

REVISION OF THE GENUS *LEPTOSOMATIDES* FILIPJEV, 1918 (NEMATODA: ENOPLIDA)

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Abstract.—The results of a study of *Leptosomatides* type-material are given.

Leptosomatides conisetosus Schuurmans Stekhoven and Mawson, 1955 is transferred to *Deontostoma*; *L. antarcticus* Mawson, 1956 is considered a good species although more information is desired regarding the presence of odontia and onchia.

Leptosomatides brevisetosus Platonova, 1976, and *L. acutipapillosus* Platonova, 1976 are synonymized with *L. marinae* by Platonova (this paper). *L. caucasiensis* Sergeeva, 1973 is synonymized with *L. euxinus* Filipjev, 1918. *Leptosomatides crassus* Platonova, 1967, *L. steineri* sensu Filipjev, 1946 and *Leptosomatum elongatum* sensu Platonova, 1967 are considered identical to *L. grebnickii* (Filipjev, 1916).

Leptosomatides steineri Filipjev, 1922, and *Leptosomatum tetrophthalmum* sensu Platonova, 1967 are synonymized with *L. arcticus* (Filipjev, 1916). *L. microlaimus* (Allgén, 1957) Platonova, 1976, and *L. filiformis* (new rank) (= *L. steineri* subsp. *filiformis* Filipjev, 1946) are considered *species inquirendae*. *Leptosomatides inocellatus* Platonova, 1967 does not belong to *Leptosomatides* and is considered a *species incertae sedis*.

Additional descriptions are given in this paper. Arguments are given for transferring *Leptosomatides* to the Thoracostomatinae. In fact, the only difference from *Deontostoma* is the absence of odontia and onchia in *Leptosomatides*.

In a previous paper (Bongers 1983) the confusion concerning the separation of the genera *Leptosomatum* Bastian, 1865 and *Leptosomatides* Filipjev, 1918 was discussed, and *Leptosomatum tetrophthalmum* sensu Platonova, 1967 (*nec* Ssaweljev, 1912), *L. arcticum* Filipjev, 1916, *L. grebnickii* Filipjev, 1916 and *L. elongatum* sensu Platonova, 1967 (*nec* Bastian, 1865) were transferred to *Leptosomatides*. Based on the literature it is almost impossible to distinguish the species of *Leptosomatides*; I therefore studied the type-material of the species assigned to it. Results and additional descriptions are presented in this paper.

Material

Type-material was available for study of the following species: *Leptosomatum arcticum* Filipjev, 1916; *L. grebnickii* Filipjev, 1916; *L. tetrophthalmum* sensu Platonova, 1967; *L. elongatum* sensu Platonova, 1967; *Leptosomatides steineri* sensu Filipjev, 1946; *L. steineri* subsp. *filiformis* Filipjev, 1946; *L. crassus* Platonova, 1967; *L. inocellatus* Platonova, 1967; *L. caucasiensis* Sergeeva, 1973; *L. acutipapillosus* Platonova, 1976; *L. brevisetosus* Platonova, 1976 and *L. marinae* Platonova, 1976. In addition, the Smithsonian Institution, Washington, D.C., U.S.A. put unidentified material at my disposal.

Methods and Differential Characteristics

The specimens, many of which were in poor condition, were compared with their descriptions. In several cases the literature was almost inaccessible. Recommendations 4 and 5 appendix E of the International Code of Zoological Nomenclature (hereafter termed the Code), in which it is advised to accompany the description of a new taxon by a translation into English, French, German, Italian, or Latin, if the description is not written in one of these languages, have often not been followed. In two cases the summaries contradicted the text.

The specimens from the Smithsonian Institution had been mounted in glycerin between coverslips in aluminum frames. The other specimens had been mounted on glass slides in glycerin-gelatin and could be observed from only one side. The coverglasses on the latter slides were not supported and the nematodes were severely flattened. Several slides contained more than one species. The way in which paratypes were designated for *Leptosomatides marinae*, *L. brevisetosus*, *L. acutipapillosus* and *L. caucasiensis*, for example, does not conform to the Code and leads to confusion.

The flattening of the specimens made relative measurements valueless in so far as body width is one of the components. Often the cuticle was swollen, and the hypodermal tissue had shrunken, pulling the cervical sensilla into small craters. In my opinion, cuticle thickness is valueless as a differential character in these cases; the same holds for ratio "a" and other relative measurements. When the tail is curved strongly to the ventral side (e.g., in the males of *L. marinae*; Fig. 3) the index "c" is also valueless.

The cephalic sensilla (sensu Lorenzen 1981) are setiform in *L. antarcticus*, *L. euxinus*, and *L. reductus*, and papilliform in the remaining species. A sensillum is considered setiform when its length is twice or more its basal breadth. Cervical sensilla were present in all species examined.

The cephalic capsule is uniform in *Leptosomatides* spp. The posterior suture undulates but is never more posterior than the anterior margin of the amphid. On the outer side of this capsule a refractive layer in the cuticle can be observed, which is homologous to the lunula in the tail. Both are present in *Leptosomatides* and related genera but absent in *Leptosomatides inocellatus*, which is removed from this genus.

The amphids are uniform in structure throughout the genus *Leptosomatides*; only some size differences occur between sexes and species. The fovea, of which the diameter is presented in this paper, is circular in lateral view and the posterior margin is clearly visible, in contradiction to the fovea in female *Leptosomatium* specimens.

The ocelli are provided with a lens-like body, here termed lens, of which the diameter, in lateral view, is used in this paper. Additional pigment, posterior to the ocelli, is present in the pharynx of a number of specimens and is not species-specific. In general, the distance from lens to anterior body end varies within about 10%. The left lens lies more anterior in two-thirds of the specimens. In two aberrant specimens, belonging to *L. euxinus* and *L. marinae*, one of the ocelli lies half as far from the anterior end as the other, but this phenomenon is not characteristic for *L. euxinus* as stated by Platonova (1976).

The renette was observed in one female of *L. tetrophthalmum* sensu Platonova,

1967 and in one female of *L. marinae*. This gland is restricted to the pharyngeal region but the position of the pore has not yet been located.

The vulva lies slightly anterior to the middle of the body; a strongly developed vaginal musculature is present in all specimens throughout *Leptosomatides* and is a differentiating character from *Leptosomatum*, in which this radial musculature is absent. This ovejector, as defined by Filipjev (1916:23), is also present in *Thoracostoma* and *Deontostoma*.

Intra-cuticular granula, anterior and posterior to the vulva, and lateral vulvar glands, are present; in *L. euxinus*, however, the granula are fewer in number but distributed over a larger area. The ducts of the lateral vulvar glands were difficult to observe. Hope (1967a) described these granula and vulvar glands in, amongst others, *Thoracostoma trachygaster*. He stated that they are absent in pre-adults but in a pre-adult of *L. crassus*, slide 7016, both are present. In *L. arcticus* five to seven glands are developed, in the remaining species two to four. A small overlap exists for which I refer to the discussion of *L. marinae*. I realize that the number of glands is a doubtful distinguishing character but it is one of the few that distinguishes females of *L. marinae* and *L. arcticus*.

