

PROCEEDINGS
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REVIEW OF THE GENUS *HERMENIA*, WITH A
DESCRIPTION OF A NEW SPECIES
(POLYCHAETA: POLYNOIDAE: LEPIDONOTINAE)

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As a part of my revisionary work on the aphroditoid polychaetes, a study was made of the members of the genus *Hermenia* Grube (Polynoidae: Lepidonotinae). Three species have been described previously, one of them both a homonym and a synonym. A new species is added herein, based on material previously confused with one of the currently recognized species. The species, treated in this report are:

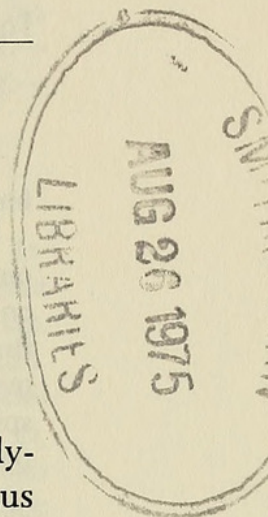
H. verruculosa Grube, 1856. Virgin Islands

[Includes *Polynoe nodosa* Treadwell, 1901 (= homonym).
Puerto Rico]

H. acantholepis (Grube, 1876), as *Polynoe*. Philippine Islands

H. neoverruculosa new species, as *H. verruculosa* by Monro, 1939. Seychelles

In addition to the specimens in the Smithsonian Institution, Washington (USNM), types and additional material were borrowed from the following Museums: Bernice P. Bishop Museum, Honolulu (BPBM), through D. M. Devaney; British Museum (Natural History), London (BMNH), through J. D. George; Museum National d'Histoire Naturelle, Paris (MNHNP), through J. Renaud-Mornant; Rijksmuseum van Natuurlijke Historie, Leiden (RMNHL), through J. van der Land; University Zoological Museum, Copenhagen (UZMC), through J. B. Kirkegaard; Zoölogisch Museum, Amsterdam (ZMA), through S. van der Spoel, and Zoologisches Institut



and Museum, Hamburg (ZMH), through G. Hartmann-Schröder. The manuscript benefited from the suggestions of H. H. Hobbs, Jr. and M. L. Jones, both of the Smithsonian Institution.

Genus *Hermenia* Grube, 1856

Type-species: *H. verruculosa* Grube, 1856, by monotypy. Gender: feminine.

Diagnosis: Body short, subrectangular, segments 26. Elytra 12 pairs, on segments 2, 4, 5, 7, and on alternate segments to 23, with dorsal cirri on posterior 3 segments; elytra firmly attached to indistinct elytophores; first 1-3 pairs moderately large, remaining ones very small (easily overlooked) to moderately so; elytra with fringes of short papillae and spiny macrotubercles. Prostomium bilobed, with 2 pairs of eyes, paired palps, and 3 antennae; lateral antennae inserted terminally on anterior continuations of prostomium, i.e., lepidonotoid. Tentacular segment (I) lateral to prostomium, with few notosetae, 2 pairs of tentacular cirri, and bulbous facial tubercle. Buccal segment (II) with ventral buccal cirri longer than those following and without distinct nuchal fold. Parapodia subbiramous; notopodia forming small lobes on anterodorsal faces of stout neuropodia; neuropodia truncate and papillate distally. Notosetae few to absent, slender, finely spinous. Neurosetae stout, with falcate tips and 1 or 2 stout teeth. Dorsal cirri with cylindrical cirrophores and rather short styles. Ventral cirri short, subulate. Pygidium with pair of anal cirri. Pharynx with 11 pairs of papillae (somewhat variable?) and 2 pairs of jaws. Nephridial papillae short, cylindrical, beginning on segments 6, 7, or 8. Integument tuberculate and/or papillate.

KEY TO THE SPECIES OF *HERMENIA*

1. First 2 or 3 pairs of elytra moderately large; remaining ones smaller but none so small as to be easily overlooked (Fig. 4a-c). Both dorsal and ventral surfaces papillate, not tuberculate (Fig. 3a,c,d). Neurosetae with 2 stout accessory teeth (Fig. 3f) *H. acantholepis* (Grube)
- 1'. First pair of elytra large; remaining ones very small, deeply embedded, and easily overlooked (Figs. 1a-c, 5a,c,d). Dorsal surface tuberculate (Figs. 1a, 5a) 2
2. Neurosetae with single stout accessory tooth (Fig. 2h). Ventral surface densely papillate (Fig. 2f,g) *H. verruculosa* Grube
- 2'. Neurosetae with 2 accessory teeth—one stout and one more slender (slender one sometimes missing; Fig. 6f). Ventral surface wrinkled, not thickly papillate (Fig. 6c,d)
 *H. neoverruculosa* new species

Hermenia verruculosa Grube

Figures 1, 2

Hermenia verruculosa Grube, 1856: 44.—Treadwell, 1911: 9, figs. 23–26; 1924: 5; 1928: 452; 1939: 187, fig. 19.—Seidler, 1923: 261, fig. 6; 1924: 95.—Augener, 1925: 4; 1927: 43.—Hartman, 1939: 4.—Fauvel, 1953a: 4.—Bellan, 1964: 307.—Ebbs, 1966: 500, fig. 4, a–g.—Devaney, 1974: 122, 140.—Rullier, 1974: 19.

Polynoe nodosa Treadwell, 1901: 187, figs. 8, 9. [Not Sars, 1861.]

Lepidonotus verruculosus.—Horst, 1922: 198.

