

ESSAYS ON POLYCHAETOUS ANNELIDS

IN MEMORY OF  
DR. OLGA HARTMAN

EDITED BY  
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REVIEW OF HALOSYDNOPSIS AND RELATED GENERA  
(POLYCHAETA: POLYNOIDAE: LEPIDONOTINAE)

by

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In connection with my revisionary studies on the aphroditoid polychaetes, some species belonging to the Polynoidae: Lepidonotinae were studied. The following genera and species are considered in this report:

<u>Halosydropsis</u> Uschakov and Wu, emended <u>H. pilosa</u> (Horst)	
<u>Parahalosydropsis</u> new genus	<u>P. hartmanae</u> new species
	<u>P. tubicola</u> (Day), new combination
<u>Lepidonopsis</u> new genus	<u>L. humilis</u> (Augener), new combination

In addition to the specimens deposited in the Smithsonian Institution, Washington (USNM), types and additional specimens from the following Museums were examined: Allan Hancock Foundation, Los Angeles (AHF), through K. Fauchald; British Museum (Natural History), London (BMNH), through J.D. George; Rijksmuseum van Natuurlijke Historie, Leiden (RMNH), through J. van der Land; Zoological Institute of the Academy of Science, Leningrad (ZIASL), through P.V. Uschakov; Zoölogisch Museum, Amsterdam (ZMA), through S. van der Spoel; and Zoologisches Museum, Berlin (ZMB), through G. Hartwich.

I am pleased to make a small contribution to the volume honoring the late Dr. Olga Hartman, whose contributions to the study of the Polychaeta are truly immeasurable. I count it a great privilege to have known her personally and will be forever grateful for her generous help, in correspondence, as well as through her publications on polychaete literature, her catalogues, and her monographic and other studies. The manuscript benefited from the suggestions of F.A. Chace, Jr. and M.L. Jones, both of the Smithsonian Institution.

The main character that sets the species of the genera Halosydropsis, Parahalosydropsis, and Lepidonopsis apart from other polynoids is the presence of long filiform papillae on the distal ends of the neuropodia. Other characters that they have in common are indicated below.

The body is subrectangular and flattened dorsoventrally. The elytra are large and overlapping; they cover the dorsum and are attached firmly to large inflated elytophores. The anterior twelve pairs of elytra are arranged on segments 2, 4, 5, 7, continuing on alternate segments to 23, with dorsal cirri and dorsal tubercles on the segments lacking elytra. The elytra are provided with tubercles and usually have lateral fringes of long papillae (lacking in P. tubicola).

The prostomium is bilobed, with two pairs of eyes, paired palps, and three antennae. The median antenna has a distinct cylindrical ceratophore in the anterior notch of the prostomium. The lateral antennae are inserted terminally on anterior continuations of the prostomium, i.e., a lepidonotoid configuration.

The first, or tentacular, segment (I), lateral and ventral to the prostomium, is considerably modified from those following. It bears two pairs of tentacular cirri, similar to the antennae, and, usually, a few notosetae on the inner side. A conical or bulbous facial tubercle projects anteriorly on the ventral upper lip.

The second, or buccal, segment (II) encloses the ventral mouth. It bears the first pair of elytra and sub-biramous parapodia. The neurosetae are somewhat modified from those following and the ventral or buccal cirri resemble the tentacular cirri.

The parapodia are sub-biramous, with internal acicula. The notopodia form small conical lobes on the anterodorsal faces of the stout neuropodia. The neuropodia are subconical or diagonally truncate, with slightly longer presetal acicular lobes and shorter rounded postsetal ones; both lobes are provided with long filiform papillae distally. The notosetae are numerous, delicate, finely spinous, tapering to capillary tips. The neurosetae are moderate in number, stout, with

few spines or spinous rows, and with slightly falcate tips. The dorsal cirri have cylindrical cirrophores, with bulbous glandular dorsal bases, and long distal styles. The ventral cirri are short and subulate. The pygidium bears the dorsal anus and a pair of anal cirri. The segmentally arranged ventral nephridial papillae are short, bulbous, beginning on segment 8. The pharynx bears nine pairs of papillae and two pairs of chitinous jaws.

Genus Halosydnopsis Uschakov and Wu, 1959, EMENDED

Type-species: Halosydna pilosa Horst, 1917, by original designation and monotypy. Gender: feminine.

Diagnosis: Body short, subrectangular, segments 37-39. Elytra 17 pairs, on segments 2, 4,5, 7, alternate segments to 25, 28, 30, 32,33, with dorsal cirri on posterior 4-6 segments; elytra firmly attached, covering dorsum, with fringes of long papillae and with scattered tubercles. Pro-stomium bilobed, with two pairs of eyes, paired palps and three antennae; lateral antennae inserted terminally on anterior continuations of prostomium. Tentacular segment (I) lateral to prostomium, with notosetae and two pairs of tentacular cirri; with conical facial tubercle. Buccal segment (II) with ventral buccal cirri longer than following ventral cirri; without dorsal nuchal fold. Parapodia sub-biramous; notopodia forming small lobes on anterodorsal faces of stout neuropodia; neuropodia diagonally truncate distally, with longer presetal acicular lobes and shorter rounded postsetal ones, with filiform papillae on distal borders. Notosetae delicate, capillary, finely spinous. Neurosetae stout, with few scattered spines, with tips entire and slightly falcate. Dorsal cirri with cylindrical cirrophores and long styles. Ventral cirri short, subulate. Pygidium with pair of anal cirri. Pharynx with nine pairs of papillae and two pairs of jaws. Nephridial papillae short, cylindrical, beginning on segment 8.

