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A Dozen New Nematode Species from Hungary

By

I. Andrássy*

Abstract. In the present article three new genera and twelve new species of Nematoda are described from Hungary. *Seleborca* gen. n. (Cephalobidae, Acrobelinae) is similar to *Acrobeles* but differs from it by the double cuticle and the structure of the lateral field. *Hoplorhynchus* gen. n. (Hoplolaimidae, Rotylenchinae) is unique among the genera of Hoplolaimidae in the structure of lateral field, in the shape of tail and in the location of phasmids. *Labronemella* gen. n. (Qudsianematidae) resembles *Labronema* but has a discolaimoid head and a very slender spear. The new species are: *Penzancia terricola, Theristus pannonicus, Metateratocephalus gracilicaudatus, Acrobeles canalis, Caenorhabditis cervi, Hoplorhynchus riparius, Ogma danubiale, Ogma castellanum, Trischistoma gracile, Aulolaimus autumnalis, Labronema pusillum* and *Labronemella labiata* spp. n.

The genera *Penzancia* (de Man, 1889) Filipjev, 1918, *Acrobeles* Linstow, 1877, *Trischistoma* Cobb, 1913, *Tripylina* Brzeski, 1963 are redefined and their species listed. To each genus *Metateratocephalus* Eroshenko, 1973, *Acrobeles* Linstow, 1877, *Seleborca* gen. n., *Trischistoma* Cobb, 1913, *Tripylina* Brzeski, 1963, *Aulolaimus* de Man, 1880 and *Labronemella* gen. n. a key is given.

As mentioned in a recent paper (Andrássy, 1982), 503 free-living nematode species have been recorded from Hungary to now. In addition to this number, I give here the descriptions of further twelve species new not only for the Hungarian fauna but also for science. Besides, two new genera are proposed and some older genera are redefined as well. To facilitate recognizing the species, keys to five genera are added.

Penzancia terricola sp. n.

(Fig. 1 A–F)

♂: L = 1.06–1.08 mm; a = 40–42; b = 5.4; c = 8.5–8.8; c' = 5 –5.5

Cuticle very thin, finely annulated; annules 1.2–1.4 μm wide on the midbody region. Somatic setae scattered, short, about as long as 1/4 body diameter. Head somewhat swollen, 16 μm wide; body at the posterior end of oesophagus 1.5 times wider than head. Cephalic setae: 4×2 submedial and 2×2 lateral. Submedial setae 14 μm and 11–12 μm , 88% and 68–75% of labial diameter, respectively. Length of shorter lateral setae about 40% of the longer ones. Labial papillae setiform.

Amphids circular, 5.8–6 μm wide, 33–35% of the corresponding body diameter, their anterior margin is situated at 20–21 μm (1.2–1.3 head diameter) from anterior body end. Vestibulum fairly wide, 8×5 μm. Oesophagus

* *Dr. István Andrássy*, ELTE Állatrendszertani és Ökológiai Tanszék (Zoosystematical and Ecological Institute of the Eötvös Loránd University), Budapest, Puskin u. 3, H–1088.

cylindrical, 196 – 200 μm long. Cardia offset, spherical, with a small tongue-shaped posterior process. Beginning of intenstine somewhat widened, forming the so-called progaster. In the lumen of the intestine rests of algae can be observed.

Testis beginning at about 4 body widths behind oesophagus. Spermatozoa minute, globular. Spicula 30 μm long (along the arc), with twisted lateral edges. Gubernaculum about 15 μm long, characteristic in shape (see Fig. 1D), on both sides with a distal triangular plate. Tail ventrally curved, 122 – 124 μm long, 5.2 times as long as anal body diameter, possessing 10 pairs of subventral and 9 – 10 pairs of subdorsal setae. Tail spinneret short.

Females were not found. The juveniles correspond to the above description of the males, their amphids were, however, a little smaller and the tail was somewhat longer.

Holotype: A male specimen with slide number H – 7247 in the collection of the author.

Type locality: Budapest, Hungary, soil around roots of maize in a garden, April 1961.

The new species is a representant of the species group "*Theristus flevensis*" which, according to WIESER and HOPPER (1967), comprises the following species: *Th. ambronensis* SCHULZ, 1935, *Th. bipunctatus* (SCHNEIDER, 1906) FILIPJEV 1929, *Th. borosi* ANDRÁSSY, 1958, *Th. calx* WIESER & HOPPER, 1967, *Th. flevensis* SCHUURMANS STEKHOVEN, 1935, *Th. macroflevensis* GERLACH, 1954, *Th. metaflevensis* GERLACH, 1955, and *Th. parambronensis* TIMM, 1952. This group of the old genus *Theristus* may be characterized by the structure of the spicular apparatus: the spicula are arched with twisted lateral edges, and the gubernaculum has a distal triangular plate on both sides. All species mentioned above are marine or inhabitants of inland salt waters. Only SCHIEMER (1978) found *Th. flevensis* in the Neusiedler Lake, Austria, a fresh water habitat. *Penzancia terricola* sp. n. can be distinguished from the members of the *flevensis* group by the fine structure of the spicula and gubernaculum, the number and length of the lateral cephalic setae (there are one or three lateral setae in the other species) and the terrestrial occurrence.

When redescribing the species *Monhystera velox* (BASTIAN, 1865), DE MAN proposed a new subgenus: *Monhystera* (*Penzancia* DE MAN, 1889), and designated some years later (in STILES and HASSAL, 1905) the same species as a type. FILIPJEV (1918) raised *Penzancia* to generic rank, whilst WIESER (1956) considered it a subgenus of *Theristus*. The latter author proposed a new type-species, *Theristus flevensis* SCHUURMANS STEKHOVEN, 1935, being BASTIAN'S uncertain *Theristus velox* a species inquirenda.

BASTIAN (1965) described *Th. velox* on the basis of a female specimen, so that in lack of male his species cannot be recognized, indeed. If the type-species remains an inquirenda, the genus *Penzancia* ought to be rejected as well and regarded only as a "genus inquirendum". However, this genus has generally been used by marine nematologists and a good number of species have been ordered and described in it. I think that it would be advisable to keep *Penzancia*, and propose therefore the solution as follows. As mentioned, DE MAN (1899) found a species in the English Channel and identified it as *Monhystera (Penzancia) velox* (BASTIAN, 1865) BÜTSCHLI, 1874. Both the description and the locality well agreed with those of BASTIAN, consequently this species of DE MAN

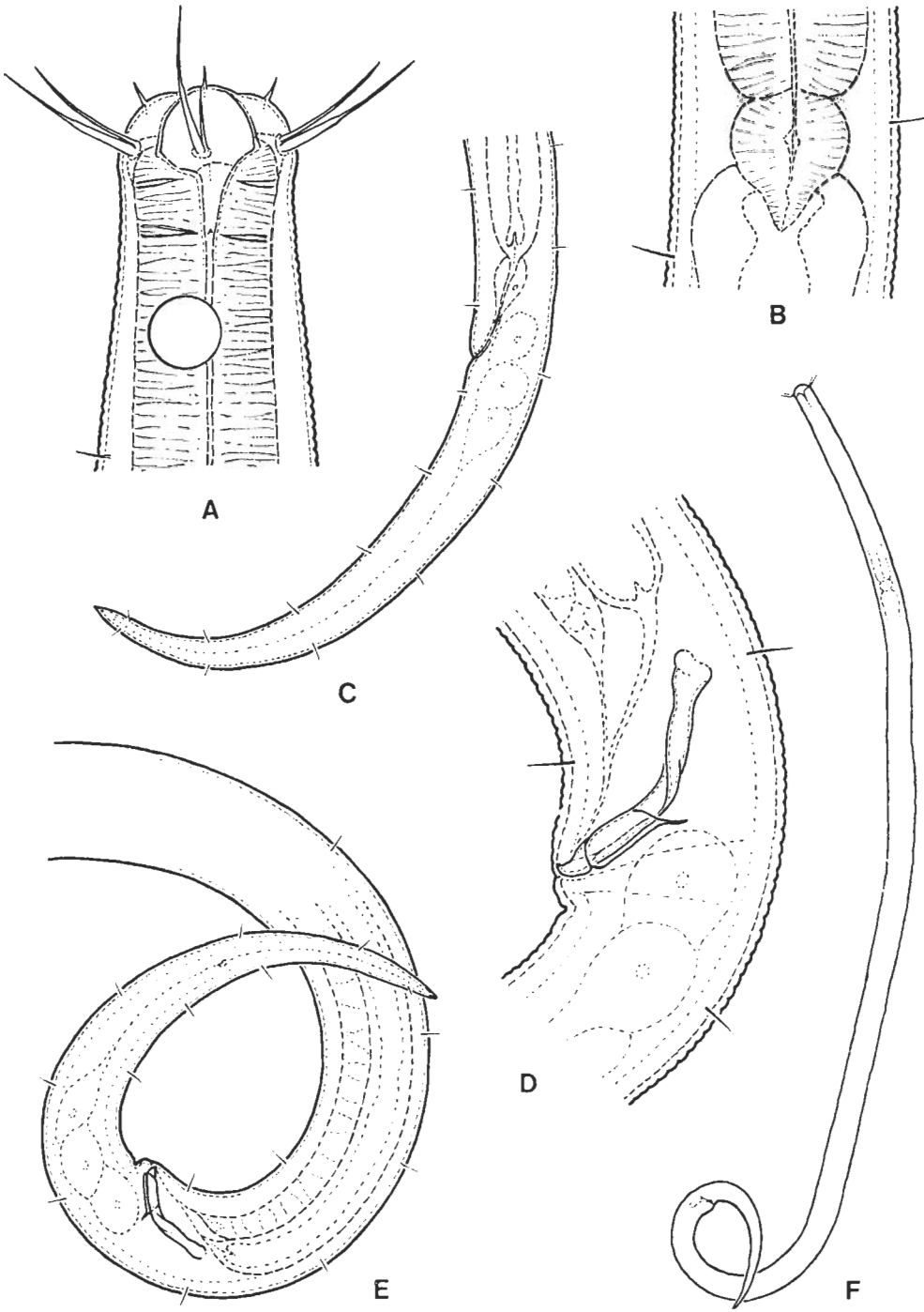

Fig. 1. *Penzancia terricola* sp. n. A: anterior end (1600×); B: cardial region (1200×); C: female tail (570×); D: cloacal region of male (1200×); E: posterior body end of male (570×); F: entire male (150×)

could justly be accepted as a representative of *velox*. *Penzancia* may remain in this manner a valid genus and characterized by its type, *Penzancia velox* (BASTIAN, 1865) FILIPJEV, 1918 sensu DE MAN, 1889.

Penzancia has been explained by different authors in different manner. WIESER (1956) enumerated 14 species, WIESER and HOPPER (1967) 19 species, GERLACH and RIEMANN (1973) 38 species. I restrict the genus to the „*flevensis* group" and give below an emended dignosis.

Penzancia (DE MAN, 1889) FILIPJEV,, 1918

Syn. *Monhystera* (*Penzancia* DE MAN, 1889); *Theristus* (*Penzancia* DE MAN, 1889) WIESER, 1956.

Xyalide. Cuticle finely annulated, with thin submedial setae. Head bearing four pairs of submedial setae and one to three lateral setae on each side. Cephalic setae not articulate. Ocelly generally present. Mouth cavity without conspicuous denticles. Amphids circular. Vulva in 2/3 to more than 3/4 body length. Spicula arched, moderately long, with twisted lateral edges. Gubernaculum with a small dorsal process and with a distal triangular plate on both sides. Tail terminus simple, without setae.

Predominantly marine or occurring in inland salt biotopes; one species terrestrial.

Type-species: *Theristus velox* BASTIAN, 1865 sensu DE MAN, 1889 = *Penzancia velox* (BASTIAN, 1865) FILIPJEV, 1918.

