SOME FREE-LIVING MARINE NEMATODES

By WOLFGANG WIESER

1. Taxonomy of the Thoracostoma species

The bottom-samples of the Galathea-Expedition hitherto available contained three species of nematodes. These were found at the following stations:

Station

281. Locality: SW of Ceylon, 3°38′N, 78°15′E. Bottom: Globigerina ooze. Depth: 3300-3400 m. Date: 10. 4. 1951.
626. Locality: Tasman Sea, 42°10′S, 170°10′E. Bottom: Glob. ooze. Depth: 595 m. Date: 20. 1. 1952.
664. Locality: Kermadec Trench, 36°34′S, 178°57′ W. Bottom: clay. Depth: 4510-4570 m. Date: 24. 2. 1952.

All three species belong to the genus *Thoracostoma*. Two species are new and the third is known from off the Chilean coast (WIESER 1953 a). The taxonomy of the genus *Thoracostoma* has been revised in an earlier paper (loc. cit.), but the species from the Galathea-Expedition render the status of the said genus still more complicated. One of the main problems is due to our incomplete knowledge of the buccal armature in the two related genera *Synonchus* and *Thoracostoma*. Satisfactory information on this point can be gained only by means of "en face" observation of the head, a method which has been applied only in a very small number of the known species, e. g. in *Thoracostoma setosum* and *T. arcticum* by DE MAN (1904).

Owing to this deficiency the two genera *Synonchus* and *Thoracostoma* are not distinctly separated. It is true, that the shape of the tail is commonly used as a distinguishing character, it being clavate in *Synonchus* and short-cylindrical in *Thoracostoma;* but from what I can infer from the literature I conclude that the structure of the buccal armature should provide another – and more significant – means of segregating these two genera. I consider the presence of a number of distinct, regularly arranged, triangular plates a character typical of *Synonchus* which has been described in *S. fasciculatus (= Fiacra brevisetosa)* by STEKHOVEN & ADAM (1931) and by BRESSLAU & STEKHOVEN (1940), in *S. strasseni* and *S. comes* by TUERK (1903), and in *S. longisetosa* by SOUTHERN (1914). In *Thoracostoma* the buccal armature always appears to be of a different structure. However, this question is not yet settled, since a number of species are insufficiently described, and we must resort to the shape of the tail to distinguish between *Synonchus* and *Thoracostoma*. One of my new species, viz. *Thoracostoma galatheae,* possesses a short and rounded tail as is typical of this genus, but a cephalic and stomodaeal capsule which are very much like those of *Synonchus fasciculatus* or *S. comes* quoted above. Owing to the uncertainties mentioned I considered the shape of the tail the more important generic feature for the time being and referred the said species to *Thoracostoma,* establishing a new subgenus, *Synonchoides,* for it. I feel this the more justifiable since I could not make out the structure of the gubernaculum with certainty in the two present males. However, I am convinced that when increased knowledge of this and related species has been obtained the subgenus *Synonchoides* should be given generic rank, and that it will find its taxonomic position between the genera *Thoracostoma* and *Synonchus*.

Another problem concerns the well known subgenera *Thoracostoma* s. str. and *Pseudocella*. As to their status I wrote in my earlier paper: "The two subgenera *Pseudocella* FILIPJEV 1927 and *Thoracostoma* s. str. are well established. Not only are they distinguished by the presence or absence of ocelli, but also – as already stated by FILIPJEV – by the shape of the spicular apparatus: in the former subgenus the spicula are regularly bent and almost even in thick-

ness, the accessory piece is provided with a *rectangular* caudal apophysis; in *Thoracostoma* s. str. the spicula consist of two portions, the proximal being narrower than the distal one and bent at a different angle, the accessory piece is closer to the spicula and the apophysis *not* rectangularly bent."

On the basis of this diagnosis the species *Thoracostoma philippinensis* ALLGEN 1951 was referred to *Thoracostoma* s. str. though it was said to be devoid of ocelli. I thought at this time that ALLGEN might have overlooked the ocelli. However, I have now more than 20 specimens of a new species *T. bruuni,* at hand which are definitely devoid of ocelli but the spicular apparatus of which is in full accordance with the definition of the subgenus *Thoracostoma* s. str. Hence the absence or presence of ocelli is ruled out as a distinguishing character between the subgenera *Thoracostoma* s. str. and *Pseudocella.* There remains the possibility of establishing a new subgenus for species devoid of ocelli but provided with a genital armature as in *Thoracostoma* s. str. I refrain from doing so since more should be known about this group. *Thoracostoma bruuni* is furthermore characterized by the possession of a vast buccal cavity and it may be distinguished from all other species of *Thoracostoma* by this additional character.

Finally, I found the male of *Thoracostoma (Pseudocella) kreisi* WIESER 1953, belonging to group B) in my previous paper. I now consider the differences in the shape of the cephalic capsule between this group and the remaining species of *Pseudocella* as sufficiently important to establish a new subgenus, *Corythostoma.*

Summing up the genus *Thoracostoma* MARION comprises now 4 subgenera the key to which is as follows:

A. Spicula consisting of two portions, the proximal being narrower than the distal one and bent at a different angle; accessory piece close to the spicula without caudal apophysis. Cephalic capsule long, well developed; interlobar incisions present, narrow or wide; interlobular fenestrae conspicuous, regularly to irregularly oval; no anterior lobes (for the nomenclature of the leptosomatide head cf. WIESER 1953b):

   Subg. *Thoracostoma* s. str.

