

## *FABRICINUDA*, A NEW GENUS OF FABRICIINAE (POLYCHAETA: SABELLIDAE)

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*Abstract.*—*Fabricinuda*, a new genus of the polychaete family Sabellidae, is described. The genus is unique in lacking a collar on the anterior peristomial ring; having an anterior peristomial ring as long as wide, or longer, and generally longer than the posterior peristomial ring; and having inferior thoracic pseudospatulate notosetae present on setigers 3–8. Two new species are described (*F. pseudopalpa* and *F. pseudocollaris*) and three species, *Fabriciola limnicola* (Hartman), *Fabricia bikini* Hartman, and *Fabriciola trilobata* Fitzhugh, are assigned to this genus and redescribed. *Fabriciola mossambica* (Day) may be referable to this genus. *Fabricinuda* is more heterogeneous morphologically than other fabriciin genera but is still monophyletic. A key to species is provided.

As part of a cladistic revision of the Sabellidae-Caobangiidae-Sabellongidae complex (Fitzhugh 1988, 1989), an extensive reexamination of the genera *Fabricia* Blainville, *Fabriciola* Friedrich, and *Augeneriella* Banse was undertaken. These three genera commonly have been regarded as a monophyletic group by nature of the character combination of pygidial eyes and three pairs of radioles (e.g., Banse 1957). Generic diagnoses have implied that the three taxa are quite distinct. For example, species of *Fabricia* are stated to lack ventral filamentous appendages, but have an anterior peristomial ring collar (sensu Fitzhugh 1988, 1989) that is reduced dorsally and laterally, and developed ventrally as a lip-like extension (see also Banse 1956). *Fabriciola* has been distinguished by the presence of unbranched, nonvascularized ventral filamentous appendages (sensu Fitzhugh 1988, 1989) and a membranous, anterior, peristomial ring collar that is relatively well developed all around (Banse 1956, 1957). *Augeneriella* has been differentiated from the other two genera by the presence of paired, vascularized, ventral filamentous appendages that are branched to some degree,

whereas the anterior peristomial ring collar is stated to be similar to that seen in *Fabricia* (Banse 1957, Gitay 1970).

Diagnoses for these genera have, however, changed over the years as new species have been described. Species in these genera now form very heterogeneous assemblages that cannot be adequately represented in only three genera. Currently, *Fabricia*, *Fabriciola*, and *Augeneriella* contain some of the smallest sabellid species. For this reason, the group is difficult to study, and there seems to have been a great deal of confusion as to what characters to use to distinguish species, and, in some instances, genera. This problem was recognized in the cladistic analyses by Fitzhugh (1988, 1989), in which two undescribed, monophyletic genera, "Genus A" and "B," were included as part of a revision of the sabellid subfamily Fabriciinae. The present paper is a formal description of "Genus B."

Generic and specific characters, and terminology (e.g., use of the term anterior peristomial ring collar or pseudospatulate setae) used in the present paper are explained and justified by Fitzhugh (1989). Additional setal terminology has been adopted from Per-



kins (1984). Results of methyl green staining for species discussed below follow the procedures outlined in Banse (1970) and Fitzhugh (1983). Specimens are available for study from the following institutions: Allan Hancock Foundation, University of Southern California (AHF) and the U.S. National Museum of Natural History, Smithsonian Institution (USNM).

*Fabricinuda*, new genus

*Type species.*—*Fabricia limnicola* Hartman, 1951.

*Diagnosis.*—Slender, small-bodied fabriciini species with 8 thoracic and 3 abdominal setigers. Branchial crown with 3 pairs of radioles; distal ends filamentous, about same width as pinnules. All pinnules terminating at same height, extending to same height as radioles or slightly shorter. Dorsal lips well developed or absent; ventral lips absent. Ventral filamentous appendages vascularized, slender, unbranched, or absent. Branchial hearts present. Branchial lobes attached in typical sabellid fashion or with very narrow attachment near dorsal margin of anterior peristomial ring. Mouth in typical sabellid position between branchial lobes or shifted dorsal to attachment point of branchial lobes. Anterior margin of anterior peristomial ring a low, even ridge all around or slightly oblique; rounded lobe present or absent on either side of dorsal midline. Anterior peristomial ring as wide as long or longer; as long as posterior peristomial ring or longer (e.g., Fig. 1B, C); anterior part of anterior peristomial ring may be narrower in lateral view. Annulation between anterior and posterior peristomial rings only distinct ventrally and laterally. Peristomial eyes black, rounded to crescentic; pygidial eyes black, rounded. Inferior thoracic notosetae of setiger 2 short, elongate, narrowly hooded; setigers 3–8 with pseudospatulate setae. Thoracic uncini acicular, with large tooth above main fang; hood present. Abdominal uncini rasp-shaped plates; manubrium about same

length as dentate region; dentate region with several teeth per row. Abdominal neurosetae modified, elongate, narrowly hooded. Body wall pigmentation variable.

*Etymology.*—The first component of a compound word, *Fabricio*-, refers to similarity this genus has with *Fabriciolo*; specifically, the presence of ventral filamentous appendages (in most species). The suffix, *-nuda*, derived from the Latin *nudus*, refers to the absence of the anterior peristomial ring collar, typical in one form or another in all other fabriciini genera (sensu Fitzhugh 1989).

*Remarks.*—The definition of *Fabricinuda* points out a number of variable characters, especially with regard to position of the branchial crown and mouth, and shape of the anterior peristomial ring. This is the most morphologically diverse genus within the revised Fabriciinae (Fitzhugh, in prep.).

The informal diagnosis for this genus in Fitzhugh (1989, as "Genus B") is not as complete as the one given here since this original diagnosis was based only on specimens of *Fabricinuda bikini* (Hartman; described below) from the Aldabra Atoll. Some of the character states (e.g., absence of dorsal lips, presence of vascularized, ventral filamentous appendages) originally assumed invariant are no longer considered synapomorphies for the genus in the present diagnosis.

*Fabricinuda* is monophyletic on the basis of 1) reduction of the anterior margin of the anterior peristomial ring to a low ridge, 2) the anterior peristomial ring being at least as wide as long, and 3) the occurrence of pseudospatulate setae in setigers 3–8. The genus contains three previously described species and three new species. In general, species display a longer and more slender body form than seen in other fabriciini.

Key to Species of *Fabricinuda*

- 1a. Branchial crown attachment to peristomium shifted dorsally to some extent (Figs. 2F, 3B, 5B) . . . 4



- b. Branchial crown attachment to peristomium not shifted dorsally 2
- 2a. Vascularized ventral filamentous appendages present; dorsal lips absent ..... 3
- b. Ventral filamentous appendages absent; dorsal lips present .....  
..... *F. pseudopalpa*, n. sp.
- 3a. Ventrum of anterior peristomial ring with paired, membranous lap-pet-like processes .....  
..... *F. pseudocollaris*, n. sp.
- b. Ventrum of anterior peristomial ring smooth, without processes .....  
..... *F. limnicola* (Hartman, 1951)
- 4a. Mouth in typical sabellid location (Fig. 5B) .....  
..... *F. trilobata* (Fitzhugh, 1983)
- b. Mouth shifted more dorsally, above branchial lobe attachment (Figs. 2F, 3F) .....  
..... *F. bikini* (Hartman, 1954)

*Fabricinuda limnicola* (Hartman, 1951),  
new combination  
Fig. 1

*Fabricia limnicola* Hartman, 1951:384–386,  
pl. 1, figs. 1–9; 1959:545; 1969:695–696,  
figs. 1–6.—Rullier, 1954:24–25.  
*Fabriciola limnicola*.—Banse, 1956:430.

*Material examined*.—California: Holo-type (AHF 209), Newport, northeast of Highway 101 bridge, between 33°36'58"N, 117°54'12"W, and 33°37'12"N, 117°53'25"W, intertidal sand flats, 18 Dec 1941. 17 specimens (AHF 3387), Anaheim Slough, near Long Beach, along shore, in sand, mud, *Zostera*, 5 Dec 1938. 7 speci-mens (USNM 41525), Southern California, 13 Jan 1933.