Remarks: Halosydnopsis has a definite number of elytral pairs (17) and a slightly variable number of segments

(37-39). The elytra are arranged on segments 2, 4,5, 7, alternate segments to 25, 28, 30, 32,33, with dorsal cirri on the posterior 4-6 segments. These characters distinguish Halosydropsis from Halosydna Kinberg, which has 18 pairs of elytra and 36 segments, with elytra arranged on segments 2, 4,5, 7, alternate segments to 25, 27,28, 30,31, 33, with dorsal cirri on the posterior 3 segments. The distal neuropodial papillae are also lacking in Halosydna.

Halosydropsis pilosa (Horst)

(Figs. 1, 2)

Halosydna pilosa Horst, 1917, pp. 81-82, Pl. 19, Figs. 1,2.

Halosydropsis pilosa: Uschakov and Wu, 1959, pp. 12-13, 31-32, Pl. 4: Figs. A-E; 1965, pp. 161-163, Fig. 4, A-E.

Material Examined: Strait of Malacca, 05°08'N, 100°11'E, 20 m, 17 June 1908, M. van Kampen, collector--holotype of Halosydna pilosa (RMNHL 1114). Tsingtao, Shantung Province, China, 1957--1 specimen (USNM 43610, exchange from ZIASL 4/9270).

Description: Length of holotype 11 mm, width including setae 3 mm, segments 39. Length of specimen from Yellow Sea 23 mm, width including setae 5 mm, segments 37 (with remnant of additional parapodium on one side; segments 24-37, according to Uschakov and Wu). Body short, flattened dorsoventrally, subrectangular, tapered slightly anteriorly and more so posteriorly.

Elytra 17 pairs, firmly attached to large inflated elytophores; elytra large, overlapping, covering dorsum, arranged on segments 2, 4,5, 7, alternate segments to 25, 28, 30, 32,33, followed by dorsal cirri on posterior 4-6 segments. Elytra (Figs. 1b, 2h) oval to auriculate, with fringes of long papillae along lateral borders and short papillae and micropapillae on surface and along borders; microtubercles variable in size and shape--oval to conical, with tips bifid to quaterfid, somewhat ridged or keeled; some larger tubercles near scars of attachment to elytophores. Elytra marbled with black pigmentation, with

distinct black spots medial to elythrofores.

Prostomium (Figs. 1a, 2a) bilobed; ceratophore of median antenna large, cylindrical, inserted in anterior notch; style long, with subterminal enlargement and filiform tip, thickly papillated with long papillae; lateral antennae inserted terminally on anterior continuations of prostomium, shorter than median antenna, nearly smooth or with short papillae; palps stout, tapered, smooth or minutely papillated; two pairs of rather small eyes on posterior half of prostomium. Parapodia of tentacular segment (I) lateral to prostomium, bearing two pairs of tentacular cirri, similar to lateral antennae; ventral tentacular cirri shorter than dorsal ones; group of capillary notosetae on inner side; conical facial tubercle projecting on ventral upper lip. Buccal segment (II) bearing first pair of elytra, sub-biramous parapodia, and longer ventral buccal cirri; neurosetae similar to those of following segments but more slender (Figs. 1a, 2a-c).

Parapodia sub-biramous (Figs. 1c,d, 2d,e). Notopodia forming small conical acicular lobes on anterodorsal sides of neuropodia. Notosetae numerous, delicate, finely spinous, with capillary tips, extending to about tips of neuropodia (Figs. 1e, 2f). Neuropodia stout, diagonally truncate distally, with longer presetal acicular lobes and shorter rounded postsetal ones; distal tips of both lobes with long filiform papillae; more medially, additional long papillae on dorsoposterior sides of neuropodia. Numerous small papillae on ventral surfaces of neuropodia, as well as on ventral surface of body. Neurosetae moderate in number (about 12), stout, light amber-colored, upper ones slightly stouter and darker, nearly smooth, with few (1-6) scattered spines, with tips entire and slightly falcate (Figs. 1f, 2g). Cirrophores of dorsal cirri stout, cylindrical, with bulbous glandular areas on surface of dorsal bases; styles long, projecting beyond neurosetae, with slight subterminal enlargements and filamentous tips, nearly smooth or with short papillae. Dorsal tubercles on cirriferous segments bulbous. Ventral cirri short, subulate, smooth or with short papillae.

Pygidium with anus medial to small parapodia of

posterior segment, with pair of small anal cirri. Pharynx with nine pairs of papillae and two pairs of amber-colored jaws. Nephridial papillae short, cylindrical, beginning on segment 8. Dorsal transverse ciliated bands, about three per segment, extending to elythrohores and dorsal tubercles.

Remarks: Horst (1917) referred the species, from the Strait of Malacca in 20 m, questionably to Halosydna. Uschakov and Wu (1959, 1965) referred their 10 specimens, collected in the Yellow Sea in 26-31 m, to their new genus Halosydropsis (up to 17 pairs of elytra and 37 segments) and included the record of Monro (1934) from Amoy, China (28 pairs of elytra and 54 segments). Monro's specimen was examined and is referred herein to a new genus and species, Parahalosydropsis hartmanae (see below).

Distribution: Strait of Malacca, Yellow Sea. In 13-31 m depth.

Parahalosydropsis new genus

Type-species: P. hartmanae new species. Gender: feminine.