   1. Ocelli present.
      To this section belong all species referred to *Thoracostoma* s. str. as groups A), B), and C), in my previous paper (1953a).
   2. Ocelli absent.
      a. Amphids in posterior portion of cephalic capsule; gubernaculum with *anterior* apophysis:
         T. (T.) philippinensis ALLGEN 1951
      b. Amphids in middle portion of cephalic capsule; gubernaculum without anterior apophysis:
         T. (T.) bruuni n. sp.

B. Spicula simple, of even thickness, regularly curved; accessory piece with *caudal* apophysis. Cephalic capsule as in *Thoracostoma* s. str. Amphids completely surrounded by the lobes of the cephalic capsule. No ocelli:

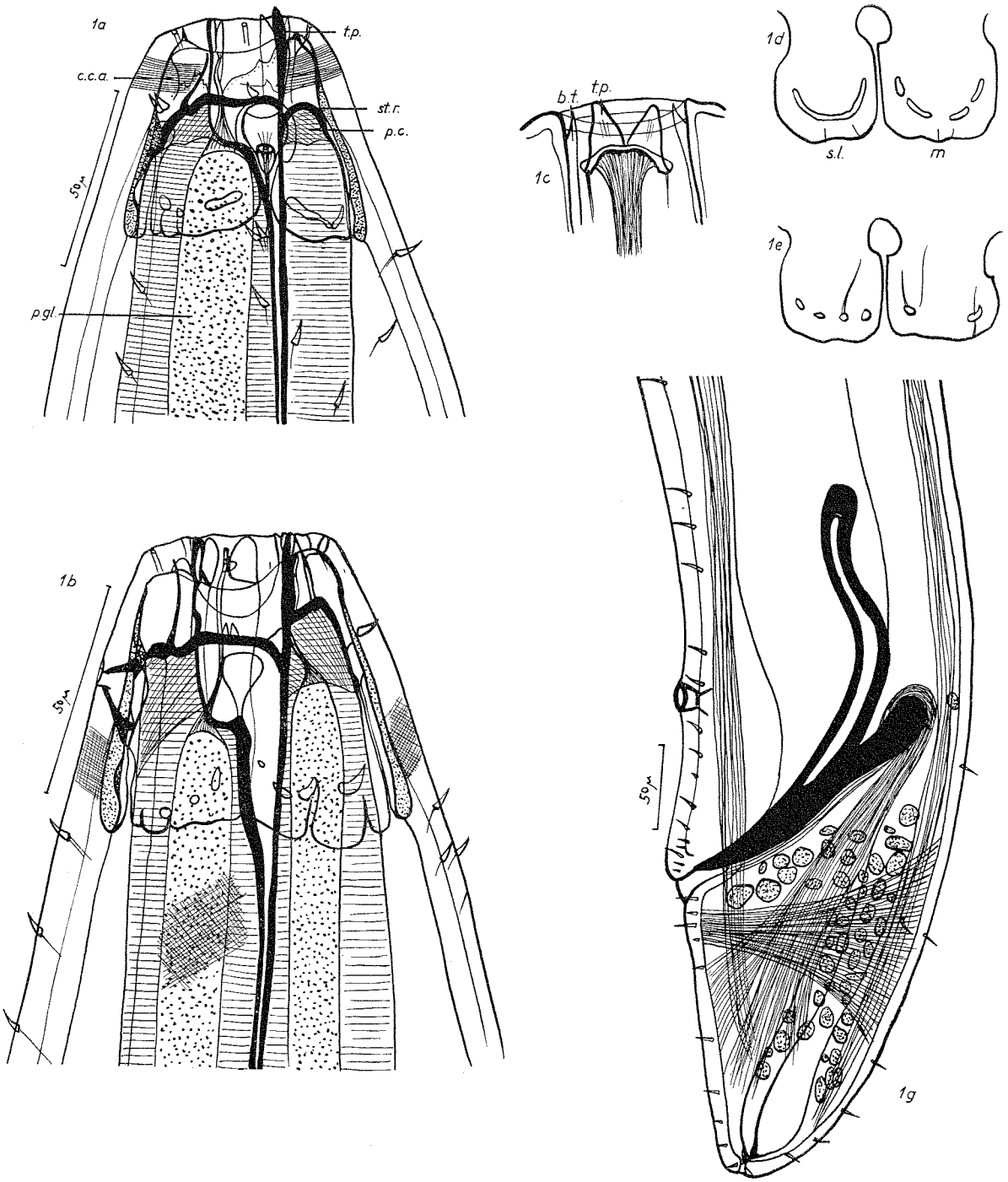
   Subg. *Pseudocella* FILIPJEV 1927
   To this subgenus belong all species described as group A) of *Pseudocella* in my previous paper.

C. Spicula as in *Pseudocella.* Cephalic capsule short, lobes weakly developed and separated by notches only; neither incisions nor fenestrae present; anterior lobes present. Amphids totally or with their greatest portion situated behind the posterior edge of the cephalic capsule. No ocelli:

   Subg. *Corythostoma* subg. nov.

   1. Amphids in male less than one tenth of corresponding diameter wide. Cephalic setae more than one third of cephalic diameter long. Interlobar notches of cephalic capsule shallow:
      T. filipjevi KREIS 1928
   2. Amphids in male 30% of corresponding diameter wide. Cephalic setae one fifth of cephalic diameter long. Interlobar notches of cephalic capsule deep:
      T. kreisi WIESER 1953a
      (The male of this species described below is new to science).

D. Spicula simple, regularly curved; accessory piece apparently without caudal apophysis. Cephalic capsule still more reduced than in *Corythostoma,* consisting of a ring with slightly notched posterior edge; no anterior lobes. Amphids posterior to cephalic capsule. No ocelli. Buccal armature resembling that of *Synonchus:* Subg. *Synonchoides* subg. nov. with a single species, *T. galatheae* n. sp.