Filipjev (1916) described a well-developed system of sensory papillae near the vulva of *Thoracostoma denticaudatum*, and Hope (1967b) reported comparable unevennesses anterior and posterior to the vulva of *Corythostoma triaulolaimus*; these sensilla are also present in *L. marinae*.

In my opinion, Filipjev and Platonova attach unwarranted importance to the number and size of the eggs. According to Platonova (1976) *Leptosomatides crassus* can be distinguished from *L. steineri* sensu Filipjev, 1946 by the number of eggs; up to eight in the former and four in the latter. It is my opinion that size and number of eggs depend on the season and developmental stage of the female.

When males are present, the spiculum and gubernaculum shape are useful to separate the species. The gubernaculum, and to a lesser degree the spicules, may be obscured by the opaqueness of the surrounding tissue. It was impossible to ascertain if there was any difference in length between the left and right spiculum. In this paper the length of the chord is given.

Males of *L. marinae* possess two ventromedian supplements, one precloacal with alae and one postcloacal without. The anterior and posterior alae (as termed by Hope 1967a) are also present in a number of species assigned to the Thoracostomatinae.

The term "alae" to describe the refractive ribs in the ventromedian supplement is confusing. Both Hope and I agree that the introduction of another term should be postponed until more information becomes available regarding its function. Often the number of pre- and postcloacal subventral papillae shows intraspecific variability.

Historical Review

The genus *Leptosomatides*, with *L. euxinus* as type-species, was erected by Filipjev in 1918 and described as being intermediate between *Leptosomatum*, which it resembles in the structure of the anterior end, and *Deontostoma*, which it resembles in the structure of the posterior end of the male. He remarked that

Leptosomatum arcticum and *L. grebnickii*, both described by himself in 1916, might also belong to *Leptosomatides* but preferred to wait until their males should be found.

Filipjev (1921:563) transferred *Leptosomatum gracile* sensu Steiner, 1916 nec Bastian, 1865 to *Leptosomatides* and in 1922 he renamed it *Leptosomatides steineri*. In 1922, the radial musculature of the vagina wall, here termed the vaginal ovejector, was added to the generic diagnosis.

Filipjev (1946) reported *L. steineri* from the New Siberian Islands; because of its more slender body, two of the specimens were described as *L. steineri* var. *filiformis*. In 1955, Schuurmans Stekhoven and Mawson added *L. conisetosus*; one year later *L. antarcticus* was described by Mawson. Both are Antarctic forms. In 1959 Timm described the only subtropical member of this genus from the Arabian Sea as *L. reductus*.

Platonova (1967) added two species from the Kara Sea, *L. inocellatus* and *L. crassus*; Sergeeva published the description of a species from the Black Sea in 1973. Three species with papilliform cephalic sensilla from the Kuril Islands, *L. acutipapillosus*, *L. brevisetosus*, and *L. marinae*, were described by Platonova in her thesis (1976), and in the same paper, *Leptosomatum microlaimum* Allgén, 1957 was transferred to *Leptosomatides*.

Leptosomatum arcticum Filipjev, 1916, *L. grebnickii* Filipjev, 1916, *L. tetrophthalmum* sensu Platonova, 1967 nec Ssaweljev, 1912, and *L. elongatum* sensu Platonova, 1967 nec Bastian, 1865 were transferred to *Leptosomatides* by Bongers (1983).

Leptosomatides Filipjev, 1918

Leptosomatides Filipjev, 1918:50–51; 1922:98.—Platonova, 1976:69–70 [Key].

Diagnosis.—Leptosomatidae Filipjev, 1916. No sexual dimorphism in amphid structure; fovea round. Cephalic capsule weakly developed, posterior suture undulating; lobes never reaching beyond anterior margin of amphids. Onchia and odontia absent. Labial sensilla intracuticular; cephalic and cervical sensilla papilliform or setiform. Ocelli provided with distinct lens. Dorsal pharyngeal gland opens into pharyngeal lumen; ventrosublateral glands open at anterior end, ducts cuticularized. Renette in pharyngeal region. Caudal glands long, overlapping intestine. Lunula present. Ortho- and loxometanemes-I present.

Female gonads amphidelphic, antidromic. Vaginal ovejector present, lateral vulvar glands and intra-cuticular vulvar granules usually present. Gonads located left of intestine. Male diorchic, testes opposed and outstretched; ventral precloacal papilla and 2 subventral rows of accessory sensilla present in cloacal region. Gubernaculum with cuneus, crura present or reduced. Copulatory muscles strongly developed.

Remarks.—Discussing the labial orifices of the ventrosublateral pharyngeal glands in *Leptosomatum bacillatum*, Platonova (pers. comm.) stated that one of her students previously described these orifices in *Leptosomatides marinae*. I have also observed these orifices on the anterior end of *Syringonomus typicus* Hope and Murphy, 1969, and *Leptosomatum* species. According to Hope (1982) these openings in the mandibular grooves might be characteristic for the Leptosoma-

tidae. The glands, as present in the lateral hypodermal chord of, amongst others, *Cyclicolaimus* are absent in *Leptosomatides*; only in the vulvar region are such glands present. The gonads in *Leptosomatides* are situated on the left side of the intestine.

Leptosomatides antarcticus Mawson, 1956

Leptosomatides antarcticus Mawson, 1956:42, fig. 1a–e.

Diagnosis.—Cephalic sensilla setiform; 4 μm . Amphid (fovea) 10 μm in diameter. Ocelli 1.5 corresponding body diameters from anterior end. Spicula relatively short, 100 μm ; crura of gubernaculum present. Tail conical in both sexes. Stoma provided with tooth (?).

Type.—Syntypes: 7 ♀, 3 ♂.

Distribution.—Antarctica: Enderby Land, MacRobertson Land.

Discussion.—I was not able to obtain material of this species for comparison. Although the vulvar region is not depicted and nothing is mentioned concerning the vagina structure, this species probably belongs to *Leptosomatides*. The small tooth at the anterior end of the pharynx, however, needs confirmation. *Leptosomatides conisetosus* Schuurmans Stekhoven and Mawson, 1955, which is provided with a tooth, may have influenced this observation.

If onchia and/or odontia are present, *L. antarcticus* must be transferred to *Deontostoma*.

Regarding the figures of *L. antarcticus* and *L. conisetosus*, some confusion exists. On page 42 (Mawson 1956), fig. 1a–c is stated to represent *L. antarcticus* and fig. 2a–d *L. conisetosus*. Five illustrations, however, are given of the former and three of the latter species. Moreover, fig. 1e probably represents *L. conisetosus*. An indication of the sex of the anterior ends is missing.

An additional description of the vulva structure, amphids, precloacal papilla in the male and indication of lectotype is needed.

Leptosomatides arcticus (Filipjev, 1916), new combination

Fig. 1A, B, D

Leptosomatium arcticum Filipjev, 1916:66–68, fig. 1.

Leptosomatium gracile sensu Steiner, 1916:610–620, fig. 27a–o, nec Bastian, 1865: 145–146, figs. 158–160.

Leptosomatides steineri Filipjev, 1922:98, pro *Leptosomatides gracile* sensu Steiner, 1916:610–620, fig. 27a–o.