Diagnosis: Body elongate, subrectangular, segments up to 67. Elytra about 30 pairs (28-34), on segments 2, 4, 5, 7, alternate segments to 25, 28, 30, alternate segments to 42, 43, 45, 47, 48, 50, alternate segments to end of body, with dorsal cirri on posterior 0-2 small segments; elytra firmly attached, covering dorsum, with or without fringes of papillae, with scattered microtubercles. Prostomium bilobed, with two pairs of eyes, paired palps and three antennae; lateral antennae inserted terminally on anterior continuations of prostomium. Tentacular segment (I) lateral to prostomium, with few notosetae and two pairs of tentacular cirri; with bulbous facial tubercle. Buccal segment (II) with longer ventral buccal cirri; without dorsal nuchal fold. Parapodia sub-biramous; notopodia forming small lobes on anterodorsal faces of stout neuropodia; neuropodia diagonally truncate distally, with longer presetal acicular lobes and shorter rounded postsetal ones, with filiform papillae on



distal borders. Notosetae delicate, capillary, finely spinous. Neurosetae stout, with few scattered spines (1-6 pairs), with tips entire and slightly flaccate. Dorsal cirri with cylindrical cirrophores and long styles. Ventral cirri short, subulate. Pygidium with pair of anal cirri. Pharynx with nine pairs of papillae and two pairs of jaws. Nephridial papillae short, cylindrical, beginning on segment 8.

Remarks: Parahalosydnoopsis has numerous segments, somewhat indefinite in number (up to 67), with about 30 pairs of elytra (28-34). The elytral arrangement up to segment 32 is as in Halosydnoopsis, then on alternate segments to 42,43, 45, 47,48, 50, and alternate segments to the end of the body, with 0-2 posterior segments with dorsal cirri. There may be some irregularity in the extreme posterior region, with a dorsal cirrus and elytron appearing on the same segment, instead of the usual symmetrical arrangement.

#### KEY TO THE SPECIES OF PARAHALOSYDNOPSIS

1 Elytra with fringes of long papillae on lateral borders, colorless (Fig. 3b). Neurosetae with 1-3 pairs of spines (Fig. 3f). Free living (?).

P. hartmanae, n. sp. SE China (Amoy)

1' Elytra without fringes of papillae, mottled with grey to black pigmentation (Fig. 4b). Neurosetae with 2-6 pairs of spines (Fig. 4h). Commensal in tubes of terebellid polychaetes.

P. tubicola (Day), n. comb. India (Maharashtra)

#### Parahalosydnoopsis hartmanae, new species

(Fig. 3)

Halosydnooides pilosa:--Monro, 1934, pp. 355-358, Fig. 1, A-H. Not Halosydna pilosa Horst, 1917.

Material Examined: Amoy, SE China, T.Y. Chen, collector--holotype (BMNH 1933.3.2.6, as Halosydnooides pilosa by Monro).

Description: Length of holotype 27 mm, width including

setae 3 mm, segments 54 (52 subequal segments and 2 very small regenerating posterior segments). Body long, subrectangular, flattened dorsoventrally.

Elytra 28 pairs (possibly more, because of regenerating posterior end), firmly attached to large inflated elytophores; elytra large, overlapping, covering dorsum, arranged on segments 2, 4, 5, 7, alternate segments to 25, 28, 30, alternate segments to 42, 43, 45, 47, 48, 50, 52, 54 (last pair small, regenerating), followed by pair of small anal cirri. Elytra (Fig. 3b) oval, with fringes of long papillae along lateral borders, and scattered microtubercles and micropapillae on surface; some larger tubercles, with roughened scaly surfaces, near scars of attachment to elytophores. Elytra colorless.

Prostomium (Fig. 3a) bilobed; ceratophore of median antenna large, cylindrical, inserted in anterior notch; style long, with subterminal enlargement and filiform tip, thickly papillated with long papillae on distal half; lateral antennae inserted terminally on anterior continuations of prostomium, shorter than median antenna, smooth; palps stout, tapered, smooth; two pairs of rather small eyes on posterior half of prostomium. Parapodia of tentacular segment (I) lateral to prostomium, bearing two pairs of tentacular cirri, similar to lateral antennae; ventral tentacular cirri slightly shorter than dorsal ones; few setae on inner side; bulbous facial tubercle projecting on ventral upper lip. Buccal segment (II) bearing first pair of elytra, sub-biramous parapodia, and longer ventral buccal cirri.

Parapodia (Figs. 3c,d) sub-biramous. Notopodia forming small conical acicular lobes on anterodorsal sides of neuropodia. Notosetae numerous, delicate, finely spinous, with capillary tips, extending slightly beyond tips of neuropodia (Fig. 3e). Neuropodia stout, diagonally truncate distally, presetal lobes slightly longer on upper part forming more or less distinct rounded supra-acicular lobes; postsetal lobes rounded; distal tips of both lobes with rather short cylindrical papillae. Scattered small papillae on ventral surfaces of neuropodia, as well as on ventral surface of

body. Neurosetae moderate in number (about 14), stout, light amber-colored, upper ones slightly stouter and darker, nearly smooth, with few (1-3 pairs) scattered spines, with tips entire and slightly falcate (Fig. 3f). Cirrophores of dorsal cirri stout, cylindrical, with bulbous glandular areas on surface of dorsal bases; styles long, projecting almost to tips of neurosetae, with slight subterminal enlargements and filamentous tips, smooth. Dorsal tubercles on cirriferous segments bulbous. Ventral cirri short, subulate, smooth.

Pygidium with pair of small anal cirri. Pharynx not extended. Nephridial papillae short, conical, beginning on segment 8.

Remarks: Monro (1934) referred his specimen from Amoy to Horst's Halosydna pilosa, although he pointed out some rather distinct differences from Horst's description. He surmised that Horst's specimen must have been incomplete. However, as indicated in the previous description of Halosydropsis pilosa, the holotype was found to be complete. P. hartmanae is a more elongated species than H. pilosa, with more numerous elytra continuing to the end of the body. Monro provisionally assigned the species to Halosydnoidea Seidler, at the same time pointing out differences in the development of the notosetae. Seidler's genus has been referred to Arctonoe Chamberlin (Hartman, 1959: 73).

