STUDIES ON THE FAUNA OF CURAÇAO AND OTHER CARIBBEAN ISLANDS: No. 30.

LESSER ANTILLEAN POLYCHAETES, CHIEFLY FROM BRACKISH WATER

with a Survey and a Bibliography of Fresh and Brackish – Water Polychaetes

by

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The number of euryhaline polychaetes known at present is relatively small, when one considers that this almost exclusively marine order numbers hundreds of species. Only a few families have representatives in fresh water, viz. Nereidae, Nephthydidae, Spionidae, Capitellidae, Sabellidae, and Serpulidae. By far the greater number of fresh-water species belong to the Nereidae (in particular to the subfamily Lycastinae), and to the Sabellidae, and these two families must therefore be regarded as those with the strongest tendency towards euryhalism. It has often been pointed out that, on account of their especial "tenacity", the nereids of the littoral area can stand the passage from one medium to another better than any other polychaetous family. It is therefore quite natural that the few genuine terrestrial polychaetes known as yet, and by far the greater number of fresh and brackish-water species, belong to the nereids. Incidentally, it may be mentioned that PFLUGFELDER (1933) showed that the epidermis of the most pronouncedly terrestrial nereids is especially rich in glands. To the best of my knowledge, no histological study of the epidermis of the fresh-water forms has yet been performed. It may be of interest to point out that none of the lacustrine polychaetes differ so much

from their marine congeners that the establishment of new families has ever been necessary; the change from marine conditions is only small. As was realized already by JOHNSON (1903), their affinities are quite clear, but the one feature common to them all is their diminutive size, often only a few mm. The fauna in localities with typical euryhaline conditions most probably represents an impoverished remnant of the fauna of the open sea. It looks as if the nereid type is the type which, of all the polychaete types, has the greatest power of adaptation to different circumstances. In this connection attention is called to the fact that other polychaetes, which have also adopted a mode of life widely different from a "normal" polychaete life, viz., the endoparasitic forms (mainly belonging to the Eunicea), have likewise undergone "only the most trivial changes" (CLARK, Ann. Mag. Nat. Hist (*12*) *9*, 1956, p. 432).

A fairly large number of papers on fresh and brackish-water polychaetes, each dealing with a single or a few new finds mainly scattered widely over the tropical and subtropical areas, have been published during the last 20–30 years. (The first lacustrine polychaetes were described by NUSSBAUM, 1900.) Nevertheless our knowledge is still very incomplete. The most exhaustive paper on polychaetes from such localities as those mentioned is SOUTHERN's "Fauna of the Chilka Lake" (1921), but to this category should also be reckoned HORST's list of Polychaeta from the Zuider Zee, and STAMMER's and AUGENER's investigations of some of the brackish-water areas of the Baltic. Each new collection and find of fresh-water polychaetes is of the greatest interest to taxonomists and topographers.

For several years Dr. P. WAGENAAR HUMMELINCK has carried out collecting work in the Lesser Antilles. The samples of lacustrine and brackish-water polychaetes which he collected in 1930 were discussed by AUGENER in 1933, his specimen from saltpond habitats in 1936. The first material has been included for completeness' sake; the second has not been included. It may be expected that further study of HUMMELINCK'S material from a widely varying series of littoral habitats will add considerably to our knowledge of aberrant polychaetes, as can be proved by the data yielded by a

few accidental samples of marine material from the shores of shallow lagoons which were sent me for comparison.

The samples studied were collected in 1936/37, 1949 and 1955, and I wish to extend my warm thanks to Dr. HUMMELINCK for having entrusted this material to me.

The collections concerned comprise:

Syllis (Typosyllis) variegata Gr.	*Dorvillea cerasina* (Ehl.)
Grubea clavata (Clap.)	*Nainereis laevigata* (Gr.)
Perinereis vancaurica (Ehl.)	*Prionospio spongicola* n.sp.
Stenoninereis martini n.g. n.sp.	*Polydora* sp.
Lycastopsis hummelincki Aug.	*Pentacirrus julianae* n.g. n.sp.
Lycastopsis beumeri Aug.	Empty serpulid tubes
Marphysa sanguinea (Mont.)	

Most of the material has been found in obvious saline localities (see Table 1), and may be considered as belonging to typical marine species. This group includes one new genus, the cirratulid *Pentacirrus*, from St. Martin.

Among the brackish-water species there is another new genus from St. Martin, the nereid *Stenoninereis*, and one new species, the spionid *Prinospio spongicola*, from the cave of Gasparo Grande, Trinidad. The material of *Lycastopsis hummelincki*, which AUGENER (1933) described from Bonaire, is particularly abundant, and therefore allows of a more detailed description of this species than he was able to give.

The greater part of the material has been presented to the State Museum of Natural History, Leiden; a few specimens have been deposited in the University Zoological Museum at Copenhagen, the British Museum (Natural History), the U.S. National Museum, the Zoological Museum of Amsterdam and at the Carribbean Marine-Biological Institute on Curaçao.

The drawings are made by the Danish scientific drawer POUL H. WINTHER.

LOCALITIES

ARUBA

Sta. 93 FONTEIN, 23.XII.1936; pond near spring from coral rock, 15 × 10 × 1 m, with some mud and leaf-decay, many algae; water clear and colourless, 29°C, pH 7.7–7.9, 400 mg Cl/l. — *Polydora* sp.

Sta. 361 SPAANS LAGOEN, northwestern shore, 1.I.1949; wet mud with leaf-decay of Rhizophora and some rock debris; water from mud possibly about 20,000 mg Cl/l or more. — *Grubea clavata.*

Sta. 363 BOEKOETI (Bucuti island), 17.I.1949; wet leaf-decay of Rhizophora on sandy debris; water from sandy mud possibly about 20,000 mg Cl/l or more. — *Lycastopsis beumeri.*

CURAÇAO

Sta. 71 BOCA SPELONK di Bak Ariba, Hato, 13.X.1936; shallow gutter with rather rapidly flowing water at covered spring from limestone, soft clayish mud, no algae, dark; water clear and colourless, 30°C, pH 7.4, 310 mg Cl/l. — *Lycastopsis hummelincki.*

Sta. 74b Spring of CAJOEDA, Hato, 26.IX.1948; small basin of brick work, 1 × ½ × ½ m, with slowly flowing water from limestone, containing muddy leaf decay, some algae; water clear and colourless, probably about 1000 mg Cl/l. — *Lycastopsis hummelincki.*

Sta. 87 Spring of ROOI SÁNCHEZ, Knip, 11.XI.1936; puddles of percolating water from siliciferous rock, up to 25 cm wide and 10 cm deep, with some plant-decay and sinter, algae; water clear and colourless, estimated at about 28°C, pH probably about 8.3, 2100 mg Cl/l. — *Lycastopsis hummelincki.*

Sta. 1045 SALINJA SANTA MARÍA, northwestern shore, 29.VIII.1949; salt lake, exposed to slight wave action; water turbid, pH 5.3, probably about 50,000 mg Cl/l. — *Marphysa sanguinea.*

BONAIRE

Sta. 44A Spring of Pos BRONSWINKEL, 27.III.1937; puddles of percolating water from porphyritic rock, up to 10 × 10 × 1 cm, with some detritus and leaf-decay, algae and mosses; water clear and colourless, 27°C, pH 7.2–7.5, about 520 mg Cl/l. — *Lycastopsis hummelincki.*

44Aa The same, 23.VIII.1955; the same, with muddy sand, slightly polluted by animals, algae; water clear and colourless, about 500 mg Cl/l. — *L. humm.*

44B Overflow from Pos BRONSWINKEL, 23.VIII.1955; shallow gutter, up to 2 cm deep, with slowly flowing water from well near 44 A, containing sandy mud and a few pieces of rock; water clear, almost colourless, 560 mg Cl/l. — *L. humm.*

Sta. 48 Spring of FONTEIN, 13.XI.1936; cemented gutter, 15 cm wide and

15 cm deep, with rather rapidly flowing water from limestone, about 1800 l/h, with some mud and leaf-decay, but almost no algae, partly covered, shady; water clear and colourless, 350 mg Cl/l. — *Lycastopsis hummelincki.*

48a The same, 30.III.1937; the same; water clear and colourless, 28°C, pH 8.3, 360 mg Cl/l. — *L. humm.*

48b The same, 21.V.1930; the same, about 1200 l/h; water clear and colourless, 28°C, about 500 mg Cl/l. — *L. humm.*

48d The same, 26.II.1949; the same; water clear and colourless, 28°C, pH 8.5, 370 mg Cl/l. — *L. humm.*

48e The same, 23.VIII.1955; the same, about 100 l/h; water clear and colourless, 28½°C, 465 mg Cl/l. — *L. humm.*

s.n. Bak di FONTEIN, 21.IX.1930; covered cistern near outlet of 48. — *L. humm.*

48C Bak di FONTEIN, 11.IX.1948; large uncovered cistern near outlet of 48, with almost stagnant water, containing some detritus and algae; water probably about 450 mg Cl/l or more. — *L. humm.*

48D Spring of FONTEIN, 23.VIII.1955; falling water from limestone at the end of tunnel about 30 m deep, between sinter deposits, without algae, dark; water clear and colourless, 28½°C, 460 mg Cl/l. — *L. humm.*

Sta. s.n. Pos GABRIEL, E of Punt Vierkant, 3.IX.1930; puddle in fissure of low limestone area, 2 × ½ × ¼ m, with mud and a few algae; water about 29°C, probably about 600 mg Cl/l. — *Microspio atlantica.*

Sta. 180A CAY, at entrance of Lac, 25.II.1949; wet mud with leaf-decay from Rhizophora and some coral debris, with some seepage of sea water and possibly brackish water, flooded at high tide; water from muddy pool possibly about 20,000 mg Cl/l. — *Perinereis vancaurica, Lycastopsis beumeri.*

Sta. 308 Southern shore of LAGOEN, 14.IX.1948; below flotsam and between wet leaves of Rhizophora on sandy rock just above water line. — *Perinereis vancaurica, Lycastopsis beumeri.*

Sta. 1102 Lagoen di GOTO, southwestern corner at wall, 22.II.1949; shore of salt lake, separated from the sea by a porous wall, between coral debris; water clear and colourless, pH 8.5, seepage of sea water in water of 72,000 mg Cl/l. — *Lycastopsis beumeri.*

TRINIDAD

Sta. 655 GASPARO GRANDE, GASPAREE CAVE, 11.I.1955; cavern water 20 m below surface of limestone terrace with tidal movements, some 200 m from shore, main basin 80 × 20 × 4–7 m, with soft mud, and a few pieces of decaying wood and leaves dropped into the water through window, with only very few, small algae, almost dark; water clear and colourless, 25°C, 11,450 mg Cl/l. — *Prionospio spongicola.*

NEVIS

Sta. 500 NELSON'S SPRING, 28.VI.1949; pond about 200 × 15 × 1½ m, near shore, with swamp deposits on clayey soil, algae and Najas; water clear and colourless, pH 8.6, 88 mg Cl/l. — Serpulid.

