Allgén, who synonymizes Filipjev's *H. filicauda* and Ditlevsen's *longicauda* (1940), says (1935) to have found this species in the Oeresund. His specimens from the Oeresund are however not only much smaller, but differ as well in the shape of the amphids, which are more circular than in *filicauda*, as in the shape of the tail, which gradually tapers and not suddenly narrows like in *filicauda*. So I am inclined to consider the specimens of Allgén's *H. filicauda* from the Oeresund as to belong to a species different from Ditlevsen's *longicauda* and apparently Allgén comes to the same conclusion in 1940. The Oeresund species should be called *Halichoanolaimus allgéni*. Further I am not in accordance with Allgén's synonymisation of *filicauda* with *longicauda*. The spicules of the larger-sized *longicauda* are broadest at their proximal end, tapering gradually towards the tip; in *filicauda* we find the broadest portion in the middle. *H. longicauda* is in the possession of 5 indistinct praeanal papillae, here we find 7 rather distinct praeanal papillae, in *longicauda* the amphids are more circular, here more transverse, although this difference may stay in relation with the state of fixation. At any rate the amphids are composed of a greater number of windings in *filicauda* than in *longicauda*. Similarly the gubernaculum of both species differs. So I come to the conclusion that we have to consider both species as different. Recently Allgén (1942) found near Banyuls-sur-Mer some juveniles from a *Halichoanolaimus* species which undoubtedly belong to *H. filicauda* Filipjev. De Coninck (1942) states to have studied material from the same species from Cap Martin near Menton.

Geographical distribution : Mediterranean, Black Sea.

Family **DESMODORIDÆ.**

Genus DESMODORA De Man, 1889.

64. — **Desmodora pontica** Filipjev, 1922.

(Fig. 64, A, B.)

1 juv. from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

Length of this juvenile : 1,18 mm; $\alpha = 24{,}6$; $\beta = 8{,}4$; $\gamma = 11{,}9$.

Filipjev's ♀ measured : 1,6 mm; $\alpha = 27$; $\beta = 8{,}5$; $\gamma = 13$.

Filipjev's formula :

$$\frac{0 \quad 140 \cdot 1060}{16 \quad 48 \quad 40} \quad 1180\ \mu$$

The head in our specimen is truncated anteriorly, but apparently the head of Filipjev's specimen had been withdrawn partly into the interior. Here one may distinguish between a lip region and an amphidial region. No setae or cephalic papillae were observed. As for the remainder my specimen answers to

the figure FILIPJEV has given from his animal. Cuticle with broad simple rings, the rings being narrower towards the caudal end. No body setae visible. Anterior labial head region demarcated by a suture line. This portion embraces 22,2 % of the whole head region of the body. The suture line runs quite in front of the amphids which are of circular outline and build a spiral, consisting of a single winding only, their width 52 % of the corresponding body diameter. Oral opening rather narrow leading into the oesophagus by means of a cylindrical canal. Dorsal tooth rather distinct, no indications of ventral teeth were found. Tail elongate conical, pointed to the tip. Spinneret distinct. Tail, 3 anal diameters long. Although FILIPJEV remarks in respect with his specimen that the tail equals 2,3 anal diameters in length, his figure 12 *c* proves that the tail of his female measured 3,55 anal diameters, which is in accordance with what the present specimen shows. In FILIPJEV's female however the diameter of the amphids was distinctly smaller than in the present specimen (which might eventually be a potential male) and moreover the oral cavity of his specimen was distinctly wider and more cyathiform than in the present specimen, which fact eventually might be due to differences in conservation and contraction of the related musculature of the buccal cavity.

GEOGRAPHICAL DISTRIBUTION : Mediterranean, Black Sea, Kaukasus, Krim.

65. — **Desmodora macramphis** n. sp.

(Fig. 65, A-F.)

I am quite sure that the specimens described under this heading are not identical with *D. pontica* from the Black Sea neither with the specimen identified by me as such from the same surroundings. They have also some resemblance with *Desmodora varioannulata* KREIS but in that species the tail is distinctly more short in relation to the body length than in our species. In the present species the amphids were even slightly larger than in the specimens described as *D. pontica,* which was in the possession of larger amphids than FILIPJEV's own specimens showed.

The present material did contain the following specimens :

1 juv. from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

3 ♀♀ from Villefranche, off the Station, coarse sand under vegetation of *Posidonia*. Depth 15 m.

2 juv. from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

3 ♂♂, 1 ♀, 2 juv. from Villefranche, off the « Vieux Villefranche », black mud. Depth 20 m.

The larva from the Point de la Gavinette enabled me to get the most accurate informations about the structur of the head portion. It is of the same texture as that of *pontica*, since it possesses two distinct portions, an anterior cephalic portion demarcated against the second or amphidial portion

by a distinct although shallow constriction. The labial cap is slightly swollen, bears on the lips in total 6 labial setiform papillae, and a crown of 4 cephalic setae, each measuring 23 % of the corresponding cephalic diameter. Amphidial portion 74,2 % of the total length of the head portion, therefore almost quite as deep as in the foregoing species, where this portion measured 77,8 % of the whole head. The amphidial portion bears the large amphids, a spiral with a little more than 1 winding. They are nearly circular in outline and measure in diameter 48,2 % of the corresponding body diameter. At the level of the lower half of the amphids a second crown of 4 hairs is to be seen, apparently the third crown of cephalic sense organs, which the genera of the Chromadoroidea do possess. These setae do not surpass 7,15 % of the

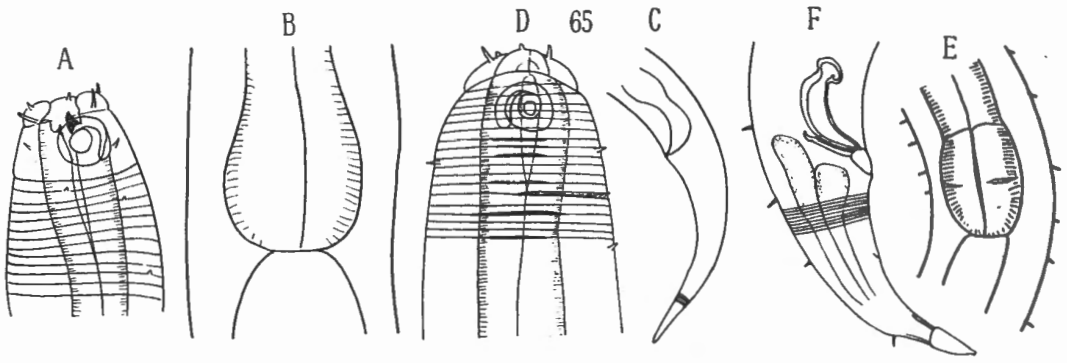


Fig. 65. — *Desmodora macramphis* n. sp.
A : Female head end. B : Base of œsophagus. C : Tail. D : Male head end.
E : Base of œsophagus. F : Male tail.

corresponding body diameter in length. The body itself is distinctly ringed, the bands are separated by shallow grooves. Here and there small setae are scattered, apparently placed more or less in longitudinal rows.

Similar hairs are seen on the tail portion as well, but here they seem to be slightly longer than more forward.

Buccal cavity beginning with a wide, spacious thin-walled vestibulum, followed by a more or less cyathiform buccal pit. Here a distinct, rather strong dorsal tooth is visible and a finer, even more pointed ventral tooth. At the posterior end it is swollen to a bulb-like portion, which neither is very pronounced nor very large. Tail elongate conical, 3,8 times as long as the anal diameter in the same juvenile.

Spinneret rather long, sharply pointed.

Dimensions of the juvenile in question :

Length : 1,512 mm; $\alpha = 31{,}5$; $\beta = 7{,}85$; $\gamma = 12{,}6$.

Filipjev's formula :

$$\frac{0 \quad 192 \quad 1392}{20 \quad 44 \quad 48 \quad 32} \quad 1512\ \mu.$$

The corresponding male differed in so far from the juvenile specimen that here apparently the amphidial portion was withdrawn and retracted into a cuticular fold, so that the amphids are crossed by cuticular rings. But since in this specimen discovered at the Vieux Villefranche the distribution of the cephalic sense organs as well as the shape of the amphids was almost identical to that of the aforementioned juvenile, I have not hesitated to bring both to the same species, although there existed some minor differences, as for instance in the longer and denser pilosity in the male, whereas this male was likewise in the possession of a comparatively longer oesophagus than the juvenile specimen possessed.

Dimensions of the male in question :

Length : 1,352 mm; $\alpha = 31$; $\beta = 4{,}75$; $\gamma = 15{,}4$.

FILIPJEV's formula :

$$\frac{0 \quad 24 \quad 284 \quad M \quad 1264}{28 \quad\quad 64 \quad 48 \quad 40} \quad 1352\ \mu.$$

Cuticle bearing rows of more or less regularly placed short, widely spaced bristles, particularly numerous at the anterior and posterior body end. Head not quite distinctly visible. Only the labial portion can be traced with some exactness, although we are not able to study the interior of the oral cavity in order to ascertain the distribution and structure of the buccal teeth.

Labial setiform papillae as well as the first row of cephalic setae just as in the foregoing juvenile. Amphids large, more or less circular, with a central dot — not visible in the juvenile — and with about 1 ½ winding. Width of the amphids 43,2 % of the corresponding diameter. Oesophageal bulb not very pronounced, less circular, more oval, with a protoplasmatic slit in the middle which subdivides the bulb body but not the internal covering of its interior.

Male genital organs much like in *pontica*. Spicula boomerang-shaped strongly knobbed at their proximal end, rather bluntly pointed distally, just as long as the anal diameter. Gubernaculum rod-like proximally, widened at its distal end. 0,68 times as long as the anal diameter. Tail 2,55 times as long as the anal diameter, therefore shorter and broader than in the forementioned juvenile.

In a female from the locality off the « station » the tail measured 3,2 times the anal diameter and in a juvenile between the « Lazareth » and « anse passable » it was 3,4 times as long as the anal diameter. Therefore the length of the tail may apparently vary to some extent.

The species in question is allied as well with *D. pontica* as with *D. microchæta* ALLGÉN, from which it however may be distinguished inter alia by the size of the cephalic setae, which are longer in the latter species.

66. — **Desmodora coniseta** n. sp.

(Fig. 66, A, B.)

1 ♂, from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

The species in question is distinguished from the foregoing to which is shows much resemblance by the size and shape of the cephalic setae, which are really conical, the minuteness of the labial papillae, the even still larger size of the amphids, which appear longer than broad, in reality however are

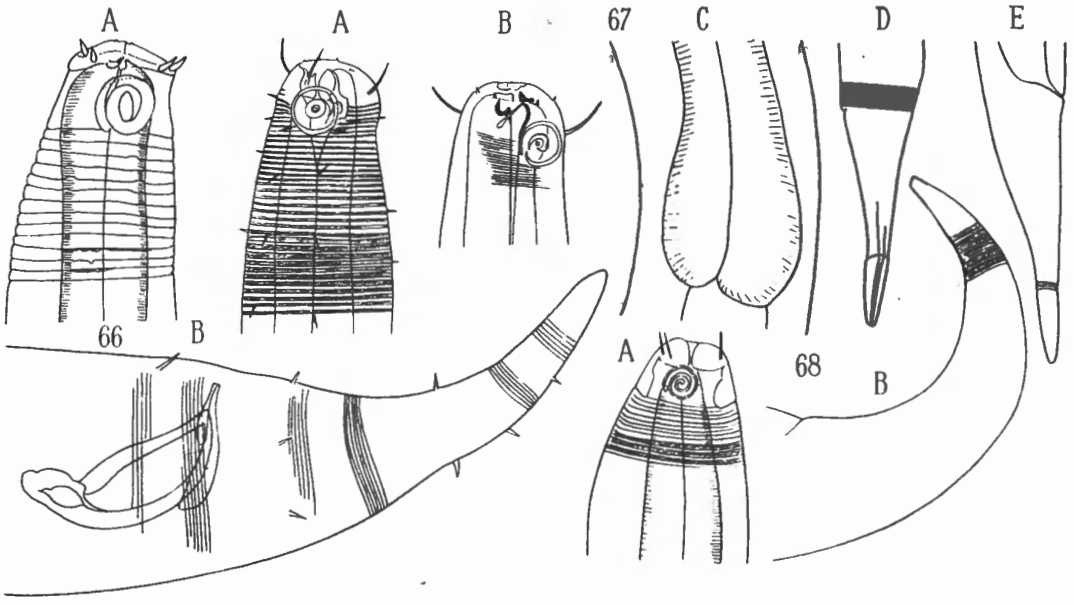


Fig. 66. — *Desmodora coniseta* n. sp.
A : Male head.
B : Male tail.

Fig. 67. — *Paradesmodora cephalata* n. sp.
A, B : Heads end. C : Base of œsophagus.
D, E : Tail ends.

Fig. 68. — *Heterodesmodora dillevseni* Micoletzky.
A : Female head end. B : Tail.

likewise almost circular like in the foregoing species. But here they cover almost the whole length of the amphidial head portion, whereas there remains a distinct space between fore and hind borders in the forementioned species.

Length of the male : 1,508 mm; $\alpha = 25$; $\beta = 6{,}78$; $\gamma = 17{,}2$.

Filipjev's formula : $\frac{0 \quad 168 \quad 228 \quad M \quad 1420}{28 \quad\quad 52 \quad 60 \quad 28}$ 1508 µ

Head end rounded. Labial portion 27,5 % of the whole cuirass. Labial papillae very minute. The four coniform setae measure 18,7 % of the corresponding diameter. Amphids circular, 1 ½ winding, their width 51,5 % of

the corresponding diameter. Posteriorly they touch to the first transverse cuticular groove. Rings broad in front, more narrow posteriorly. Buccal cavity not very distinctly to be seen, but apparently with a dorsal and a ventral tooth. Oesophageal bulb occupying 38 % of the whole oesophagus.

Genital armature consisting of bow-shaped spicula, knobbed at their proximal end, almost as long as the anal diameter. Gubernaculum a shallow gutter, 0,59 % of the anal diameter. Tail elongate conical, 2,24 anal diameters long, covered with rows of hairs. Spinneret rather short, titter-like.

Genus PARADESMODORA n. gen.

The present genus may be distinguished from *Desmodora* in that we do not find the vigorous head capsule present in the typical Desmodoras. The head portion is comparatively short and is not divided into two portions, a labial region and a cephalic region, separated by a suture line, like we find it in *Desmodora*. The amphids are large, cryptospiral, their lower half embedded in the body rings, such in contradistinction with *Desmodora* where the amphids are found on the cephalic capsule. Apparently we find 6 cephalic setae against 4 in *Desmodora*. Buccal capsule with teeth.

67. — **Paradesmodora cephalata** n. sp.

(Fig. 67, A-E.)

1 juv. ♀, from Villefranche, off the Station, coarse sand under vegetation of *Posidonia*. Depth 15 m.

The head has a more *Acanthopharynx*-like outlook. It is bulbar, swollen, distinctly shorter than broad. The amphids are large circular, apparently cryptospiral in structure, at their lower half embraced by the body rings.

Length: 1,668 mm; $\alpha = 32$; $\beta = 8{,}35$; $\gamma = 18{,}9$; V. = 57,5 %.

$$\frac{0 \quad 200 \quad 960 \quad 1580}{24 \quad 46 \quad 52 \quad 40} \quad 1668\ \mu.$$

Oral opening circular, rather wide, surrounded by 6 small conical papillae. The cephalic setae are long, measure 43,5 % of the corresponding cephalic diameter, and are situated at a level with the fore border of the amphids. The latter circular in outline, composed of at least 3 cuticular rings, which are apparently connected and make the whole a cryptospiral structure, which then consists in 2 ½ windings (compare fig. 62 *a* and *b*). Diameter of the amphids equal to 45,3 % of the corresponding body diameter. Buccal capsule shallow, vestibulum short, pit strongly cuticularized with distinct dorsal tooth. Body rings beginning at the equator of the amphids, rather broad. Body setae, placed in longitudinal rows. Tail conical, 2,55 times as long as the anal diameter ornated with some short setae.

Genus HETERODESMODORA Allgén, 1932.

68. — **Heterodesmodora ditlevseni** (Micoletzky, 1922).

(Fig. 68, A, B.)

1 ♀, from Villefranche, off the « Plage des Marinières », coarse sand under vegetation of *Posidonia*. Depth 3 m.

Length : 1,42 mm; $\alpha = 27{,}3$; $\beta = 8{,}9$; $\gamma = 14{,}2$; V. = 53,5 %.

Structure of the head, amphids, size of setae, length of tail and all features as in Micoletzky's specimens. The head capsule is composed of two portions, separated by a circular groove. The cephalic setae, 10 in number, placed just anterior to the said groove, their length 33 % of the corresponding diameter. Tail 3,65 anal diameters long. No buccal tooth. Skin finely ringed.

Geographical distribution : Villefranche, Adriatic (Rovigno, Meleda, Cattaro), Suez.

Genus ACANTHOPHARYNX Marion, 1870.

This is indeed one of the most difficult genera of the *Desmodora*-Group, because we do possess so few figures from its representants and because the different representants can only be distinguished after subtile characters, as do they resemble each other very much.

Micoletzky mentions to have found 2 species only : 1. *Acanthopharynx micans* (Eberth) and 2. *Acanthopharynx perarmata* (Marion). He depicts only the first species. On no place in the litterature we do find exact figures and dimensions of *Acanthopharynx perarmata* Marion. So I think it advisable to give some additional figures of *Acanthopharynx perarmata* after a male specimen, observed by me at Naples, in order that furture workers on this field may have a holdfast for comparison. The two species observed near Villefranche both belong to new species the first *Acanthopharynx rigida* n. sp. is closely allied to *Acanthopharynx micans* (Eberth) and *Acanthopharynx setosissima* Schuurmans Stekhoven, the second *Acanthopharynx seticauda* shows greater affinity with *Acanthopharynx micramphis* Schuurmans Stekhoven if the male tail is regarded.

69. — **Acanthopharynx perarmata** (Marion, 1870).

(Fig. 69, A-C.)

I will bring here 2 figures of what I consider to be the male of *Acanthopharynx perarmata*. The figures fit well I think with those given by Marion and answer liewise to the description given from that male by Micoletzky (1924). The head is elongate conical, distinctly longer than it is broad at the base of the tooth. The cephalic cuirass is not very vigorous. There are 6 lips,

supported by cuticularized rods, and apparently bearing setiform labial papillae. This is the first row of cephalic sense organs. The head capsule is slightly constricted at a level with the foremost row of cephalic setae. I counted three such rows, of which the first two correspond with the 2 crowns of setae found in other genera compare *Croconema*, the upper row composed of at least 10 rather short setae, no longer than 19,3 % of the corresponding body setae, is situated at a level with the upper end of the buccal tooth. The second row is composed of ± 10 much longer setae, that measure 57 % of the

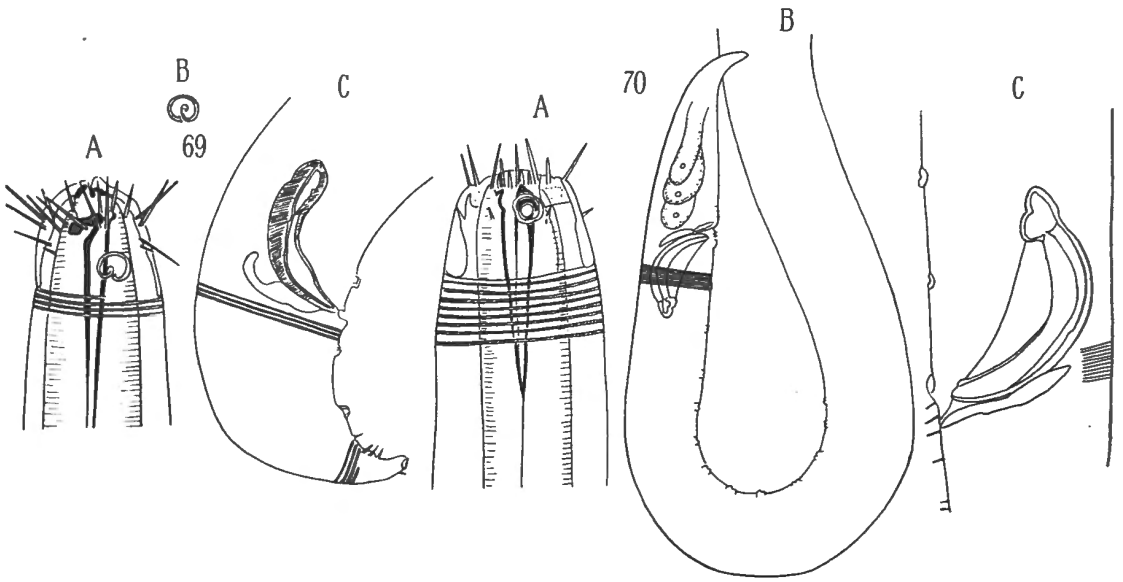


FIG. 69. — *Acanthopharynx perarmata* (MARION).
A : Head end of male.
B : Amphid. C : Male tail.

FIG. 70. — *Acanthopharynx rigida* n. sp.
A : Heed end. B : Male tail.
C : Male genital armature.

corresponding diameter. The third row is composed of a few setae only. It consists of no more than 4 long setae, placed slightly in front of the amphids. These setae are accompanied by shorter partners. The length of the longer setae equals 38,8 % of the corresponding cephalic diameter. Amphids cryptospiral, more or less circular in outline, their diameter 29 % of the corresponding cephalic diameter. In the shallow buccal cavity a large blunt dorsal tooth projects. This tooth has a distinct cavity. It meets a smaller tooth that projects from the ventral side. Anterior oesophageal portion not swollen like is the case in *A. setosissima* .

Male genital armature consisting in a vigorous spiculum, that is bluntly headed proximally, presents a longitudinal crest and ends distally in a rather blunt point. Spicular chord slightly longer than 1 anal diameter. Gubernaculum with proximal curved hook and distal plate, its length equal to 58 %

of the anal diameter. I found a single very distinct and prominent praeanal wart. Tail thick, curved ventrally, no longer than 1,8 anal diameter. There are 3 prominent wartlike excressences on the ventral side of the tail, the most apical one of these bears 3 setulae whereas a fourth seta is found in the middle between the second and third wart. Near the spinneret we find a dorsal seta quite under the tip of the tail. The ringing of the cuticle is rather fine.

Geographical distribution : Mediterranean, Naples, Marseille

70. — **Acanthopharynx rigida** n. sp.

(Fig. 70, A-C.)

1 ♂, from Villefranche, off the « Plage des Marinières », coarse sand under vegetation of *Posidonia*.

Dimensions :

♂ : 2,828 mm; $\alpha = 50,2$; $\beta = 6,79$; $\gamma = 23,5$.

Filipjev's formula :

$$\frac{0 \quad 24 \quad 416 \quad M \quad 2336 \quad 2708}{32 \qquad 52 \quad 64 \qquad 44} \quad 2828\ \mu.$$

Length of head 24 micra. Head rounded anteriorly, provided with a strongly cuticularized head capsule. The crown of cephalic setae is composed of ± 16 components of unequal size. We find unpaired lateral setae, situated in front of the amphids, whereas the submedian setae are paired, the couples being composed of unequal partners, the longer partners measure 39,4 %, the shorter ones 28,5 % of the corresponding cephalic diameter. A second crown of short cephalic respectively cervical setae is found at a level with the diameter of the amphids. These setae are very short and do not surpass 11,9 % of the corresponding body diameter. Amphids circular, with a large central dot, 25 % of the corresponding body diameter wide. Oral cavity shallow, the vestibular portion is supported by slender longitudinal ribs. It may however be that we must consider these lips as invaginated. In that case, what seemigly are the longitudinal ribs of the vestibulum, in reality have to be considered as the first crown of cephalic setae. Dorsal tooth vigorous, prominent, blunt, conical, reaching to the base of the vestibular diadem. This dorsal tooth is attached to the walls of the funnelshaped buccal cavity by means of a rodlike thickening of the oesophageal will. Subventral teeth inconspicuous.

Cuticle smooth, strongly ringed. There are 14 praeanal papillae, the most apical of which is separated 8,4 anal diameters from the anal opening. These papillae are almost equidistant. The first praeanal papilla is situated on the cephalic lip of the cloaca. Spiculum with proximal knoblike ventral prolongation, distal end blunt. Length of the velate spiculum equal to 1,3 anal diameter, the gubernaculum is only 0,84 anal diameter long. Male tail elongated

conical, not unlike that of the female of EBERTH's *Odontobius micans*, whereas the male tail of that species is much less slender. The male tail of our species is 3,14 anal diameters long, whereas the tail of EBERTH's female was 2,5 anal diameters long. I doubt if EBERTH's female belongs to the same species as his male and might ask if not his female and the present male are conspecific. Ventrally the tail of the present male is provided with some short setae. From *A. micans* as depicted by MICOLETZKY (1924) the present species differs by the shape of the tail and the number of praeanal papillae.

71. — **Acanthopharynx seticauda** n. sp.

(Fig. 71.)

1 ♂, from Villefranche, farther end of the « Port de la Darse », black mud and organic detritus. Depth 3 m.

Dimensions :

♂ : 1,932 mm; $\alpha = 40{,}2$; $\beta = 6{,}46$; $\gamma = 27$.

$$\frac{0 \quad 300 \quad M \quad 1860}{32 \quad 48 \quad 48 \quad 44} \quad 1932\ \mu.$$

In many respects the male in question resembles that of *A. perarmata* as well as that of *A. micramphis* SCHUURMANS STEKHOVEN from Ibiza, but may be easily distinguished from both, because in *perarmata* there is only a single praeanal wart, whereas in *micramphis* no praeanal papillae were observed, but the tail is in the possession of a row of spines and warts on its distal half. In the present male of which I have only depicted the tail end we find 9 almost equidistant praeanal papillae. The anterior praeanal papilla is found at a distance equal to 5 anal diameters from the cloaca. Spiculum curved, pointed at its distal, headed at its proximal end. Gubernaculum a spade-shaped plate. Spicular chord 1,2 anal diameters long. Tail short and rather thick, swollen at its base, curved ventrally, terminating in a distinctly set off spinneret. Annulation fine. Ventrally as well as subventrally the tail distinctly shows a rather great number of fine spines. No postanal neither praeanal warts are visible. Length of tail equal to 2,4 anal diameters.

Genus CROCONEMA COBB, 1920.

KREIS (1928) has described as new a species of *Croconema*, brought by him to his new genus *Aculeonchus*. He named it *Aculeonchus sphæricus* KREIS. At a later date KREIS came to the conviction (in litteris) that his species should be reckoned to belong to the genus *Croconema* COBB 1920, so that it had to be called henceforth *Croconema sphæricum* (KREIS). *Croconema sphæricum* (KREIS) was recently (1942) found by ALLGÉN (1942) at Banyuls among *Posidonia*.

In 1926 Steiner and Hoeppli have described from Japan *Croconema mamillatum*. The type species *Croconema cinctum* Cobb came from Jamaica. To these species I can add a fourth, which I propose to call *Croconema longiseta*.

72. — **Croconema longiseta** n. sp.

(Fig. 72, A-D.)

5 ♂♂, 2 ♀♀, 1 juv. from Villefranche, off the « Vieux Villefranche », black mud and organic detritus. Depth 20 m.

Dimensions :

♂ : 2,756 mm; $\alpha = 38{,}2$; $\beta = 8{,}75$; $\gamma = 17{,}1$.

Filipjev's formula :

$$\frac{0 \quad 44 \quad 316 \quad M \quad 2576}{40 \qquad 72 \quad 72 \quad 64} \quad 2756\ \mu.$$

Dimensions :

♀ : 2,025 mm; $\alpha = 25{,}2$; $\beta = 6{,}75$; $\gamma = 14{,}4$; V. = 67,2 %.

Filipjev's formula :

$$\frac{0 \quad 52 \quad 300 \quad 1380 \quad 1880}{28 \qquad 68 \quad 80 \quad 40} \quad 2020\ \mu.$$

Cuticle vigorously ringed, except on the head, that presents a head capsule of moderate strength. Lips closed, crowned with 6 setiform papillae. Follows a crown of 6 short, thorn-like bristles, of which none is placed in quite lateral position. One may say this crown is composed of 4 sublateral + 2 submedian spines. A third crown of head sense organs is composed of apparently 10 elements of which 8 are paired and 2 are single. The peculiarity of this arrangment is, that again none of them is quite lateral in position. The paired setae are sublateral in position and do consist of a short conical hair and a rather long hair, staying next to the former and measuring 25 % of the corresponding body width. The short conical setae occupy a lateral position, in respect to the longer setae. In itself this arrangment of the paired hairs would not be peculiar if not the crown did consist of 10 setae of which the unpaired ones are placed in dorsal and ventral position. For in the common scheme we do find 6 groups of sense organs arranged round the head in such a way that the unpaired hairs occupy a lateral position, whereas the paired setae are submedian. It is not possible to bring the present arrangement into the general scheme, neither is it easy to understand that in the present case the third crown of 10 components would be the result of the fusion of the second and third crown of head sense organs, since the second crown is still present. At this place I may point to the fact, that we may find in the closely related genus *Acanthopharynx*, confer for instance *A. perarmata*, apart from a crown of labial sense organs, which are shaped as setiform papillae in the said species, 3 crowns of setae, 2 of which are found in front of the amphids. So we have

here too three crowns of cephalic sense organs, often composed of many elements. It is certainly worth while to make a further minute studies of the symmetry problem and of the distribution of these head sense organs.

Amphids spiral with a central dot, and 1 ½ windings, their diameter 22,25 % of the corresponding body diameter. Posterior to the amphids we find again crowns of hairs, i.e. just posterior to the amphids at either side of these a small seta, almost in straight line posterior to the small partners of

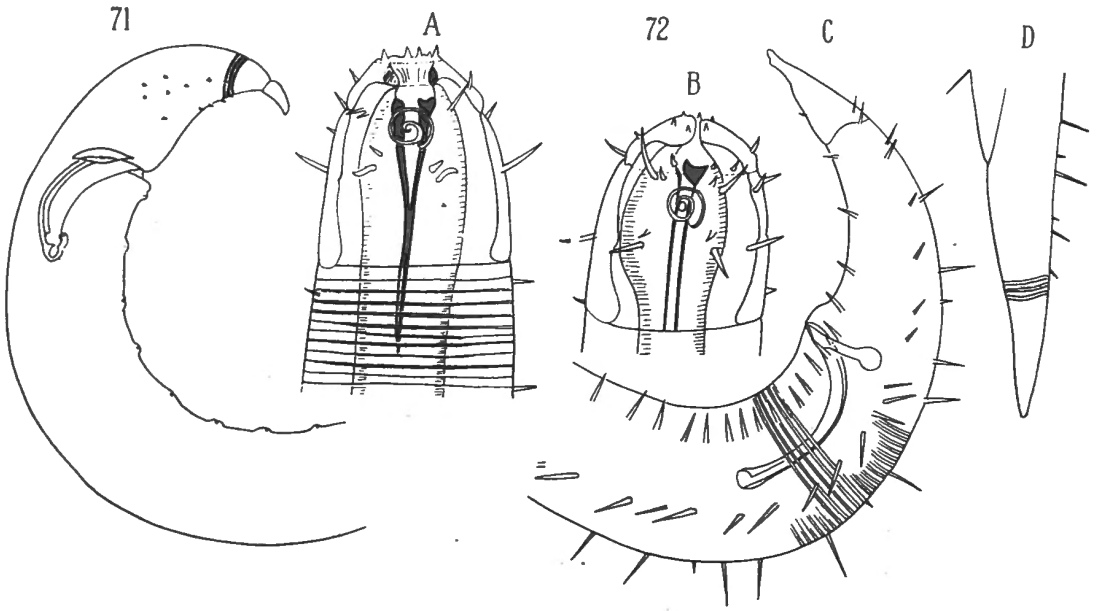


FIG. 71. — *Acanthopharynx seticauda* n. sp.
Male tail.

FIG. 72. — *Croconema longiseta* n. sp.
A : Female head end. B : Male head end. C : Male tail. D : Female tail.

the sublateral groups, wheras slightly more backward a crown of six longer setae is observed. Near the posterior end of the head a dorsal and a ventral small seta are found. (Confer likewise also DE CONINCK, 1942, p. 34.)

In respect with the arrangement of the setae there is still one point worth mentioning. In the *Enoploidea* we always do find a crown of head sense organs composed of 10 components, which like was shown can be explained as to be the result of the fusion of two crowns of head sense organs. This explanation does not fit here, like I showed above. Now in the *Enoploidea* the smaller partners of the submedian groups often are placed quite in front of the longer partners, or in the case they are placed next to them they are quite adjacent to the former, whereas lateral setae always are present. The absence of lateral setae as well as the sublateral position of the setae in the

present case leads me to read the pattern of setae as composed of either 6 or of 10 longitudinal rows. Cobb (1920) says in respect to *Croconema cinctum* there must be at least six irregular longitudinal rows of setae in the helmet, but it seems impossible to pick out any single circlet of these setae that particularly merit the term cephalic setae.

Steiner and Hoeppli (1926) have studied *Croconema mammillatum*, which presents a more regular arrangment of the setae and for this species they state that there are 10 cephalic setae (1 lateral, 2 sublateral and 2 submedian). Posterior to the amphids the setae are arranged in 6 longitudinal rows.

Croconema sphæricum (Kreis) from the Mediterranean possesses according to Kreis 10 longitudinal rows of short but stiff bristles, 4-5 in each row, whereas, just as in the present case the body cuticula possesses only 6 rows of setae.

In *Croconema longiseta* the body presents 6 rows of longitudinal rather long and stiff bristles, whereas on the head we find an arrangment which is intermediate between 6 and 10, posterior to the amphids there are quite certainly no more than 6 rows, the crown placed just in front of the amphids is composed of 10 components, whereas the first crown of cephalic setae possesses only 6 bristles. So at any rate the number 6 prevails and the supposition lays at hand that where there are 10 components they are placed on tops of cells, duc to fission of the 6 cells of the original scheme.

Body cuticle with broad rings, which are narrower to the tail end than in front, setae long and slender, stiff.

Oral cavity shallow, bottle-shaped. There is a prominent dorsal tooth. Anterior portion of oesophagus swollen to a kind of bulb, just like in *Croconema sphæricum* and *Cr. cinctum*, whereas this swelling is less pronounced in *Cr. mamillatum*. Spiculum slender, curved, hardly swollen at the proximal end, pointed at the tip, 1,23 anal diameters long. Gubernaculum building a short gain, and provided with a dorsal prolongation, which is swollen at its proximal end. The whole is 0,63 anal diameter long. No praeanal papillae nor mamilla like elevations of the cuticle. Tail elongated conical, tapering to a rather acute tip. Spinneret pronounced. Length of tail 2,45 anal diameters.

Female in most respects quite similar to the male. Here the lips are open and the vestibulum oris does show faint longitudinal ribs. Cuticular lining of the oesophageal walls thick. The arrangment of the cephalic setae was less distinct than in the male. From the first crown I have not seen the sublateral hairs, whereas the second crown apparently also possesses 10 components. The ante-amphidial portion of the head is distinctly set off against the post-amphidial portion of the same. Amphids larger than in the male, quite 30 % of the corresponding diameter. Tail 3,58 times as long as the anal diameter.

The present species may be clearly distinguished from the mediterranean species of KREIS by the arrangment of the cephalic setae, the distinctly longer pilosity of the body and the absence of praeanal warts in the male sex. The vulva in my species is distinctly more posterior than in KREIS species, which species are otherwise closey related.

Genus SPIRINA FILIPJEV, 1918.

73. — **Spirina rouvillei** n. sp.

(Fig. 73, A B.)