Etymology: The species is named in honor of the late Dr. Olga Hartman in recognition of her outstanding contributions to the Polychaeta.

Distribution: SE China Sea (Amoy). Dredged.

Parahalosydropsis tubicola (Day), new combination  
(Fig. 4)

Lepidasthenia tubicola Day, 1973b, pp. 341-343, Fig. 2, A-E.

Material Examined: INDIA: Mirkae Waga, Ratnagiri, Maharashtra State, intertidal, U.D. Gaikwad, collector: 17 March 1969, in terebellid tubes--holotype (complete specimen,

BMNH 1972.53) and 2 paratypes (1 complete, 1 in three pieces, BMNH 1972.54); 16 February 1969, in terebellid tube on rocky-sandy shore--1 anterior fragment (USNM 48051); and 6 April 1969, in terebellid tube, associated with yellow sponge--1 complete specimen (USNM 48050).

Description: Length of complete specimen (USNM 48050) 34 mm, width including setae 4 mm, segments 62. Length of complete holotype 35 mm, width including setae 5 mm, segments 56 (last 4 small). Length of complete paratype 29 mm, width including setae 4 mm, segments 67, last two very small. Body long, subrectangular, flattened dorsoventrally, tapered slightly posteriorly. Body colorless but with splotches of black pigment on upper lip and palps, with subterminal dark bands on antennae, tentacular and dorsal cirri.

Elytra about 30 pairs (29-34), firmly attached to large inflated elytophores; elytra large, overlapping, covering dorsum, arranged on segments 2, 4,5, 7, alternate segments to 25, 28, 30, alternate segments to 42,43, 45, 47,48, 50, alternate segments to end of body, with dorsal cirri on posterior 0-2 small segments; sometimes with few asymmetrical segments more posteriorly--elytron and dorsal cirrus on same segment (segments 48, 50, 53, of holotype). Elytra (Fig. 4b) oval to cordiform, without fringes of papillae, with scattered rounded-truncate microtubercles, nearly absent from medial parts of elytra; some larger tubercles near central parts of elytra, their surfaces somewhat ridged; additional micropapillae present. Elytra mottled with grey to black pigmentation, more or less continuous posterior and medial to scars of attachment and spotted anteriorly.

Prostomium (Fig. 4a; Fig. 2c, in Day, 1973b) bilobed; ceratophore of median antenna large, cylindrical, inserted in anterior notch; style long, with subterminal enlargement and filiform tip; with long papillae on distal part; lateral antennae inserted subterminally on anterior continuations of prostomium, shorter than median antenna, smooth; palps stout, tapered, smooth; two pairs of rather small eyes on posterior half of prostomium. Parapodia of tentacular segment (I) lateral to prostomium, bearing two pairs of

tentacular cirri, similar to lateral antennae; ventral tentacular cirri shorter than dorsal ones; few setae on inner side; bulbous facial tubercle projecting on ventral upper lip. Buccal segment (II) bearing first pair of elytra, sub-biramous parapodia, and longer ventral buccal cirri; neurosetae more slender than following, with longer spinous regions, tapering to sharp tips (Fig. 4a,c,d).

Parapodia (Fig. 4e,f) sub-biramous. Notopodia forming small conical acicular lobes on anterodorsal sides of neuropodia. Notosetae numerous, delicate, finely spinous, with capillary tips, extending slightly beyond tips of neuropodia (Fig. 4g). Neuropodia stout, diagonally truncate distally, presetal lobes longer than postsetal, upper part forming more or less distinct rounded supra-acicular lobes; distal tips of both lobes with rather short cylindrical papillae. Ventral surfaces of neuropodia and body appearing smooth, without papillae. Neurosetae moderate in number (about 14), stout, light amber-colored, upper ones slightly stouter and darker, with two (lower neurosetae) to six (upper ones) pairs of subtriangular spines, with tips entire and slightly falcate (Fig. 4h). Cirrophores of dorsal cirri stout, cylindrical, with bulbous glandular areas on surface of dorsal bases; styles long, projecting beyond tips of neurosetae, with subterminal enlargements and filamentous tips, smooth. Dorsal tubercles on cirriferous segments inflated. Ventral cirri short, subulate, smooth.

Pygidium with dorsal anus medial to parapodia of few posterior small segments, with pair of small anal cirri. Pharynx with nine pairs of papillae and two pairs of amber-colored jaws. Nephridial papillae short, conical, beginning on segment 8 (very small on segments 8-11). Dorsal transverse ciliated bands, about three per segment, extending to elytriphores and dorsal tubercles.

Remarks: Day (1973b) questionably referred the species to Lepidasthenia and pointed out that it showed some resemblances to Halosydnooides pilosa (Horst), as described by Monro (1934). Day did not describe the arrangement of the elytra except to say, "As usual they are inserted on segments

2, 4, 5, and alternate segments over most of the body but a few are irregularly arranged near the posterior end." This statement does not properly describe the elytral arrangement for either P. tubicola or for species of Lepidasthenia. Further, the presence of numerous notosetae and the different types of neuropodia and neurosetae in P. tubicola would distinguish it from Lepidasthenia.

All five specimens were collected by Mr. U.D. Gaikwad in 1969 from tubes of terebellid polychaetes; two of them were included in a collection of unidentified polychaetes sent to me in January 1972. Their elytra show the dark pigmentation characteristic of other elongated polynoids that are associated with terebellids, such as Lepidametria commensalis Webster, L. gigas (Johnson), and Lepidastheniella comma (Thomson). The absence of fringes of papillae on the elytra, as in P. tubicola, is also characteristic of some tube-dwelling polynoids, in contrast to many free-living forms.