Material examined: WEST INDIES AND CARIBBEAN SEA: Virgin Islands: St. John, 9 June 1846, Krøyer, collector—holotype of *Hermenia verruculosa* (UZMC). Off St. Thomas 36.5–42 m, FISH HAWK sta. 6079, 6 February 1899—holotype of *Polynoe nodosa* (USNM 16013). St. James Island near St. Thomas, 4.5 m, 10 July 1915, C. R. Shoemaker, collector—1 specimen (USNM 46912). Virgin Islands, 91 m, S.S. ADVANCE II, sta. 1, September 1970, J. Clark, collector—1 specimen (USNM 46922). Barbuda: near Spanish Point, shore, on beach wrack and coral, 28 April 1958, W. L. Schmitt, collector—1 specimen (USNM 46915). Barbados: 3 miles west of Needham Point, University of Iowa Barbados-Antigua Expedition—1 specimen (USNM 20272; reported by Treadwell, 1924). Puerto Rico: Fajardo, FISH HAWK 1898–99—paratype of *Polynoe nodosa* (USNM 16014). Majimo Reef, rather compact calcareous sand of Mangrove Island, 1–2 feet, 9 March 1967, M. E. Rice, collector—1 specimen (USNM 46920). Caribbean: 09°32'N, 79°54'W, 62 m, ALBATROSS sta. 2146, 2 April 1884—1 specimen (USNM 951). 18°30'N, 66°25'W, 73 m, Johnson-Smithsonian Deep Sea Expedition, 7 February 1933—1 specimen (USNM 20058). Bahamas: Golding Key, Andros Island, 13 May 1912, P. Bartsch, collector—1 specimen (USNM 16492). Off North Point, Gibson Cay, Andros Island, 24°19.8'N, 77°40.8'W, 6 March 1966, M. L. Jones, collector—1 specimen (USNM 46918). Outer reef, north of Clarencetown, Long Island, 15 May 1970, C. Riser, collector—1 specimen (USNM 46921).

CENTRAL AND SOUTH AMERICA: British Honduras: on brittle star, *Ophiocoma pumila* Lütken, 7 March 1969, D. M. Devaney, collector—1 specimen (BPBM). Carrie-Bow Cay, 27 m, 11 June 1972, M. E. Rice, collector—2 specimens (USNM 50112). Colombia: Old Providence Island, shore, Presidential (Roosevelt) Cruise sta. 30, 6 August 1938, W. L. Schmitt, collector—1 specimen (USNM 20489; reported by Hartman, 1939).

FLORIDA AND GULF OF MEXICO: Florida: Dry Tortugas, June–July 1914, A. L. Treadwell, collector—3 specimens (USNM 17722, 17733). Loggerhead Key, Dry Tortugas, A. L. Treadwell, collector, Fauvel collection—1 specimen (BMNH 1928: 4: 236). Dry Tortugas, 1930, W. L. Schmitt, collector—2 specimens (USNM 46913; BMNH 1972: 106). Loggerhead Key, from matrix of large brain coral, 3 m, 19 August 1966,

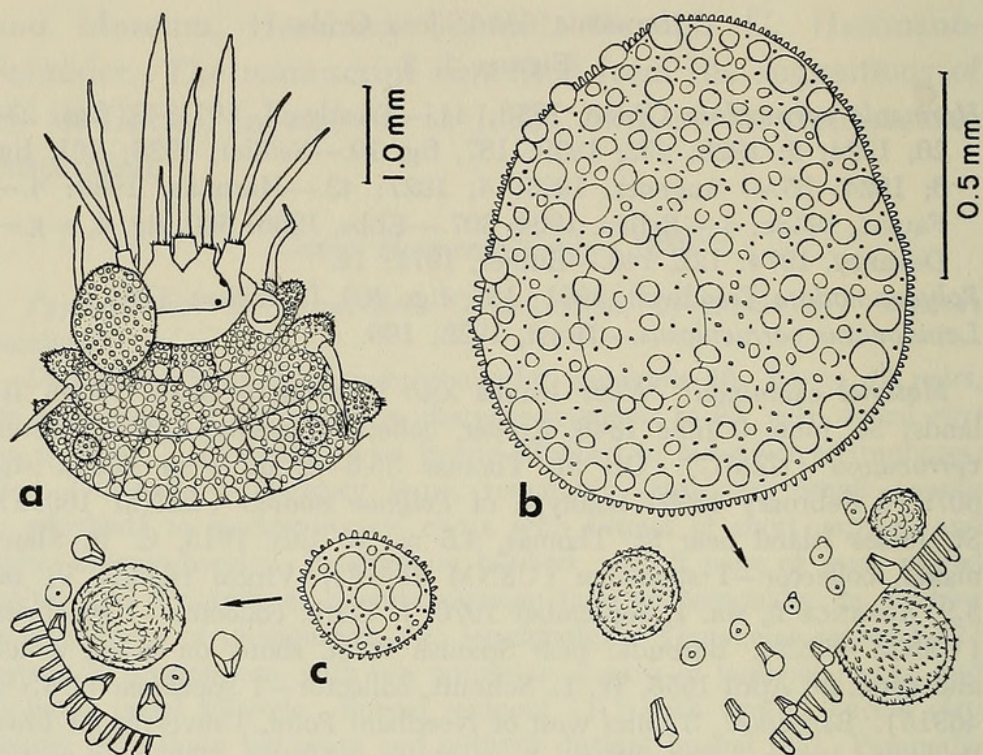


FIG. 1. *Hermenia verruculosa* (Paratype of *Polynoe nodosa* Treadwell, USNM 16014): a, Prostomium and anterior four segments, dorsal view; first right elytron removed; b, First elytron (segment II), with detail of tubercles and sensory papillae; c, Elytron from middle of body, with detail of tubercles and sensory papillae.