The following 10 species may be included here:

P. ambronensis (SCHULZ, 1936) comb. n.
Syn. *Theristus ambronensis* SCHULZ, 1936
Theristus (Penzancia) ambronensis SCHULZ, 1936 (WIESER, 1956)

P. bipunctata (SCHNEIDER, 1906) comb. n.
Syn. *Monhystera bipunctata* SCHNEIDER, 1906
Theristus bipunctatus (SCHNEIDER, 1906) FILIPJEV, 1929
Theristus (Penzancia) bipunctatus (SCHNEIDER, 1906) FILIPJEV, 1929 (WIESER & HOPPER, 1967)

P. borosi (ANDRÁSSY, 1958) comb. n.
Syn. *Theristus borosi* ANDRÁSSY, 1958
Theristus (Penzancia) borosi ANDRÁSSY, 1958 (WIESER & HOPPER 1967)

P. calx (WIESER & HOPPER, 1967) comb. n.
Syn. *Theristus (Penzancia) calx* WIESER & HOPPER, 1967

P. macroflevensis (GERLACH, 1954) comb. n.
Syn. *Theristus macroflevensis* GERLACH, 1954
Theristus (Penzancia) macroflevensis GERLACH, 1954 (WIESER, 1959)

P. metaflevensis (GERLACH, 1955) comb. n.
Syn. *Theristus metaflevensis* GERLACH, 1955
Theristus (Penzancia) metaflevensis GERLACH, 1955 (WIESER, 1959)

P. parambronensis (TIMM, 1952) comb. n.
Syn. *Theristus parambronensis* TIMM, 1952
Theristus (Penzancia) parambronensis TIMM, 1952 (WIESER, 1959)

P. scanica (ALLGÉN, 1949) comb. n.
Syn. *Theristus scanicus* ALLGÉN, 1949
Theristus (Penzancia) scanicus ALLGÉN, 1949 (WIESER, 1956)
Theristus (Penzancia) heteroscanicus WIESER, 1956

P. terricola sp. n.

P. velox (BASTIAN, 1865) FILIPJEV, 1918
Syn. *Theristus velox* BASTIAN, 1865
Monhystera velox (BASTIAN, 1865) BÜTSCHLI, 1874
Monhystera (Penzancia) velox (BASTIAN, 1865) BÜTSCHLI, 1874 (DE MAN, 1889)
Theristus flevensis SCHUURMANS STEKHOVEN, 1935*
Theristus (Penzancia) flevensis SCHUURMANS STEKHOVEN, 1935 (WIESER, 1956)

Theristus pannonicus sp. n.

(Fig. 2A–F)

♂: L = 0.90 mm; a = 51; b = 5.3; c = 6.0; c' = 10.
Predault ♀: L = 0.64 mm; a = 44; b = 4.2; c = 7.0; V = 63%; c' = 8.

Cuticle very thin, finely annulated; annules on mid-body only about 1 μm wide, on the posterior body region somewhat wider. Cuticle scattered with very thin setae measuring about the half the body width.

Head 10 μm wide, not separated from body; at posterior end of oesophagus body 1.6–1.7 times as wide as head. Labial papillae setose, fairly long. Cephalic setae arranged as follows: 4×2 submedial setae and 2×1 lateral setae. The longer setae measuring 10 μm = one head diameter, the shorter ones only 65–70% of the former. Amphids large, 5.5–6 μm wide, about half as wide as corresponding body diameter (they are a little wider in the predault female), their anterior margin lying 13–14 μm from head end (1.3–1.4 head diameter).

Oesophagus 170 μm long, distance between oesophagus and vulva 1.6 times as long as oesophagus. Cardia spheroid, with a small posterior tongue-like process. Beginning of intestine set off (progaster). Distance between vulva and anus 1.6 times as long as tail.

Male tail 150 μm long, 10 times anal body diameter, ventrally curved, distinctly narrowing behind cloaca. Tail spinneret small. Spicula 42 μm long, 2.7 times as long as anal body diameter, slender, with somewhat widened anterior end. Gubernaculum slipper-like, encircling the posterior third of spicula.

Holotype: Male on slide No. H–4399 in the collection of the author.

Type locality: Keszthely, Hungary, soil from a wheat field, May 1967.

* Nomen novum by SCHUURMANS STEKHOVEN (1935) for *Monhystera velox* sensu DE MAN, 1922. DE MAN's species (1889 and 1922) is proposed here to accept as identical with *Theristus velox* of BASTIAN, 1965.

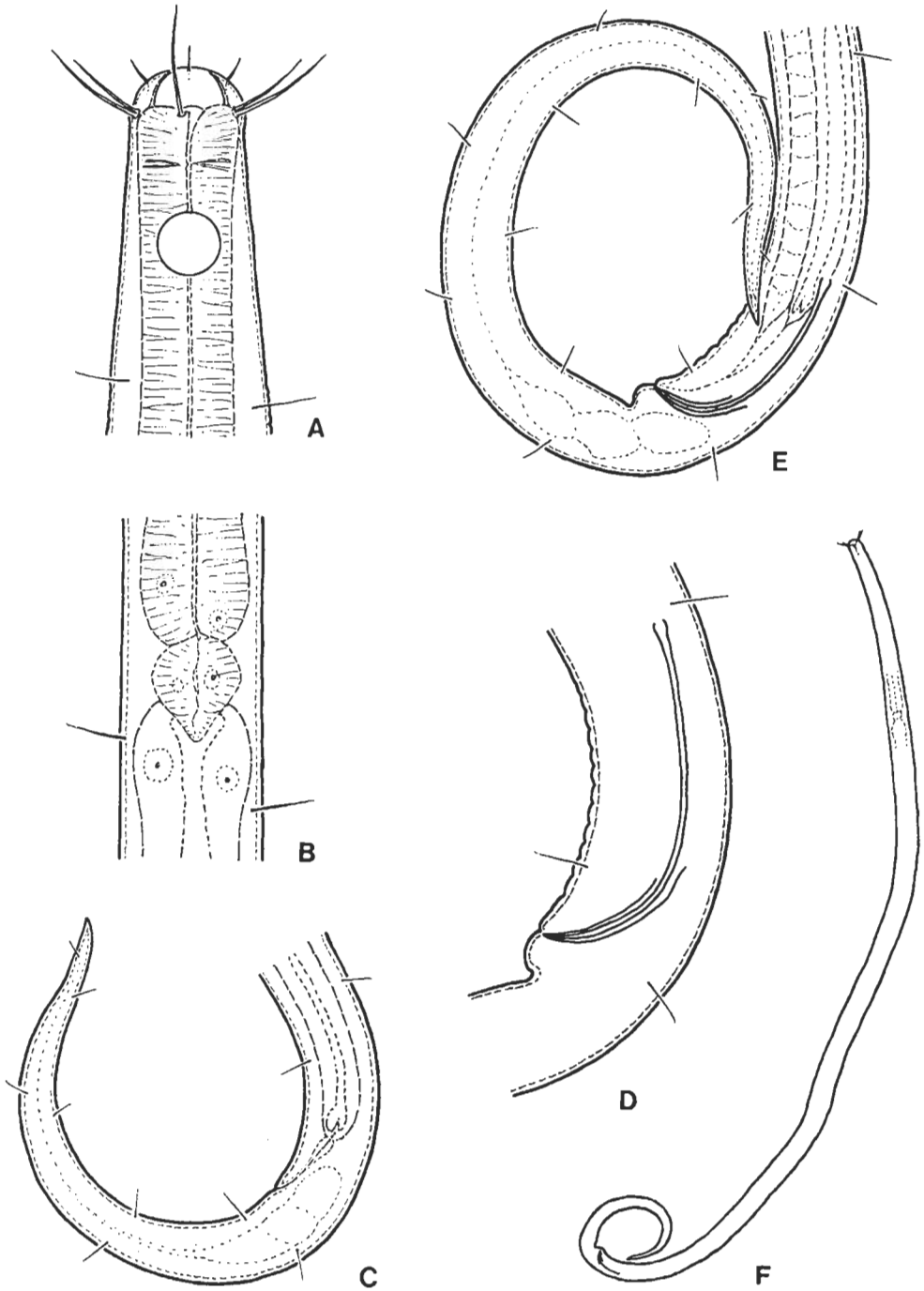

Fig. 2. *Theristus pannonicus* sp. n. A: anterior end (1600×); B: cardial region (1200×); C: female tail (800×); D: cloacal region of male (1200×); E: posterior body end of male (800×); F: entire male (150×)

In the shape and length of the spicula the new species resembles *Theristus ruffoi* ANDRÁSSY, 1959; the spicula of the latter are 48–50 μm long, 2.5–2.7 times as long as the anal body diameter. *Theristus pannonicus* sp. n. can be distinguished from *Th. ruffoi* as follows: the longer cephalic setae are as long as the diameter of head (in *ruffoi* 82–86% of head diameter), the amphids considerably larger (in *ruffoi* only 1/4 of the corresponding body width), the spicula a little shorter, and the body narrows characteristically behind the cloacal opening.

Metateratocephalus gracilicaudatus sp. n.

(Fig. 3A–G)

♀: L = 0.39–0.43 mm; a = 30–33; b = 3.7–4.1; c = 6.3–7.2; V = = 51–52%; c' = 7–8.

Cuticle very thin, 0.5–0.7 μm on the mid-body, very finely annulated and ornamented with minute dots somewhat stronger on the lateral fields, especially in the posterior portion of body. Lateral fields about 1/3 as wide as body width.

Head 9.5–10.5 μm wide, sharply offset, considerably wider than adjacent body region. Labial regon divided into six lobes with strongly cuticularized edges, each bearing a bristle-like tip. Amphids circular or crypto-spiral, 5 μm wide, about 1/3 as wide as corresponding body width, situated 15–17 μm or 1.5–1.7 head diameters from anterior body end.

Buccal cavity relatively wide, cheilostom funnel-shaped, heavily cuticularized, promesostom cylindrical, thin-walled. Oesophagus almost cylindrical, 100–104 μm long, terminal bulb strong, spherical or ovoid. Rectum 1.5 times as long as anal body diameter. Distance between oesophagus and vulva nearly as long as oesophagus.

Female gonads paired and reflexed, rather short, each branch 2.2–2.5 times as long as body diameter. Vagina short. One egg in the uterus: 37–43×11–12 μm, 2.8–3.2 times body diameter.

Distance between vulva and anus 2–2.5 times as long as tail. This latter 56–62 μm long, 7–8 times anal body diameter and 14–16% of entire body length, respectively, conical, strongly bent dorsally in its 2/3 part. Tail tip filiform. Phasmids unrecognizable.

Male was not found.

Holotype: Female on slide No. H–9732 in the collection of the author.

Type locality: Nyírestó, Hungary, *Sphagnum* moor, March 1983, leg. GY. KERTÉSZ.

When established the new genus *Metateratocephalus*, EROSHENKO (1973) designated *M. typicus* EROSHENKO, 1973 as type-species. As second species, he transferred *M. crassidens* (DE MAN, 1880) EROSHENKO, 1973 from the genus *Euteratocephalus* ANDRÁSSY, 1958. The differences between both species are, however, so little (amphids spiral or crypto-spiral, oesophageal bulb rounded or somewhat angular, respectively) that the species cannot be separated from each other. I synonymize therefore *typicus* with *crassidens*.

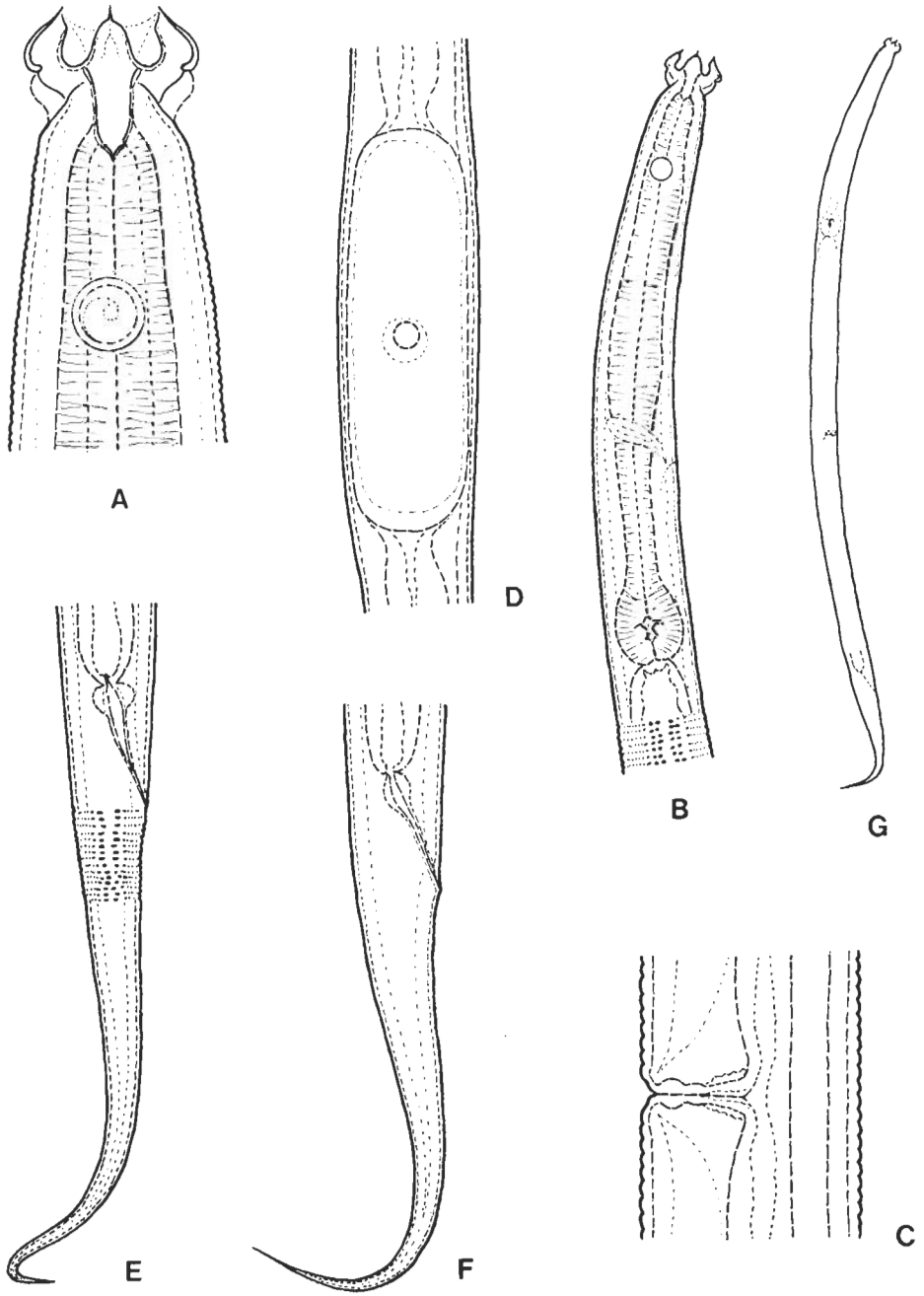

Fig. 3. *Metateratocephalus gracilicaudatus* sp. n. A: anterior end (2500×); B: oesophageal region (800×); C: vulva (1600×); D: egg in the body (1200×); E – F: tail forms of females (1200×); G: entire female