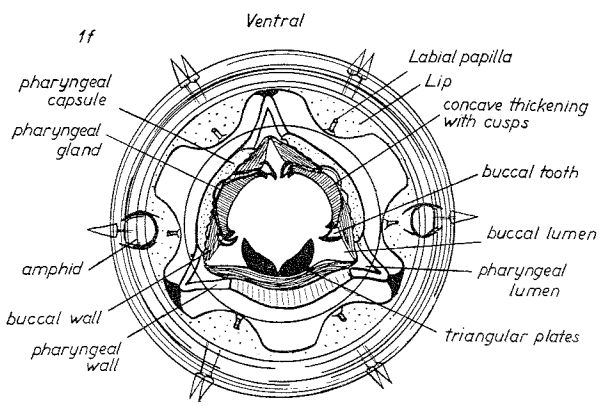


Fig. 1 a-g. *Thoracostoma (T.) bruuni* n. sp.
For description – see next page.
a – anterior end of male, lateral view. (c. c. a. = cephalic capsule, anterior portion, p. c. = pharyngeal capsule; p. gl. = pharyngeal gland; st. r. = stomodaeal ring; t. p. = triangular plate).
b – anterior end of another male, medial view.
c – buccal armature. (b. t. = buccal tooth; t. p. = triangular plate).
d, e – posterior lobes of cephalic capsule. (m. = median; s. l. = sublateral).
f – head in "en face" view.
g – tail of male.

Thoracostoma (T.) bruuni n. sp.

(Fig. 1 a-g, fig. 2)

Station 626. Total of specimens: 8 juv., 10 ♀♀, 3 ♂♂.

	juv.:		♀♀:	
L =	9,62 – 15,2	(13,02)	15,91 – 19,61	(17,45)
a =	29,0 – 45,6	(37,9)	40,0 – 47,4	(42,0)
b =	4,3 – 5,9	(5,0)	5,0 – 5,5	(5,3)
c =	74,6 – 117,4	(95,0)	98,2 – 132,5	(113,1)
Vu =			52,6 – 61,4	(57,7)

♂♂	
17,02 – 18,13	(17,76)
37,7 – 48,0	(43,9)
5,4 – 5,7	(5,6)
92,0 – 98,0	(96,0)

The cephalic diameter measures 64-65 μ = approximately 15% of the diameter at the end of the esophagus. The cephalic capsule is very well developed and approx. 56 μ long. The posterior portion consists as usual of 6 lobes each of which is faintly trilobate. Irregular furrows and locules are present; sometimes the locules fuse so as to form a semicircular groove in the posterior portion of the lobe (fig. 1 d). The submedian interlobar incisions are narrow and long; the lateral incisions which lead to the amphids are somewhat wider and shorter. The fenestrae are almost regularly oval, the lateral ones being bigger than the submedian ones. The anterior portion of the cephalic capsule is weakly developed, and there are apparently no regular lobes; however, this portion is difficult to analyse. The amphids measure 14,5 μ in width in the male, and in medial view (fig. 1 b) it can be seen that they are accompanied by sclerotized plates. The cephalic setae are 6 μ long. In the cervical region there are irregularly scattered setae the most characteristic of which form a group of two to three setae right posterior to the lateral incisions of the cephalic capsule. The cuticle is finely transversely striated in front of the cephalic setae (fig. 1 a) and obliquely striated posterior to the latter (1 b). The six lips are conspicuous, each provided with a labial papilla. The buccal cavity is deep and large; it consists of a cylindrical portion, 44 μ deep, and of a conical portion which actually is the dilated anterior lumen of the pharynx. Between these two portions a tooth-like elevation of the buccal wall may by present.

The buccal armature is complicated and can be analysed in "en face" view of the head only (fig. 1 f). The most prominent structure are two fused triangular plates (fig. 1 c) which are situated on the dorsal wall of the buccal cavity. These two plates are homologous with the structure described as "piéce cordiforme" by DE MAN (1904) in *Thoracostoma antarcticum*. Corresponding to the triangular plates on the dorsal wall there are concave cuticular thickenings on the two subventral walls of the buccal cavity, each thickening provided with two cusps on its distal tips. These two cusps are homologous with the tips of the two triangular plates. There are at least four more teeth, two on each subventral wall, situated slightly distally and caudally to the concave thickenings. Level with these teeth the latero-ventral pharyngeal glands open. The pharyngeal capsule is well developed (fig. 1 f), and so is the stomodaeal ring (cf. WIESER 1953 b) which is fused with both the buccal wall and the cephalic capsule (fig. 1 a, b).

In its anterior portion not only the lumen but also the outer contour of the pharynx is triradiate (fig. 1 f).

The nerve-ring is situated at 23-25% of the length of the esophagus. The male genital armature is typical of this subgenus. The spicula are 283 μ = 1,7 anal diameters long, irregularly bent, and consisting of two portions: a proximal and a distal one. The gubernaculum is 171 μ long, of irregular thickness and slightly cephalate proximally. There is no caudal apophysis.