Distribution: India (Maharashtra State). Low water.

Lepidonopsis new genus

Type-species: Lepidonotus humilis Augener, 1922.

Gender: masculine.

Diagnosis: Body short, subrectangular, segments 26. Elytra 12 pairs, on segments 2, 4, 5, 7, alternate segments to 23, with dorsal cirri on posterior three segments; elytra firmly attached, covering dorsum, with fringes of papillae and with scattered microtubercles. Prostomium bilobed, with two pairs of eyes, paired palps, and three antennae; lateral antennae inserted terminally on anterior continuations of prostomium. Tentacular segment (I) lateral to prostomium, with few notosetae and two pairs of tentacular cirri; with bulbous facial tubercle. Buccal segment (II) with longer ventral buccal cirri; with pair of subtriangular nuchal lobes. Parapodia sub-biramous; notopodia forming small lobes on anterodorsal faces of stout neuropodia; neuropodia subconical, with longer presetal acicular lobes and shorter rounded postsetal ones, with filiform papillae on distal

borders. Notosetae delicate, finely spinous, with blunt (upper few) and capillary tips. Neurosetae stout, with few spinous rows, with tips bifid and slightly falcate. Dorsal cirri with cylindrical cirrophores and long styles. Ventral cirri short, subulate. Pygidium with pair of anal cirri. Pharynx with nine pairs of papillae and two pairs of jaws. Nephridial papillae short, bulbous, beginning on segment 8.

Remarks: Lepidonopsis has a definite number of elytral pairs (12) and segments (26): the elytra are arranged on segments 2, 4, 5, 7, continuing on alternate segments to 23, with dorsal cirri on the posterior 3 segments. It resembles Lepidonotus Leach and Hermenia Grube in this regard. In Lepidonotus, the distal neuropodial papillae are lacking. In Hermenia, the dorsal and ventral body surfaces and the parapodia are thickly covered with papillae or tubercles, the notosetae are few in number or lacking, and the stout falcate neurosetae have 1-2 stout accessory teeth (Pettibone, 1975).

Lepidonopsis differs from both Halosydnopsis and Parahalosydnopsis by the presence of paired dorsal subtriangular nuchal lobes on segment II; the upper few notosetae end in blunt tips, instead of all being capillary; and the neurosetae have bifid tips, instead of being entire.

Lepidonopsis humilis (Augener), new combination  
(Figs. 5, 6)

Lepidonotus humilis Augener, 1922, p. 40; 1933, pp. 194-195.--Hartman, 1944, pp. 9-10.

Lepidonotus carinulatus.--Monro, 1928, p. 553. Not Grube, 1870.

Thormora johnstoni.--Monro, 1928, p. 556 (part). Not

Lepidonotus johnstoni Kinberg, 1857.

Lepidonotus sublevis.--Day, 1973a, p. 6. Not Verrill, 1873.

Material Examined: NORTH CAROLINA: 34°36'N, 76°28'W, 10 m, BST sta. 223, J.H. Day, collector--12 specimens (USNM 50899; as L. sublevis by Day, 1973a).

S.W. FLORIDA: Dry Tortugas, S.W. Channel, Hartmeyer, collector--syntype of L. humilis (ZMB 6262).

S.E. MEXICO: Bahía de la Ascensión, Quintana Roo, central part of Nicchehabin Reef, 1-2 m, coral and sea fans, E.L. Bousfield, collector--2 specimens (USNM 51043).

BAHAMAS: West side of North Bimini, 0.5 km north of Entrance Point, rocks, 25 August 1962, M.L. Jones, collector--1 specimen (USNM 51014).

JAMAICA: Kingston, Kükenthal and Hartmeyer, collectors--syntype of L. humilis (ZMB 6263).

PUERTO RICO: Isla Caja de Muertos, 1963, Hulings and Feray, collectors--1 specimen (USNM 42750).

LESSER ANTILLES: Los Testigos, 40 m, 20 January 1896, Yacht Chazalie--1 specimen (ZMA 558; identified by Augener, 1933).

VENEZUELA: Isla Cubagua, shore, Sta. A25-39, April 1939--1 specimen (AHF 1505; identified by Hartman, 1944).

PANAMÁ (ATLANTIC): Galeta Island, Canal Zone, 09°24.4'N, 79°52.3'W, Sta. 15, 26 April 1959, muddy pools on top of reef and Sta. 18, wash from coral and rock, J. Barnard, collector--2 specimens (USNM 50250, 50252). Galeta Island, reef west of STRI Laboratory, Sta. 60, 9 November 1971, D.L. Pawson et al., collectors--1 specimen (USNM 50251). Limón Bay, west side in Shelter Cover near Toro Point, 09°22'N, 79°57'W, on scrapings from pilings under vessel dock, 0-2 m, Sta. 11A, 20 April 1971, M.L. Jones, collector--1 specimen (USNM 50133).

PANAMÁ (PACIFIC): Isla Taboga, 2-4 m, from dead coral, C. Crossland, collector--8 specimens (BMNH 1928.9.14.5; mixed with Thormora johnstoni by Monroe, 1928). Isla Taboga, 9 m, C. Crossland, collector--2 specimens (BMNH 1928.9.14.52; as L. carinulatus by Monroe, 1928). Balboa, scrapings and coral fragments from buoy at Canal entrance, C. Crossland, collector--24 specimens (BMNH 1928.9.14.59/60; USNM 50134; as L. carinulatus by Monroe, 1928).

PERU: Paita, 8 October 1926, W.L. Schmitt, collector--2 specimens (USNM 24149).

