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PRIAPULOIDEA, SIPUNCULOIDEA AND ECHIUROIDEA,

by Elise WESENBERG-LUND (Copenhagen).

(With 1 plate.)

The present material of Gephyreans belongs to the Institut royal des Sciences naturelles de Belgique. It originates from different parts of the world, boreo-arctic as well as subtropical and tropical regions. It contains 13 species one of which is new to science.

The species are :

Priapuloidae :

1. *Priapulus bicaudatus* DAN. & KOR. — N. and E. of Iceland.

Sipunculoidea :

2. *Sipunculus nudus* L. — Plymouth.
3. *S. robustus* KEF. — Banda Neira.
4. *S. titubans* SEL. var. *diptychus* FISCHER. — French Guinea.
5. *Phascolosoma nigrescens* KEF. — Angola.
6. *Ph. varians* KEF. — Tortugas Key.
7. *Ph. agassizii* KEF. — California.
8. *Golfingia liljeborgi* (DAN. & KOR.). — E. of Iceland.
9. *Aspidosiphon elegans* (CHAM. & EYSENH.). — Tortugas Key.
10. *A. sp.* — Récif Fronpant.

Echiuroidea :

11. *Urechis caupo* FISHER & MAC GINITIE. — California.
12. *Ochetostoma pellucidum* (FISCHER). — French Guinea.
13. *O. mercator* n. sp. — Angola.

As regards the geographical distribution the species treated here are of only little interest, yet the following remarks may be made: *Aspidosiphon elegans* was hitherto not known from the western hemisphere; the distribution of *Phascolosoma nigrescens* along the West coast of Africa is considerably widened southwards, and *Ochetostoma pellucidum* was not found since the original description was given.

I beg to refer my best thanks to the direction of the Institut royal des Sciences naturelles de Belgique for confiding this material to me.

PRIAPULOIDEA.

Priapulus bicaudatus DANIELSSEN, 1868.

Syn. : *Priapulopsis typicus* KOR. & DAN., 1875, p. 108.

Priapuloides typica KOR. & DAN., 1877, p. 3.

Localities. — About 66° 27' Lat. N., 21° Long. W., the bank W. of Hunaflói Djup, Iceland, 150-190 m, 16/20-VI-1938, 2 spec. — About 66° 20' Lat. N., 12° 28' Long. W., N. E. of Digranes Flak (E. of Iceland); 180-220 m, 20/24-VI-1938; 12 spec.

Remarks. — The specimens are typical, all of a deep red-brown colour and rather small.

Distribution. — The species is restricted to the northern parts of the Atlantic; it ranges from Finmarken and Spitzbergen in the East to the Davis Strait in the West. It was formerly reported from N. as well as E. of Iceland (E. WESENBURG-LUND, 1937, p. 4).

SIPUNCULOIDEA.

Sipunculus nudus LINNÉ, 1767.

Locality. — Plymouth, 6.VI.1930.

Remarks. — Five big specimens, the longest one with proboscis protruded measured 28 cm, the smallest one 18 cm with proboscis only partly protruded. — The colour in alcohol is yellowish-white.

This well-known and widely-spread species is previously known from the Channel and even from off Plymouth.

Distribution. — Cosmopolitan.

Sipunculus robustus KEFERSTEIN, 1865.

(Plate I)

Locality. — Banda Neira, 1935.

Remarks. — Two big specimens with the following measures; trunk : 250 mm and 201 mm; introvert (in both only partly protruded) : 35 and 43 mm; circumference : 75 and 70 mm resp. The colour is dark rusty-brown. The body is very strongly ribbed with deep furrows between the longitudinal muscles; the ribs continue almost to the hindmost end. Owing to the strong development of the longitudinal as well as the circular muscles the surface of the animal is cut up into deeply impressed quadratic areas. The posterior end has no bulbous appearance or any collar as described and figured by A. C. STEPHEN (1941, pl. I, fig. 2, pl. II, fig. 3). I am inclined to regard the collar-like expansion in his specimen as due to preservation and contraction, whereas the bulbous appearance of his small specimen is considered due to juvenile age. The protruded part of the introvert is covered with numerous soft and large, triangular, scale-like papillæ pointing backwards and arranged in irregular rings.