On the other hand, however, it seems hardly questionable that the species described by DE CONINCK (1935) from Zaire as „*Teratocephalus crassidens*" is not identical with DE MAN's *crassidens*. It distinguishes from the latter by the amphids located 3 head diameters behind the anterior end (1.5 – 2 head diameters in *crassidens*), the weak punctation of cuticle also on the lateral fields (punctation much heavier on the lateral fields in *crassidens*), and the tail showing a mucro-like tip (not mucronate in *crassidens*). I considered it a separate species and proposed the name *Metateratocephalus deconincki* ANDRÁSSY, 1984 (Syn. *Teratocephalus crassidens* apud DE CONINCK, 1935 nec DE MAN, 1880).

Metateratocephalus gracilicaudatus sp. n. can be separated from both *crassidens* and *deconincki* in having a more slender body, a wider head, and a much longer, filiform tail.

Key to the species of Metateratocephalus

1 Tail 7 – 8 times anal body diameter, very finely attenuated. – ♀: L = = 0.39 – 0.43 mm; a = 30 – 33; b = 3.7 – 4.1; c = 6.3 – 7.2; V = 51 – 52%. ♂ unknown. (Hungary.) ..... **gracilicaudatus** sp. n.
– Tail 4 – 5 times anal body diameter, more robust 2

2 Amphids 3 head diameters behind anterior body end; tail tip with mucro. – ♀: L = 0.43 mm; a = 21 – 22; b = 3.3 – 3.6; c = 8.6 – 8.7; V = 50 – – 53%. ♂ unknown. (Zaire.) ..... **deconincki** ANDRÁSSY
– Amphids 1.5 – 2 head diameters behind anterior body end; tail tip without mucro. – ♀: L = 0.30 – 0.50 mm; a = 18 – 28; b = 3.5 – 4.4; c = 7 – 10; V = 53 – 60%. ♂: L = 0.33 mm; a = 23; b = 3.9; c = 9.3. (Holland, Belgium, Germany, Austria, Switzerland, Hungary, Czechoslovakia, Rumania, Poland, Great Britain, Denmark, Spain, Italy, Soviet Union [Estonia, Lithuania, Uzbekistan], Japan, Kenia, Brunei, Morocco, Venezuela, New Zealand.) ..... **crassidens** (DE MAN)

Acrobeles canalis sp. n.

(Fig. 4 A – D)

♀: L = 0.83 – 0.86 mm; a = 17 – 18; b = 3.5 – 3.7; c = 11; V = 60 – – 62%; c' = 2.3 – 2.4.

Body comparatively large and stout, hardly curved ventrally. Cuticle single, thin, 1.5 – 1.8 μm, with broad and flat annules. Each annule bearing two rows of fine dots. Annules 4 – 4.7 μm wide on mid-body; their total number on the holotype female is 202 (from head to proximal base of oesophagus 53, from head to vulva 119, from head to anus 183 annules). Lateral field 6.5 – 7 um wide, 1/7 of body diameter, consisting of three longitudinal lines; the inner one is somewhat thicker than the marginal ones, and the latter are slightly crenate. The lateral field begins at the anterior third of procorpus and terminates on tail tip. A very characteristic feature is that on each side of the body a very prominent zigzag-shaped canal runs in the lateral chord (below the lateral field). This canal originates at the middle of oesophagus and reaches to the beginning of tail.

Head 20 μm wide, body at posterior end of oesophagus 2.3 times as wide as head. Labial probolae 17 – 18 μm long, bifurcate to the half of their length; each

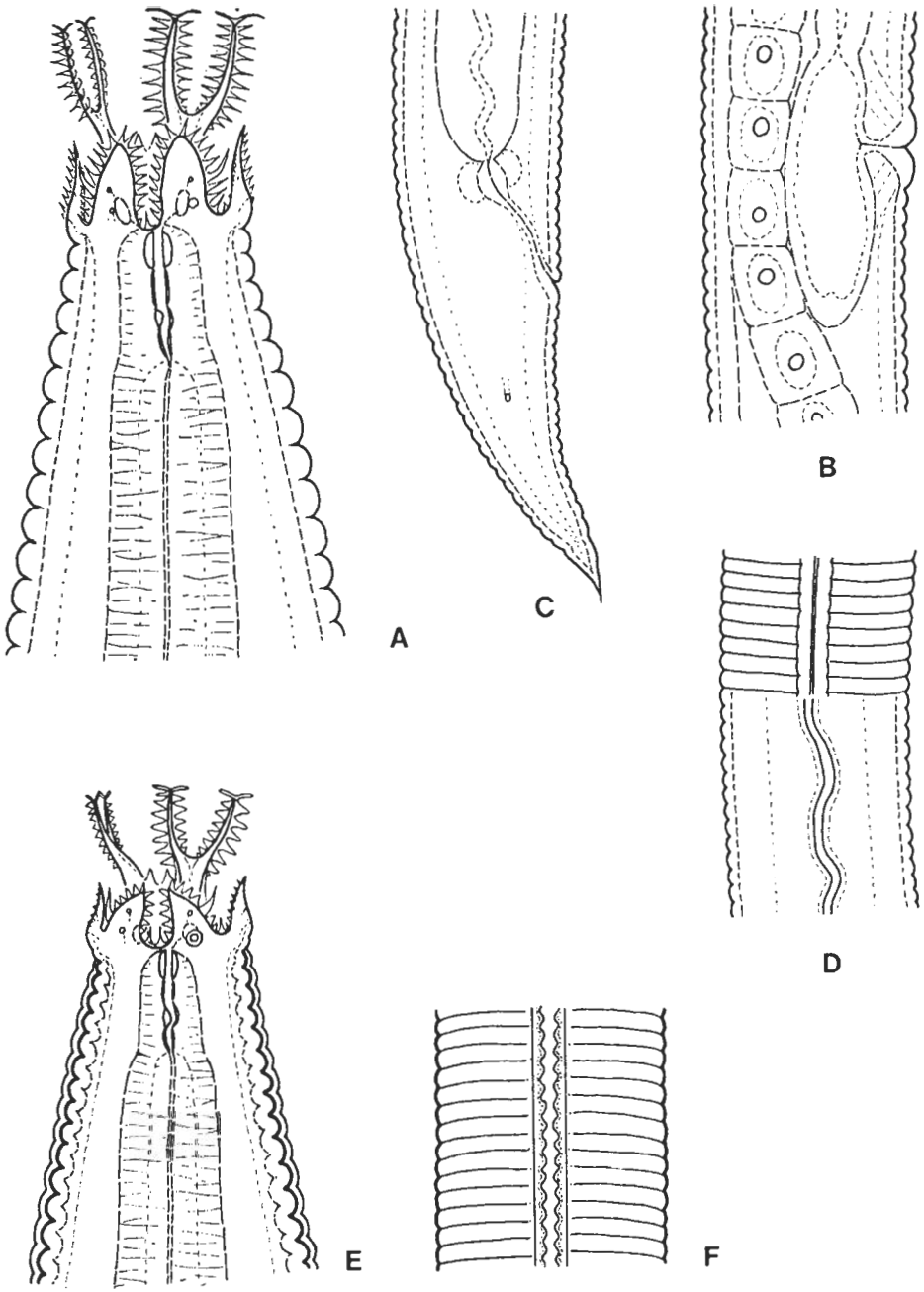

Fig. 4. A – D: *Acrobeles canalis* sp. n. A: anterior end (1200×); B: vulval region (600×); C: female tail (600×); D: a part of mid-body showing the lateral field (up) and the lateral canal (down). – E – F: *Seleborca complexa* (THORNE, 1925) comb. n. E: anterior end (1200×); F: a part of body with the lateral field

prong fringed with long and thin, sharply acute tines, 8–10 in number on each border. Terminal spurs very thin. Cephalic probolae nearly half as long as labial ones, with thin fringes. Amphids circular, located on the lateral cephalic probolae.

Stoma 16–17 μm long. Cheilorhabdions oblong, refractive, prorhabdions bacilliform, cuticularized, other rhabdions small. Oesophagus 230 μm long, distance between oesophagus end and vulva 1.3 times longer than oesophagus. Procorpus practically cylindrical, isthmus about as long as terminal bulb; the latter 36 μm long. Prerectum well separate, 80 μm long, 2.5 times anal body diameter. Excretory pore on the 36th annule, 145 μm from anterior end, or in 63% of oesophagus length, respectively.

Vagina short, 1/4 of body width. Postvulval uterine sac about equal in length with vulval body diameter. Ovary long, reaching the prerectum. Distance between vulva and anus 3.2 times as long as tail.

Tail conoid, with acute terminus, 75–78 μm long, 2.3–2.4 times anal body diameter, and 9% of total body length, respectively. On the ventral side of tail 18–19 cuticular annules may be counted. Phasmids situated in 34–38% of tail length.

Male was not found.

Holotype: female on slide No. H–10142 in the collection of the author.

Type locality: Fülöpháza, Kiskunság National Park in Hungary, sandy, grassy soil, April 1978.

The new species can be distinguished from every other representative of the genus *Acrobeles* by the presence of subcuticular lateral canals. The structure of head and the width of cuticular annules serve also as good diagnostic characters for *Acrobeles canalis* sp. n.

As pointed out by Heyns (1969) and found also by me in course of studying my *Acrobeles* collection as well as the corresponding literature, the species of this genus may be divided in two distinct groups. The one group is characterized by a single cuticle and a lateral field consisting of two or three lines, whilst the other one is marked by a conspicuously double cuticle and a lateral field bearing two simple outer and two strongly waved inner incisures. In my opinion, these two groups represent also separate genera, namely the old genus *Acrobeles* and a new genus, for which I propose the name *Seleborca* gen. n.

Below, I give the definition of each genus with enumerating the species.

Acrobeles Linstow, 1877

Cephalobidae, Acrobelinae. Body length between 0.3 and 1.1 mm. Cuticle single (Fig. 4A), often ornamented with minute dots, annules simple or, rarely, divided into blocks by longitudinal striae. Lateral field simple, with two or three incisures, of which the marginal ones straight or slightly crenate. Head with two kinds of appendages: labial probolae long, bifurcate, fringed with thin and acute tines and terminated in fine spurs. Cephalic probolae more or less triangular, also with fringes. Amphids circular, well visible. Stoma consisting of the usual five elements (rhabdions); cheilorhabdions refractive. Oesophageal procorpus generally cylindrical, terminal bulb strong. Location of excretory pore varying between 1/4 and more than 3/4 of oesophagus length. Ovary anterior with two flexures; postvulval uterine sac present. Males generally with eight pairs of genital papillae. Tail in both sexes conoid, acute, with distinct phasmids.