R. F. Cressey, collector—2 specimens (USNM 46919). Off Louisiana: 28°06'N, 91°02'W, 53 m, OREGON sta. 1416, 21 September 1955—1 specimen (USNM 46914). S.E. Mexico: Yucatán peninsula, Bahía de la Ascensión, Quintana Roo, Nicchehabin Reef, cracked from coral pieces and sea fans, 1–2 m, Smithsonian-Bredin Expedition, stations 67 and 72, 13/14 April 1960, W. L. Schmitt and E. L. Bousfield, collectors—2 specimens (USNM 46916–7).

NORTH ATLANTIC: Off New Jersey, 39°56'N, 70°20'W, 223 meters, ALBATROSS station 2246, 26 September 1884—1 specimen (USNM 3296).

Description: Length of holotype 20 mm, width including setae 8 mm, segments 26. Length of largest specimen from Tortugas (USNM 17733) 32 mm, width including setae 9 mm, segments 26. Body short, subrectangular, flattened ventrally, arched dorsally, slightly tapered anteriorly and posteriorly. First pair of elytra moderately large, nearly covering prostomium; following elytra very small, partially embedded in integument of body (easily overlooked; Figs. 1a–c, 2f). Elytra oval; margins with short, cylindrical, sensory papillae; surface with small, globular, sensory papillae and spiny, globular macrotubercles of various sizes.

Prostomium (Fig. 1a) bilobed; ceratophore of median antenna cylindrical, papillate, inserted in anterior notch; style long, smooth, with subterminal enlargement and filiform tip; lateral antennae similar to but shorter than median antenna; palps long, stout, tapered, smooth; anterior pair of eyes situated anterolaterally, larger than posterodorsal pair. Tentacular segment (I) distinct dorsally but sometimes retracted within segment II; parapodia lateral to prostomium, bearing 2 pairs of tentacular cirri, resembling median antenna, ventral pair slightly shorter than dorsal pair; few (1 or 2) notosetae on mesial side; bulbous facial tubercle projecting anteriorly on ventral upper lip.

Buccal segment (II) bearing first pair of elytra, subbiramous parapodia, and ventral buccal cirri similar to tentacular cirri (Figs. 1a, 2a). Third segment with first pair of dorsal cirri (Figs. 1a, 2d). Neurosetae of these two segments differing from those of following in being more slender, straight, and usually provided with more numerous accessory teeth (Fig. 2c,e).

Parapodia subbiramous (Fig. 2f,g). Notopodia represented by small bulbous acicular lobes on anterodorsal sides of neuropodia. Notoetae greatly reduced (0-1), slender, curved, tapering to acute tips, with numerous spinous rows (Fig. 2b). Neuropodia stout, thick, truncate and distally papillate, with upper distal part distinctly notched; its dorsal surface covered with globular tubercles and its ventral surface papillate. Neurosetae (about 10), stout, amber-colored, falcate, with single lateral stout tooth (Fig. 2h). Cirrophores of dorsal cirri stout, cylindrical, papillate; styles moderately short, smooth, with subterminal enlargements and filiform tips. Dorsal tubercles on cirriferous segments inconspicuous. Ventral cirri short, subulate, smooth.

Pygidium with anus situated medial to parapodia of posterior segment and bearing pair of long anal cirri on distinct papillate cirrophores. Pharynx usually with 11 pairs of papillae (10/11 or 11/12) and 2 pairs of amber-colored jaws. Nephridial papillae short, cylindrical, beginning on segment 7 or 8 (Fig. 2g). Dorsal surface of body and parapodia covered with globular tubercles and covered ventrally with fine papillae (Figs. 1a, 2f,g).

Biology: In the Tortugas, *H. verruculosa* was observed by Treadwell (1911: 11) living in the interstices of coral rocks, and, when disturbed, moving into deeper crevices with considerable rapidity, clinging with great tenacity to the rock, and thus making it difficult to remove them without injury. In British Honduras, Devaney (1974: 122, 140) collected a specimen of *H. verruculosa* that was attached to the ophiuroid, *Ophiocoma pumila* Lütken. The two animals were both transversely banded, brown and white, and the dorsal papillae of the polynoid were similar in size and color to the granules of the disc of the ophiuroid, giving the worm a camouflaged appearance against the ophiuroid and suggesting a possible commensal relationship.