In the largest specimen there are 30 muscle bands at the level of the anus and 31 farther backwards; in the smaller specimen the corresponding figures are 27 and 27. The four retractor muscles arise at the same level. The spindle muscle arises rather far in front of the anus and is not fastened posteriorly. The intestine was filled with coarse sand and pebbles and much distended and easily ruptured by the slightest touch of the needle, therefore the rectal diverticulum was not discovered. The convolutions were fastened to the body-wall by means of numerous fixing-muscles. On each side of the anal opening was a little tuft-like organ attached to the mesentery. The anus is far behind the external openings of the segmental organs; it is bounded by two longitudinal muscles, and it is characteristic that there are two muscle-ribs in front of it and only one behind it. The segmental organs are very long and of yellowish colour with a remarkable warty and rough appearance as if they were covered all over with small vesicles; they are free for nearly their whole length. Their external apertures were between the 4th and the 5th longitudinal muscle bands.

There are two Polian canals with numerous very small but also very distinct Polian tubules. — As far as I can see from

literature these two features : the small vesicles on the surface of the segmental organs and the Polian tubules have not been noticed before (fig. 1 a and b).

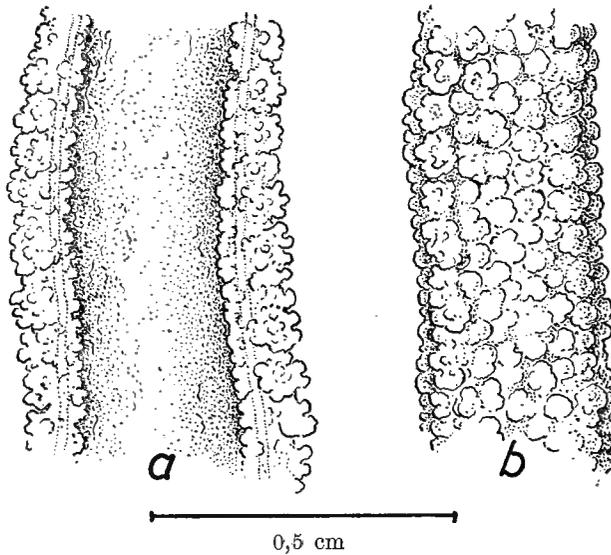
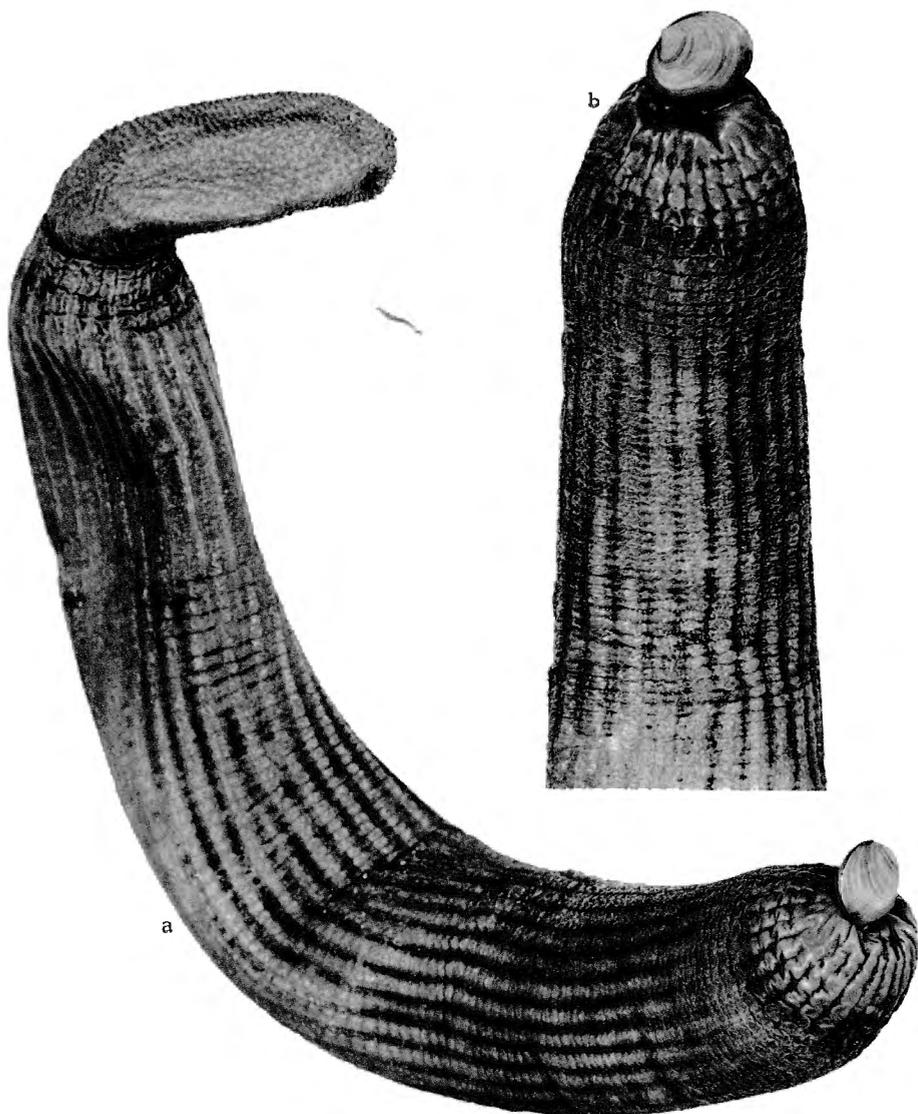