BAJA CALIFORNIA: Bahía de La Paz, 30 September 1971,



W. Shepherd, collector--14 specimens (USNM 48865).

SOUTHERN CALIFORNIA: Off Pelican Point, Santa Cruz Island, tide-pool area, 28 April 1954, Feder and Roberts, collectors--1 specimen (USNM 50972).

Description: Length of two syntypes 8-10 mm, width including setae 3-4 mm, segments 26. Other specimens up to 12 mm, width including setae up to 4 mm, segments 26. Body short, flattened dorsoventrally, subrectangular. Body without color except for reddish or brownish dorsal bands on posterior three segments, antennae, tentacular and dorsal cirri.

Elytra 12 pairs, firmly attached to large inflated elythrophores; elytra large, overlapping, covering dorsum, arranged on segments 2, 4,5, 7, alternate segments to 23, followed by dorsal cirri on posterior three segments. Elytra (Figs. 5b, 6i) oval to subreniform, with fringes of long papillae along lateral borders and short papillae and micro-papillae on surface; microtubercles variable in size and shape--oval to subconical; larger tubercles with roughened, tubercled tips, forming low crests. Elytra tannish in color, with irregular splotches of brownish pigment.

Prostomium (Figs. 5a, 6a,b) bilobed; ceratophore of median antenna cylindrical, inserted in anterior notch; style long, with subterminal enlargement and filiform tip, smooth; lateral antennae inserted terminally on anterior continuations of prostomium, shorter than median antenna; palps stout, tapered, smooth; two pairs of eyes on posterior half of prostomium, anterior pair larger than posterior pair. Parapodia of tentacular segment (I) lateral to prostomium, bearing two pairs of tentacular cirri, similar to antennae, ventral tentacular cirri shorter than dorsal ones; usually with 1-2 notosetae on inner side; bulbous facial tubercle or inflated facial ridge on ventral upper lip.

Buccal segment (II) bearing first pair of elytra, papillate sub-biramous parapodia, and longer ventral buccal cirri; dorsally with paired nuchal lobes; neurosetae different from those of following segments, more slender, with elongate bare tips, upper and middle ones with bifid tips. lower

ones with tips entire, curved (Figs. 5a, 6a-d).

Parapodia (Figs. 5c,d, 6e,f) sub-biramous, both rami with cylindrical papillae on distal tips. Notopodia forming small conical lobes on anterodorsal sides of neuropodia. Notozetæ slender, delicate, finely spinous, upper few short, ending in blunt tips, others numerous, longer, extending to tips of neuropodia or beyond, and ending in capillary tips (Figs. 5e, 6g). Neuropodia stout, subconical, with slightly longer presetal acicular lobes and shorter, rounded postsetal lobes. Neurosetæ moderate in number (about 24), all similar, stout, with few (2-5) spinous rows; tips slightly hooked, with small secondary tooth (Figs. 5f, 6h). Cirrophores of dorsal cirri stout, cylindrical, with bulbous glandular areas on surface of dorsal bases; styles long, projecting beyond neurosetæ, with subterminal enlargements and filamentous tips, smooth. Dorsal tubercles on cirriferous segments forming inconspicuous inflated areas. Ventral cirri short, subulate, smooth.

Pygidium with dorsal anus and anal ridge on segments 25-26, with pair of long anal cirri. Pharynx with nine pairs of papillae with reddish pigment spots, and two pairs of reddish chitinous jaws. Nephridial papillae short, bulbous, beginning on segment 8. Dorsal transverse ciliated bands, two per segment, extending between elytriphores and dorsal tubercles (Fig. 6a).

Remarks: The original description of the species by Augener (1922) is short, incomplete, and without figures. He did, however, comment on the digitiform papillae present on the distal ends of both parapodial rami. The presence of papillated parapodia separates Lepidonopsis humilis from species of Lepidonotus.

Distribution: Off North Carolina, S.W. Florida, S.E. Mexico, Bahamas, West Indies (Jamaica, Puerto Rico), Lesser Antilles (Los Testigos), Venezuela, Panamá (Atlantic and Pacific), Southern and Lower California to Peru. Low water to 40 m.

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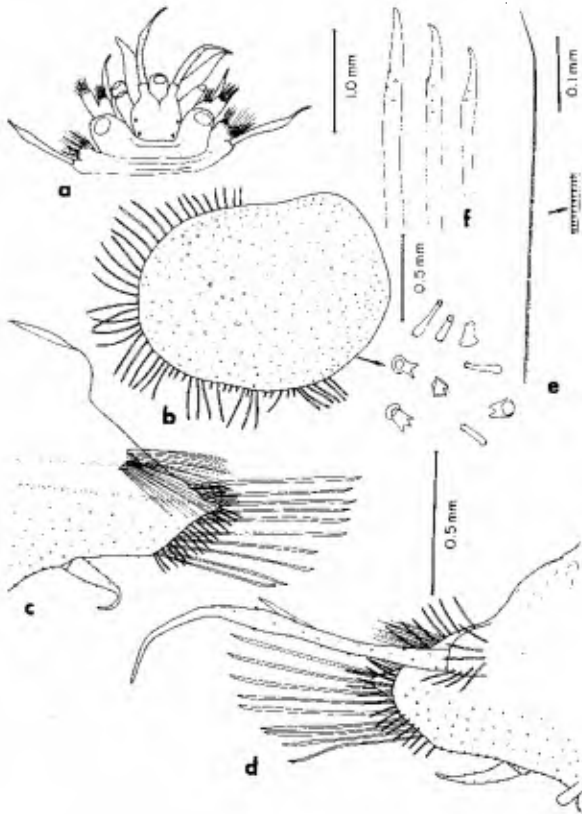


Fig. 1. *Halosydna pilosa* (holotype of *Halosydna pilosa*, RMNHL 1114): a, Prostomium and anterior 3 segments, dorsal view, elytra removed; styles of median antenna and tentacular cirri missing; b, left middle elytron, showing detail of some tubercles and papillae (not to scale); c, elytragerous parapodium, anterior view, internal acicula dotted; d, cirriferous parapodium, posterior view; e, notoseta, showing detail of small portion; f, upper, middle and lower neurosetae.