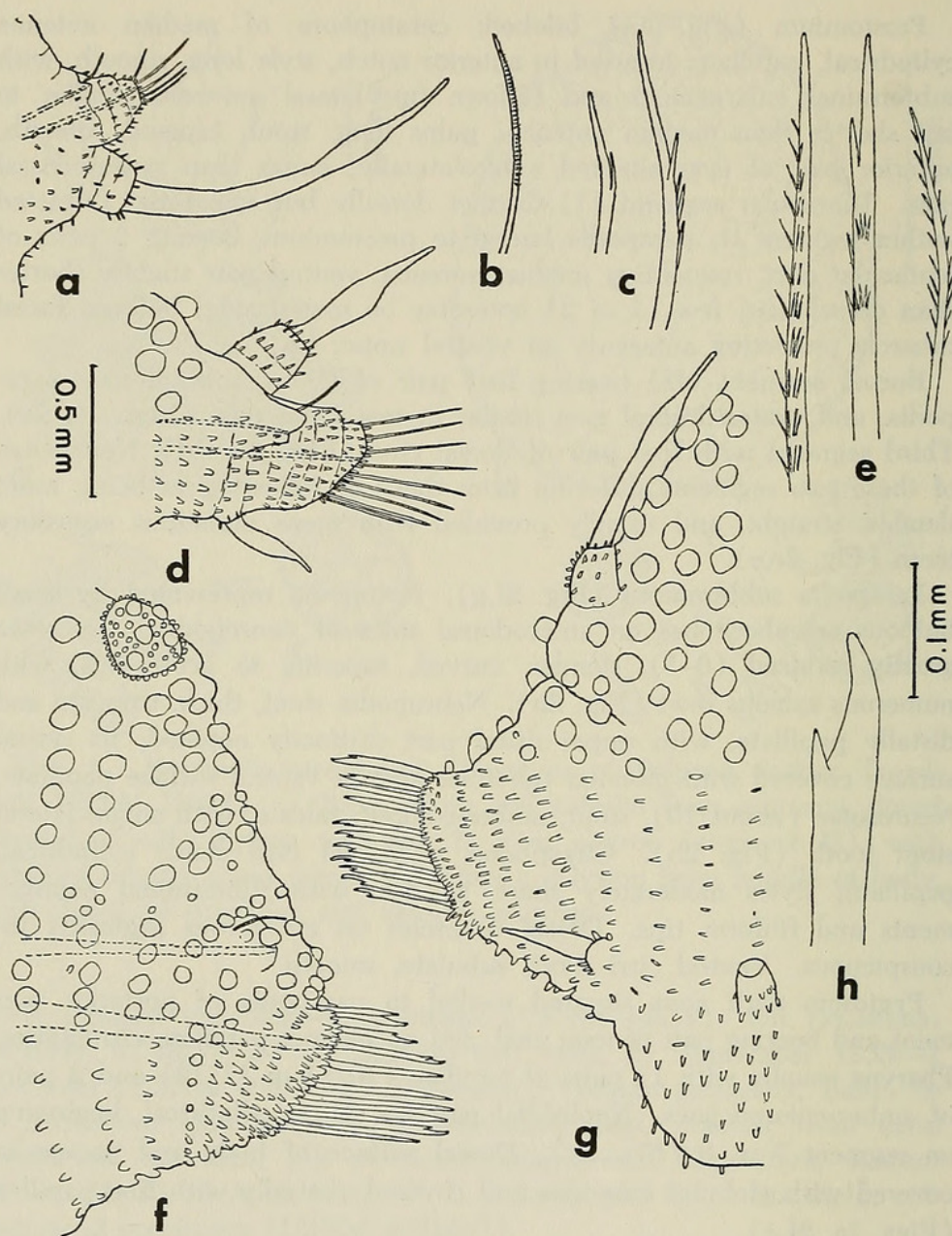


FIG. 2. *Hermenia verruculosa* (Paratype of *Polynoe nodosa* Treadwell, USNM 16014): a, Left parapodium from segment II, anterior view; internal acicula dotted; b, Notoseta from same; c, Two neurosetae from same; d, Left parapodium from segment III, anterior view; internal acicula dotted; e, Three neurosetae from same; f, Left elytragerous parapodium, anterior view; internal acicula dotted; g, Left cirriferous parapodium, posterior view; h, Neuroseta.

Distribution: West Indies and Caribbean Sea, Bahamas, South and Central America (Colombia, British Honduras), Gulf of Mexico (S.W. Florida, off Louisiana, Yucatán Peninsula, Mexico), North Atlantic (off New Jersey). In low water to 223 m.

Hermenia acantholepis (Grube)

Figures 3, 4

Polynoe acantholepis Grube, 1876: 61.*Polynoe* (*Lepidonotus*) *acantholepis*.—Grube, 1878: 24, pl. 2: Fig. 1.*Lepidonotus acantholepis*.—Michaelsen, 1892: 95.—Hornell, 1903: 25.—

Horst, 1917: 67, pl. 15: Figs. 3, 4.—Fauvel, 1922: 490, Fig. 1, a-d.

Hermenia acantholepis.—Seidler, 1923: 262; 1924: 94.—Monro, 1924:

39, Figs. 2, 3; 1939: 169.—Pruvot, 1930: 11, pl. 1. Figs. 27-32.—

Fauvel, 1933: 41; 1935: 296; 1953b: 38, Fig. 14,a,b.

Material examined: Japan, Goto Island—2 specimens (BMNH 1925: 1: 28: 4-5; reported by Monro, 1924).

Philippine Islands, Upolu—holotype of *Polynoe acantholepis* (ZMH 504).

Indonesia (reported by Horst, 1917): Bay of Badjo, west coast of Flores, shore, SIBOGA sta. 50—1 specimen (ZMA 547a). Anchorage off Pasir Pandjang, west coast of Binongka, reef, sta. 220—2 specimens (ZMA 547b; RMNHL 1124). Nalahia Bay, Nusa Laut Island, reef, sta. 234—1 specimen (RMNHL 1125). South coast of Timor, 08°39.1'S, 127°04.4'E, 34 m, *Lithothamnion*, sta. 285—1 specimen (ZMA 547c).

Annam, Honlohé, île Mamelles, Fauvel collection—1 specimen (MNHNP; reported by Fauvel, 1935).