Type-species: *Acrobeles ciliatus* LINSTOW, 1877.
Soil-inhabiting species occurring in every continent except the Antarctica. Thirteen species may be listed here:

A. annulatus HEYNS & HOGEWIND, 1969

A. bushmanicus HEYNS, 1969

A. canalis sp. n.

A. chelatus THOMAS & ALLEN, 1965

A. ciliatus LINSTOW, 1877
Syn. *Cephalobus ciliatus* (LINSTOW, 1877) DE MAN, 1880
Cephalobus (Acrobeles) ciliatus (LINSTOW, 1877) DE MAN, 1880 (MICOLETZKY, 1922)
Acrobeles sinensis KREIS, 1930
Acrobeles maeneeneus YEATES, 1967 (syn. n.)
Acrobeles singulus HEYNS, 1969 (syn. n.)

A. cylindricus IVANOVA, 1968

A. elaboratus THORNE, 1925
Syn. *Acrobeles kotingotingus* YEATES, 1967 (syn. n.)

A. serricornis THORNE, 1925

A. sheasbyi HEYNS & HOGEWIND, 1969

A. sparsus HEYNS, 1969

A. taraus YEATES, 1967

A. thornei HEYNS, 1963

A. undulatus LOOF, 1964

The following species must be regarded as "species inquirenda":
A. neocephalatus KANNAN, 1961

Key to the species of Acrobeles

1 Annules of cuticle divided into blocks by longitudinal striae 2
– Annules of cuticle simple, not divided into blocks 4

2 Vulva sunken in body contour and surrounded by a flap-like cuticular membrane. – ♀: L = 0.68–0.82 mm; a = 15–24; b = 3.3–4.3; c = 11–12; V = 59–63%. ♂: L = 0.62–0.71 mm; a = 18–21; b = 3.6–4.0; c = = 10–13. (South- and South-West Africa.) ..... **sheasbyi** HEYNS & HOGEWIND
– Vulva not sunken in body contour, without cuticular membrane 3

3 Body 0.7–1.0 mm; annules 4.5–5.5 μm wide. – ♀: L = 0.69–0.98 mm; a = 13–25; b = 3.7–4.2; c = 9.7–12; V = 58–65%. ♂: L = 0.76–1.0 mm; a = 16–24; b = 3.8–4.3; c = 9.5–11. (South Africa, United States.) ..... **thornei** HEYNS

– Body 0.5–0.7 mm; annules 3 μm wide. – ♀: L = 0.49–0.65 mm; a = = 14–17; b = 3.3–4.1; c = 9–14; V = 63–67%. ♂ unknown. (Venezuela.) ..... **undulatus** Loof

4 Anterior body region swollen, unusually plump; excretory pore far before the middle of oesophagus; body very small, 0.3 mm. – ♀: L = 0.30–0.33 mm; a = 13–15; b = 2.8–3.6; c = 8–10; V = 56–60%. ♂ unknown. (Hungary, Soviet Union: Uzbekistan, Tadzhikistan.) ..... **cylindricus** Ivanova

– Anterior body region not swollen; excretory pore (when its position known) at the middle of oesophagus length or posterior that 5

5 Lateral field with two incisures and minutely spotted inner area; labial probolae curved inwards .....

– Lateral field with three incisures, not spotted; labial probolae practically straight 8

6 Each annule ornamented with two rows of fine dots. – ♀: L = 0.74 mm; a = 15; b = 4; c = 15; V = 60%. ♂ unknown. (Spain, Hungary, United States: Utah.) ..... **elaboratus** Thorne

– Annules without visible dots 7

7 Cephalic probolae long and slender, approaching the labial probolae in length. – ♀: L = 0.61 mm; a = 15; b = 4.2; c = 13; V = 63%. ♂ unknown. (United States: Utah; Soviet Union: Russia, Uzbekistan.) ..... **serricornis** Thorne

– Cephalic probolae of usual form, about half as long as labial probolae. – ♀: L = 0.38–0.65 mm; a = 14–19; b = 3.0–4.2; c = 8–10; V = 56–63%. ♂: L = 0.39–0.59 mm; a = 15–21; b = 3.0–3.7; c = 9–13. (Europe: Holland, GFR, GDR, Austria, Hungary, Italy, Great Britain, Sweden, Bulgaria; Soviet Union: Russia, Ukraine, Latvia, Lithuania, Estonia, Belorussia, Georgia, Turkmenia, Azerbaizhan, Tadzhikistan, Uzbekistan, Kazakhstan, Kirghizia, Far East; Asia: Mongolia; Africa: Algeria, Zaire, South-Africa; America: Brasil, Venezuela; Australia: New Zealand.) ..... **ciliatus** Linstow

8 Lateral chord with a sclerotized, strongly waved canal. – ♀: L = 0.83– –0.86 mm; a = 17–18; b = 3.5–3.7; c = 11; V = 60–62%. ♂ unknown. (Hungary.) ..... **canalis** sp. n.

– Lateral chord without such a canal 9

9 Each arm of labial probolae armed with three terminal spurs forming a claw. – ♀: L = 0.56–0.75 mm; a = 18–23; b = 3.5–4.1; c = 11–14; V = = 60–63%. ♂: L = 0.61–0.67 mm; a = 20–22; b = 3.8–4.0; c = 10–12. (Australia: New South Wales.) ..... **chelatus** Thomas & Allen

– Each arm of labial probolae armed with the usual two terminal spurs ...10

10 Annules exceptionally broad, 6–7 μm on mid-body; head with three marginal supplementary probolae. – ♀: L = 1.05–1.07 mm; a = 17–28; b = = 4.5–4.7; c = 14–15; V = 63–66%. ♂: L = 0.89–1.0 mm; a = 26–29; b = 3.9–4.5; c = 11–12. (South- and South-West Africa.) ..... **annulatus** Heyns & Hogewind

– Annules not so broad, 2.5 to 4 μm on mid-body; head without marginal supplementary probolae 11

11 Anterior 12–18 cuticular annules corrugated; tail short and stout, only one-and-a-half times anal body diameter. – ♀: L = 0.68–0.75 mm; a = 15–17; b = 3.7; c = 15–16; V = 63–64%. ♂: L = 0.60–0.73 mm; a = 15–22; b = 3.4–3.9; c = 12–16. (New Zealand.) ..... **taraus** YEATES

– Anterior cuticular annules not corrugated; tail longer, 2–3 times anal body diameter 12

12 Body 0.5–0.6 mm long; labial probolae with 5–7 pairs of fringes on each sprong. – ♀: L = 0.51–0.58 mm; a = 14–19; b = 3.5–3.8; c = 10–13; V = 60–62%. ♂: L = 0.55–0.56 mm; a = 19–21; b = 3.5–3.8; c = 11–13. (South- and South-West Africa.) ..... **bushmanicus** HEYNS

– Body 0.7–0.8 mm long; labial probolae with 8–10 pairs of fringes on each sprong. – ♀: L = 0.71–0.85 mm; a = 14–24; b = 3.9–4.1; c = 8.6–14; V = 60–66%. ♂ unknown. (South Africa.) ..... **sparsus** HEYNS

Seleborca gen. n.*

Cephalobidae, Acrobelinae. Body length between 0.4 and 0.9 mm. Cuticle double: the outer layer thinner and showing faint annules, the inner layer thicker, heavily annulated and more strongly sclerotized than the former (Fig. 4 E); annules occasionally with minute dots but never divided into blocks by longitudinal striae. Lateral field consisting of two simple outer lines and two corrugated or waved inner lines. In head structure and other characteristics very similar to the genus *Acrobeles*.

Type-species: *Acrobeles complexus* THORNE, 1925 = *Seleborca complexa* (THORNE, 1925) comb. n.

Terricolous animals with world-wide distribution.

Ten species belong to the genus:

S. cephalata (COBB, 1901) comb. n.
Syn. *Cephalobus cephalatus* COBB, 1901
Acrobeles cephalatus (COBB, 1901) THORNE, 1925

S. complexa (THORNE, 1925) comb. n.
Syn. *Acrobeles complexus* THORNE, 1925

S. ctenocephala (THORNE, 1925) comb. n.
Syn. *Acrobeles ctenocephalus* THORNE, 1925

S. dimorpha (HEYNS & HOGEWIND, 1969) comb. n.
Syn. *Acrobeles dimorphus* HEYNS & HOGEWIND, 1969

S. ensicaudata (THOMAS & ALLEN, 1965) comb. n.

S. mariannae (ANDRÁSSY, 1968) comb. n.
Syn. *Acrobeles mariannae* ANDRÁSSY, 1968
Acrobeles capensis HEYNS, 1969 (syn. n.)

* „*Seleborca*" is an inverse form of the word „*Acrobeles*" and feminin in gender.

S. ornata (THORNE, 1925) comb. n.
Syn. *Acrobeles ornatus* THORNE, 1925

S. raoi (KANNAN, 1961) comb. n.
Syn. *Acrobeles raoi* KANNAN, 1961

S. recurva (HEYNS, 1969) comb. n.
Syn. *Acrobeles recurvus* HEYNS, 1969

S. timmi (CHATURVEDI & KHERA, 1979) comb. n.
Syn. *Acrobeles timmi* CHATURVEDI & KHERA, 1979

Key to the species of Seleborca

1 Tail comparatively long, 4–6 times anal body diameter. 2
– Tail shorter, 1.5–3 times anal body diameter 3

2 Tail in its posterior 2/3 very slender, ensiform; excretory pore far before the middle of oesophagus lenght. – ♀: L = 0.62–0.68 mm; a = 16–17; b = = 3.6–4.1; c = 5.3–6.0; V = 54–58%. ♂ unknown. (United States: Florida.) ..... **ensicaudata** (THOMAS & ALLEN)
– Tail uniformly conoid; excretory pore behind the middle of oesophagus length. – ♀: L = 0.83–0.89 mm; a = 19–25; b = 3.9–4.4; c = 7.8–8.8; V = 53–56%. ♂: L = 0.76–0.83 mm; a = 19–23; b = 3.8–4.2; c = 13– –15. (South- and South–West Africa.) ..... **dimorpha** (HEYNS & HOGEWIND)

3 Tail unusually short, hardly longer than one anal body diameter 4
– Tail two anal body diameters or longer. 5

4 One of the terminal spurs of each labial furca recurved backwards. – ♀: L = 0.80–0.85 mm; a = 15; b = 4.2; c = 17; V = 64%. ♂: L = 0.73 mm; a = 18; b = 4.5; c = 11. (United States: Colorado; Soviet Union: Georgia, Kazakhstan.) ..... **ornata** (THORNE)
– Both terminal spurs of each labial furca directed forwards. – ♀: L = 0.86– –0.95 mm; a = 11–13; b = 3.8–5.6; c = 9.6–12; V = 57%. ♂: L = = 0.8 mm; a = 14; b = 4.5; c = 18. (India.) ..... **raoi** (KANNAN)

5 Excretory pore level with the anterior part of oesophagus; small species, 0.4–0.5 mm 6
– Excretory pore level with the posterior part of oesophagus; larger species, more than 0.5 (to 0.9) mm 7

6 Labial and cephalic probolae with long and acute tines; head distinctly wider than neck region. – ♀: L = 0.37–0.52 mm; a = 13–19; b = 3.1–3.5; c = 10–13; V = 58–62%. ♂ unknown. (South Africa, Paraguay.) ..... **mariannae** (ANDRÁSSY)
– Labial and cephalic probolae with extremely minute tines; head not separate, as wide as neck region. – ♀: L = 0.4 mm; a = 17; b = 4; c = 10; V = = 58%. ♂: L = 0.4 mm; a = 18: b = 4; c = 25. (Australia: New South Wales.) ..... **cephalata** (COBB)

7 Termini of labial furcas recurved toward the oral aperture; annules of cuticle with punctation. – ♀: L = 0.63–0.65 mm; a = 17–23; b = 3.9–4.0; c = 8.7–10.5; V = 58%. ♂: L = 0.62–0.66 mm; a = 23–24; b = 3.8; c = 11–14. (South Africa.) ..... **recurva** (HEYNS)
– Termini of labial furcas straight; annules of cuticle without punctation 8

8 Tail 2 anal body diameters, phasmids opposite the anus. – ♀: L = 0.5 mm; a = 13; b = 3.6; c = 13; V = 64%. ♂: L = 0.59 mm; a = 17; b = 3.4; c = 12.5. (United States: California, Colorado, Utah; Soviet Union: Russia, Moldavia, Georgia, Uzbekistan, Kazakhstan.) ..... **ctenocephala** (THORNE)
– Tail 3–4 anal body diameters, phasmids far behind the anus 9

9 Posterior uterine branch distinctly longer (to twice) than corresponding body diameter; body 0.6–0.8 mm long. – ♀: L = 0.59–0.83 mm; a = 13–21; b = 3.5–4.3; c = 9–12; V = 56–60%. ♂: L = 0.58–0.85 mm; a = 16–23; b = 3.5–4.3; c = 12–15. (Holland, Hungary, Czechoslovakia, Italy, Turkey, Soviet Union [Russia, Moldavia, Uzbekistan], Mongolia, South Africa, United States [California, Colorado, Idaho, Utah], Cuba, Venezuela.) **complexa** (THORNE)
– Posterior uterine branch much shorter than corresponding body diameter; body 0.5–0.6 mm long. – ♀: L = 0.49–0.62 mm; a = 17–18; b = 3.5–4.1; c = 9–11; V = 57–59%. ♂: L = 0.51–0.63 mm; a = 16–20; b = 4.1–4.2; c = 12–15. (India.) ..... **timmi** (CHATURVEDI & KHERA)

Caenorhabditis cervi sp. n.
(Fig. 5A–E and 6A–B)

♀: L = 0.56–0.68 mm; a = 22–25; b = 4.5–4.7; c = 8.3–9.0; V = 54–56%; c' = 5.0–5.4.