ST. BARTHÉLEMY

Sta. 450 GUSTAVIA HARBOUR, eastern corner, 1.VI.1949; between some flotsam and in wet, sandy mud under rock debris; water possibly about 20,000 mg Cl/l. — *Lycastopsis beumeri.*

ST. MARTIN

Sta. 476 Western shore of FLAMINGO POND, Simson Bay Lagoon, 8.VI.1949; wet leaf-decay with some muddy sand at water line of large mangrove pond; water nearby clear and colourless, pH 8.6, possibly about 25,000 mg Cl/l. — *Grubea clavata, Lycastopsis beumeri, Dorvillea cerasina, Nainereis laevigata, Pentacirrus julianae.*

Sta. 480 GREAT KEY, Simson Bay Lagoon, 2.VIII.1949; leaf-decay on soft, sandy mud in large mangrove lagoon, a few centimetres deep; water possibly about 22,000 mg Cl/l. — *Syllis variegata, Lycastopsis beumeri.*

Sta. 542 DEVIL'S HOLE SWAMP near Simson Bay bridge, 4.VIII.1949; pond in sink hole of limestone area, about 25 × 10 × 1½ m, probably about 150 m from shore, tidal movements, rocks with mud and plant-decay, Bathophora and other algae, partly swamped by Avicennia growth; water slightly turbid and greenish brown, pH about 8.0, 13,800 mg Cl/l. — *Stenoninereis martini.*

542a The same, 26.VII.1955; about 20 × 5 × ?1½ m; water almost clear and slightly greenish brown, 10,900 mg Cl/l. — *S. mart.*

TABLE 1

Distribution of *Polychaeta dealt with in this paper* with regard to salinity
(Approximate salinity of non-marine habitats in g Cl/l)

Species	Island	Habitat					
		Fresh	*Brackish* oligo-haline	meso-haline	poly-haline	*Marine*	*Salt-lake*
Syllis variegata	St. Martin					×	
Grubea clavata	Aruba					×	
	St. Martin					×	
Perinereis vancaurica	Bonaire					×	
Stenoninereis martini	St. Martin				10–14		
Lycastopsis hummelincki	Curaçao		0.3–0.7	2.1			
	Bonaire		0.3–0.6				
Lycastopsis beumeri	Aruba					×	
	Bonaire					×	×
	St. Barthélemy					×	
	St. Martin					×	
Marphysa sanguinea	Curaçao						×
Dorvillea cerasina	St. Martin					×	
Nainereis laevigata	St. Martin					×	
Prionospio spongicola	Trinidad				11.5		
Polydora sp.	Aruba		0.2–0.5				
Microspio atlantica	Bonaire		0.6?	?			
Pentacirrus julianae	St. Martin					×	
serpulid tubes	Nevis	0.09					

Family SYLLIDAE

Syllis (Typosyllis) variegata Grube, 1863

St. Martin: *Great Key*, Sta. 480; 5 specimens.

Of the five specimens two are complete, measuring 19 mm and 14 mm in length, respectively; the largest of them with regenerated posterior end; the three others are anterior fragments. The colour is yellowish-brown, darkest in the anterior part where the proventriculus is situated. The very long dorsal cirri are colourless. The pharynx is rather short, with an anterior, almost transparent, conical tooth. The dorsal cirri are alternately long and short, the number of articles varying from about 40 to 70. The falcate terminal piece of the setae differs only slightly in shape in the different parts of the body. The setae are neatly bidentate; in the posterior segments, a dorsal and a ventral simple acicular seta.

The species is highly variable; it is closely allied to the Arctic *S. fasciata* Mlmgr., and is perhaps identical with, or a variety of, *S. prolifera* Krohn.

Distribution: Widely distributed in the Atlantic, Pacific and Indian Oceans; Mediterranean.

Grubea clavata (Claparède), 1863

Aruba: *Spaans Lagoen*, Sta. 361; 3 specimens. St. Martin: *Flamingo Pond*, Sta. 476; 1 specimen.

The single specimen is an anterior fragment broken in two pieces, together 2 mm long. The antennae and the right tentacular cirri are also lacking. The following features make it reasonable to refer this damaged specimen to the above-mentioned species: the shape of the dorsal cirri and the bidentate, compound setae; the presence of an almost straight needle in the last of the segments present; and the single tooth in the anterior part of the pharynx.

Distribution: Atlantic, Mediterranean.

Family NEREIDAE

Perinereis vancaurica (Ehlers), 1868

[Fig. 1]

Nereis languida Grube, 1867, p. 15.

Bonaire: *Cay*, Sta. 180A; 5 specimens. *Lagoen*, Sta. 308; 2 specimens, one of wich macerated.

All specimens are atokous; length 25–30 mm; colour in alcohol yellowish-white. The prostomium twice as long as broad, with two small, closely set subulate antennae and four big, violet eyes with large lens. In none of the specimens was the proboscis protruded, but dissection of one of them revealed the following characteristic placing of the horny paragnathis: I = 1; II, III, IV = clusters of numerous, very

small paragnaths; V = 3 in a triangle; VI = two transverse chitinised bars; VII, VIII = three rows, the anterior with much larger paragnaths than the two others.

In the figure of the type, *N. languida* GRUBE (1867, pl. II fig. 1b) has one paragnath in I, just as in the present specimen, but when redescribing the species in 1878 (p. 83) he mentions two or three in tandem. He also states that in some of his specimens each of the bars of group VI is divided into two, "so dass dann also jederseits von der Triangelgruppe V 4 erscheinen." In the allied species *P. floridana* (EHLERS) (1864–68, p. 503) the typical single bar of group VI may likewise be divided into two smaller, closely set ones (HARTMAN, 1951, p. 41). As far as I know *P. vancaurica* and *P. aibuhitensis* Gr. from the Philippines, and *P. seurati* Grav. from Gambier Island, Australia, are the only species which typically have 2 bars in each group VI. — The maxillae are fairly delicate, with indistinct dentition. — The longest of the four pairs of tentacular cirri reaches backwards to the 4th setigerous segment.

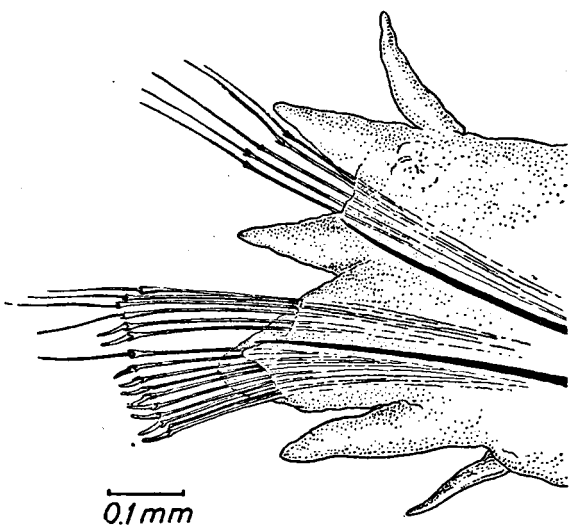

Fig. 1. *Perinereis vancaurica* (Ehl.) from Bonaire: Parapodium from the middle part of the body.

The feet (fig. 1) are rather broad and short. The two notopodial lobes are of the same length and shape; the intermediate lobe is reduced; the neuropodial setigerous lobe is the largest of all the pedal lobes, whereas the ventral lobe is narrow and digitiform. The dorsal cirrus arises at half the distance between the base and the point of the foot; it is similar in length and shape to the ventral cirrus. The notopodial setae are all supra-acicular, homogomph spinigers. In the supra-acicular, neuropodial bundle there are 3–4 homogomph spinigers, and ventrally to them 2 heterogomph falcigers; in the subacicular bundle there are 1, seldom 2 homogomph spinigers and 9–10 heterogomph falcigers. The aciculi are strong and black, the bristles are pale. The terminal pieces of the falcigers are short, straight, broad and finely denticulate. — In the notopodium there is a distinct pedal gland.

The species was described by GRUBE (1867) from Vancaurica as *Nereis languida*, but in 1864–1868 EHLERS stated (p. xx) that this name was preoccupied, and he gave it the name *N. vancaurica*.

Distribution: Mergui Archipelago, Philippine Islands, the Red Sea, New Zealand, French Guiana, and Bonaire — i.e. widely distributed, especially in the tropical area, but evidently rare. — See FAUVEL 1932, p. 103.

Stenonereis martini n.g. s.sp.

[Fig. 2–4]

ST. MARTIN: *Devil's Hole Swamp*, Sta. 542 and 542a; about 25 specimens, of which a few are only anterior fragments. (Greater part of material in Leiden Museum; a few specimens in British Museum, U.S. Nat. Museum, Amsterdam, and Copenhagen.)

The length of the complete specimens varies from 0.7 mm with 5 chaetigers to 6 mm with 34 chaetigers; the breadth varies from 0.5 mm to 1.4 mm (the parapodia included). They are all colourless, i.e. yellowish-white in alcohol, with black eye spots, some of them with a few black pigmental dots on the parapodial stems and the dorsal cirri; in one specimen also dark spots on the body wall between the feet; in another a big brown spot in the dorsal midst of each segment. The body is nearly the same breadth throughout, only slightly tapering towards the posterior end.