Ceylon, Driesch, collector—2 specimens (ZMH 505; reported by Michaelsen, 1892). Ceylon, Talili Bay, 73 m, Willey collection—1 specimen (BMNH 1973: 12; reported by Hornell, 1903).

Maldives, Felidu, J. S. Gardiner, collector—1 specimen (BMNH 1941: 4: 4: 195; reported by Monro, 1939).

Description: Length of holotype 25 mm, width including setae 8 mm, segments 26. Length of two specimens from SIBOGA stations 220 and 234 (RMNHL 1124/5) 13-25 mm, width including setae 6-9 mm, segments 26. Length of specimen from New Caledonia, according to Pruvot (1930: 11), 33 mm, width including setae 10 mm, segments 26. Body short, subrectangular, flattened ventrally, arched dorsally, tapered slightly anteriorly and posteriorly.

First 2-3 pairs of elytra moderately large, touching medially; following elytra smaller (not so small as in *H. verruculosa*; Figs. 3d, 4a-c). Elytra rounded to oval; margins and surfaces with short cylindrical sensory papillae and globular to oval spinuous macrotubercles of various sizes.

Prostomium (Fig. 3a) bilobed; ceratophore of median antenna cylindrical, distally papillate, inserted in anterior notch; style long, smooth, with subterminal enlargement and filiform tip; lateral antennae similar to and slightly shorter than median antenna; palps long, stout, tapered, smooth; anterior pair of eyes situated anterolaterally, slightly larger than posterodorsal pair; prostomium often partly withdrawn, resulting in posterior pair of eyes being hidden from view by fold of segment II.

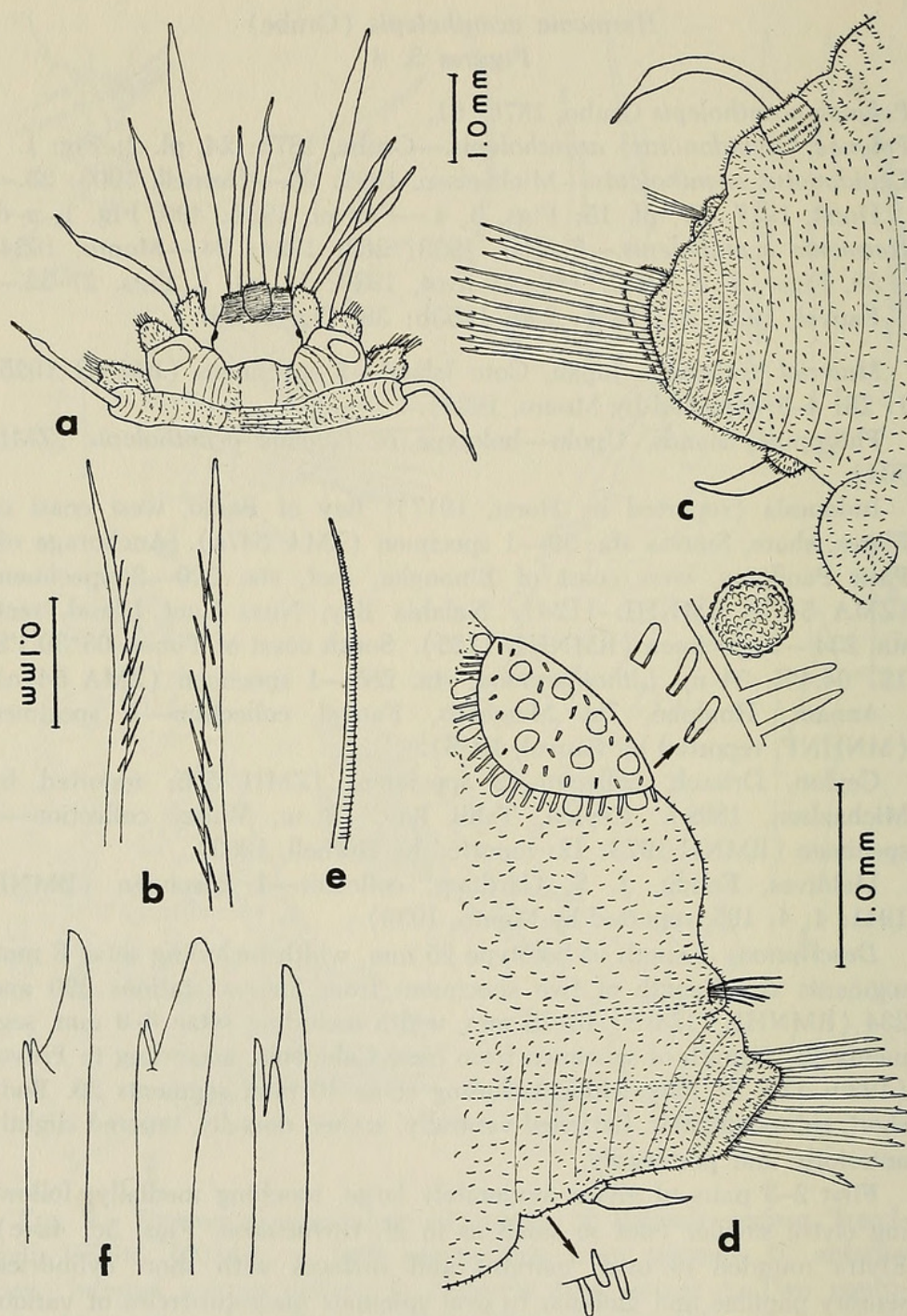


FIG. 3. *Hermenia acantholepis* (ZMA 547b): a, Prostomium and anterior three segments, dorsal view; elytra removed; prostomium partly withdrawn, resulting in posterior pair of eyes being hidden from view by fold of segment II; b, Two neurosetae from segment II; c, Left cirriferous parapodium, posterior view; d, Left elytriferous parapodium, anterior view, with detail of elytral tubercles and papillae and neuropodial papillae; internal acicula dotted; e, Notoseta; f, Three neurosetae.