Fig. 1. — *Sipunculus robustus* KEF.

- a) A cut of oesophagus with midventral and middorsal Polian tubes with numerous tubules.
- b) A cut of a segmental organ to show the structure of the surface.

In both specimens a small bivalve was found fastened to the posterior end of the body. A wrinkle of the skin had been seized and got jammed between the two shells, and the bivalve was partly dragged into the cavity formed by the introversion of the hindmost end of the trunk (plate I). This does not seem to be due to chance; it seems to be a rather common phenomenon; H. SÄTO (1935 p. 302) writes that in the majority of his specimens from the Palau Islands in the Carolines a little bivalve was also found in the same place, and A. E. SHIPLEY (1899 p. 158) writes that he has observed the same thing, but in another species, viz. *S. nudus* L. Finally it should be mentioned that H. SÄTO (op. cit.) writes that the natives of the



Sipunculus robustus KEFERSTEIN, 1865.
a) Whole animal with partly protruded introvert.
b) Posterior end of the second specimen.

E. WESENBERG-LUND. - Priapulioidea, Sipunculoidea
and Echiuroidea.

Caroline Islands catch this huge Sipunculid by means of a wooden spear and use it as food. It is often found at the coral sand shores.

Distribution. — The species seems to be rather common in the East Indies (Singapore, Timor, Billiton, Ceram) and in the Oceania (the Caroline and the Marquesas Islands); furthermore the Bay of Bengal (the Mergui Archipelago). From the tropical parts of the Atlantic Ocean it is known from Barbados and Curaçao (A. Ten Broeke, 1925).

Sipunculus titubans SELENKA, 1883,

var. *diptychus* FISCHER, 1895.

Locality. — Between the Islands of Tamara and Roumé, French Guinea, about 10m, 10.12.1936.

Remarks. — Two specimens of purple colour, 18 and 20 mm long with the introvert only partly extruded. One of them was opened, and the internal anatomy showed that the ventral retractors take their origins from the third and fourth longitudinal muscle-bands, the dorsal ones from the eleventh and twelfth. In the main species the ventral retractors arise from corresponding bands, but the dorsal ones from the eighth to the eleventh. The retractors remain separate for a very long streak, and all of them arise on the same level as the anus. There are 28 well separated longitudinal muscle-bands, which nowhere anastomose. The nephridia are rather short, they open at a conspicuous distance in front of the anus among the fourth and the fifth muscle.

Distribution. — The variety was described from Accra (Gold Coast), thus the locality here published is not surprising. The main species is known from so widely separated localities as Madagascar, Siam, Guatemala, Punta Arenas; it may evidently be incorporated among the circumtropical species.

Genus *Phascolosoma* and *Physcosoma*.

W.K.FISHER (1952, p. 422-23) has unravelled the confusion as to the synonymie of the generic names *Phymosomum* QUATREFAGES, *Phymosoma* SELENKA, *Physcosoma* SELENKA, *Prophy-mosoma* LAMBERT and *Physconosoma* BATHER, which since QUATREFAGES (1866), who started the confusion, have been used for those species in which the mouth is situated outside and

ventral to the tentacular crown, whereas the brain and the nuchal organ are situated within the latter. The type species with these features was, however, originally described by LEUCKART (1828, p. 22) and called *Phascolosoma granulatum*. Thus the above mentioned generic names used for nearly a century must give way for LEUCKART'S name according to the rules of priority. The fact that the name *Phascolosoma* for a similar long space of time has been used for Sipunculids with the mouth inside the tentacular crown will no doubt bring about some trouble until the generic name *Golfingia* LANKESTER 1885 has been naturalized. We are indebted to the recently deceased W.K. FISHER — for a long time the best connaisseur of Sipunculids and Echiuroids — for the elucidation of these intricate questions of priority and synonymie.