♂: L = 0.57–0.60 mm; a = 22–26; b = 4.4–5.0; c = 22–25.

Body straight or slightly bent ventrally. Cuticle very thin, only about 0.5 μm at mid-body, smooth, or exceedingly finely striated on both ends of body. Body width in the middle region 24–27 μm (♀).

Head 7 μm wide, not set off, lips hardly separate, low with minute papillae. Body at posterior end of oesophagus 3.3–3.5 times as wide as head. Amphids inconspicuous, slit-like, located on the lateral lips.

Mouth cavity 21–23 (♀) or 18–20 (♂) μm long, about 3 times head diameter, 1/6–1/7 of entire length of oesophagus, respectively. Cheilostom not cuticularized, promesostom tubular, surrounded by a thin oesophageal collar to about 60% of its length. Metastom isoglottoid, bearing two very fine setose denticles on each swelling. Oesophagus in ♀ 122–146, in ♂ 113–133 μm long; anterior portion (from head to base of medial bulb) 55–58% of its length. Medial bulb oblong, not too strong, basal bulb spherical-oval, well developed. Excretory pore level with posterior bulb or isthmus. Rectum nearly as long as anal diameter.

Distance between oesophagus and vulva 1.5–1.6 times as long as oesophagus, that between vulva and anus 2.8–3 times as long as tail. Vulva a little protruding, vagina thin, 1/3 of corresponding body diameter. Female gonads paired, anterior branch 5.7–6.5, posterior branch 5.1–5.8 times body diameter, or 25 and 22–23% of body length, respectively. One or two eggs in the uteri; 47×19 μm. Oviparous animal.

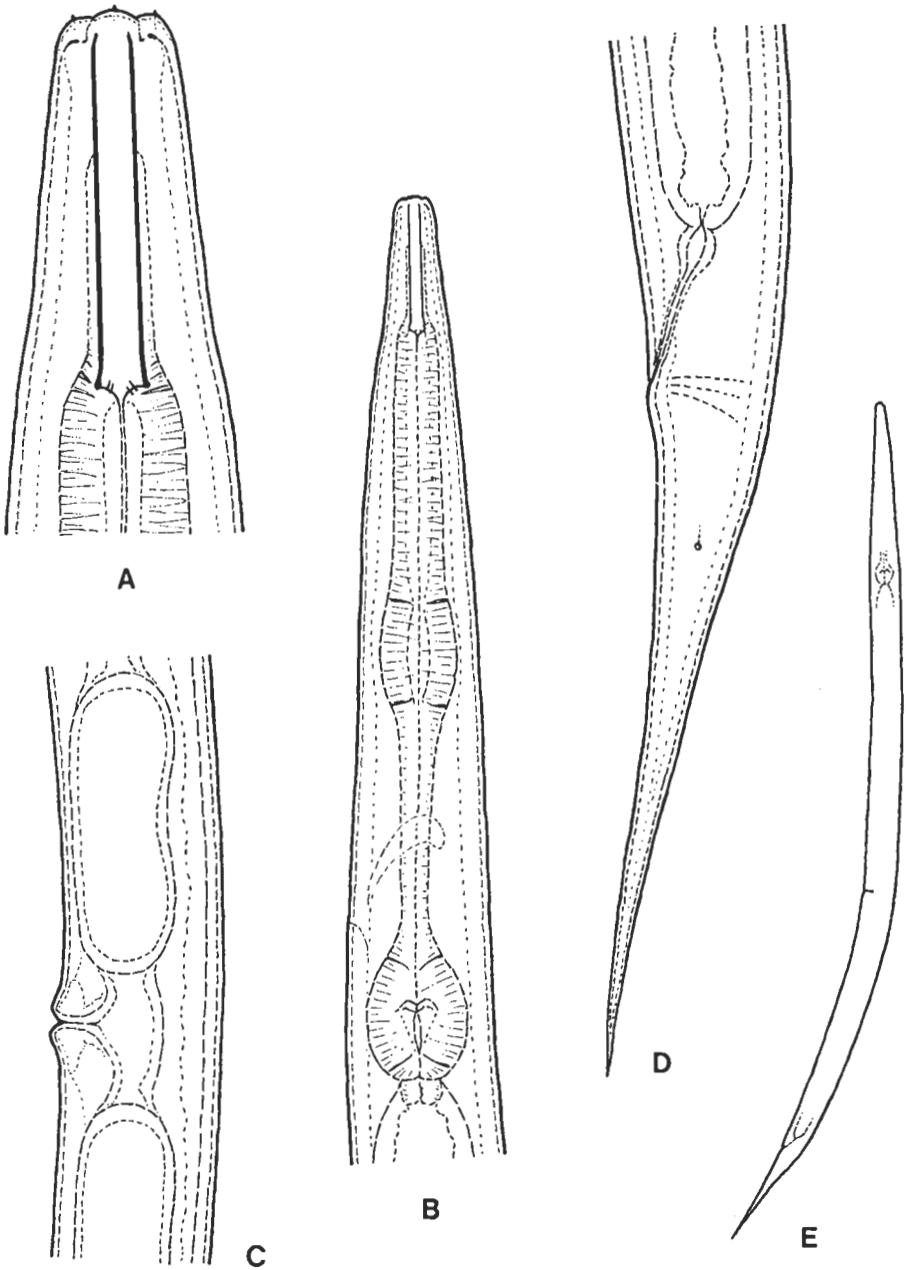

Fig. 5. *Caenorhabditis cervi* sp. n. A: anterior end (2500×); B: oesophageal region (800×); C: vulva and eggs (800×); D: female tail (1200×) E: entire female (170×)

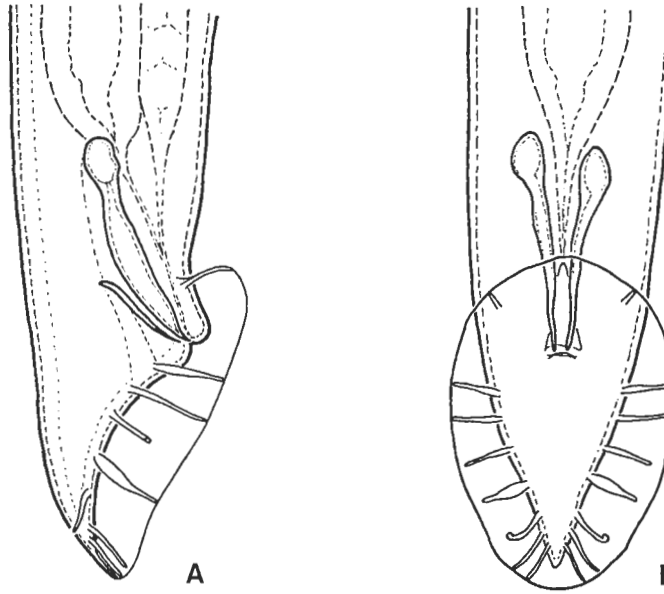

Fig. 6. *Caenorhabditis cervi* sp. n. A: posterior body end of male from lateral view (1200×); B: the same from medial view (1200×)

Female tail 68 – 76 μm long, 5 – 5.4 times anal body diameter, and 11 – 12% of body length, conoid, straight. Phasmids small, at about 1.5 anal diameters behind anus.

Male tail conical, slightly bent ventrally. Spicula free, 22 – 24 μm long, anteriorly spoon-like; left spiculum occasionally somewhat shorter than the right one. Gubernaculum simple, 9 – 10 μm long. Bursa peloderan, regularly oval (not cardioid), anteriorly closed, with smooth or very finely waved margin. Its length 33 – 35 μm, width 23 – 24 μm. Eight pairs of bursal papillae present: 1 + 4 + 3 pairs, of which the first pair is situated just on the anterior margin of the bursa, the other lying postcloacal. The group of the 2nd to 5th papillae is fairly loose, papillae 6 – 8 are close one another. The 5th papilla, on both side, is the thickest.

Holotype: Male on slide No. H – 9854 in the collection of the author.

Type locality: Dömös in the Pilis Mountains, Hungary, straw litter in a deer feeder, February 1983.

Caenorhabditis cervi sp. n. is unique among the eight known species of the genus in three characteristics: *1)* the mouth cavity is comparatively long, 3 head diameters, while in the other species it is shorter than two head widths; *2)* the bursa has only 8 pairs of papillae, i. e. the 2nd preanal pair, being always present in other species, is completely lacking here; *3)* the body is smaller (♀ to 0.7 mm) than in the other representatives of the genus (♀ 0.8 – 1.8 mm).

Hoplorhynchus gen. n.

Hoplolaimidae, Rotylenchinae. Body straight. Cuticle distinctly annulated. Lateral fields broad, each bearing six longitudinal furrows, without annulation. Head hemispherical, possessing fine transverse striae and a heavy cephalic framework. Amphids minute. Spear strong, with rounded basal knobs. Orifice of dorsal oesophageal gland close to spear base. Medial bulb with central valve, terminal bulb dorsally lobed. Female gonads paired, ovaries outstretched. Vulva without epiptygma. Tail cylindrical with rounded tip; annulation encircling tail terminus. Phasmids small, behind middle of tail. Male unknown.

Type and only species: *Hoplorhynchus riparius* sp. n.

On the basis of the head shape, the strong cephalic framework, the spear shape, the lobed oesophagus, the paired gonads and the conspicuous phasmids the new genus belongs to the family Hoplolaimidae, and, on the basis of the high head, the short oesophageal lobe and the small phasmids to the subfamily Rotylenchinae. It shows however three characteristics in which it differs from every other representative of the subfamily, and even of the family: *1)* the lateral fields bear not four but six incisures, *2)* the tail is comparatively long and cylindrical and *3)* the phasmids are located in the posterior half of the tail. In shape of the tail and structure of the lateral fields *Hoplorhynchus* gen. n. resembles the genera of the family Tylenchorhynchidae but in construction of the head and oesophagus it is a typical representative of the Hoplolaimidae. It is in many respects similar to *Rotylenchus* FILIPJEV, 1936 but differs from it by the three peculiarities mentioned above.

Hoplorhynchus riparius sp. n.

(Fig. 7A – D)

♀: L = 0.83 – 0.96 mm; a = 27 – 34; b = 4.5 – 5.0; c = 16 – 17; V = 57 – – 58%; c' = 2.4 – 2.7.

Body fairly plump, 24 – 31 μm wide in the middle, almost straight. Cuticle 1.2 – 1.5 μm thick, finely annulated; annules 1.5 – 1.9 μm wide on the mid-body. Lateral fields 8 – 9 μm wide, about 1/3 of body diameter, each with six longitudinal incisures but without transverse striae or annules.

Head hemispherical, 9.5 – 10 μm wide at base, bearing 5 – 6 thin annules; at posterior end of oesophagus body 2.6 – 2.8 times as wide as head. Cephalic framework well developed, strong, hoplolaimoid. Amphids minute, indistinct. Buccal spear fairly robust, 21 – 22 μm long, 1.1 – 1,3 times longer than head diameter. Metenchium 50 – 52% of spear length. Basal knobs rounded, about 5 μm wide. Orifice of dorsal oesophageal gland not far (1.5 times the knob width) from spear base.

Medial bulb of oesophagus strong, oval, with central valve. Posterior half of oesophagus consisting of a shorter isthmus and a longer glandular part; basal lobe overlapping the intestine dorsally; overlapping part 12 – 15 μm long. Glandular nuclei conspicuous. Excretory pore level with posterior bulb or situated somewhat before it. Oesophagus 182 – 190 μm long, anterior portion (from head to base of medial bulb) 46 – 48% of its length. Hemizonid and deirids 3 – 4 annules before excretory opening. Rectum somewhat shorter than anal body diameter.