Leptosomatium tetrophthalmum sensu Platonova, 1967:828–829, nec Ssaweljev, 1912:124.

Nec *Leptosomatides steineri* sensu Filipjev, 1946:159, 177–178, fig. 2.

Nec *Leptosomatium arcticum* sensu Mawson, 1958:315–316, fig. 1a–c.

Diagnosis.—Cephalic sensilla papilliform; 2–3 μm . Cephalic capsule 10–13 μm . Fovea 8 μm . Lens 10 μm . Lateral vulvar glands 5–7. Intracuticular granula numerous. Males unknown.

Type.—The only syntype of *L. arcticus* is a decapitated body; *Leptosomatium gracile* sensu Steiner, 1916 could not be located. Of *L. tetrophthalmum* sensu

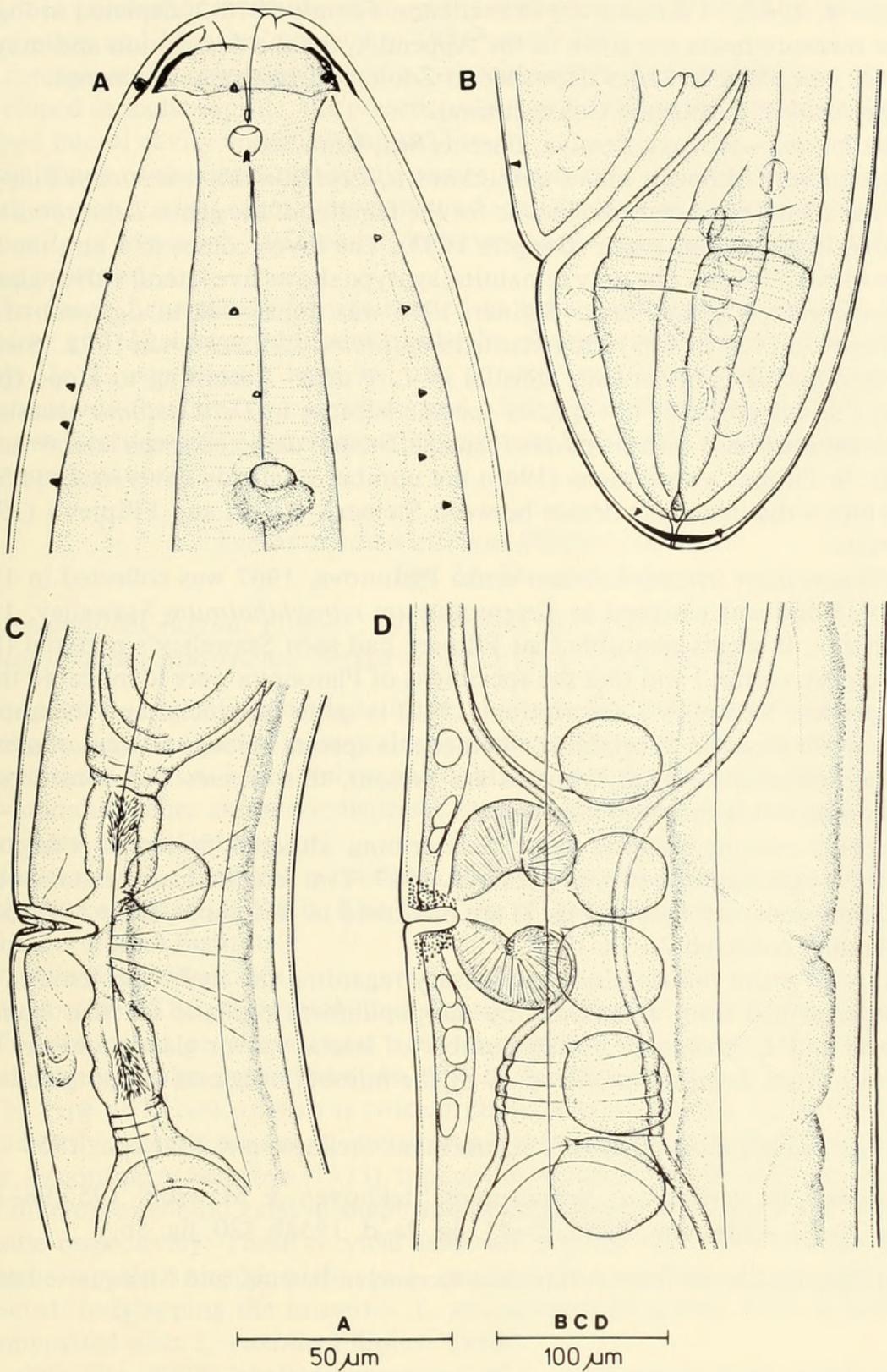


Fig. 1A, B, D. *Leptosomatides arcticus* (Filipjev, 1916) (depicted is *Leptosomatium tetrophthalmum* sensu Platonova, 1967): A, Female, anterior end; B, Female tail; C, *Leptosomatides filiformis* (Filipjev, 1946): lectotype, vulvar region; D, Vulvar region.

Platonova, 1967, 15 females are in existence. Female 5070-2, depicted in Fig. 1, whose measurements are given in the Appendix, fits the description and may be used for comparison. Slides deposited at Zoological Institute, Leningrad.

Type-locality.—Murman Coast; littoral.

Distribution.—Novaya Zemlya, Barents Sea, Kara Sea.

Discussion.—Although males are unknown, *Leptosomatum arcticum* Filipjev, 1916 has all the characters diagnostic for the females of the genus *Leptosomatides* as stated in a previous paper (Bongers 1983). The fovea comes to 8 μm , the lens 10 μm in lateral view. The only remaining syntype shows five lateral vulvar glands.

Leptosomatum gracile sensu Steiner, 1916 was transferred to *Leptosomatides* by Filipjev in 1921 (p. 563) and renamed *Leptosomatides steineri* in 1922.¹ Steiner described six pairs of cephalic sensilla in *L. gracile*. According to Hope (pers. comm.) this is probably not species-specific because in *Deontostoma* occasional specimens are found with six pairs of sensilla. Steiner depicted seven lateral vulvar glands; in Filipjev's specimens (1946) the number of glands never exceeds four. Therefore a distinction is drawn between Steiner's (1916) and Filipjev's (1946) material.

Leptosomatum tetrophthalmum sensu Platonova, 1967 was collected in 1915 and 1925 and was assigned to *Leptosomatum tetrophthalmum* Ssaweljev, 1912 by Filipjev. It seems plausible that Filipjev had seen Ssaweljev's material (Platonova pers. comm.) and that the specimens of Platonova were identical to those of Ssaweljev. Ssaweljev's description (1912) is quite superficial and incomplete and it is not possible to establish whether this species belongs to *Leptosomatum* or *Leptosomatides*. As no syntypes are present, this species was considered a *species inquirenda* in a previous paper.

The only existing material worth redescribing, although flattened, is *Leptosomatum tetrophthalmum* sensu Platonova, 1967. Two females have been restudied and dimensions and figures (Fig. 1) are presented in this paper. Slide 5070 bears two females collected 22-IX-1925.