The supplement is weakly developed and situated at 114 μ in front of the anus. There are preanal and

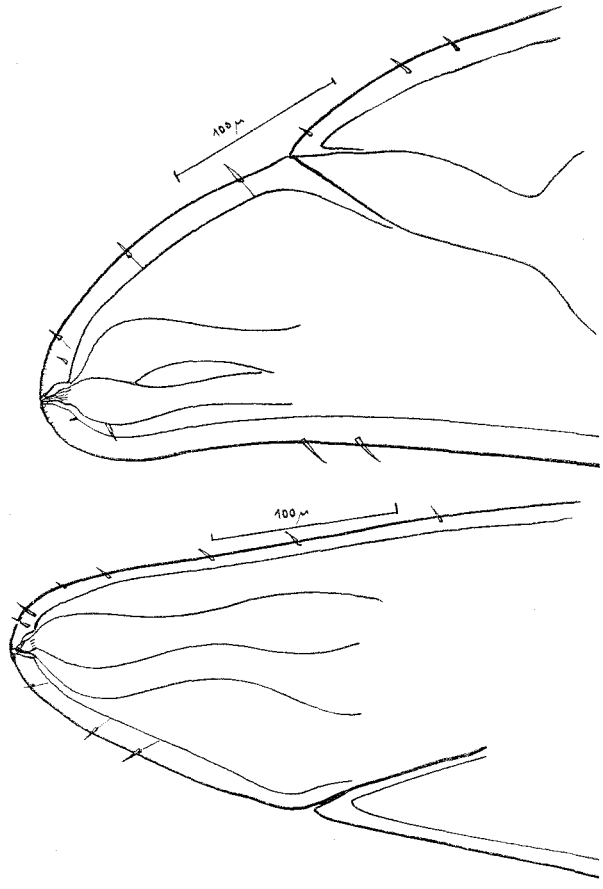


Fig. 2. *Thoracostoma (T.) brunni* n. sp. Tail of two females.

postanal setae. The bursal musculature is strongly developed.

The tail measures about 1 anal diameter both in males and females.

Thoracostoma (Corythostoma) kreisi (WIESER 1953 a)
(Fig. 3 a-c)
= *T. (Pseudocella) k.* WIESER 1953 a

1 ♂ from station 281, SW of Ceylon, 3400 m.
L = 13,7 a = 61,7 b = 7,4 c = 105,7
Dimensions of juveniles from Chile (WIESER 1953 a):
L = 5,78-6,63 a = 34,8-43,5 b = 4,8-5,4
c = 52,1-87,0.

Of this species two juveniles have been found on soft bottom in 18-80 m depth off the Chilean coast. The male from the Galathea-collection obviously belongs to the same species if we take into account the sexual dimorphism as to the shape and size of the amphids, a feature not rarely found in this family. To make clear the differences between the juvenile and the male the head of one of the juveniles obtained off the Chilean coast was re-drawn (fig. 3 b).

The head diameter in the male measures 50 μ = 23% of the diameter at the end of the esophagus. The cephalic capsule is 23 μ long. The posterior lobes are relatively well developed and separated by deep notches. There are no incisions or fenestrae. All notches are about of the same depth, and the lateral notches are slightly wider than the submedian ones. There are conspicuous anterior lobes the anterior edge of which seems to be deeply incised so as to give the impression of being serrate. This can be inferred from the figure of the juvenile (fig. 3 b), since there the head is viwed sligthly en face (this feature did not show in my previous paper the figure having been drawn on a smaller scale). The amphids measure 15 μ in width in the male and 9-10 μ in the juveniles, i. e. 30% and 20% of the corresponding body diameter respectively. In the male the orifice is more narrowly oval than in the juvenile and the pouch is much bigger.