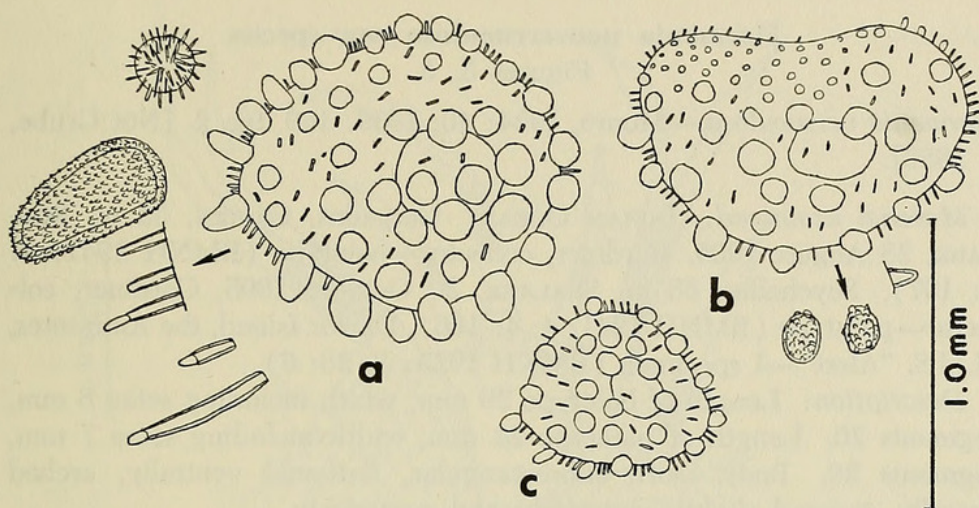


FIG. 4. *Hermenia acantholepis* (from Annam, MNHNP): a, First right elytron (segment II), with detail of tubercles and papillae; b, Second right elytron (segment III); c, Middle right elytron.

Parapodia of tentacular segment (I) lateral to prostomium and bearing 2 pairs of tentacular cirri resembling median antenna; ventral pair slightly shorter than dorsal pair; few (1–2) notosetae on mesial side; bulbous facial tubercle projecting anteriorly on ventral upper lip.

Buccal segment (II) bearing first pair of elytra, subbiramous parapodia, and ventral buccal cirri similar to tentacular cirri. Neurosetae of segments II and III differing from those of following in being more slender, straight, and provided with more numerous accessory teeth (Fig. 3b).

Parapodia subbiramous (Fig. 3c,d). Notopodia forming small bulbous, papillate acicular lobes on anterodorsal sides of neuropodia. Notoetae few in number, slender, curved, tapering to blunt tips, with numerous spinous rows (Fig. 3e). Neuropodia stout, thick, papillate, with diagonally truncate presetal acicular lobes and shorter, rounded postsetal ones. Neurosetae (about 18), stout, amber-colored, slightly falcate, with pair of large conical teeth (Fig. 3f). Cirrophores of dorsal cirri stout, cylindrical, papillate; styles relatively short, smooth, with subterminal enlargements and filiform tips. Dorsal tubercles on cirriferous segments inconspicuous. Ventral cirri short, subulate, smooth.

Pygidium with anus situated medial to parapodia of posterior segment and bearing pair of long anal cirri on distinct papillated cirrophores. Pharynx not extended. Nephridial papillae short, cylindrical, beginning on segment 6 (Fig. 3c). Body thickly covered with short cylindrical papillae (Fig. 3a,c,d).

Distribution: Widely distributed in Indo-Pacific Region: Japan (Goto Island, Seto), Indochina, Philippines, Indonesia, Australia (Pel-sart group), New Caledonia, Ceylon, Maldives, Madagascar, Gulf of Suez. Intertidal to 73 m.

***Hermenia neoverruculosa* new species**

Figures 5, 6

Hermenia verruculosa.—Monro, 1924: 40; 1939: 169, fig. 2. [Not Grube, 1856].

Material examined: INDIAN OCEAN: Cargados, Carajos, 55 m, SEALARK, 28 August 1905, Gardiner, collector—holotype (BMNH 1941: 4: 4: 197). Seychelles, 68 m, SEALARK, 30 October 1905, Gardiner, collector—paratype (BMNH 1941: 4: 4: 196). Darros Island, the Amirantes, H.M.S. "Alert"—1 specimen (BMNH 1925: 1: 28: 6).

Description: Length of holotype 29 mm, width including setae 8 mm, segments 26. Length of paratype 22 mm, width including setae 7 mm, segments 26. Body short, subrectangular, flattened ventrally, arched dorsally, tapered slightly anteriorly and posteriorly.

First pair of elytra large, covering prostomium; following elytra very small (Figs. 5a,c,d; 6d). Elytra oval; margins with short cylindrical papillae; surface with short, globular, sensory papillae and globular to oval, spiny macrotubercles of various sizes.