*Description*.—Holotype complete with 8 thoracic and 3 abdominal setigers; length 7.60 mm (branchial crown comprising 1.20 mm), maximal width 0.28 mm. Branchial crown one-third to one-eighth total body length, attached to peristomium in typical sabellid fashion. Three pairs of radioles; dis-

tal ends filamentous, same width as pin-nules. Radioles each with 7–10 pairs of pin-nules, all terminating at same height as radioles or up to one-third shorter. Dorsal and ventral lips absent. Pair of unbranched, vascularized ventral filamentous append-ages (Fig. 1E) distinctly wider than pinnules; width of each uniform except proximal one-fourth slightly wider; distal ends blunt. Sur-face of ventral filamentous appendages with numerous minute transverse wrinkles; length variable, one-half total radiole length to one-fourth longer than radioles. Body cy-lindrical, slender. Peristomial eyes black, crescentic to rounded; pygidial eyes black and rounded, situated in posterior fourth of pygidium. Anterior margin of anterior peri-stomial ring of even height or slightly oblique, as long ridge all around (Fig. 1A–C). Anterior peristomial ring 2 to 4 times longer than posterior ring; annulation dis-tinct ventrally and laterally; posterior three-fourths of ventrum of anterior ring appear-ing glandular, swollen (Fig. 1B, C). Setigers 1–3 shortest, usually wider than long; fol-lowing setigers longer; setigers 7–8 each 2 to 3 times longer than anterior setigers, much longer than wide. Setiger 9 about same length as 8 or slightly shorter; setigers 10 and 11 successively shorter, setiger 11 about as long as wide. Pygidium about as long as setiger 11; distinctly tapered, conical (Fig. 1D). Su-perior thoracic notosetae elongate, narrowly hooded; 4–5 per fascicle. Inferior thoracic notosetae of setiger 2 short, elongate, nar-rowly hooded; 2 per fascicle. Setigers 3–8 with pseudospatulate setae; 2–3 per fascicle (Fig. 1F). Abdominal neurosetae modified, elongate, narrowly hooded, 3–4 per fascicle. Thoracic acicular uncini in single, some-times irregular rows; 6–9 per fascicle (Fig. 1G). Abdominal uncini with 9–10 teeth in profile, 3–4 teeth per row; manubrium slightly constricted below dentate region, ex-panded somewhat proximally to quadran-gular base (Fig. 1H); manubrium slightly longer than dentate region; 25–30 uncini per fascicle. All specimens examined pigment-ed; radioles uniformly light to dark brown,



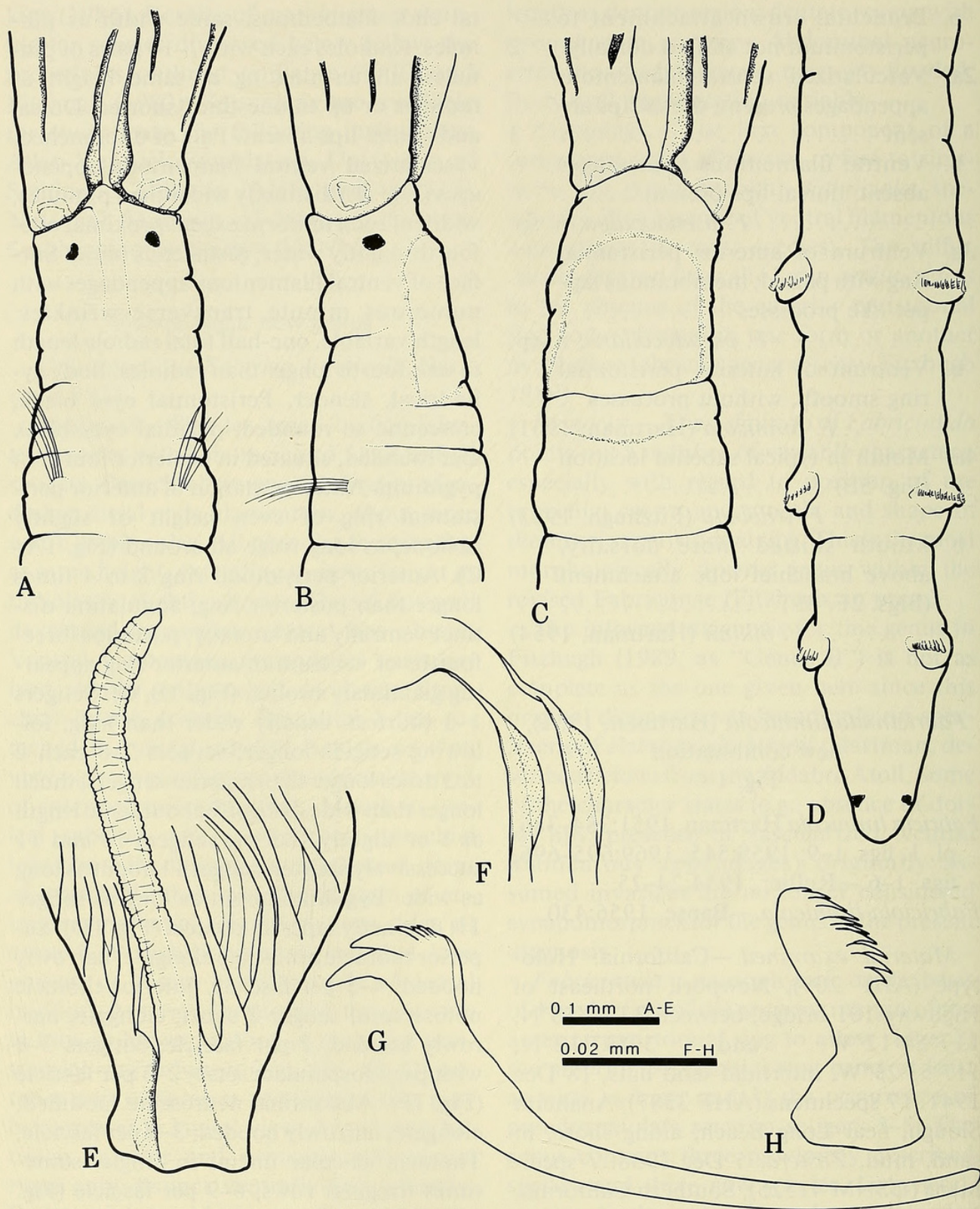


Fig. 1. *Fabricinuda limnicola* (AHF 3387): A-C, Dorsal, lateral (right side) and ventral views, respectively, of the anterior end; D, Posterior end, dorsal view; E, Right half of branchial crown, inner margin; F, Pseudo-spatulate setae from setiger 8; G, Thoracic uncinus from setiger 7; H, Abdominal uncinus from setiger 9.



some with darker pigmentation along inner dorsal and ventral margins of branchial lobes; ventral filaments light to dark brown; conical structure above mouth dark brown; pigment commonly extending posteriorly along middorsal groove on peristomium; ventrum of anterior peristomial ring, anterior to glandular area, dark brown, quadrangular or triangular in shape, remainder of peristomium light brown; thoracic and abdominal setigers unpigmented, cream colored. Tubes loosely constructed of quartz sand grains and fine mud. Methyl green staining (AHF 3387 material) darkest on anterior midventral margin of setiger 1, uniformly light staining on ventrum from setiger 2 to pygidium; uptake of stain less in crown and peristomium.

*Remarks.*—*Fabricinuda limnicola* is a very long, slender species that is distinguished from other species in the following characters: 1) the anterior peristomial ring margin does not have lobes to either side of the dorsal midline; 2) there is a glandular-like area on the ventrum of the anterior peristomial ring; and 3) there is a distinctive pigment pattern on the ventral side of the anterior end, accentuating the glandular region. Characters 2 and 3 are illustrated in Hartman (1951: fig. 2).

The figure of an abdominal uncinus in Hartman (1951: fig. 5; compare with Fig. 1H herein) incorrectly depicts a very long, slender manubrium, about four to five times longer than the dentate region. The uncinus was probably drawn while still within the fascicle, which usually gives the impression of the manubrium being longer and narrower than what is seen in true profile.

*Fabricinuda bikinii* (Hartman, 1954),  
new combination  
Figs. 2–4

*Fabricia bikinii* Hartman, 1954:641, fig. 178; 1959:544.