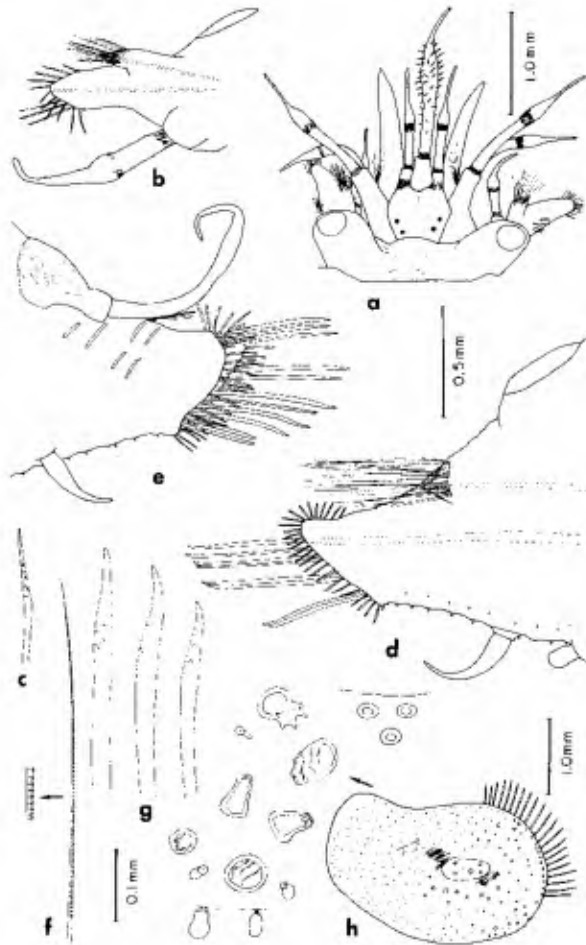


Fig. 2. *Halosydropsis pilosa* (from Yellow Sea, USNM 43610): a, Prostonium and anterior 2 segments, dorsal view, elytra removed; b, parapodium from buccal segment (II), anterior view; internal acicula dotted; c, lower neuroseta from same; d, elytragerous parapodium, anterior view, internal acicula dotted; e, cirriferous parapodium, anterior view; f, notoseta, showing detail of small portion; g, upper, middle and lower neurosetae; h, right middle elytron, showing detail of some tubercles and micropapillae (not to scale).

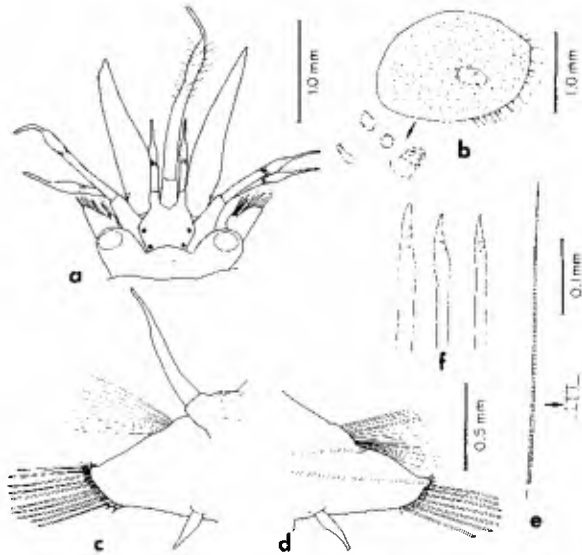


Fig. 3. *Parahalosydopsis hartmanae*, new genus, new species (holotype, BMNH 1933.3.2.6): a, Prostomium and anterior 2 segments, dorsal view, elytra removed; b, middle right elytron, showing detail of some tubercles and micropapillae (not to scale); c, cirriferous parapodium, posterior view; d, elytragerous parapodium, anterior view, internal acicula dotted; e, notoseta, showing detail of small portion; f, upper, middle and lower neurosetae.