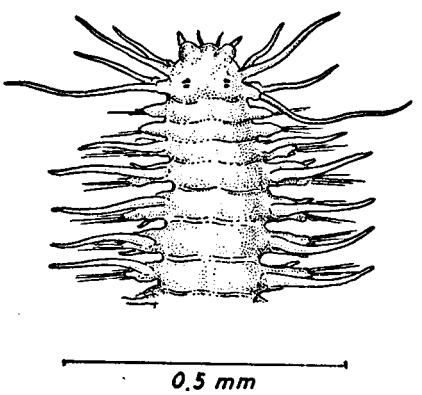

Fig. 2. *Stenonereis martini* n.g. n.sp. from the Devil's Hole, St. Martin: Anterior end

The prostomium is slightly broader than long, with a small incurvation at the posterior border in some specimens; the frontal border is rounded and carries two tiny, subulous antennae, and two sharply downward-turned, short, bulbous palpi with indistinct end knobs. In young specimens there are 6 eyes arranged in two triangles of three each; the eyes in each triangle are close together, but the two groups are widely separated. In the largest specimen there are 4 eyes on each side, arranged in two narrow, longitudinal rows. — The maxillae (fig. 3) are broad at the base, sharply curved apically; the interior edge has 5–9 teeth, the row of

which ceases where curvation takes place. In two of the specimens the proboscis was protruded, in two others it was cut open; it is short, broad, without any trace of either paragnaths or papillae. There are 4 pairs of tentacular cirri, very long and slender, the dorsal posterior one being by far the longest; in small specimens it reaches the fourth, in the biggest one the 9th chaetiger.

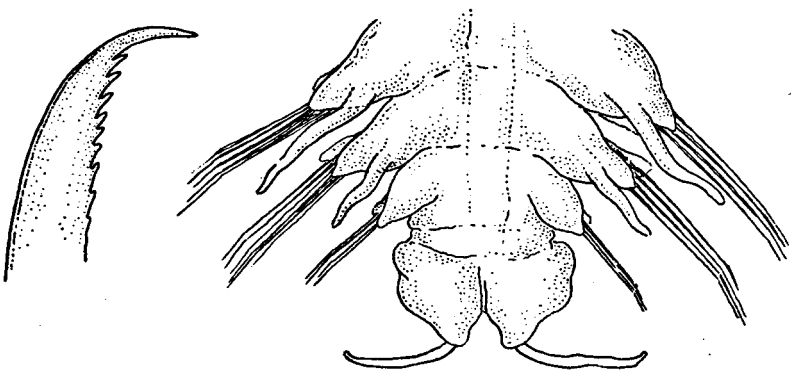

Fig. 3. *Stenoninereis martini* n.g. n.sp.: Jaw (left) and posterior end (right).

The buccal segment lacks parapodia; the first two feet are uniramous, reduced, and with a few short, homogomph spinigers. The following feet are all biramous, with very long sickle-shaped dorsal cirri which, in the middle segments, extend far beyond the feet and only diminish slightly in length posteriorly. They are broad and flat in the proximal part, and consist of a long cirrophore which ends in a cylindrical cirrostyle. The ventral cirri are only half the length of the ventral parapodia, almost threadlike and often broken off.

In a fully developed foot from the central part of the body, e.g. from the tenth chaetiger (fig. 4a), the notopodium has two slender, subulate, digitiform ligules, the ventral one being considerably longer than the dorsal one.

The neuropodium is of the same length as the dorsal part of the notopodium, but much broader and thicker and only represented by a single, pointed lobe with two lips, between which the setae emerge. There are no intermediate fillets. In the more posterior segments the notopodium undergoes a simplification. As shown in the illustrations, the dorsal ligule gradually diminishes, and by about the twenty-sixth segment (fig. 4c) it has completely vanished. The neuropodium is not modified. In the notopodium the bristles are homogomph spinigers; in the neuropodium there are, in addition, 1–3 heterogomph falcigers at the base of the bundle, but not, however, in the last segments. The shafts are finely barred and the terminal pieces slender, long and finely denticulate.

The pygidium (fig. 3) has a rather peculiar shape; it is divided into two flat, wing-like expansions, each with a long thread-like appendage.

Some of the specimens exhibit very big ova in a few of the segments; there is never more than one in each segment.

The species is named after the island of St. Martin.

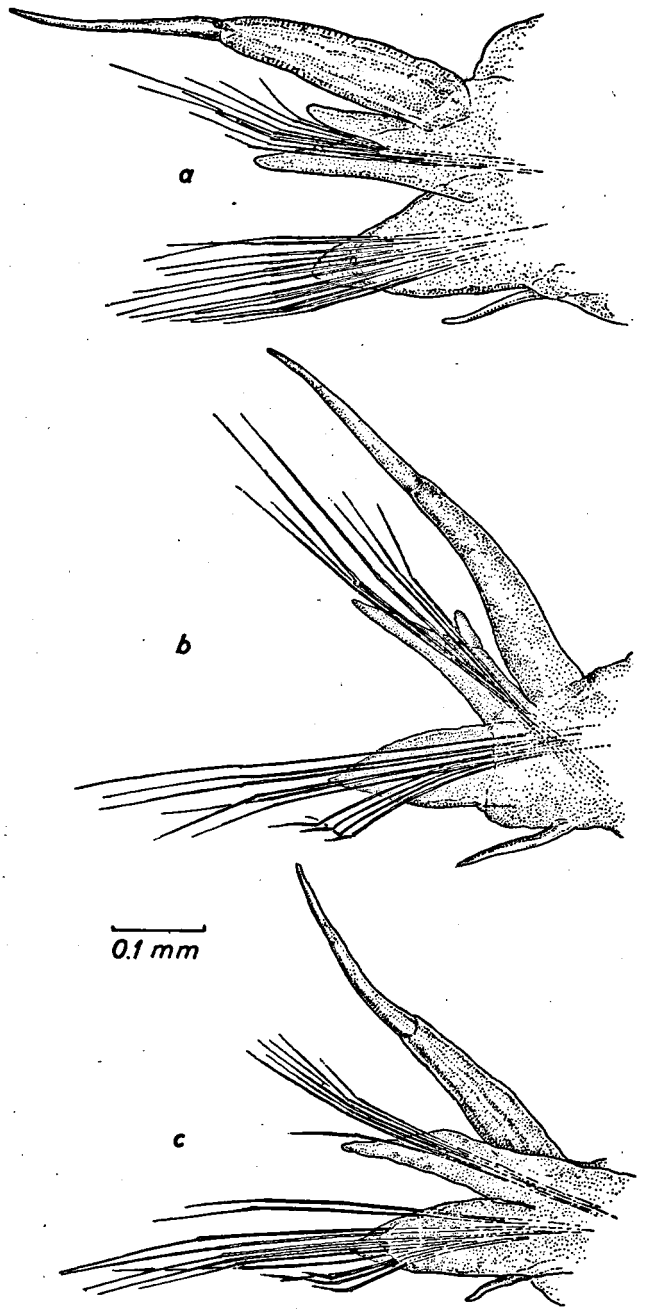

Fig. 4. *Stenoninereis martini* n.g. n.sp.: *a* tenth, *b* nineteenth, *c* twenty-sixth parapodium.

Generic and specific diagnosis:

Parapodia biramous after the second chaetiger (*Lycastinae* excluded).

First segment apodous; with antennae (*Micronereis* excluded). Paragnaths and proboscideal papillae absent, the dorsal lobe of parapodia not greatly expanded (*Leptonereis* excluded).

Palpi and antennae short; 4 pairs of tentacular cirri; 3 (4) pairs of eyes; very long, sickle-shaped dorsal cirrus with cirrophore and cirrostyle; neuropodium with only one lobe; gradual reduction until disappearance of the dorsal ligule of notopodium. The usual three kinds of setae.

The genus is named after the famous seventeenth-century Danish scientist NICOLAUS STENO.

Lycastopsis hummelincki Augener, 1933

[Fig. 5–8]

AUGENER, 1933, p. 352, fig. 1; OKUDA 1937, p. 306.

CURAÇAO: *Boca Spelonk*, Sta. 71; 18 specimens. *Bron Cajoeda*, Sta. 74b; about a dozen specimens, fragmentary. *Rooi Sánchez*, Sta. 87; 10 specimens. — BONAIRE: *Pos Bronswinkel*, Sta. 44A; 3 specimens. Sta 44 Aa; 1 spec. Sta. 44B; several spec. *Fontein*, Sta. 48; 1 spec. Sta. 48a; 8 small spec. and 2 broken larger ones. Sta. 48b; 1 adult spec. (described by AUGENER 1933 — typus!). Sta. 48d; 1 small spec. Sta. 48e; 2 spec. Bak di Fontein, 1930; fragment from middle part of body, consisting of 8 segments, described by AUGENER 1933). Sta. 48C; 3 small, partly macerated spec. Sta. 48D; 20 small spec.

The animals are small and slender. One of the longer ones measures 26 mm by about ½ mm and possesses 110 setigerous segments; the smallest specimens 3 mm and 3.2 mm, with 17 and 19 segments respectively. The colour in alcohol is yellowish-white, more rarely yellowish-brown or (Sta. 74b) dark grey. The dorsal side is more vaulted than the ventral. The body is of nearly the same width throughout, only slightly tapering posteriorly. The prostomium and the buccal segment are of the same breadth as the following segments (fig. 5). The antennae are short, subulate, set widely apart; the palpi are remarkably stout and thick, with rounded terminal joints. There are no eyes to be seen, and this is certainly not due to the influence of the preserving fluid, as AUGENER suggests, for in none of the present specimens was there the slightest trace of pigment to be found. The worm is evidently blind. There is no median cephalic groove, such as is often observed in the closely allied genus *Lycastis*. There are three pairs of tentacular cirri, rather long and slender, longer than the still more slender dorsal cirri. They are arranged as described by AUGENER: anteriorly one dorsal and one ventral, posteriorly only one dorsal; the dorsal anterior is the longest of them.