Phascolosoma nigrescens (KEFERSTEIN), 1865.

SYN. : *Phymosoma nigrescens* SELENKA, 1883, p. 72.

Physcosoma nigrescens SHIPLEY, 1898, p. 470.

Locality. — Forta Bay, South of Lobito, Angola, 14,5 m. XIV cruise of the « Mercator » 10.2.1938.

Remarks. — Only one specimen, highly contracted, measuring 15 mm; proboscis deeply invaginated. The colour is light-yellowish, all over peppered with dark brown papillae. The dorsal side is darker than the ventral, especially on the proboscis, at the base of which the papillae are largest and most densely crowded and prominent; each of them is covered with numerous small, chitinous plates. Close to the tentacular crown are about 28 rings of closely set hooks; behind the rings is an area where hooks and papillae are irregularly scattered. The hooks have a strongly curved, long apical tooth, very pointed and almost without any hump at the base of the curvation. They are imbedded in the tissue by a fairly long rod with a bluntly serrated edge lying in prolongation of the basal part of the hook. A canallike transparent streak is seen inside the hook, closely following the convex side of it. Between every two of the rings of hooks are small perforated papillae lying in the centre of an elliptical glandular body.

There are 22 separate muscle-bands in the middle of the trunk, a few more in the posterior part on account of a few bifurcations. The muscles do not anastomose. The ventral retractors fasten in the posterior third of the trunk, the dorsal ones

slightly in front. On account of the strong contraction the intestine was ruptured at several places, and it was not possible to clear out the number of convolutions as well as it was impossible to state the presence of a diverticulum. The rectum has well developed wing-muscles, and the anus is at the same level as the external apertures of the nephridia. The Polian vessel carries a number of small, rounded vesicles on the dorsal side of the oesophagus. — The segmental organs are light rusty-red, slender tubes reaching as far backwards as to the fastening of the retractor muscles. They are anchored to the body wall in nearly their whole length; proximally they are slightly inflated.

The species is closely related to *Ph. puntarenae* (Gr.), 1859.

Distribution. — *Ph. nigrescens* is widely distributed in tropical and subtropical areas of the Atlantic as well as the Pacific and Indian Oceans. It has formerly been reported from West Africa (Gold Coast), but not so far southwards as Angola (FISCHER, 1895, p. 12).

Phascolosoma varians (KEFERSTEIN), 1865.

Syn. : *Phymosoma varians* SELENKA, 1883, p. 69.

Physcosoma varians TEN BROEKE, 1925, p. 69.

Localities. — Tortugas, St. 20, Bird Reef, 2750 m S. of Fort Jackson, 1 m, 19.7.1937, 2 spec. — Tortugas, St. 21, Bird Reef, S. of Garden Key, 1300 m S. of Fort Jackson, about 1 m, 20.7.1937, 1 spec.

Remarks. — The three specimens from these two closely lying localities are rather small and strongly contracted with the introvert fully withdrawn. The largest one, which was dissected, measures 37 mm, and the following description refers to this specimen. The colour is yellowish brown in alcohol, and the body-wall thick and opaque covered with large papillae densely crowded on the dorsal side especially at the posterior tip of the trunk. The dorsal papillae are dark brown with a colourless, central spot; the greatest of the ventral ones are devoid of pigment. They are all covered with numerous chitinous platelets. — The tentacles are arranged in a semicircle above the mouth. The introvert is about two thirds of the length of the trunk. At the anterior end of it there are about 30 rings of hooks; then follows a girdle devoid of hooks but with small papillae, then a zone with hooks and papillae scattered and mixed, and at last after a narrow, light girdle without either;

the rest of the introvert is densely covered with very large, strongly pigmented papillae on the dorsal side. The hooks are rather characteristic with their terminal portion sharply bent nearly at a right angle. The tooth or «hump» on the concave border is very prominent. The triangular space is separated from the median clear streak. The shape of the hooks closely agree with the figure of E. SELENKA (1883, pl. IX, fig. 124), and the same holds good of the small papillae between the rings of hooks (fig. 125 and 126).

There are 22 longitudinal muscle-bands in the middle of the trunk; only a few anastomoses; they are perfectly fused into a continuous sheet in the region of the introvert. The strong ventral retractors arise from the 2nd to the 9th muscle-bands in the last third of the body; the more slender, dorsal retractors from the 5th to the 8th in the middle of it. A stout spindle muscle arises in front of the anus and is fixed at the posterior end of the trunk. A pair of broad wing muscles on the lateral sides of rectum near anus. The intestinal spiral with a rather well developed sausage shaped diverticle at the base of rectum. The Polian vessel with a number of large, rounded Polian tubules. The segmental organs are long, rusty red tubes attached to the body-wall in 2/3 of their length by a thin mesentery. They are not proximally inflated, and they open to the exterior slightly in front of anus.