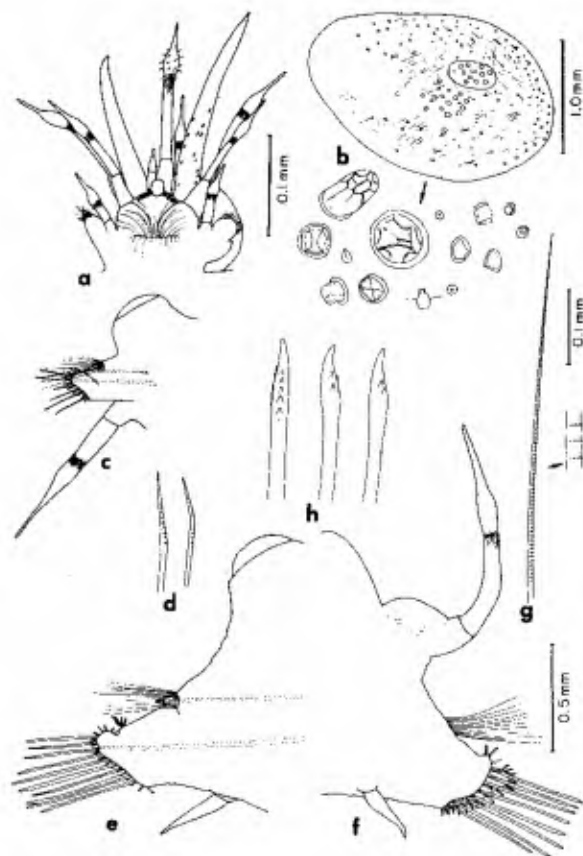


Fig. 4. *Parahalosydropsis tubicola* (USNM 48059): a, Prostomium and anterior 2 segments, ventral view; right palp and right lateral antenna smaller, regenerating; pigmented areas on antennae, cirri, left palp and upper lip indicated by shading; b, right middle elytron, showing detail of some surface tubercles and micropapillae (not to scale); c, parapodium from buccal segment (II), anterior view, internal acicula dotted; d, middle and lower neurosetae from same; e, elytrigerous parapodium, anterior view, internal acicula dotted; f, cirriferous parapodium, posterior view; g, notoseta, showing detail of small portion; h, upper, middle and lower neurosetae.



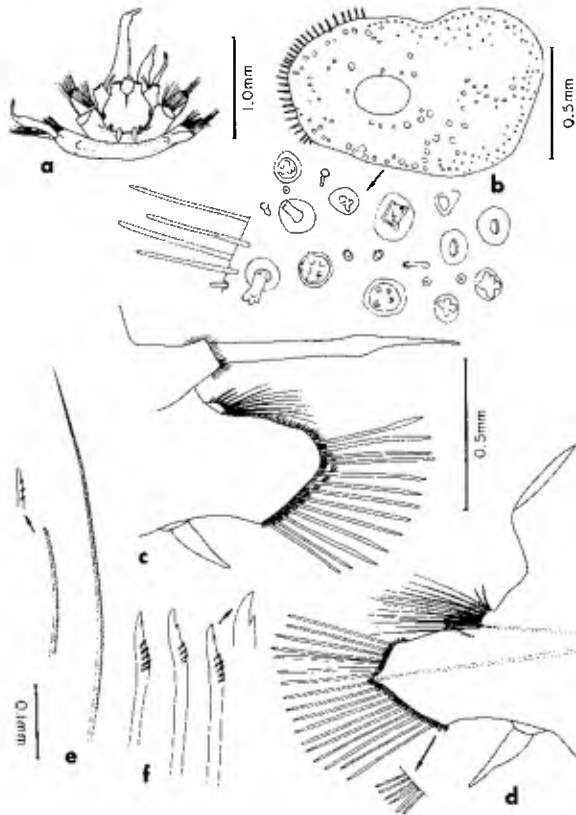


Fig. 5. *Lepidonopsis humilis* (syntype of *Lepidonotus humilis* from Dry Tortugas, ZMB 6262): a, Prostomium and anterior 3 segments, dorsal view; elytra removed; right palp shorter, regenerating; styles of median and lateral antennae, both left and right dorsal tentacular cirri, and right dorsal cirrus missing; b, left middle elytron, showing detail of some tubercles and papillae (not to scale); c, cirriferous parapodium, posterior view; d, elytriferous parapodium, anterior view, internal acicula dotted; e, shorter upper and longer lower notosetae; f, upper, middle and lower neurosetae.

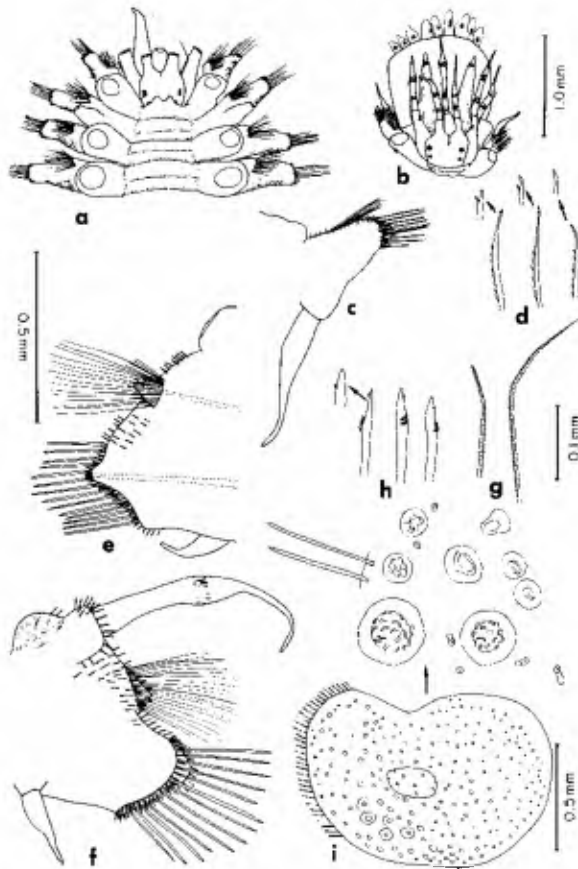


Fig. 6. *Lepidonopsis humilis* from Galeta Island, Canal Zone (USNM 50250): a, Prostomium and anterior 5 segments, dorsal view; styles of antennae, tentacular and dorsal cirri (III), and right palp missing.

*Lepidonopsis humilis* from Limón Bay, Panamá (USNM 50133): b, Prostomium and anterior 2 segments, dorsal view; pharynx extended; c, parapodium from buccal segment (II), posterior view; d, upper, middle and lower neurosetae from same; e, elytragerous parapodium, anterior view, internal acicula dotted; f, cirriferous parapodium, posterior view; g, upper and lower notosetae; h, upper and middle neurosetae; i, left middle elytron, showing detail of some tubercles and papillae (not to scale).