*Material examined.*—Pacific Ocean: Holotype (USNM 24725) and 18 paratypes

(AHF 207), Bikini Island, Bikini Atoll, reef flat, white coralline sand, coll., K. O. Emery, 26 Sep 1950. Indian Ocean: Picard Island, Aldabra Atoll. Station Q1-83: replicates 1–11, sand flat with *Thalassia* in front of wet lab, 31 Mar 1983; Q1-83-2, 1 specimen (USNM 121977); Q1-83-3, 1 specimen (USNM 121978); Q1-83-5, 1 specimen (USNM 121979); Q1-83-6, 1 specimen (USNM 121980); Q1-83-9, 1 specimen (USNM 121981). Station Q1A-83: replicates 1–5, same locality as Q1-83, 1 Apr 1983; Q1A-83-1, 7 specimens (USNM 121982); Q1A-83-3, 1 specimen (USNM 121983); Q1A-83-4, 5 specimens (USNM 121984). Station Q5-83: replicates 1–5, *Halodule* flat off beach in front of wet lab, 7 Apr 1983; Q5-83-3, 1 specimen (USNM 121985). Station Q6-83: replicates 1–15, *Thalassodendron* seagrass bed in front of wet lab, Apr 1983; Q6-83-2, 1 specimen (USNM 121986); Q6-83-13, 2 specimens (USNM 121987). Station Q7-83: replicates 1–5 (9 Apr 1983), 6–10 (10 Apr 1983), lagoon, *Caulerpa* on limestone pavement; Q7-83-1, 22 specimens (USNM 121988); Q7-83-3, 6 specimens (USNM 121989); Q7-83-6, 3 specimens (USNM 121990); Q7-83-7, 15 specimens (USNM 121991); Q7-83-8, 15 specimens (USNM 121992); Q7-83-9, 9 specimens (USNM 121993); Q7-83-10, 10 specimens (USNM 121994). Station Q8-83: replicates 1–5, *Thalassia* seagrass bed in lagoon just inside Passe Femme, 16 Apr 1983; Q8-83-3, 143 specimens (USNM 121995); Q8-83-5, 62 specimens (USNM 121996). Coll., K. Fauchald, B. Kensley, P. Hutchings, M. Schotte. Station 85-Q1: replicates A–E, *Thalassia* seagrass bed 120 m from shore, 20 cm depth, 12 Mar 1985; replicates F–K, *Thalassodendron* seagrass bed 120 m from shore, 20 cm depth, 13 Mar 1985; 85-Q1A, 4 specimens (USNM 121997); 85-Q1B, 17 specimens (USNM 121998); 85-Q1C, 3 specimens (USNM 121999); 85-Q1D, 4 specimens (USNM 122000); 85-Q1G, 4 specimens (USNM 122001); 85-Q1H, 10 specimens (USNM



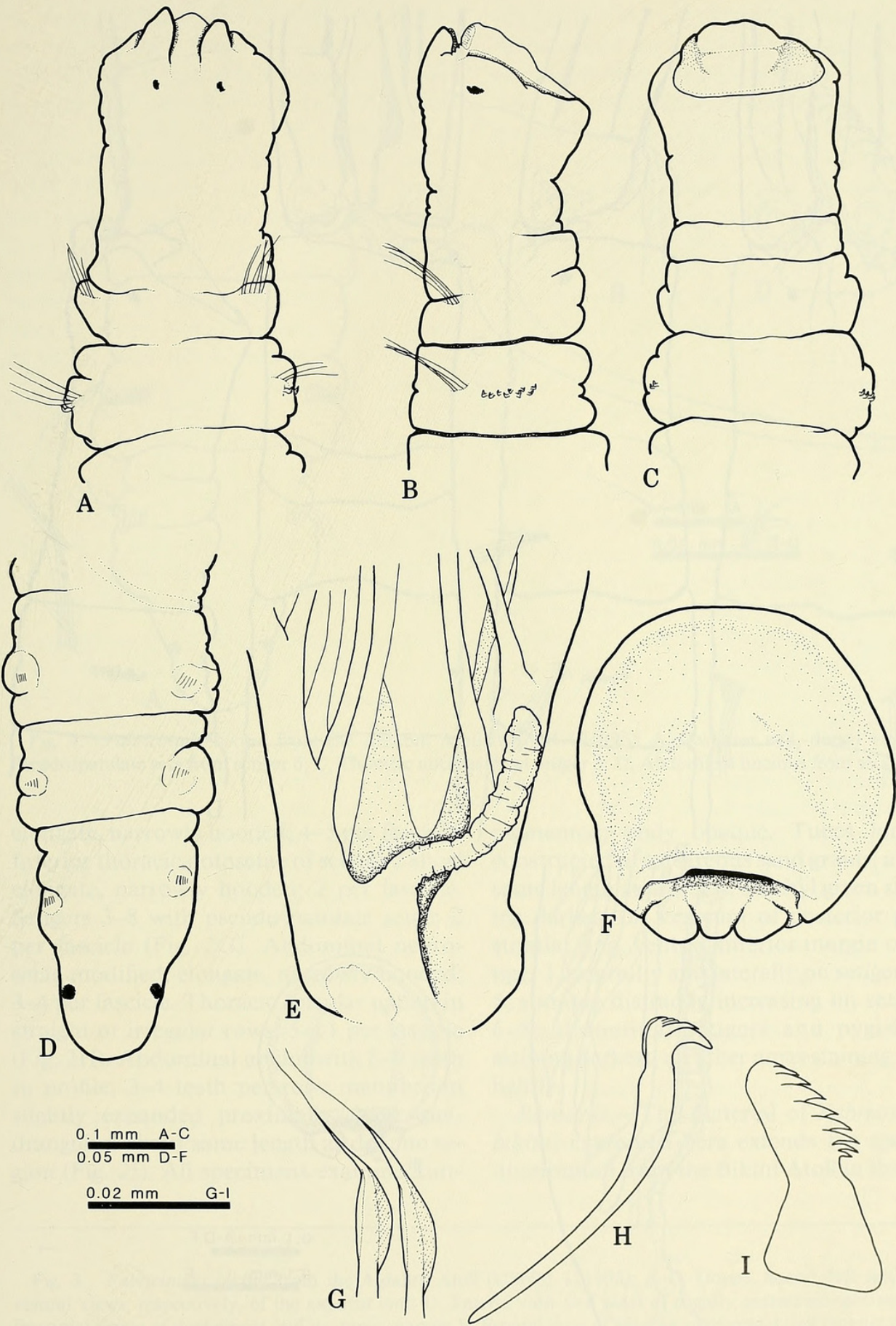
122002); 85-Q1K, 35 specimens (USNM 122003). Station 85-Q2: replicates A-E (15 Mar 1985) and F-K (22 Mar 1985), *Thalassia* bed in lagoon, inside Passe Femme, 10 cm depth; 85-Q2A, 10 specimens (USNM 122004); 85-Q2B, 104 specimens (USNM 122005); 85-Q2C, 16 specimens (USNM 122006); 85-Q2D, 11 specimens (USNM 122007); 85-Q2E, 14 specimens (USNM 122008); 85-Q2H, 80 specimens (USNM 122009); 85-Q2J, 85 specimens (USNM 122010); 85-Q2K, 56 specimens (USNM 122011). Station 85-Q3: replicates F-K, core sample, *Thalassodendron* seagrass bed, 21 Mar 1985; 85-Q3K-Core, 1 specimen (USNM 122012). Coll., K. Fauchald, B. Kensley, K. Fitzhugh, M. Schotte. Station ALD-BC: Bassin Lebine, 1 m depth, 13 March 1985; replicates 1-5 from "*Codium*"-like algal scrapings from undercut sides of bassin; replicates 6-9 from "*Bryopsis*"-like algal scrapings from undercut sides of bassin; replicate 10 from "*Caulerpa*"-like algal scraping from undercut side of bassin; ALD-BC-Bottom: thin veneer of flocculent sediment over smooth rock bottom, 1.5 m depth; ALD-BC-1, 1 specimen (USNM 122013); ALD-BC-2, 10 specimens (USNM 122014); ALD-BC-5, 7 specimens (USNM 122015); ALD-BC-6, 2 specimens (USNM 122016); ALD-BC-10, 125 specimens (USNM 122017); ALD-BC-Bottom, 28 specimens (USNM 122018). F5-85: station data unavailable; 2 specimens (USNM 122019). F9-85: station data unavailable; 89 specimens (USNM 122020). Coll., K. Fauchald, B. Kensley, K. Fitzhugh, M. Schotte.