Although more information is necessary regarding the male, the females can be distinguished from *L. euxinus* by the papilliform cephalic sensilla, from *L. marinae* and *L. grebnickii* by the number of lateral vulvar glands and the lens diameter, from *Leptosomatides* sp. A by the number of lateral vulvar glands.

Leptosomatides conisetosus Schuurmans Stekhoven & Mawson, 1955

Leptosomatides conisetosus Schuurmans Stekhoven & Mawson, 1955:98–100, figs. 20–22.—Mawson, 1956:42–43, fig. 2a–d; 1958b:320, fig. 5b.

This species known from Antarctica, Kerguelen Islands, and Macquarie Island,

¹ Platonova (1976) probably wrongly interpreted this paper: on the one hand she considers *L. gracile* sensu Steiner, 1916, conspecific with *L. gracile* Bastian, 1865 for which she used the figures of Steiner (1916). On the other hand, however, on page 71 she accepts *L. steineri* Filipjev, 1922 and does not refer to Steiner's paper. So, according to Platonova, *Leptosomatum gracile* sensu Steiner, 1916 and *Leptosomatides steineri* Filipjev, 1922 are not congeneric. According to Filipjev (1922), however, they are objective synonyms.

was not available for re-examination, so the discussion will be based on the original description and Mawson's papers of 1956² and 1958b.

Leptosomatides conisetosus (*lapsus conisetosum*) is characterized by a strongly developed cephalic capsule, the presence of a small tooth at the base of the funnel-shaped buccal cavity and cuticularized lips.

The shape of the cephalic capsule varies somewhat; in the holotype the lobes are short with straight edges posteriorly and semicircular spaces between the lobes. Figure 2a of Mawson's 1956 paper, however, shows a capsule with lobes broadening posteriorly.

The genus *Leptosomatides* was erected as being intermediate between *Deontostoma* and *Leptosomatium* concerning the posterior and anterior end respectively. In *L. conisetosus*, however, the anterior end shows closer affinities to *Deontostoma* than to *Leptosomatium* and I herewith transfer this species to that genus as *Deontostoma conisetosum* (Schuurmans Stekhoven and Mawson, 1955), new combination.

Leptosomatides euxinus Filipjev, 1918

Fig. 2A–D

Leptosomatides euxinus Filipjev, 1918:51–54, fig. 3a–f.

Leptosomatides caucasiensis Sergeeva, 1973:1711–1712, fig. 3a–b.

Diagnosis.—Cephalic sensilla setiform: 4–5 μm . Cephalic capsule short; 7 μm in length. Anterior part of pharynx cuticularized. Fovea 5.5–6.5 μm in diameter in both sexes. Lens 6–7 μm . Vulvar glands absent (not developed?). Intracuticular vulvar granula finer and more dispersed than usual in the genus. Spiculum short; crura present, but reduced.

Holotype.—The holotype is on slides 5074 (body) and 5015 (head), Zoological Institute, Leningrad, U.S.S.R. The holotype of *L. caucasiensis* is also deposited at the Zoological Institute.

Distribution.—Black Sea.

Discussion.—The description and figures of slide 6565 given by Platonova (1976) are based on a specimen with an aberrant position of the ocelli; this phenomenon is also present in slide 7996 of *L. marinae*.

The type of *L. caucasiensis* is twisted; the precloacal papilla, in the summary erroneously stated to be absent, is visible at low magnification if the slide is turned over. According to Sergeeva (1973), the cervical setae are absent in *L. caucasiensis* and differences should exist in shape and development of spiculum and cephalic capsule respectively. These cervical setae are present. The development of the cephalic capsule is similar to that in *L. euxinus*; the caudal glands are longer than depicted, overlapping the intestine. *L. caucasiensis* Sergeeva, 1973 is herewith synonymized with *L. euxinus* Filipjev, 1918.

A slide (No. 8097) labelled "paratype" of *L. caucasiensis* (Coll. 1 Feb 1968),

² The way in which Mawson (1956) described the body proportions is not to be recommended. On page 43: "The eyes are one-fifth to one-sixth of the distance from head to nerve ring, and this latter is 1/2.7–1/3.3 of the length of the oesophagus." The length of the pharynx has to be calculated from $b = 7.2\text{--}8.8$ and $L = 14\text{--}15$. These relative measurements are almost useless.

