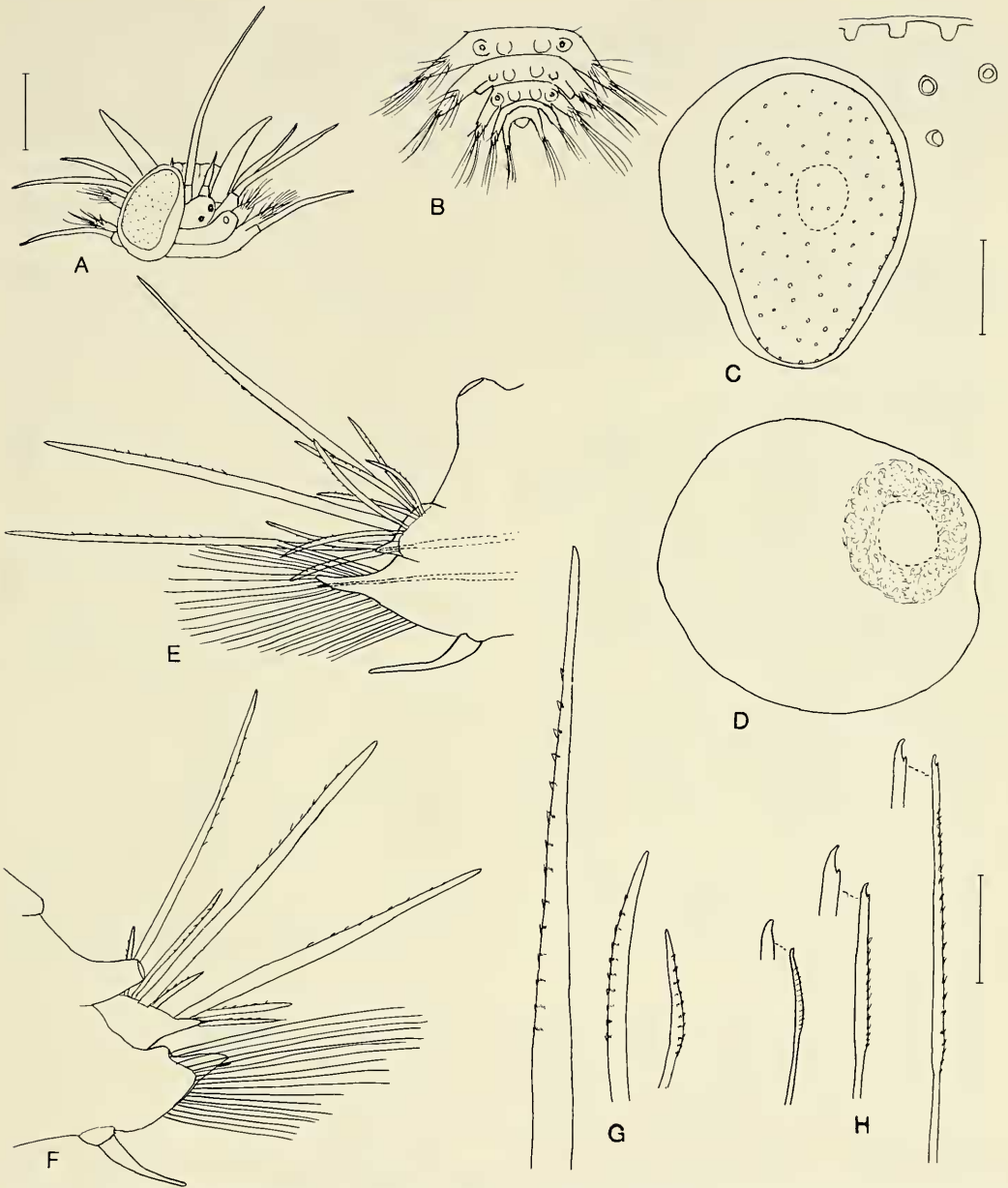


Fig. 16. *Gorgoniapolynoe pelagica*, holotype (USNM 80092): A, Dorsal view of anterior end, including segments 1-3; B, Dorsal view of posterior end, including segments 21-25; C, Right 1st elytron from segment 2, with detail of microtubercles; D, Right 5th elytron from segment 9; E, Right elytrigerous parapodium from segment 9, anterior view, acicula dotted; F, Right cirriferous parapodium from segment 10, posterior view, style of dorsal cirrus missing; G, Long and shorter notosetae; H, Lower, middle and upper neurosetae, with detail of tips. Scales = 0.5 mm for A, B; 0.2 mm for C-F; 0.1 mm for G, H.