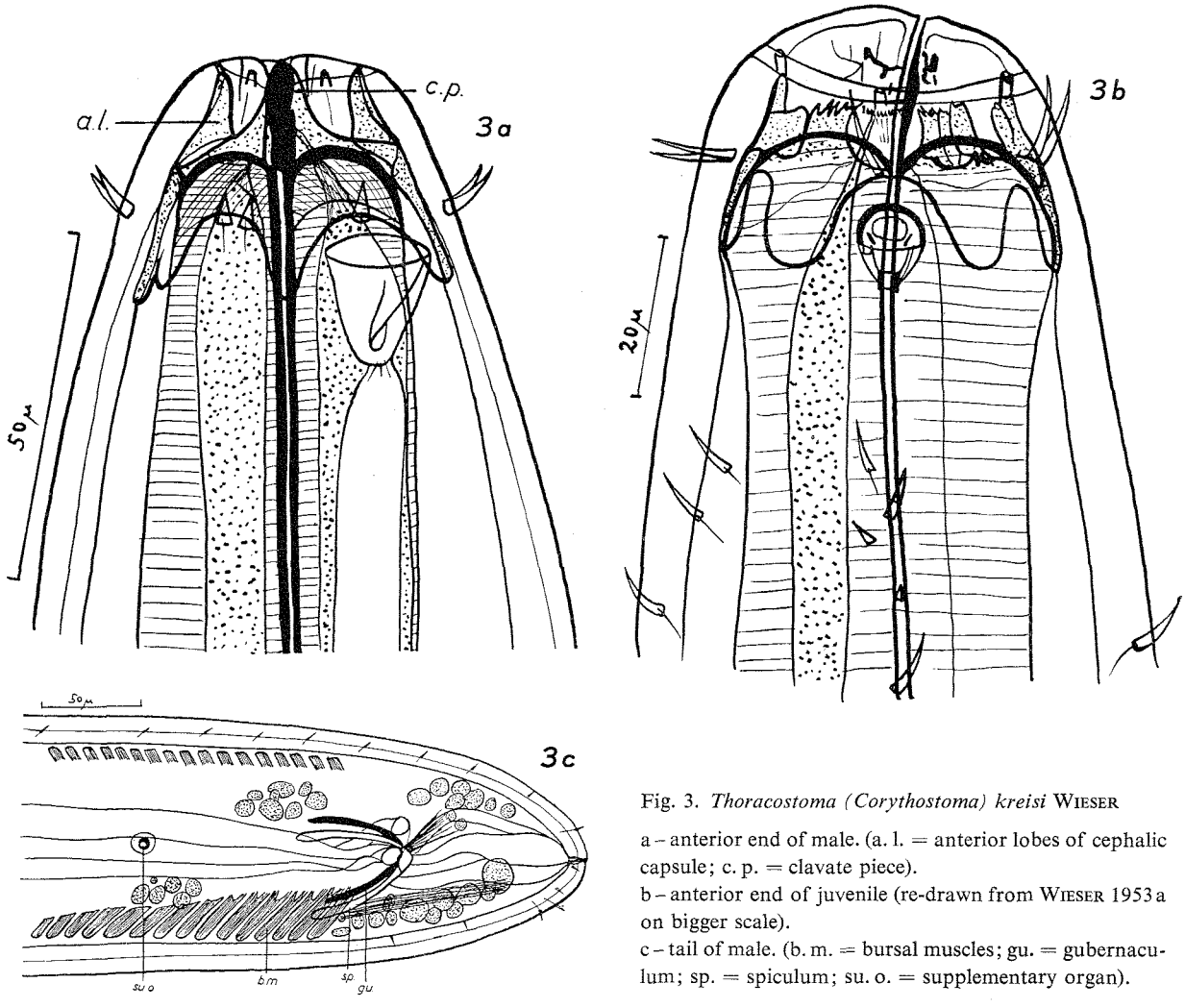


Fig. 3. *Thoracostoma (Corythostoma) kreisi* WIESER
a – anterior end of male. (a. l. = anterior lobes of cephalic capsule; c. p. = clavate piece).
b – anterior end of juvenile (re-drawn from WIESER 1953 a on bigger scale).
c – tail of male. (b. m. = bursal muscles; gu. = gubernaculum; sp. = spiculum; su. o. = supplementary organ).

The cephalic setae are 10-10,5 μ long both in juveniles and in the male. The cervical setae are shorter in the male than in the juveniles, and they are situated more posteriorly in the former than in the latter. There are conspicuous labial papillae.

The buccal armature could not be analysed in detail. There appears, however, to be a sclerotized, clavate piece ("p. cl." in figs. 3a, b) which might be homologous with the triangular plates and the "piéce cordiforme" in *Thoracostoma* s. str. The buccal cavity is narrow. The stomodaeal ring is well developed and fused with the lining of the pharyngeal lumen, with the cephalic capsule ("p. a." in fig. 3b), and apparently also with the clavate piece in the buccal cavity.

The two latero-ventral pharyngeal glands are conspicuous and open as usual in this genus into the anterior portion of the buccal cavity. The nerve-ring is situated at 33% of the length of the esophagus.

The male genital armature could not be analysed, since the male specimen was seen in medial view only. The spicula should measure approximately 61 μ in length, and the gubernaculum appears to be slender. I was not able to find a caudal apophysis which, nevertheless, might be present. The preanal supplement is situated 128 μ in front of the anus.

The tail measures less than 1 anal diameter in length.

Thoracostoma (Synonchoides) galatheae n. sp.
(Fig. 4 a-d)

1 ♂ from station no. 626 (Tasman Sea); damaged
1 ♂ – – – 664 (Kermadec Trench)
(664): L = 20,3 a = 95,5 b = 7,3 c = 138,5.

The head diameter measures 65 μ = 25% of the diameter at the end of the esophagus. The cephalic capsule is short and ring-shaped; the posterior por-