*Description* (based on type material).—Holotype incomplete (left half of branchial crown missing) with 8 thoracic and 3 ab-

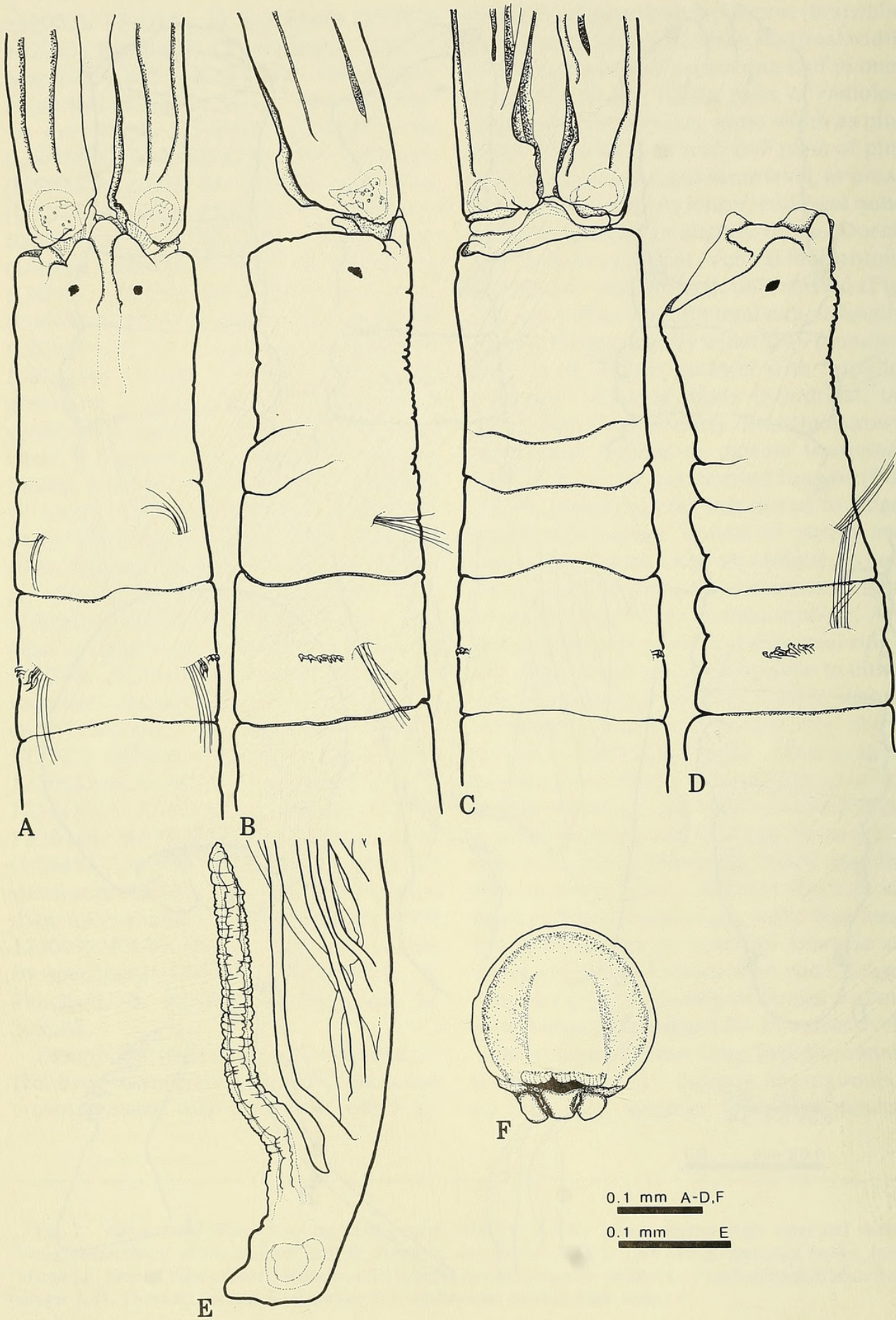
dominal setigers; length 3.4 mm (branchial crown comprising 1.00 mm); maximal width 0.28 mm. Branchial crown one-half to one-third total length. Three pairs of radioles; distal ends filamentous, same width as pinnules. Radioles each with 6-7 pairs of pinnules, all terminating at same level, or proximalmost pair slightly longer, ending at same height as radioles or slightly below. Dorsal and ventral lips absent. Ventral filamentous appendages vascularized, unbranched (Fig. 2E); one-half to one-fifth total radiole length; width uniform, slightly wider than pinnules; distal ends blunt; surface with minute, transverse wrinkles. Body cylindrical, tapering slightly posteriorly. Branchial crown attachment limited to narrow transverse ridge near dorsal peristomial margin (Fig. 2B, F); mouth located just dorsal to ridge. Peristomial surface ventral to mouth and crown attachment ridge an oblique or horizontal shelf-like process, sometimes slightly raised along dorso-ventral midline. Anterior margin of anterior peristomial ring a low ridge except for rounded lobe to either side of dorsal midline (Fig. 2A-C); slightly overlapping middorsal conical lobe above mouth; all lobes same height. Anterior peristomial ring 2-3 times longer than posterior peristomial ring; annulation between rings distinct ventrally and laterally. Peristomial eyes rounded to crescentic, black; pygidial eyes rounded, black. Anterior thoracic setigers each of similar length, wider than long; length increasing in posterior thoracic setigers, setigers 6-7 longer than wide, setiger 8 similar to anterior setigers. Setiger 9 about same length as 8; setigers 10-11 successively shorter; all wider than long. Pygidium same length as setiger 11; tapered, bluntly rounded (Fig. 2D). Superior thoracic notosetae

Fig. 2. *Fabricinuda bikini* from the Bikini Atoll (AHF 207): A-C, Dorsal, lateral (right side) and ventral views, respectively, of the anterior end; D, Posterior end, dorsal view; E, Left half of branchial crown, inner margin; F, Frontal view of anterior peristomial margin, dorsal margin at bottom; G, Pseudospatulate setae from setiger 7; H, Thoracic uncinus from setiger 3; I, Abdominal uncinus from setiger 9.