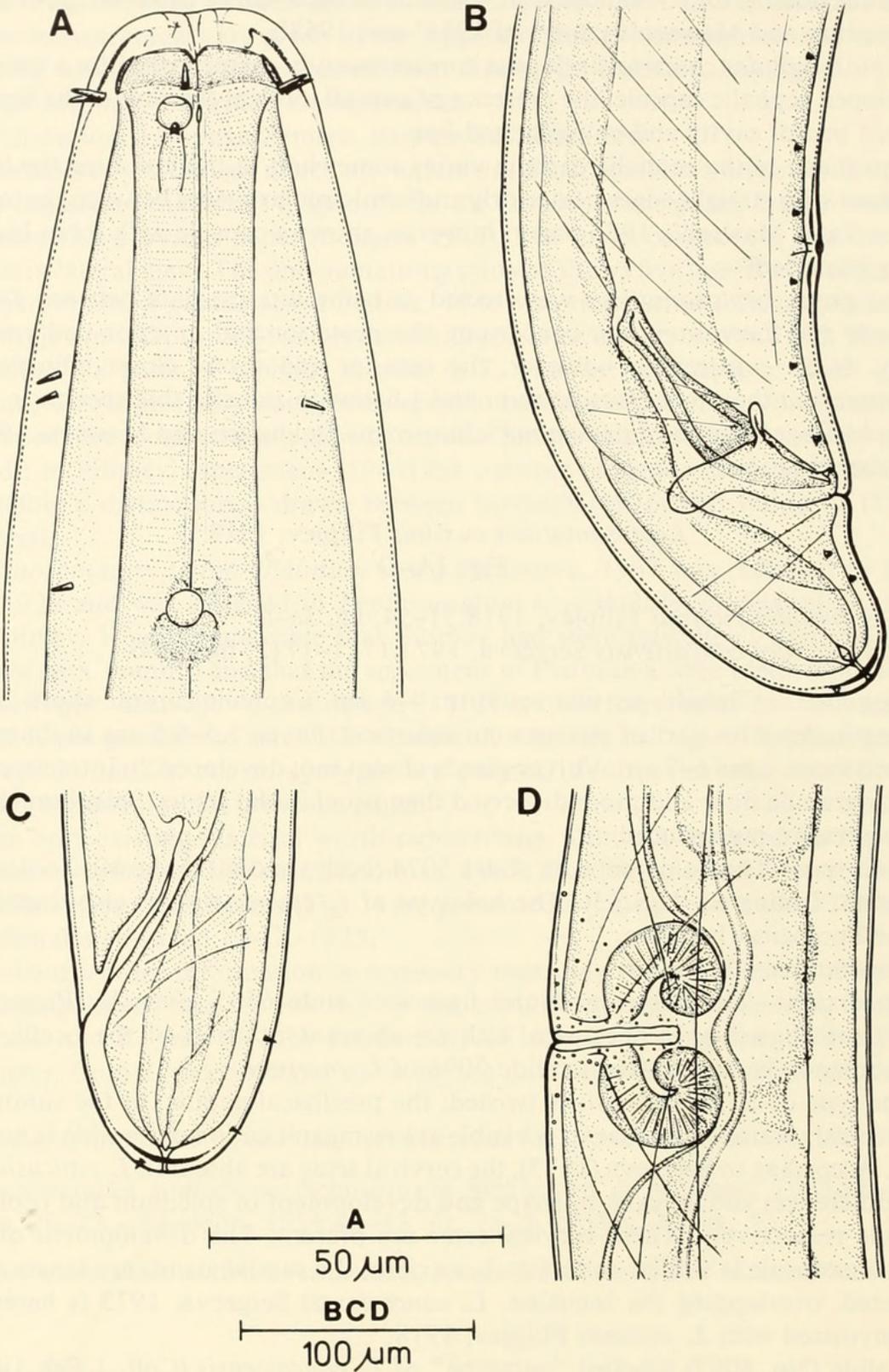


Fig. 2. *Leptosomatides euxinus* Filipjev, 1918 (depicted is *Leptosomatides caucasiensis* Sergeeva, 1973, det. Sergeeva). A, Male head; B, Male tail; C, Female tail; D, Vulvar region.

is present in the collection of the Zoological Institute, which contains a male and two female specimens in rather good condition. (The indication of slide 8097 as paratype is not valid as these specimens do not belong to the type-series.) The body dimensions of these specimens are given in the Appendix and Fig. 2 is also based on this material. The male specimen was in excellent condition and the gubernaculum structure could easily be observed. The crura are reduced; these anterior processes seem to be twisted.

In the type of *L. euxinus* I was unable to note the lateral vulvar glands. According to Filipjev (1921:405) these glands (phagocytic cells) are sometimes present, although he was unable to observe the ducts.

This species can easily be distinguished from the other species of *Leptosomatides* by the setiform cephalic sensilla, the short length of the cephalic capsule in both sexes, the ocelli, which lie at about twice the corresponding body width from the anterior end, and the c-value exceeding 120. *Leptosomatides reductus* Timm, 1959 is closely related to this species and is distinguishable by the diameter of the fovea in the male, which is about 10 μm as opposed to 6–7 μm in *L. euxinus*. Minor differences exist in the length of the cephalic setae and structure of spiculum.

Leptosomatides filiformis (Filipjev, 1946), new rank

Fig. 1C

Leptosomatides steineri filiformis Filipjev, 1946:159, 177–178.

Diagnosis.—Cephalic sensilla papilliform; 3 μm . Cephalic capsule 9–11 μm . Fovea 7 μm . Lens 8 μm . One lateral vulvar gland. Intracuticular granula almost absent. Uterine (?) ovejector present.

Type.—The specimen on slide 7010 is herewith designated lectotype. It is labelled: *L. steineri* var. *filiformis* ♀ det. I. N. Filipjev "SADKO," 80°16'N × 74°02'E, 26-8-1935 Karskoje more. Zoological Institute, Leningrad, U.S.S.R.

Distribution.—Northern Kara Sea (see coordinates).

Discussion.—Filipjev (1946) described a variety of *L. steineri* as subsp. *filiformis* on the basis of a more slender body. This female, and not a male as stated in the French summary, is characterized by the ratios 105, 8.0 and 105. In the collection of the Zoological Institute in Leningrad, two slides were present, 6999 and 7010, with aberrant females. The female on 7010, labelled as var. *filiformis*, was measured by me and the vulvar region figured (Fig. 1c). The body is twisted; anterior and posterior ends are oriented dorsoventrally, midbody laterally. The cuticle is considerably swollen.

The other female, labelled *L. steineri* var. *filiformis* (slide N-6999) has the same aberrant vagina structure. According to Platonova (pers. comm.) this female is 11.8 mm long with a pharynx length of 1700 μm , tail length of 120 μm and body width of 170 μm .

This is a doubtful species; more information is necessary regarding the torn vaginal ovejector. The difference between this species and *L. steineri* sensu Filipjev, 1946 is not less than the differences between the other short-papilloid species and, therefore, this subspecies is raised to specific level.

Leptosomatides grebnickii (Filipjev, 1916), new combination

Leptosomatium grebnickii Filipjev, 1916:68–70, fig. 2.

Leptosomatides steineri sensu Filipjev, 1946:159, 177–178, fig. 2. *Nec* Filipjev, 1922:98 pro *Leptosomatium gracile* sensu Steiner, 1916:610–620, fig. 27a–o. — *Nec Leptosomatides steineri* subsp. *filiformis* Filipjev, 1946:159, 177–178. — Platonova, 1967:829.

Leptosomatides crassus Platonova, 1967:829–831, figs. 5–7.

Leptosomatium elongatum sensu Platonova, 1967:828. — *Nec* Bastian, 1865:145, figs. 156–157.

Diagnosis. — Cephalic sensilla papilliform 2–3 μm . Cephalic capsule 10–13 μm . Fovea 10 μm in female. Lens 6 μm . Lateral vulvar glands 2–4. Intracuticular granula numerous. Spicula uniformly curved, gubernacula with paired cunei directed posteriorly at right angles to spicula.

Type. — Head on 5778 and decapitated body on 5779. Indicated by Platonova (1976) as holotype. However, as this designation was done after the original publication, the correct designation is lectotype. Zoological Institute, Leningrad, U.S.S.R.

Type-locality. — Behring Islands.

Distribution. — New Siberian Islands, Behring, Kara and Barents Sea.

Discussion. — Platonova (1976) indicated slides 5778 and 5779 as holotype; the former slide contains the head, the latter a decapitated body of a female and a complete female. Hence the head, together with the decapitated female, represent the lectotype.

According to Filipjev (1916), *Leptosomatides grebnickii* can be distinguished from *L. arcticus* (= *Leptosomatium arcticum*) by the bigger amphids. However in the description of *L. steineri* and its variety *filiformis* by Filipjev (1946), 8 μm is given for the diameter of the amphids (aperture?). From the text, it is impossible to conclude whether this diameter refers to the female, male, or amphids of the variety.

My measurements of the fovea of females of *L. steineri* sensu Filipjev, 1946 are 10 μm ; for the variety *filiformis* the measurement is 7 μm ; the diameter of the fovea in the male could not be stated as the anterior part of the male was twisted dorsoventrally.

Leptosomatides crassus and *Leptosomatium elongatum* sensu Platonova (det. Filipjev), both of which were described by Platonova in 1967, cannot be distinguished from *L. grebnickii*. In *Leptosomatium elongatum* sensu Platonova, the ovejector was not recorded in the more extensive description of 1976. *Leptosomatides crassus* was depicted with one short caudal gland. Both are provided with ovejector, granula, lateral vulvar glands, and long caudal glands. Slide 5761 of *L. elongatum*, collected from *Balanus porcatus* at the Murman Coast in 1923, is measured and data are presented in the Appendix.

Filipjev (1946) also described the male but as a separation is made between his *L. steineri* and its variety *filiformis*, this male might also belong to the subspecies. According to Filipjev the length of spiculum and gubernaculum are 210 and 90 μm respectively, whereas Platonova (1976) gave 137 and 25 μm . In both specimens, the gubernaculum and spiculum are of the *Pseudocella* type and 16–17 subventral precloacal papillae are present.