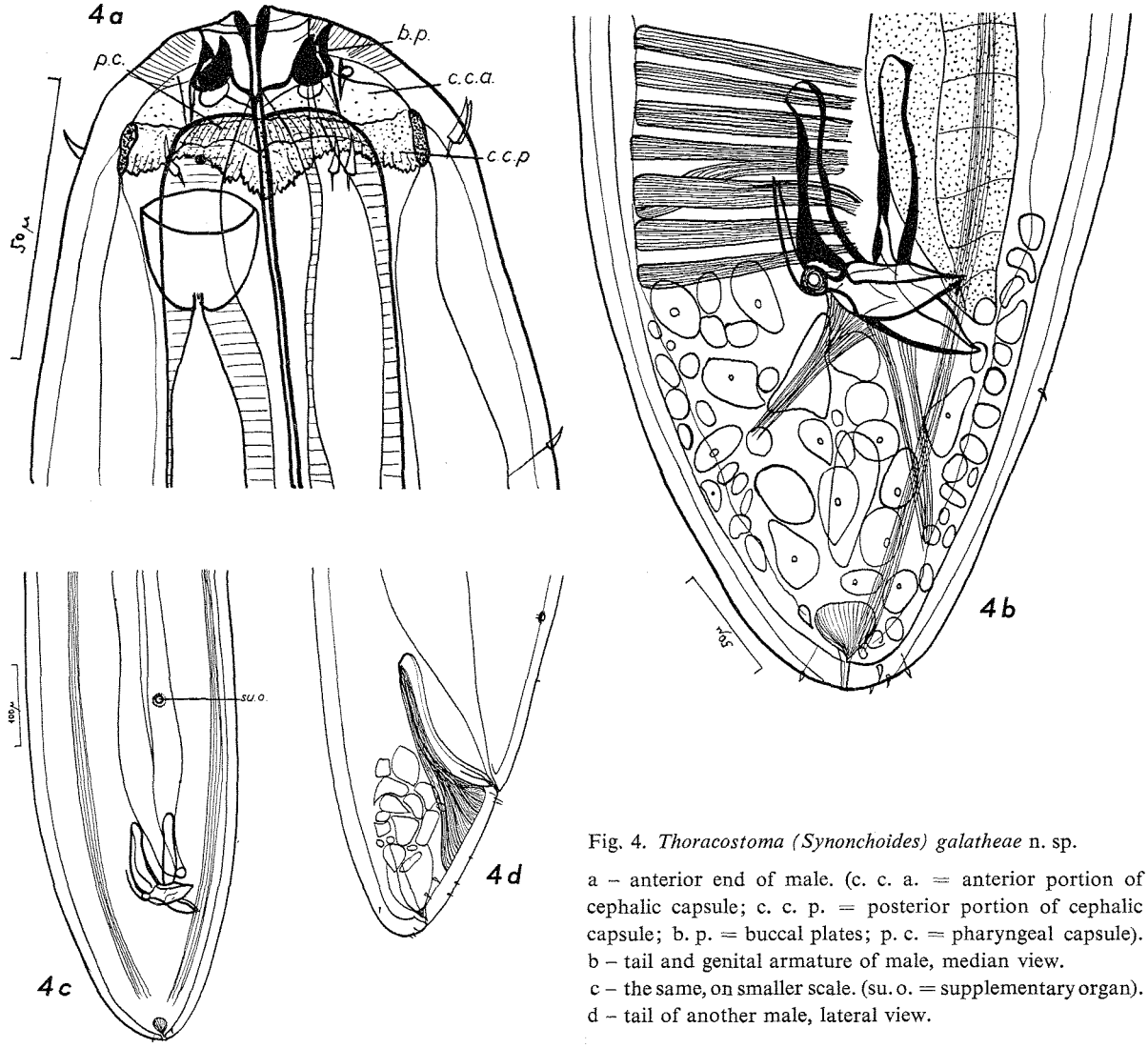


Fig. 4. *Thoracostoma (Synonchoides) galatheae* n. sp.
a – anterior end of male. (c. c. a. = anterior portion of cephalic capsule; c. c. p. = posterior portion of cephalic capsule; b. p. = buccal plates; p. c. = pharyngeal capsule).
b – tail and genital armature of male, median view.
c – the same, on smaller scale. (su. o. = supplementary organ).
d – tail of another male, lateral view.

tion ("c.c.p." fig. 4a) is traversed by irregular longitudinal ridges and its posterior edge is serrated throughout, an unusual feature in this and related genera. The anterior portion of the cephalic capsule ("a.a." fig. 4a) is markedly thinner than the posterior one and is devoid of special structures. The posterior interlobar notches are very shallow and wide. The amphids are situated almost totally posterior to the cephalic capsule; they measure 20 μ = 25% of the corresponding body diameter in width and are regularly pouch-shaped. The cephalic setae are approximately 10 μ long. There are 6 labial papillae.

The buccal armature consists of at least 2 pairs of equal-shaped plates which in lateral view appear to be oval with slightly outwardly curved distal tip. I am not sure whether there is a third pair of plates or not. Each plate is about 10 μ long. In case there are 2 pairs only these are homologous with what I described as "concave cuticular thickenings on the two subventral walls of the buccal cavity" in *Thoracostoma (T.) bruuni* n. sp., and the homologon to the two "triangular plates", i.e. the "piéce cordiforme", is either missing or was overlooked.

At any rate, a paired structure on the anterior end of each of the three sectors of the buccal wall (the cheilostom) appears to be a common feature in all genera of this groups of leptosomatides. Either the dorsal structure only (as in most *Thoracostoma*-species), or the two subventral structures (as perhaps in this species), or all three (as in *Synonchus)* are well developed.

The presence of at least two equal-shaped pairs of buccal plates is another feature by which *Thoracostoma (Synonchoides) galatheae* is distinguished from all other species of this genus, and by which its closer relation with *Synonchus* is expressed.

The two latero-ventral pharyngeal glands open at the base of the buccal plates into the stoma.

Stomodaeal ring and pharyngeal capsule are present.

The cuticle is finely striated; in the cervical region it is 15 μ thick. There are some short cervical setae.

The nerve-ring is situated at 24% of the length of the esophagus. Patches of pigmented granuli are scattered all over the body. The shape of the male genital apparatus could not be clarified in detail. The spicula apparently are simple and regularly curved, the proximal end is slightly cephalate; they are approximately 150 μ = 1 anal diameter in length or less. The accessory pieces most probably are simple, too, and do not possess any well developed apophyses, but whether a small caudal or dorsal apophysis is present cannot be decided on the basis of these two specimens.

There is a very small supplement situated at 190 μ and 228 μ respectively in front of the anus.

The bursal musculature is well developed.

The tail is slightly less than one anal diameter long.

2. List of free-living marine nematodes hitherto reported from more than 400 metres depth

In the following list the specific names are given in accordance with the modern nomenclature, the name under which the respective species was described being added in brackets.

	Author	Position	Locality	Depth (m)
Leptosomatidae:				
Anticoma pellucida BASTIAN	DITLEVSEN 1926	1.) 67°19′N 15°52′W	N of Iceland	528
	–	2.) 57°48′N 7°40′E	Skagerrak	440–460
	–	3.) 57°58′N 8°15′E	–	525–550
Leptosomatum abyssale ALLG.	ALLGEN 1951	?	Sagami Sea, Japan	720
Thoracostoma (T.) arcticum SAVELJEV (= *T. elongatum)*	DITLEVSEN 1926	64°24′N 28°50′W	W of Iceland	1418
T. (T.) antarcticum (LINST)	ALLGEN 1929	78°38′S 170°21′W	Antarctic (Discovery Bay)	550
T. vallini ALLGEN	–	–	–	–