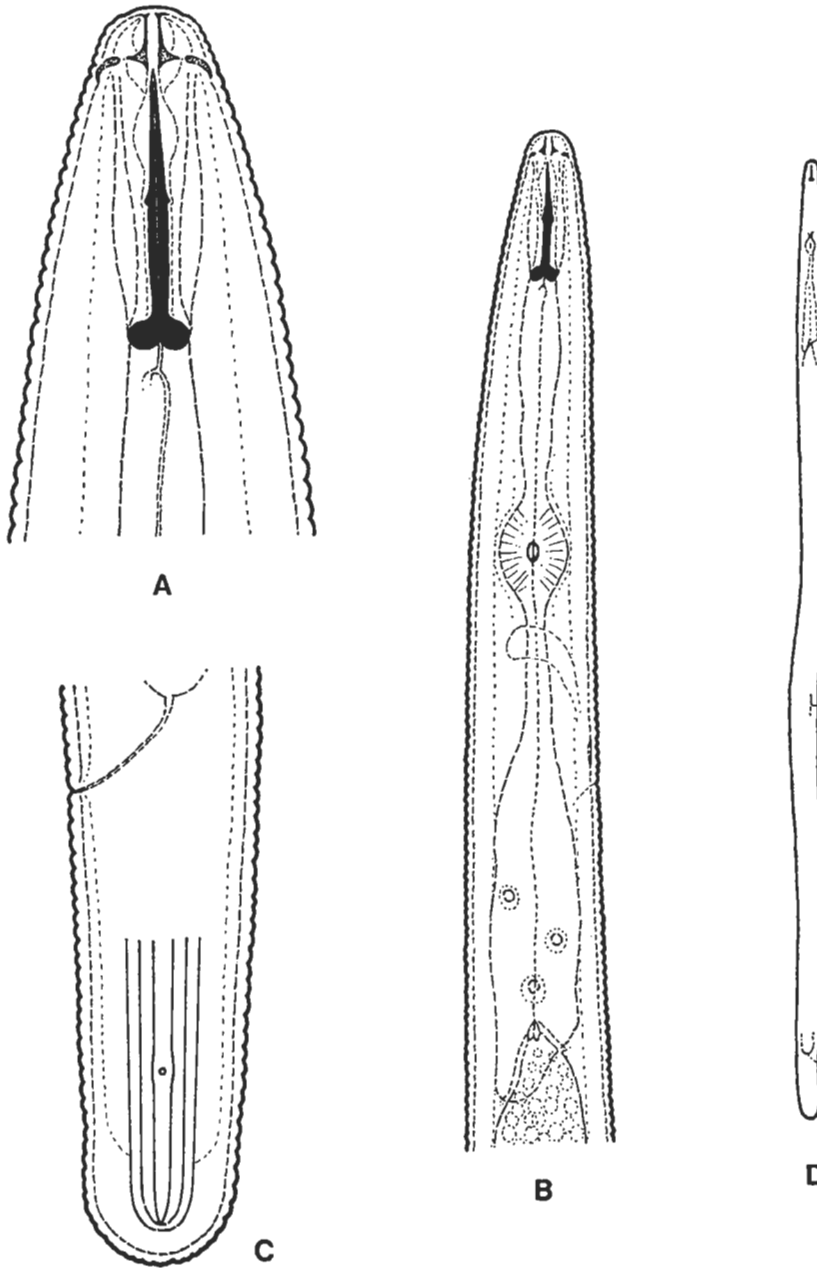

Fig. 7. *Hoplorhynchus riparius* gen. n., sp. n. A: anterior end (1600×); B: oesophageal region (600×); C: female tail (1200×); D: entire female

Distance between oesophagus end and vulva 1.6 – 1.8 times as long as oesophagus, that between vulva and anus 5.7 – 6.4 times as long as tail. Vulva transverse, vagina half as long as body width. Gonads paired, long. Spermatheca comparatively small, rounded, packed with very small (1 μm) globular spermatozoa.

Tail cylindrical, 48 – 57 μm long, 2.4 – 2.7 times as long as anal body diameter, bluntly rounded on its tip, with 32 – 37 cuticular annules. Annulation encircling tail terminus. Cuticle strikingly thickened (7 – 9 μm) on tail end. Phasmids small but well visible, in 59 – 64% of tail length.

Male was not found.

Holotype: Female on slide No. H – 9709.

Type locality: Sződliget, Hungary, sandy soil in the inundation area of the Danube River, February 1983.

Ogma danubiale sp. n.

(Fig. 8A – D)

♀: L = 0.47 – 0.49 mm; a = 10 – 11; b = 3.4 – 3.6; c = 11 – 13; V = 84 – – 86%.

Body robust, straight or slightly bent ventrally, 44 – 47 μm wide. Consisting of 58 – 60 annules. Annules strong, 8 – 9 μm broad in mid-body region, bearing triangular, uni-tipped scales or appendages arranged in 12 longitudinal rows on the greatest part of body. The number of scale rows decreases to 9 – 11 on the both ends of the body. Scales directed backward, their tips rounded; they are of the same shape on the whole body except the anterior end where they are shorter and more numerous, and the posterior end where they become narrower. Distance between two scales of the same mid-body annule 12 – 14 μm.

Head consisting of two annules directed outward to slightly forward, all other body rings are directed backward. First head annule 16 μm wide, the second one a little narrower. Third annule (the first somatic annule) 23 – 24 μm wide. Margins of cephalic annules weakly waved. Submedial lobes small.

Spear strong, 90 – 95 μm long, 5.5 – 6 times as long as head diameter, 19 – 21% of entire length of body. Metenchium 82 – 83% of spear length. Basal knobs 7 μm wide, in the 11th to 13th somatic annule. Medial bulb heavy, oval, as long as isthmus and basal bulb together, or a little longer.

Vulva located in the 46th to 48th annule counted from head end, or, in the 13th annule counted from tail end. Postvulval body region 66 – 76 μm long, conical. Anus rather indistinct, located 7 – 8 annules before tail tip.

Male and larval forms unknown.

Holotype: Female on slide No. 9713 in the collection of the author.

Type locality: Sződliget, Hungary, sandy soil in the inundation area of the Danube, February 1983.

There are two species of the genus *Ogma* SOUTHERN, 1914 which possess 12 longitudinal rows of cuticular scales: *O. zernovi* KIRJANOVA, 1948 and *O. squamiferum* (HEYNS, 1970) ANDRÁSSY, 1979. The new species can be distinguished from them in having fewer body annules (66 annules in *zernovi*, 66 – 71 annules in *squamiferum*), vulva located farer from the tail end (on the 9th annule in *zernovi*, and on the 8th to 10th annule in *squamiferum*), and postvulvar body

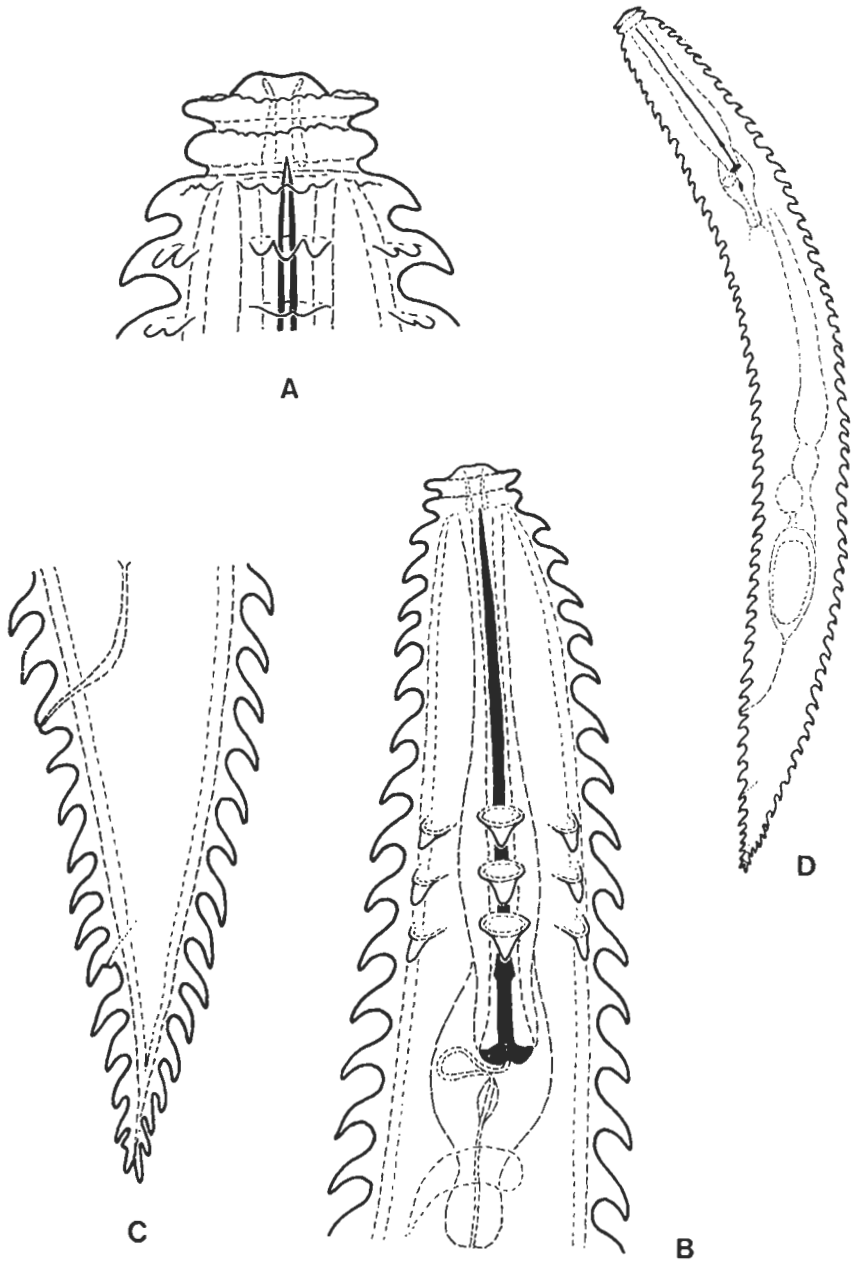

Fig. 8. *Ogma danubiale* sp. n. A: anterior end (1600×); B: oesophageal region (800×); C: posterior end of female (800×); D: entire female (250×)

region being more slender and regularly conical. Besides, it can be separated from *zernovi* by the broad cephalic annules, and from *squamiferum* by the smaller body (*squamiferum* 0.62 – 0.70 mm long), the head annules being almost equal in width, the shorter spear (102 – 108 μm in *squamiferum*), and the more sharply pointed cuticular scales.

Ogma castellanum sp. n.

(Fig. 9A – D)

♀: L = 0.43 – 0.46 mm; a = 8.8 – 9.6; b = 3.5 – 4.0; c = 12 – 14; V = = 84 – 87%.

Body robust, straight or a little bent ventrally, 46 – 49 μm wide (including scales), consisting of 60 – 66 annules. Annules 7.9 – 9 μm wide in mid-body region, bearing triangular or spine-shaped scales arranged in 8 longitudinal rows. Scales uni-tipped and directed backward; they become narrower on the posterior end of body. Distance between each scale of the same body annule 18 – 24 μm.

Head composed of two annules, of which the first annule is wider than the second. First annule 16 – 19 μm, second annule 14 – 15 μm, third annule (first somatic annule) 21 – 26 μm wide. Both head annules directed forward, the others backward. First cephalic annule having 25 – 30 fringes, second annule waved or finely tubercled on its margin. Submedial lobes distinct.

Spear 75 – 82 μm long, 4 – 5 times head diameter, 17 – 19% of body length. Metenchium 81 – 86% of spear length. Basal knobs 8 μm wide, pointed, located in the 11th to 13th somatic annule. Medial bulb oval, mostly longer than isthmus and basal bulb together. Excretory pore 128 – 161 μm posterior to head end, located on the 20th to 23rd annule, in 30 – 35% of body length, respectively. Oesophagus ending in the 17th to 20th somatic annule.

Vulva conical, closed, on the 50th to 53rd annule, or on the 12th to 15th annule from tail end. Postvulval body portion 56 – 75 μm long. Gonad unusually long, reaching to the oesophagus. Egg 56 × 74 μm long. Anus 8 – 9 annules before tail tip. Tail 33 – 36 μm long.

Juvenile (last stage): Rather different from female. Body consisting of 69 annules and bearing short scales arranged in 10 longitudinal rows. A very thin sheath surrounds the annules. Head annules equally wide; first head annule without fringes, only with fine tubercles. Spear 63 μm long.