Leptosomatides grebnickii can be distinguished from *L. euxinus* by the papil-

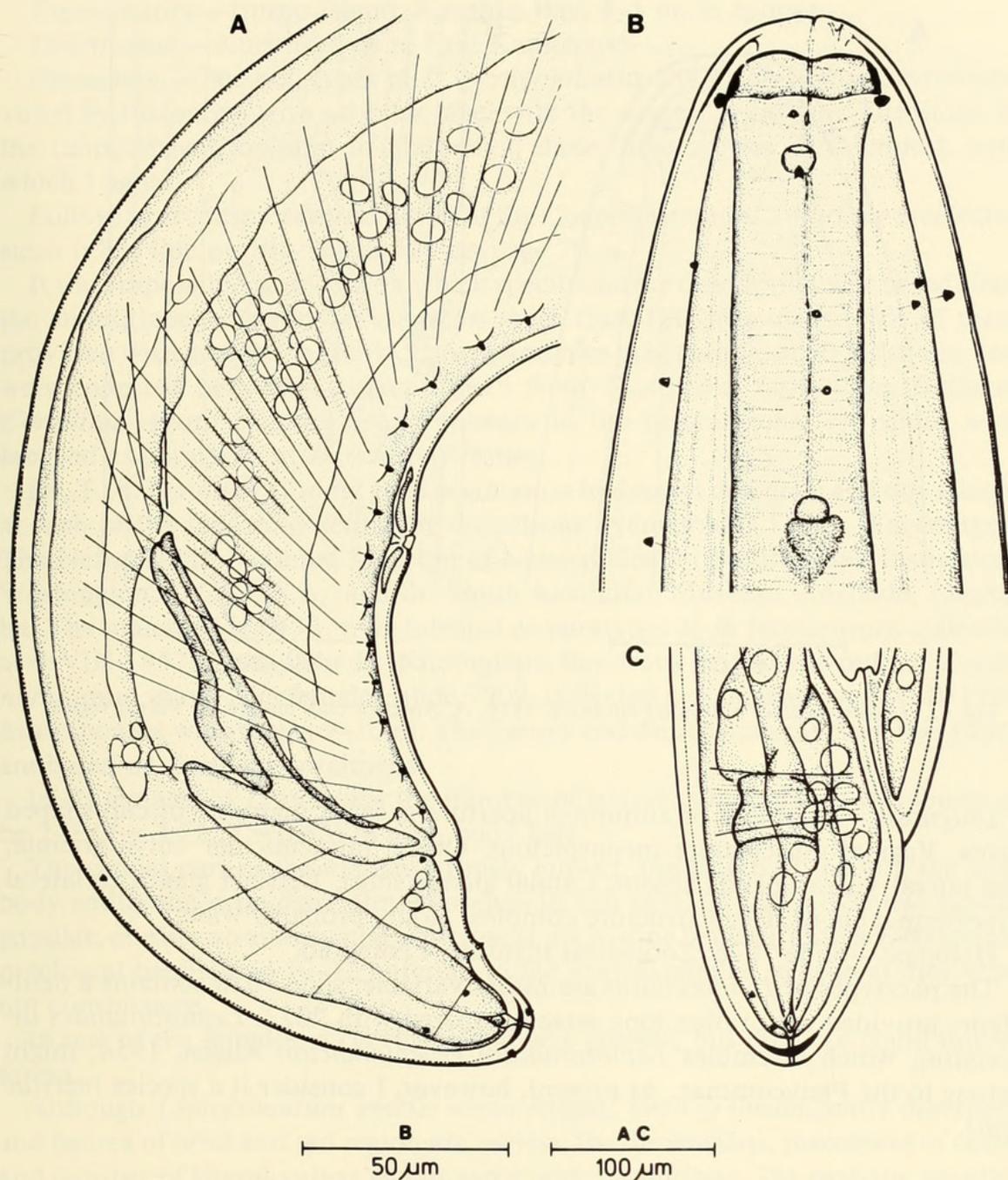


Fig. 3. *Leptosomatides marinae* Platonova, 1976. A and B, Posterior and anterior end; male paratype of *L. brevisetosus* Platonova, 1976; C, Posterior end paratype *L. marinae*.

liform cephalic sensilla; from *Leptosomatides arcticus*, *L. marinae* and *L. sp. A* by the size of the amphids and lens. The male is characterized by the uniformly curved spicula with paired apophyses directed posteriad at right angles to the spicula, as in *Pseudocella*, which is unique in the genus *Leptosomatides*.

Leptosomatides inocellatus Platonova, 1967

Leptosomatides inocellatus Platonova, 1967:829, figs. 3–4.

The material, on which this description was based, was collected in 1935; the nematodes were mounted in glycerin-gelatin and are rather flattened.

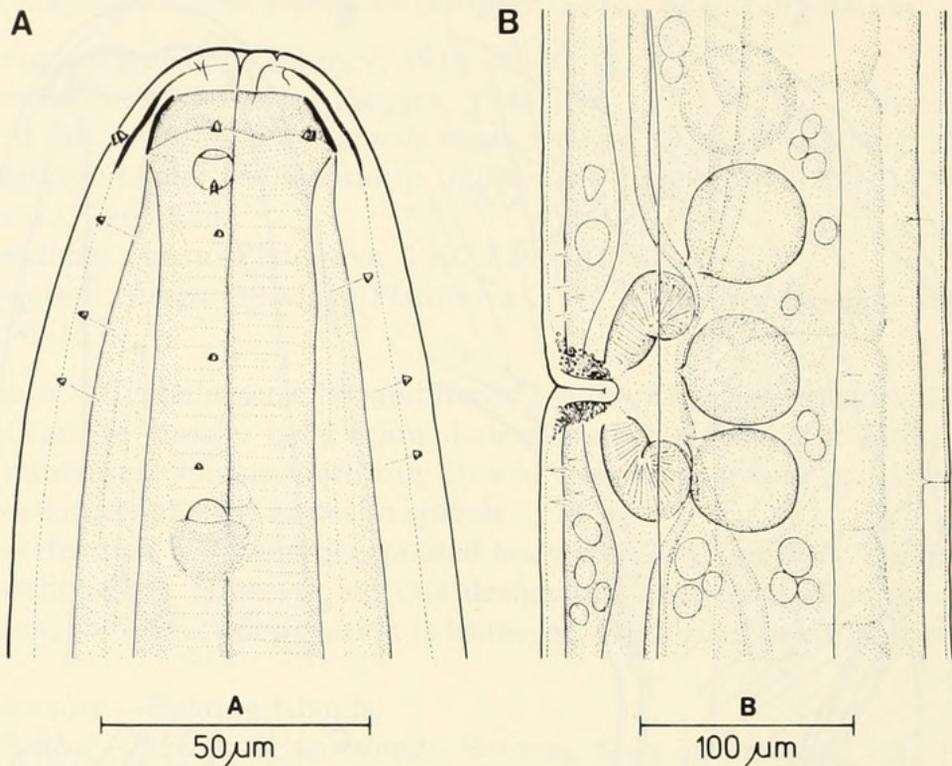


Fig. 4. *Leptosomatides marinae* Platonova, 1976. A, Anterior end, female; B, Vulvar region.