Distribution. — *Ph. varians* is a littoral form, very common in the West Indies and in several centres of the western Atlantic: Bahama Isles, Virgin Isles, Barbados, furthermore Bermudas and Ascension Island. In the Pacific it is reported from Rotuma and Funafuti and Formosa.

The species was previously known from the Tortugas Keys and Florida (W. KEFERSTEIN, 1864, p. 48).

Phascolosoma agassizii (KEFERSTEIN), 1866.

Syn. : *Phascolosoma lordi* BAIRD, 1868, p. 92.

Phymosoma agassizii SELENKA, 1883, p. 78.

Phycosoma agassizii CHAMBERLIN, 1919, p. 30.

Locality. — Bay of Monterey, California, 26-7-1933.

Remarks. — Two small specimens, both 9 mm long, pulled out from tubes built of small sand grains knitted together with a fine grey muddy substance and lined with grey ooze. The colour is pale rusty red with a few irregularly scattered trans-

versal spots on the dorsal side. The introvert was fully inverted in both specimens; it carried 20-22 rings of hooks of the characteristic type with the clear streak without any expansion but closely following the convexity of the hook.

Distribution. — Temperate and tropical waters of both hemispheres. The species is one of the most common Sipunculids in the intertidal zone of California, previously known from the locality published here.

Golfingia (Subgenus *Phascolides* FISHER)

liljeborgi (DANIELSSEN and KOREN, 1881).

Locality. — About 66°23' N 12°53' W; North of Digranes Flak, 200-250 m.

Remarks. — Four small specimens, the largest about 15 mm, the smallest 7 mm, the colour in alcohol yellowish-white. In one of them the proboscis is protruded. The specimens are typical with hyaline, smooth skin; the proboscis is devoid of hooks, and in one of them the tentacular crown can be seen, formed by 10 short broad and blunt tentacles. The species was originally described as having only one retractor muscle. This was corrected by HJ. THÉEL (1905) and C. PH. SLUITER (1912), and the specimen dissected by me also showed two retractors embracing the nervecord, but very soon fused into one.

This species belongs to what HJ. THÉEL (op. cit.) in his paper on northern and arctic Sipunculids calls « the abyssorum section », characterized by the slight development or lack of true tentacles. The only species which inside this group possess tentacles are *Golfingia abyssorum* (DAN. & KOR.) and *G. liljeborgi*, and they may easily be separated by the presence of hooks (the former) and the absence of hooks (the latter).

Distribution. — The new locality published here is of fairly great interest, primarily because the species seems to be rather rare, secondarily because it widens its area of distribution considerably. Hitherto it has been recorded only from Spitzbergen (W. FISCHER, 1895, p. 14) and from a few localities in the northern Atlantic, (D. DANIELSSEN & I. KOREN, 1881, and C. PH. SLUITER, 1912). This new locality, west of the east coast of Iceland, is much more westwards than the previously known finding-places. The Norwegian Northatlantic Expedition has taken it at seven localities within an area, which ranges from

72° to 63° N. Lat. and 16° E. to 7° W. Long. and in depths from 412 to 2222 m. The « Princess Alice » in 1889 (C. PH. SLUITER, 1912) has secured it at the following two localities : 72° 37' N. 20° 00' E., 394 m and 79° 28' N. 5° 40' E., 1865 m. All localities are situated in the cold area of the Northern Atlantic, where the bottom temperature constantly is below zero and where the bottom is reported to be soft : clay, Biloculina-clay, or ooze, seldom mixed with gravel.

Phascolion strombi (MONTAGU, 1815).

Locality. — About 66° 20' Lat. N. 12° 28' Long. ; Digranes Flak (East of Iceland), 180-220 m ; 1 spec.

Distribution. — An abundant and very widespread species in arctic and boreal areas ; circumpolar ; Mediterranean ; subtropical ; Antarctic.

Aspidosiphon elegans (CHAMISSE & EYSENHARDT, 1821).

Locality. — Tortugas, Bird Reef (S. of Garden Key), 1300 m S. of Fort Jackson, about 1 m, 20.7.1937.