Male not found.

Holotype: Female on slide No. H – 9885 in the collection of the author.

Type locality: Zemplén Mountains in Hungary, ruins of the castle Füzér, grassy soil on basalt rocks, April 1983.

Ogma castellanum sp. n. can easily be distinguished from every known species of the genus by its first cephalic annule ornamented with conspicuous fringes or appendages. Of the species having 8 longitudinal rows of scales only *O. chrisbarnardi* (Heyns, 1970) Andrássy, 1979 shows a similar head shape (the 1st head annule is distinctly wider than the 2nd). The new species differs from *chrisbarnardi* in having cephalic fringes, cuticular scales not becoming longer on posterior body end, a longer body and a longer spear, and in the vulva being situated farther from body end.

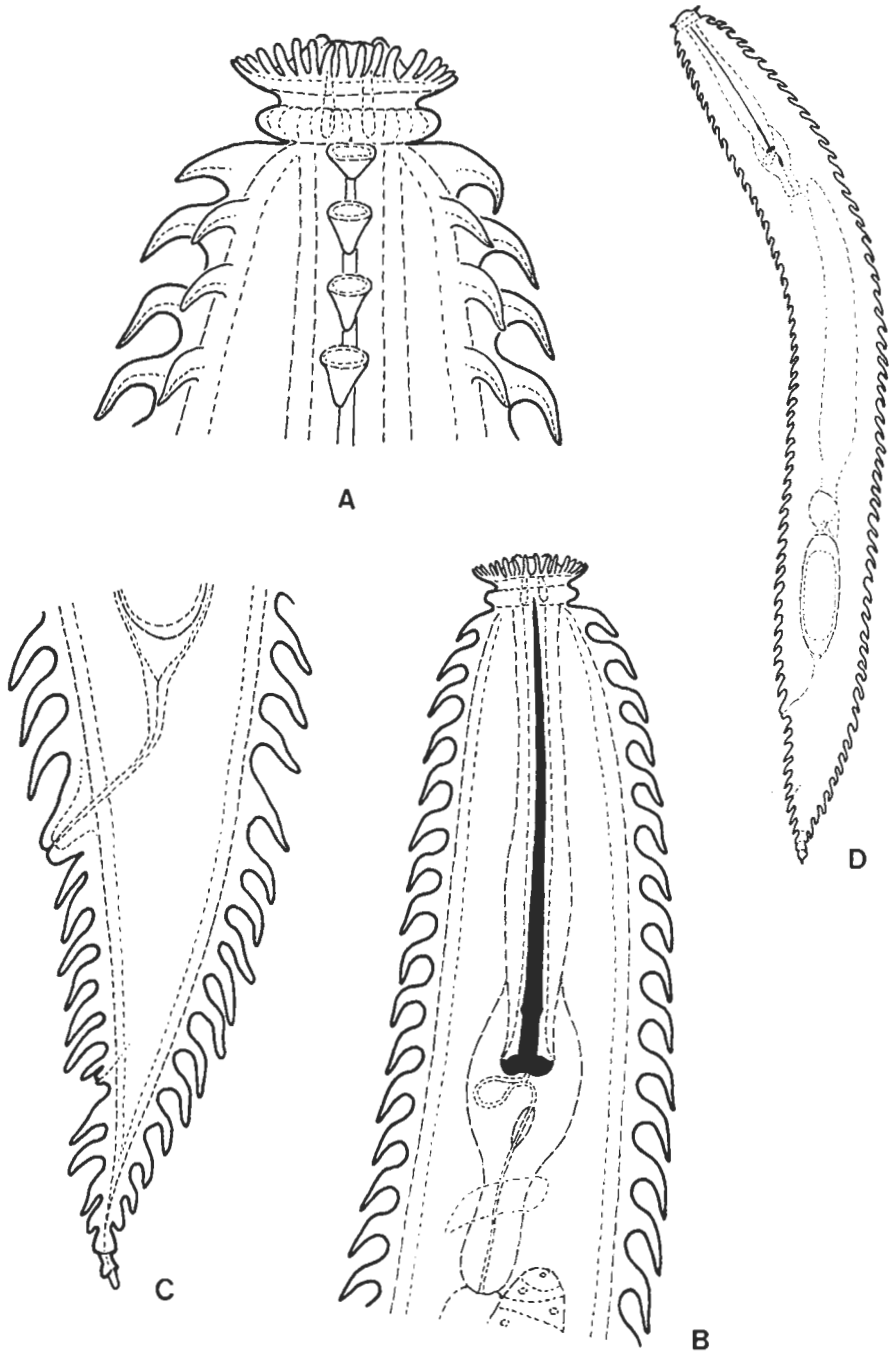

Fig. 9. *Ogma castellanum* sp. n. A: anterior end (1600×); B: oesophageal region (800×); C: posterior end of female (800×); D: entire female (250×)

Trischistoma gracile sp. n.

(Fig. 10A–G)

♀: L = 1.06–1.10 mm; a = 49–53; b = 4.9–5.3; c = 12.2–13.3; V = = 76–78%; c' = 5.0–5.5

Cuticle smooth, very thin. Head at level of the longer setae 10–11 μm wide; body at posterior end of oesophagus 1.6–1.7 times wider than head. Cephalic setae arranged in two circles: anterior ones 6 in number and 6–6.5 μm long (60% of body diameter), posterior ones 4 in number and 5–6 μm long, much thinner than the former ones. Distance between both circles of setae 6.5–7 μm. Amphids small, level with the buccal denticles.

Stoma quite narrow, with minute denticles. Oesophagus cylindrical, 205–216 μm long; distance between oesophagus and vulva 2.8–3.1 times as long as oesophagus. Intestine beginning with wide lumen. Rectum about as long as anal body diameter.

Vulva not cuticularized, vagina half as long as corresponding body diameter, encircled by ring-like muscles. Female gonad unpaired, prevulval. Distance vulva–anus 1.7–2.1 times as long as tail.

Tail 5–5.5 times anal body diameter, 82–86 μm long, very characteristic in shape: on the whole S-shaped, curved first dorsally then ventrally, with a small spinneret on its tip.

Male unknown.

Holotype: Female on slide No. H–9435 in the collection of the author.

Type locality: Fényesfürdő, Hungary, algae from a small pool, May, 1960.

How to distinguish the new species from the other ones – see below in the key.

In 1963 BRZESKI set up a genus, *Tripylina*, for the „*Tripyla*" species possessing unpaired gonads but he synonymized it in 1965 with the genus *Trischistoma* COBB, 1913. Having gone through the descriptions of the *Trischistoma* and *Tripylina* species and the slides presenting such mematodes in my collection as well, I am of the opinion that both genera are still valid.* The monodelphic tripylas may be separated by some characteristics into two definite groups as follows: *1)* in *Trischistoma* the cephalic setae (6) and subcephalic setae (4) are separated into two circles – in *Tripylina* they are all arranged in a single circle (6+4); *2)* in *Trischistoma* the vulva is located far back, at 73–83% of body length – in *Tripylina* it is not so far back, at 56–67% of body length; *3)* in *Trischistoma* the tail is curved dorsally or first dorsally then ventrally – in *Tripylina* it is curved ventrally or first ventrally then dorsally; *4)* in *Trischistoma* the body is more slender (a = 36–84) than in *Tripylina* (a = 18–36).

Below I give an emended definition of each of these genera and also keys to determining the species.

* Recently, THALOLIKHIN (1983) expressed the same opinion.

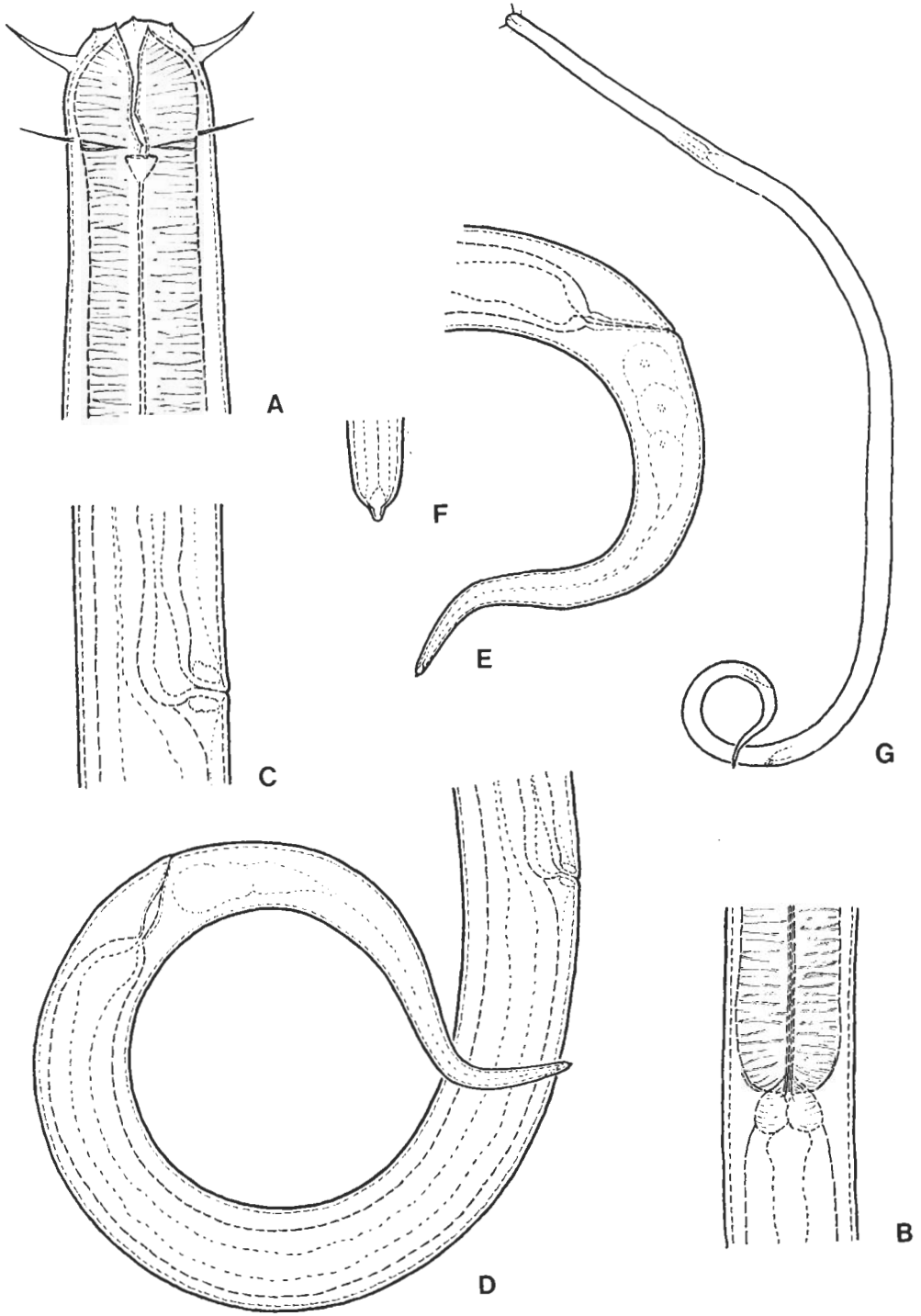

Fig. 10. *Trischistoma gracile* sp. n. A: anterior end (1600×); B: cardial region (1200×); C: vulva (1200×); D: posterior body of female (800×); E: tail of an other female (800×); F: tail tip; G: entire female (170×)

Trischistoma Cobb, 1913

Syn. *Tripyla* (*Trischistoma* Cobb, 1913) Micoletzky, 1925.

Tripylidae. Body 0.6–1.8 mm long (♀) and very slender. Cuticle smooth. Head with 6+4 setae arranged in two circles: 6 longer and stronger cephalic-, 4 shorter and thinner subcephalic setae. Buccal denticles minute. Female gonad prodelphic, with or without posterior uterine sac. Vulva located far back, at 73–83% of body length. Tail 4–6 times as long as anal body diameter, dorsally or first dorsally then ventrally twisted. Males rare or unknown.

Type-species: *Trischistoma pellucidum* Cobb, 1913.

Four species:

T. gracile sp. n.

T. monohystera (de Man, 1880) Schuurmans Stekhoven, 1951

Syn. *Tripyla monohystera* de Man, 1880

Tripyla (Trischistoma) monohystera de Man, 1880 (Micoletzky, 1925)

Tripylina monohystera (de Man, 1880) Brzeski, 1963

T. monohysteroides Altherr, 1963

T. pellucidum Cobb, 1913

Syn. *Tripyla pellucida* (Cobb, 1913) Micoletzky, 1922

Tripyla (Trischistoma) pellucida (Cobb, 1913) Micoletzky, 1922 (Micoletzky, 1925)

Note: The description of *Trischistoma conicaudatum* Schuurmans Stekhoven, 1951 was based on a single juvenile specimen with spiral (?) amphids: species inquirenda.