The present species is in a certain sense intermediate between FILIPJEV's *Sp. zosterae* and *Sp. sabulicola*. With *sabulicola* it has in common the disposition of th cephalic setae, although we may not forget that FILIPJEV's figure depicts an invaginated head end of that species. In both species the socalled cephalic setae are implanted at the caudal border of the amphids. The shape of the tail of the present species is however quite identical to that in *Sp. zosterae* and *Sp. parasitifera* (BASTIAN). The status of the species of *Spirina*, found by DE ROUVILLE (1904) near Cette remains uncertain. If his hitherto unpublished figure of that species is consulted, it is clear that the crown of cephalic setae is implanted at the fore border of the amphids, just as in the case in *Sp. parasitifera* and in the present species. Therefore I am inclined to identify DE ROUVILLE's specimens from Cette as *Sp. parasitifera*. With this species the present form is likewise closely allied. The body setae however, rather irregularly scattered over the oesophageal portion of the body of *Sp. parasitifera*, are minute in that species, whereas they are long and arranged in distinct longitudinal rows in the specimen from Cette, more or less so as in *Sp. lævis* (BASTIAN). The present specimens possess likewise distinctly longer setae than *Sp. parasitifera* has, DE ROUVILLE's female was however distinctly shorter than the females from *Sp. lævis* from more northern regions. It measures only 2,3 mm against 3,5-3,76 mm for the females of *Sp. lævis* from the North Sea and Baltic. In length our juvenile nears DE ROUVILLE's specimen, 2,148 mm against 2,3 mm for the female of DE ROUVILLE, whereas my female from Baie de Lilong near Villefranche measured 3,712 mm, so that this female falls in the range of variability of *Sp. lævis*, but possesses at the other hand distinctly greater amphids, which surpass in diameter even those of *Sp. parasitifera* (BASTIAN). It is of importance to pay particular attention to the head end. Here I could identify (confer fig. 68) a crown of 6 minute labial papillae, a crown of likewise 6 cephalic papilliform setae and a third crown of 6 long cephalic setae, placed at a level of the foreborder of the amphids. Often the head of these species is more or less invaginated, so that the loca-

tion of sense organs is difficult. For the mentioned reasons, it will be wise I think to treat the species in question as new. I proposed to call it *Spirina rouvillei* n. sp. The following specimens were found.

1 juv. ♀, from Villefranche, off the Station, under vegetation of *Posidonia*, coarse sand. Depth 15 m.

1 ♂, from baie de Lilong, sand. Depth 3 m.

Dimensions :

Juv. 1 ♀, length : 2,148 mm; $\alpha = 38,3$; $\beta = 14,1$; $\gamma = 18,5$.

FILIPJEV's formula :

$$\frac{0 \quad 120 \quad 152 \qquad 2032}{12 \qquad 52 \quad 56 \quad 44} \quad 2148\ \mu.$$

♀ 1, length : 3,712 mm; $\alpha = 40,3$; $\beta = 19,3$; $\gamma = 23$; V. = 46,4 %.

FILIPJEV's formula :

$$\frac{0 \quad 128 \quad 192 \quad 1712 \quad 3552}{16 \qquad 72 \quad 92 \quad 56} \quad 3712\ \mu.$$

Anterior attenuation of the body when compared with the hind end of the oesophagus 3,25 (juvenile)-4,5 (female).

Head bluntly rounded at the anterior end. Here there are minute labial papillae. Posterior to it 6 setiform cephalic papillae, and at a level with the posterior border of the amphids 4 submedian cephalic setae of comparatively great length, measuring 40 % of the corresponding diameter. Amphids circular, 1 ½ winding, their diameter 42-43 % of the corresponding body diameter. The pilosity of the anterior body portion is scanty, the setae are arranged in submedian longitudinal rows. Dorsal tooth minute. Oesophagus short, with caudal bulb, occuping 21 % of the total oesophageal length. Nerve ring at 66,8 % of the oesophageal length. Tail conical, 3,65 times as long as the anal diameter.

From *S. parasitifera* our species is distinguished by the longer and more regularly distributed body setae, by the longer cephalic setae, the larger amphids and the more posterior position of the nerve ring. It remains doubtful if DE ROUVILLE's specimen belongs to the present species, since the figure DE ROUVILLE has made after his specimen is far from beautiful and does not enable with certainty a correct identification.

Genus CHROMASPIRINA FILIPJEV, 1918.

The genus in question was brought by FILIPJEV to the Desmodoridae and I think in this he is right. In 1934 FILIPJEV synonymized with it the genus *Mesodorus* COBB 1920. The genus *Chromaspirina* is closely allied with *Spirina*, if we take in account the figure of *Chromaspirina pontica* like depicted by FILIPJEV. The shape of the amphids, the disposition of the cephalic setae reminds that in *Spirina*. At the other hand the dorsal tooth in *Chromaspirina*

pontica is more like in *Desmodora* and *Paradesmodora*. We miss however the typical ringing of the cuticle, found in these genera. The tail as well as the genital armature of *Spirina* and *Chromaspirina* do resemble each other to a great extent. As for *Mesodorus*, here the distribution of cephalic setae is more *Acanthopharynx*-like. The amphids are not cryptospiral like in *Chromaspirina*,

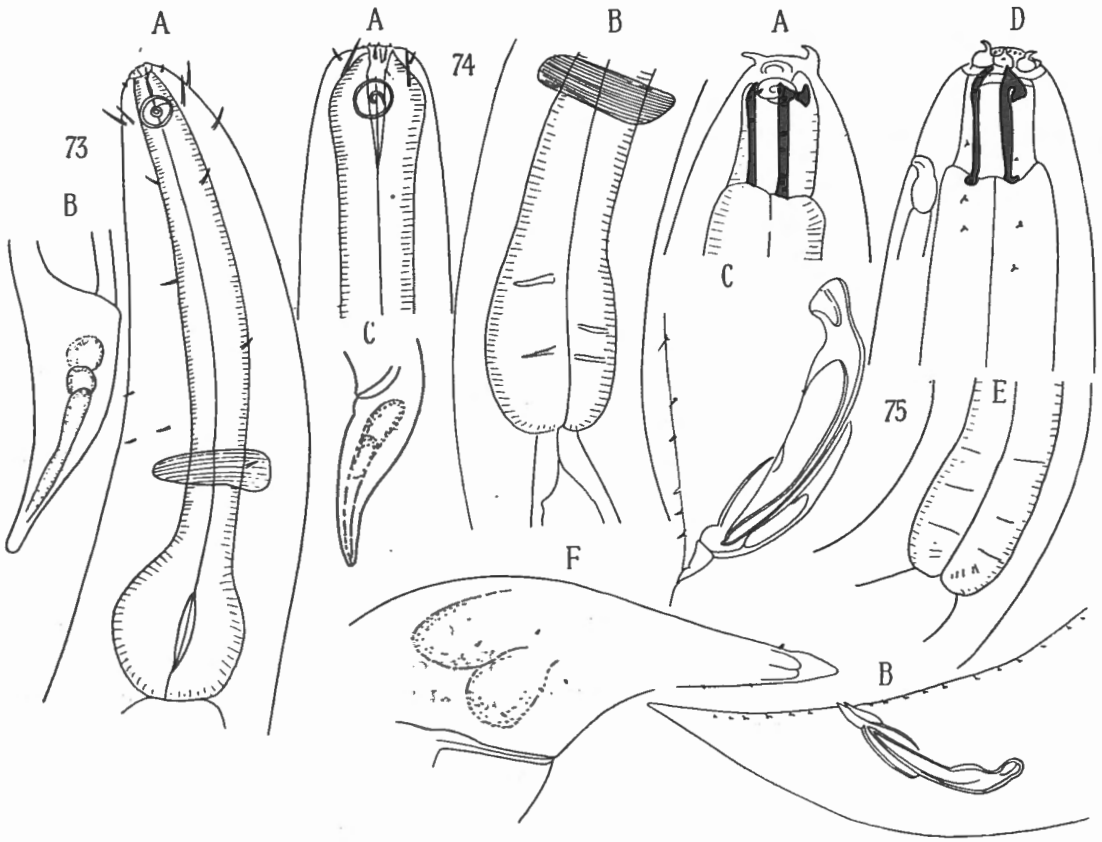


FIG. 73. — *Spirina rouvillei* n. sp.
A : Head end. B : Tail.

FIG. 74. — *Chromaspirina paucispira* n. sp.
A : Female head end.
B : Base of œsophagus.
C : Tail.

FIG. 75. — *Metachromadora longtlaima* n. sp.
A : Male head end. B : Male tail.
C : Male genital armature. D : Female head end.
E : Base of œsophagus. F : Female tail.

but distinctly spiral, but this needs not to be an essential difference, for in both we find a central dot. The number of the cephalic setae found to occur in each crown, differs from that counted in *Chromaspirina*. The anterior crown is after COBB (1920) composed of 12 labial papillae, follows a row of 6 cephalic setae, whereas the third crown is composed in COBB's *Mesodorus cylindricollis* of 14 elements. This latter number is difficultly to bring in accordance with that in *Chromaspirina pontica*. So I am in doubt if FILIPJEV is right in synony-

mizing both genera *Chromaspirina* and *Mesodorus* and if it would not be better to consider both as separate genera, which are distinct like for instance *Desmodora* and *Acanthopharynx* which resemble each other likewise in many respects.

74. — **Chromaspirina paucispira** n. sp.

(Fig. 74, A-C.)

1 ♀, from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

Dimensions :

♀ : 3,54 mm; $\alpha = 59$; $\beta = 17,7$; $\gamma = 43,8$; V. = 62,3 %.

$$\frac{0 \quad 200 \quad 2200 \quad 3460}{30 \quad 40 \quad 60 \quad 40} \quad 3540\ \mu.$$

Head end truncate, with distinct labial papillae, at least 6 in number. A crown of 6 short cephalic setae, no longer than 20 % of the corresponding cephalic diameter and a third crown of 4 submedian cephalic setae, each measuring 41,5 % of the corresponding body diameter. Cuticle pale brownish in colour, without distinct transverse striae. Amphids spiral, composed of 2 ½ windings, diameter of the same 46,5 % of the corresponding diameter. Buccal cavity with a vestibulum, presenting longitudinal cuticular folds, metastome conical, likewise with longitudinal folds. At the brink of mesostome and metastome I find the indication of a dorsal tooth, which however is much less distinct than in *Chromaspirina pontica*. Oesophagus swollen at the oral end, embracing the whole buccal cavity. At the posterior end a bulbar swelling is observed. Ovaries double with three well developed eggs each. Tail short, 1,65 anal diameters long, bluntly ending, conical in shape, containing 3 caudal glands in tandem position.

Genus METACHROMADORA FILIPJEV, 1918.

75. — **Metachromadora longilaima** n. sp.

(Fig. 75, A-F.)

1 ♂, 4 ♀♀, 4 juv. from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

2 ♂♂, 1 ♀, from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

Length : ♀, 1,204 mm; $\alpha = 14,4$; $\beta = 4,87$; $\gamma = 15,2$; V. = 56,8 %.

FILIPJEV's formula :

$$\frac{0 \quad 36 \quad 248 \quad 684 \quad 1124}{20 \quad\quad 76 \quad 84 \quad 44} \quad 1204\ \mu.$$

Length : ♂, 1,120 mm; $\alpha = 14,75$; $\beta = 4,5$; $\gamma = 14$.

$$\frac{0 \quad 36 \quad 248 \quad M \quad 1040}{20 \quad\quad 76 \quad 76 \quad 44} \quad 1120\ \mu.$$

Length : juv., 1,088 mm; $\alpha = 13,6$; $\beta = 4,24$; $\gamma = 13,6$.

$$\frac{0 \quad 32 \quad 256 \quad M \quad 1008}{28 \qquad 68 \quad 80 \quad 44} \quad 1088\ \mu.$$

♂. Head bluntly rounded anteriorly, with complicate lips that bear setiform papillae. Head set off by a cuticular band. Vestibulum thin walled. Oral cavity deep, cylindrical, thick walled, with a prominent, vigorous, pointed tooth. Amphids in the shape of a transverse spiral in diameter, 43,5 % of the corresponding diameter. Oesophagus only slightly enlarged posteriorly. Excretory pore at lower end of buccal cavity. Genital armature consisting of comparatively slender spicula, 1,48 anal diameters long, with a knobbed proximal end and a swordlike distal end. Gubernaculum gutter-shaped at the proximal end, pointed distally. There is a medioventral row of 11 praeanal setae or setiform papillae, similarly a row of 6 postanal setiform papillae. Tail conical, pointed to the apex. Length of tail 1,9 times as long as the anal diameter. In the female the tooth was longer than in the male sex. Moreover we find on the body submedian rows of short minute setae allover the body running from the head end to the tail. Here the tail was 1,77 times as long as the anal diameter.

76. — **Metachromadora papillata** n. sp.

(Fig. 76, A-D.)

1 ♂, from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

Length : ♂, 1,208 mm; $\alpha = 16,8$; $\beta = 6,05$; $\gamma = 13,8$.

FILIPJEV's formula :

$$\frac{0 \quad 24 \quad 120 \quad 200 \quad M \quad 1120}{24 \qquad\qquad 64 \quad 72 \quad 40} \quad 1208\ \mu.$$

Closely allied to the foregoing species with a sharply demarcated head end, short and narrow spiral amphids, a strong dorsal tooth. Length of tail 2,3 anal diameters. Genital armature consisting of a gutter-shaped gubernaculum, running posteriorly to about 2/3 the length of the spicula, whereas the anterior prolongation is very short, distal end of the same pen point-shaped. Spicula slender with a proximal knob, which bears a distal prolongation, that points to the anal opening. Praeanally we find 14 praeanal papillae, posterior to the anal opening neither anal setae, nor papillae are to be discerned.

By these characteristics the present form may be easily distinguished from *Metachromadora longilaima* S. S.

Family **MONOPOSTHIIDÆ.**

Genus MONOPOSTHIA De Man, 1889.

77. — **Monoposthia mediterranea** n. sp.

(Fig. 77, A, B.)

1 ♀, from Villefranche, off the Station, coarse sand under vegetation of *Posidonia*. Depth 3 m.

Length : ♀, 1,28 mm; $\alpha = 32$; $\beta = 6{,}69$; $\gamma = 12{,}79$; V. = 82 %.

Filipjev's formula :

$$\frac{0 \quad 152 \quad 192 \quad 1080 \quad 1180}{20 \qquad 40 \quad 40 \quad 24} \quad 1280\ \mu.$$

The specimen in question resembles very much *Monoposthia costata* De Man. Unfortunately we do possess no male of the same species and of the same locality, otherwise we could be rather sure about the identity of the species. It differs from *costata* in the distinctly greater length of the cephalic setae, which are 69 % as long as the corresponding cephalic diameter, in our species, whereas they are distinctly shorter in the specimens of *costata* from North Sea and Baltic. *Sp. costata* of the Black Sea possesses, when Filipjev's figure is consulted, cephalic setae that are half as long as the corresponding diameter and are therefore intermediate between those of the present species and that of the North Sea. The circular amphids measuring 21 % of the corresponding body diameter (13 % in *costata*) are situated in the third body ring. The buccal tooth is distinct and sharply pointed, longer than in *costata* and more prominent at the same time. Number of longitudinal rows of V-shaped interruptions of the cuticular annules distinctly less than in *costata*. Anterior portion of oesophagus bulbar, like in all other species of *Monoposthia*. Posterior bulbus equal in length to 20,8 % of the total oesophageal length. Vulva at the same spot as in the female of *costata*. Tail elongate conical with a blunt conical spinneret. Its length 3,9 times as long as the anal diameter [3,59 in the Black Sea female of *costata*, studied by Filipjev (1918-1921)].

Steiner's female from Teneriffa comes near to the present female not only in its dimensions which are almost quite identical, but apparently also in its structural features.

Length of Steiner's :

♀, 1,198 mm; $\alpha = 26$; $\beta = 6{,}8$; $\gamma = 11{,}5$; V. = 82,97 %.

Steiner (1916) points to the fact, that his specimen was distinctly smaller than those of the North Sea generally are, and that quite as in our specimen the annulation of the head end is not or almost not disturbed and deviated by the interruption caused by the amphids.

So I come to the conclusion that the specimens from Teneriffa and Villefranche belong to a separate species, for the latter of which I propose the name *Monoposthia mediterranea.*

In material from Ibiza I found a male, which might be the male of this species. It has a small circular amphid in the third body ring. The oesopha-

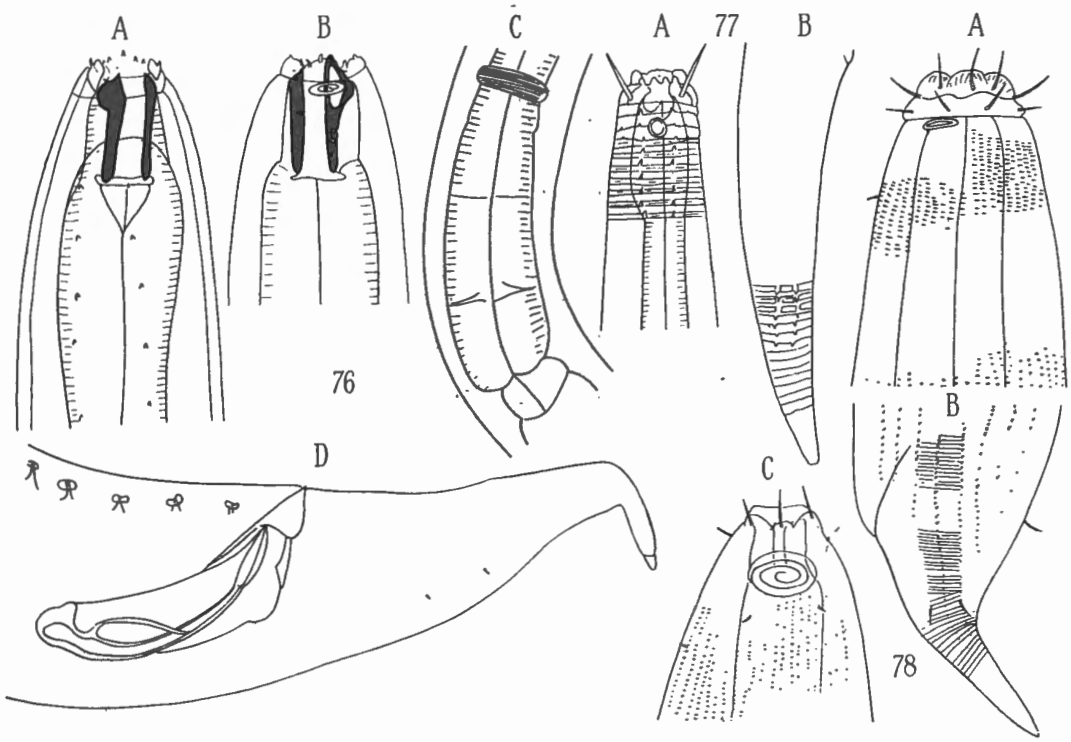


FIG. 76. — *Metachromadora papillata* n. sp.
A, B : Head ends. C : Base of œsophagus.
D : Male tail.

FIG. 77. — *Monoposthia mediterranea* n. sp.
A : Female head end.
B : Tail.

FIG. 78. — *Richtersia elongata* n. sp.
A : Head of female larva. B : Tail of the same. C : Head of male larva.

geal bulb occupies 28,3 % of the whole oesophageal length. The spicula are less curved than in the typical *costata.*

Length of that male : 1,332 mm; $\alpha = 33\ 3$; $\beta = 6{,}2$; $\gamma = 11{,}1$.

0	12	152	212	M	1212	1332 µ.
16			40	40	32	

In its dimensions the male may be in accordance with the female of Villefranche. So the same species apparently also occurs in Ibiza. ALLGÉN (1942) states to have found *M. costata* in Banyuls. Further comparison of material of Villefranche and Banyuls has to prove if ALLGÉN's conclusion is correct, and if ALLGÉN did not dispose of specimens of *M. mediterranea.*

Family **RICHTERSIIDÆ.**

Genus RICHTERSIA Steiner, 1916.

78. — **Richtersia elongata** n. sp.

(Fig. 78, A-C.)

1 juv. ♀ and 1 juv. ♂, from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

The species in question is closely allied to *R. demani* Schuurmans Stekhoven but may apparently be distinguished from the latter by differences in the shape of the amphids in the female sex, in the number of longitudinal rows of clawlike spines on the cuticle in both sexes, the more elongate tail and slight differences in the pubescence in the male sex.

Both specimens were juvenile forms, no genital organs being apparent, but easily distinguishable as belonging to either the female or the male sex by the shape of the amphids, which present sex dimorphism.

Length of the juv. ♂ : 0,532 mm; $\alpha = 7,4$; $\beta = 2,95$; $\gamma = 7,4$.
Filipjev's formula :

$$\frac{0 \quad 180 \quad 460}{16 \quad 72 \quad 44} \quad 532\ \mu.$$

Length of the juv. ♀ : 0,752 mm; $\alpha = 12,5$; $\beta = 2,77$; $\gamma = 12,5$.
Filipjev's formula :

$$\frac{0 \quad 272 \quad 692}{28 \quad 60 \quad 40} \quad 752\ \mu.$$

The dimensions of the juvenile females fall in the range of variation of *Richtersia demani* female, as for the male specimen the difference in its α and γ might be due eventually to a difference in development, but it seems to me that these differences are rather great to be pure growth differences and this combined with the greater number of longitudinal rows of spines brought me to create a new species for it.

Head in the female individual distinctly set off against the remainder of the body by a constriction, immediately in front of the amphids. Like in other species of the genus a second constriction separates lip region and lower head portion. Six distinct lips, with 6 setae. These setae are rather slender and measure 45,2 % of the corresponding diameter. Caudal head portion with a second crown of 8 setae, distinctly shorter that the anterior crown, only 17,5 % of the corresponding diameter in length.

Amphids more slit-like, probably a flat spiral, 30 % of the corresponding diameter. The shape of these amphids may be derived from those of *R. demani* by imagining that the opening of the amphids in *R. demani* has been diminished by dorsoventral pressure on the amphidial ring. The oral

cavity could not be studied. Near the head end there are at least 40 rows of cuticular spines, further downward this number diminishes to about 25. On the level of the anal opening the number is even less and seems to be no more than 20. Tail elongate conical more sharply pointed than in *R. demani*. Tail 2 anal diameters long, with some scattered setae. The distal point of the tail appears slightly longer than in *R. demani*.

Male larva with a much less pronounced head portion, hardly demarcated against the remainder of the body, with six indistinct lips and as many setae. The latter, 50 % of the corresponding diameter. Second crown of much smaller setae, 16,1 % of the corresponding diameter, consisting of 6 setae only. Amphids transverse spirals, with 3 ½ windings, diameters of the amphids, 51,2 % of the corresponding diameter. Posterior to the amphids 2 short but distinct setae were found.

Buccal cavity as such not studied, apparently folded together. Number of rows of spines like in the female about 40.

Family **CHROMADORIDÆ.**

Genus SPILOPHORELLA Filipjev, 1918.

79. — **Spilophorella euxina** Filipjev, 1918.

(Fig. 79, A-G.)

4 ♂♂, 3 ♀♀, from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

1 ♂, 1 ♀, from Villefranche, baie de Lilong, sand. Depth 5 m.

Dimensions :

♂ 1, length : 1,356 mm; $\alpha = 26$; $\beta = 5,65$; $\gamma = 7,7$.

Filipjev's formula : $\frac{0 \quad 172 \quad 240 \quad M \quad 1180}{20 \quad\quad 52 \quad 52 \quad 36}$ 1356 µ.

♂ 2, length : 1,320 mm; $\alpha = 25,3$; $\beta = 5,88$; $\gamma = 7,49$.

Filipjev's formula : $\frac{0 \quad 148 \quad 160 \quad 224 \quad M \quad 1144}{16 \quad\quad\quad\quad 50 \quad 52 \quad 40}$ 1320 µ.

♀ 1, length : 1,248 mm; $\alpha = 26$; $\beta = 5,69$; $\gamma = 6,62$; V. = 46,5 %.

Filipjev's formula : $\frac{0 \quad 140 \quad 220 \quad 580 \quad 1060}{20 \quad\quad 48 \quad 48 \quad 32}$ 1248 µ.

♀ 2, length : 1,344 mm; $\alpha = 26$; $\beta = 5,8$; $\gamma = 7$; V. = 44 %.

Filipjev's formula : $\frac{0 \quad 160 \quad 232 \quad 592 \quad 1152}{20 \quad\quad 40 \quad 52 \quad 32}$ 1344 µ.

Filipjev's ♀, length : 0,97 mm; $\alpha = 18$; $\beta = 5,33$; $\gamma = 7$; V. = 46 %.

♀, from Mallorca, ♀ 1, 1,06 mm; $\alpha = 22,5$; $\beta = 4,4$; $\gamma = 6,6$; V. = 50 %.

Filipjev has only studied the female sex of the present species, so that the male is new to science.

Head of the male in question distinctly set off from the remainder of the body, rather soft-skinned, slightly swollen. Lips distinct bearing cephalic setae, that are as long as 30 % of the corresponding cephalic diameter. Labial papillae, 6 in number, minute and inconspicuous. Mesostom with a well developed diadem, metastom widened again with a well developed dorsal tooth,

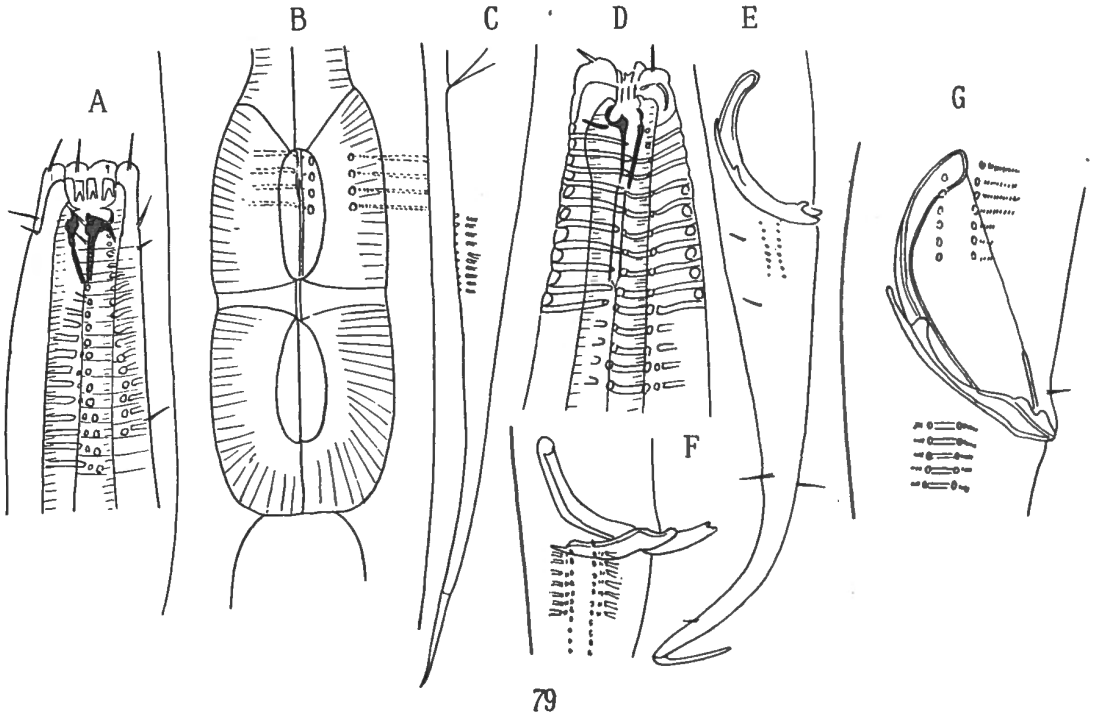


Fig. 79. — *Spilophorella euxina* Filipjev.
A : Female head. B : Base of œsophagus. C : Female tail. D : Male head.
E : Male tail. F, G : Male genital armature.

anchored into the wall of the oesophagus by means of a cuticular rod. Opposite to the said tooth there is a minute denticle at the entrance of the oesophageal cylinder. The latter distimctly swollen at the proximal end, provided with two separate bulbar swellings. Length of the bulbar portion of the oesophagus in a male 28,4 % of the oesophageal length, whereas it measured 30 % of that length in a female. Nerve ring at 63,5 % of the oesophageal length.

Cuticula with the lateral fields distinctly demarcated by large dots which are situated on comparatively broad rings. Width of the lateral fields 21 % of the corresponding body diameter near the anterior end, whereas the same measures only 16 % of the body diameter in the neighbourhood of the oeso-

phageal bulbs. Bulbs equal in size. Some scattered setae are found on the cuticle especially at the anterior end. At the level of the dorsal tooth one of the females presented a couple of setae of unequal length at each side of the body. Next to the lateral fields the cuticular annulations are stripe-like or broken into a number of fine dots.

The tail bears some scattered fine setae. No praeanal papillae seen. Spicula slender, velate. Chord 1,33 times as long as the corresponding anal diameter. Proximal part of the spicula with a club-shaped swelling, distal end bluntly pointed. Gubernaculum closely surrounding the distal end of the spicula with a proximal bifurcation and two tooth-like processes at the distal end. Tail slender, tapering to a fine needle-like spinneret. Length of the tail, 5,6 anal diameters. Length of spinneret 16 % of the tail length.

Female in general structure like the male. Cephalic setae, 45,5 % of the corresponding cephalic diameter. Tail very slender, 7 anal diameters long. Length of spinneret 15,7 % of the whole taillength, effilate.

The present species is easily distinguished from *S. dentata* G. SCHNEIDER to which it is closely related by the strong curvature of the spicula. The spicula and the gubernaculum are of equal structure as the same structures of *Spilophorella paradoxa* (DE MAN), but in the present species they are more strongly curved and moreover the proximal end of the same is swollen, whereas in *paradoxa* the proximal end is more attenuate and moreover the bulbs are of equal size in our species, whereas they are of unequal size in *paradoxa*. In general our description is in accordances with that of FILIPJEV. I am however quite sure that *Spilophorella euxina* is not identical with *Sp. paradoxa* like MICOLETZKY (1924) in his description of *Sp. paradoxa mediterranea* thinks. Another point is if not *Sp. paradoxa* var. *mediterranea* is identical with FILIPJEV's *euxina*. The structure of the oesophageal bulb which is composed of two unequal portions and the differences in the ornamentation of the skin and the structure of the buccal cavity seem to speak against this identity, whereas the species or form described by MICOLETZKY is not inconspicuously smaller than the present form. So I keep it for certain that *Sp. euxina* is a good species, the geographical distribution of which runs from Villefranche to the Black Sea.

80. — **Spilophorella mediterranea** (MICOLETZKY, 1924).

(Fig. 80, A, B.)

1 ♀, from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

Length : ♀, 0,876 mm; $\alpha = 24,2$; $\beta = 5,1$; $\gamma = 7,05$; V. = 44,9 %.

♀, from the Camargue, length : ♀, 0,680 mm; $\alpha = 22,5$; $\beta = 6,3$; $\gamma = 5,6$; V. = 47 %.

MICOLETZKY : ♀. 0,82 mm; $\alpha = 24,1$; $\beta = 5,36$; $\gamma = 6,85$; V. = 47,5 %.

FILIPJEV's formula ♀, Villefranche :

$$\frac{0 \quad 172 \quad 302 \quad 752}{16 \quad 36 \quad 36 \quad 20} \quad 876\ \mu.$$

The present female may be easily distinguished from the foregoing species by the fainter dental armature and development of the oral cavity, by the ornamentation of the skin, which is more like in *Sp. paradoxa* De Man, and by its smaller size, whereas it may be distinguished from *Sp. paradoxa* by the fact that both oesophageal bulbs are less distinct in size than in the latter species. I have not with certainty observed the set of small setae on the spinneret mentioned by Micoletzky but similar minute hairlets are found along

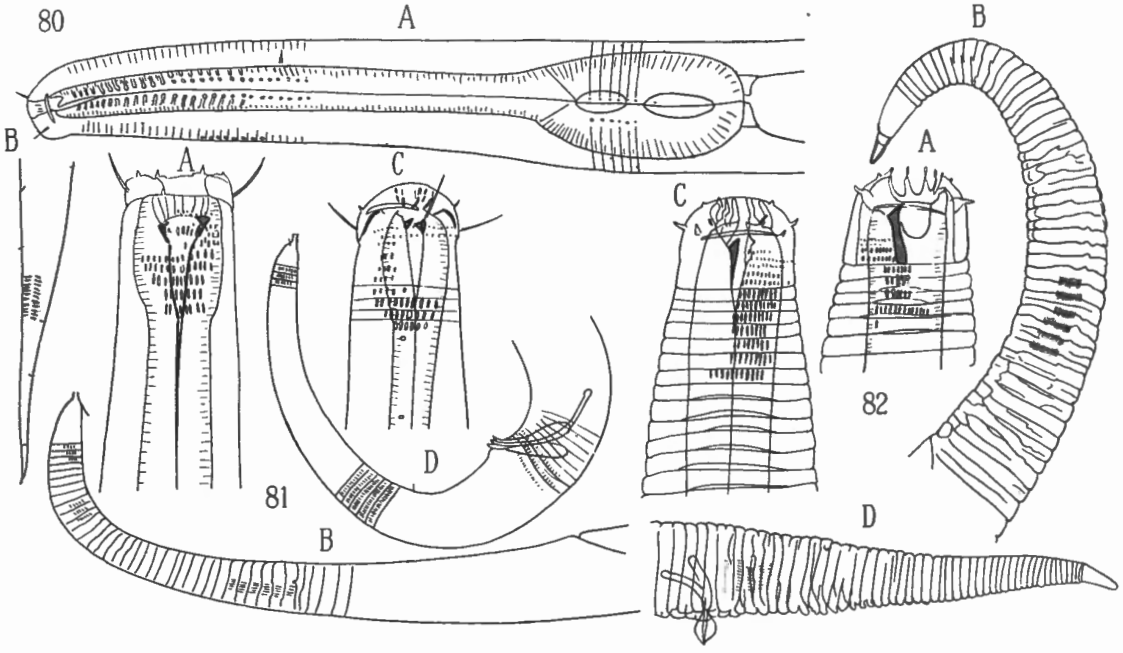


Fig. 80. — *Spilophorella mediterranea* (Micoletzky).
A : Female head end. B : Tail.

Fig. 81. — *Euchromadora africana* von Linstow.
A : Female head. B : Female tail.
C : Male head end. D : Male tail.

Fig. 82. — *Euchromadora inflatispiculum* n. sp.
A : Female head end. B : Tail.
C : Male head end. D : Tail.

the tail, so that I am convinced also from the observation of a female from the Camargue that my specimen is conspecific with Micoletzky's species to which I ascribe specific value.

Cuticula with cuticular rings, strengthened by transverse bars, beginning with the prominent dots which do border the lateral fields. The latter 15,6 % of the corresponding body diameter. To the dorsal and ventral side the bars are dissolved into rows of points. Head slightly swollen with cephalic setae, measuring 29,5 % of the corresponding cephalic diameter.

Amphids transverse, halfmoon-shaped slits, measuring 47,4 % of the body diameter. They are situated slightly in front of the dorsal tooth. Oral

cavity with a faintly plicated vestibulum. Dorsal tooth acute. Oesophageal bulb occupying together 37,5 % of the total oesophageal length, divided into 2 subequal bulbs. Tail elongate pointed, provided with a rather long spinneret. Length of tail 5,88 anal diameters. Tail beset with scattered minute setae. ALLGÉN (1942) does not recognize *S. mediterranea* as a valid species. He identifies it with *S. paradoxa* (DE MAN) and mentions this species from Banyuls. I am however convinced that the Banyuls specimens should be reckoned to *S. mediterranea*.

GEOGRAPHICAL DISTRIBUTION : Adria near Rovigno, Ombla Bay Melada, Bocche di Cattaro, near Naples and Ischia, Villefranche, Camargue.

Genus EUCHROMADORA DE MAN, 1886.

81. — **Euchromadora africana** VON LINSTOW, 1908.

(Fig. 81, A-D.)

4 ♂♂, 7 ♀♀, 3 juv. from Villefranche « Baie de Lilong », sand. Depth 5 m.

Length : ♂, 1,66 mm; $\alpha = 27,5$; $\beta = 5,92$; $\gamma = 9,2$.

FILIPJEV'S formula :

$$\frac{0 \quad 280 \quad M \quad 1480}{24 \quad 40 \quad 60 \quad 32} \quad 1660\ \mu.$$

Length : ♀, 1,944 mm; $\alpha = 23$; $\beta = 6,4$; $\gamma = 9,7$; V. = 49,6 %.

FILIPJEV'S formula :

$$\frac{0 \quad 304 \quad 564 \quad 1744}{24 \quad 48 \quad 84 \quad 32} \quad 1944\ \mu.$$

STEINER'S: ♂, from Teneriffa : 1,638 mm; $\alpha = 28,2$; $\beta = 5,9$; $\gamma = 8,5$.
♂, from Togo, Lome : 1,098-1,584 mm; $\alpha = 24,4\text{-}29,3$; $\beta = 4,5\text{-}6$; $\gamma = 8\text{-}9$.
♀, from Togo : 1,724-2,189 mm; $\alpha = 23\text{-}23,15$; $\beta = 4,5\text{-}6$; $\gamma = 8\text{-}9,9$.