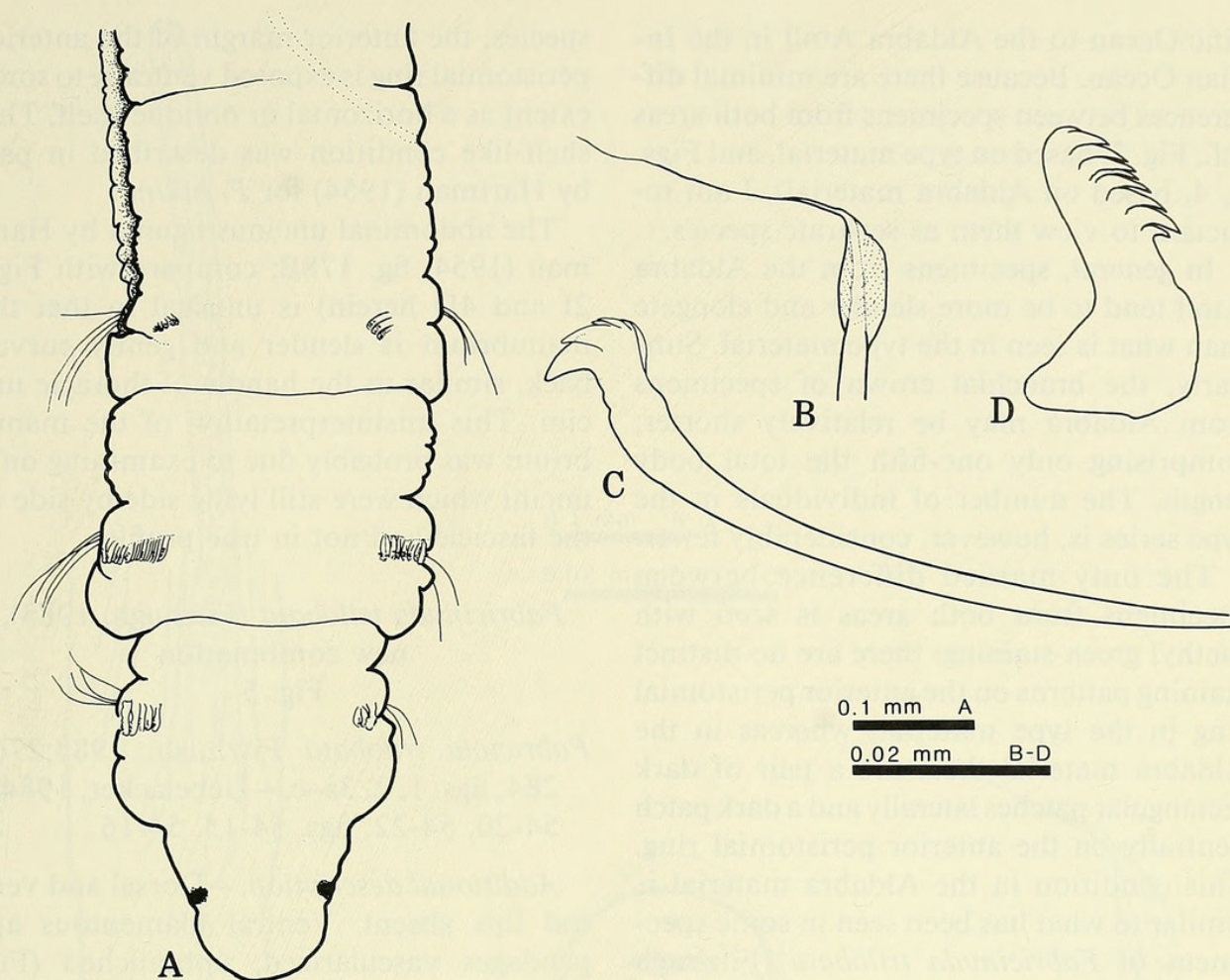


Fig. 4. *Fabricinuda bikinii* from the Aldabra Atoll (USNM 121995): A, Posterior end, dorsal view; B, Pseudospatulate seta from setiger 6; C, Thoracic uncinus from setiger 5; D, Abdominal uncinus from setiger 10.

elongate, narrowly hooded; 4–5 per fascicle. Inferior thoracic notosetae of setiger 2 short elongate, narrowly hooded; 2 per fascicle. Setigers 3–8 with pseudospatulate setae; 2 per fascicle (Fig. 2G). Abdominal neurosetae modified, elongate, narrowly hooded; 3–4 per fascicle. Thoracic acicular uncini in straight or irregular rows; 5–11 per fascicle (Fig. 2H). Abdominal uncini with 8–9 teeth in profile, 3–4 teeth per row; manubrium slightly expanded proximally, base quadrangular, about same length as dentate region (Fig. 2I). All specimens examined un-

pigmented; body opaque. Tubes loosely constructed of calcareous sand grains; about same length as animals. Methyl green staining darkest on ventrum of posterior peristomial ring, ventral anterior margin of setiger 1, ventrally and laterally on setigers 2–5; staining distinctly increasing on setigers 6–8; abdominal setigers and pygidium staining darkest; all other areas staining very lightly.

*Remarks.*—The material of *Fabricinuda bikinii* examined here extends the species distribution from the Bikini Atoll in the Pa-

Fig. 3. *Fabricinuda bikinii* from the Aldabra Atoll (USNM 121995): A–C, Dorsal, lateral (left side) and ventral views, respectively, of the anterior end; D, Lateral view (left side) of slightly contracted specimen; E, Proximal region of dorsalmost radiole, inner margin; F, Frontal view of anterior peristomial ring margin, dorsal margin at bottom.



cific Ocean to the Aldabra Atoll in the Indian Ocean. Because there are minimal differences between specimens from both areas (cf., Fig. 2, based on type material, and Figs. 3, 4, based on Aldabra material), I am reluctant to view them as separate species.

In general, specimens from the Aldabra Atoll tend to be more slender and elongate than what is seen in the type material. Similarly, the branchial crown of specimens from Aldabra may be relatively shorter, comprising only one-fifth the total body length. The number of individuals in the type series is, however, considerably fewer.

The only marked difference between specimens from both areas is seen with methyl green staining: there are no distinct staining patterns on the anterior peristomial ring in the type material, whereas in the Aldabra material there are a pair of dark rectangular patches laterally and a dark patch ventrally on the anterior peristomial ring. This condition in the Aldabra material is similar to what has been seen in some specimens of *Fabricinuda trilobata* (Fitzhugh 1983; see below). While differences in staining patterns may be indicative of regional, populational, or species-specific variation, the differences seen in the present material may also be a function of age and preservation.

*Facricinuda bikini* is unique in that the mouth has been shifted dorsally and in front of the attachment point of the branchial lobes to the peristomium. In addition, the point of attachment for the branchial lobes is reduced to a narrow, transverse ridge just behind the mouth. As a result of this latter condition, the branchial lobe bases sit largely unattached over the anterior end; only the dorsal margins of the lobes are connected to the peristomium. An intermediate condition is seen in *F. trilobata* (Fitzhugh 1983; see below) in that the crown attachment has been shifted dorsally to a lesser degree but with lobes completely attached to the peristomium and the mouth in the typical sabellid position. As a result of this shift in crown attachment in these two

species, the anterior margin of the anterior peristomial ring is exposed ventrally to some extent as a horizontal or oblique shelf. This shelf-like condition was described in part by Hartman (1954) for *F. bikini*.

The abdominal uncinus figured by Hartman (1954: fig. 178B; compare with Figs. 2I and 4D herein) is unusual in that the manubrium is slender and gently curved back, similar to the handle of thoracic uncini. This misinterpretation of the manubrium was probably due to examining only uncini which were still lying side by side in the fascicle and not in true profile.

*Fabricinuda trilobata* (Fitzhugh, 1983),  
new combination  
Fig. 5

*Fabriciola trilobata* Fitzhugh, 1983:276–284, figs. 1, 2, 3a–c.—Uebelacker, 1984a: 54-20, 54-22, figs. 54-15, 54-16.

*Additional description.*—Dorsal and ventral lips absent. Ventral filamentous appendages vascularized, unbranched (Fig. 5A), slightly wider than pinnules; width uniform except for basal swelling of margin adjacent to dorsal radiole; distal end blunt; surface with minute transverse wrinkles. Anterior peristomial ring margin available for branchial lobe attachment reduced in size, attachment shifted dorsally (Fig. 5B). Branchial lobes completely attached to peristomium. Mouth in usual sabellid position relative to branchial lobes. Narrow, exposed shelf-like region present below crown attachment area. Inferior thoracic notosetae of setiger 2 short, elongate, narrowly hooded; 1 per fascicle. Inferior thoracic notosetae of setigers 3–8 pseudospatulate setae (Fig. 5C); 1–2 per fascicle.

*Remarks.*—*Fabricinuda trilobata* is distinctive in the partial shifting dorsally of the branchial crown and mouth, resulting in an exposed, narrow shelf. As noted in Remarks under *F. bikini*, this condition in *F. trilobata* is intermediate to what is seen in *F. bikini* on the one hand and remaining species on the other. This suggests a possible