The proboscis is thick and fleshy, without paragnaths but with two rounded, soft, cushion-like elevations on the dorsal side of the oral ring. The slightly curved

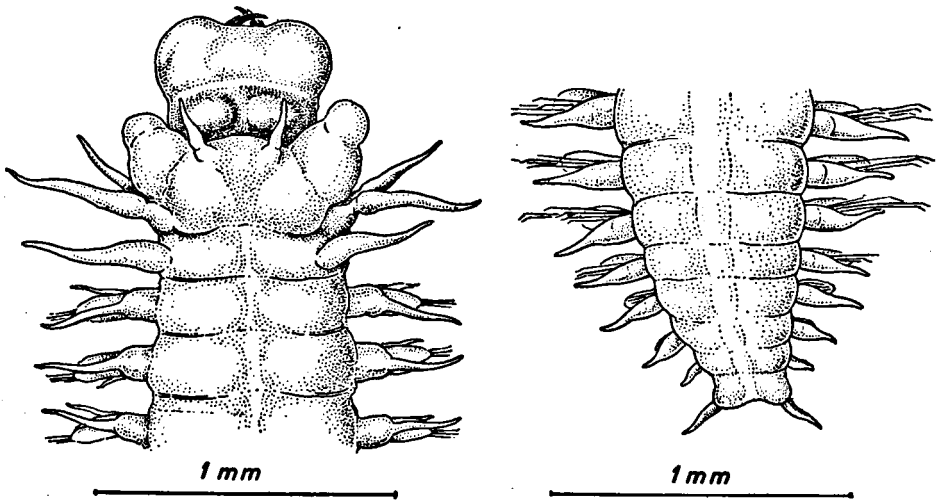

Fig. 5–6. *Lycastopsis hummelincki* Aug.: Anterior and posterior ends.

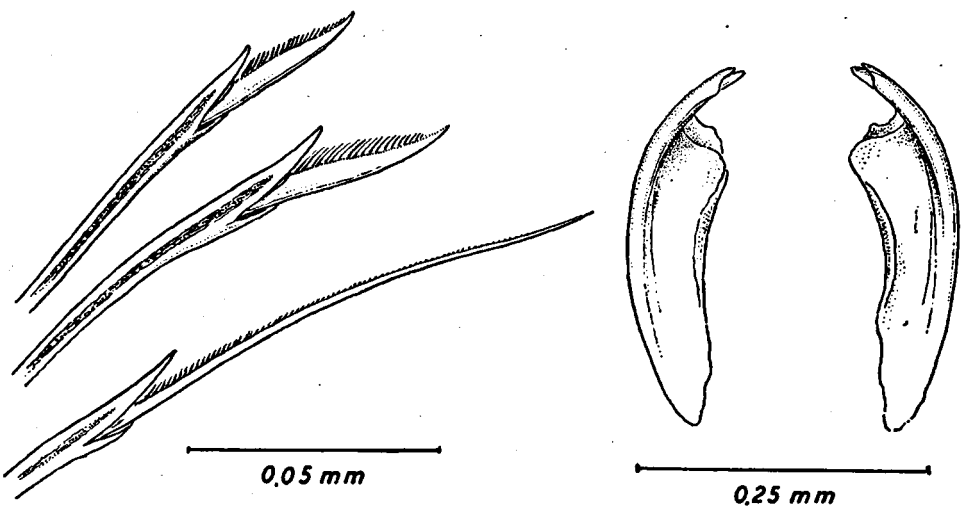

Fig. 7–8. *Lycastopsis hummelincki* Aug.: Two setae with short, falcate terminal pieces (top left); spiniger with hair-like end blade (bottom left); AUGENER's "Pseudo Grätenborsten" are intermediate between these two. — Jaws (right).

jaws (fig. 8) are bifurcated at their apex, both tips ending bluntly, but are otherwise devoid of teeth. They have a wing-like expansion at their concave side, reaching almost to the apex.

The parapodia are uniramous, with two black spines, the dorsal of them both shorter and thinner than the ventral; there are no dorsal setae. The setae (fig. 7) are compound, with strongly heterogomph articulation; they are arranged as described by AUGENER and closely correspond to his drawings. There are setae with short, rather stout, dentigerous, falcate end blade, and two kinds of spinigerous setae more moderately heterogomph, one kind with a very long, almost hairlike terminal piece, another with a shorter, broader terminal piece; the latter kind is described by AUGENER as "Pseudo-Grätenborsten".

The parapodia, as well as the dorsal subulate cirri, taper slightly towards the posterior end (fig. 6); the last pair is literally quite rudimentary. The ventral cirri are blunt and much shorter than the dorsal ones. The last segment is without appendages. The pygidium is short and blunt, and the anal cirri resemble the last pair of cirri in shape and size. They arise from a little globular knob.

Lycastopsis beumeri Augener, 1922

[Fig. 9–11]

AUGENER 1922, p. 42; AUGENER 1936, p. 346. — ? *Lycastis littoralis* Grube, 1871. — *Lycastoides pontica* (Brobr.) LA GRECA, 1949, p. 164.

ARUBA: *Boekoeti*, Sta. 363; 1 specimen. — BONAIRE: *Cay*, Sta. 180A; 3 spec. *Lagoen*, Sta. 308; 2 spec. *Goto*, Sta. 1102; 3 spec., grey in colour. ST. BARTHÉLEMY: *Gustavia Harbour*, Sta. 450; 3 spec., partly macerated. ST. MARTIN: *Flamingo Pond*, Sta. 476. *Great Key*, Sta. 480; many specimens.

Material described by AUGENER 1936 (p. 339–340, 346–347) but not studied by the author: BONAIRE, Lagoen di *Goto*, Sta. 1105, 26.VIII.1930; seepage of salt water (estimated at about 20 g Cl/l) at shore of salt lake, abt. 28°C; abt. 30 spec. Lagoen di *Goto*, Spring at Rooi Riscado, Sta. 1106, 26.VIII.1930; seepage of polyhaline or salt water at muddy shore of salt lake, abt. 30°C; abt. 10 spec.

The length of the present specimens varies from about 5 mm to 14 mm; the colour is yellowish-white or grey; the prostomium (fig. 9) is nearly quadrangular, with two pairs of indistinct eyes, set pairwise close to each other and close to the postero-lateral parts of the head. The antennae are very short and thick, and wide apart, the palpi are short and thick, with spherical end knobs. The proboscis is short and bulbous, without paragnaths of any kind, but on the oral ring, corresponding to groups VI, are two low, rounded elevations like soft cushions, and on the maxillary section is a ring of similar but smaller cushions, which are, however, so low, that they cannot be called papillae. The border between the maxillary and the oral ring is very distinct, but the longitudinal lines separating the different fields cannot be distinguished. — Only in one of the specimens could this be done; in the rest, the proboscis was retracted. The jaws are slightly curved, and have one or two teeth below the apex. The three pairs of tentacular cirri are extremely short, all subulate and of the same length; the two anterior pairs are more laterally placed than the third, more dorsal pair, which only extends to the second chaetiger.

The parapodia (fig. 10) are small but well developed, and all alike; they are uniramous, with dorsal and ventral cirri nearly triangular, and much shorter than in *L. hummelincki*. The first foot is on the first segment behind the peristomium. The notopodium is only represented by an aciculum, which is shorter and more

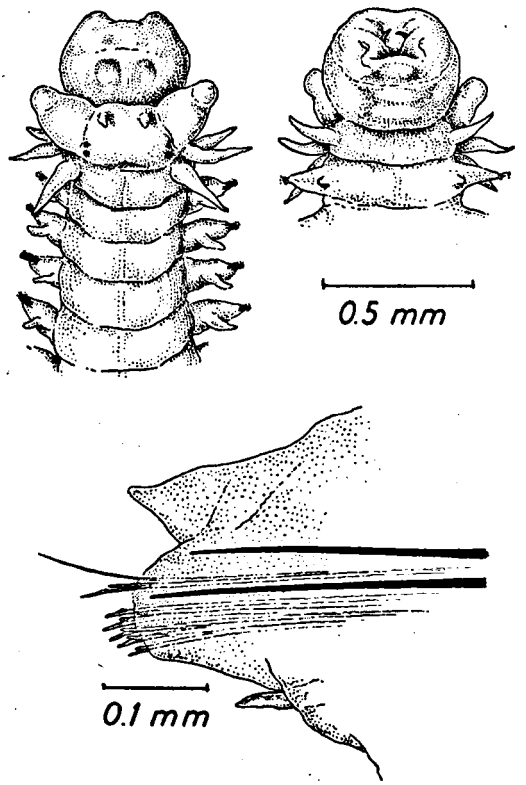

Fig. 9–10. *Lycastopsis beumeri* Aug.: Anterior part from dorsal and ventral side. — Parapodium from the middle part of the body.

slender than the ventral aciculum. In the neuropodium there are, supra-acicularly, 1 homogomph spiniger and 1 heterogomph; subacicularly, there are 4–5 heterogomph falcigers with the terminal piece shorter than in the supra-acicular falciger. The aciculi are black, the setae pale.

Distribution: The species was described from Havana (1922) and Bonaire (1936), and refound in the Black Sea (Bay of Sebastopol and Bosphorus).

The genus *Lycastopsis*, which was erected by AUGENER (1922), belongs to the group of nereids which has uniramous feet and which is occasionally incorporated in the family of *Lycastidae* or subfamily of *Lycastinae*. The genus is distinguished from the allied genera *Lycastis* (Sav.) and *Lycastella* (Feuerb.) (the latter = *Namanereis* Chamb.) by having three pairs of tentacular cirri; the other two genera

have four pairs. The fourth *Lycastoides* Johnson, also has three pairs, but the two posterior pairs arise from an elongate common basal article, a character so aberrant in polychaetes that it is most probably due to an abnormality, as JOHNSON himself points out.

The genus *Lycastopsis* comprises 7, perhaps only 6 species, all except two from fresh water:

1) *Lycastopsis littoralis* (Grube), 1872, from Brazil.