Remarks. — The trunk of the single specimen measures 14 mm, the partly protruded proboscis 4 mm. The colour is yellowish-white, the skin thin and almost transparent, the papillae only little conspicuous. The anal shield is dark brown, oval in shape ; the anus is in the central part surrounded by four big diamond-shaped platelets forming a cross. The caudal shield is only slightly darker than the skin and bears a great number of furrows radially arranged. The introvert is shorter than the trunk and it carries about 25 complete rings of exceedingly small and densely set hooks ; behind these rings the hooks are more irregularly distributed. The hooks are very characteristic ; they are strongly curved and with a large secondary tooth below the main fang. The light streak is apically bifurcated. In the interspace between the hook-rings and scattered over the area behind these latter are numerous cylindrical or conical, pierced papillae. Both these and the hooks closely agree with the drawings of E. SELENKA (1883, pl. XIV, figs. 207 and 208).

Only little can be said of the internal anatomy. The specimen seems to have been desiccated and the organs were hard and fragile. The longitudinal muscles form a continuous layer ; the

retractors arise near the caudal shield; they are fused into one strong band in nearly their whole length. The segmental organs are long, slender, orange-coloured tubes.

Distribution. — The species is widely distributed in tropical parts of the Pacific, known e. g. from the Malay Peninsula, the Philippines, Funafuti, the Caroline Islands and the Loyalty Islands; it also occurs in the Red Sea. The present finding place is, however, of great interest, because according to the literature available to me it has hitherto not been recorded from the western hemisphere.

Aspidosiphon sp.

Locality. — Recif Fronpant.

Remarks. — Two specimens indeterminable on account of desiccation.

ECHIUROIDEA.

Order *XENOPNEUSTA* FISHER, 1946.

Family *URECHIDÆ* FISHER & MACGINITIE, 1928.

Urechis caupo FISHER & MACGINITIE, 1928.

Syn. — *Echiurus* sp. JOHNSON & SNOOK, 1927, p. 178, fig. 153.

Locality. — Monterey Bay, Elhorn Slough, California, 14.7.1939.

Remarks. — Two specimens of this highly interesting and remarkable animal are present from the same locality from where it originally was described in 1928. The length of them is about 22 cm; it is, however, difficult to give the exact measures on account of the state of preservation. In both of them the proboscis is present. The colour is yellowish-white or brown. I have nothing to add to the excellent and exhaustive description given by W.K. FISHER, the only thing I can mention is that the spiral extensions of the lips of the coelomic apertures of the three pairs of nephridia are much longer than shown in the drawings of this author.

The entire lacking of a system of blood-vessels but on the other side the presence of numerous large blood corpuscles containing hæmoglobin freely floating in the coelomic fluid have justified partly the erecting of a separate order, *Xenopneusta*, within the class *Echiuroidea*, and partly the following consideration

that the genus *Urechis* with its three well-known species «is the last of a very ancient stock, one that may have flowered into many species during paleozoic times. It belongs to the honourable company of *Lingula* and those other aristocrates sometimes referred to as «living fossils» (W. K. FISHER, 1946, p. 265). As regards the unique and remarkable behaviour (especially respiratory movements and feeding habits) as well as the three commensals permanently found in its burrow (a polynoid annelid and two pinnotherid crabs) and the more casual but yet frequent ones (a bivalve, a common shrimp and a goby) reference is made to W. K. FISCHER & G. E. MACGINTTIE (1928b) and W. K. FISHER (1946).

Distribution. — California, always in quiet bays or sloughs in sandy mud.

Order *ECHIUROINEA* BOCK, 1942, FISCHER emend. 1946.

Family *ECHIURIDAE* (de BLAINVILLE, 1827).

Ochetostoma pellucidum (FISCHER, 1895).

Syn. : *Thalassema pellucidum* FISCHER, 1895, p. 19.

Locality. — Between the Islands of Tamara and Roumé, French Guinea, about 10 m; 10.12.1936.

Remarks. — Only a single, rather badly preserved specimen of greyish colour with a slight reddish tinge. The length of the trunk is 18 mm, of proboscis 4 mm; the ventral margins of this latter are not united with each other, not even at the base; proximately the margins are deeply scalloped. The hooks (only one hook is present) are strong, sharply bent and very long. It was difficult to study the internal anatomy because of the bad preservation, only the following few features can be stated: There are 13 broad, well-separated muscle-bands, two pairs of very short, tubular segmental organs; the lateral margins of their funnels are produced into spirally coiled threads about three times as long as the organ itself and exceedingly thin. The annal vessels are tubular structures, a little shorter than one fourth of the length of the trunk.

Distribution. — The species is previously known from West Africa. It was originally described from Whydah in Dahomey (the Slave Coast), and as far as I can see not refound until now.