Our specimens fall also fully in the range of variation of STEINER'S specimens.

The extreme head portion distinctly set off against the remainder of the body, is slightly swollen. Lips movable, therefore varying in outlook adorned with 6 setiform papillae, a second row of 6 cephalic papillae and a crown of 4 long and slender cephalic setae, which measure 47 % of the corresponding cephalic diameter in the male sex. Lower portion of the head with 3 transverse rows of distinctly spaced small points and rods. Immediately behind the head the rings are ornamented with hexagonal rods typical for the genus, and distinctly separate. Laterally one finds as far as I could see a single row of minute pores, undoubtedly the outlets of cuticular glands. Amphids halfmoon-

shaped, slitlike, their width 52 % of the corresponding cephalic diameter. Oral cavity with a distinct diadem, whereas the metastom bears not only a dorsal tooth, but also a single, probably even two subventral teeth. This seems to be in contradiction with the descriptions of STEINER (1916) and VON LINSTOW and also with the figure of the female given below, but this may be due I think to the side from which the animal was observed. Anterior oesophageal portion slightly swollen. Posterior end of oesophagus with an elongate bulb-like swelling, which is hardly indicated. Width at the head end 40 % of that in the middle of the body. Spicula slender, curved, pointed at their distal end, hardly swollen at the proximal end, their chord measuring 1,44 anal diameters. Gubernacula half the length of the spicula, broadly rounded proximally.

Length of tail 6,8 anal diameters. Spinneret with a short unilateral tube. Some fine setae are found on the tail, of which there is a single at the dorsal side of the spinneret.

In the female which I observed from a slightly different point of view I have only found a single dorsal tooth. Here the head was more expanded than in the male figured in figure 78 *a*, so that the three portions of the buccal cavity are clearly distinguished; a smooth vestibulum, a mesostom with its diadem and the metastom with its tooth at the junction between meso- and metastom. The lining of this conical part is strongly cuticularized. Length of the cephalic setae 43 % of the corresponding cephalic diameter.

Female tail 7,45 anal diameters long.

Although I have doubted a moment whether the male in question really did belong to the same species, the fact that both did occur at the same spot and moreover had so many points in common convinced me that both male and female are conspecific.

The species has a rather wide distribution and does occur as well in the Mediterranean as along the african coast. From the description MICOLETZKY (1924) has given from his specimens of *Euchromadora striata* and from my own observations after a female from Alexandria, it is clear that *E. striata* and *E. africana* have to be considered as separate forms. Remains however the possibility that MICOLETZKY has confused two species. Possibly DE CONINCK's *Euchromadora* sp. (1942) from Castiglione (Alger) belongs to the same species.

82. — **Euchromadora inflatispiculum** n. sp. SCHUURMANS STEKHOVEN, 1942.
(Fig. 82, A-D.)

1 ♀, from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

2 ♂, from Villefranche, off the « Vieux Villefranche », black mud and organic detritus. Depth 20 m.

The present species ressembles in certain points STEINER's *E. lüderitzi* because it possesses a rather long head capsule opposite to what we find in *E. africana* but the species may be easily distinguished by the fact that it has longer and sharper teeth. This fits as well for the dorsal tooth as for the subventral teeth. Further the cephalic setae and papillae are more conspicuous and thirdly we find at least 5 rows of points and bars on the cephalic portion which is distinctly set off by a cuticular constriction. Apart from the greater size it also differs by the swollen apex of the spicula.

Length of male : 3,120 mm; $\alpha = 41$; $\beta = 6{,}5$; $\gamma = 12{,}9$.
FILIPJEV's formula :

$$\frac{0 \quad 480 \quad M \quad 2880}{28 \quad 68 \quad 76 \quad 60} \quad 3120\ \mu.$$

Length of female: 2,760 mm; $\alpha = 34{,}5$; $\beta = 6{,}19$; $\gamma = 13{,}8$; V. = 45 %.
FILIPJEV's formula :

$$\frac{0 \quad 440 \quad 1240 \quad 2560}{28 \quad 72 \quad 80 \quad 56} \quad 2760\ \mu.$$

The head is sharply demarcated against the remainder of the body and of considerable length. It is bluntly rounded anteriorly and bears 6 blunt labial papillae. Cephalic setae, 6 in number, short, claw-like, measuring 11,4 % of the corresponding cephalic diameter. Amphids slit-like, very broad, 69,5 % of the corresponding body diameter. Diadem with thick longitudinal bars. Oral cavity with a sharply pointed dorsal tooth and 2 rather sharp subventral teeth. Oesophagus not swollen anteriorly. On the posterior half of the head one finds 5 transverse rows of dots and bars in the male, whereas I have seen only three of these rows in the female sex. Genital armature consisting of a nearly straight gubernaculum, which is only half as long as the corresponding body diameter and of slender spicula, distinctly inflated at their distal end. Length of the chord, 0,9 anal diameters. Tail gradually tapering to the spinneret, which is short and devoid of skin ornamentation. Length of tail, 4,15 anal diameters. Width at the beginning of the spinneret 16,6 % of the anal diameter. Female in general shaped as the male, the tail however more sharply pointed than in the male sex. Tail length equal to 6,05 anal diameters.

GEOGRAPHICAL DISTRIBUTION. — Mediterranean, Villefranche, Alexandria.

Genus HYPODONTOLAIMUS De Man, 1888.

83. — **Hypodontolaimus ponticus** Filipjev, 1922.

(Fig. 83, A-E.)

1 ♀, 3 ♀♀, from Villefranche, black mud and organic detritus, farther end of the « Porte de la Darse ». Depth 3 m.

1 ♂, 1 ♀, from Villefranche, grey mud between the « Lazareth » and the « Anse passable ». Depth 50 m.

4 ♂♂, 5 ♀♀, from Villefranche, grey mud, off the « Pointe de la Gavinette ». Depth 80 m.

Length : ♂ 1, 1,16 mm; $\alpha = 32$; $\beta = 5,48$; $\gamma = 9,05$.

Filipjev's formula :

$$\frac{0 \quad 144 \quad 212 \quad 1032}{20 \qquad 36 \quad 24} \quad 1160\ \mu$$

♂ 2, 1 mm; $\alpha = 27,6$; $\beta = 5,53$; $\gamma = 10$.

Filipjev's formula :

$$\frac{0 \quad 120 \quad 180 \quad M \quad 900}{20 \qquad 32 \quad 36 \quad 28} \quad 1000\ \mu$$

♂ 3, 0,996 mm; $\alpha = 24,9$; $\beta = 5,52$; $\gamma = 8,32$.

Filipjev's formula :

$$\frac{0 \quad 128 \quad 180 \quad 388 \quad M \quad 876}{16 \qquad 32 \qquad 40 \quad 32} \quad 996\ \mu.$$

♀ 1, 1,22 mm; $\alpha = 27,6$; $\beta = 6,08$; $\gamma = 9,5$; V. = 51 %.

Filipjev's formula :

$$\frac{0 \quad 140 \quad 200 \quad 620 \quad 1092}{20 \qquad 40 \quad 44 \quad 28} \quad 1220\ \mu$$

Filipjev's : ♀, 0,950 mm; $\alpha = 24$; $\beta = 5$; $\gamma = 6$; V. = 50 %.

♀ 2, 1,124 mm; $\alpha = 28,1$; $\beta = 6,1$; $\gamma = 9,38$; V. = 46,6 %.

Filipjev's formula :

$$\frac{0 \quad 124 \quad 184 \quad 524 \quad 1004}{16 \qquad 32 \quad 40 \quad 20} \quad 1124\ \mu.$$

1 ♂ from Mallorca length : 0,648 mm; $\alpha = 27$; $\beta = 4,05$; $\gamma = 8,5$.

The body is half as wide anteriorly than it is at the end of the oesophagus in the female sex, but slightly less attenuated in the male sex. Labial region of the head, capshaped, short, distinctly set off against the remainder of the body. Lips rather distinct, bearing 6 labial papillae and a crown of 4 short cephalic setae, not seen by Filipjev. Length of the same 40 % of the corresponding body-width in both sexes.

The head, that ends, where the regular cuticular annulations begin, is provided with a certain number of dots in two rows, beginning immediately

behind the amphids. These rows are continued on the rest of the body in the rows of dots, which demarcate the lateral fields. Amphids circular in outline, spiral in structure, measuring 24 % of the corresponding body diameter. Annules distinct, adorned with rows of dots, those adjacent to the lateral dots, smaller in size and more posteriorly shaped like minute bars. Width of the lateral fields on the oesophageal region 15,6 % of the corresponding body

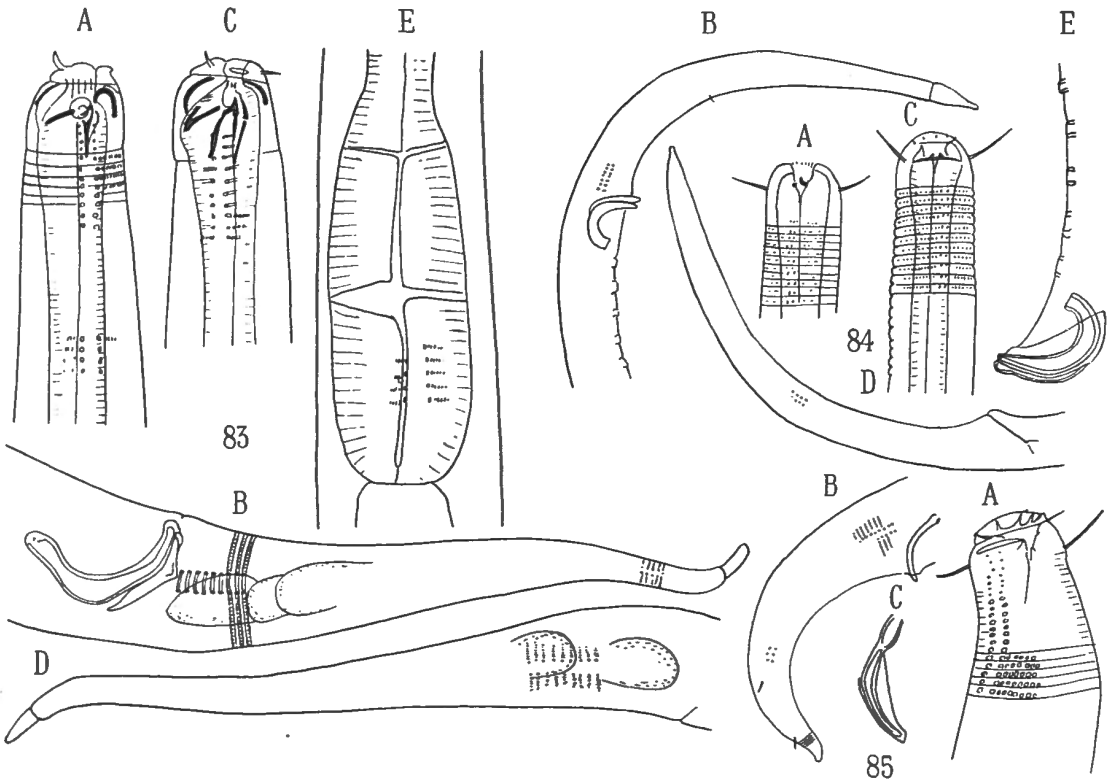


FIG. 83. — *Hypodontolaimus ponticus* FILIPJEV.
A : Male head end. B : Male tail.
C : Female head. D : Female tail.
E : Base of œsophagus.

FIG. 84. — *Dichromadora tenuicauda* n. sp.
A : Male head end. B : Male tail.
C : Female head end. D : Female tail.
E : Male genital armature.

FIG. 85. — *Dichromadora punctata* n. sp.
A : Male head end. B : Male tail. C : Spiculum and gubernaculum.

diameter in the female, 14,7 % of the same in the male sex. The dots demarcating the lateral fields are connected transversely by cuticular bars (fig. 83). Cuticular pores, next to the lateral fields scattered over the surface. Vestibulum oris surrounded by the lips. Diadem inconspicuous. There is a rather strong dorsal tooth, sharply pointed anteriorly and connected with the oesophageal wall by means of a rod. Ventral wall of the oral cavity thickened opposite to the dorsal tooth. This oesophageal region is, like in all other species of *Hypodontolaimus*, asymetrical in optical section.

Oesophagus with a rather long elongate not very prominent bulbar swelling with two protoplasmatic interruptions. Length of this bulbar portion 33 % of the total oesophageal length.

Genital armature, consisting of strongly curved spicula, that are blunt at their distal end. Spicular chord 1,06 anal diameters long. Gubernaculum notched, 78 % of the anal diameter. Tail length 4,45 anal diameters. Caudal glands 3 in number, in tandem position, spinneret fingershaped. Female tail 6,55 anal diameters long.

Geographical distribution : Black Sea, Mediterranean, Villefranche, Baléares.

Genus DICHROMADORA Kreis, 1928.

84. — **Dichromadora tenuicauda** n. sp.
(Fig. 84, A-E.)

1 ♂, 1 ♀, from Villefranche, baie de Lilong, sand. Depth 5 m.

Length : ♂, 1,264 mm; $\alpha = 53$; $\beta = 8,3$; $\gamma = 8,3$.
Filipjev's formula :

$$\frac{0 \quad 120 \quad 152 \quad M \quad 1072}{16 \quad\quad 20 \quad 24 \quad 24} \quad 1264\ \mu.$$

Length : ♀, 1,416 mm; $\alpha = 39,2$; $\beta = 7,7$; $\gamma = 7,08$; V. = 48 %.
Filipjev's formula :

$$\frac{0 \quad 184 \quad 676 \quad 1216}{16 \quad 20 \quad 36 \quad 20} \quad 1416\ \mu$$

The specimens in question greatly resemble those of *D. parapœcilosoma*. Their tail however is as well in the male as in the female sex considerably longer, especially if the relative length is taken into consideration, almost 10 anal diameters against slightly more than 5 anal diameters. Further there are inconspicuous differences in the genital armature and in the width of the lateral fields, which makes me conclude that we have to do with a distinct species, for which I propose the name *D. tenuicauda*.

Quite at the anterior end, which is bluntly rounded, we find the head portion, with a single row of transverse dots at its base. Here there is not yet an interruption of the rows of dots on the lateral fields, which is further on to be seen. There these are 14,3 % of the corresponding body diameter wide. The double row of dots is prolonged till on the tail. Head with minute labial papillae. Cephalic setae long and slender, 55 % of the corresponding cephalic diameter. Oral cavity undeep, with vestibular longitudinal ribs, a prominent dorsal tooth and less distinct subventral teeth. Both kinds pointed at their tips, the dorsal tooth having the shape of a curved prong. Oesophagus with elongate bulbus with three cuticular interruptions, the wole occupying 47,5 %

of the oesophageal length. End of excretory cell at 150 % of the oesophageal length from the anterior head end. Spicula very strongly curved, their chord as long as 1 anal diameter. Gubernaculum velate, platelike. I counted 5 praeanal papillae, the most caudal being situated just at the proximal end of the spicula, whereas the most anterior one is separated from the cloaca by a distance equal to 3 anal diameters. Tail long and slender, elongate, slightly swollen towards the tip, where one finds a conical spinneret. Length of tail in the male sex 8 anal diameters, in the female sex 10 anal diameters.

The present species shows close resemblance with *Neochromadora quinquepapillata* SCHUURMANS STEKHOVEN, but may be easily distinguished from the latter by the longer cephalic setae, the structure of the spicula and the more pronounced oesophageal bulb.

85. — **Dichromadora punctata** n. sp.

(Fig. 85, A-C.)

1 ♂, from Villefranche, off the Station, coarse sand under vegetation of *Posidonia*. Depth 15 m.

Length : ♂, 0,904 mm; $\alpha = 22{,}6$; $\beta = 6{,}88$; $\gamma = 7{,}5$.

FILIPJEV's formula :

$$\frac{0 \quad 104 \quad 132 \quad M \quad 784}{20 \qquad 36 \quad 40 \quad 32} \quad 904\ \mu.$$

The male in question is closely allied to *Dichromadora cricophana* (FILIPJEV) and likewise resembles *Chromadorella mytilicola* FILIPJEV. From the first species it may be easily distinguished by the much longer cephalic setae and the more blunt and short, less slender shape of the tail. From *Chromadorella mytilicola* it distinctly differs in the structure of the buccal cavity, in the size of the cephalic setae and in the ornamentation of the cuticula.

Head end bluntly rounded anteriorly. The head however is not in excellent condition, for we find an extrusion of the vestibulum with its longitudinal ribs. The head is not sharply demarcated against the remainder of the body. Labial papillae 6 in number, conical in shape, minute. Cephalic setae likewise 6 in number, long and fine, measuring 54 % of the corresponding body diameter. Oesophageal bulb 21,2 % of the total oesophageal length. Genital armature consisting of rather slender spicula, bluntly pointed at their distal end and enlarged tot an elongate tube at their proximal end. Curvature of the spicula not very vigorous. Spicular chord 0,84 anal diameter long. There is a velum or at any rate a membranaceous gubernaculum, that ensheathes the spiculum from the head end to the tip. No praeanal papillae seen. Tail rather plump and short, 3,6 anal diameters long, provided with a short spinneret and some scattered setae on its dorsal side.

Genus PROCHROMADORELLA Micoletzky, 1924.

From this genus two species are known from the Mediterranean, i.e. *Prochromadorella neapolitana* and *Prochromadorella mediterranea*. The present species resembles strongly *Prochromadorella mediterranea* Micoletzky. Opposite to what we find in that species the dorsal and subventral teeth are subequal, the cephalic setae are apparently shorter than in *mediterranea*, whereas there are 4 praeanal papillae in the place of 3, which needs not necessarily be an essential difference. Further we find a distinctly shorter tail, in comparison with the body length. Although we have to keep in mind, that further researches on mediterranean material, might prove, that the present

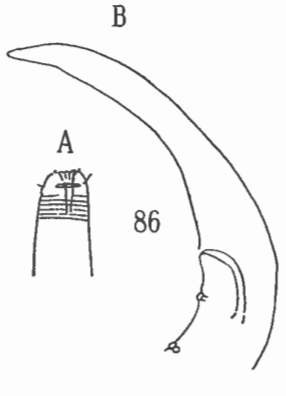


Fig. 86. — *Prochromadorella brachyura* n. sp.
A : Male head end.
B : Male tail.

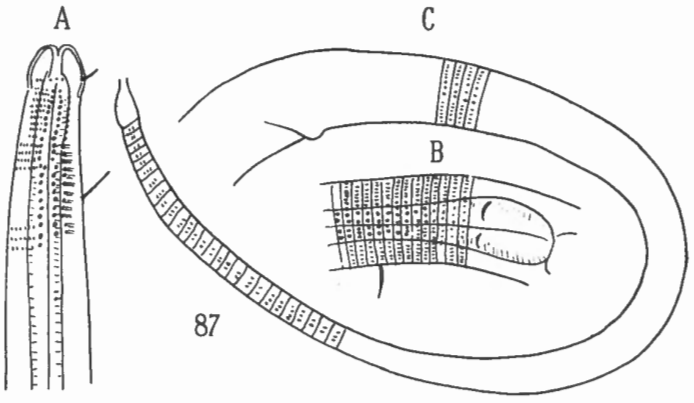


Fig. 87. — *Trichromadora ophiocephala* n. sp.
A : Female head end. B : Base of œsophagus.
C : Tail.

specimen is conspecific with *P. mediterranea*, I think it will be wise to separate it for the moment from that species and to treat it here as *Prochromadorella brachyura* n. sp.

86. — **Prochromadorella brachyura** n. sp.

(Fig. 86, A, B.)

1 ♂, from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

Length : ♂, 0,6 mm; $\alpha = 30$; $\beta = 5{,}58$; $\gamma = 11{,}5$.

Filipjev's formula :

$$\frac{0 \quad 108 \quad M \quad 548}{8 \quad 20 \quad 16 \quad 16} \quad 600\ \mu.$$

Head with distinct lips, crowned with minute setiform papillae. The cephalic setae, 4 in number, measure 33 % of the corresponding cephalic

diameter. Amphids slit-like, half as wide as the corresponding body diameter. Buccal cavity with distinct diadem and 3 equal rather blunt teeth, situated at the level of the cephalic setae.

Spicular curved, hardly swollen at their proximal end, the chord measuring 1,1 anal diameter. Gubernaculum, very faint. I have seen 4 equally spaced distinct praeanal papillae, of which the most posterior one is placed at a level with the proximal end of the spicula, whereas the most anterior one is separated from the anal cleft by a distance equal to 2,28 anal diameters. Tail gradually tapering to the spinneret. Length of the same 4 anal diameters.

Genus TRICHOMADORA KREIS, 1925.

87. — **Trichomadora ophiocephala** n. sp.

(Fig. 87, A-C.)

1 ♀, from Villefranche, farther end of the « Port de la Darse », black mud and organic detritus. Depth 2 m.

Length of the female :

1,204 mm; $\alpha = 43,2$; $\beta = 9,16$; $\gamma = 4,86$; V. = 46,1 %.

FILIPJEV's formula :

$$\frac{0 \quad 132 \quad 556 \quad 956}{8 \quad 16 \quad 28 \quad 16} \quad 1204\ \mu.$$

Body slender. Width at the anterior end 28,5 % only of that at the vulva, whereas the body attenuates strongly from the posterior oesophageal end to in front so that its width at the anterior end is no more than half that of the posterior end of the oesophagus. Head end swollen, bluntly truncate anteriorly. No labial papillae observed. Cephalic setae short, measuring 45,5 % of the corresponding cephalic diameter. Amphids not seen. Cuticular ornamentation beginning immediately behind the cephalic swelling. Here the lateral fields are demarcated by three longitudinal rows of comparatively widely spaced cuticular dots; width of these lateral fields 33,3 % of the body diameter at the anterior end of the oesophagus. For the rest the rings bear a single transverse row of fine rodlike points. Pilosity at the anterior end of the oesophagus like elsewhere on the body, scarce, comparatively long. Length of these setae 50 % of the corresponding body diameter. Oral cavity narrow, no teeth observed. Oesophagus only slightly widened towards the posterior end, so that one can hardly speak of a bulb. Tail long, gradually tapering to the posterior end, which is slightly swollen again. Width at the base of the spinneret 21,8 % of the anal diameter. Tail length equal to 12,8 anal diameters.

The species is closely allied to *Trichomadora longicaudata* Kreis from Trébeurden but differs from the latter by the absence of a dorsal tooth and by differences in the pilosity of the head portion. Moreover the tail in *Tr. longicaudata* is comparatively longer (19 anal diameters) than in the present species, whereas the oesophagus in the present species is comparatively longer than there.

Family **COMESOMIDÆ.**

Genus DORYLAIMOPSIS Ditlevsen, 1919.

88. — **Dorylaimopsis punctatus** Ditlevsen, 1919.

(Fig. 88, A-I.)

2 ♂♂, 1 juv. from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

5 ♂♂, 9 ♀♀, 12 juv. from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

1 juv. from Villefranche, grey mud, entrance of the road. Depth 230 m.

Length : ♂ 1, 2,532 mm; $\alpha = 27{,}8$; $\beta = 7{,}3$; $\gamma = 13{,}9$.

Filipjev's formula :

$$\frac{0 \quad 24 \quad 144 \quad 304 \quad M \quad 2072}{16 \qquad\qquad 60 \quad 80 \quad 52} \quad 2532\ \mu.$$

♂ 2, 1,94 mm; $\alpha = 27$; $\beta = 6{,}9$; $\gamma = 12{,}18$.

Filipjev's formula :

$$\frac{0 \qquad 280 \quad M \quad 1680 \quad 1780}{16 \qquad 64 \quad 72 \qquad\quad 64} \quad 1940\ \mu.$$

♂ 3, 2,18 mm; $\alpha = 36{,}4$; $\beta = 6{,}42$; $\gamma = 12{,}1$.

Filipjev's formula :

$$\frac{0 \qquad 340 \quad M \quad 2000}{20 \qquad 60 \quad 60 \quad 50} \quad 2180\ \mu.$$

♀ 1, 2,332 mm; $\alpha = 28{,}4$; $\beta = 7$; $\gamma = 12{,}8$; V. = 45,5 %.

Filipjev's formula :

$$\frac{0 \qquad 320 \quad 1012 \quad 2052}{16 \qquad 72 \quad 76 \quad 48} \quad 2332\ \mu.$$

Juv. 1, 1,7 mm; $\alpha = 26{,}5$; $\beta = 5{,}3$; $\gamma = 9{,}45$.

Filipjev's formula :

$$\frac{0 \qquad 320 \quad 1420}{12 \qquad 64 \quad 56} \quad 1700\ \mu.$$

Ditlevsen's male length : 2,6 mm; $\alpha = 35$; $\beta = 6{,}7$; $\gamma = 12{,}3$.
Ditlevsen's female length : 2,9 mm; $\alpha = 29$; $\beta = 8{,}2$; $\gamma = 12{,}4$.

The rich material enabled me to make a thourough study of the present species, which belongs to a genus closely allied to *Sabatieria,* but easily distinguishable from the latter by the possession of 3 buccal teeth, lateral fields consisting of 4 rows of dots and a notched long spiculum.

Head distinctly off set from the body by a constriction. Six lips each with a conical papilla, 6 identical labial papillae and 4 cephalic setae, implanted near the lower end of the head portion. Length of these setae 47,5 % of the

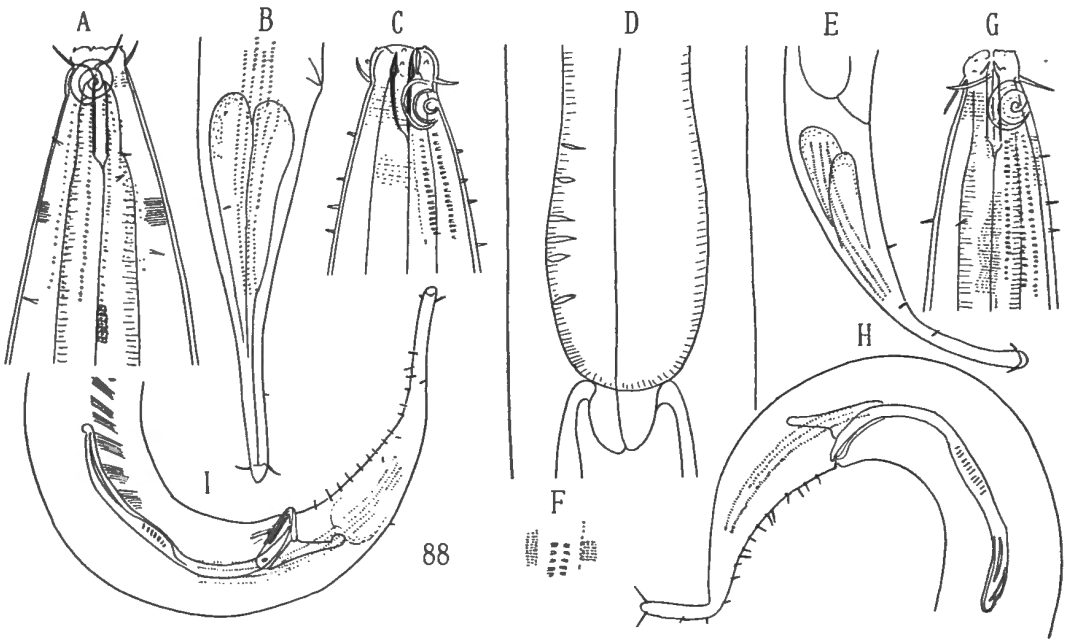


FIG. 88. — *Dorylaimopsis punctatus* DITLEVSEN.

A : Head end juvenile. B : Tail juvenile. C : Female head end.
A : Head end juvenile. B : Tail juvenile. C : Female head end. D : Female, base of œsophagus. E : Female tail. F : Cuticular or namentation on the male skin. G : Male head end. H, I : Male tail.

corresponding cephalic diameter in the female, 66,8 % of that same cephalic diameter in the male. Amphids spiral, consisting of 3 ½ windings. Width of the amphids 64 % of the corresponding diameter in both sexes. Oral cavity beginning with a narrow vestibulum, followed by the mesostomal cavity from which 3 teeth point forwards and followed by a cylindrical metastome. Oesophagus ending with a posterior bulbar swelling.

Cuticle with fine interior striation, exterior rows of points, interrupted at the lateral fields by 4 longitudinal rows of points, of which the interior ones are distinctly larger than the exterior ones and moreover mounted on scale-like platelets (fig. 88 B). Short setae are scattered over the oesophageal body portion, more or less distributed in longitudinal rows. Female tail broad at

base, gradually tapering towards a more or less cylindrical portion, which occupies 35 % of the whole tail length. Tip of tail slightly swollen. Some minute hairs are found on the tail, especially on the ventral and subventral sides and at the base of the spinneret. Length of female tail equal to 4 anal diameters.

Male in the possession of a strongly curved spiculum, pointed at its tip, widened at its distal half, where it is provided with transverse striae. Proximal end of the spicula hardly swollen; at its distal end, where there is also longitudinal ridge, the spiculum ends in a point. Spicular chord, 2,48 anal diameters long. Gubernaculum, 78,8 % of the anal diameter, provided with a dorsal apophysis. The distal portion of the gubernaculum embraces the tip of the spiculum. I did observe a praeanal row of 18-22 faint praeanal papillae. Male tail with a cylindrical apical portion, occupying 36,25 % of the total tail length. Along the ventral side of the tail one finds a row of distinct setae. Length of the tail 3,22 anal diameters.

Geographical distribution : Trondjhemfjord, Oresund, Sound, Mediterranean, Villefranche.

Genus PARACOMESOMA n. gen.

89. — **Paracomesoma coronata** n. sp.

(Fig. 89, A-F.)

1 juv. from Villefranche « Baie de Lilong », sand. Depth 3 m.

4 ♂♂, 3 ♀♀, 2 juv. from Villefranche, off the « Vieux Villefranche », black mud and organic detritus. Depth 20 m.

Length : ♂, 2,82 mm; $\alpha = 39$; $\beta = 10{,}1$; $\gamma = 12{,}8$.

Filipjev's formula :

$$\frac{0 \quad 160 \quad 280 \quad M \quad 2600}{16 \qquad 44 \quad 71 \quad 42} \quad 2820\ \mu.$$

Length juv. Lilong : 3,952 mm; $\alpha = 56{,}5$; $\beta = 10{,}6$; $\gamma = 11{,}5$.

Filipjev's formula :

$$\frac{0 \quad 220 \quad 372 \quad 3652}{70 \quad 40} \quad 3952\ \mu.$$

The species in question is closely allied to Filipjev's *Comesoma dubia*, the male of which measured : Length 2,8 mm; $\alpha = 49$; $\beta = 11{,}5$; $\gamma = 14$. Filipjev's species differs however from the present species in that the cervical setae are distinctly shorter than in our species. The spicula of Filipjev's species are in the possession of a very complicate gubernaculum, that is composed of at least two pieces, of which one is applicated to the spiculum. In the present species this question is not quite clear. In one of the specimens I have found a gubernaculum with dorsal apophysis, in the other it seems to

be applicated to the spiculum. Remains the question if we have to reckon *Comesoma dubia* to the genus *Comesoma* or not. It is distinguished from the other representants of the genus by its peculiar buccal dentition, for we find 3 distinct teeth in the mesostome. For that reason I think it advisable to bring *Comesoma dubia* FILIPJEV as well as the present species to a new genus which I propose to name *Paracomesoma.*

Head distinctly swollen, lips prominent, crowned with 6 conical papillae. Further we observe 6 cephalic setae, that are 43,5 % of the corresponding

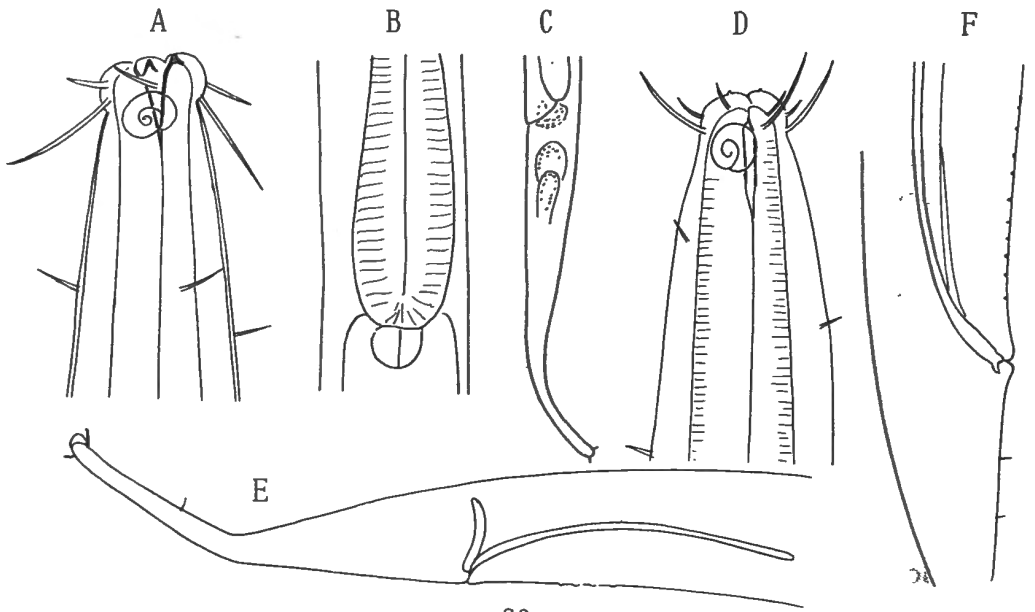


FIG. 89. — *Paracomesoma coronata* n. sp.
A : Female head end. B : Base of œsophagus. C : Female tail. D : Male head end. E : Male tail. F : Male genital armature.

diameter long in the male type specimen. Cervical setae in the same male as long as 1,13 times the corresponding cervical body diameter.

In the juvenile the corresponding data were 44,6 % and 113 %.

Amphids opposite to the lower head end, spiral, composed of 2 ½ windings, only half as broad as the corresponding body diameter. In the juvenile from Lilong the amphids measured 54 % of the corresponding body diameter. The oesophageal portion of the body bears a small number of setae, more or less arranged in longitudinal, submedian rows. Oral cavity, cylindroconical, with the mentioned three teeth. Oesophagus swollen towards the posterior end. Cardia distinct. Nerve ring at 59 % of the total length in the juvenile, at 57,5 % in the male. Genital armature consisting of long and slender spicula, 3,5 anal

diameters long. Gubernaculum with dorsal apophysis, 0,74 anal diameter long, boomerang-shaped. In one of the other males it was applicated against the spiculum and truncated at its tip. Male tail, 5,58 anal diameters long, cylindrical portion of the same 33,3 % of the total length. It is adorned with a few short setae. The juvenile tail measures 7,4 anal diameters, its cylindrical portion occupies 33 % of the whole tail.

Genus COMESOMA Bastian, 1865.

90. — **Comesoma punctata** n. sp.

(Fig. 90, A-C.)

2 ♀♀, from Villefranche, off the Station, coarse sand under vegetation of *Posidonia*. Depth 15 m.

Length : ♀, 2,616 mm; $\alpha = 41$; $\beta = 9$; $\gamma = 31{,}2$; V. = 51,5 %.

Filipjev's formula : $\frac{0 \quad 152 \quad 292 \quad 1352 \quad 2532}{16 \qquad 52 \quad 64 \quad 40}$ 2616 µ.

With some hesitation I bring the species in question to the genus *Comesoma* because I have no male to my disposition, which should make the diagnose quite certain. But considering the shape of the buccal cavity with its strong cuticularization and its chitinous ring at the anterior end, the long cephalic setae it should be reckoned to the said genus. The only difference of importance is the fact, that here we apparently have 6 long cephalic setae instead of the usual 4 but apparently 2 of the submedian setae are doubled, since these setae are quite contiguous and not widely spaced, which should be the case if we had to do with 6 units, corresponding to 6 areas of the head. Further the species in question is characterized by the shortness of its tail.