2) *L. beumeri* Augener, 1922, from Cuba — perhaps identical with *L. littoralis* (as supposed by FEUERBORN, 1932) — in marine environments. Also known from St. Martin, St Barthélemy, Bonaire and Aruba.

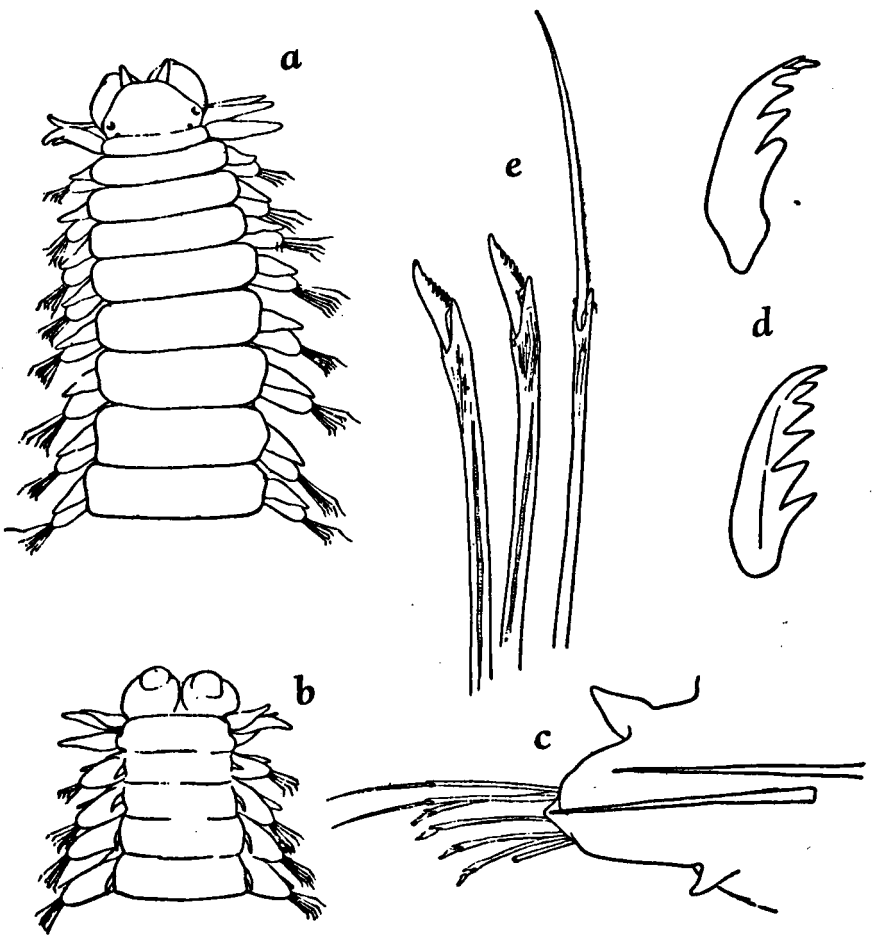

Fig. 11. "*Lycastoides pontica* Bobr." — *a* and *b* anterior end from dorsal and ventral side; *c* parapodium; *d* jaws; *e* setae. From LA GRECA, 1949.

3) *L. catarractarum* Feuerborn, 1932, from Java, Sumatra and Amboina.

4) *L. hummelincki* Augener, 1933, from Bonaire and Curaçao.

5) *L. amboinensis* Pflugfelder, 1933, from Amboina — in dead sheaths of coco palm.

6) *L. augeneri* Okuda, 1937, from Hokkaido, about 43°N 140°E. — A discovery of special interest, since it is the first *Lycastopsis* to have been found up till now outside the tropical area and the second one from salt water; it was found in the littoral zone, near the high-tide mark, in abundance under decaying seaweed (as *L. beumeri*!). USCHAKOV 1955 mentions it as occurring in Amniva Bay in southern Sakhalin, and in Peter the Great Bay, Vladivostok.

7) *L. tecoluthensis* Rioja, 1946, in estuarine environment at Teculutla, eastern Mexico — only known from occurrence in the type locality.

In either 1870 or 1881 BOBRETZKY described a species from the Black Sea (the Bay of Sebastopol), under the specific name *pontica*. Both BOBRETZKY's papers are in Russian and not available in Denmark. For this species IAKUBOVA, 1930, p. 863 (also writing in Russian) erects the genus *Lycastoides*. In 1947 two specimens of this species, with 60 and 40 chaetigers respectively, were refound in the Bosphorus and described by LA GRECA in 1949 (p. 164) as *Lycastoides pontica* (Bobr.). LA GRECA's description is repeated here. "Prostomium plus large que long, pentagonal. Deux petites antennes coniques plus courtes que les palpes; ceux-ci sont gros, globuleux avec un gros palpostyle en bouton. Deux yeux. Trois paires de cirres tentaculaires, courtes, coniques. Trompe sans paragnathes avec deux mâchoires pourvues de 6 dents. Parapodes cylindriques très longs et saillants. Cirres dorsaux courts, coniques, placés au milieu du côté dorsal de chaque parapode; cirres ventraux, extrèmement petits et placés à la base des parapodes. Mamelon setigère conique obtus avec un seul faisceau de 10–12 soies dont 2–3 en arète et les autres en serpe hétérogomphe. Les soies en arète ont l'article apical long et faiblement pectiné; les serpes sont denticulées".

A comparison of this description and LA GRECA's drawings reproduced here (fig. 11), with the present specimens, has led me to the conclusion that *Lycastoides pontica* Bobr. is *Lycastopsis beumeri* Aug.

As regards JAKUBOVA's generic name *Lycastoides* (1930) only the following short remarks are made. In 1948 CORREA (p. 217) pointed out that this name has been preoccupied by JOHNSON for *Lycastoides alticola*, a strictly fresh-water nereid, secured from a mountain stream 7,000 feet up, in Sierra Laguna, Lower California, and most probably an unrecognizable species.

Family EUNICIDAE

Marphysa sanguinea (Montagu), 1815

CURAÇAO: *Salinja Santa María*, Sta. 1045; 1 specimen.

The single specimen is complete but is only 11 mm long; the body tapers strongly but evenly towards the posterior end, which terminates in two long urites. The anterior part is dark yellowish-brown and opaque, the middle and posterior part is somewhat distended, the dark intestine shimmering through the transparent skin. The gills commence on the eleventh chaetiger as a single, short filament; they have two filaments from the twenty-second segment onwards, and do not

develop more than three filaments in all; the gills are only lacking in the last fifteen or so segments.

The first chaetiger has only uncompound, limbate capillaries, the following segments have compound capillary neurosetae with long, sickle-shaped end blades and, from the sixteenth chaetiger onwards, a single strong but short, subacicular, clearly bidentate hook; finally, a few comb-shaped bristles occur, from the forty-eighth chaetiger onwards.

Distribution: The species has a world-wide occurrence, mainly in tropical and subtropical seas in both hemispheres.

Family DORVILLEIDAE

Dorvillea cerasina (Ehlers), 1901

Staurocephalus cerasinus EHLERS, 1901a, p. 263. *Stauronereis cerasina* EHLERS, 1901b, p. 147. *Dorvillea cerasina* HARTMAN, 1944, p. 190. — Here I follow HARTMAN's view of the relationship and synonymy of the superfamily *Eunicea*.

ST. MARTIN: *Flamingo Pond*, Sta. 476; 1 specimen.

Only one small, complete specimen was secured, 6.5 mm long, with 42 chaetigers; the colour is bronzy. The antennae and palpi are short, nearly of the same length, both moniliform; the palpi have a little globular terminal article. The prostomium bears eyes. No nuchal papilla. The parapodia have a long, dorsal cirrophore, which carries a short, pointed cirrostyle, together longer than the parapodium proper. No simple, forked setae. In the neuropodium, the usual composite heterogomph setae with long terminal pieces with bidentate ends; a few simple, long, curved bristles with finely denticulated convex edges. — The pygidium is rounded and carries two rather short, moniliform appendages.

Distribution: The species was originally described as occurring in Juan Fernandez, among tubes of *Vermetus*. Further known from the Gulf of California, Mexico, and the West Indies. It is littoral and intertidal.

Family ARICIIDAE

Nainereis laevigata (Grube), 1855

ST. MARTIN: *Flamingo Pond*, Sta. 476; about 20 specimens, the greater part fragmentary.

The biggest specimen measures 14 mm; its colour is rusty red. In all specimens the proboscis is withdrawn. The thoracic region consists of 15–25 segments; the gills commence on the eight or ninth setiger as small dorsal papillae; they rapidly grow into sickle-shaped leaves, partly covering the dorsum. In about the last 10 segments they are lacking. The notosetae are crenate capillaries and one or two bifurcate into shorter setae, with very short, subequal rami. The neurosetae are similar capillaries, and, in addition, there are 2–5 shorter, stouter subuluncini.

Distribution: The species was previously known to occur in the Antilles and the Caribbean Sea. But it has a very wide distribution outside this area — e.g. in the Arctic and Boreal regions, the Mediterranean, Africa — and is most probably cosmopolitan.

Family SPIONIDAE

Prionospio spongicola n. sp.

[Fig. 12]

TRINIDAD: *Gasparee Cave* on the island of Gasparo Grande, Sta. 655; 1 specimen. (British Museum.)

Only a single imperfect specimen is to hand, extracted from a tiny bit of sponge; it consists only of about 30 anterior segments and is approximately 4 mm long, but the branchial region is so characteristic that I venture to describe the fragment as belonging to a hitherto undescribed species.