Ochetostoma mercator n. sp.

Locality. — Farta Bay (Angola), S. of Lobito, about 15 m; 10.2.1938; XIV of the « Mercator ».

Remarks. — Only one specimen is present. The trunk is 25 mm, the proboscis 5 mm long. The colour is yellowish-white in alcohol, the longitudinal muscle-bands are iridescent and shimmering through the rather thin and transparent body-wall. Round the trunk there are 30-35 rings of big, oblong papillae. It is impossible to give the exact number, because the middle portion of the body is much distended, but at both ends the rings are very distinct. Between the rings smaller papillae are irregularly scattered.

The proboscis is short, broad, fleshy and evidently nondeciduous; the margins are perfectly free from each other to the very base; the proximal part of them with several rows of scollops. The strong gold-glimmering hooks are only slightly curved and situated about one mm behind the mouth.

The posterior end is produced into a narrower stem distinctly set off from the trunk and much narrower. In the centre of it the anus is formed as a longitudinal fissure. On each side of it four long, digitiform papillae; two shorter papillae are situated inside the big ones (fig. 2).

The animal was opened in the dorsal midline and unfortunately the interior organs turned up to be rather macerated. The following features could, however, be stated. There are 13 longitudinal muscles, nowhere anastomosing and of the same breadth as the intervals between them, strongly iridescent in green and yellowish colours. Crossing the intervals are numerous separate small muscle bundles of the interior muscle layer, which over the surface of the longitudinal bands form a nearly continuous sheath. The alimentary canal is moderately long; it is ruptured in several places; it is highly convoluted and fastened to the body-wall by means of numerous mesenterial anchoring muscles. Masses of eggs were entangled between these fine fibres. The big convolution turning upwards in the figure (fig. 3) is artificially made in order to make the diverticle visible. In spite of the bad state of preservation the intestine showed a remarkable feature. At the transition between the oesophagus and the longitudinally striated bulbous gizzard is ventrally a proportionally big, stalked diverticle with thick walls; it seems absolutely to be connected with the lumen of the intestine. On the hind-

most part of the intestine, about 3 mm from anus a much smaller, globular, stalked diverticle is situated at the side turning towards the nerve-cord; most probably this vesicle is the intestinal coecum, in which the ciliated groove ends.

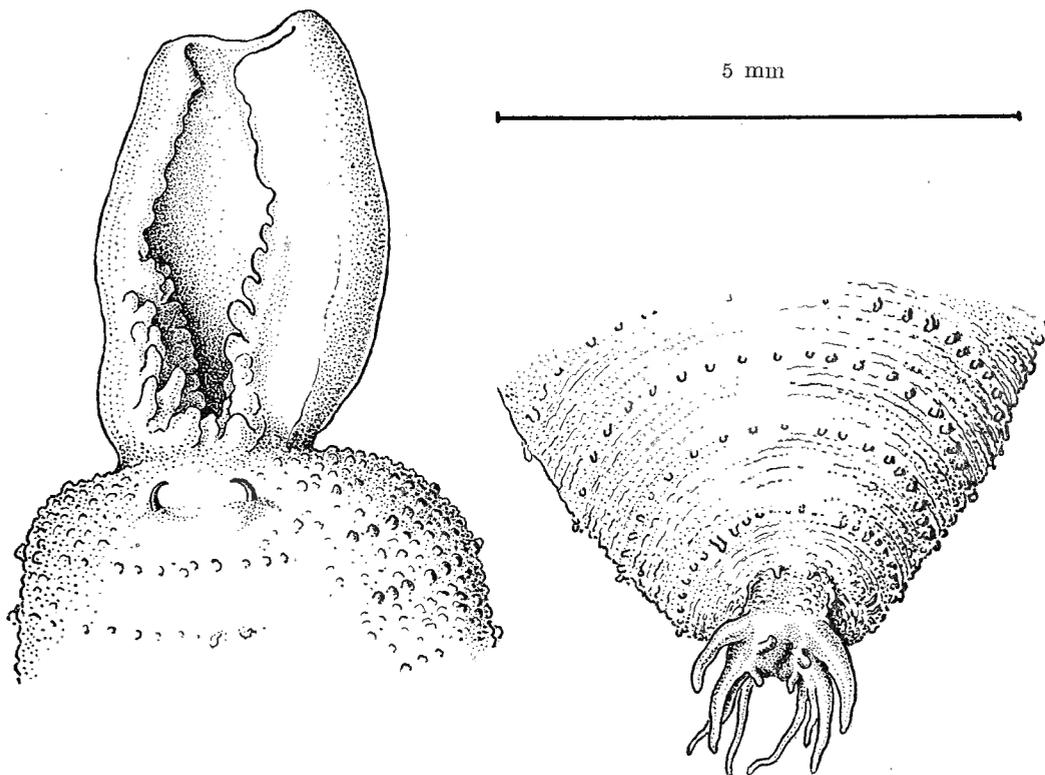


Fig. 2. — *Ochetostoma mercator* n. sp.
Anterior and posterior end.