Head distinctly set off from the remainder of the body, swollen. Lips distinct. Labial papillae minute. Cephalic papillae, 6 in number, setiform. The 6 cephalic setae are very long and measure 1,24 times the corresponding cephalic diameter. Amphids circular in outline, spiral in structure, with 2 ½ windings. Skin with transverse rows of points, especially large and distinct on the lateral fields, which measure 44,5 % of the body diameter. Body annulation prominent. On the anterior portion of the body one finds a small number of irregularly scattered stiff bristles. Buccal cavity conical with anterior chitinous rim. In the depth of the latter a minute tooth. Nerve ring at 52 % of the oesophageal length. Tail short with the same cuticular annulation, conical. Length of the same 2,075 anal diameters long. Along the tail one finds some short setae. The condition of the tail allows us to conclude, that its tip was broken off during the life of the animal and the wound repaired. This results likewise from a comparison with the normal female where the tail has an elongate conical shape, with long filiform portion (fig. 90 C).

Genus SABATIERIA De Rouville, 1903.

91. — **Sabatieria hilarula** Bastian, 1865.

(Fig. 91, A-F.)

2 ♂♂, 2 ♀♀, 1 juv. from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

7 ♂♂, 4 ♀♀, from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

1 ♀, from Villefranche, entrance of the road of Villefranche, grey mud. Depth 230 m.

Length : ♂ 1, 1,44 mm; $\alpha = 32,7$; $\beta = 6,92$; $\gamma = 8,4$.

Filipjev's formula :

$$\frac{0 \quad 120 \quad 208 \quad M \quad 1268}{12 \qquad 40 \quad 44 \quad 36} \quad 1440\ \mu.$$

Length : ♂ 2, 1,612 mm; $\alpha = 36,5$; $\beta = 8,4$; $\gamma = 8,03$.

Filipjev's formula :

$$\frac{0 \quad 132 \quad 192 \quad M \quad 1412}{18 \qquad 36 \quad 44 \quad 36} \quad 1612\ \mu.$$

Length : ♀, 1,58 mm; $\alpha = 26,25$; $\beta = 7,18$; $\gamma = 9,9$; V. = 45,5 %.

Filipjev's formula :

$$\frac{0 \quad 220 \quad 720 \quad 1420}{16 \quad 44 \quad 60 \quad 36} \quad 1580\ \mu.$$

Length : juv., 1,38 mm; $\alpha = 34,5$; $\beta = 6,9$; $\gamma = 8,25$.

Filipjev's formula :

$$\frac{0 \quad 116 \quad 128 \quad 200 \quad M \quad 1212}{14 \qquad\qquad 36 \quad 40 \quad 32} \quad 1380\ \mu.$$

Sabatieria hilarula is known from Helgoland, Holland, Norway, Trebeurden; in the Mediterranean I found it in material from Mallorca.

Head rounded in front, slightly swollen, with 6 lips and as many labial papillae, 6 cephalic papillae and 4 rather long setae, that measure 75 % of the corresponding cephalic diameter. Amphids large composed of 3 ½ windings, their width 73 % of the corresponding body diameter. Immediately behind the amphids one finds 4 rows of 7, rather long setae each. Oesophagus swollen posteriorly. Nerve ring at 58-68,5 % of the oesophageal length. Opposite to what is known from the litterature I did observe in the male, 11-12 inconspicuous very minute praeanal papillae, of which the most anterior one is situated 2,75 anal diameters in front of the cloaca, and a single praeanal seta. Spicula curved, strong, with a longitudinal bar near the proximal end. Length of the

spicular chord 1,58 anal diameters. Gubernaculum with dorsal manubrium; the distal part of the gubernaculum helds the distal portion of the spicula in its grip. Tail slender with the apical half tubular. It bears a row of ventral setae. Tail length equal to 4,5 anal diameters.

In the female I found the same relations at the head end. Here the cephalic setae measured 64 % of the corresponding cephalic diameter, whereas the amphids, composed of 3 ½ windings were comparatively smaller, measuring not more than 56,5 % of the corresponding body diameter. There are the usual

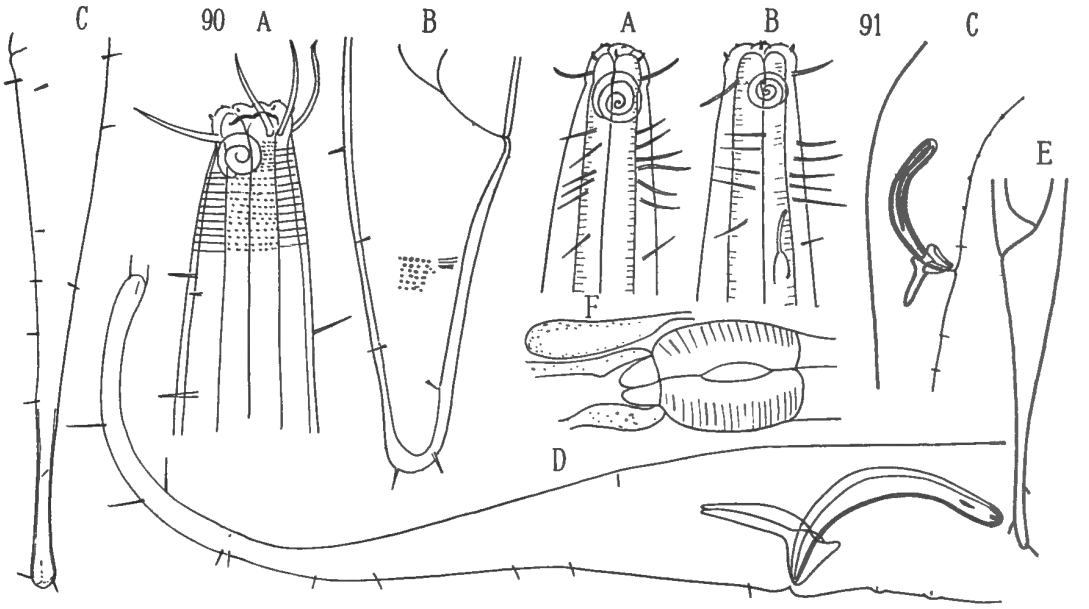


FIG. 90. — *Comesoma punctata* n. sp.
A : Female head end.
B : Female tail, wounded and repaired.
C : Female tail.

FIG. 91. — *Sabatieria hilarula* BASTIAN.
A : Male head end. B : Female head end.
C : Male genital armature. D : Male tail.
E : Female tail. F : Base of œsophagus.

rows of cervical setae, composed of 6 setae each. The excretory pore opens at a distance from the anterior end, 2,34 times as long as the widest cephalic diameter. Female tail of the same shape as the male tail, 5,2 anal diameters long, the tubular portion occupying 53 % of the whole tail length.

Although the dimensions of the present specimens are slightly smaller than those of more northern areas the structural differences are so slight, that it is quite certain that the specimen in question do belong to the said species. The only difference worth mentioning is the presence of praeanal papillae, which were not observed in former occasions, but the latter are so small and minute, that they easily may have escaped the attention of other nematologists.

92. — Sabatieria longicaudata Filipjev, 1922.

(Fig. 92, A, B.)

3 ♂♂, 1 ♀, 3 juv. from Villefranche, farther end of the « Port de la Darse », black mud and organic detritus. Depth 3 m.

Length : ♂, 1,22; $\alpha = 38$; $\beta = 10,1$; $\gamma = 3,6$.

Filipjev's formula :

$$\frac{0 \quad 80 \quad 120 \quad M \quad 880}{16 \quad\quad 32 \quad 36 \quad 32} \quad 1220\ \mu.$$

Length of Filipjev's : ♂, 1,04 mm; $\alpha = 40$; $\beta = 7,5$; $\gamma = 4,5$.

Length of female in which the tail is partly broken :

1,34 mm; $\alpha = 41,8$; $\beta = 9,6$; $\gamma = 7,45$; V. = 43,25 %.

Filipjev's formula :

$$\frac{0 \quad 140 \quad 480 \quad 1160}{16 \quad 32 \quad 32 \quad 24} \quad 1340\ \mu.$$

Length of Filipjev's : ♀, 1,25 mm; $\alpha = 36$; $\beta = 8$; $\gamma = 6$.

In general structure the specimens found by me quite agree with those of Filipjev. I have therefore only depicted the male tail because it gives a more detailful picture of the male genital apparatus.

Spicula curved, proximal end rather broad, divided by a longitudinal rod into 2 cavities. Distal end of the spicula pointed. Length of the chord 1,245 anal diameters. Gubernaculum taking the distal end of the spicula in its grip with a strong dorsal apophysis. Proximal part of the tail conical, 29,5 % of the total tail length, which measures 10,2 anal diameters.

Geographical distribution : Krim, Kaukasus, Mediterranean, further Norway, Trondjhemsfjord, Oresund, Holland, Zuidersee, Trébeurden.

93. — Sabatieria abyssalis Filipjev, 1918.

(Fig. 93, A-D.)

4 ♂♂, 3 ♀♀, 5 juv. from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

2 ♀♀, from Villefranche, entrance of the road, grey mud. Depth 230 m.

Length : ♂, 1,8 mm; $\alpha = 41,8$; $\beta = 9,2$; $\gamma = 15,4$.

Filipjev's formula :

$$\frac{0 \quad 100 \quad 200 \quad 1720}{12 \quad\quad 40 \quad 44\ 32} \quad 1840\ \mu.$$

Length Filipjev's : ♂, 1,650 mm; $\alpha = 33$; $\beta = 7,5$; $\gamma = 10,5$.

Length : ♀ 1, 1,72 mm; $\alpha = 39$; $\beta = 9$; $\gamma = 10,25$; V. = 55,5 %.

FILIPJEV's formula : $\frac{0 \quad 108 \quad 192 \quad 952 \quad 1552}{16 \qquad 40 \quad 44 \quad 32}$ 1720 μ.

Length : ♀ 2, 1,432 mm; $\alpha = 35{,}8$; $\beta = 7{,}18$; $\gamma = 10{,}7$; V. = 50,1 %.

FILIPJEV's formula : $\frac{0 \quad 200 \quad 720 \quad 1300}{12 \quad 36 \quad 40 \quad 32}$ 1434 μ.

FILIPJEV's : ♀, 1,5 mm; $\alpha = 25$; $\beta = 6{,}5$; $\gamma = 9$; V. = 41 %.

Head end set off inconspicuously against the remainder of the body, as well in the male as in the female, not swollen. Labial and cephalic papillae

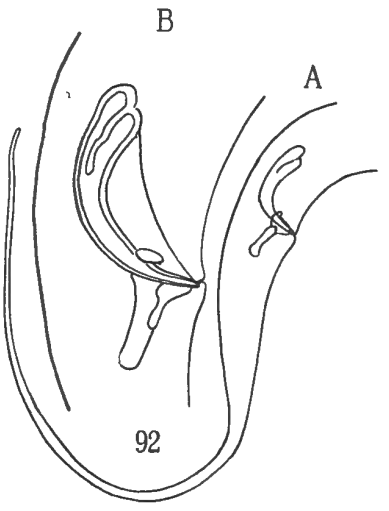


FIG. 92. — *Sabatieria longicaudata* FILIPJEV.
A : Male tail.
B : Male genital armature.

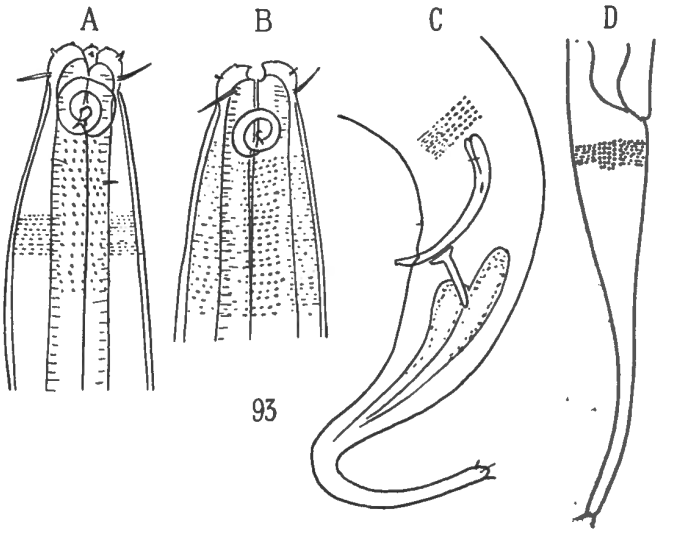


FIG. 93. — *Sabatieria abyssalis* FILIPJEV.
A : Male head. B : Female head.
C : Male tail. D : Female tail.

distinct, although not very prominent. Cephalic setae measuring in the male 53 % of the corresponding cephalic diameter. Amphids large, composed of 3 ½ windings, their diameter 70 % of the corresponding body diameter. Lateral fields distinctly demarcated by larger and more widely spaced dots, 31,3 % of the body diameter in the oesophageal region. Submedian portions finely striated. On the oesophageal region of the body some fine setae. Oral cavity undeep, oesophageal tooth present.

Genital armature : Spicula slender, slightly widened proximally, where one finds a median division of the spicular cylinder, followed more distally by a minute rod. Distal end pointed. Length of spicular chord 1,29 anal diameters. Gubernaculum with dorsal prolongation. No praeanal papillae observed. FILIPJEV (1918) saw 10 praeanal papillae, which he however did not depict, so that we may assume that they were inconspicuous.

Tail conical at base, apical portion occupying 52 % of the taillength filiform. Almost no setae on the tail except near the opening of the spinneret. Taillength equal to 3,75 anal diameters.

♀. Head much like that of the male. Length of cephalic setae 56 % of the corresponding diameter. Amphids composed of 2 ½ windings, but distinctly smaller than in the male, 50 % of the corresponding diameter. Lateral fields 28,5 % of the corresponding diameter in the oesophageal region, where we find like in the female some small setae. Nerve ring at 56,5 % of the total oesophageal length. Tail shaped as in the male, 4,9 anal diameters long, thus comparatively more slender than in the male sex, apical 47,5 % filiform. Some small setae are found on the tail.

GEOGRAPHICAL DISTRIBUTION : Black Sea, Mediterranean.

From *S. cleopatris* MICOLETZKY to which it is closely allied the species in question differs by its distinctly longer cylindrical portion of the tail. *S. abyssalis* FILIPJEV is closely related with *S. tenuicaudata* (BASTIAN) from which it may be distinguished by the smaller size and the comparatively greater length of the cephalic setae. MICOLETZKY (1924) says to have found *S. tenuicaudata* in the Mediterranean. He does however give no further data, with which this identification can be compared and tested on its correctness.

94. — **Sabatieria clavicauda** FILIPJEV, 1918.

(Fig. 94, A-G.)

5 ♂♂, 7 ♀♀, 10 juv. from Villefranche, farther end of « Port de la Darse », black mud and organic detritus. Depth 3 m.
16 ♂♂, 8 ♀♀, 11 juv. from Villefranche, off the « Vieux Villefranche », black mud and organic detritus. Depth 20 m.
1 ♂, from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.
1 ♀, offe the « Pointe de la Gavinette », grey mud. Depth 80 m.
2 ♀♀, from Villefranche, entrance of the road, grey mud. Depth 230 m.

Length : ♂ 1, 1,668 mm; $\alpha = 32,2$; $\beta = 8,9$; $\gamma = 13,9$.

FILIPJEV's formula :

$$\frac{0 \quad 120 \quad 188 \quad M \quad 1548}{12 \quad 36 \quad 40 \quad 52 \quad 44} \quad 1668\ \mu.$$

♂ 2, 1,388 mm; $\alpha = 38,6$; $\beta = 7,72$; $\gamma = 10,8$.

FILIPJEV's formula :

$$\frac{0 \quad 100 \quad 180 \quad M \quad 1260}{12 \quad 32 \quad 36 \quad 36} \quad 1388\ \mu.$$

♂ 3, 1,924 mm; $\alpha = 40$; $\beta = 9,62$; $\gamma = 16$.

FILIPJEV's formula :

$$\frac{0 \quad 120 \quad 128 \quad 200 \quad 240 \quad M \quad 1652 \quad 1804}{16 \quad \quad \quad 40 \quad \quad 48 \quad \quad 40} \quad 1924\ \mu.$$

♂ 4, 2,24 mm; $\alpha = 43$; $\beta = 9,32$; $\gamma = 15,9$.

FILIPJEV'S formula :

$$\frac{0 \qquad\qquad\qquad 240 \quad 1240 \quad 2100}{20 \qquad\qquad\quad 48 \quad 52 \quad 40} \quad 2240\ \mu.$$

FILIPJEV'S : ♂, 1,27 mm; $\alpha = 33$; $\beta = 8$; $\gamma = 11$.
Length : ♀ 1, 2,44 mm; $\alpha = 48{,}6$; $\beta = 8{,}7$; $\gamma = 15{,}3$; V. = 47,5 %.

FILIPJEV'S formula :

$$\frac{0 \quad 280 \quad 1160 \quad 2280}{15 \quad 40 \quad 50 \quad 40} \quad 2440\ \mu.$$

Length : ♀ 2, 1,536 mm; $\alpha = 32$; $\beta = 8{,}35$; $\gamma = 10{,}6$; V. = 47,2 %.

FILIPJEV'S formula :

$$\frac{0 \quad 112 \quad 144 \quad 724 \quad 1392}{12 \qquad 40 \quad 48 \quad 32} \quad 1536\ \mu.$$

Length : ♀ 3, 1,392 mm; $\alpha = 34{,}8$; $\beta = 6{,}98$; $\gamma = 10{,}5$; V. = 53,2 %.

$$\frac{0 \quad 120 \quad 200 \quad 740 \quad 1260}{12 \qquad 36 \quad 40 \quad 24} \quad 1392\ \mu.$$

FILIPJEV'S : ♀, 1,62 mm; $\alpha = 30$; $\beta = 9$; $\gamma = 12$; V. = 49 %.
Length : juv., 1,832 mm; $\alpha = 45{,}8$; $\beta = 10{,}9$; $\gamma = 13{,}9$.

FILIPJEV'S formula :

$$\frac{0 \quad 168 \quad M \quad 1700}{10 \quad 36 \quad 40 \quad 28} \quad 1832\ \mu.$$

Head not distinctly set off against the remainder of the body, hardly swollen with minute labial papillae, a crown of 6 cephalic papillae and 4 cephalic setae, measuring in the male 42,2 % of the corresponding cephalic diameter. In the female the same setae measure about 50 % of the corresponding diameter. Amphids in the male circular, spiral, composed of 3 ½ windings, diameter 58 % of the corresponding body diameter. On the oesophageal portion some scattered setae. Cuticula finely striated by transverse striae, composed of minute dots. No peculiar differentiation on the sides like in *punctata*. Oral cavity distinct, more or less circular. Oesophageal tooth present.

Nerve ring at 55,5-64 % of the total oesophageal length. Excretory pore at 64 % of the oesophageal length. End of excretory cell 1,2 oesophageal lengths from the anterior body end. Genital armature, composed of curved spicula, the proximal end of which is distinctly headed, in the possession of a median ridge, connected with a rather long rod. Length of spicula 1,04 anal diameters. Gubernaculum with a broad grip, embracing the spicula and dorsal prolongations, 74 % of the anal diameter. 6-7 praeanal papillae (8 in FILIPJEV's male), the most apical ones closely adjacent, those next to the cloaca more widely spaced.

The most cephal one 3 anal diameters from the cloaca (5 anal diameters in FILIPJEV's male). Tail conical tapering to a short cylindrical portion, slightly swollen at the apex. Length of the tail 2,25 anal diameters, provided with some short setae.

Amphids in the female circular with 3 ½ circumvolutions, measuring 52,5 % of the corresponding diameter. Length of the female tail 4,68 anal diameters.

GEOGRAPHICAL DISTRIBUTION : Black Sea, Mediterranean.

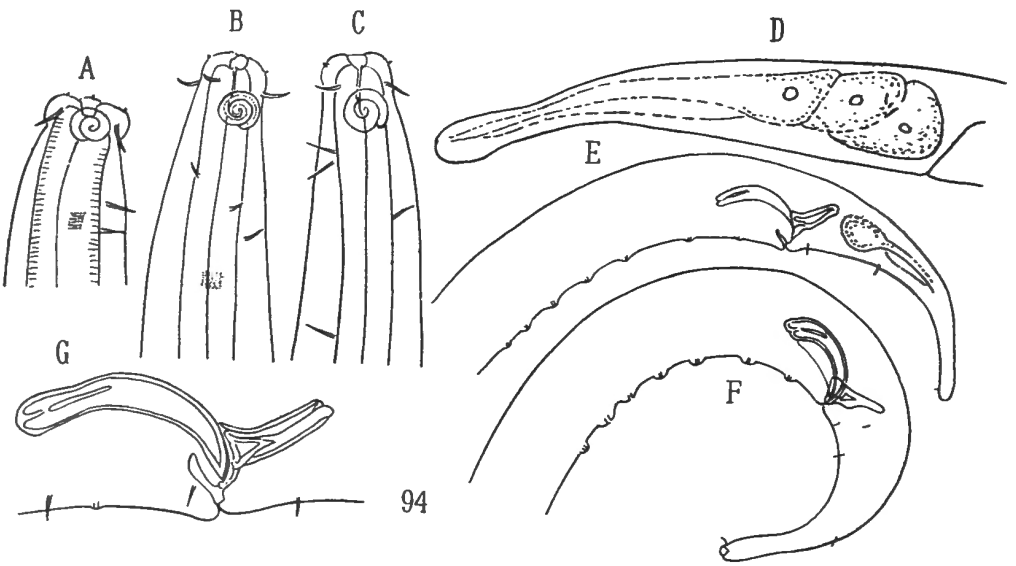


FIG. 94. — *Sabatieria clavicauda* FILIPJEV.
A : Female head. B : Female head. C : Male head. D : Female tail E F : Male tail ends.
G : Male genital armature.

From *S. quadripopullata* FILIPJEV to which it is closely allied it differs in the structure of the spicula and the number of praeanal papillae.

Notwithstandig the differences my specimens present with the type, I believe we may safely bring them to that species.

The specimens show at the same time great resemblance with *S. punctata* KREIS, especially those that have been depicted by ALLGÉN for the Öresund. The structure of the spicula however is more like that in FILIPJEV's type, for in *punctata* we find a longitudinal ridge throughout the whole length of the spicula. The possibility exists that future researches will prove that *S. punctata* and *clavicauda* are conspecific in which case the name *clavicauda* must be retained.

95. — **Sabatieria rugosa** n. sp.

(Fig. 95, A-C.)

1 ♂, from Villefranche, off the Station, coarse sand under vegetation of *Posidonia*. Depth 15 m.

Length : ♂, 2,464 mm; $\alpha = 43.8$; $\beta = 9{,}9$; $\gamma = 12$.

Filipjev's formula : $\frac{0 \quad 248 \quad M \quad 2248}{24 \quad 48 \quad 64 \quad 44}$ 2464 µ.

Kreis ♂ of *dodecaspapillata* which is closely related measured 2,432 mm; $\alpha = 28{,}5\text{-}35{,}9$; $\beta = 10{,}3\text{-}11{,}1$; $\gamma = 9{,}8\text{-}12{,}3$.

Head swollen, anteriorly truncated. Labial papillae 6 in number. Cephalic papillae minute. cephalic setae slender, 54,8 % of the corresponding cephalic diameter. Amphids composed of 2 ½ circumvolutions, 54 % of the corresponding body diameter. Cuticle at the lateral fields adorned with rather widely spaced comparatively large dots; punctation much finer on the submedian fields. On the anterior oesophageal portion one finds some scattered setae. Buccal cavity caliciform, shallow. There is a minute oesophageal tooth opposite to the amphids. Genital armature : Kreis (1929) found in this *dodecaspapillata* 12 praeanal papillae, whereas the present specimens possessed about 20 praeanal papillae, being small more or less tubular outlets of gland cells. Spicula gently curved, knobbed at the proximal end, possessing just there a median rod, extending almost halfways to the distal end of the same, which is less far than in Kreis *dodecaspapillata*. Distal end bluntly cut off. Chord of spicula 1,3 anal diameters long. Gubernaculum with a long dorsal apophysis. Tail 4,85 anal diameters long and slender, bearing rather numerous setae, further in the possession of a rather long filiform portion, which occupies 45,8 % of the total tail length.

The present species may be distinguished from *S. dodecaspapillata* by the lateral differentiation of the cuticular ornamentation by the longer cephalic setae, by the differences in structure of spicula and gubernaculum, as well as by the greater number of praeanal papillae.

The male in question shows far reaching resemblance with *S. tenuicaudata* from Alexandria. Confer for instance the shape of head and tail, the structure of the spicula, the number of praeanal papillae as well their structure, the ornamentation of the skin and its pilosity. As differences I ask attention for the distinctly larger buccal cavity in *S. tenuicaudata* (Bastian), for the longer cephalic papillae of that species, for the recurved cephalic portion of the gubernaculum in the last named species, for the longer longitudinal ridge of the spicula in *rugosa*.

Undoubledly *S. rugosa* and *S. tenuicaudata* are closely related.

96. — Sabatieria effilata n. sp.

(Fig. 96, A, B.)

1 ♂, from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

Length : ♂, 3,04 mm; $\alpha = 76$; $\beta = 12{,}7$; $\gamma = 15{,}2$.

FILIPJEV's formula :

$$\frac{0 \quad 240 \quad 2840}{20 \quad 40 \quad 40} \quad 3040\ \mu.$$

The species in question is closely allied to *S. abyssalis* FILIPJEV, as well as to the species treated above as *S. rugosa* SCHUURMANS STEKHOVEN. From the latter it may be distinguished by its more slender body and by the distinctly larger size of the amphids, from the first except by its larger size by differences in the structure of the spicula.

Head rounded, distinctly set off from the remainder of the body. Labial papillae not prominent, cephalic papillae minute and not so distinct as in *abyssalis*. Cephalic setae 4 in number, measuring 46 % of the corresponding cephalic diameter. Amphids large, transverse, with 3 ½ windings, their width 73 % of the corresponding diameter. Anterior oesophageal portion of the body with a small number of setae, like in *S. rugosa*. Lateral fields distinctly marked off by larger and more widely spaced dots, width of the lateral fields 38,3 % of the body diameter at the anterior portion of the body. Spicula slender, rather sharply cut off distally, not knobbed proximally, with a long rod for strengthening, running from the proximal end over 39 % of the whole spicular length. Length of the spicula, measured along the chord, 2,06 anal diameters. No praeanal papillae were observed, but a number of short setae instead. Gubernaculum embracing the spicula at their distal end with a broadened prolongation, whereas the proximal portion of the gutter in which the spicula glide is pointed. The gubernaculum possesses a distinct dorsal apophysis, which is rather slender and parallelsided, not swollen at its distal end. Tail conical at base, soon tapering to the rather long filiform end, which occupies about 53,5 % of the whole tail, which equals 4,56 anal diameters. Tail beset with a number of short setae, especially numerous along its subventral side.

Order ARÆOLAIMOIDEA

Family DIPLOPELTIDÆ.

Genus DIPLOPELTIS Cobb, 1905.

97. — **Diplopeltis cirrhatus** (Eberth, 1863).

Syn. *D. eberthi* Filipjev.

(Fig. 97, A, B.)

1 ♂, from Villefranche, off the « Plage des Marinières », coarse sand under vegetation of *Posidonia*. Depth 3 m.

Length : ♂, 2,628 mm; $\alpha = 34,5$; $\beta = 11,21$; $\gamma = 17,7$.

Filipjev's formula :

$$\frac{0 \quad 160 \quad 236 \quad 580 \quad M \quad 2480}{16 \qquad 56 \qquad 76 \quad 56} \quad 2628\ \mu.$$

Filipjev's ♀, 3,65 mm; $\alpha = 40$; $\beta = 17,5$; $\gamma = 48$.

Having of *D. eberthi* consulted the whole litterature on this point I am not quite sure that *Diplopeltis eberthi* Filipjev and *D. cirrhatus* (Eberth), with which *D. typicus* Cobb is synonymous, are not one and the same species. For the main difference between both species consists in the shape of the amphids, which according to Filipjev is discus-shaped in *cirrhatus* and more like a sheperd's crook in *eberthi*. Now I have to my disposition a figure made by Bresslau and published in my monograph on the freeliving marine Nematodes of the North Sea and Baltic which depicts the amphids of *D. cirrhatus* as a sheperd's crook, and if we look at Cobb's figure (9, 1891) of *D. typicus* we may be rather sure that here too the amphids had the same shape. The tail is slightly longer in *eberthi* than in *cirrhatus*, but this is nearly the only difference worth mentioning. So I am convinced that *D. cirrhatus* and *D. eberthi* are synonymous. Probably the growth type of this slender species is about the same as *Ascolaimus filiformis* for which I have shown in collaboration with De Coninck (1932) that several other species are conspecific with it. Difference in size may be explained by assuming that the smaller specimens were younger than the longer ones.

Body strongly attenuated anteriorly, more then 4 times narrower at the anterior end than in the middle of the body. Quite in front the body is bluntly pointed. Here one finds 4 submedian rows of long setae, running without interruption to about the spot where one finds the eye spots. More backwards only a small number of such setae is found. Each of the former rows consists of 10 hairs. Length of these setae in front of the shields on which the amphids are situated 1,14 times as long as the corresponding body diameter. Amphidial shield more or less reversed heart-shaped, its greatest width measuring 53 %

of the corresponding body diameter. The amphids themselves loop-shaped, this loop is open at the back side. The widest portion of the loop measures 36 % of the corresponding body diameter. At the level of the eye spots the oesophagus presents a dilatation of its lumen. No special buccal cavity. Anterior portion of the oesophagus with cuticular lining, which is rather strong.

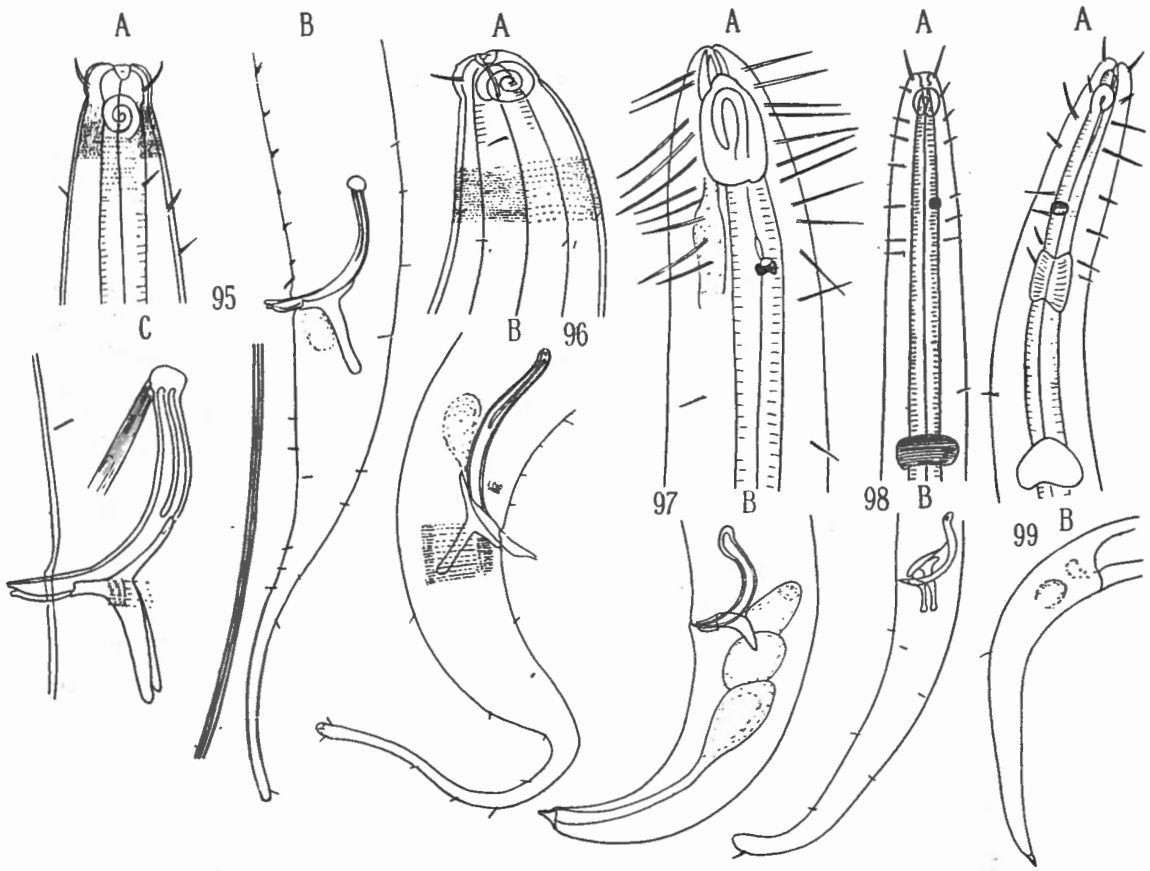


FIG. 95. — *Sabatieria rugosa* n. sp.
A : Male head. B : Male tail. C : Male genital armature.

FIG. 96. — *Sabatieria effilata* n. sp.
A : Male head. B : Male tail.

FIG. 97. — *Diplopeltis cirrhatus* (EBERTH).
A : Male head. B : Male tail.

FIG. 98. — *Araeolaimus bioculatus* (DE MAN).
A : Male head. B : Male tail.

FIG. 99. — *Araeolaimoides demani* n. sp.
A : Female head end. B : Female tail.

Excretory porus far forward opposite the amphids. Tail short, pointed at the end, elongate conical, 2,5 anal diameters long. Spicula strongly curved swollen proximally, its chord 78 % of the anal diameter. Gubernaculum embracing the spicula distally by means of a kind of manchette, that presents a caudal apophysis.

The tail contains 3 caudal glands, which run backwards till in front of the cloaca.

Geographical distribution : Black Sea, Mediterranean, Naples, Nizza, North Sea, Irish Sea, Bretagne, further Norwegian Coast, Vega, Gaasnes, Ingöy. Was recently observed by Allgén (1942) at Banyuls.

Family **AXONOLAIMIDÆ.**

Genera ARÆOLAIMUS and ARÆOLAIMOIDES (De Man).

The identification of the mediterranean *Arœolaimus* meets with great difficulties. One may even say that the problem cannot be solved with absolute certainty, because we do not dispose over enough detailed figures of the species formerly described. De Man has described two species of *Arœolaimus* called by him *Spira bioculata* De Man and *Spira mediterranea* De Man. Later on Micoletzky (1924) has given some details on what he calls *Arœolaimus bioculatus* var. *filiformis* and on a species, which he identifies as *Coinonema punctatum*. In 1935 Schuurmans Stekhoven has synonymized *Coinonema* with *Arœolaimoides*, so that we have henceforth to discern between *Arœolaimus* and *Arœolaimoides*.

Now unfortunately De Man's figures are not very exact I think, neither are they taken from the angle, that makes identification very easy. So for instance has De Man not given good figures of the lateral side of his specimens. If we take his plate IX, we find the picture of a female of his *Spira mediterranea* and next to it the picture of a head which eventually might have been the head of that same female. Underneath the figure 14 *c* depicts, what I suppose to be the male tail of that same species. If we compare figure 14 *a* (female head of *Sp. mediterranea*) with figure 14 *b*, a male head striking differences are observed. A direct comparison is difficult, because the first head has been depicted in lateral view, the second in dorsal resp. ventral view. The scale of both figures may likewise differ. We may however state with certainty, that the cervical setae of the female of figure 14 *a* were distinctly shorter and less obvious than those of the male of figure 14 *b*. It seems likewise that the amphids of the male were greater than those of the form depicted in figure 14 *a*. The cervical as well as the cephalic setae of *Spira bioculata* De Man (consult his fig. 13 *b* and *c*) are likewise smaller than the cervical and cephalic setae in the male head on figure 14 *b*. So I come to the supposition that 14 *b* and 14 *c* are taken from different species of animals and that 14 *b* should belong to the same animal of which the tail is depicted in figure 13 *d* on plate VIII. In that case we probably should have before us 3 species : 1. *Sp. bioculata* De Man, ♀ figure 13 *a-c*, ♂ figure 14 *c*; 2. *Spira mediterranea*, ♀ figure 14 *a*, ♂ figure 14 *c*, and the third species, of which the male has been depicted in figure 13 *d* and figure 14 *b*.