Diagnosis.—Diameter of amphidial aperture exceeds diameter of cup-shaped fovea. Vaginal musculature inconspicuous. Ocelli, intracuticular vulva granula, and lateral vulvar glands absent. Caudal glands short. Distinct glands in lateral hypodermal chord. Head structure complex; stoma probably wide.

Holotype.—Slide 7026; Zoological Institute, Leningrad.

The paratypes of *L. inocellatus* are rather variable; slide 7028 contains a nematode, provided with rather long setae compared with 7027. *Leptosomatides inocellatus*, which resembles *Leptosomatium groenlandicum* Allgén, 1954, might belong to the Platycominae. At present, however, I consider it a species *incertae sedis*.

Leptosomatides marinae Platonova, 1976
Figs. 3A–C, 4A–B

Leptosomatides marinae Platonova, 1976:70, 77–79, fig. 29.

Leptosomatides acutipapillosus Platonova, 1976:70, 75–76, fig. 27.

Leptosomatides brevisetosus Platonova, 1976:70, 76–77, fig. 28.

Diagnosis.—Cephalic papilliform sensilla 3 μm long. Cephalic capsule 10–12 μm in females, 7–9 μm in males. Fovea 8–9 μm in both sexes. Lens 8 μm in diameter. Lateral vulvar glands 2–4. Intracuticular granula numerous. Spiculum robust, gubernaculum with crura. Ventromedian precloacal papilla provided with alae. Ventral postcloacal papilla present, vulva sensilla present.

Type.—Holotype 7880, by original designation. Zoological Institute, Leningrad, U.S.S.R.

Type-locality.—Iturup Island. Kasapka Bay, 4–5 m, in sponge.

Distribution.—Kuril Islands to East Kamchatka.

Discussion.—The holotypes of *L. acutipapillosus* and *L. brevisetosus* were provided by Platonova with an extra label with the name *L. marinae*. Therefore, in the (unpublished) opinion of Platonova, these three species are identical, with which I agree.

Following recommendation 24(A) of the Code, the name *L. marinae* is selected since it has line priority in the key on page 70.

It was impossible to decide on which specimens the description was based since the slides, labelled paratypes, contain more than 120 specimens, 40% of them provided with a question mark. These paratypes originate from 30 locations, and were collected between 1910 and 1975 from *Cystoseira*, *Laminaria*, *Balanus*, *Corallina*, *Alaria*, *Agrarum*, and sponges in the littoral zone. No slides were labelled as paratypes of *L. acutipapillosus*.

Dr. T. A. Platonova kindly gave permission to deposit one male and one female at each of the following nematode collections: Nematology Dept., Wageningen, The Netherlands; National Museum of Natural History Smithsonian Institution, Washington, D.C., U.S.A., and the South Australian Museum, Adelaide, Australia. The males, slide 6133, were labelled as paratypes of *L. brevisetosus*, collected at 9-VIII-1957, Chimushir Is. Kitabujnaja Bay from littoral rhizoids of *Laminaria*, mud, sand. The females, slide 7909, collected at Kunashir Is. 13-VII-1969 from sponges with shells, 9–10 m. The figures and dimensions given in this paper are based on these six specimens.

In 23 females of *L. marinae* the number of lateral vulvar glands was found to be 2–5 ($\bar{x} = 3.22$; $\sigma = 0.83$) in each body half.

The caudal part of the male is strongly curved; the length of the tail, the anal body width and ratio *c* are almost useless in this case. Of the subventral cloacal papillae, one or two are situated postcloacal, six to nine between cloaca and median precloacal papilla and 10–12 anterior to the ventral papilla; in general they were not conspicuous.

In one of the females, a cervical gland was present, but the pore could not be found.

Although *Leptosomatium gracile* sensu Allgén, 1954 is insufficiently described and figures of head and tail region are useless, the dimensions, placement of ocelli and number of lateral vulvar glands agree with *L. marinae*. The cephalic sensilla, capsule and amphids, however, are not described or illustrated.

The males of *L. marinae* can easily be distinguished by the precloacal papilla provided with alae. The females differ from *L. arcticus* in the number of lateral vulvar glands and the position of the ocelli; from *L. grebnickii* by the diameter of the lens and fovea, from *L. sp. A* by the diameter of the lens and tail length.

Leptosomatides microlaimus (Allgén, 1957)

Leptosomatium microlaimum Allgén, 1957:7, fig. 1a–b.

Discussion.—This species was collected at a depth of 1750 m near Spitzbergen; the type-material could not be located. It appears in the key of *Leptosomatides*, given by Platonova (1976) where it is designated *L. microlaimum* Allgén, 1957.

The absence of justification, the inappropriate gender ending, and the fact that the author's name is not enclosed in parentheses may lead to confusion. Judging from the figure, I agree with this transfer. The discrepancy in Allgén's calculations of ratio "C" and the description, which cannot be taken seriously, are reason to consider it a *species inquirenda*.

Leptosomatides reductus Timm, 1959

Leptosomatides reductus Timm, 1959:207–209, fig. 2d–e.

Diagnosis.—Cephalic setiform sensilla 6.5 μm long. Ocelli twice corresponding body diameter from anterior end. Fovea in male 9–10.5 μm ; in female 7–7.5 μm . Gubernaculum without crura.

Type.—Syntypes: 10 ♀, 10 ♂.

Type-locality.—Manora Island, Karachi, Arabian Sea.

Type-habitat.—Algae growing on rocks.

Discussion.—I was not able to study this material, which is deposited at the slide collection of the Pakistan Zoological Survey, Karachi. According to the description, this species resembles *L. euxinus*, but differs by the greater amphidial diameter in the male, the greater length of the cephalic setae and the absence of crura on the gubernaculum. In my opinion this is a good species.

Leptosomatides species A

Material.—Three females from the Atlantic Ocean SW of Nova Scotia. Two of them (76074 and 76075) collected at 43°40'N, 66°07'W on 10 Aug 1963 in 60 m, one female (76076), collected at 40°21'N, 67°48'W on 8 Aug 1963. These specimens are deposited in the collection of the USNM, Smithsonian Institution, Washington, D.C., U.S.A.

Description.—For general body proportions refer to the Appendix. Cephalic sensilla papilliform; 3–4 μm . Cephalic capsule 11–13 μm . Diameter fovea 7 μm , lens 10 μm . Lateral vulvar glands 3–4. Intracuticular granula numerous. Male unknown. No figures are given since the only features in which it was found to differ from *L. arcticus* are the lens diameter and the number of vulvar glands. These specimens are not named specifically as no males are present.