	Author	Position	Locality	Depth (m)
T. (Pseudocella) coecum SAVELJEV	DITLEVSEN 1926	1.) 67°19′N 15°52′W	N of Iceland	528
(= T. elegans)	–	2.) 57°48′N 7°40′E	Skagerak	440–460
T. (Pseudocella) obliqua DITL.	–	61°32′N 9°43′W	W of the Faroe Islands	1158
T. (T.) bruuni n. sp.	WIESER this paper	42°10′S 170°10′E	Tasman Sea	595
T. (Corythostoma) kreisi WIESER	–	3°38′N 78°15′E	SW of Ceylon	3300–3400
T. (Synonchoides) galatheae n. sp.	–	1.) 42°10′S 170°10′E	Tasman Sea	595
	–	2.) 36°34′S 178°57′W	Kermadec Trench	4510–4570
Synonchus obtusidens (DITL) (= *Cylicolaimus o.*)	DITLEVSEN 1926	1.) 63°30′N 54°25′W	Davis Strait	1048
	–	2.) 65°14′N 55°42′W	– – – –	756
	–	3.) 65°16′N 55°05′W	– –	652
	–	4.) 67°19′N 15°52′W	N of Iceland	528
Synonchus filicaudatus (DITL) (= *Cylicolaimus f.*)	DITLEVSEN 1926	58°10′N 48°25′W	Cape Farewell	3321
S. fasciculatus COBB	STEKHOVEN 1946	58°40′N 9°57′E	Skagerrak	530
Cylicolaimus magnus (VILLOT)	–	–	–	–
Stenolaimus (♂) antarcticus ALLGEN	ALLGEN 1929	78°38′S 170°21′W	Antarctic (Discovery Bay)	550
Metacylicolaimus flagellicaudatus STEKHOVEN	STEKHOVEN 1946	58°40′N 9°57′E	Skagerrak	530
Rhabdomania laticauda (DITL.) (= *Demania* l.)	DITLEVSEN 1926	63°36′N 7°30′W	N of the Faroe Islands	1264
Phanodermatidae:				
Crenopharynx marioni (SOUTH) (= *Stenolaimus m.*)	DITLEVSEN 1926	1.) 67°19′N 15°52′W	N of Iceland	528
	–	2.) 63°36′N 7°30′W	N of the Faroe Islands	1264
	–	3.) 64°07′N 11°12′W	NW –	427
	–	4.) 57°48′N 7°40′E	Skagerrak	440–460
	–	5.) 57°58′N 8°15′E	–	525–550
	STEKHOVEN 1946	58°48′N 9°47′E	–	350–400
Micoletzkyia elegans DITL.	DITLEVSEN 1926	1.) 57°48′N 7°40′E	–	440–460
	–	2.) 63°36′N 7°30′E	N of the Faroe Islands	1264

	Author	Position	Locality	Depth (m)
Phanoderma (Alyncoides) parasiticum DITL.	DITLEVSEN 1926	1.) 57°48′N 7°40′E	Skagerrak	440–460
	–	2.) 57°58′N 8°15′E	–	525–550
P. (A.) islandicum DITL.	–	67°19′N 15°52′W	N of Iceland	528
Phanodermopsis groenlandicum DITL.	–	65°16′N 55°05′W	Davis Strait	622
P. caudatum (FILIPJEV)	STEKHOVEN 1946	58°48′N 9°47′E	Skagerrak	350–400
Oxystomatina rotundicaudatum DITL.	DITLEVSEN 1926	57°58′N 8°15′E	Skagerrak	520–550
O. oxyxaudatum DITL.	–	1.) 57°58′N 8°15′E	–	520–550
	–	2.) 58°10′N 9°19′E	–	658
	ALLGEN 1929	78°38′S 170°21′W	Antarctic (Discovery Bay)	550
Enoplidae:				
Enoplus communis BAST. (= *E. pellucidus*)	DITLEVSEN 1926	57°48′N 7°40′E	Skagerrak	440–460
E. groenlandicus DITL.	–	63°30′N 56°00′W	Davis Strait	2160
E. constrictus DITL.	–	67°53′N 10°19′W	NE of Iceland	1820
E. serratus DITL.	–	67°19′N 15°52′W	N of Iceland	528
Oxyonchus polaris (FIL.) (= *Enoplolaimus hamatus*)	–	57°48′N 7°40′E	Skagerrak	440–460
Epacanthion saveljevi (FIL.) (= *Enoplolaimus crassus*)	–	1.) 63°36′N 7°30′W	N of the Faroe Islands	1264
	–	2.) 68°08′N 16°02′W	N of Iceland	1313
Paramesacanthion oxycephalus (DITL.) (= *Enoplolaimis o.*)	–	1.) 66°50′N 20°02′W	–	849
	–	2.) 63°26′N 7°56′W	N of the Faroe Islands	849
	–	3.) 63°36′N 7°30′W	–	1264
Oncholaimidae:				
Filoncholaimus filicaudatus (DITL.) (= *Oncholaimus f.*)	–	58°10′N 9°19′E	Skagerrak	658
Enchelidiidae:				
Symplocostoma (?) dubia DITL.	–	1.) 63°30′N 54°25′W	Davis Strait	1048
	–	2.) 63°36′N 7°30′W	N of the Faroe Islands	1264