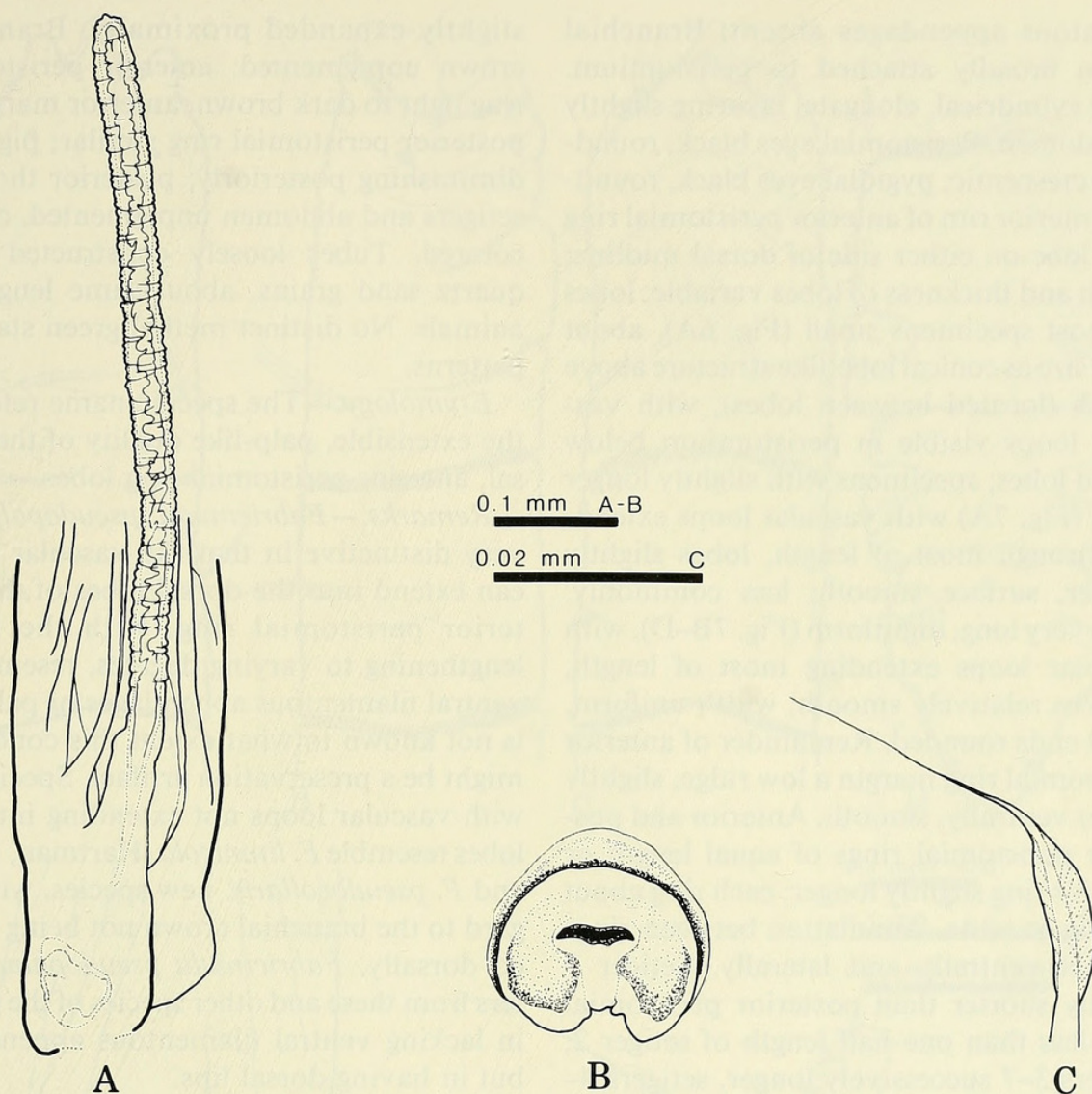


Fig. 5. *Fabricinuda trilobata* (paratypes, A, C from USNM 74689, B from USNM 74691): A, Left half of branchial crown, inner margin; B, Frontal view of anterior peristomial ring margin, dorsal margin at bottom; C, Pseudospatulate seta from setiger 7.

transformation series in which dorsal shifting of the branchial crown occurred prior to the mouth being displaced above the branchial lobes.

Together with various workers in the past, Fitzhugh (1983) erroneously referred to the ventral filamentous appendages as "palps."

*Fabricinuda pseudopalpa*, new species

Figs. 6, 7

**Material examined.**—California: Holotype (USNM 122021) and 24 paratypes (USNM 122022), Dutch Harbor, San Nic-

olas Island, Channel Islands, low intertidal, among roots of *Phyllospadix* and rocks, coll., R. Seapy, 5 May 1977.

**Description.**—Holotype complete with 8 thoracic and 3 abdominal setigers; length 3.10 mm (0.70 mm comprising branchial crown), maximal width 0.23 mm. Branchial crown one-fourth to one-sixth total body length. Three pairs of radioles; distal ends filamentous, same width as pinnules. Radioles each with 8–10 pairs of pinnules, all terminating at same height as radioles. Dorsal lips erect (Fig. 6E), longer than wide, slightly tapered, distally blunt. Ventral fil-



amentous appendages absent. Branchial crown broadly attached to peristomium. Body cylindrical, elongate, tapering slightly in abdomen. Peristomial eyes black, rounded to crescentic; pygidial eyes black, rounded. Anterior rim of anterior peristomial ring with lobe on either side of dorsal midline; length and thickness of lobes variable; lobes on most specimens small (Fig. 6A), about same size as conical lobe-like structure above mouth (located between lobes); with vascular loops visible in peristomium below paired lobes; specimens with slightly longer lobes (Fig. 7A) with vascular loops extending through most of length, lobes slightly thicker, surface smooth; less commonly, lobes very long, digitiform (Fig. 7B–D), with vascular loops extending most of length, surfaces relatively smooth, width uniform, distal ends rounded. Remainder of anterior peristomial ring margin a low ridge, slightly higher ventrally, smooth. Anterior and posterior peristomial rings of equal length or anterior ring slightly longer; each ring about as long as wide. Annulation between rings distinct ventrally and laterally. Setiger 1 slightly shorter than posterior peristomial ring, less than one-half length of setiger 2; setigers 3–7 successively longer, setigers 4–7 each about 2–2.5 times longer than setiger 2; setiger 8 shorter, same length as setiger 3. Setiger 9 about one-half length of 8, about as long as wide; setigers 10–11 successively shorter, narrower. Pygidium about same length as setiger 11; conical, bluntly rounded (Fig. 6D). Superior thoracic notosetae elongate, narrowly hooded; 4–5 per fascicle. Inferior thoracic notosetae of setiger 2 short, elongate, narrowly hooded; 2 per fascicle. Setigers 3–8 with pseudospatulate setae; 1–3 per fascicle (Fig. 6F). Abdominal neurosetae modified, elongate, narrowly hooded; 4–6 per fascicle. Thoracic acicular uncini in straight single or irregular rows; 6–13 per fascicle (Fig. 6G). Abdominal uncini with 11–12 teeth in profile, proximal tooth slightly larger (Fig. 6H); 4–5 teeth per row; 17–22 uncini per fascicle; manubrium

slightly expanded proximally. Branchial crown unpigmented; anterior peristomial ring light to dark brown, anterior margin of posterior peristomial ring similar; pigment diminishing posteriorly; posterior thoracic setigers and abdomen unpigmented, cream colored. Tubes loosely constructed with quartz sand grains, about same length as animals. No distinct methyl green staining patterns.

*Etymology.*—The specific name refers to the extensible, palp-like quality of the dorsal, anterior peristomial ring lobes.

*Remarks.*—*Fabricinuda pseudopalpa* is very distinctive in that the vascular loops can extend into the dorsal lobes of the anterior peristomial ring, with the lobes lengthening to varying degrees, resembling ventral filamentous appendages or palps. It is not known to what extent this condition might be a preservation artifact. Specimens with vascular loops not extending into the lobes resemble *F. limnicola* (Hartman, 1951) and *F. pseudocollaris*, new species, with regard to the branchial crown not being shifted dorsally. *Fabricinuda pseudopalpa* differs from these and other species of the genus in lacking ventral filamentous appendages but in having dorsal lips.

*Fabricinuda pseudocollaris*, new species  
Figs. 8, 9

*Material examined.*—Florida: Holotype (USNM 122023) and five paratypes (USNM 65903), entrance to East Lagoon, Seahorse Key, silty sand, coll., J. H. Taylor, 24 Apr 1960.