*Distribution.*—South Atlantic Ocean, South Africa; Indian Ocean, Réunion Island; Southwest Pacific Ocean, New Caledonia, in 72–750 meters.

*Gorgoniapolynoe pelagica*, new species

Fig. 16

*Material examined.*—Western North Atlantic Ocean: off Bermuda, 31°39'N, 63°52'W, 0–1750 m, USNM Ocean Acre Program, R/V *Sands* cr 6, sta 6-6N, 26 Apr 1969, Gibbs and Roper, collectors, holotype (USNM 80092).

*Description.*—Holotype 5 mm long, 3 mm wide including setae, 25 segments. Body elongate, oval, flattened ventrally, arched dorsally. Elytra 12 pairs, on segments 2, 4, 5, 7, continuing on alternate segments to 23. First pair of elytra modified: central part amber-colored, chitinous, translucent, with scattered oval microtubercles, enclosed in bare margin, widest on medial side (Fig. 16A, C). Following elytra large, oval, delicate, denser around place of attachment to elyrophore (Fig. 16D). Dorsal cirri with cylindrical cirrophores on posterior sides of notopodia; styles long, tapered, extending beyond setae; dorsal tubercles nodular (Fig. 16A, B, F). Additional paired rounded tubercles on dorsal side of posterior segments 21–23, medial to elyrophores and dorsal tubercles (Fig. 16B).

Bilobed prostomium with lobes rounded anteriorly, without cephalic peaks; median antenna with ceratophore in anterior notch, style long, slender, with filamentous tip; lateral antennae with ceratophores inserted lateroventrally, removed from median antenna, styles short, with filamentous tips; palps stout, tapered; 2 pairs of moderately sized eyes, anterior pair larger than posterior pair (Fig. 16A). Tentaculophores lateral to prostomium, achaetous; dorsal and ventral tentacular cirri similar to but shorter than median antenna (Fig. 16A). Segment 2 with first pair of large elyrophores, biramous parapodia, and long ventral buccal

cirri, similar to tentacular cirri (Fig. 16A). Pharynx not extended.

Biramous parapodia with notopodium rounded, with projecting acicular process on lower side, almost as long as neuropodium; larger neuropodium with subconical pre-setal acicular lobe with supraacicular process; postsetal lobe shorter, rounded (Fig. 16E, F). Notoetae moderate in number, forming radiating bundle, stouter than neurosetae, of 2 kinds: few (3–4) long, straight, extending beyond neurosetae, with spinose rows on distal half and long, bare, pointed tips; and ca. 8 short, curved, with shorter spinose regions and shorter, bare tips (Fig. 16G). Neurosetae numerous, upper ones with long spinose regions and slightly curved tips, with small secondary tooth; middle ones with short spinose regions and bifid tips; lower ones with faint spinose rows and entire, slightly hooked tips (Fig. 16H). Ventral cirri short, subulate, with slender tips (Fig. 16E, F). Pygidium small, conical (Fig. 16B).

*Etymology.*—The species is named for its presence in the plankton.

*Remarks.*—The species is referred to *Gorgoniapolynoe* based mainly on the modified first pair of elytra. It differs from its commensal congeners in that it is well adapted for swimming, rather than crawling, with well-developed parapodia, long notosetae and neurosetae. It has only 12 pairs of elytra, instead of 15; and 25 segments, instead of about 40 or more. There is a possibility that *G. pelagica* is a pelagic juvenile stage.

*Distribution.*—Western North Atlantic Ocean, off Bermuda, in 0–1750 meters.

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