Prostomium (Fig. 5a, b) bilobed; ceratophore of median antenna cylindrical, somewhat wrinkled or annulate, inserted in anterior notch; style long, with subterminal enlargement and filiform tip, smooth; lateral antennae similar to but shorter than median antenna; palps missing; anterior pair of eyes situated anterolaterally, subequal in size to posterolateral pair. Tentacular segment (I) dorsally distinct, forming inflated area medial to elytophores of segment II; parapodia lateral to prostomium, bearing 2 pairs of tentacular cirri resembling median antenna; single notoseta on mesial side; bulbous facial tubercle projecting anteriorly on ventral upper lip (Fig. 5a,b).

Buccal segment (II) bearing first pair of elytra, subbiramous parapodia, and ventral buccal cirri similar to tentacular cirri (Figs. 5a,b; 6a). Neurosetae few in number (some lost?), differing from those of following in being more slender, curved, and provided with few spinous rows (Fig. 6b).

Parapodia subbiramous (Fig. 6c,d). Notopodia forming small subconical acicular lobes on anterodorsal sides of neuropodia. Notoetae greatly reduced (0–2), slender, curved, tapering to blunt tips, with numerous spinous rows (Fig. 6e). Neuropodia stout, thick, truncate and distally papillate, upper distal part distinctly notched. Neurosetae (about 12), stout, amber-colored, slightly falcate, with 2 teeth—one stouter and one more slender, latter one sometimes missing (Fig. 6f). Cirrophores of dorsal cirri stout, cylindrical; styles relatively short, smooth, with subterminal enlargements and filiform tips. Dorsal tubercles on cirriferous segments inconspicuous. Ventral cirri short, subulate, smooth.

Pygidium with anus situated medial to parapodia of posterior segment and bearing pair of long anal cirri on distinct cirrophores. Pharynx not extended. Nephridial papillae short, cylindrical, beginning on segment 7. Dorsal surface of body covered with globular tubercles; ventral

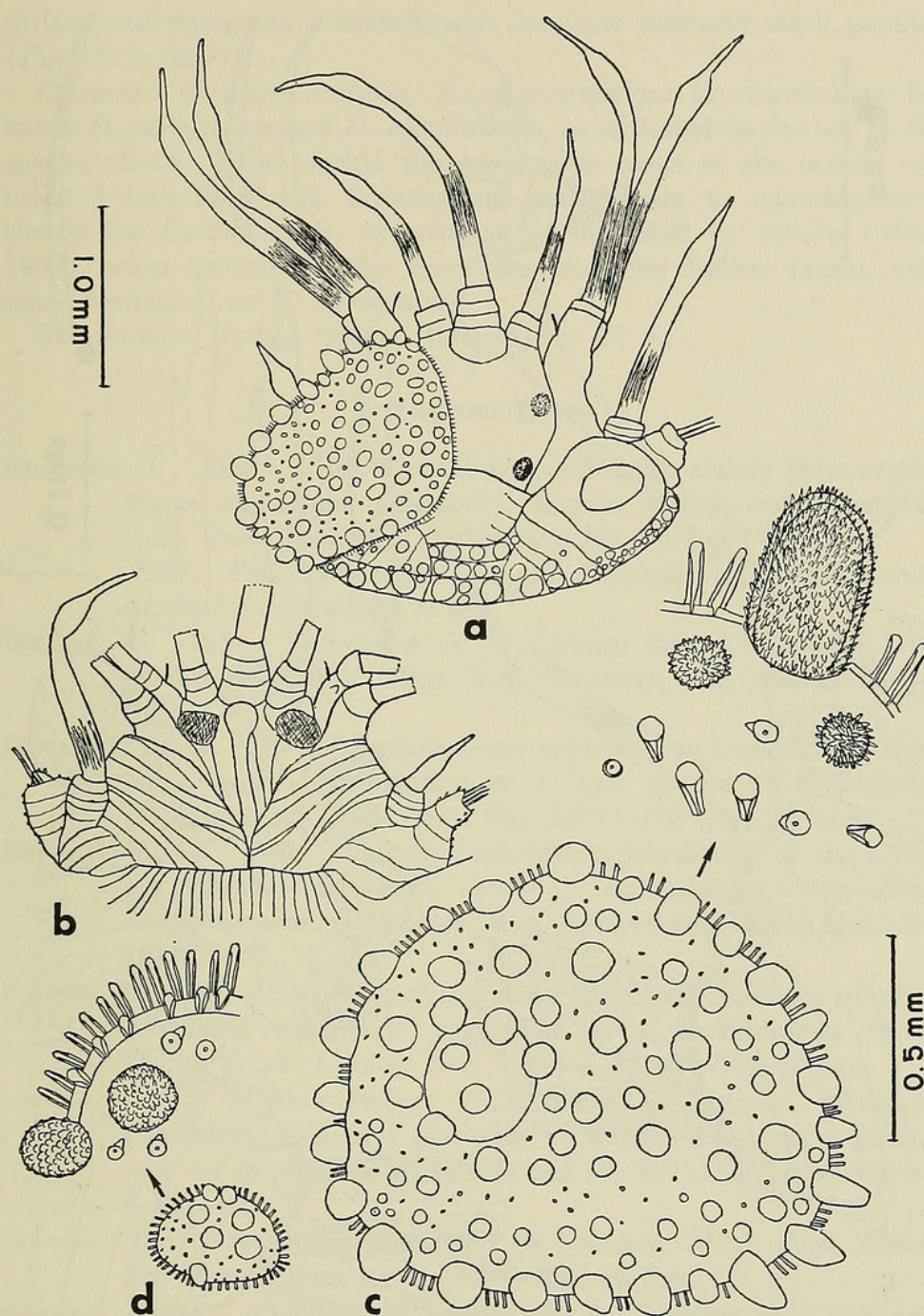


FIG. 5. *Hermenia neoverruculosa* (Holotype, BMNH 1941: 4: 4: 197): a, Dorsal view of prostomium and anterior two segments, palps missing; right elytron removed; left buccal cirrus smaller, regenerating; b, Same, ventral view; position of missing palps cross-hatched; c, First right elytron, with detail of tubercles and papillae; d, Elytron from middle of body, with detail of tubercles and papillae.