*Description.*—Holotype complete with 8 thoracic and 3 abdominal setigers; length 10.00 mm (branchial crown comprising 1.00 mm), maximal width 0.24 mm. Branchial crown one-ninth to one-tenth total body length. Crown broadly attached to peristomium, not displaced dorsally (Fig. 8B); with mouth between branchial lobes. Three pairs of radioles; distal ends filamentous, same width as pinnules. Radioles each with



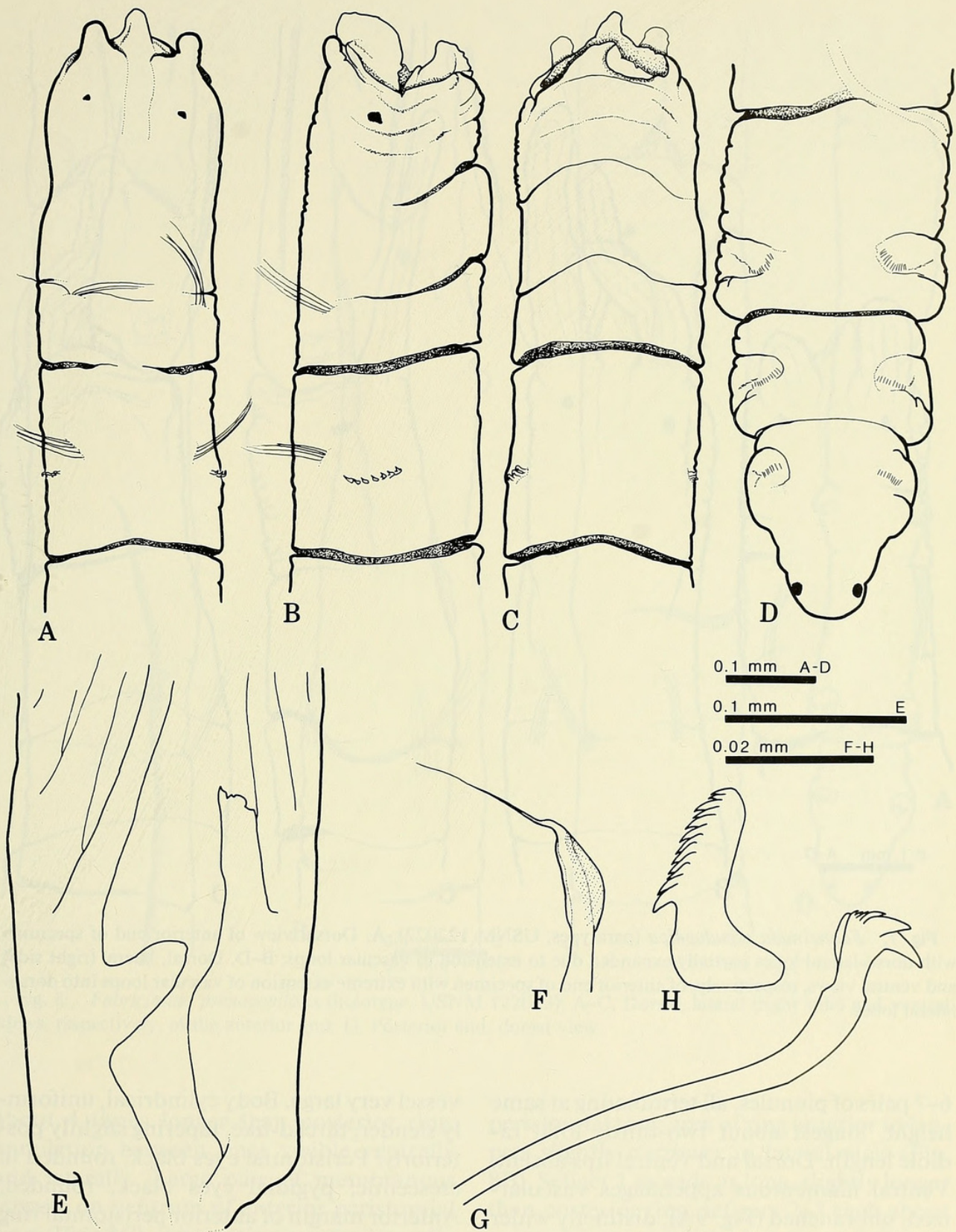


Fig. 6. *Fabricinuda pseudopalpa* (paratypes, USNM 122022): A–C, Dorsal, lateral (right side) and ventral views, respectively, of anterior end; D, Posterior end, dorsal view; E, Left half of branchial crown, inner margin; F, Pseudospatulate seta from setiger 4; G, Thoracic uncinus from setiger 4; H, Abdominal uncinus from setiger 9.



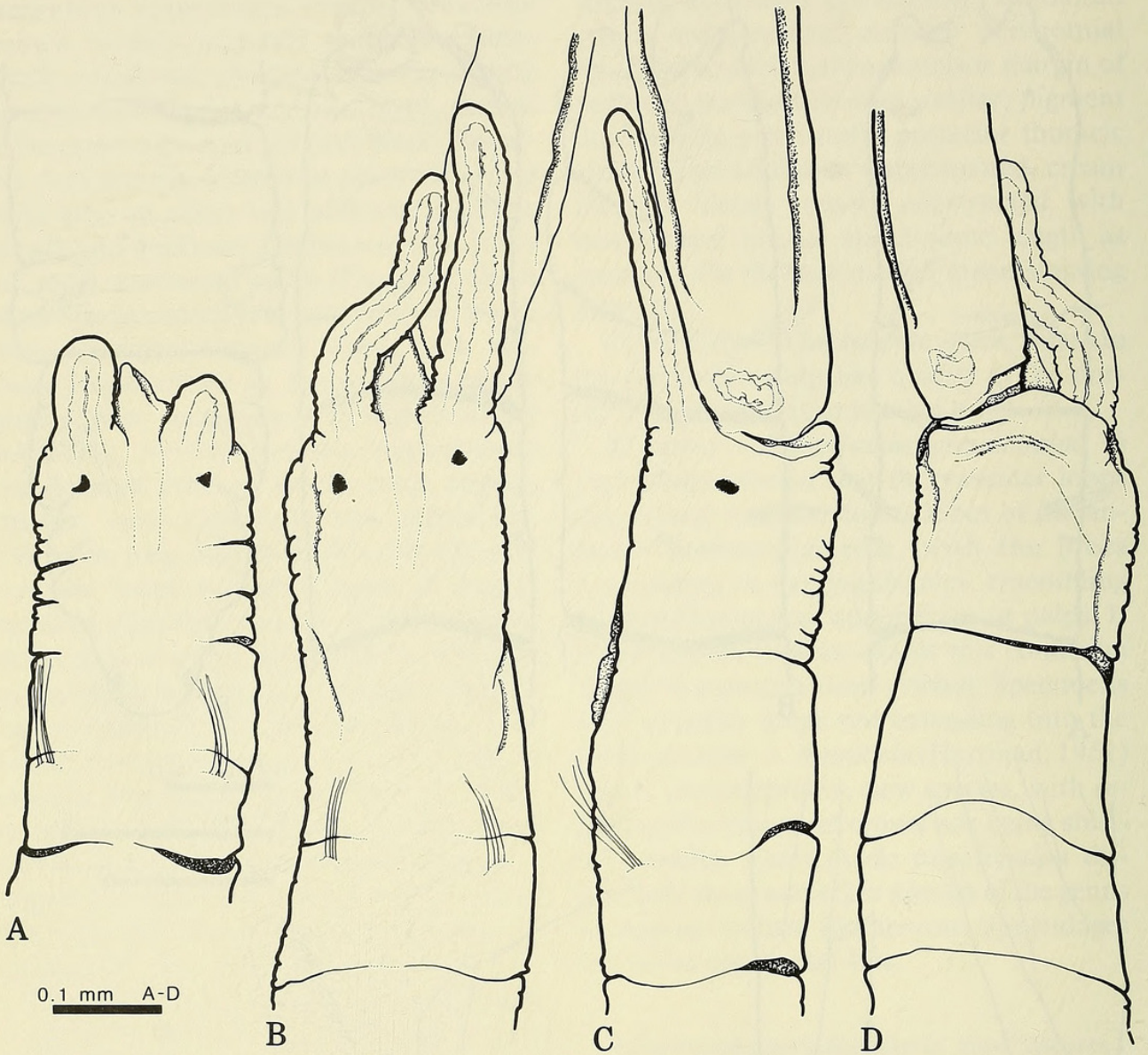


Fig. 7. *Fabricinuda pseudopalpa* (paratypes, USNM 122022): A, Dorsal view of anterior end of specimen with dorso-lateral lobes partially expanded due to extension of vascular loops; B–D, Dorsal, lateral (right side) and ventral views, respectively, of anterior end of specimen with extreme extension of vascular loops into dorso-lateral lobes.