The following arguments have brought me to this supposition. In the material of Villefranche I found a female specimen, in which the cervical setae were peculiarly long, just as in DE MAN's figure 14 *b*, whereas the shape of the tail was quite in accordance with that of figure 13 *d* except that we had to do with a female instead of with a male. This tail rather suddenly attenuated; it was 5 anal diameters long in the male depicted by DE MAN, whereas my female had a tail, which was about 6 anal diameters long but had for the rest the same shape and curvature as the DE MAN's male. The head is quite alike that of figure 14 *a*. The amphids of my specimen are oval, an open loop and not circular like in *bioculata*. This would therefore be a representant of DE MAN's third species which I might call *Arœolaimoides demani*. I am supported in this conviction because I have found in Naples a male, which is in the possession of amphids that are almost circular in outline, although their structure is spiral. The cervical setae of that species are less long and hardly prolong over the sides of the body, which would be in accordance with DE MAN's data on *Sp. bioculata*. The tail being 5 anal diameters long gradually tapers to the narrower tip, more as in figure 14 *c*, than as in figure 13 *d*. The vulva is situated in *Sp. bioculata* DE MAN behind the middle of the body, that in *Sp. mediterranea* is found in front of the middle. A female from Alexandria was in the possession of amphids that although being spiral in structure are in reality loop-shaped. Its cervical setae were comparatively long, but shorter than in the specimen from Villefranche, the tail was more elongate, of the same type as in *bioculata*, whereas the vulva was situated behind the middle of the body, which fits with *bioculata*. The relative length of the tail fitted well with *bioculata*. The tail of the male from Naples is however shorter and was 5 anal diameters long, whereas the male tail of DE MAN's figure 14 *c*, which eventually might be the male of *Sp. bioculata* is only 4 anal diameters long. The gubernacula depicted by DE MAN for both males were apparently misinterpreted. They are in reality of the common type, frequently encountered in the family of *Axonolaimidæ*. From *Arœolaimus bioculatus* var. *filiformis* we possess insufficient data. We neither do know how the cervical setae were distributed nor do we possess exact figures of the tail in toto, so that a thorough comparison is impossible. The anterior position of the vulva should indicate that the form belongs to the relationship of *Sp. mediterranea*.

It is however questionable whether MICOLETZKY has figured the whole gubernaculum or if he has depicted the distal portion of it only.

Coinonema punctatum COBB, which probably is not conspecific with COBB's *Arœolaimoides punctatum* from the Pacific Coast of North America, is probably conspecific with *Spira mediterranea*, but we cannot be quite certain about that, so that it will be wise to let this species out of question till we know more of it.

Resuming we may say that we know from the Mediterranean the following forms. *Arœolaimus bioculatus* DE MAN, female sex and male sex.

Arœolaimus mediterraneus, figure 14 *a* De Man, with which *Coinonema punctatum* Micoletzky nec Cobb might be conspecific. It is possible that the male tail depicted by De Man in his figure 14 *c* belongs to a male of that species, but we are not absolutely sure on that point.

The third form *Arœolaimoides demani* is depicted in De Man's figures 13 *a* and 14 *b*. That we have here to do with a species of *Arœolaimoides* and not with *Arœolaimus* can be derived from the more elongate shape of the amphids and the inconspicuous oral cavity. About the position of the excretory pore of the species nothing is known.

In 1936 De Coninck described *Metarœolaimoides oxystoma* n. g. n. sp. from Sardinia, Bay of Capella.

Apart from that species I will give here too a description of *Arœolaimus bioculatus* De Man taken after material from Naples.

Genus ARÆOLAIMUS De Man, 1888.

98. — **Arœolaimus bioculatus** (De Man, 1888).

(Fig. 98, A, B.)

1 ♂, from Naples, collected by me in 1932.

Length : 0,804 mm; $\alpha = 36{,}5$; $\beta = 7$; $\gamma = 8$.

$$\frac{0 \quad 28 \quad 72 \quad 116 \quad M \quad 704}{5 \qquad 18 \quad 28 \quad 22 \quad 18} \quad 804\ \mu.$$

Head end rounded anteriorly. Four long cephalic setae, each 1,1 cephalic diameter long. Follows on the 4 submedian sectors of the oesophageal region a row of 6-7 setae of moderate length, of which the most anterior ones are slightly shorter than the following ones. Each of the setae projects a little over the side of the body. The rows of submedian setae are continued till shortly behind the ocular spots, over a distance that equals 4 times the distance head end to back side of the amphids. Amphids circular in outline, spiral in structure, their diameter measuring 57 % of the corresponding body diameter. Ocular spots at 24 % of the oesophageal length. Nerve ring at 62 % of the oesophageal length. Buccal cavity cylindroconical, ending just opposite the centre of the amphids. Genital armature consisting in strongly curved spicula, with a swollen head end, that distinctly shows a short median ridge. Spicular chords, 80 % of the anal diameter. Gubernaculum with a cap projecting over the cephalic side of the spicula and two dorsal apophyses. Tail gradually tapering towards the rather filiform tip, ending with a conical spinneret. Along the tail some short setae, arranged more or less in longitudinal rows. Tail length equal to 5 anal diameters.

Geographical distribution : Mediterranean, Naples.

Genus ARÆOLAIMOIDES De Man, 1893.

99. — **Araeolaimoides demani** n. sp.

Syn. *Arœolaimus bioculatus* pr. parte.
Arœolaimus mediterraneus pr. parte.

(Fig. 99, A, B.)

1 ♀, from Villefranche « Baie de Lilong », sand. Depth 5 m.

Length : ♀, 1,32 mm; $\alpha = 33$; $\beta = 8{,}3$; $\gamma = 11$.

Filipjev's formula : $\frac{0 \quad 36 \quad 160 \qquad 1200}{10 \qquad 32 \quad 40 \quad 24}$ 1320 µ.

Head end bluntly rounded with 4 cephalic setae, being no longer than the cephalic diameter. These setae stay at the beginning of 4 submedian longitudinal rows, each composed of 8 setae of variable length, the third and fourth seta of each row distinctly longer than the second, which is situated at a level with the foreborder of the amphids and the fifth and following ones that run backwards till the end of the praeneural bulb. The second seta of each row is the smallest and does not surpass 43 % of the corresponding body diameter. The eyespots are found on a distance from the anterior end equal to 3 times the distance anterior end to backside of the amphids.

The eyespots are found at 40 % of the distance head end-nerve ring, shortly in front of the praeneural bulb. Tail elongate conical, almost 6 anal diameters long. The tail rather suddenly attenuates and ends with a rather sharp point, that is crowned with a spinneret. The tail has the same shape as the male depicted in De Man's figure 13 *d*. Whether *Coinonema punctatum* Micoletzky is identical with the present form cannot be proved any more now.

Geographical distribution : Naples, Villefranche, Mediterranean.

Arœolaimus tenuicaudatus Allgén from the Öresund is closely related with the present species.

Genus AXONOLAIMUS De Man, 1889.

100. — **Axonolaimus arcuatus** n. sp.

(Fig. 100, A-E.)

1 ♂, 1 ♀, from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

This species is closely related to *Axonolaimus spinosus* Buetschli and to *Axonolaimus setosus* Filipjev nec Buetschli from the Black Sea but readily distinguishable from both by the shorter cephalic setae, by differences in the cervical pilosity as well as in the shape and size of the tail, by differences in the structure of the genital armature, whereas the amphids are distinctly more open at the anterior end than in both the aforementioned species.

Length : ♂, 1,5 mm; $\alpha = 34$; $\beta = 6,48$; $\gamma = 8\ 95$.

FILIPJEV's formula :

$$\frac{0 \quad 152 \quad 232 \qquad 1332}{12 \quad 32 \quad 36 \quad 44 \quad 36} \quad 1500\ \mu.$$

Length : ♀, 1,648 mm; $\alpha = 27,4$; $\beta = 7,1$; $\gamma = 9,4$; V. = 51,5 %.

FILIPJEV's formula :

$$\frac{0 \quad 24 \quad 140 \quad 232 \quad 852 \quad 1472}{12 \qquad\qquad 40 \quad 50 \quad 36} \quad 1648\ \mu.$$

♂. Head truncated anteriorly, slightly swollen along the sides. Lips each with two minute labial papillae. Cephalic setae 4 in number, comparatively short, measuring nor more than 50 % of the corresponding body diameter. Vestibulum with strongly cuticularised walls, presenting distinct longitudinal ridges, belonging to the mechanism of disclosure. Metastome conical, separated from the former by a fine circular cuticular fold. Amphids sausage-shaped, narrowly open anteriorly, closed posteriorly, quite covering the oral pit. There are 2 short setae at the right side, one of which just opposite to the posterior end of the amphids, the other about twice the length of the buccal cavity from the anterior border of the body, at the left side just posteriorly to the amphids I found two setae only separated by a narrow space. Nerve ring at 65,5 % of the total oesophageal length. Excretory pore not seen in the male. In front of the cloaca I observed a series of midventral glands. Spicula strongly arcuate, velate, chord of the same 1,15 anal diameters long. Proximal end of the spicula slightly dilated and elongated complicate in structure with two chitinous rods, one at the dorsal, the other at the ventral side of the same. Gubernaculum with dorsal apophyses, 75 % of the anal diameter, swollen at their proximal end.

There are subventral rows of praeanal and postanal setae. Tail elongate conical with three unequal caudal glands. Length of tail 4,5 anal diameters. The last 21 % of the tail is nipple-shaped, slightly swollen at its tip. Female in many respects identical with the male. Cephalic setae 41 % of the corresponding body diameter. Instead of two closely adjacent setae we find here 3 equally spaced setae at the same side. Oral cavity 10 % of the whole oesophageal cylinder. Excretory pore at 2,2 oral cavities from the anterior end. Opposite to the opening of the excretory pore the lumen of the oesophagus presents a slight widening and an interruption of the cuticular covering like is found in the genus *Arœolaimus*. Nerve ring at 60 % of the oesophageal length. Female tail 4,75 anal diameters long, containing three caudal glands in tandem position.

101. — **Axonolaimus ponticus** FILIPJEV 1918.

(Fig. 101, A, B.)

1 juv. from Villefranche, between the « Lazareth » and « Anse passable ». Depth 50 m.

The present specimen so strongly resembles *A. ponticus* FILIPJEV in general shape as well as in some particulars of its structure, that I am inclined to bring it to this species, although it is much smaller than the type specimens, which may however be due to age, since in the present case we have apparently to do with a juvenile specimen.

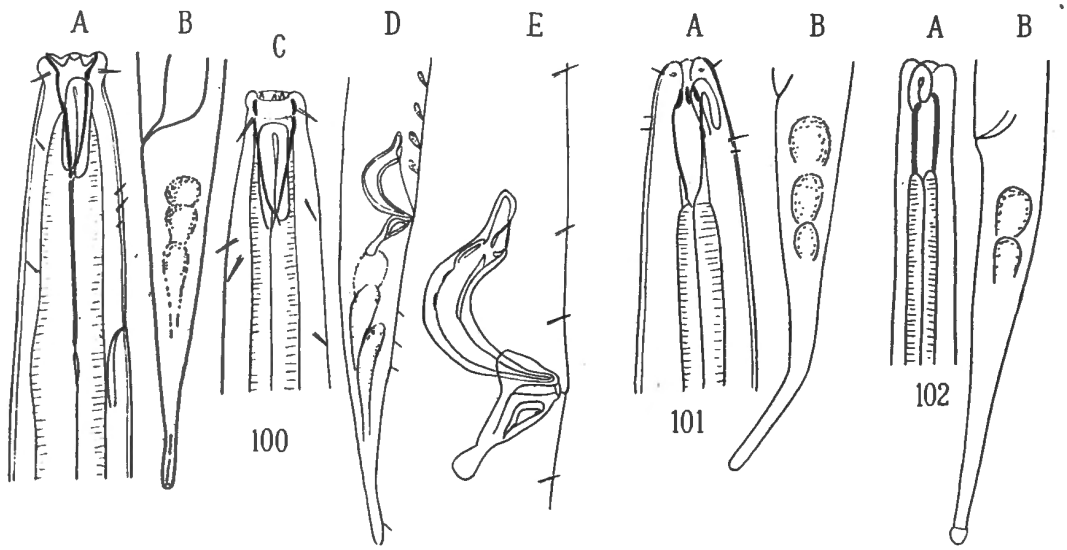


FIG. 100. — *Axonolaimus arcuatus* n. sp.
A : Female head end B : Female tail. C : Male head. D : Male tail.
E : Male genital armature.

FIG. 101. — *Axonolaimus ponticus* FILIPJEV.
A : Female head end. B : Female tail.

FIG. 102. — *Axonolaimus* spec.
A : Female head end. B : Female tail.

Length : juv., 1,284 mm; $\alpha = 35{,}6$; $\beta = 6{,}7$; $\gamma = 9{,}7$.

FILIPJEV's formula :

$$\frac{0 \quad 192 \qquad\qquad 1152}{16 \quad 36 \quad 36 \quad 20} \quad 1284\ \mu.$$

Head rounded anteriorly with on the lips minute papillae; I counted 4 cephalic setae, shorter than in the type specimen, but nevertheless 35 % of the corresponding cephalic diameter. Anterior head portion apparently intruded. For that reason we find the cuticular rods, resembling the teeth in the genus *Odontophora* more backwards than normal. They serve to strengthen the anterior conical portion of the buccal cavity, which is somewhat intruded in

the present specimen, are not so strong as in *Odontophora* but are apparently of the same strength as in *Axonolaimus*. Amphids loop-shaped, their maximal width being 42 % of the corresponding body diameter. Just as in the specimen depicted by Filipjev one finds, opposite to the lower end of the amphids two pairs of submedian groups of 2 short hairs each. Tail conical, gradually tapering to a cylindrical portion, which measures 33 % of the total tail length. Length of tail 5,08 anal diameters. Width at apex 20 % of the anal diameter.

Geographical distribution : Black Sea, Krim, Kaukasus, Sebastopol, Mediterranean, Villefranche.

102. — **Axonolaimus** spec.

(Fig. 102, A, B.)

1 ♀, from Villefranche, off the « Plage des Marinières », coarse sand under vegetation of *Posidonia*. Depth 3 m.

The specimen in question is in very bad condition of preservation, so that it cannot be identified with certainty. So for instance the cephalic setae are missing. The amphids situated near the anterior border of the head end apparently shifted to that position by the intrusion of the anterior head end, are elongate oval, their maximal width 40 % of the corresponding body diameter. Cephalic setae lost. Buccal cavity of the normal type. Tail elongate conical at base, then cylindrical, the latter. This portion occupying almost half the tail length. Tail length equal to 6,3 anal diameters, width at tip of tail 20 % of the anal diameter.

Dimensions :

Length : 1,7 mm; $\alpha = 56{,}6$; $\beta = 2{,}8$; $\gamma = 12{,}1$; V. = 62,3 %.

$$\frac{0 \quad 600 \quad 1060 \quad 1560}{13 \qquad 30 \quad 20} \quad 1700\ \mu.$$

Genus ODONTOPHORA Buetschli, 1874.

The material from Villefranche comprises 3 species, which I have reckoned to that genus. The first *Odontophora quadristicha* shows rather great resemblance with *Pseudolella cephalata* Cobb. It is however not in the possession of the cuticular wings, characteristical for that species. It does not show the distinct cuticular rings, that species presents. There is no more or less distinctly demarcated head portion. The buccal cavity is less deep than in *Pseudolella*. At the other hand our species has the peculiarly long amphids as well as the 4 groups of submedian subcephalic setae, each composed of 3 setulae and the buccal teeth, which are the prolongations of the longitudinal

riblike cuticularisations of the buccal cavity with *Pseudolella* in common. The cephalic setae are much longer than in *Pseudolella cephalata*. The amphids of the genus *Pseudolella* have however a much longer proximal leg, than in the present species which I prefer to keep in the genus *Odontophora*.

103. — **Odontophora quadristicha** n. sp.

(Fig. 103, A, B.)

The present species is characterized by the bluntly conical head, crowned with 4 comparatively long cephalic setae, by loop-shaped amphids with their legs largely divergent in length and by the presence of 4 groups of 3-4 minute setae each, opposite to the lower end of the shorter leg of the amphidial loop.

1 ♀, from Villefranche, off the « Vieux Villefranche », black mud and organic detritus. Depth 20 m.

Length : ♀, 1,42 mm; $\alpha = 28$; $\beta = 7{,}3$; $\gamma = 8{,}1$; V. = 52 %.

FILIPJEV'S formula :

0	40	120	200	312	760	1280	
	12			44	52	48	1420 µ.

Head bluntly conical. Cephalic setae fine, 72 % of the corresponding cephalic diameter. The 4 groups of small setae are already mentioned above. Buccal cavity with 6 teeth in the vestibulum, the latter accompanied by minute rodlike structures. Length of vestibulum only 20 % of the whole length of the buccal cavity, the caudal 4/5 of which has parallel-sided walls. Amphids loop-shaped, the legs of the loop unequal in length, the longer one almost reaching to the end of the buccal cavity which itself measures 40 µ equal to 20 % of the whole oesophageal length. Their maximal width equals 50 % of the corresponding body diameter. Nerve ring at 60 % of the whole oesophageal length. End of excretory cell at 1,56 % of the oesophageal length from the anterior end. Vulva almost in the middle of the body. Tail conical in its basal half, then filiform, barely swollen at its tip, 4,1 anal diameters long. Width at apex 7 % of anal diameter.

104. — **Odontophora breviseta** n. sp.

(Fig. 104, A, B.)

1 ♀, from Villefranche, between the « Lazareth » and « Anse passable », Depth 50 m.

Length : 1,642 mm; $\alpha = 40{,}7$; $\beta = 8{,}66$; $\gamma = 9$; L. = 46,8 %.

FILIPJEV'S formula :

0	28	144	188	768	1440	
12			40	40	28	1642 µ.

The species is closely allied to *O. quadristicha* but is in the possession of distinctly shorter cephalic setae, whereas the filiform portion of the tail is markedly longer than in the first named specie.

Head swollen anteriorly with the buccal teeth extruded. Cephalic setae 25 % of the corresponding cephalic diameter. Amphids loop-shaped, one of the legs, just as in *quadristicha*, although distinctly shorter than in that species. Moreover the legs of the loop seem to be thinner than in *quadristicha*. Maximal width of the amphids 33 % of the corresponding body diameter. Opposite to the lower end of the shorter leg of the amphidial loop,

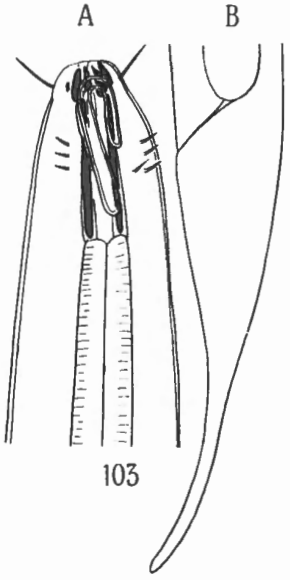
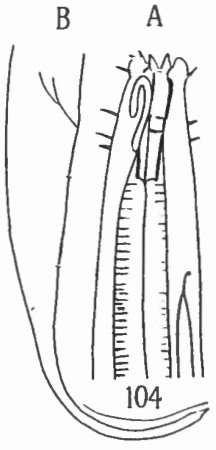


FIG. 103. — *Odontophora quadristicha* n. sp.
A : Female head. B : Female tail.



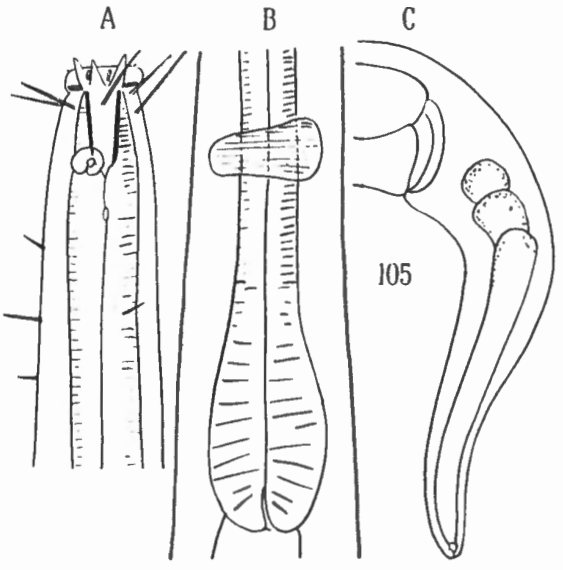


FIG. 104. — *Odontophora breviseta* n. sp.
A : Female head. B : Female tail.

FIG. 105. — *Odontophora angustilatma* (FILIPJEV).
A : Female head. B : Base of œsophagus. C : Female tail.

4 submedian groups of short setae are observed, each composed of 2 or 3 setae, in the latter case of unequal length. Excretory pore on 1,75 buccal lengths from the anterior end. Nerve ring at 76 % of the total oesophageal length. Oesophagus enlarged posteriorly to a faint, elongate bulb-like swelling. Tail elongate conical, with its posterior 60 % effilated and pointed at its extreme apex. Length of tail 6,7 anal diameters. On the tail some short scattered setae. Width of the tail at its apex 10 % of the anal diameter.

105. — **Odontophora angustilaima** (FILIPJEV, 1918).

(Fig. 105, A-C.)

This species discovered by FILIPJEV in the Black Sea was rediscovered by me in the material from Villefranche.

1 ♀, from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

Length : ♀, 1,732 mm; $\alpha = 43{,}3$; $\beta = 12{,}3$; $\gamma = 24$; V. = 54,2 %.

FILIPJEV's formula :

$$\frac{0 \quad 140 \quad 940 \quad 1660}{12 \quad 42 \quad 40 \quad 28} \quad 1732\ \mu.$$

Head straight in front, with minute labial papillae. Vestibular teeth protracted and projecting in the present case through the oral opening. Cuticular bars, supporting the buccal cavity, horizontal in position. Like in FILIPJEV's specimen I find two crowns of cephalic setae, the anterior one apparently consisting of 4, the posterior one of 6 rather long setae, equal to the corresponding body diameter. Oral pit conical. The circular amphids, spiral in structure, are situated at the lower end of the buccal cavity and measure 35 % of the corresponding body diameter. I did not find the third crown of shorter cephalic setae FILIPJEV did depict in his figure 72 neither the short setae at the lower end of the buccal cavity. In my specimen some setae were, irregularly scattered along the submedian fields further downwards. Ovaries double. Tail rather short, bluntly conical, with three caudal glands in tandem position. Length of tail equal to 3,4 anal diameters. Width at tail end 20 % of anal diameter. Although we find some differences with FILIPJEV's specimen I dont think these are of specific rank, the more not since most of the features agree quite well his description whereas the differences may be partly due to variation and to the fact that the vestibular teeth were protracted in my specimen, but retracted in that of FILIPJEV, which likewise causes a shifting of the amphids, which for that reason had a more forward position in FILIPJEV's specimen, compared with mine.

In the shape of its amphids, *O. angustilaima* reminds the condition found in *Ascolaimus*.

FAMILY HALAPHANOLAIMIDÆ.

Genus SOUTHERNIA ALLGÉN, 1929.

106. — **Southernia elongata** n. sp.

(Fig. 106, A-C.)

1 juv. from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

The present species is easily distinguishable from those known in literature by the long slender effilate tail. Head truncate with indistinct lips and 4 cephalic setae, quite near to the anterior end, being of the same length as the corresponding cephalic diameter. Oral cavity long, cylindrical and very narrow, hardly more than a longitudinal slit, suddenly broadening posterior to the amphids to an oesophageal cylinder. Posterior oesophageal portion widening again to a somewhat elongate bulbous portion.

Amphids demarcated posteriorly by a straight line, connected with the anterior conical portion by means of a first broad, then narrow ring. Width of the amphids at their widest portion 56 % of the corresponding body diameter. At a level with the anterior end of the amphids one finds some short spines. Similar spines are observed more backwards. The cephalic portion of the body reminds that of the genus *Siphonolaimus* and as to me the exact position of the genus always remains somewhat uncertain. Nervering at 40 % of the total oesophageal length. Tail elongate tapering, with a long spinneret. Length of tail equal to 4,5 anal diameters.

Dimensions :

Length : 3,024 mm; $\alpha = 64{,}3$; $\beta = 11$; $\gamma = 14{,}2$.

FILIPJEV's formula :

$$\frac{0 \quad 108 \quad 272 \quad 2812}{\qquad\qquad\quad 47} \quad 3024\ \mu.$$

The species resembles closely *Southernia zosteræ* ALLGÉN but may be distinguished from that species by the greater slenderness of the tail, the shape of the amphids and the pilosity of the anterior body end.

Family **TRIPYLOIDIDÆ.**

Genus RHABDOCOMA Cobb, 1920.

107. — **Rhabdocoma brevicauda** n. sp.

(Fig. 107, A, B.)

1 ♂, 1 ♀ from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

1 ♂, from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

Dimensions :

Length : ♂ 1, 2,44 mm; $\alpha = 122$; $\beta = 20{,}5$; $\gamma = 40{,}7$.

$$\frac{0 \quad 80 \quad 120 \quad M \quad 2380}{8 \quad 16 \quad\quad 20 \quad 20} \quad 2440\ \mu.$$

♂ 2, 2,571 mm; $\alpha = 90$; $\beta = ?$; $\gamma = 45$.

$$\frac{0 \quad\quad\quad\quad M \quad 2120}{8 \quad 16 \quad 28 \quad 24 \quad 16} \quad 2178\ \mu.$$

♀, 2,72 mm; $\alpha = 97$; $\beta = 22{,}75$; $\gamma = 68$; V. = 56 %.

$$\frac{0 \quad 72 \quad 120 \quad 1120 \quad 2680}{6 \quad\quad 20 \quad 28 \quad 16} \quad 2720\ \mu.$$

Head end conical, rounded, with a minute oral opening and a crown of 6 very short setae, 16,6 % of the corresponding diameter. Somewhat more caudad I find a single seta, apparently belonging to a pair. Amphids circular, cryptospiral with a distinct median dot. Diameter of amphids 50 % of the corresponding body diameter. Buccal cavity very small, almost wanting. Oesophagus cylindrical, its posterior swelling indicated. Spicula rather coarse, blunt at proximal end. Length of spicula equal to 1,12 anal diameters. Gubernaculum rather small with a short dorsal apophysis. Tail short conical, 2,67 anal diameters long.

End of tail with a spinneret.

The systematic position of the representants of this genus is somewhat uncertain. Filipjev (1925) reckons the genus to the *Tripyloididæ* and so I have done, although I am not convinced that this position is quite correct. We have to await a larger material to solve this difficult question.

108. — **Rhabdocoma cylindricauda** n. sp.

(Fig. 108, A, B.)

4 ♀ ♀, from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

Dimensions :

Length : ♀ 1, 3,16 mm; $\alpha = 113$; $\beta = 19{,}8$; $\gamma = 158$; V. = 55,8 %.

$$\frac{0 \quad 88 \quad 160 \quad 1760 \quad 3140}{8 \qquad 20 \quad 28} \quad 3160\ \mu.$$

♀ 2, 2,596 mm; $\alpha = 93$; $\beta = 21{,}6$; $\gamma = 162$; V. = 55,5 %.

$$\frac{0 \qquad 120 \quad 1440 \quad 2580}{8 \qquad 28 \quad 28 \quad 28} \quad 2592\ \mu.$$

This species shows so much resemblance as to its general characters to the foregoing form, that I have thought it justified to bring it to the same

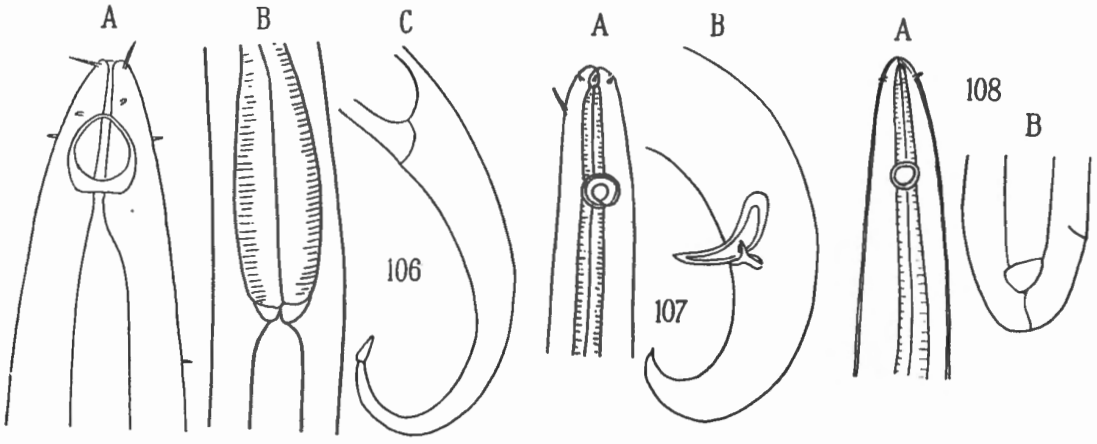


Fig. 106. — *Southernia elongata* n. sp.
A : Juvenile head end. B : Base of œsophagus. C : Tail.

Fig. 107. — *Rhabdocoma brevicauda* n. sp.
A : Male head. B : Male tail.

Fig. 108. — *Rhabdocoma cylindricauda* n. sp.
A : Female head. B : Female tail.

genus. Instead of 6 cephalic setae however I did find only 4 of them and as for the amphids they are quite circular like in the foregoing species but without a median dot, which is as far as I see without importance as one of the females of *Rhabdocoma brevicauda* too did not possess such dots.

Head end conical. Cephalic setae very short, 20 % of the corresponding diameter. Amphid circular, 3 cephalic diameters from the anterior end, 38,3 % of the corresponding body diameter. Buccal cavity inconspicuous. Oesophagus cylindrical. Tail short cylindrical, ending blunt. Tail almost as wide as long.

Genus PARATRIPYLOIDES n. gen

The present genus closely resembles *Tripyloides*, but differs from it i.a. by the absence of a tooth in the second department of the buccal cavity. There is a crown of 10 rather short cephalic setae. The genus possess amphids which are circular in outline and provided with a median dot. Their structure is in reality cryptospiral. Gubernaculum large, ressembling rather much that of *Tripyloides*, but differing from that in the lastnamed genus, in that we find no ring near its distal end. Spicula curved, although inconspicuously. Tail elongate cylindrical.

109. — **Paratripyloides longicauda** n. sp.

(Fig. 109, A, B.)

1 ♂, from Villefranche, between the « Lazareth » and « Anse passable », grey mud. Depth 50 m.

Dimensions :

Length : ♂, 1,192 mm; $\alpha = 29.8$; $\beta = 6,6$; $\gamma = 8,55$.

$$\frac{0 \quad 108 \quad 180 \quad M \quad 1052}{12 \quad\quad 32 \quad 40 \quad 24} \; 1192\ \mu.$$

Head rounded anteriorly. Lips with 6 minute labial papillae. We encounter a crown of cephalic setae composed of 10 elements. The submedian pairs of setae are subequal, the longer ones measure 32,5 % of the corresponding diameter, the shorter setae, 23,5 % of that same diameter, whereas the lateral setae are quite as long as the submedian longer setae. Amphids as described in the diagnose of the genus, their diameter measuring 37 % of the corresponding body diameter. They are separated from the anterior head end by a distance equal to 2,48 cephalic diameters. Buccal cavity with a conical anterior portion and a more cylindrical posterior portion.

Gubernaculum embracing the slightly curved almost straight spicula, measuring 77 % of the anal diameter. Tail like in other representants of the genus *Tripyloides* with a cylindrical, bluntly ending portion. Length of tail equal to 5,8 anal diameters. Width at the apex equal to 17 % of the anal diameter.

Ordo MONHYSTEROIDEA.

Family LINHOMŒIDÆ.

Genus METALINHOMŒUS De Man, 1907.

The present material contains as far as I could ascertain by a thorough comparison of the species in question at least 6 different species, which are easily distinguished by the shape of the tail, the structure of the amphids and the structure of the spicula in the male sex.

The genus *Metalinhomœus* is characterized by the fact, that the oral crown of setae is composed of 4 setae only, by the possession of a distinct oesophageal bulb and by the absence of a crossbar in the oral cavity.

110. — **Metalinhomœus breviseta** n. sp.

(Fig. 110. A-E.)

5 ♀ ♀, 11 juv. from Villefranche, farther end of the « Port de la Darse », black mud and organic detritus. Depth 3 m.

1 ♂, 1 juv. from Villefranche, off the « Vieux Villefranche », black mud and organic detritus. Depth 20 m.

Dimensions :

Length juv., 2,27 mm; $\alpha = 33,5$; $\beta = 10,9$; $\gamma = 5,7$.

0	132	208	232	1880	2272 µ.
32		64	68	52	

♂, 1,916 mm; $\alpha = 31,8$; $\beta = 10$; $\gamma = 7,77$.

0	123	192	224	M	1664	1916 µ.
32			64	60	52	

Head bluntly rounded anteriorly, without distinct lips. Labial setae, 4 in number, rather short, 28,7 % of the corresponding diameter in the male, 36,6 % in the juvenile. Subcephalic setae, 6 in number, just posteriorly to the amphids, minute, measuring no more than 12,5 % of the corresponding diameter in the male sex, or 61 % of the labial setae. Amphids apparently circular, but on closer observation finely spiral, the spiral composed of 3 ½ circumvolutions. Diameter of the amphids hardly surpassing the width of the cylindrical buccal cavity, i.e. 28,2 % of the corresponding diameter. Buccal cavity cylindrical, its wall strengthened by cuticular bars, divided in the middle of their length by a kind of constriction. In juvenile specimens this broken line is not yet encountered. There the oral cavity is cylindrical throughout, without subdivisions. Longitudinal folds may however be present.

Oesophagus cylindrical, with a posterior bulb and a distinct cardiac portion, the latter measuring 25 % of the whole oesophageal length. Excretory pore at 64 % of the oesophageal length.

Genital armature : Spicula long and curved, nooked at their proximal end. Here the spicula are provided with a longitudinal ridge; distally they are pointed. Spicular chord, equal to 1,7 anal diameters. Gubernaculum with slightly retrorse rather long apophysis, its length 71 % of the anal diameter.

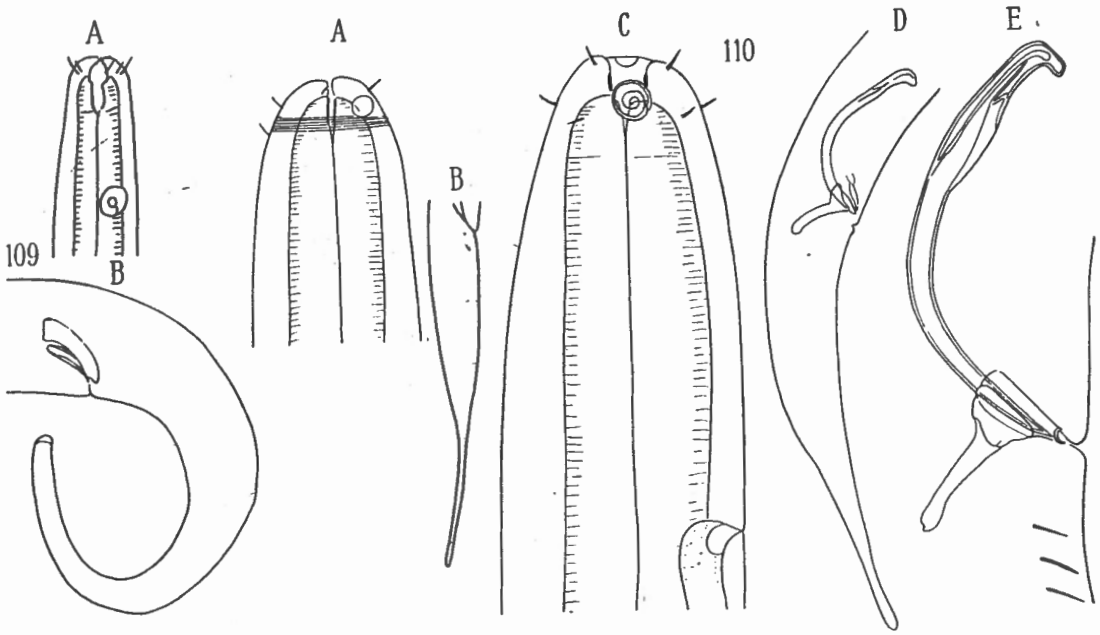


FIG. 109. — *Paratripyloides longicauda* n. sp.
A : Male head. B : Male tail.