The intestine is narrow, and the different sections of it are impossible to be distinguished with certainty. The anterior convolutions were empty, the following filled with very fine mud on which the worm evidently feed, but by far the greatest part was filled by lots of fecal pellets formed as elongated ellipsoids.

There are two anal vesicles, tubular and unbranched, 8-9 mm long.

Two pairs of tubular nephridia of equal size; the lateral lips of their ciliated funnels are elongated into two thread-like spirals, only about 1/4 of the length of the organ proper; the anterior pair is close behind the level of the setae; the openings to the exterior are at the border between the first muscle-band and the second interval. Both pairs are perfectly free from the body-wall and were empty.

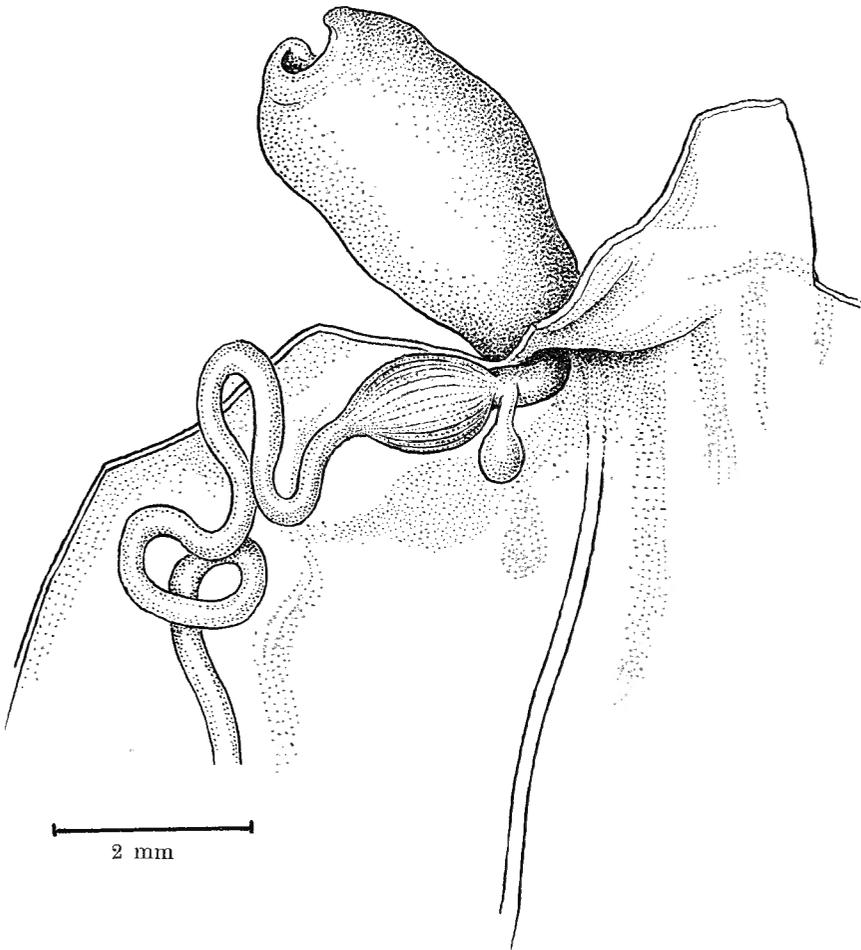


Fig. 3. — *Ochetostoma mercator* n. sp.
Opened dorsally; note the oesophageal diverticle.

The reasons, which to me seem to justify the establishment of a new species, are primarily the peculiar posterior tip of the body and secondarily the presence of the oesophageal diverticle. As far as I know only one *Ochetostoma* is known with papillae at the hindmost tip, viz. *O. formulosum* (K. LAMBERT, 1883), figured and discussed by C. Ph. SLUTTER, 1902, p. 48, pl. IV, fig. 13, but the papillae in this species are much shorter, more numerous and evidently arranged in a circle — by the way : the figure is rather deficient. Secondarily : an oesophageal diverticle has hitherto not been described.

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