The anterior border of the prostomium is entire, and is broadly rounded, with small lateral flanges; posteriorly it tapers to a blunt tip which nearly reaches the border between the second and third chaetiger; there is no distinct median caruncle and no occipital papilla. Two pairs of eyes, the anterior pair small and circular, the posterior pair like big, black rods. The long palpi are lost (of course!). The branchial region is somewhat depressed. The first chaetiger is abranchous, carrying small, reduced parapodia with relatively few and short capillaries. The following five chaetigers have big branchiae, partly covering the dorsum and arising close to the base of the notopodia. The first pair have a few digitiform prolongations along their margins; the second pair are considerably longer, flattened, ligulate and with smooth margins, i.e. quite devoid of processes; the third pair have a few lateral processes, and the fourth and fifth pairs have a few long digitiform processes, all thick, blunt and arranged along the margins of the stems, those nearest the base being the longest. The extreme tips, as well as the dorsal and ventral surfaces, are smooth; the tips are especially long at the fifth pair.

The anterior 11 chaetigers have capillary bristles only; they curve outwards and upwards, and are arranged in vertically placed fans; they are especially long in the branchial region. They are very acute and, as far as can be seen, devoid of wings. The neuropodial crochets appear on the twelfth chaetiger, increasing in number from 2 to 6. It is impossible to ascertain where the notopodial crochets begin, as the posterior end of the specimen is lacking; all that can be said is that the crochets extend posteriorly to about the thirtieth segment. The valves of the hood are short and broad. The segments after the branchial region are all in such poor condition that a closer description is impossible.

The present species seems to be most nearly allied to MOORE's *P. heterobranchia*, which also has 5 pairs of gills — as far as I am aware, the only *Prionospio* species known to have 5 pairs. But in *P. heterobranchia* the second and third pairs are smooth and ligulate, and in the first and fifth pairs the digitiform processes are densely crowded over the whole surface of the proximal parts of the branchial stems. MOORE's species was secured from soft ooze in the deepest part of Eal Pond, Woods Hole, Mass., and has not been recorded again since its establishment in 1904. — In 1951 HARTMAN (p. 85) described a subspecies, *P. heterobranchia texana* from Aransas Bay, Texas (fine sand mixed with decaying vegetation). The subspecies differs from the stem species in two characters: it has a single pair of eyes and the neuropodial hooks occur from the fortieth segment onwards, whereas the stem species has two pairs of eyes and the corresponding hooks commence at the fifteenth segment.

Until 1935 the *Prionospio* species were only known to occur in salt water, but in that year OKUDA described a species, *P. japonicus*, in brackish water, from a lake

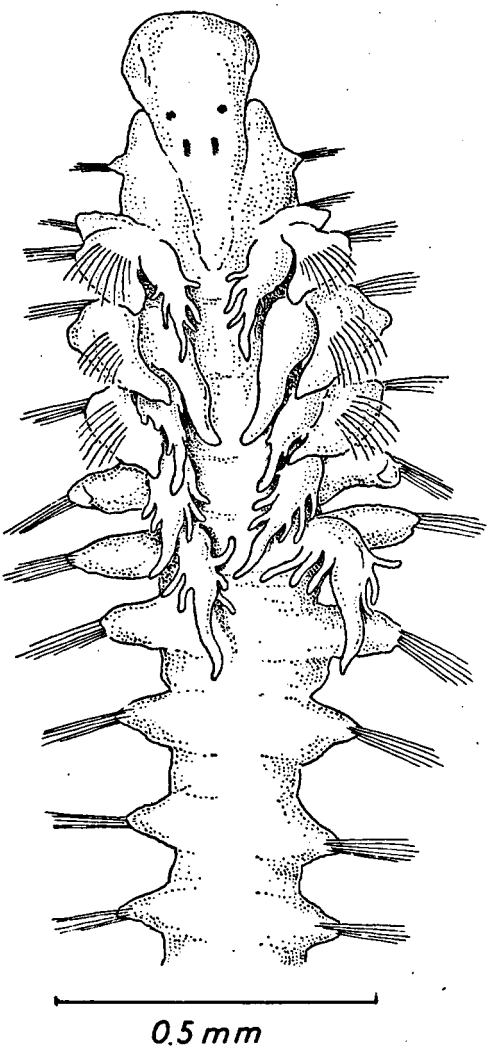

Fig. 12. *Prionospio spongicola* n.sp. from Gasparee Cave, Trinidad.

on the southern coast of the Sea of Japan. One of its distinguishing characters is 4 pairs of slender branchiae completely devoid of appendages.

Polydora sp.

[Fig. 13]

ARUBA: *Fontein*, Sta. 93; 1 specimen. (Copenhagen.)

Only an anterior fragment consisting of 12–14 segments is available. The fifth chaetiger carries 4 strong, yellow needles, and the first chaetiger a tuft of long,

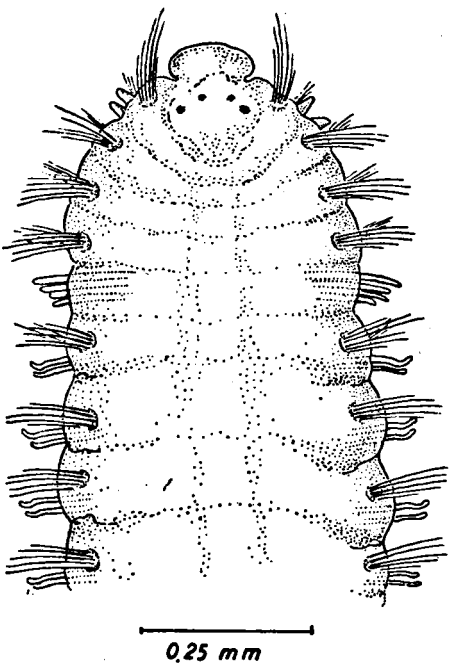

Fig. 13. *Polydora* sp. from Fontein, Aruba.

delicate bristles. The hooded bristles commence at the seventh chaetiger. There were no gills to be seen, and the long palpi were also missing.

Microspio atlantica Mesnil, 1896

AUGENER 1933, p. 355; WAGENAAR HUMMELINCK 1933, p. 317.

BONAIRE: *Pos Gabriel*; 1 young specimen — considered by AUGENER "mit etwas Vorbehalt" as belonging to this species.

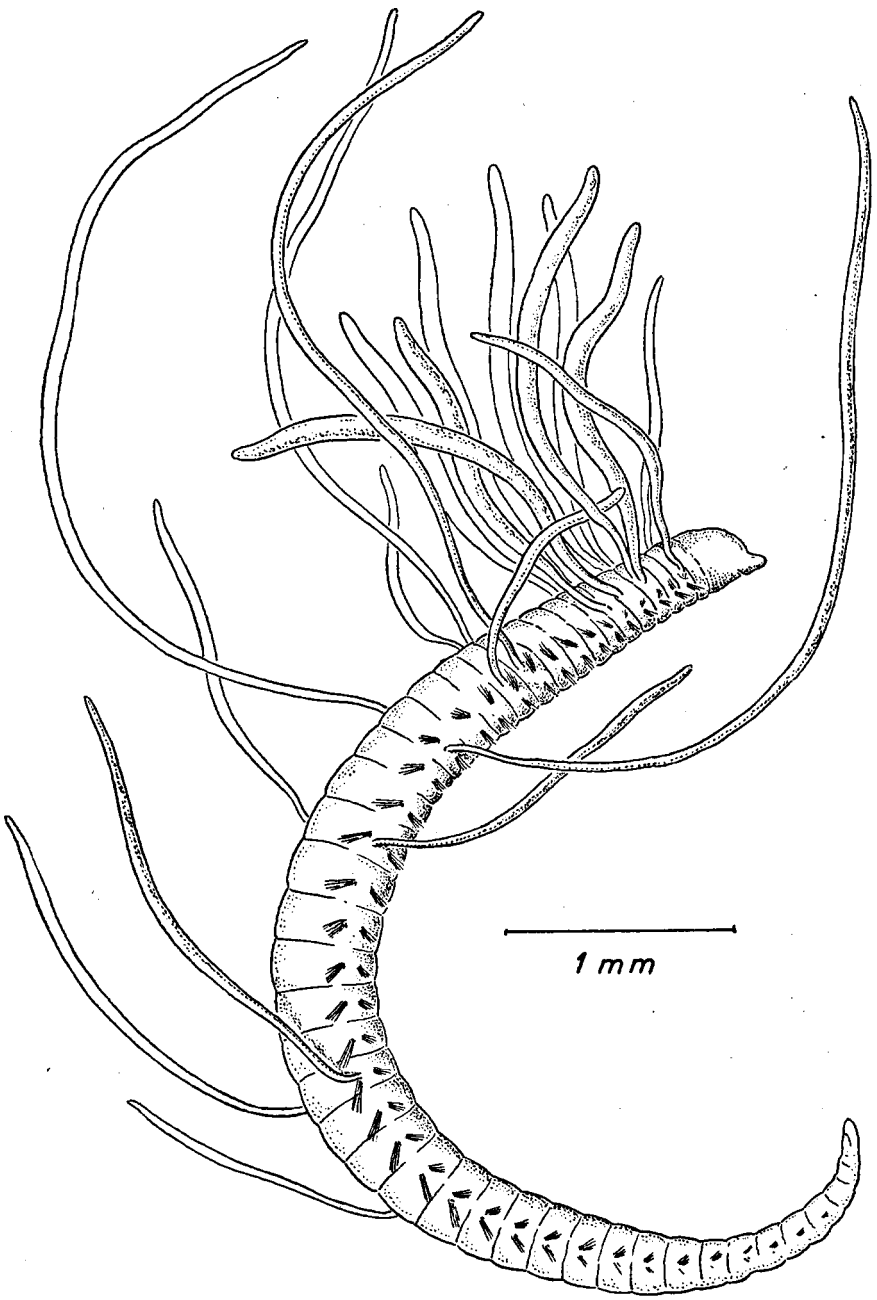

Fig. 14. *Pentacirrus julianae* n.g. n.sp. from Flamingo Pond, St. Martin.

Family CIRRATULIDAE

Pentacirrus julianae n.g. n.sp.

[Fig. 14]

ST. MARTIN: *Flamingo Pond*, Sta. 476; 1 specimen. (Leiden.)

A single specimen, nearly complete, except for the fact that a great number of the branchiae are lacking. It measures 2 mm in length, and is yellowish-white (in alcohol). The body is extremely narrow, tapering evenly to the posterior end.