FIG. 110. — *Metalinhomœus breviseta* n. sp.
A : Female head. B : Female tail. C : Male head. D : Male tail.
E : Male genital armature.

The gubernaculum embraces the apex of the spicula caplike. Tail in the male as well as in the female sex almost cylindrical, then gradually attenuated, ending with a narrow flagellum which is blunt at apex. Length of tail 5 anal diameters.

MICOLETZKY's *Linhomœus* spec. 1 of which this author encountered a juvenile specimen on the port wall in Suez probably belongs to the present species.

The species is closely related with *Linhomœus filiformis* FILIPJEV from the Black Sea, but may be distinguished from the latter by the pilosity of the head end, and by the greater length and somewhat different shape of the spicula. Amphids more in front than in *filiformis*.

111. — **Metalinhomœus cylindricauda** n. sp.

(Fig. 111, A-G.)

2 ♂♂, 1 juv. from Villefranche, farther end of the « Port de la Darse », black mud and organic detritus. Depth 3 m.

Kreis (1926) has found at Naples *Metalinhomœus elegans* Kreis, which species is closely related as well with our species as with *M. zosterœ* Filipjev. It is of smaller size than *zosterœ* but may be distinguished from the latter

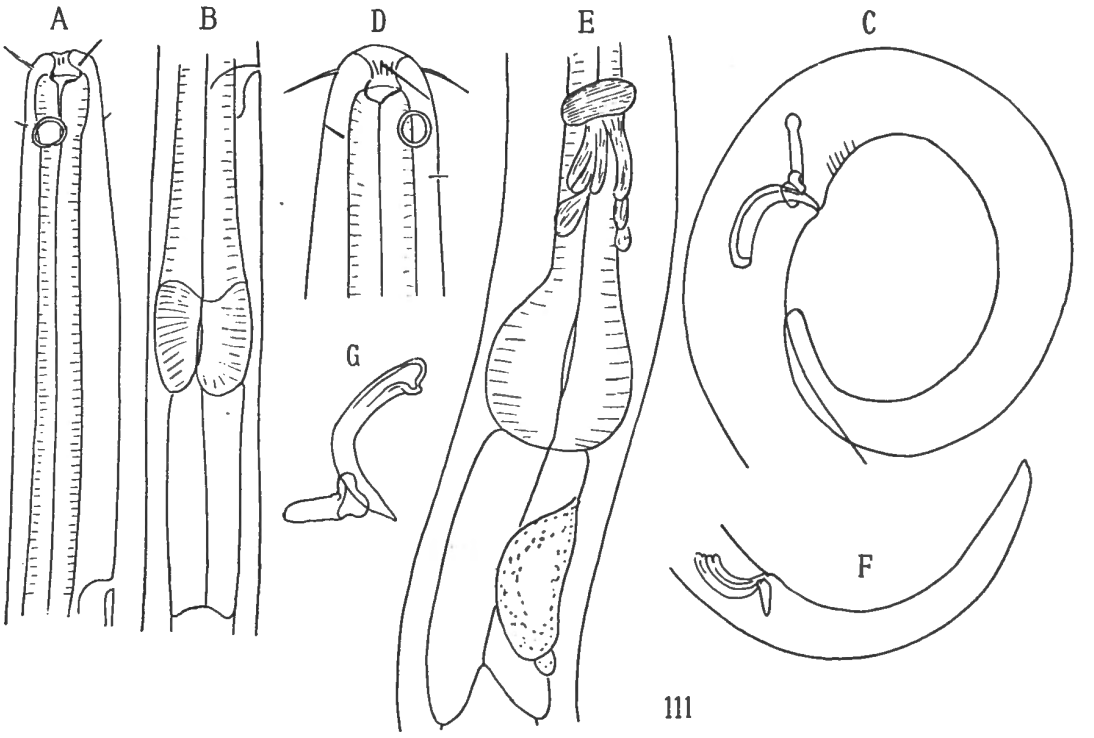


Fig. 111. — *Metalinhomœus cylindricauda* n. sp.

A : Male head. B : Base of œsophagus of same male. C : Male tail of the same. D : Head of another male (²). E : Base of œsophagus with ventral gland. F : Tail of the same male. G : Male genital armature.

species in the main by the position of the vulva, which has shifted far backwards. The present species resembles *M. zosterœ* very much, but possesses a more cylindrical, less attenuated tail and longer cephalic setae. Moreover we encounter subcephalic setae, which *zosterœ* misses. From *M. elegans* it differs in the structure of the oesóphagus. So I think the species in question should be new.

Dimensions :

Length : ♂, 2,536 mm; $\alpha = 70,4$; $\beta = 17,1$; $\gamma = 13,4$.

$$\frac{0 \quad 92 \quad 148 \quad M \quad 2348}{16 \quad\quad 28 \quad 36 \quad 24} \; 2536\ \mu.$$

♂ 2, 1,98 mm; $\alpha = 71,8$; $\beta = 17,2$; $\gamma = 13,4$.

$$\frac{0 \quad 140 \quad M \quad 1820}{12 \quad 20 \quad 20 \quad 24} \; 1980\ \mu.$$

♂. Head rounded anteriorly, crowned with 4 rather long cephalic setae, 4 in number and measuring 68,5 % of the cephalic diameter. Subcephalic setae short, placed just posterior to the amphids. Amphids circular, 27 % of the corresponding diameter. Oral cavity like in *zosteræ* with a longitudinally striated vestibulum and an oral pit of which the base and the erect walls are cuticularized. Oesophagus with a distinct posterior bulb. Nerve ring at 62 % of the oesophageal length. Cardia elongate. Ventral gland with supplementary cell. Excretory pore at 8,2 cephalic diameters from the anterior head end. Genital armature consisting of spicules resembling much those of *elegans*. Spicules strongly curved, with a partial longitudinal crest. Proximal end somewhat enlarged but not swollen. Distal end pointed. Length of spicula 1 anal diameter. Gubernaculum broad at its distal end, with a cylindrical dorsal apophysis. Length of the cylindrical tail 6,2 anal diameters.

The species in question resembles *Monhysteriella* (*Rhabdinema*) *elegans* Kreis from Trébeurden. It may however be distinguished from that form by its longer size, the presence of an elongate cardia and by differences in the pilosity of the oesophageal portion.

112. — **Metalinhomœus attenuatus** n. sp.

(Fig. 112, A-C.)

1 ♀, from Villefranche, between the « Lazareth » and « Anse Passable », grey mut. Depth 50 m.

Dimensions :

Length : ♀, 2,572 mm; $\alpha = 64,3$; $\beta = 17$: $\gamma = 9,2$; V. = 48 %.

The present species may be easily distinguished from the foregoing by the shape of the tail which is more filiform and effilate.

Head bluntly rounded anteriorly with a crown of 4 cephalic setae, measuring each 59 % of the corresponding cephalic diameter. Subcephalic setae in front of the amphids, half as long as the cephalic setae. Amphids cryptospiralic in structure, 42,5 % of the corresponding diameter. Buccal cavity undeep, the vestibulum passes into the lower portion of the buccal cavity

without constriction or limitation. Walls of buccal cavity not cuticularized. Vestibulum ribbed. Bottom of cavity strengthened. Oesophagus with a prominent posterior bulb and a distinct cardia. Nerve ring at 68 % of the total oesophageal length. Tail elongate, 11,5 anal diameters long, slightly swollen at its tip. Width at apex 15,7 % of the anal diameter.

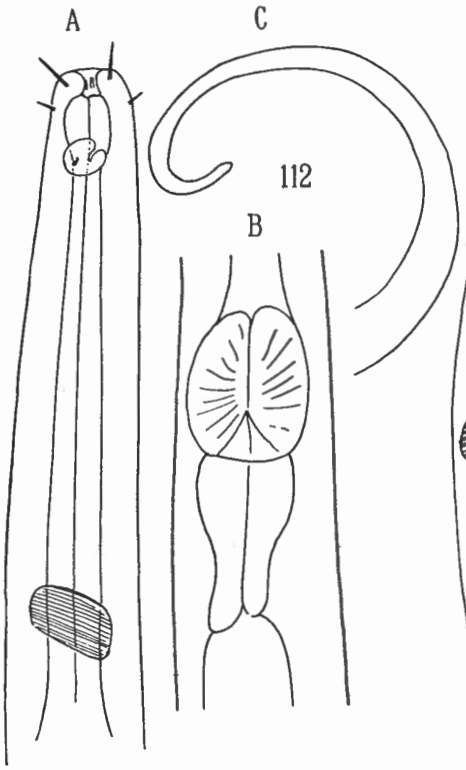


Fig. 112. — *Metalinhomœus attenuatus* n. sp.
A : Female head end.
B : Base of œsophagus.
C : Female tail.

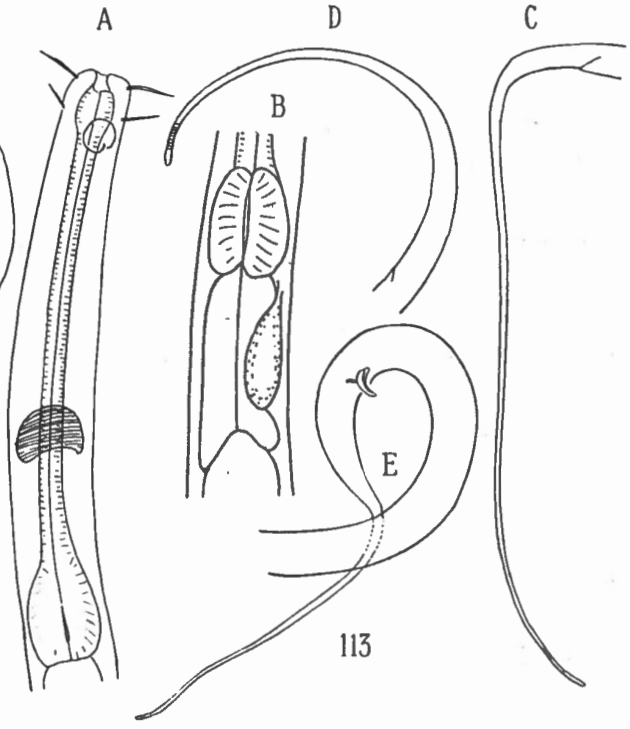


Fig. 113. — *Metalinhomœus effilatus* n. sp.
A : Female head end.
B : Base of œsophagus with ventral gland.
C : Female tail. D : Tail of juvenile.
E : Male tail.

113. — **Metalinhomœus effilatus** n. sp.

(Fig. 113, A-E.)

1 ♀, from Villefranche, farther end of the « Port de la Darse », black mud and organic detritus.

1 ♂, from Villefranche, off the « Pointe de la Gavinette », grey mud.

Dimensions :

Length : ♀, 2,3 mm; $\alpha = 96$; $\beta = 16,4$; $\gamma = 7,4$; V. = 51,5 %.

0	64	120	1180	1980	2300 µ.
12		20	24	20	

Dimensions :

Lenght : ♂, 3,46 mm; $\alpha = 8{,}65$; $\beta = 17{,}3$; $\gamma = 8{,}23$.

$$\frac{0 \quad 120 \quad 200 \quad M \quad 3040}{16 \quad 40 \quad\quad 40 \quad 40} \; 3460$$

The species in question, closely allied to *Metalinhomœus attenuatus*, may be easily distinguished from it by the filiform flagellum, the longer subcephalic setae and the less pronounced cuticularisation of the buccal cavity.

Head flattened anteriorly, crowned with 4 long setae, each 80 % of the corresponding cephalic diameter. The setae of the second crown are distinctly shorter and measure only 50 % of the corresponding diameter. Amphids cryptospiral, composed of a single winding, measuring 50 % of the corresponding diameter, at 1 cephalic diameter from the anterior head end. Buccal cavity elongate cylindroconical. No buccal plates observed. Oesophagus widened anteriorly, then cylindrical, with a distinct, although not very prominent posterior bulb, occupying 17,7 % of the total oesophageal length. Cardia elongate, accompanied by a distinct ventral gland cell. Tail filiform, with a long flagellum, 28,5 anal diameters long.

The male genital armature consists of double curved, anvil-shaped spicula, only 75 % of the corresponding diameter long and a guttershaped gubernaculum with dorsal apophysis. Tail as in the female, 11 anal diameters long.

114. — **Metalinhomœus obtusicaudatus** (De Man, 1889).

(Fig. 114, A-D.)

1 ♂, 2 ♀♀, 2 juv. from Villefranche, off the « Plage des Marinières », coarse sand under vegetation of *Posidonia*.

Dimensions :

Length : juv. 1, 2,544 mm; $\alpha = 57{,}8$; $\beta = 13{,}2$; $\gamma = 19{,}2$.

$$\frac{0 \quad 120 \quad 192 \quad 2412}{28 \quad\quad 44 \quad 32} \; 2544\ \mu.$$

♀ 1, 2,772 mm; $\alpha = 53$; $\beta = 12{,}4$; $\gamma = 19{,}8$; V. = 73 %.

$$\frac{0 \quad 124 \quad 224 \quad 312 \quad 2032 \quad 2632}{32 \quad\quad 44 \quad\quad 52 \quad 40} \; 2772\ \mu.$$

♂ 1, 2,364 mm; $\alpha = 53{,}8$; $\beta = 11{,}6$; $\gamma = 14{,}8$.

$$\frac{0 \quad 116 \quad 204 \quad M \quad 2204}{24 \quad\quad 40 \quad 44 \quad 40} \; 2364\ \mu.$$

Micoletzky (1924) did describe the same species after specimens from Suez and the Adria, whereas De Man has found the same species in the Channel.

Head flattened anteriorly with a crown of 4 rather long cephalic setae, measuring 41 % of the corresponding diameter. Amphids opposite to the cylindrical mesostome, circular, cryptospiral, 25,5 % of the corresponding body diameter, comparatively smaller than in the specimens from Micoletzky where they measured 30-33 % of the same diameter.

Buccal cavity with a rather wide longitudinally striated vestibulum and a cylindrical mesostom with cuticularized walls. Oesophagus cylindrical. Nerve ring at 67 % of the oesophageal length. Tail short, conical, ending

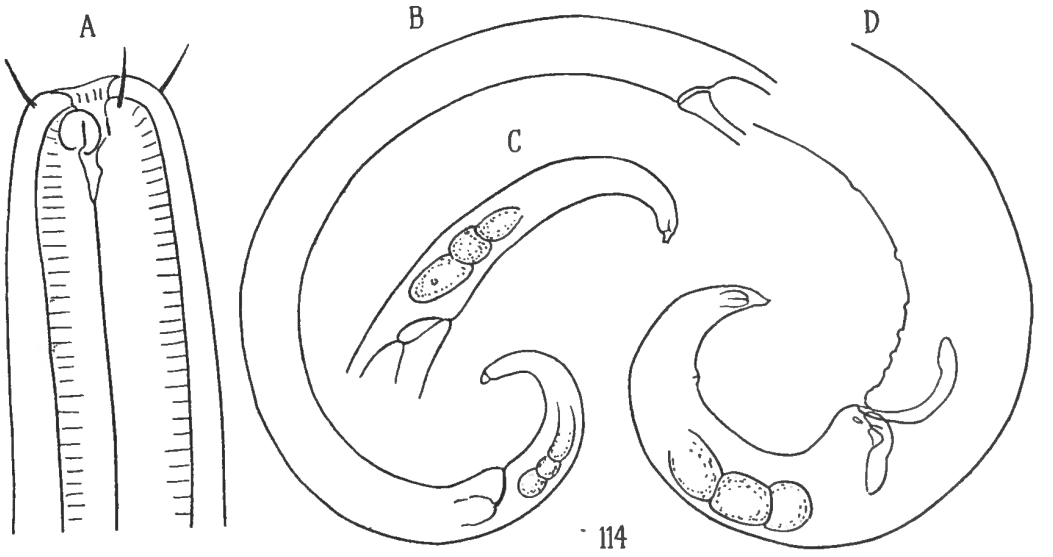


Fig. 114. — *Metalinhomœus obtusicaudatus* (De Man).
A : Female head. B C : Female tail ends. D : Male tail.

bluntly with a distinct spinneret. Length of tail 4 anal diameters. Three caudal glands in tandem position. In the male the tail is strongly curved ventrally. It measure about 4 anal diameters. The spiculum is likewise strongly curved, its chord measures 90 % of the anal diameter. Its proximal end is headed, distally it is pointed. Gubernaculum measuring 0,6 anal diameter, with broad apophysis; its distal end ambracing the spicula. I counted 8 praeanal papillae, those next to the cloaca narrowly spaced, the papillae 5-8 gradually more widely spaced. Tail with three caudal glands in tandem position and a spinneret at apex.

Geographical distribution : French Channel, Adria, Rovigno, Meleda, Ombla Bay, Bocche di Cattaro, Suez, Villefranche, Banyuls, Sea of Marmara.

115. — **Metalinhomœus pilosus** n. sp.

(Fig. 115, A-C.)

1 ♀, from Villefranche, off the Station, coarse sand under vegetation of *Posidonia*. Depth 15 m.

Dimensions :

Length : ♀, 3,068 mm; $\alpha = 76,7$; $\beta = 11,4$; $\gamma = 15,2$; V. = 48,6 %.

FILIPJEV's formula :

0	140	268	1488	2868	
32		40	36	28	3068 µ.

I should be inclined to reckon the present species to the species *Eulinhomœus ponticus* FILIPJEV to which it resembles very much, was not the cephalic crown of setae of the latter species composed of 10 elements, in stead of 4. FILIPJEV's states to have found 4 long setae and 6 minute setae. In FILIPJEV's specimen the vulva is situated at 38,5 % of the body length. For the rest the dimensions are rather similar.

FILIPJEV's ♀ measured : 3.4 mm; $\alpha = 83$; $\beta = 12$; $\gamma = 17$.

In our specimen, which I have named *pilosus*, the head is flattened in front. It bears a crown of 4 rather long setae, that measure 60 % of the corresponding cephalic diameter. Behind the first crown we encounter a rather great number of shorter setae, placed more or less in submedian longitudinal rows. Amphids circular, measuring 33 % of the corresponding body diameter. Vestibulum wide, followed by a mesostome, that may be closed by cuticular plates, that surround it. Metastome short. Oesophagus cylindrical, swollen posteriorly, but without distinct bulb. At the utmost we find an elongate bulb, but this is not sharply demarcated. Cardia elongate like in the other species of the genus. Nerve ring at 54 % of the oesophageal length. End of ventral gland just opposite to the cardia. Tail elongate cylindrical, containing the caudal glands in tandem position. The shape of the tail is quite similar to that in *Linhomœus ponticus* FILIPJEV. Length equal to 6 anal diameters.

Genus PARALINHOMŒUS DE MAN, 1907.

116. — **Paralinhomœus elongatus** n. sp.

(Fig. 116, A-C.)

1 juv. from Villefranche, farther end of the « Pointe de la Darse », black mud and organic detritus. Depth 3 m.

Dimensions :

Length : juv., 2,936 mm; $\alpha = 45,7$; $\beta = 10,62$; $\gamma = 11,25$.

0	116	120	276	M	2676	
36			64	60	44	2936 µ.

The species is closely related to *P. tenuicaudatus* (Buetschli) but differs from the latter i.a. by the size of the cephalic setae and by the shape of the tail, which is less effilate than in that species.

Head flattened anteriorly with 10 cephalic setae, of which the longer partners of the 4 submedian pairs are considerably longer than the 6 very minute setae of the anterior crown. These longer submedian setae measure 21,5 % of the corresponding diameter. Amphids circular, cryptospiral, measuring

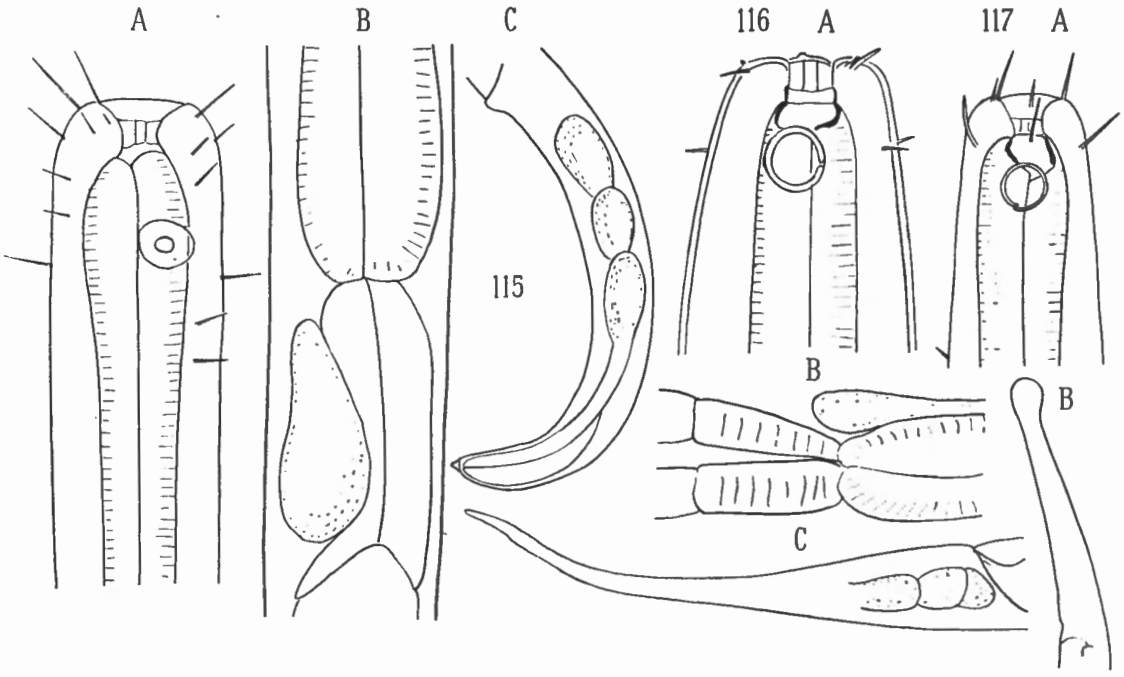


Fig. 115. — *Metalinhomœus pilosus* n. sp.
A : Female head. B : Base of œsophagus with ventral gland. C : Female tail.

Fig. 116. — *Paralinhomœus elongatus* n. sp.
A : Juvenile head end.
B : Base of œsophagus. C : Tail.

Fig. 117. — *Paralinhomœus clavicaudatus* n. sp.
A : Female head end.
B : Tail of the same.

30,8 % of the corresponding body diameter. At a level with the amphids one finds some small setae. Buccal cavity : vestibulum wide with distinct, but few longitudinal ridges, leading into the short, but wide mestostome, which is separated from the metastome by a cuticular fold. Both meso- and metastome possess strongly cuticularized walls. Oesophagus cylindrical, hardly swollen at its posterior end. Cardia likewise cylindrical. Excretory gland ending at the junction of cardia and the posterior end of oesophagus. Excretory pore just in front of the nerve ring which is situated at 43,5 % of the oesophageal length. Tail elongate, pointed at its tip, presenting 3 caudal glands in tandem position. Length of tail equal to 6,1 anal diameters.

117. — **Paralinhomœus clavicaudatus** n. sp.

(Fig. 117, A, B.)

1 ♀, from Villefranche, off the « Plage des Marinières », coarse sand under vegetation of *Posidonia*. Depth 3 m.

Dimensions :

Length : ♀, 2,016 mm; $\alpha = 50{,}4$; $\beta = 11{,}8$; $\gamma = 15{,}25$; V. = 58 %.

0	16	80	172	1164	1684	2016 µ.
24			36	40	28	

Head rounded anteriorly, crowned by 10 cephalic setae of unequal size, the longer partners of the submedian pairs measuring 63,5 % of the corresponding diameter, the shorter ones 39,5 % of that same diameter. A second crown of longer hairs is found on half the distance between the anterior head end and the amphids. These setae measure 41,3 % of the corresponding diameter. Amphids circular, cryptospiral, 37,2 % of the body diameter wide. Oesophagus cylindrical, elongate. Nerve ring at 46,5 % of the oesophageal length. Tail short elongate with a terminal swelling. Tail 6 anal diameters long.

Apart form the fact, that there are only 4 cephalic setae in representants of *Desmolaimus*, the present species resembles in many respects *Desmolaimus elongatus* Allgén from the Öresund.

118. — **Paralinhomœus ostrearum** Filipjev, 1918-1921.

(Fig. 118, A-C.)

1 juv. from Villefranche, off the « Vieux Villefranche », black mud and vegetal detritus. Depth 20 m.

Dimensions :

Lenght : 1 juv., 3,06 mm; $\alpha = 38$; $\beta = 12{,}8$; $\gamma = 25{,}5$.

0	120	240	280	2950	3060 µ.
48		76	80	60	

Head flattened anteriorly with 10 short, equally long, conical setae, not longer than 14,2 % of the corresponding diameter. The cephalic setae were distinctly longer in Filipjev's form (compare his fig. 58 *c*). At a level with the amphids 2 setae in the submedian meridians, not longer than 10 % of the corresponding body diameter. Amphids circular, cryptospiral, with a broad outer rim. Diameter of the amphids, 28 % of the corresponding body diameter. Buccal cavity subdivided into 3 divisions, a short vestibulum, followed by a rather long mesostome, with vigorous, strongly cuticularized plates and a metastome at the bottom of which two cuticular blades are encountered. Walls of metastome cuticularized. Oesophagus cylindrical, not distinctly swollen at its

posterior end. Cardia short, cylindrical. Tail very short, bluntly rounded. It corresponds to Filipjev's figure 58 *b*, not to 58 *c*. In Filipjev's figure 58 *b* the tail of a female is depicted, which in the present case should be quite distinct from that of a male, where we should have a filiform tip. In Filipjev's

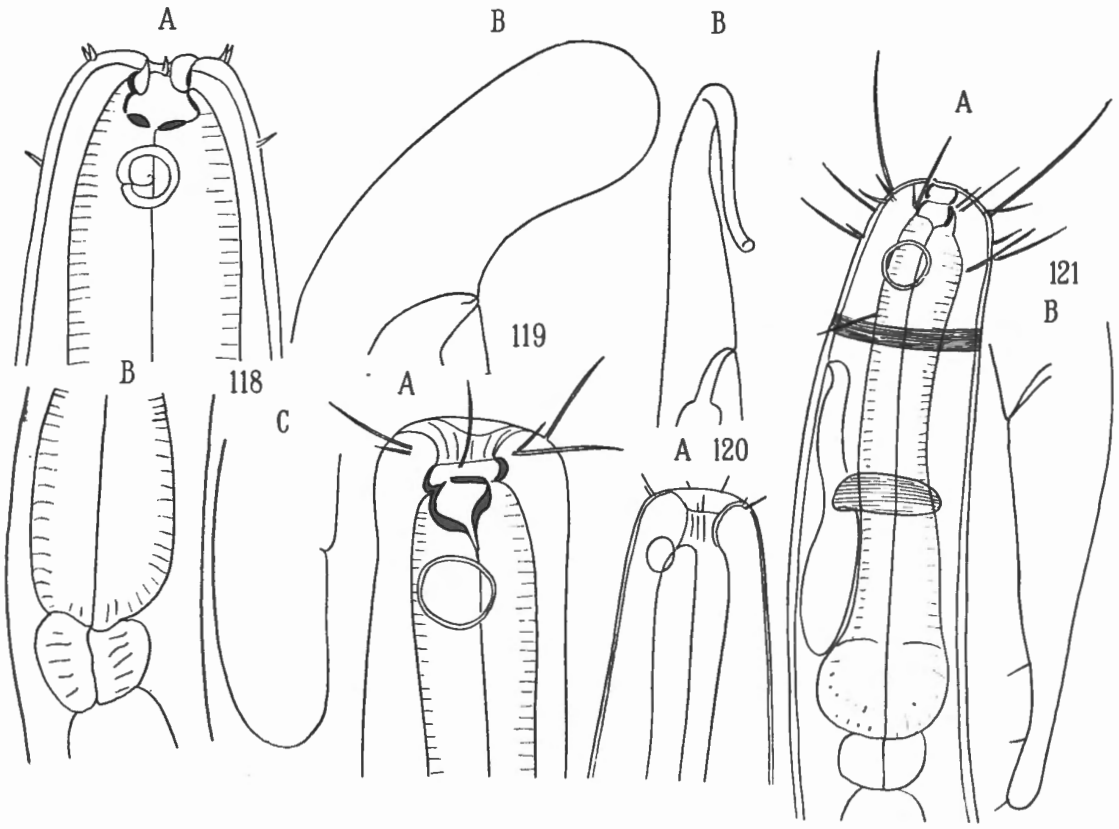


Fig. 118. — *Paralinhomœus ostrearum* Filipjev.
A : Juvenile head end.
B : Base of œsophagus. C : Tail.

Fig. 119. — *Paralinhomœus brevicaudatus* n. sp.
A : Juvenile head end.
B : Tip of tail.

Fig. 120. — *Paralinhomœus brevibucca* n. sp.
A : Juvenile head end.
B : Tail.

Fig. 121. — *Perilinhomœus longisetosus* n. sp.
A : Juvenile head end.
B : Tail.

female, of which we do not know the whole length, the tail was almost as long as the anal diameter is wide. In the present juvenile the length of the tail equalled to 1,66 anal diameters.

Allgén's *Paralinhomœus strandibrevicaudatus* is closely related with the present species.

Geographical distribution : Black Sea, Mediterranean, Villefranche, further Trébeurden.

119. — **Paralinhomœus brevicaudatus** n. sp.

(Fig. 119, A, B.)

1 juv. from Villefranche, off the Station, coarse sand under vegetation of *Posidonia*. Depth 15 m.

At first I thought the specimen belonged to *L. mirabilis* Bütschli, but closer observation learned me that it belonged to the genus *Paralinhomœus*.

Dimensions :

Lenght : juv., 2,104 mm; $\alpha = 40{,}05$; $\beta = 8{,}1$; $\gamma = 32{,}8$.

$$\frac{0 \quad 260 \quad 2040}{40 \quad 52 \quad 44} \; 2104\ \mu.$$

Head rounded anteriorly and slightly swollen. Cephalic setae, 20 in number, forming a single crown. Lateral setae unpaired, submedian setae paired, unequal, the longer ones 68 % of the corresponding cephalic diameter, the shorter ones measuring 21 % of the same diameter only. Amphids comparatively large, 41 % of the corresponding diameter, immediately posterior to the buccal cavity. Buccal cavity subdivided into three portions, vestibulum with longitudinal ridges, mesostome short, with cuticularized walls, separated from both pro- and metastome by constrictions, metastome much narrower and distinctly heavier cuticularized than the mesostom. At its fore border we find a cross bar. Tail short and blunt, rounded posteriorly, 2 anal diameters long.

From *L. mirabilis* Buetschli the species in question may be distinguished by the longer cephalic setae, the absence of cervical setae, the larger amphids and by differences in the structure of the buccal cavity.

120. — **Paralinhomœus brevibucca** n. sp.

(Fig. 120, A, B.)

1 juv. from Villefranche, off the « Pointe de la Gavinette ». Depth 8 m.

The specimen in question shows resemblance as well with *Metalinhomœus breviseta*, from which it may be distinguished by the greater number of cephalic setae (10 instead of 4), as with *Paralinhomœus ostrearum* Filipjev. In the female sex *Paralinhomœus ostrearum* is in the possession of a cylindrical tail, whereas the male has after Filipjev (consult his fig.58 *c*) a different sort of tail; elongate conical with a filiform tip.

It is doubtfull if Filipjev's male and female belong to the same species.

Dimensions :

Length : juv., 2,22 mm; $\alpha = 37{,}8$; $\beta = 9{,}1$; $\gamma = 8{,}25$.

$$\frac{0}{24} \; \frac{100 \quad 200 \quad 1600}{48 \quad 48} \; 2220\ \mu.$$

Head rounded anteriorly crownded with 10 setae, the partners of the submedian pairs almost equal in size, measuring 25 % of the corresponding

diameter. Buccal cavity with longitudinal ribs, cylindrical. Tail elongate cylindrical with a terminal filiform portion. Length of that portion 39,25 % of the whole tail length, which is 6 anal diameters long. If the specimen in question had been in the possession of 6 cephalic setae in stead of 10 I would not have hesitated to bring it to the species *Metalinhomœus breviseta* Schuurmans Stekhoven.

Genus PERILINHOMŒUS n. gen.

The following species based on a juvenile specimen shows some particulars, that necessitate to create a new genus for it. The head bears 6 groups of 2 setae each, therefore 12 setae in total. The peculiarity is, that we do not encounter mediolateral isolate hairs, but that there are 2 groups of 2 setae of unequal length each, that are paralateral in position. The buccal cavity is cylindrical, but divided into 2 separate cavities by a median constriction. The cuticularisations of the walls are broken. Cervical setae rather numerous. Excretory gland short. Posterior end of it in front of the oesophageal bulb.

121. — **Perilinhomœus longisetosus** n. sp.

(Fig. 121, A, B.)

1 juv. from Villefranche, off the « Vieux Villefranche », black mud and organic detritus. Depth 20 m.

Dimensions :

Length : juv., 2,992 mm; $\alpha = 83$; $\beta = 24{,}8$; $\gamma = 22{,}5$.

The species in question is characterized by the very long dorsal and ventral setae of the cephalic crown, the short ventral gland and the cylindrical cardia.

Head rounded anteriorly, with distinct labial papillae. Crown of cephalic setae composed of 12 setae, of which the dorsal and ventral pairs are composed of one very long seta, surpassing in length the cephalic diameter = 1,6 cephalic diameter, whereas the shorter partner measures 50 % of the same diameter. The sublateral pairs are likewise of unequal size, the longer partner measuring 72 % of the cephalic diameter, the shorter 32 % of the same diameter. Apart from this cephalic crown there is a second crown of comparatively long setae, at a level with the diameter of the amphids, composed of at least 6 components, these measuring 65,8 % of the corresponding diameter. Amphids circular, 35 % of the corresponding diameter. Cuticle finely ringed. There is moreover a single unpaired hair just posteriorly to each amphid. Buccal cavity rather wide, composed of two cylindrical portions, each with cuticularized walls, separated from each other by a constriction. Vestibular longitudinal folds indicated. Oesophagus cylindrical, swollen posteriorly but without a true

bulb. Cardia short, cylindrical. Ventral gland ending immediately in front of the posterior swelling of the oesophagus. Excretory pore at 34,5 % of the oesophageal length. Nerve ring at 57,5 % of the oesophageal length.

Tail elongate conical with a slightly attenuated cylindrical portion, slightly swollen at its apex with some subventral setae. Tail 3,65 anal diameters long.

The species in question resembles *Paralinhomœus viscosus* ALLGÉN but may be easily distinguished from it by size and distribution of its cephalic setae as well as by the shape of the tail.

Genus PARACHROMOGASTERIELLA ALLGÉN, 1933.

In 1933 ALLGÉN has created his new genus *Parachromogasteriella* for *P. cylindricauda* ALLGÉN, which this author brought to the relationship of *Arœolaimus* and *Odonthophora* in the Family of *Axonolaimidæ*. ALLGÉN's figures although apparently taken after specimens in a bad state of fixation bring me to the conviction that this author had to do with a representant of the *Linhomœidæ* family. I transfer therefore ALLGÉN's genus to the *Linhomœidæ*. The structure of the amphids, which are cryptospiral like in so many Linhomoeids, the structure and pilosity of the head end make me suppose that we have to do with a Linhomoeid species.

Now I encountered in the material from Villefranche the female of a species, which apparently belongs to the same genus and which undoubtedly has to be reckoned to the *Linhomœidæ* family, like for instance may be concluded from the presence of a cardia. As further characteristics I mention the presence of a rhabditoid cylindrical buccal cavity, the presence of only 4 cephalic setae, just like in ALLGÉN's species, double ovaries, a conicocylindrical tail. For the present species I propose the name *Parachromogasteriella conicauda.*

122. — **Parachromogasteriella conicauda** n. sp.

(Fig. 122, A-D.)

1 ♀, from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

Dimensions :

Length : ♀, 0,996 mm; $\alpha = 22{,}5$; $\beta = 5{,}65$; $\gamma = 10$; V. = 61 %.