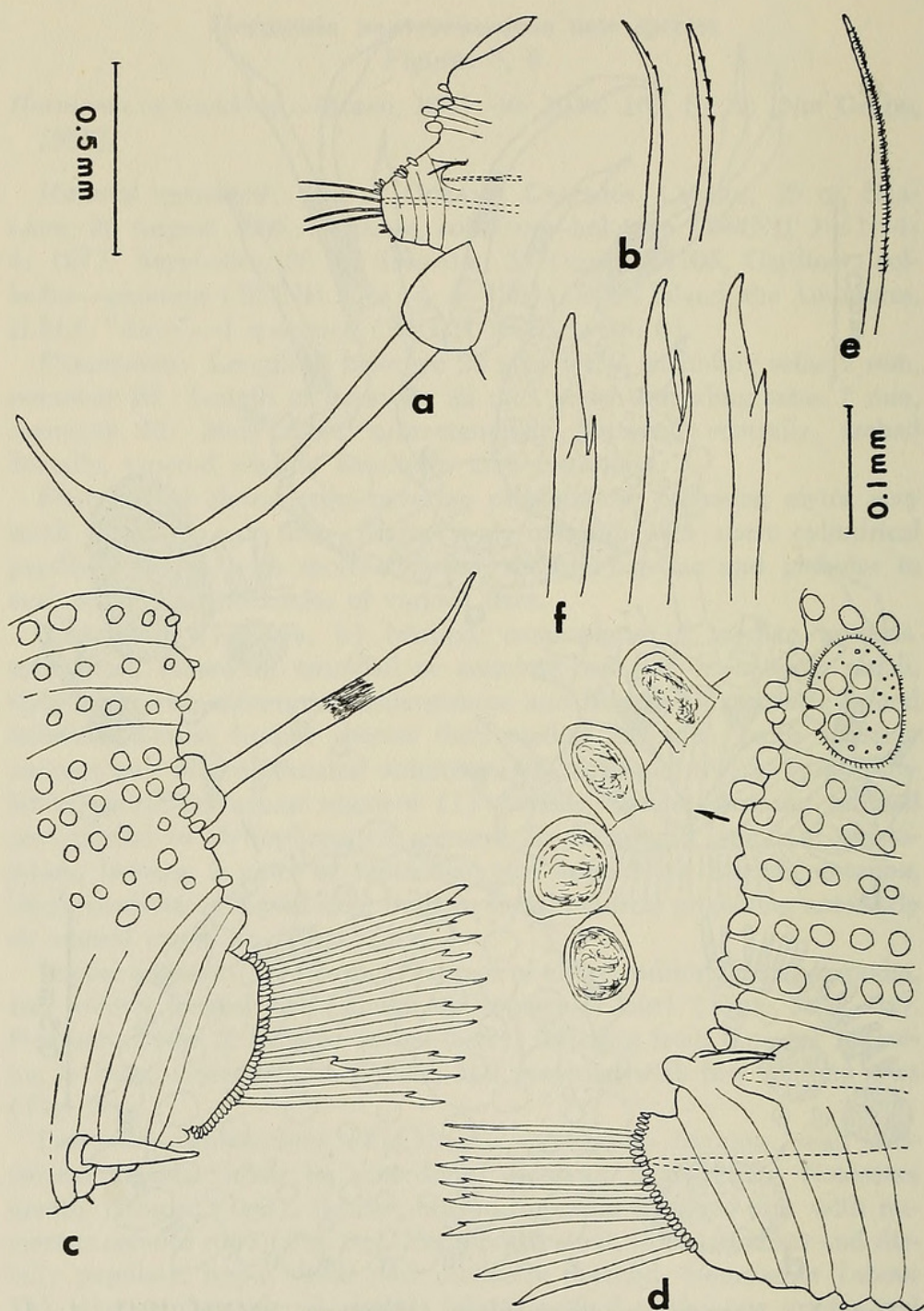


FIG. 6. *Hermenia neoverruculosa* (Holotype, BMNH 1941: 4: 4: 197): a, Right parapodium from segment II, anterior view; internal acicula dotted; b, Two neurosetae from same (tips broken); c, Right cirriferous parapodium, posterior view; d, Right elytragerous parapodium, anterior view, with detail of tubercles from dorsal surface; internal acicula dotted; e, Notoseta; f, Three neurosetae.

surface and parapodia wrinkled, with only few scattered small papillae (Figs. 5a,b; 6c,d).

Remarks: In many respects, *H. neoverruculosa* is intermediate between *H. verruculosa* and *H. acantholepis*, as indicated in the key to the species above. It lies within the geographic range of the widely distributed Indo-Pacific *H. acantholepis* but appears to resemble more closely the Caribbean *H. verruculosa*, as indicated by Monro (1924, 1939), when he referred the specimens from the Indian Ocean, with some hesitancy, to *H. verruculosa*.

Distribution: Indian Ocean. Intertidal to 68 m.

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