The prostomium is rounded and without appendages of any kind; no palps, nor any trace of their being lost. No eyes. The first segment after the buccal segment is apodous and achaetous. All the following segments are apodous, but carry bundles of noto- and neurosetae. Five pairs of almost equally long tentacular filaments, all shorter and considerably thicker — especially at their distal ends — than the branchiae, which are of the same breadth throughout their whole length. The arrangement of these filaments is as follows: First chaetiger: 1 pair of filaments close to the anterior segmental furrow. Second chaetiger: nude. Third chaetiger: two pairs of filaments. Fourth and fifth chaetigers: each one pair. — In the present specimen the first pair of branchiae appears on the tenth chaetiger; they may, however, have commenced farther anteriorly, since so many of them have been lost, and their presence in the following chaetigers may be regarded as rather casual. The first and third pairs (on the tenth and fourteenth chaetigers) are extremely long, whereas that on the eleventh is the shortest of them all.

On the first 5 chaetigers there are only capillary setae of unequal length; from the sixth chaetiger onwards there are both capillaries and spines in the notobundle as well as in the neurobundle. No dorsal, no ventral cirri. The hooks are slightly curved, stout, blunt needles, much shorter than the capillaries. Both kinds of setae are pale. — The pygidium is rounded; the anus subterminal; no pygidial appendages.

The reason for establishment of the new genus is the arrangement of the tentacular filaments. As far as I know there is no cirratulid in which these organs occur over a stretch of 5 segments; they are usually arranged in a transverse row across one of the anterior segments. The new genus should, in my opinion, be placed in the vicinity of the genera *Audouinia* and *Cirratulus*, which are both characterized, among other features, by the abscence of the prehensile palpi.

The species is named in honour of QUEEN JULIANA.

Family SERPULIDAE

Empty Serpulid Tubes

[Fig. 15]

NEVIS: *Nelson's Spring*, Sta. 500; small number of empty tubes. (British Museum.)

The white, calcareous, completely empty tubes are almost smooth in the parts which have been cemented to the substratum (of which nothing is left), whereas the anterior ends rising from this have more or less distinct, smooth rings. The tubes

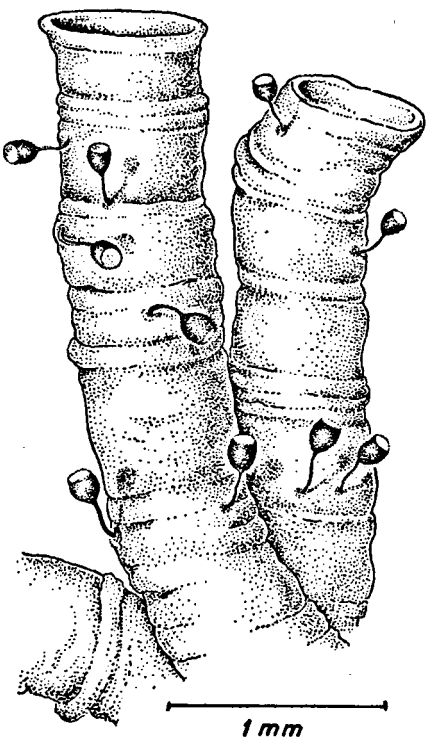

Fig. 15. Serpulid tubes with chalices of an acinet, from Nelson's Spring, Nevis.

are about 1–1.5 mm wide, the aperture is circular, the border smooth. On some of them were fastened a number of empty, transparent, stalked chalices of a suctorian most likely belonging to the family *Acinetidae* (fig. 15).

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SURVEY OF FRESH AND BRACKISH-WATER POLYCHAETES

The tabular enumeration shows that:

1) the number of purely fresh-water species amounts to 31, and a great part of these belong to the *Nereidae* (here including the *Lycastinae,* which are considered by some authors as a special family, *Lycastidae*), viz. 17 species, and to the *Sabellidae,* 7 species.

2) the number of species known to occur exclusively in brackish water amounts to 57 (16 nereids). A great number of them (21) were first found in Chilka Lake, on the northeast coast of India, and many of them are known only from this locality.

3) 8 species are found in both brackish and fresh water.

4) the number of species marked "brackish (marine)" amounts to 29. These are species which in reality are marine, but are more or less adapted to environments of varying salinity. Most probably a far greater number of polychaetes possess this adaptibility; the species listed here are those mentioned in the papers I have studied which deal with the fauna of areas of typically euryhaline or brackish character, e.g. the Baltic, the German haffs, the Zuiderzee, etc.

5) 4 species only are found to occur in marine, brackish *and* fresh regimens, viz. 3 nereids and 1 sabellid, i.e. representatives of the very two families which have the greatest number of members in fresh water. — There is no doubt that nereids (perhaps especially *Neanthes lighti* Hartm. and *Nereis diversicolor* O. F. Müll., as shown by R. J. SMITH) are species which are particularly favourable subjects for studies on tolerance of varying salinities, i.e. in osmotic regulation.

Species	*Locality*	*Habitat*	*Author*
Polynoidae			
Harmothoe sarsi (Kinb.)	Gulf of Finland	brackish (marine)	SEGERSTRÅLE 1949
— *waahli* Kinb.	Swan River (Austr.)	brackish? (marine)	MONRO 1938
Lepidonotus squamatus (L.)	Zuiderzee	brackish (marine)	HORST 1922
Pilargiidae			
Ancistrosyllis constricta South.	Chilka Lake (N.E. India)	brackish	SOUTHERN 1921
Nereidae			
Dendronereis aestuarina South.	Gangetic Delta	brackish	SOUTHERN 1921
Dendronereides heteropoda South.	Gangetic Delta	brackish, fresh	SOUTHERN 1921, FAUVEL 1932
Tylonereis fauvelli South.	Chilka Lake	brackish	SOUTHERN 1921
Leonnates ehlersi Aug.	Swan River	brackish? (marine)	MONRO 1938
Leptonereis pandoensis Monro	Uruguay	fresh	MONRO 1937
Ceratocephala osawai Izuka	Japan	brackish	INOMATA 1927, MIYADI 1932
Tylorhynchus chinensis Gr.	Tonkin	brackish, fresh	NGUYEN-CONG-TIEN, 1930
Chinonereis edestus Chamb.	China	fresh	CHAMBERLIN 1924
Ceratonereis erythraensis Fauv.	Swan River	brackish? (marine)	MONRO 1938
Stenoninereis martini n.sp.	St. Martin (Antilles)	brackish	this paper
Nereis chilkaensis South.	Chilka Lake, Madras	brackish	SOUTHERN 1921, FAUVEL 1932
— *culveri* Webster	Coast of New Jersey	brackish?, fresh	WEBSTER 1879
— *diversicolor* O. F. Müll.	Denmark, German "haffs", Slovenia, Netherlands	fresh, brackish (marine)	MENDTHAL 1890, NUSSBAUM 1901, GRAVIER 1901, HORST 1920,1922, AUGENER 1932, DE VOS 1954
— *glandicincta* South.	Gangetic Delta	brackish	SOUTHERN 1921, FAUVEL 1932
— *japonica* Izuka	Japan	brackish, marine	IZUKA 1908, 1912
— *limnicola* Johns.	Lake Merced (Calif.)	fresh	JOHNSON 1903
— *nouhuysi* Horst	Celebes	fresh	HORST 1918
— *oxypoda* Marenz.	Swan River	brackish? (marine)	MONRO 1938
— *pelagica* L.	Zuiderzee	brackish (marine)	DE VOS 1936
— *reducta* South.	Chilka Lake	brackish	SOUTHERN 1921
— *sakhalinensis* Okuda	Lake in Sakhalin	brackish	OKUDA 1935

Species	*Locality*	*Habitat*	*Author*
— *virens* Sars	European coasts, Zuiderzee, New England	brackish (marine)	HAMAKER 1898, JOHNSON 1903, DE VOS 1936
— spec.	Lake Palaeostrow, Mingrelia (Transcaucasia)	fresh	LEUCKART (teste GRAVIER 1901)
— spec.	Trinidad (B.W.I.)	fresh	VON KENNEL 1883
Perinereis brevicirris var. *brevicirris* Gr.	Rice fields in southern Korea	fresh	AOYAMA 1931
— *cavifrons* Ehl.	Gangetic Delta	brackish (marine)	FAUVEL 1932
— *cultrifera* Gr.	European coasts	brackish (marine)	GRAVIER 1901
— *longipes* St. Joseph	Coast of France	brackish (marine)	GRAVIER 1901
— *marjorii* South.	Chilka Lake	brackish	SOUTHERN 1921
— *seurati* Grav.	Gambier Island (near Adelaide, Austr.)	fresh	GRAVIER 1905
— *vancaurica* Ehl.	Nicobar Islands	brackish (marine)	GRUBE 1867
Neanthes lighti Hartm.	California	brackish	HARTMANN 1938
— *meggitti* Monro	Rangoon	brackish	MONRO 1931
— *oligohalina* Rioja	Gulf of Mexico	brackish	RIOJA 1946
— *salloni* Hartm.	Salton Sea (Calif.)	brackish	HARTMANN 1938
— *succinea* (Frey & Leuck.)	Gulf of Mexico, Lake Merritt (Calif.), Caucasia, Zuiderzee	brackish (marine)	RIOJA 1946, HARTMANN 1938, ANNENKOVA 1929, HORST 1922, DE VOS 1954
Lycastis abiuma Grav.	I. Marajó (Brazil)	brackish	CORREA 1948, AUGENER 1936
— *geayi* Grav.	Ouanary River (Fr. Guiana)	fresh	GRAVIER 1901, CORREA 1948
— *hawaiiensis* Johns.	Honolulu, Java	fresh	JOHNSON 1903, HORST 1909, CORREA 1948
— *indica* South.	Cochin Backwater (S.W. India), Gangetic Delta, Chilka Lake	brackish	SOUTHERN 1921, CORREA 1948
— *longicirris* Takah.	Formosa	fresh	TAKAHASHI 1931, CORREA 1948
— *ouanaryensis* Grav.	French Guiana, Suriname, Puerto Plata	brackish, fresh (marine)	GRAVIER 1901, CORREA 1948, AUGENER 1936
— *ranauensis* Feuerb.	Lake Ranau (Java)	fresh	FEUERBORN 1932, CORREA 1948
— *senegalensis* St. Joseph	Senegal	brackish	ST. JOSEPH 1901
— *siolii* Correa	Amazon River	fresh	CORREA 1948
Lycastella quadraticeps Gay	Chile, Straits of Magellan, S.W. Africa, New Zealand	brackish, fresh (marine)	EHLERS 1897
Lycastoides alticola Johns.	Sierra Laguna (Calif.)	fresh	JOHNSON 1903, HARTMAN 1938
Lycastopsis amboinensis Pfl.	Amboina	fresh (in sheaths of coco leaves)	PFLUGFELDER 1933
— *augeneri* Okuda	Hokkaido, Sakhalin, Vladivostok	brackish and salt	OKUDA 1934
— *beumeri* Aug.	Black Sea, Amboina	brackish (marine)	LA GRECA 1945
— *catarractarum* Feuerb.	E. Java, Sumatra	fresh	FEUERBORN 1932
— *hummelincki* Aug.	Bonaire, Curaçao	fresh, brackish	AUGENER 1933, this paper
— *littoralis* (Gr.)	Brazil	brackish or fresh	GRUBE 1872
— *tecolutlensis* Rioja	Tecolutla River (Mex.)	brackish	RIOJA 1946
Nephthyidae			
Nephthys fluviatilis Monro	Uruguay	fresh	MONRO 1937
— *oligobranchia* South.	China, Chilka Lake	fresh	OKUDA 1943, SOUTHERN 1921
— *polybranchia* South.	China, Chilka Lake, Cochin Backwater	brackish	SOUTHERN 1921, FAUVEL 1932
Glyceridae			
Glycera alba var. *cochinensis* South.	Cochin Backwater	brackish	SOUTHERN 1921
Glycinde oligodon South.	Chilka Lake	brackish	SOUTHERN 1921
Glycinde sp.	Sakhalin	brackish	OKUDA 1935
Eunicidae			
Marphysa gravelyi South.	Chilka Lake	brackish	SOUTHERN 1921
— *sanguinea* (Mont.)	Swan River	brackish (marine)	MONRO 1938
— spec.	Near Madras	brackish	AIYAR 1931