0	104	176	204	616	896	996 µ.
8		32		44	28	

Head bluntly rounded anteriorly. No distinct labial papillae but 4 cephalic setae, measuring 25 % of the corresponding cephalic diameter. Amphids large, circular in outline, but in reality spiral, their width 63 % of the corresponding diameter. Buccal cavity rhabditiform, prostome with small rhabdions, mesostome cylindrical elongate. The anterior portion of the oesophagus is cylin-

drical and slightly narrower than the next muscular part. Nerve ring embracing the muscular part, at 59 % of the total oesophageal length. Oesophagus proper followed by an apple-shaped cardia. Vulva with two vulvar glands. Tail conical with 3 caudal glands in tandem position. Length of tail equal to 4 anal diameters.

Genus TERSCHELLINGIA De Man, 1888.

123. — **Terschellingia heteroseta** n. sp.

(Fig. 123, A, B.)

6 ♂, from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

This species closely resembles *Terschellingia pontica* Filipjev. In the genus *Terschellingia* however the oral cavity should be almost or quite absent. Since the present species possesses a rather wide buccal cavity with distinct longitudinal ridges, one should be inclined to bring it to the genus *Metalinhomœus*. Yet I believe that it in reality belongs to the genus *Terschellingia*, because I found in *Terschellingia antonovi* Filipjev, next to specimens, in which apparently no or only a slitlike buccal cavity was found, other individuals, which presented more widely opened buccal cavities that showed similar longitudinal ridges in their buccal cavities as the present species. The present species is characterized by the very long filiform tail, that is almost 24 anal diameters long against not quite 10 anal diameters in *T. pontica*, by the large size of its amphids, which however might probably be due to sex and by differences in size between the cephalic and subcephalic setae. The latter are distinctly much longer than the former.

Dimensions :

Length : ♂, 1,328 mm; $\alpha = 33{,}2$; $\beta = 10{,}3$; $\gamma = 5{,}5$.

$$\frac{0 \quad 80 \quad 128 \quad M \quad 1088}{14 \quad\quad 32 \quad 40 \quad 28} \; 1328\ \mu.$$

Head bluntly rounded anteriorly with 4 short cephalic setae, not longer than 27,8 % of the corresponding diameter. Subcephalic setae at the lower border of the amphids, 1,6 times as long as the cephalic setae and 38 % of the corresponding diameter. Amphids large, 58,5 % of the corresponding body diameter. Buccal cavity comparatively wide, cylindrical. Oesophagus cylindrical, widened to a prominent posterior bulb, that measures 25 % of the total length of the oesophagus. Nerve ring at 56 % of the whole oesophageal length. Genital armature. Spicula curved, distinctly knobbed at their proximal end, where one finds a longitudinal ridge over a short distance. Distal end pointed. Gubernaculum broad at its distal end, embracing the spicula. Manubrium of the same short, ending bluntly. Tail long, filiform, almost 24 anal diameters long, provided with a long flagellum.

As for their indices *Terschellingia pontica* and *heteroseta* fall into the same scheme. The pilosity of both sexes however is as far as is known for the present moment always quite similar. The tail, especially the flagellum of *T. heteroseta* is distinctly longer than in *pontica*. We must however always

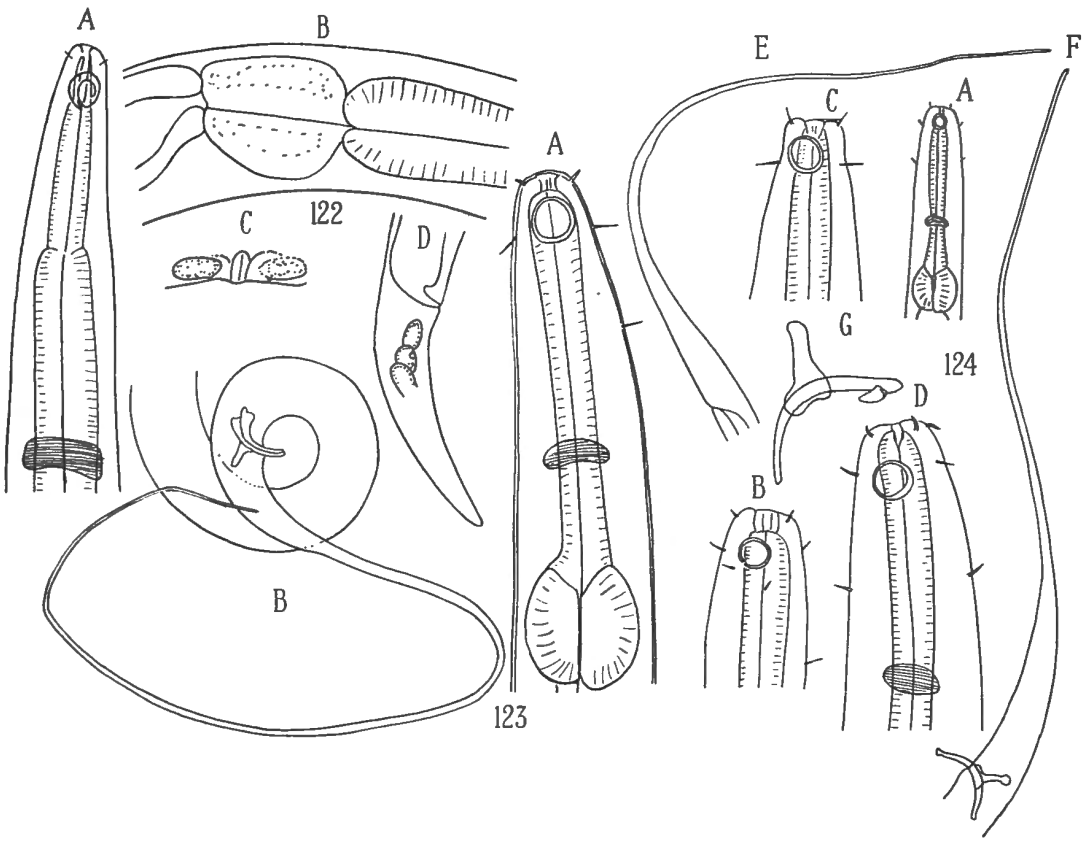


FIG. 122. — *Parachromogasteriella conicauda* n. sp.
A : Female head end.
B : Base of œsophagus.
C : Vulva with glands.
D : Female tail.

FIG. 123. — *Terschellingia heteroseta* n. sp.
A : Male head end. B : Male tail.

FIG. 124. — *Terschellingia antonovi* FILIPJEV.
A : Head end.
B C : Female head ends.
D : Male head end.
E : Female tail.
F : Male tail.
G : Male genital armature.

be aware, that such a long filiform tail may be partly broken off and healed. I have however the impression that this was not the case in the specimen of *pontica* studied by FILIPJEV. So I feel justified in creating a new species for the present male.

124. — Terschellingia antonovi Filipjev, 1922.

(Fig. 124, A-G.)

8 ♂♂, 9 ♀♀, 11 juv. from Villefranche, off the « Vieux Villefranche », black mud and organic detritus. Depth 20 m.

3 ♀♀, from Villefranche, between the « Lazareth » and « Anse Passable », grey mud. Depth 50 m.

Dimensions :

Length : ♂, 1,68 mm; $\alpha = 35$; $\beta = 12$; $\gamma = 4{,}2$.

$$\frac{0 \quad 80 \quad 140 \quad M \quad 1280}{16 \qquad 36 \quad 48 \quad 28} \quad 1680\ \mu.$$

♀ 1, 1,6 mm; $\alpha = 40$; $\beta = 12{,}5$; $\gamma = 3{,}12$; V. = 43,4 %.

$$\frac{0 \quad 128 \quad 688 \quad 1088}{16 \quad 32 \quad 40 \quad 30} \quad 1600\ \mu.$$

♀ 2, 1,564 mm; $\alpha = 43{,}4$; $\beta = 12{,}6$; $\gamma = 3{,}42$; V. = 40 %.

$$\frac{0 \quad 68 \quad 124 \quad 624 \quad 1104}{16 \qquad 36 \quad 32 \quad 24} \quad 1564\ \mu.$$

Filipjev's : ♀, 1,9 mm; $\alpha = 55{,}$; $\beta = 17$; $\gamma = 3{,}5$; V. = 39 %.

Head rounded anteriorly to more bluntly truncate. Lips with 4 short cephalic setae, measuring 33,4 % of the corresponding diameter. Subcephalic setae, opposite to the middle of the amphids, almost quite as long or at the utmost slightly longer. Amphids circular, with the walls unequally thick, 38,8 % of the corresponding diameter. Posterior to the amphids some submedian setae of the same length as those of the subcephalic crown and equally some other setae of the same size on the remainder of the oesophageal region, in the same meridian as the cervical, subcephalic setae. Buccal cavity closed or open, in the latter case with distinct longitudinal ridges, in the former case, slitlike. Nerve ring at 54,5 % of the oesophageal length. Posterior oesophageal bulb distinct, occupying 21,75 % of the oesophageal length. Male with rather long curved spicula with a proximal barb, distal end blunt. Spicula, 1,62 anal diameters long. Gubernaculum ensheathing the spicula, with a distinct dorsal apophysis. Male tail quickly tapering to a long filiform portion. Length of tail 14,7 anal diameters. The female tail is identical in shape. Here the tail index is 19.

Geographical distribution : Mediterranean, Villefranche, Sea of Azov.

Genus ELEUTHEROLAIMUS FILIPJEV, 1922.

The genus *Eleutherolaimus* FILIPJEV is in the possession of a cylindrical buccal cavity and of two crowns of cephalic sense organs of 4 elements each. These 2 crowns may however occasionally be fused, like is the case in the present species, so that we get in this case a crown of 8 cephalic setae. I have not found lateral setae. If these have been broken off and are missing, then the

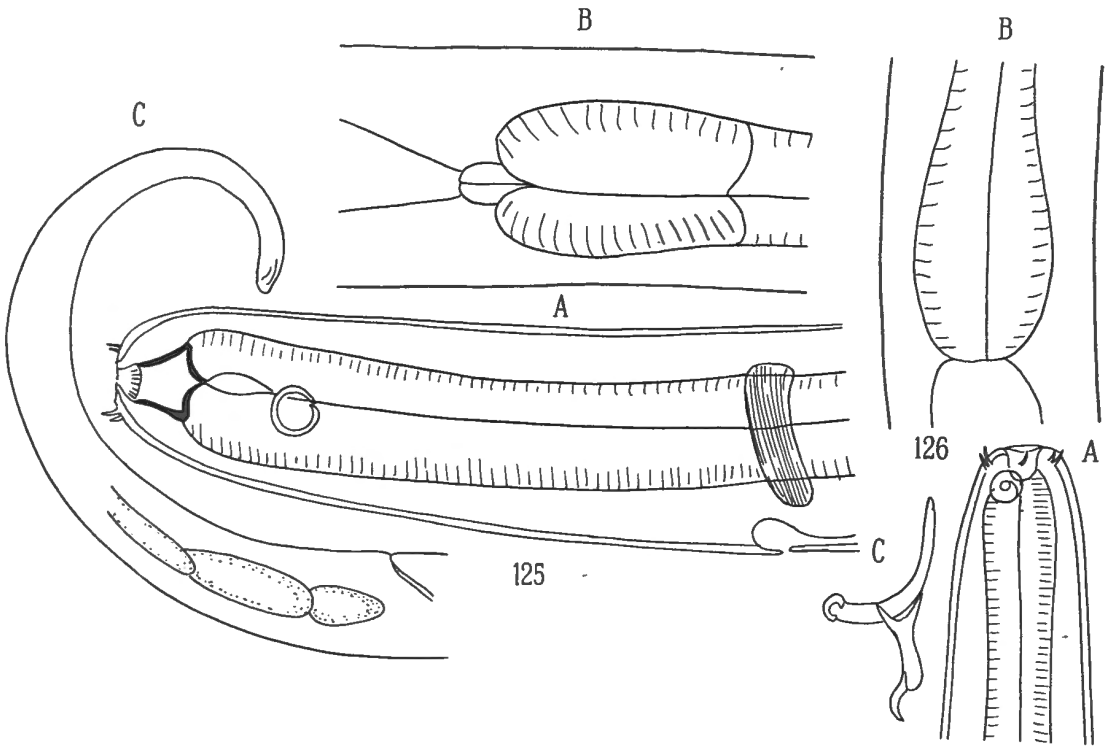


FIG. 125. — *Eleutherolaimus duplicatus* n. sp.
A : Juvenile head end.
B : Base of œsophagus. C : Tail.

FIG. 126. — *Omicronema truncatum* n. sp.
A : Male head end. B : Base of œsophagus.
C : Male genital armature.

crown of cephalic sense organs would be composed of 10 elements and the species in question would fall in the genus *Metalinhomœus*. The species in question shows so great a similarity to *Eleutherolaimus longus* FILIPJEV of the Black Sea, that I was first inclined to take it for the same species. It may however easily be distinguished from the latter species apart from its much greater size, by the markedly longer tail, the shorter cephalic setae. The amphids are of smaller size, but this might be a question of sexual dimorphism.

125. — **Eleutherolaimus duplicatus** n. sp.

(Fig. 125, A-C.)

1 juv. from Villefranche, between the « Lazareth » and « Anse Passable », grey mud. Depth 50 m.

Dimensions :

Length : juv., 5,56 mm; $\alpha = 92{,}6$; $\beta = 21{,}3$; $\gamma = 13$.

$$\frac{0 \quad 260}{50} \quad \frac{M \quad 5160}{60 \quad 40} \quad 5560\ \mu.$$

Head truncate anteriorly, the oral opening surrounded by 6 indistinct labial papillae. I found 8 very minute cephalic setae (confer fig. 125 A), not measuring more than 25 % of the corresponding cephalic diameter. Amphids circular, cryptospiral, 27,3 % of the corresponding diameter, separated from the anterior end by a distance 2,5 times the cephalic diameter. Buccal cavity rather deep, with a number of longitudinal ridges in the vestibulum. Meso- and metastome with cuticularized walls. Oesophagus cylindrical, inconspicuously widened at the posterior end, where we find no prominent bulbus. Cardia short and narrow. Nerve ring at 55 % of the oesophageal length. Excretory pore just in front of the nerve ring, provided with a distinct ampulla. Tail with 3 tail glands, in tandem position. Tail elongate conical, ending blunt, 7,8 anal diameters long.

Genus OMICRONEMA Cobb, 1920.

126. — **Omicronema truncatum** n. sp.

(Fig. 126, A-C.)

1 ♂, from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

Unfortunately I have made no notices on the dimensions of the specimen in question. It has several points in common with *Omicronema litorium* Cobb (Cobb, 1920, p. 265), so that I have brought it to that genus, although I am not quite sure that it really belongs to it.

The buccal cavity however is not wide but rather narrow and shallow. The head is truncate at apex. No labial papillae are to be seen, neither are cephalic papillae. The only crown is the crown of the cephalic setae, 10 in number, the longer ones not longer than 26 % of the corresponding cephalic diameter. Walls of the buccal cavity not strengthened.

Amphids circular in outline, with central dot, cryptospiral in structure. Oesophagus cylindrical, with a faint bulb at base. Cuticle smooth, not ringed like in *litorium*.

Male genital armature consisting of a curved spiculum, headed at its proximal end and a gubernaculum, that embraces the spiculum at its lower half and bears itself a dorsal apophysis with curved proximal end. The exact position of this species cannot be given with certainty, although I am inclined to place it in the group of the *Linhomœidæ*.

cavity, embraced by chagrinated cuticularized plates, which in their turn are connected with the oral pit by means of thick and curved cuticular bars. At the lower limit of this portion, just in front of the circular rather large amphids the next crown of setae is observed. Oral pit conical. In the oesophageal region as well as further downwards rather long and fine setae are placed in longitudinal rows. Amphids circular, in reality, like was observed in one of the studied males, cryptospiral, 13,8 % in one, 25,5 % of the corresponding diameter in another of my males. Nerve ring just in front of the middle of

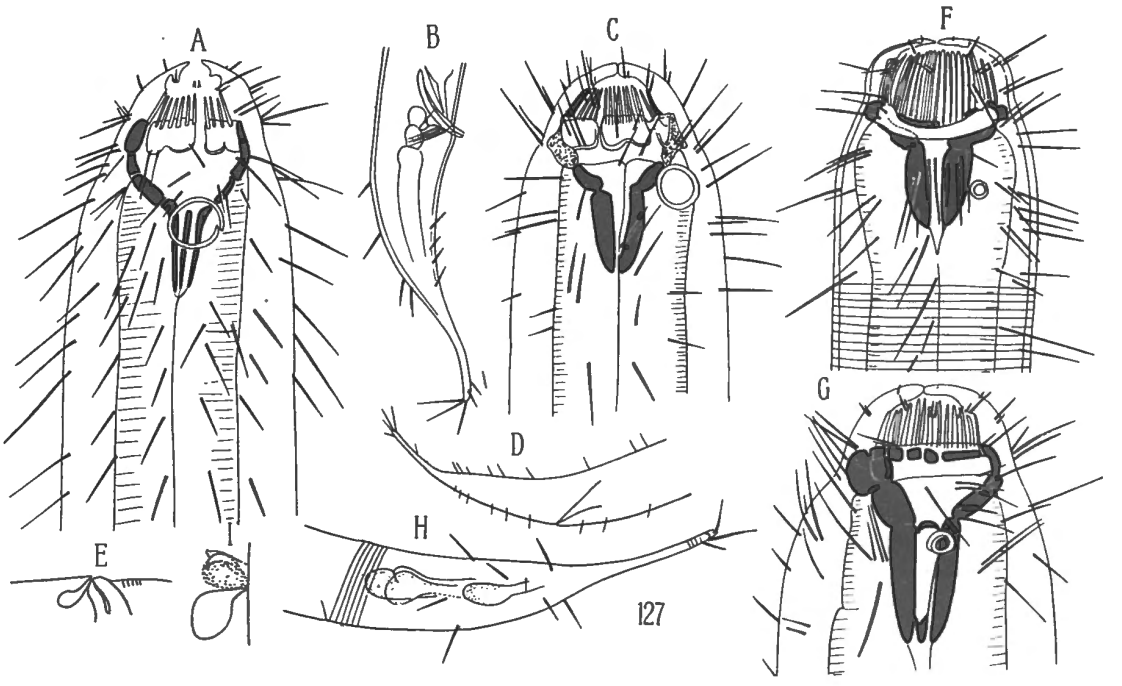


FIG. 127. — *Sphærolaimus dispar* FILIPJEV.
A : Male head. B : Male tail. C : Head. D : Tail. E : Vulva. F G : Female head end H : Female tail. I : Vulva with glands.

the oesophagus. Genital armature : Spicula short, slender, bluntly pointed at both ends, hardly longer than the anal diameter. Gubernaculum building a kind of manchette with a short dorsal apophysis. Tail elongate conical, with a more or less filiform portion occupying not more than 26 % of the tail length, which itself is 3,6 anal diameters long, ending with some rather long setae and bearing a number of setae arranged in longitudinal rows.

In the female, which shows a distinct sexual dimorphism when compared with the male, as well in respect with the structure of the buccal cavity as in respect with the size of the amphids hence the name *dispar*, the setae are likewise arranged into 4 or 5 crowns on the head portion in front of the small

Family **SPHÆROLAIMIDÆ.**

Genus SPHÆROLAIMUS Bastian, 1865.

From this genus till so far *Sphærolaimus gracilis* De Man only was encountered in the Mediterranean (Camargue). Now I can add to it 2 other species, already described by Filipjev (1918-1921) from the Black Sea : *Sphærolaimus dispar* Filipjev and *Sphærolaimus macrocirculus* Filipjev.

127. — **Sphærolaimus dispar** Filipjev, 1918-1921.

Syn. ? *Sphærolaimus striatus* Allgén, 1935.

(Fig. 127, A-I.)

1 ♀, 2 juv. from Villefranche, between the « Lazareth » and « Anse Passable », grey mud. Depth 50 m.

2 ♂♂, 2 ♀♀, 2 juv. from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

1 ♀, from Villefranche, entrance of the road, grey mud. Depth 230 m.

Dimensions :

Length : ♂, 1,768 mm; $\alpha = 21$; $\beta = 4{,}12$; $\gamma = 8{,}85$.

0	48	188	428	M	1568	1768 µ.
24	40	72	80	84	60	

♀ 1, 1,816 mm; $\alpha = 22{,}5$; $\beta = 4{,}35$; $\gamma = 7{,}58$; V. = 70 %.

0	48	416	1276	1576	1816 µ.
24	40	72	80	50	

♀ 2, 2,540 mm; $\alpha = 25{,}5$; $\beta = 4{,}24$; $\gamma = 8{,}5$; V. = 67 %.

0	600	1700	2240	2540 µ.
50	100	100	80	

♀ 3, 2,14 mm; $\alpha = 26{,}7$; $\beta = 3{,}05$; $\gamma = 8{,}9$; V. = 70 %.

0	700	1500	1900	2140 µ.
40	80	80	50	

The specimens in question answer rather good to the descriptions and figures of the same species as given by Filipjev.

Head of the male distinctly more acute than that of the female, conical. Lips fleshy with a crown of 12 labial setae, the components of each pair of setae being very unequal in size, a minute hair is found next to a comparatively long hair, that measures 27,5 % of the corresponding diameter. Second crown of setae, placed in groups, varying from one to three setae each, just opposite the lower end of the second portion of the buccal cavity which is supported interiorly by the well known longitudinal bars, that originate from the cusp-like cuticularized plates from the middle portion of the buccal cavity. Opposite to those cusp-like plates the third crown of long setae is found, similarly arranged in groups of 1-3 setae. Next follows a narrow portion of the buccal

circular or cryptospiral amphids, which measure no more than 10,5 % of the corresponding diameter. Lips with labial setiform papillae, not observed in the male. The oral cavity is, like for instance fig. 127 *a* shows, composed of 5 portions just as in the male sex but the divisions apparently may be telescoped into each other or longitudinally compressed by movements of the parts like for instance from a comparison of figure 127 F and figure 127 G results. Apparently the cuticular ring which embraces the third portion of the buccal cavity may be moved downwards and this gives the varying pictures of the buccal cavity in the female sex. Vulva with vulvar gland. Tail of the female with a filiform portion occupying 25 % of the whole tail length, which is 3,75 anal diameters long.

ALLGÉN's *Sphærolaimus striatus* from the Öresund (1934, p. 133) seems to me to be a synonym of *S. dispar*. The relative length of the oesophagus is somewhat greater than in the specimens from the Mediterranean, but this may stay in connection with the greater length of the specimen from more northern latitude, like this is often the case with nematodes. The spicula are slightly longer as is also the dorsal apophysis of the gubernaculum. The tail bears a smaller number of setae than in my specimens, but these might be broken off or might have been overseen. So I am inclined to keep it for granted, that *S. striatus* ALLGÉN is a synonym of *S. dispar* FILIPJEV.

GEOGRAPHICAL DISTRIBUTION : Black Sea, Mediterranean, Villefranche, Öresund.

128. — **Sphærolaimus macrocirculus** FILIPJEV, 1918-1921.

(Fig. 128, A-F.)

2 ♂♂, 4 ♀♀, 2 juv. from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

1 ♂, from Villefranche, entrance of the road, grey mud. Depth 230 m.

Dimensions :

Length : ♂, 2,018 mm; $\alpha = 31,6$; $\beta = 4,15$; $\gamma = 9,2$.

0	48	168	408	M	1808	
28		60	60	64	56	2018 µ.

♀, 1,816 mm: $\alpha = 22,5$; $\beta = 4,35$; $\gamma = 7,54$; V. = 70 %.

0	48	316	416	1276	1576	
24	40	68	72	80	50	1816 µ.

♀ 2, 1,768 mm; $\alpha = 21$; $\beta = 4,15$; $\gamma = 8,9$.

0	48	188	428	M	1568	
24	40	76	80	84	60	1768 µ.

FILIPJEV has only seen the male of the species, the female, discovered by me, is therefore new to science. There is here too some sexual dimorphism, but this mainly refers to the amphids.

Male with a distinctly tapering dome-shaped head. Lips with 6 labial papillae and 6 short conical labial setae. Opposite to the anterior portion of the rather long chagrinated portion we find a crown, composed of groups of setae, each group consisting of 2-3 setae of considerable length, the longest measuring 56 % of the corresponding diameter. In total I counted 8 groups of setae. At a level with the amphids a crown, composed of pairs of setae of

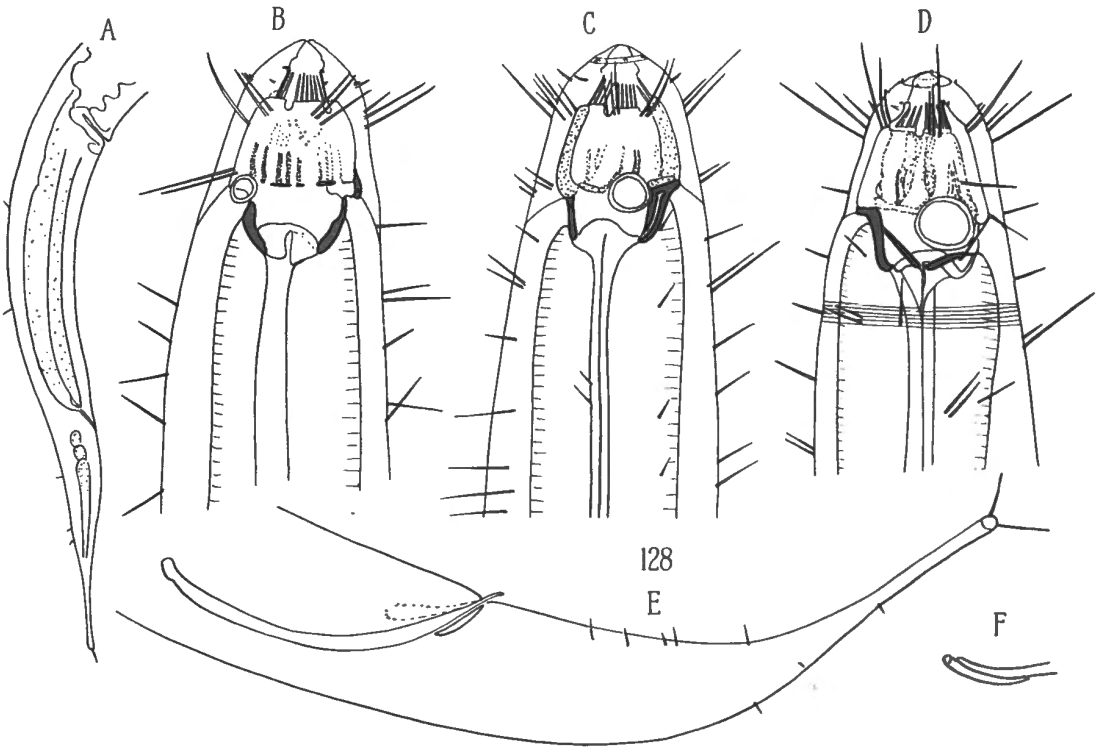


Fig. 128. — *Sphærolaimus macrocirculus* Filipjev.
A : Female tail. B C : Female head ends. D : Male head. E : Male tail.
F : Spiculum and gubernaculum.

unequal size is found. Further the setae are arranged in longitudinal rows. Amphids circular, 22,3-36,5 % of the corresponding body diameter.

Buccal cavity egg-shaped. On a narrow vestibulum a short portion follows, supported by the well known rod-like structures. Follows the chagrinated part, limited at its posterior border by transverse rods, from which longitudinal rows or double rows of dots and spots run halfways on the chagrinated part. The next portion of the buccal cavity is cylindrical and presents at its sides vigourous cuticular bars. At the anterior end of this portion the suture line of the head is encountered.

Genital armature, composed of long and slender spicula and a short, plate-like gubernaculum. Length of spicular chord, 2,33 anal diameters. Male tail with a rather long filiform portion occupying not less than 27,4 % of the whole tail. Length of the same equal to 4,16 anal diameters. Female with distinctly much smaller amphids measuring not more than 15,6 % of the corresponding body diameter. Tail 5,15 anal diameters long. The filiform portion occupies 25 % of the whole tail length.

GEOGRAPHICAL DISTRIBUTION : Black Sea, Mediterranean, Villefranche.

FAMILY **SIPHONOLAIMIDÆ.**

Genus SIPHONOLAIMUS DE MAN, 1893.

129. — **Siphonolaimus weissmanni** (ZUR STRASSEN, 1904).

(Fig. 129, A, B.)

2 ♂♂, from Villefranche, between « Lazareth » and « Anse Passable », grey mud. Depth 50 m.

Dimensions :

Length : ♂, 2,292 mm; $\alpha = 113$; $\beta = 23$; $\gamma = 72$.

$$\frac{0 \quad 100 \quad M \quad 2260}{4 \quad 16 \qquad 20} \quad 2292\ \mu.$$

Body tapering distinctly anteriorly. Head conical with a labial crown of 6 setae, the lateral setae being papilliform and unpaired, whereas the dorsal and ventral setae are paired, the longer ones measuring 44,2 % of the corresponding diameter. A second crown of conical setae is found halfways between the anterior border of the head and the amphids. Amphids circular, 36,5 % of the corresponding diameter. Buccal cavity lacking, a siphon-shaped spear fills up the oesophageal cylinder. Oesophagus ending with an elongate bulb which occupies 36,5 % of the oesophageal length. Tail short cylindrical, curved ventrally, ending bluntly, 1,76 times as long as the anal diameter. Spicula extremely long and slender, not less than 4,25 anal diameters long. Gubernaculum forming a manchette. In the ventral curve of the tail one finds 14 praeanal papillae.

GEOGRAPHICAL DISTRIBUTION : Naples, Villefranche, Mediterranean.

Family **MONHYSTERIDÆ.**

Genus PARAMONHYSTERA Steiner, 1916.

130. — **Paramonhystera paranormandica** (Micoletzky, 1922).

(Fig. 130, A-E.)

2 ♂♂, 1 ♀, 1 juv. from Villefranche « Baie de Lilong ». Depth 5 m.

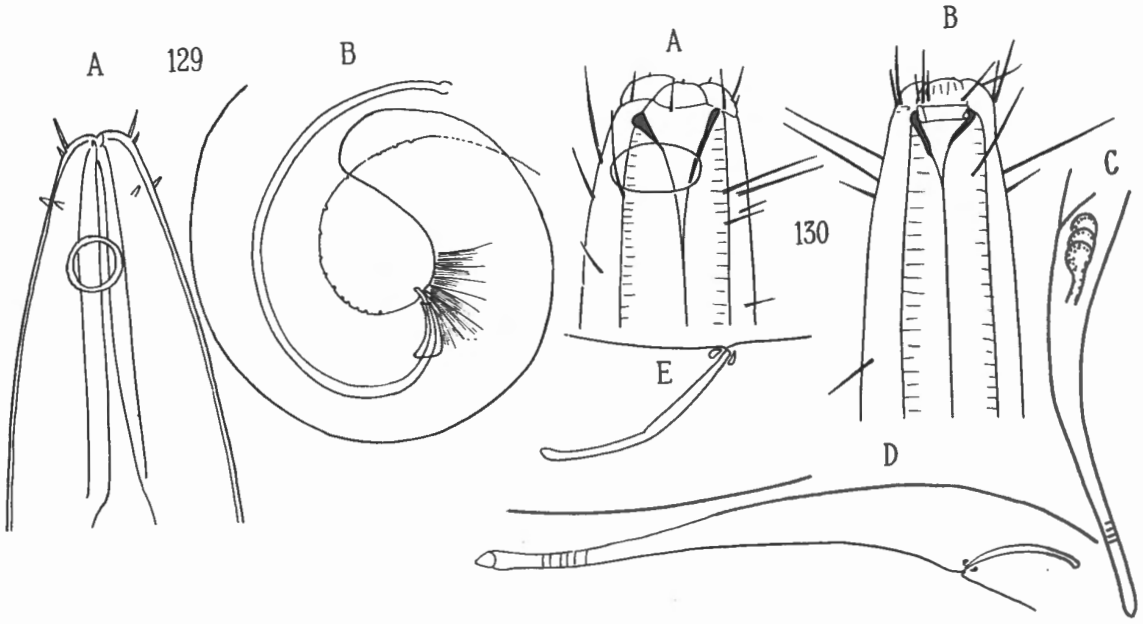


Fig. 129. — *Siphonolaimus weissmanni* (Zur Strassen).
A : Male head. B : Male tail.

Fig. 130. — *Paramonhystera paranormandica* (Micoletzky).
A : Female head. B : Male head. C : Female tail. D : Male tail.
E : Male genital armature.

Dimensions :

Length : ♂, 1,432 mm; $\alpha = 22{,}8$; $\beta = 4{,}5$; $\gamma = 7{,}5$.

0	320	M	1260	1432 µ.
24	48	64	32	

1 ♀ : 1,32 mm; $\alpha = 28{,}2$; $\beta = 4{,}25$; $\gamma = 6{,}8$; V. = 65 %.

0	140	320	880	1160	1320 µ.
24		40	48	28	

Juv., 1,028 mm; $\alpha = 21{,}5$; $\beta = 3{,}05$; $\gamma = 8{,}1$.

0	140	320	900	1028 µ.
20		48	32	

In general my specimens answered rather good to the description given from the species in question by Micoletzky. So I give here only a picture of

the head end, the male genital armature and the female tail. The large transversely placed, elliptical amphids, that measure 62,5 % of the corresponding body diameter, the 12 cephalic setae, the longitudinal striation of the vestibulum oris, the strongly cuticularized metastome as well as the long cervical setae of the head end are typical features. Unfortunately MICOLETZKY has not given a picture of the tail, which gap I fill out here. Such a female tail measured 7,35 anal diameters. The male genital armature was identical to that found and described by MICOLETZKY. Spicula slender, rod-shaped, almost the same width throughout, hardly headed at their proximal end, bluntly pointed distally, 1,4 anal diameters long. Gubernaculum minute, inconspicuous.

GEOGRAPHICAL DISTRIBUTION : Mediterranean, Adria, Rovigno, Ombla Bay, Bocche di Cattaro, Napoli, Ischia, Sea of Marmara, Suez, Alexandria. One of the species most frequently encountered in the Mediterranean.

131. — **Paramonhystera elliptica** FILIPJEV, 1918.

(Fig. 131, A, B.)

2 ♀♀, 1 juv. from Villefranche, off the « Vieux Villefranche », black mud and organic detritus. Depth 20 m.

Dimensions :

Length : ♀, 2,4 mm; $\alpha = 17{,}1$; $\beta = »$; $\gamma = 9{,}1$; V. = 61,6 %.

FILIPJEV'S formula :

$$\frac{0 \quad 480 \quad 1480 \quad 2140}{40 \quad 80 \quad 140 \quad 60} \quad 2400\ \mu.$$

Although my specimens were distinctly less slender $\alpha = 17{,}1$ against 32 in FILIPJEV's female (FILIPJEV, 1918-1921, p. 280), my specimens have so many points in common with FILIPJEV's species, that I do not hesitate to bring them to the species in question. Head faintly demarcated. Lips slightly swollen, 12 cephalic setae, arranged in pairs. The longer setae of each couple measures 45 % of the corresponding body diameter, against 47 % in FILIPJEV's female. Shorter setae of each couple not longer than 25 % of the corresponding cephalic diameter. Labial papillae conical, distinct. Buccal cavity conical, not very strongly cuticularized. Amphids elliptical, very large, occupying almost the whole lateral side of the body. Just behind the amphids we find a number of very long and slender cervical setae, each almost 45 % of the corresponding body diameter long. Tail slender, elongate, 4,4 anal diameters long, whereas the tail measured in FILIPJEV's specimens 4 anal diameter in the female sex.

GEOGRAPHICAL DISTRIBUTION : Black Sea, Krim, Kaukasus, Mediterranean, Villefranche.

132. — **Paramonhystera micramphis** n. sp.

(Fig. 132, A-D.)

2 ♀♀, 1 juv. from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

Dimensions :

Length : ♀, 1,96 mm; $\alpha = 49$; $\beta = 6,52$; $\gamma = 8,6$; V. = 56 %.

Filipjev's formula :

$$\frac{0 \quad 160 \quad 300 \quad 1100 \quad 1800}{28 \qquad 40 \qquad 36} \quad 1960\ \mu.$$

Length juvenile : 1,528 mm; $\alpha = 38,2$; $\beta = 4,8$; $\gamma = 7,35$.