6–7 pairs of pinnules, all terminating at same height; longest about two-thirds total radiole length. Dorsal and ventral lips absent. Ventral filamentous appendages vascularized, unbranched (Fig. 9A); distinctly wider than pinnules, width uniform throughout except for slight basal swelling along margin adjacent to dorsal radiole; distally blunt; same length as radioles or slightly shorter. Ventral filament surface relatively smooth or with minute transverse wrinkles; blood

vessel very large. Body cylindrical, uniformly slender, thread-like, tapering slightly posteriorly. Peristomial eyes black, rounded to crescentic; pygidial eyes black, rounded. Anterior margin of anterior peristomial ring a low ridge all around except for low rounded lobe to either side of dorsal midline (Fig. 8A–C); dorsal lobes smaller than median conical lobe above mouth; ridge of same height ventrally and dorsally, concave laterally (Fig. 8B). Anterior peristomial ring





Fig. 8. *Fabricinuda pseudocollaris* (holotype, USNM 122023): A–C, Dorsal, lateral (right side) and ventral views, respectively, of the anterior end; D, Posterior end, dorsal view.

about 4 times longer than posterior ring; annulation between rings visible ventrally and laterally. Large pair of membranous lappets on ventrum of anterior peristomial ring (Fig. 8C), originating ventro-laterally on anterior half of ring; separated by wide gap, with posterior margin of gap developed as narrow shelf. Lappets directed anteriorly with distal margins broadly rounded; terminating below anterior rim of anterior

peristomial ring; area of ring anterior to lappets slightly narrower in lateral view (Fig. 8B). Setiger 1 as wide as long, slightly longer than posterior ring; setigers 2–3 each about twice as long as setiger 1; setigers 4–5 each twice as long as 3; setigers 6–7 each twice as long as 4 or 5; setiger 8 slightly longer than 6 or 7. Setiger 9 about one-half length of setiger 8; setigers 10–11 successively shorter. Pygidium same length as setiger 11,



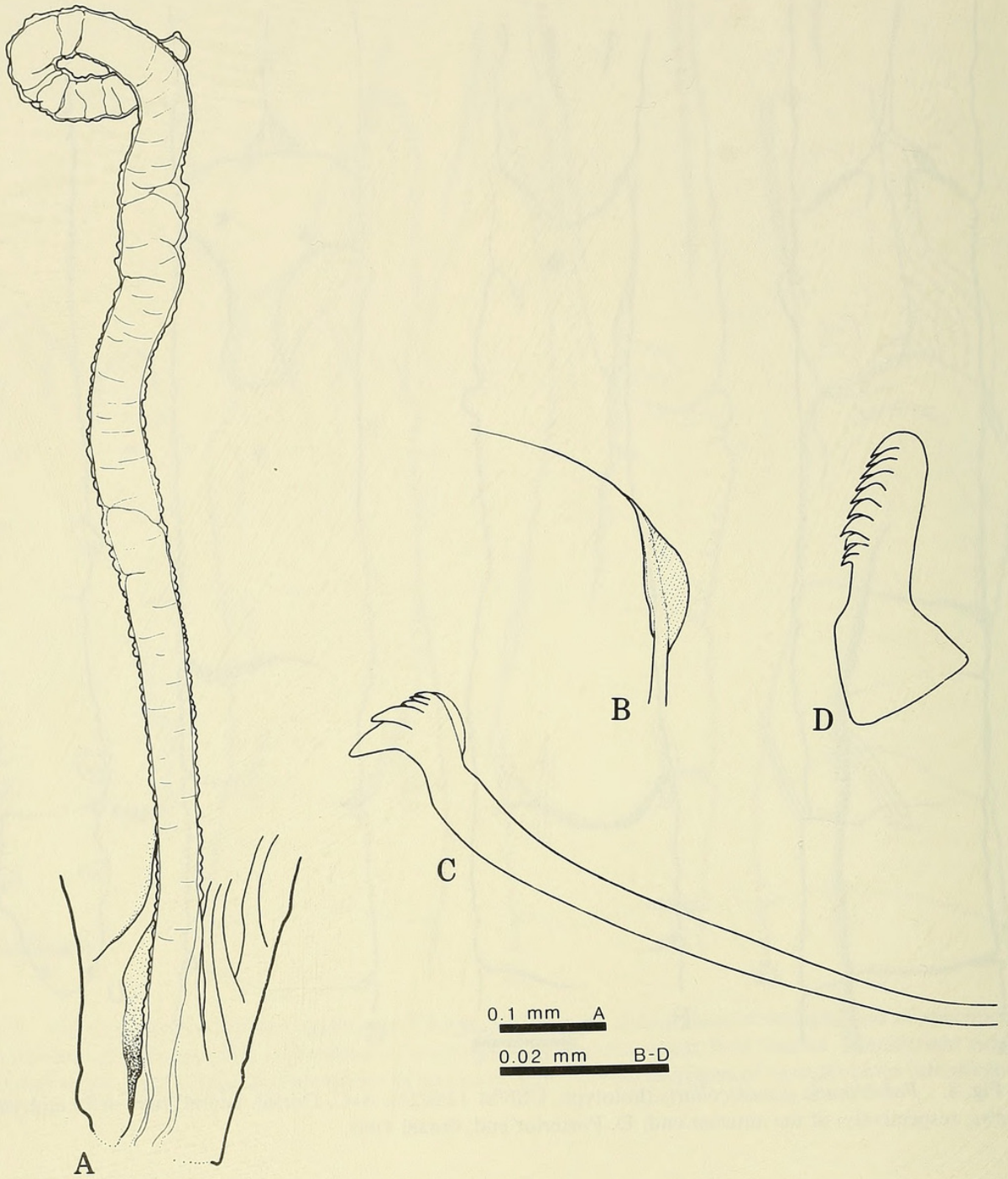


Fig. 9. *Fabricinuda pseudocollaris* (paratypes, USNM 65903): A, Proximal region of right half of branchial crown, inner margin; B, Pseudospatulate seta from setiger 5; C, Thoracic uncinus from setiger 5; D, Abdominal uncinus from setiger 9.

tapering to rounded end (Fig. 8D). Superior thoracic notosetae elongate, narrowly hooded; 4–6 per fascicle. Setiger 2 inferior thoracic notosetae short, elongate, narrowly hooded; 2 per fascicle; setigers 3–8 with pseudospatulate setae; 2 per fascicle (Fig.

9B). Abdominal neurosetae modified, elongate, narrowly hooded; 3–4 per fascicle. Thoracic acicular uncini in irregular double rows; 8–12 per fascicle (Fig. 9C). Abdominal uncini with 9–10 teeth in profile, 3–4 teeth per row; manubrium constricted be-



low dentate region, expanded proximally with quadrangular base (Fig. 9D); 20–25 uncini per fascicle in setigers 9–10; 18 per fascicle in setiger 11. Ventral filamentous appendages yellowish to light brown; remainder of branchial crown unpigmented or dark brown on inner lobe margins. Conical lobe above mouth dark brown, pigment extending posteriorly along dorsal midline of anterior peristomial ring; region between ventral lappets of anterior ring dark brown; remainder of body cream colored. Tubes loosely constructed with quartz sand grains; same length as animals. Methyl green staining greatest in ventral rectangular area of anterior peristomial ring below lappets, through posterior peristomial ring to anterior margin of setiger 1; ventrum of setigers 2–4 or 5 uniformly dark, remaining thoracic setigers lightly stained; abdominal setigers and pygidium dark.

*Etymology.* — The specific name refers to the ventro-lateral anterior peristomial ring lappets, which give the impression of a collar.

*Remarks.* — *Fabricinuda pseudocollaris* is very distinctive with its paired, ventral, membranous lappets on the anterior peristomial ring. The concomitant narrowing of this ring anterior to these structures appears somewhat similar to the more pronounced narrowing of the far anterior region seen in *F. trilobata* and *F. bikini*. At this time I do not consider the two conditions to be homologous. Relative to other species in the genus, *F. pseudocollaris* also has the longest anterior peristomial ring.

#### Species Possibly Referable to *Fabricinuda*

Day (1957) described the species, *Fabricia mossambica*, later referred to as *Fabriciola mossambica* by Day (1963, 1967), from South Africa. In the original description, Day (1957: fig. 8k) noted that contracted specimens have a truncated anterior end. The figure shows the anterior end of a specimen lacking the branchial crown and with the

anterior peristomial ring margin smooth. The attachment area for the crown is displaced dorsally somewhat and the anterior peristomial ring is indicated as longer than the posterior ring. Day's figures of relaxed specimens (Day 1957: fig. 8g–j), however, show a rounded ventral lobe and no dorsal lobes on the anterior peristomial ring margin; ventral filamentous appendages are present, but degree of vascularization is not mentioned. Unlike typical *Fabriciola*, this species lacks the membranous anterior peristomial ring collar and the manubrium of abdominal uncini is the same length as the dentate region. The general features described by Day (1957) for *F. mossambica* suggest that it is a species of *Fabricinuda*.

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