Species	*Locality*	*Habitat*	*Author*
Onuphiidae			
Diopatra variabilis South.	Chilka Lake	brackish	SOUTHERN 1921
Lumbrinereidae			
Lumbrinereis polydesma South.	Chilka Lake	brackish	SOUTHERN 1921
— *simplex* South.	Chilka Lake	brackish	SOUTHERN 1921
— spec.	Trinidad	fresh	VON KENNEL 1883
Ariciidae			
Haploscoloplos kerguelensis Mc'Intosh	Swan River	brackish? (marine)	MONRO 1938
Scoloplos marsupialis South.	Chilka Lake	brackish	SOUTHERN 1921
Spionidae			
Spio bengalensis Willey	Lower Bengal	brackish	WILLEY 1908
Prionospio japonicus Okuda	Japan	brackish	OKUDA 1935
— *spongicola* n.sp.	Trinidad	brackish	this paper
Polydora ciliata Johnst.	Cosmopolitan, Zuiderzee	brackish (marine)	GRAVIER 1901, HORST 1920, 1921
— *elegans*	Zuiderzee	brackish (marine)	DE VOS 1954
— *hoplura* Clap.	Alkmaarder Meer (Netherl.)	brackish (marine)	HORST 1920
— *kornelli* Willey	Chilka Lake	brackish	SOUTHERN 1921
— *redekei* Horst	Alkmaarder Meer, Zuiderzee	brackish	HORST 1920, DE VOS 1954
— *uncatiformis* Monro	Uruguay	brackish	MONRO 1938
— spec.	Aruba	fresh or brackish	this paper
— (*Carazzia*)*kempi* South.	Chilka Lake	brackish	SOUTHERN 1921
Boccardia brachycephala Hartm.	California	brackish	HARTMAN 1938
Pygospio elegans Clap.	Bay of Finland, the Baltic, Zuiderzee	brackish (marine)	RENFORS 1932, AUGENER 1928, DE VOS 1954
Microspio atlantica Mesnil	Bonaire	brackish (marine)	AUGENER 1933
Cirratulidae			
Streblospio shrubsoli (Buch.)	Denmark, the Thames	brackish (marine)	E. WESENBERG-LUND 1941, HORST 1922
— *dekhuyzeni* Horst	Zuiderzee	brackish	HORST 1922, DE VOS 1954
Capitellidae			
Barantolla sculpta South.	Gangetic Delta	brackish	SOUTHERN 1921
Eisigella ouanaryensis Grav.	Ouanary River	fresh	GRAVIER 1901
Heteromastus similis South.	Chilka Lake, Uruguay	brackish, fresh	SOUTHERN 1921, MONRO 1937
— *filiformis* Clap.	Denmark, Zuiderzee	brackish (marine)	WESENBERG-LUND 1941, DE VOS 1936, 1954
Mastobranchus indicus South.	Gangetic Delta	brackish	SOUTHERN 1921
Notomastus spec.	Inzai-Ko (Japan)	brackish	OKUDA 1935
Maldanidae			
Euclymene annandalei South.	Chilka Lake	brackish	SOUTHERN 1921
Oweniidae			
Myriochele picta South.	Chilka Lake	brackish	SOUTHERN 1921
Sternaspidae			
Sternaspis costata Marenz.	Chilka Lake	brackish (marine)	SOUTHERN 1921
Ampharetidae			
Alkmaria romijni Horst	North Holland, Zuiderzee, Denmark	brackish	HORST 1919, 1920, DE VOS 1936, 1954, WESENBERG-LUND 1941
Hypania invalida (Gr.)	Caspian Sea, Dnjeper	brackish, fresh	ANNENKOVA 1929
Hypaniola kowalewskii (Grimm)	Caspian Sea	brackish	ANNENKOVA 1929
Microsamythe ryckiana Aug.	River Rück at Greifswald	brackish	AUGENER 1928
Parhypania brevispina (Gr.)	Caspian Sea	brackish	ANNENKOVA 1928

Species	*Locality*	*Habitat*	*Author*
Terebellidae			
Amphitrite figulus (Dal.)	Zuiderzee	brackish (marine)	Horst 1922
Sabellidae			
Caobangia billeti Giard	Tonkin	fresh	Giard 1893
Demonax leucaspis Kinb.	Swan River	brackish? (marine)	Monro 1938
Dybowscella baicalensis Nussb.	Lake Baikal	fresh	Nussbaum 1900, Dybowski 1923
— *godlewski* Nussb.	Lake Baikal	fresh	Nussbaum 1900, Dybowski 1923
Fabricia sabella Ehrenb.	Caspian Sea, Denmark	brackish, fresh (marine)	Dybowski 1923, Wesenberg-Lund 1941
Haplobranchus aestuarinus Bourne	Thames, Liffey (Ireland), Netherlands, Denmark, Caspian Sea	brackish, fresh	Bourne 1883, Horst 1921, 1922, Dybowski 1923, Wesenberg-Lund 1941
— *balticus* Karling	Bay of Finland	brackish	Karling 1933
Laonome indica South.	Chilka Lake	brackish	Southern 1921
Manayunkia aestuarina (Bourne)	Zuiderzee, North Holland	brackish	de Vos 1954
— *africana* Monro	Matadi (Congo River)	fresh	Monro 1939
— *baikalensis* Nussb.	Lake Baikal	fresh	Nussbaum 1900
— *caspica* Annenk.	Caspian Sea	brackish	Annenkova 1929
— *eriensis* Krecker	Lake Erie	fresh	Krecker 1939
— *polaris* Zenkev.	Coast of Murman	brackish	Zenkevitch 1935
— *speciosa* Leidy	New England, Lake Erie	fresh	Pettibone 1953
— *spongicola* South.	Chilka Lake	brackish	Southern 1921
Oridia rivularis Annenk.	Schantar Isl. (Sea of Okhotsk)	brackish	Annenkova 1929
Potamilla leptochaeta South.	Chilka Lake	brackish	Southern 1929
Serpulidae			
Tricopomatus macrodon South.	Cochin Backwater, Madras	brackish	Southern 1921
Marifuga cavatica Abs. & Hr.	Herzegovina	fresh	Absolon & Hrabě 1930, Augener 1932, Komarek 1954
Mercierella enigmatica Fauv.	Denmark, Gt. Britain, France, Spain, Tunisia, Caucasia, Swan River	brackish, fresh	Seurat 1927, Annenkova 1929, Monro 1938, Wesenberg-Lund 1941
Mercierellopsis prietoi Rioja	Tecolutla	brackish	Rioja 1945
Sphaeropomatus miamiensis Treadw.	Miami River (Fla.)	brackish	Treadwell 1934
Spirorbis spirorbis L.	The Baltic	brackish (marine)	Augener 1928
	Terrestrical Polychaeta		
Nereis belawanensis Pflugf.	Sumatra (burrows in the earth)		Pflugfelder 1933
— *tenuipalpa* Pflugf.	Sumatra (burrows in the earth)		Pflugfelder 1933
— *vitabunda* Pflugf.	Sumatra (burrows in the earth)		Pflugfelder 1933
Lycastis meraukensis Horst	Merauke (New Guinea) (decayed wood of sago palm)	brackish?, fresh	Horst 1919, Correa 1948
— *nipae* Pflugf.	Sumatra (axils of nipa palm)	fresh	Pflugfelder 1933
— *terrestris* Pflugf.	Sumatra (burrows in the earth)		Pflugfelder 1933, Correa 1948
— *vivax* Pflugf.	Sumatra (Rhizophora belt)	brackisch	Pflugfelder 1933, Correa 1948
Lycastopsis amboinensis Pflugf.	Amboina (leaf sheaths of coco palm)	fresh	Pflugfelder 1933, Correa 1948

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