Key to the Species of *Leptosomatides*

- | | |
|---|-----------------------|
| 1. Length of cephalic sensilla twice their basal width (setiform) | 2 |
| – Length of cephalic sensilla less than twice basal width (papilliform) | 4 |
| 2. Ocelli 1.5 corresponding body diameters; setae 4 μm | <i>L. antarcticus</i> |
| – Ocelli 2 corresponding body diameters | 3 |
| 3. Setae 6 μm . Fovea in male 10 μm | <i>L. reductus</i> |
| – Setae 4–5 μm . Fovea in male 6 μm | <i>L. euxinus</i> |
| 4. Intracuticular vulva granula present | 5 |
| – Intracuticular vulva granula absent | <i>L. filiformis</i> |
| 5. Lateral vulvar glands 5–7 on each side | <i>L. arcticus</i> |
| – Lateral vulvar glands 2–4 on each side | 6 |
| 6. Lens diameter 10 μm | <i>L. sp. A</i> |
| – Lens diameter 8 μm or less | 7 |

7. Lens diameter 6 μm , crura absent, precloacal papilla without alae *L. grebnickii*
 - Lens 8 μm , crura present, precloacal papilla with alae *L. marinae*

Status of Nominal Species of *Leptosomatides*

Species	Present status ¹
<i>Leptosomatides acutipapillosus</i> Platonova, 1976	Synonym of <i>L. marinae</i>
<i>L. antarcticus</i> Mawson, 1956	Good species
<i>L. brevisetosus</i> Platonova, 1976	Synonym of <i>L. marinae</i>
<i>L. caucasiensis</i> Sergeeva, 1973	Synonym of <i>L. euxinus</i>
<i>L. conisetosus</i> Sch. Stekh. & Mawson, 1955	To <i>Deontostoma</i>
<i>L. crassus</i> Platonova, 1967	Synonym of <i>L. grebnickii</i>
<i>L. euxinus</i> Filipjev, 1918	Good species
<i>L. inocellatus</i> Platonova, 1967	Species <i>incertae sedis</i>
<i>L. marinae</i> Platonova, 1976	Good species
<i>L. microlaimus</i> (Allg�en, 1957) Platonova, 1976	<i>Species inquirenda</i>
<i>L. reductus</i> Timm, 1959	Good species
<i>L. steineri</i> Filipjev, 1922	Synonym of <i>L. arcticus</i>
<i>L. steineri</i> sensu Filipjev, 1946	Synonym of <i>L. grebnickii</i>
<i>L. steineri</i> Subsp. <i>filiformis</i> Filipjev, 1946	<i>L. filiformis</i> , species <i>inquirenda</i>
<i>Leptosomatium arcticum</i> Filipjev, 1916	<i>Leptosomatides arcticus</i>
<i>L. elongatum</i> sensu Platonova, 1967	Synonym of <i>L. grebnickii</i>
<i>L. grebnickii</i> Filipjev, 1916	<i>Leptosomatides grebnickii</i>
<i>L. tetrophthalmum</i> sensu Platonova, 1967	Synonym of <i>L. arcticus</i>

¹ The indication "good species" does not mean that these species are sufficiently described; more information, regarding all species is desired.

General Discussion

As far as can be determined, the genus *Leptosomatides* forms a group that includes all species with the combination of characters given in the generic diagnosis. This genus is regarded as related to *Deontostoma*. The only distinguishing characters are the reduction of the cephalic capsule and absence of onchia and/or odontia in *Leptosomatides*. More information regarding all species is needed; especially males of some species are not known. Special attention should be given to the structure of the spiculum, gubernaculum, and cloacal papillae in the male, and the intracuticular vulvar granula, lateral glands, ovejector, and sensilla in the vulvar area of the female.

Until now, the genus *Leptosomatides* has been placed in the Leptosomatinae Filipjev, 1916. In fact the only argument for this placement is the presence of a reduced cephalic capsule. *Leptosomatides* differs from the Leptosomatinae sensu stricto (*Leptosomatium* and *Syringonomus typicus* Hope and Murphy, 1969) by

the structure of the cephalic capsule, amphids, spiculum, gubernaculum, meta-nemes, and the presence of vulva granula, ovejector, lateral vulvar glands, median precloacal papilla, and subventral cloacal papillae. The typical sexual dimorphism in the amphids of the Leptosomatinae is absent in *Leptosomatides*. Therefore, *Leptosomatides* must be removed to the Thoracostomatinae and the diagnosis of the latter emended. The genus *Paraleptosomatides* probably also belongs to the Thoracostomatinae. In a separate paper attention will be paid to this rearrangement.

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Appendix; Measurements of Species of *Leptosomatides*

Abbreviations: S—Sex, SN—slide number, L—body length, DF—distance to fovea, DRL—distance to right lens, DLL—to left lens, DNR—distance to nerve ring, PL—pharyngeal length, CL—caudal length, CW—cephalic width, OW—body width at level of lens, NW—width at level of nerve ring, PW—width at base of pharynx, MW—maximum width, AW—anal body width and the ratio's of de Man are expressed in a, b, c and V. Dimensions are given in μm .

S	SN	L	DF	DRL	DLL	DNR	PL	CL	CW	OW	NW	PW	MW	AW	a	b	c	V
<i>Leptosomatides arcticus</i> (<i>Leptosomatium tetrophthalmum</i> sensu Platonova, 1967)																		
F	5070-2	14,860	25	112	114	485	2531	179	54	114	168	216	279	187	53	5, 9	83	67
F	5070-1	15,110	23	116	119	493	2554	181	57	104	—	239	277	185	55	5, 9	83	65
<i>Leptosomatides euxinus</i> (<i>L. caucasiensis</i> Sergeeva, 1973)																		
M	8097-1	9190	15	110	102	477	1878	73	38	67	107	127	148	92	62	4, 9	126	
F	8097-3	9430	17	121	131	469	1944	77	40	68	103	129	156	81	91	6, 3	186	53
F	8097-2	12,450	16	125	114	481	1989	67	38	65	107	121	137	87	60	4, 9	122	60
<i>Leptosomatides filiformis</i> (<i>L. steineri</i> subsp. <i>filiformis</i> Filipjev, 1946)																		
F	7010	13,930	21	112	121	526	2305	—	57	108	135	137	160	—	87	6, 0	—	62
<i>Leptosomatides grebnickii</i> (<i>Leptosomatium elongatum</i> sensu Platonova, 1967)																		
F	5761	13,370	28	110	112	575	2734	178	52	95	132	170	204	152	66	4, 9	75	65
<i>Leptosomatides marinae</i> (males as <i>L. brevisetosus</i> Platonova, 1976)																		
F	7909-2	13,790	16	85	89	409	2350	144	41	77	111	141	177	121	78	5, 9	96	67
F	7909-3	13,860	22	89	92	409	2305	131	47	76	116	146	202	119	69	6, 0	106	66
F	7909-1	14,280	17	83	81	411	2509	139	49	80	112	143	185	133	77	5, 7	103	65
M	6133-3	17,950	32	121	116	617	3661	112	37	91	154	218	281	150	64	4, 9	160	
M	6133-1	18,810	27	135	139	658	3277	121	52	98	160	196	260	152	72	5, 7	155	
M	6133-2	19,740	29	123	125	682	3864	112	49	93	162	227	270	187	73	5, 1	176	
<i>Leptosomatides</i> sp. A.																		
F	76074	10,650	33	96	100	460	2441	135	45	64	106	114	135	100	79	4, 4	79	69
F	76075	11,290	29	96	108	485	2554	139	47	67	102	139	177	106	64	4, 4	81	68
F	76076	11,410	32	98	112	486	2418	129	52	77	116	125	185	123	62	4, 7	88	65



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