	Author	Position	Locality	Depth (m)
Desmodoridae:				
Desmodora (Heterodesmodora) pilosa DITL.	DITLEVSEN 1926	63°30′N 54°25′W	Davis Strait	1048
D. aucklandiae DITL.	ALLGEN 1929	78°38′S 170°21′W	Antarctic (Discovery Bay)	550
D. abyssorum ALLGEN	–	–	–	–
Chromadoridae:				
Euchromadora amokurae DITL.	–	–	–	–
Prochromadorella antarctica (COBB) (= *Chromadora mucrodonta* var. *antarctica)*	–	–	–	–
Comesomatidae:				
Dorylaimopsis punctatus DITL.	DITLEVSEN 1926	57°48′N 7°40′E	Skagerrak	440–460
Sabatiera australis ALLGEN	ALLGEN 1929, 1946	78°38′S 170°21′W	Antarctic (Discovery Bay)	550
S. praedatrix BASTIAN	STEKHOVEN 1946	58°40′N 9°57′E	Skagerrak	530
Sphaerolaimidae:				
Sphaerolaimus hirsutus BASTIAN	DITLEVSEN 1926	1.) 57°48′N 7°40′E	Skagerrak	440–460
	–	2.) 57°58′N 8°15′E	–	525–550

It is premature to draw any conclusions from these data. I confess that it is very tempting to state that most of the deep-sea nematodes belong to the order *Enoploidea (Leptosomatidae* to *Enchelidiidae),* but since these nematodes also are the largest ones (and thus most easily detected in the bottom-samples) their dominance can easily be due to methodological causes. I am the more inclined to make this reservation since from depths between 300 and 400 metres an enormous number of species belonging to the family *Epsilonematidae* has been reported by STEINER (1932). This family comprises the smallest nematodes known; the same holds true of the *Desmoscolecidae* which were found in depths from 200 to 400 metres by SCHEPOTIEFF (1907). It is unlikely that these small nematodes are prevented by some factor from passing the 400 m-level and we assume that they will also be found at greater depths if thoroughly looked for.

One statement can be made with fair safety, viz. that it is the two closely related genera *Thoracostoma* and *Synonchus* which are the most common deep sea nematodes among the larger forms. The three deepest samples, i. e. 4510-4570 m, 3300-3400 m (Galathea-expedition), and 3321 m (Ingolf-expedition), contained only specimens belonging to either of these two genera.

Of the 43 species listed in the table above the following species are confined to depths greater than 400 m:

Thoracostoma (Pseudocella) obliqua DITLEVSEN 1926
T. (T.) bruuni n. sp.
T. (Synonchoides) galatheae n. sp.
Synonchus obtusidens (DITLEVSEN 1926)
S. filicaudatus (DITLEVSEN 1926)
Stenolaimus (?) antarcticus ALLGEN 1929
Rhabdodemania laticauda (DITLEVSEN 1926)
Enoplus groenlandicus DITLEVSEN 1926
E. constricuts DITLEVSEN 1926
E. serratus DITLEVSEN 1926
Filoncholaimus filicaudatus (DITLEVSEN 1926
Symplocostoma (?) dubia DITLEVSEN 1926
Desmodora (Heterodesmodora) pilosa DITLEVSEN 1926
D. abyssorum ALLGEN 1929
Sabatiera australis ALLGEN 1929.

LITERATURE CITED:

ALLGEN, C., 1929: Ueber einige antarktische freilebende marine Nematoden. Zool. Anz. 84, 126.

– 1946: Kleinere Notizen ueber freilebende Nematoden. Kungl. Fysiogr. Sällsk. Förh. Lund, Bd. 16, no. 15.

– 1951: Pacific Freeliving Marine Nematodes. (Papers from Dr. Th. Mortensens Pacific Expedition 1914-16, LXXVI). Vid. Medd. Dansk Naturh. Foren. København, 113, pp. 263-411.

BRESSLAU & STEKHOVEN, S. 1940. Marine freilebende Nematoden aus der Nordsee. Ouvrage édite par le patrimoine du Musée royal d'Hist. nat. de Belg. Bruxelles, pp. 1-74.

DITLEVSEN, H., 1926: Free-living Nematodes. The Danish Ingolf Exp. 4.

FILIPJEV, I., 1927: Les Nématodes libres des mers septentrionales appartenant à la famille des Enoplidae. Arch. Naturgesch. 91, A, nr. 6, pp. 1-216.

KREIS, H., 1928: Die freilebenden marinen Nematoden der Spitzbergen-expedition von F. Römer und F. Schaudinn im Jahre 1898. Mitt. Zool. Mus. Berlin 14, pp. 131-197.

DE MAN, J. G. 1904: Résultats du Voyage du S. Y. Belgica. Exp. antarct. Belg. (Zool.). Anvers.

SCHEPOTIEFF, A., 1907: Zur Systematik der Nematoideen. Zool. Anz. 31, pp. 132-162.

SOUTHERN, R., 1914: Nemathelmia, Kinorhyncha and Chaetognatha. Proc. R. Irish Soc. 31. (Clare Island Survey 54, pp. 1-80).

STEINER, G., 1932: Die Nematoden der deutschen Südpolarexpedition 1901-1903; I und II. Deutsche Südpolar-Exp. 20 (Zool.)

STEKHOVEN, S., 1946: Freilebende marine Nematoden des Skageraks und der Umgebung von Stockholm. Arkiv f. Zoologi 37, A, no. 16, pp. 1-91.

STEKHOVEN, S. & ADAM, W., 1931: The free-living marine nemas of the Belgian coast I. Mém. Mus. Hist. nat. Belg. 49, pp. 1-58.

TUERK, F., 1903: Ueber einige im Golfe von Neapel freilebende Nematoden. Mitt. Zool. Stat. Neapel 16, pp. 281-348.

WIESER, W., 1953a: Free-living marine Nematodes, vol. I. Enoploidea. Reports of the Lund University Chile Exp. Lunds Univ. Årsskr., N. F., Avd. 2, 49, 6, pp. 1-155.

– 1953b: On the morphology of the head in the family Leptosomatidae (marine freeliving nematodes). Arkiv f. Zoologi 2, 6, 3, pp. 69-74.

28. 12. 56. 600. 125.