Filipjev's formula :

$$\frac{0 \quad 140 \quad 320 \qquad 1320}{34 \qquad 36 \quad 40 \quad 32} \quad 1528\ \mu.$$

The species in question is more or less intermediate between *Paramonhystera elliptica* Filipjev and *P. paranormandica* Micoletzky. It is easily distinguished from both by the distinctly smaller amphids, which are however elliptical in outline and by the less conspicuous cervical setae.

Head truncate to rounded anteriorly with low lips, each bearing a rather minute labial papilla. Cephalic setae apparently likewise 12 in number, arranged in couples, the longer partners measuring 53 % of the corresponding cephalic diameter. The amphids measure 41 % of the corresponding body diameter. They are placed somewhat more backwards, when compared with their position in *paranormandica*, opposite to the oral bottom. At a level with the amphids some cervical setae, not measuring more than 37 % of the corresponding body width. Buccal cavity with a conical metastome, the latter separated from the shallow mesostome by a transverse culticular ring, like this is the case in *paranormandica*. The cuticular ring however is less vigorous than in *paranormandica*. Tail elongate cylindroconical, gradually tapering towards the blunt tip, length of the tail about 6,5 anal diameters.

Genus THERISTUS Bastian, 1865.

133. — **Theristus mæoticus** Filipjev, 1922.

(Fig. 133, A-C.)

1 ♂, 1 ♀, 1 juv. from Villefranche, off the Station, coarse sand under vegetation of *Posidonia*. Depth 15 m.

Dimensions :

Length : ♂, 0,96 mm; $\alpha = 27$; $\beta = 5,3$; $\gamma = 6,05$.

$$\frac{0 \quad 180 \quad M \quad 800}{16 \quad 32 \quad 36 \quad 30} \quad 960\ \mu.$$

Although the specimen measured by me was distinctly smaller than FILIPJEV's type male of *Theristus mœoticus* (FILIPJEV's males varied in length between 1.300 and 1.400) they agree rather well with that species in general structure. So I have felt justified to bring my specimens to the said species.

Head distinctly demarcated, but not strongly swollen. I counted 10 cephalic setae, the longer ones measuring 83 %, the smaller ones measuring 47 % of

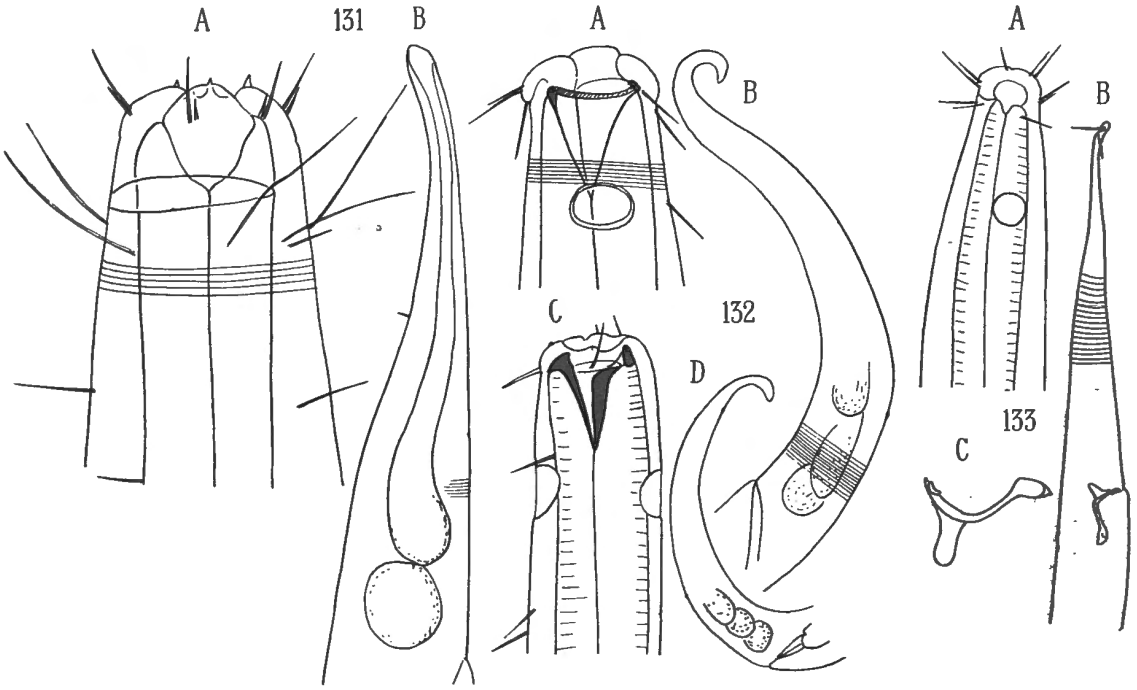


FIG. 131. — *Paramonhystera elliptica* FILIPJEV.
A : Female head. B : Female tail.

FIG. 132. — *Paramonhystera micramphis* n. sp.
A : Female head. B : Female tail.
C : Juvenile head. D : Juvenile tail.

FIG. 133. — *Theristus mœoticus* FILIPJEV.
A : Male head. B : Male tail.
C : Spiculum and gubernaculum.

the corresponding cephalic diameter. Amphids circular, measuring 31 % of the corresponding body diameter, and on a distance equal to 2 times the cephalic diameter from the anterior end.

Genital armature : Spicula curved, rectangular, swollen at their proximal, pointed at their distal end; the chord as long as 1 anal diameter. Gubernaculum with distinct dorsal apophysis. Tail, 5,6 anal diameters long, gradually tapering to the more or less effilated tip, which bears some long setae.

GEOGRAPHICAL DISTRIBUTION : Sea of Azov, Mediterranean, Villefranche.

134. — Theristus tenuispiculum Ditlevsen, 1919.

(Fig. 134, A, B.)

1 ♂, from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.
1 ♂, 1 juv. from Villefranche, entrance of the road, grey mud.

Dimensions :

Length : ♂ 1, 0,956 mm; $\alpha = 19{,}8$; $\beta = 4{,}6$; $\gamma = 7{,}45$.

$$\frac{0 \quad 100 \quad 208 \quad M \quad 828}{16 \qquad\quad 44 \quad 48 \quad 32} \quad 956\ \mu,$$

♂ 2, 1,32 mm; $\alpha = 25{,}3$; $\beta = 5{,}88$; $\gamma = 7{,}49$.

$$\frac{0 \quad 148 \quad 160 \quad 224 \quad M \quad 1144}{16 \qquad\quad\ \ 50 \quad 52 \quad 40} \quad 1320\ \mu.$$

Head caplike, much narrower than the rest of the body. Cephalic setae, 6 in number, not longer than 30 % of the corresponding diameter. Amphids 23 % of the body diameter, at 136 % of the cephalic diameter from the anterior head end. Cuticula distinctly annulated.

Spicula rectangular, with a long perpendicular portion, not swollen at their proximal end; tip of spicula blunt. Gubernaculum a tubular manchette. Length of spicular chord 1,18 anal diameters. Gubernaculum measuring only 66 % of the anal diameter. Tail conical at its base, tapering to a rather long filiform portion, which occupies 31,4 % of the tail, which itself is 4,22 anal diameters long.

Geographical distribution : North Sea and Baltic, Mediterranean.

Discussion : Although the specimens from the Mediterranean differ in some points from the typical specimens from the North Sea, so for instance in the fact, that the spicula do not possess the swollen head ends found in specimens from the Belgian Coast, they are for the rest so similar to the latter that I have not hesitated to bring them to the same species. The present specimens show likewise strong resemblance with *Monhystera rotundicapitata* Filipjev from the Black Sea, but in that species we encounter a much shorter, conical, non-effilate tail.

135. — **Theristus normandicus** (De Man, 1890).

(Fig. 135, A-F.)

3 ♂♂, 6 ♀♀, 6 juv. from Villefranche, farther end of the « Port de la Darse », black mud and organic detritus. Depth 20 m.

1 ♀, 1 juv. from Villefranche, off the « Pointe de la Gavinette », grey mud. Depth 80 m.

Dimensions :

Length : ♂, 1,472 mm; $\alpha = 34{,}6$; $\beta = 5{,}68$; $\gamma = 6{,}5$.

0	120	260	M	1244	1472 µ.
21		41,5		25	

♀, 1,7 mm; $\alpha = 26{,}5$; $\beta = 5{,}9$; $\gamma = 6{,}55$; V. = 58 %.

0	140	288	988	1440	1700 µ.
22		48	64	32	

The dimensions of male and female fall in the range of variation of the species. In structural features these specimens quite agree with those from more northern latitudes. I may only point to the fact, that in the female I found a postvulvar sac. The male quite agrees with those formerly studied by me (compare the figures 135 A and F).

Geographical distribution : North and Baltic Seas, Atlantic Coast of Europe, Mediterranean. Allgén (1941, p. 292) mentions to have found the same species near Bandirma, Sea of Marmara. His female was distinctly smaller than the present specimens. Length not more than 0,90 mm, whereas the vulva was situated at 69,7 % of the total length. He further found it in Banyuls.

136. — **Theristus longicaudatus** Filipjev, 1922.

(Fig. 136, A-E.)

1 ♀, from Villefranche, between the « Lazareth » and « Anse Passable », grey mud. Depth 50 m.

2 ♂♂, from Villefranche, off the « Vieux Villefranche », black mud and organic detritus. Depth 20 m.

Dimensions :

Length : ♂, 1,328 mm; $\alpha = 33{,}2$; $\beta = 5{,}3$; $\gamma = 6{,}6$.

0	120	248	M	1128	1328 µ.
16		36	40	28	

♀, 1,18 mm; $\alpha = 29{,}5$; $\beta = 4{,}5$; $\gamma = 5$; V. = 64 %.

0	260	760	944	1180 µ.
12	36	40	28	

In general my specimens agree rather well with those of Filipjev.

Head rounded anteriorly with distinct lips, crowned with minute, yet very distinct labial papillae. There are 12 subequal cephalic setae, measuring in the male about 57 % of the corresponding cephalic diameter. Cuticle distinctly

striated transversely. Buccal cavity wide, with the entrance of the oesophagus a thickened cuticular lining, which was not distinctly to be seen in the female from « l'Anse passable ».

Genital armature consisting of spicula, distinctly swollen at their proximal end. These spicula are rectangular. Length of their chord, 1,4 anal diameters.

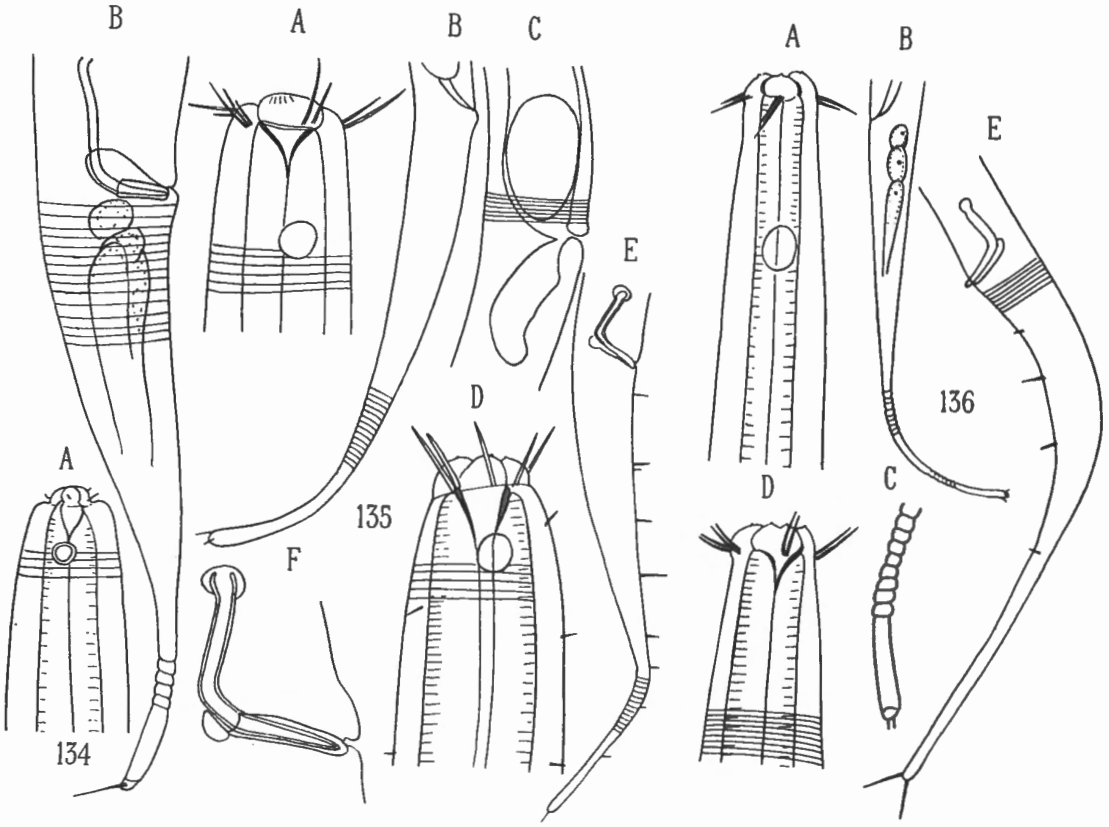


Fig. 134. — *Theristus tenuispiculum* Ditlevsen.
A : Male head. B : Male tail.

Fig. 135. — *Theristus normandicus* (De Man).
A : Female head.
B : Female tail. C : Vulva. D : Male head.
E : Male tail. F : Male genital armature.

Fig. 136. — *Theristus longicaudatus* Filipjev.
A : Female head end.
B : Female tail. C : Tip of the same sort of tail.
D : Male head end. E : Male tail.

Distal end of spicula blunt. Gubernaculum short, without dorsal apophysis, building a simple sliding gutter for the spicula. Tail elongate conical with a rather long cylindrical filiform portion, occupying no less than 45 % of the whole tail length. Length of tail equal to 7 anal diameters. At the ventral side of the male tail some setae were observed.

The female presented, if the not very clear relations are correctly understood, somewhat elongate amphids, their diameter measured 33 % of the

corresponding body diameter, their anterior border was separated from the anterior body end by 2,1 cephalic diameters. Vulva with large vulvar glands of which the caudal is distinctly larger than the anterior. Length of tail equal to 9,3 anal diameters.

GEOGRAPHICAL DISTRIBUTION : Black Sea, Anatolia, Mediterranean.

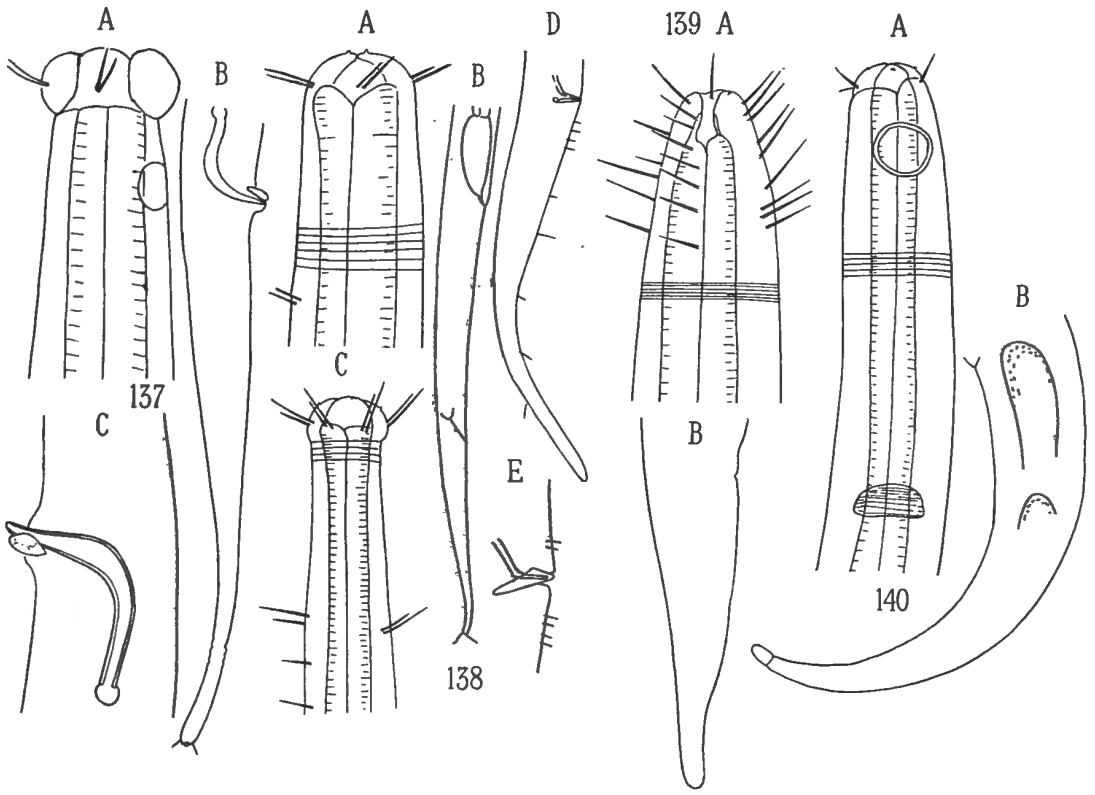


FIG. 137. — *Theristus calcaneus* n. sp.
A : Male head end. B : Male tail. C : Male genital armature.

FIG. 138. — *Theristus angulatus* n. sp.
A : Female head. B : Female tail end.
C : Male head end. D : Male tail.
E : Male genital armature.

FIG. 139. — *Theristus stichotricha* n. sp.
A : Female head end. B : Tail.

FIG. 140. — *Theristus obtusicephalus* n. sp.
A : Female head. B : Tail.

137. — Theristus calcaneus n. sp.

(Fig. 137, A-C.)

1 ♂, from Villefranche, farther end of the « Port de la Darse », black mud and organic detritus. Depth 20 m.

Dimensions :

Length : ♂, 1,352 mm; $a = 41$; $\beta = 5{,}85$; $\gamma = 6{,}15$.

$$\frac{0 \quad 232 \quad M \quad 1132}{21 \qquad 33{,}5} \quad 1352\ \mu.$$

This species, closely related to *Theristus oxyuroides* Schuurmans Stekhoven from the Zuidersea Holland, is however twice as big and crowned with distinctly smaller cephalic setae.

Head swollen, rather large. Cephalic setae comparatively small, 31,5 % of the corresponding diameter. The partners of each couple subequal. Amphids circular, measuring 33 % of the corresponding body diameter. Genital armature : Spicula rectangular, their chord 1,21 anal diameters long, proximal end swollen, distal end bluntly pointed. Gubernaculum small, in the shape of a calcaneus. Tail elongate conical with a distinct filiform portion, occupying about 44,5 % of the whole tail length. Tip of tail with some short setae. Total length of tail 6,38 anal diameters long.

138. — **Theristus angulatus** n. sp.

(Fig. 138, A-E.)

1 ♂, 1 ♀, from Villefranche, farther end of the « Port de la Darse », black mud and organic detritus. Depth 3 m.

This species is closely allied to *Theristus calceolatus* De Coninck and Schuurmans Stekhoven and shows likewise great resemblance to *Th. oxycerca* (De Man). The spicula of *Th. oxycerca* however are distinctly more slender than those of *Th. angulatus* and of other texture. The resemblance with *Th. calceolatus* is still greater but the present form possesses shorter cephalic setae, a comparatively longer filiform tail portion and distinctly longer postanal setae than in *calceolatus,* to which I was inclined to bring the species at first. Thirdly the pilosity of the anterior end in my species is denser than in *calceolatus,* where we find no pilosity at the cervical end.

Dimensions :

Length : ♂, 0,988 mm; $\alpha = 32,8$; $\beta = 4,95$; $\gamma = 6,7$.

$$\frac{0 \quad 200 \quad M \quad 840}{16 \quad 26 \quad 30 \quad 24} \quad 988\ \mu.$$

♀, 1,28 mm; $\alpha = 32$; $\beta = 4,5$; $\gamma = 7,1$; V. = 69 %.

$$\frac{0 \quad 280 \quad 880 \quad 1100}{20 \quad 36 \quad 30 \quad 28} \quad 128\ \mu.$$

Head end slightly swollen with 6 distinct lips, crowned with distinct labial papillae. Cephalic setae 12 in number (in 6 pairs), the longer partners measuring 64 % of the corresponding cephalic diameter, the shorter partners 50 % of that same diameter. Buccal cavity short and wide. Amphids not seen. Cervical pilosity distinct. Genital armature : Spicula short, angular, hardly widened at their proximal end. Spicular chord measuring 66 % of the anal diameter. Gubernaculum embracing the spicula at their distal pointed end. There is an oblique dorsal apophysis. Just behind the anal opening we find

a row of 4 setae, whereas 2 short setae are placed in front of the cloaca. Further downwards the tail bears a subventral row of setae. Tail elongated conical at base, 7,4 anal diameters long. The filiform portion occupies 26,4 % of the whole tail.

The female resembles very much that of *Th. normandicus*, is however in the possession of a more effilate tail of setae on the cervical portion of the body and has no postuterine sac. Length of female tail equal to 6,7 anal diameters. Cephalic setae subequal; the longer partners measure 50 %, the shorter ones 40 % of the cephalic diameter.

139. — **Theristus stichotricha** n. sp.

(Fig. 139, A, B.)

1 ♂, from Villefranche, between the « Lazareth » and « Anse Passable », grey mud. Depth 50 m.

Dimensions :

Length : ♀, 1,740 mm; $\alpha = 34{,}8$; $\beta = 8{,}7$; $\gamma = 14{,}5$; V. = 49,4 %.

$$\frac{0 \quad 200 \quad 860 \quad 1620}{20 \quad 50 \quad 50 \quad 30} \quad 1740\ \mu.$$

The female in question is in rather bad condition, sor for instance I have not observed the amphids. As for the rest it is caracterized by the presence of longitudinal rows of setae in the cephalic region. Lips not sharply demarcated. Head flattened in front, with indistinct labial papillae. There are only 6 cephalic setae, measuring 76,5 % of the corresponding diameter. Cuticular striation very fine and dense. Tail short, 3,1 anal diameters long, cylindrical, on its distal third narrowed to a nipple-shaped tip.

The species belongs apparently to the same group as *Th. horridus* STEINER.

140. — **Theristus obtusicephalus** n. sp.

(Fig. 140, A, B.)

1 ♀, from Villefranche, between the « Lazareth » and « Anse Passable », grey mud. Depth 50 m.

Dimensions :

Length : ♂, 0,928 mm; $\alpha = 25{,}7$; $\beta = 6{,}1$; $\gamma = 7{,}4$; V. = 59 %.

$$\frac{0 \quad 142 \quad 532 \quad 804}{14 \quad 28 \quad 36 \quad 24} \quad 928\ \mu.$$

Head bluntly rounded anteriorly, with indistinctly demarcated lips, bearing each a minute labial papilla. Cephalic setae, 6 in number, measuring 35 % of the cephalic diameter. Head end distinctly demarcated against the remainder of the body. Oral cavity undeep. Amphids large circular, measuring not less than 61,5 % of the corresponding diameter, situated not quite 1 cephalic dia-

meter from the anterior head end. Cuticle faintly striated transversely. Tail elongate conical, with 3 caudal glands in tandem position. Tail 5 anal diameters long.

The species shows resemblance with *Monhystera rotundicapitata* Filipjev but shows the cuticular striae proper to *Theristus*, is in the possession of longer cephalic setae and larger amphids.

Genus METADESMOLAIMUS Schuurmans Stekhoven, 1935.

In 1935 Schuurmans Stekhoven (1935, p. 33) created the genus *Metadesmolaimus* for a new species from the Belgian Coast, which although resembling in several respects to *Theristus* could be easily distinguished from the latter by the structure of its buccal cavity. In the material from Villefranche I have encountered another representant of that genus, which I propose to call *Metadesmolaimus coronatus*, whereas *Cobbia sabulicola* Filipjev should likewise be reckoned to this genus. The genus *Cobbia* is characterized by the presence of three buccal teeth, like they are found in *Cobbia triodonta* Filipjev, which teeth the species *Cobbia sabulicola* misses. In the figure Filipjev has given from that species (fig. 63 *a*) no such teeth are to be observed, although the author mentions its presence in the text. So I feel sure that that species should be placed in the proximity of both *Metadesmolaimus labiosetosus* S. S. and *Metadesmolaimus coronatus* S. S. Comparing the figures, that stay to my disposition I come to the conclusion that *Metadesmolaimus* is a Monhysterid and not a Linhomoeid.

From *Metadesmolaimus sabulicola* the present species may be easily distinguished by its more prominent labial setae, its distinctly longer flagellum of the tail and its comparatively longer oesophagus.

141. — **Metadesmolaimus coronatus** n. sp.

(Fig. 141, A-E.)

1 ♂, 1 ♀, from Villefranche, off the Station, coarse sand under vegetation of *Posidonia*. Depth 15 m.

Dimensions :

Length : ♂, 2,22 mm; $\alpha = 55{,}5$; $\beta = 5{,}55$; $\gamma = 6{,}93$.

$$\frac{0 \quad 400 \quad M \quad 1900}{24 \quad 40 \quad 40 \quad 36} \quad 2220\ \mu.$$

♀, 2,38 mm; $\alpha = 49{,}5$; $\beta = 6{,}1$; $\gamma = 7$; V. = 58,5 %.

$$\frac{0 \quad 52 \quad 392 \quad 1392 \quad 2040}{28 \quad\quad 44 \quad 48 \quad 36} \quad 2380\ \mu.$$

Male : Head distinctly set off from the remainder of the body. Lips prominent with longitudinal striation of the vestibulum oris; each lip bears

prominent labial setae, measuring 41 % of the corresponding diameter. There is a crown of 10 cephalic setae, of which the lateral setae are single, whereas the submedian setae are paired, the partners of each couple being unequal in size. Lateral setae measuring 88 % of the cephalic diameter, the longer submedian setae measure 112 % of the cephalic diameter, whereas their shorter

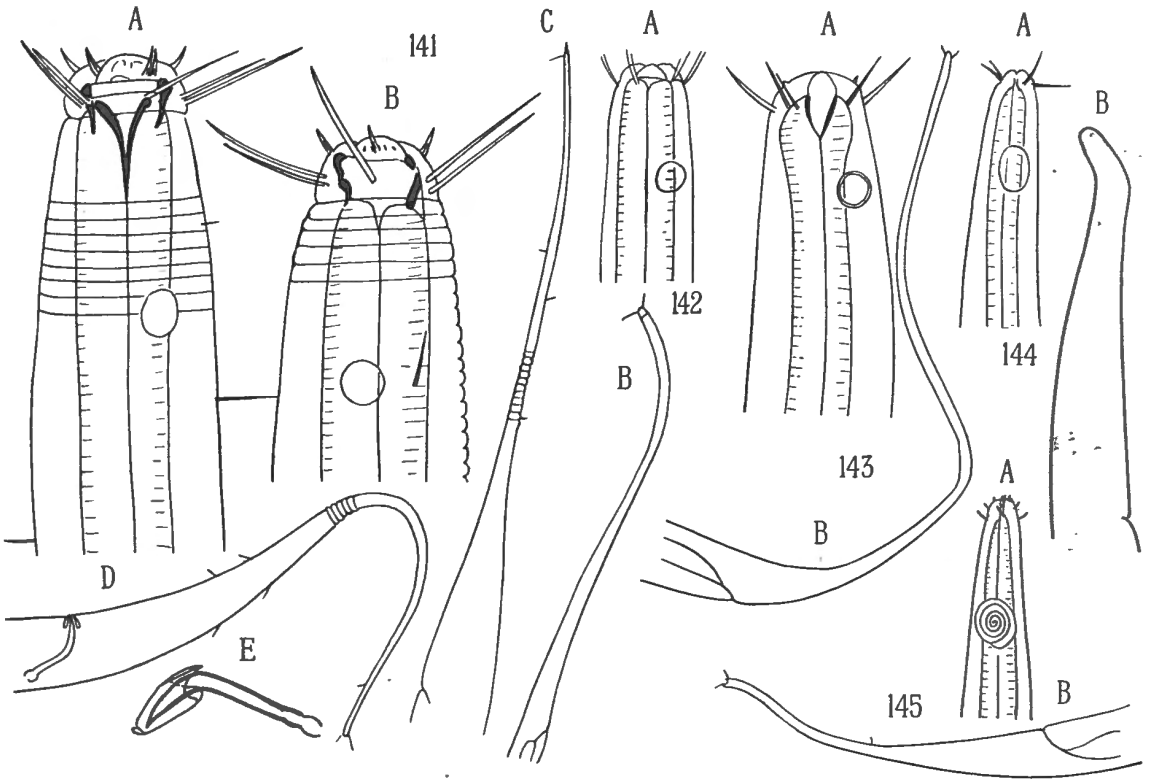


FIG. 141. — *Metadesmolaimus coronatus* n. sp.
A : Female head. B : Male head. C : Female tail. D : Male tail.
E : Male genital armature.

FIG. 142. — *Monhystera gracilicauda* n. sp.
A : Juvenile head. B : Tail.

FIG. 143. — *Monhystera heterolaima* n. sp.
A : Female head. B : Tail.

FIG. 144. — *Monhystera tenuis* n. sp.
A : Female head end. B : Tail.

FIG. 145. — *Linhomœlla tenuicauda* n. sp.
A : Female head end. B : Tail.

partners measure 84 % of the same diameter. Cuticle coarsely striated transversely. Amphids 21 % of the corresponding body diameter, circular, 1,8 cephalic diameters from the anterior head end. Buccal cavity complicate, composed of a rather wide prostome or vestibulum, a small mesostome, embraced by the cuticular ring of the cephalic capsule, which is firmly anchored in the oesophageal corpus by means of longitudinal rods. Metastome conical, lined with thick cuticularisations. Spiculum swollen at its proximal end, pointed at its

distal end, which is surrounded at all sides by the sheath of the gubernaculum, which does not possess a dorsal prolongation. Tail of the male with some setae as well along the ventral as along the dorsal side. Flagellum occupying 38,6 % of the whole tail which measures 8,5 anal diameters.

In the female we find a similar distribution of the cephalic setae. Here the longer submedian hairs measure 121 %, the shorter 100 % of the corresponding diameter, whereas the lateral hairs measure 106 % of that diameter. Next to the amphids I find a short seta. The amphids themselves circular in outline, measure 24 % of the corresponding diameter and are separated from the anterior end by a distance equal to 1,8 cephalic diameters. Female tail conical in the beginning, becoming soon filiform. The flagellum occupies 71 % of the whole tail which is 9,6 anal diameters long.

Genus MONHYSTERA Bastian, 1865,

142. — **Monhystera gracilicauda** n. sp.

(Fig. 142, A, B.)

2 juv. from Villefranche, farther end of the « Port de la Darse », black mud and organic detritus.

Dimensions :

Length : juv. 1, 1,08 mm; $\alpha = 54$; $\beta = 7{,}7$; $\gamma = 4{,}5$.

$$\frac{0 \quad 140 \quad 840}{16 \quad 20 \quad 16} \quad 1080$$

Juv. 2, 1,726 mm; $\alpha = 58$; $\beta = 8{,}2$; $\gamma = 5{,}8$.

$$\frac{0 \quad 146 \quad 1056}{16 \quad 22 \quad 20} \quad 1276\ \mu.$$

A typical long-tailed species, resembling *M. filicaudata* Allgén from which it may be distinguished by the shorter cephalic setae which are almost equal, whereas they are unequal in size in *filicaudata*, the absence of cervical setae and the longer tail. The species in question resembles likewise to *Theristus longicaudatus* Filipjev, but misses the cuticular ringing and possesses a more slender tail.

Head rounded anteriorly, with distinct lips, surrounding a very shallow buccal capsule. Cephalic setae subequal, 12 in number, measuring 61 % of the corresponding diameter. Amphids circular, on a distance equal to 1,5 cephalic diameters from the anterior head end. Diameter of the same equal to 32,8 % of the corresponding diameter. Tail very long, varying in length between 15 and 11 anal diameters, conical at base, soon narrowed to a long flagellum, which occupies at least 75 % of the whole tail length.

143. — **Monhystera heterolaima** n. sp.

(Fig. 143, A, B.)

3 ♀♀. from Villefranche, off the « Vieux Villefranche », black mud and organic detritus. Depth 20 m.

Dimensions :

Length : ♀, 1,512 mm; $\alpha = 42$; $\beta = 10{,}8$; $\gamma = 4{,}3$; V. = 50,5 %.

$$\frac{0 \quad 140 \quad 760 \quad 1160}{16 \quad 36 \quad 36 \quad 24} \quad 1512\ \mu.$$

The species in question is characterized by the possession of a long effilate tail, of comparatively long cephalic setae and by the peculiar cuticularization of the oral pit.

Head rounded anteriorly.. Lips not demarcated distinctly, beset with prominent setiform labial papillae. I have counted 10 cephalic setae, of which the lateral remain unpaired. These measure 64 % of the corresponding diameter, whereas the longer partners of the submedian pairs are quite as long. The shorter submedian setae measure 44 % of the same diameter. Amphids circular, 31,3 % of the corresponding diameter, only little more than 1 cephalic diameter from the anterior head end. Vestibulum not particularly strengthened, oral pit with strong cuticularization, ressembling the structure of the oral cavity in *M. conica* Filipjev.

Tail very long with a distinct rather broad conical portion, quickly tapering to the long flagellum, which occupies 80 % of the whole tail length. Length of tail 14,6 anal diameters.

144. — **Monhystera tenuis** n. sp.

(Fig. 144, A, B.)

1 ♀, from Villefranche, between the « Lazareth » and « Anse Passable », grey mud. Depth 50 m.

Dimensions :

Length : ♀, 1,356 mm; $\alpha = 48{,}4$; $\beta = 8{,}4$; $\gamma = 17$; V. = 52,2 %.

$$\frac{0 \quad 160 \quad 708 \quad 1276}{8 \quad 20 \quad 28 \quad 20} \quad 1356\ \mu.$$

The true systematic position of the present species is not quite certain. It is in the possession of an inconspicuous buccal slit only. For the rest it mostly resembles a *Monhystera* species, so that I feel urged be it with some hesitation to bring it to that genus.

Head end slightly attenuated, without distinct lips. Six cephalic setae, 1,2 cephalic diameters long. Buccal cavity inconspicuous. Amphids slightly

elongate, not quite circular, on 2 cephalic diameters from the anterior end, their diameter 53 % of the corresponding body diameter. Tail conical, ending bluntly. Length of the tail equal to 5,65 anal diameters.

Addendum : In the material from Villefranche I met with another species of *Monhystera* in the sample collected entre le Lazareth et l'Anse passable. This species could not be identified, because it was in a very bad state of preservation.

SPECIES OF UNKNOWN AFFINITY.

The following species I have provisionally brought to the genus *Linhomœlla,* although it misses one of the typical features of that genus, the shorter cephalic setae not differentiated to little cups like this was the case in *Linhomœlla exilis* Cobb. The amphids circular in outline are distinctly spiral, which is often the case in the Linhomoeidae. If the species belongs to the Linhomoeidae or to the Monhysteridae like I suppose it does, can only be stated with certainty if more ample material is at hand. The spiral amphids remind me those found in *Ægialoalaimus.* In that case it should again get another systematic position.

Genus LINHOMŒLLA Cobb, 1920.

145. — **Linhomœlla tenuicauda** n. sp.

(Fig 145, A, B.)

1 ♀, from Villefranche, between the « Lazareth » and « Anse Passable », grey mud. Depth 50 m.

Dimensions :

Length : ♀, 0,82 mm; $\alpha = 29{,}3$; $\beta = 4{,}55$; $\gamma = 7{,}32$; V. = 54 %.

$$\frac{0 \quad 180 \quad 440 \quad 708}{8 \quad 28 \quad 28 \quad 20} \quad 820\ \mu.$$

Head end conical, rounded anteriorly, bearing 6 labial papillae, a crown of 6 labial setae and a third crown of 6 cephalic setae. The labial setae measure 28,5 % of the corresponding diameter, the cephalic setae 44,5 % of the corresponding diameter. Buccal cavity inconspicuous. Amphids circular in outline, very large, 77 % of the corresponding diameter, spiral in structure and composed of 5 ½ windings. Tail long and slender, with a flagellum which occupies about 52 % of the tail. Tail 6,6 anal diameters long. Tip of tail beset with some small setae. Cuticle bare, no transverse striations.

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