Key to the species of Trischistoma

1 Body 1 mm or shorter; tail strongly curved, forming a sharp S. 2
– Body 1.5 mm or longer; tail slightly curved, forming a weak S. 3

2 Bigger species, 1.0–1.1 mm; tail 5–5.5 times anal body diameter. – ♀: L = 1.06–1.10 mm; a = 49–53; b = 4.9–5.3; c = 12–13; V = 76–78%. ♂ unknown. (Hungary.) ..... **gracile** sp. n.

– Smaller species, 0.6–0.8 mm; tail 3.5–4 times anal body diameter. – ♀: L = 0.60–0.85 mm; a = 36–43; b = 4.4–4,6; c = 12–14; V = 73–80%. ♂ unknown. (Mexico, Jamaica, Paraguay.) ..... **pellucidum** Cobb

3 Subcephalic setae nearly as long as cephalic setae and lying farther from the latter than the length of a cephalic seta. – ♀: L = 1.4–1.8 mm; a = 45–70; b = 5.0–5.6; c = 12–15; V = 76–80%. ♂: L = 1.38 mm; a = 60; b = 5.4; c = 12. (Holland, both Germanies, Czechoslovakia, Hungary, Switzerland, France, Italy, Yugoslavia, Denmark, Sweden, Soviet Union, China, Sumatra, Congo Republic, United States, Mexico, Jamaica, Argentina.) ..... **monohystera** (de Man)

– Subcephalic setae distinctly shorter than cephalic setae and lying closer to the latter than the length of a cephalic seta. – ♀: L = 1.58–1.84 mm; a = = 69–84; b = 5.0–6.1; c = 13–15; V = 76–83%. ♂: L = 1.42–1.98 mm; a = 53–90; b = 4.0–6.9; c = 11–18. (Argentina.) ..... **monohysteroides** ALTHERR*

Tripylina BRZESKI, 1963

Syn. *Abunema* KHERA, 1971 (syn. n.).

Tripylidae. Body 0.8–1.7 mm long, moderately slender. Cuticle smooth. Both cephalic and subcephalic setae arranged in a single circle, the former much longer and stronger than the latter ones. Buccal denticles comparatively strong. Female gonad prodelphic, without posterior uterine sac. Vulva located in 56–67% of body length. Tail 2.5–4.5 times as long as anal body diameter, ventrally or first ventrally then dorsally curved. Males unknown.

Type-species: *Tripyla arenicola* DE MAN 1880 = *Tripylina arenicola* (DE MAN, 1880) BRZESKI, 1963.

Four species:

T. arenicola (DE MAN, 1880) BRZESKI, 1963
Syn. *Tripyla arenicola* DE MAN, 1880
Tripyla (Trischistoma) arenicola DE MAN. 1880 (SCHNEIDER, 1939)
Trischistoma arenicola (DE MAN, 1880) SCHUURMANS STEKHOVEN, 1951
Tripyla minor COBB, 1893
Abunema indicum KHERA, 1971

T. macroseta (VINCIGUERRA & LA FAUCI, 1978) THALOLIKHIN, 1983
Syn. *Trischistoma macroseta* VINCIGUERRA & LA FAUCI, 1978

T. sheri BRZESKI, 1963
Syn. *Trischistoma sheri* (BRZESKI, 1963) BRZESKI, 1965
Tripyla (Trischistoma) sheri (BRZESKI, 1963) KHERA, 1970
Trischistoma ursulae ARGO & HEYNS, 1973
Tripylina ursulae (ARGO & HEYNS, 1973) THALOLIKHIN, 1983

T. stramenti (YEATES, 1971) THALOLIKHIN, 1983
Syn. *Trischistoma stramenti* YEATES, 1971

Key to the species of Tripylina

1 Body 1.5–1.7 mm long; cephalic setae about as long as 40% of head diameter. – ♀: L = 1.49–1.69 mm; a = 26–30; b = 5.7–6.4; c = 14–19; V = 60–64%. ♂ unknown. (New Zealand.) ..... **stramenti** (YEATES)
– Body smaller than 1.5 mm; cephalic setae about as long as 60–70% of head diameter 2

* *T. monohysteroides* may be identical with *T. monohystera*.

2 Tail ventrally curved. – ♀: L = 0.78 – 1.30 mm; a = 22 – 36; b = 4.3 – 6.0; c = 11 – 27; V = 56 – 67%. ♂ unknown. (Poland, South Africa.) ..... **sheri** BRZESKI

– Tail S-shaped: first ventrally then dorsally curved. 3

3 Tip of tail strongly curved dorsally and also laterally twisted; body 0.8 – 1.0 mm long. – ♀: L = 0.80 – 0.94 mm; a = 20 – 24; b = 4.8 – 5.3; c = 12 – 13; V = 62 – 65%. ♂ unknown. (Italy.) ..... **macroseta** (VINCIGUERRA & LA FAUCI)

– Tip of tail slightly curved dorsally, not twisted laterally; body 1.0 – 1.4 mm. – ♀: L = 1.0 – 1.4 mm; a = 18 – 30; b = 5.3 – 6.4; c = 14 – 20; V = 62 – 67%. ♂ unknown. (Holland, Austria, Italy, Hungary, Soviet Union, India, Vietnam, Sumatra, Fiji, Canada, Mexico, Paraguay.) ... **arenicola** (DE MAN)

Aulolaimus autumnalis sp. n.

(Fig. 11A – G)

♀: L = 0.55 – 0.59 mm; a = 25 – 29; b = 5.0 – 5.5; c = 7.0 – 8.2; V = 53 – 57%; c' = 4.7 – 5.2.

♂: L = 0.59 mm; a = 30; b = 5.1; c = 8.4.

Cuticle about 1 μm wide on mid-body but 1.7 – 2 μm wide at level of the stoma, considerably thicker than the buccal tube; smooth. A very fine annulation occurring on the neck region only. Cuticle bearing about 50 fine, 0.9 – 1 μm wide longitudinal striae.

Head very small, 2 μm wide, laterally pointed, set off by constriction; body at posterior end of oesphagus about 10 times as wide as head. Amphids small, round, 1.5 – 2 cephalic diameters behind head. Buccal tube 68 – 70 μm long and only 1 μm wide, 60% of entire length of oesophagus. Basal bulb 46 – 48 μm long, 40% of oesophageal length, showing in its anterior part 1, in the posterior part 3 transverse wrinkles. Hemizonid small, level with anterior third of bulb. Cardia globular, set off. Rectum nearly as long as corresponding body width.

Distance between oesophagus and vulva 1.6 – 2 times as long as oesophagus, that between vulva and anus 2.3 – 2.7 times as long as tail, Vulva sunk, vulval „alae" (inner cuticularized vulval pieces) 12 – 14 μm wide. Female gonads paired. Egg 62×18 μm, 2.8 times longer than body diameter.

Tail conoid, with pointed tip, 72 – 83 μm long, 4.7 – 5.2 times as long as anal body diameter, its posterior portion devoid of body contents: "empty". Anterior lip of anus protruding.

Male tail 70 μm long, 4.4 times the length of anal body diameter, slightly bent ventrally, empty in its posterior part. Tip of tail pointed. Spicula 20 μm long, hemicircular in shape, in the anterior part somewhat bent dorsally. Gubernaculum with caudal process. Two large and flat preanal supplements located 26 and 35 μm from cloaca.

Holotype: Female on slide No. H – 9791 in the collection of the author.

Type locality: Budapest, Hungary, cemetery of Rákoskeresztur, wet brown sand under dried plant residues, November 1982.

The most important characters of *Aulolaimus autumnalis* sp. n. are the very small and separate head, the cuticular annulation on the neck region, the cons-

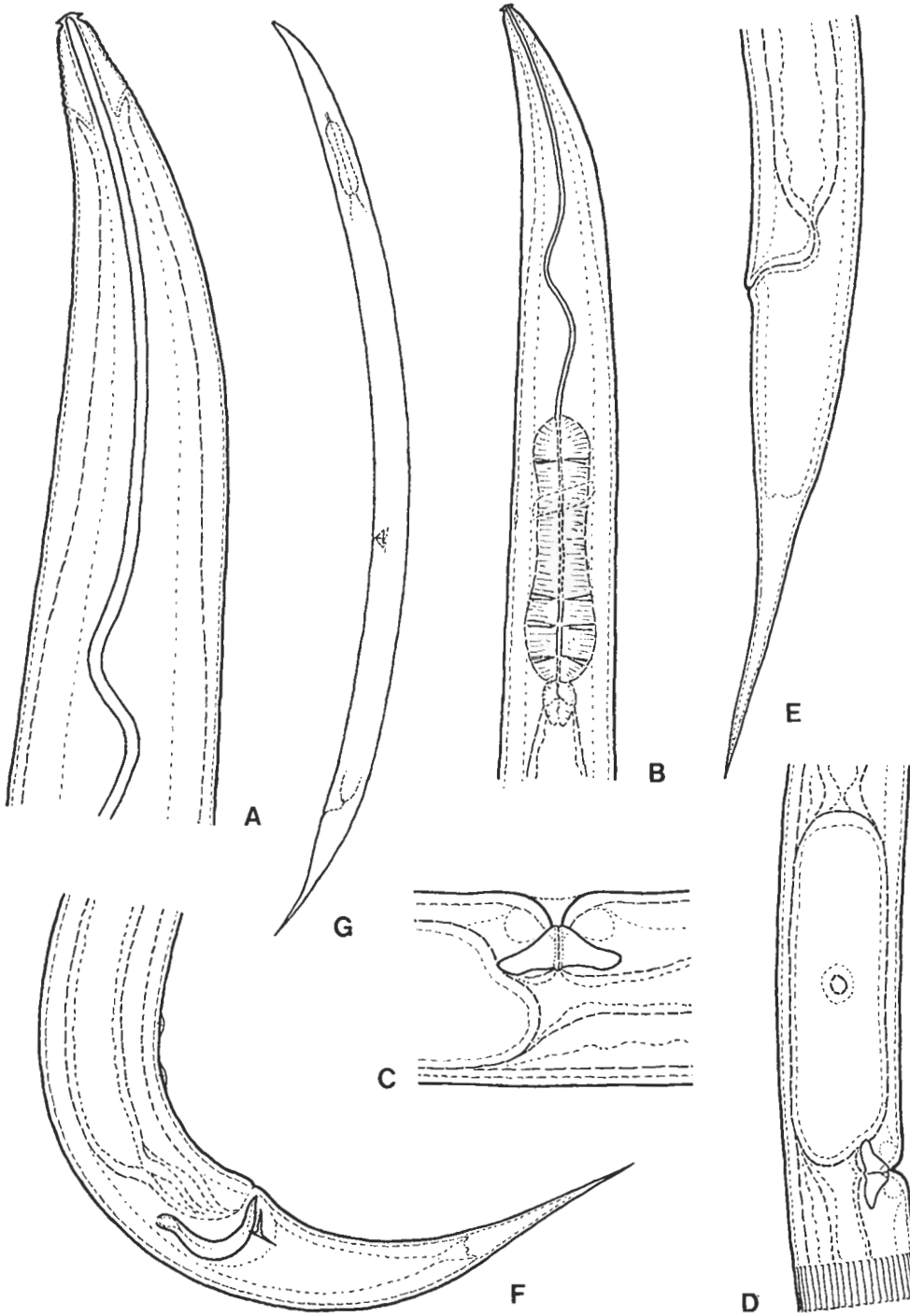

Fig. 11. *Aulolaimus autumnalis* sp. n. A: anterior end (1600×); B: oesophageal region (800×); C: vulva (1200×); D: vulval region (800×); E: female tail (800×); F: male tail (800×); G: entire female (240×)

picuously widened cuticle in the anterior body region, the shape of the vulval alae and the tail which has no body content in its posterior half. In the head shape the new species resembles *A. nannocephalus* ANDRÁSSY, 1972 but the body is smaller, the cuticle swollen on the neck, the tail shorter and empty in the hind part, and the vulva located more back. In number of longitudinal striae, and in shape and length of tail. *A. autumnalis* sp. n. is similar to *A. oxycephalus* DE MAN, 1880, *A. meyli* LOOF, 1961 and *A. mouhitius* (YEATES, 1967) JAIRAJPURI & HOOPER, 1968, it can be distinguished, however, from all of them by the swollen cuticle of the postcephalic region and the shape of the vulval alae.

Key to the species of Aulolaimus

1 Cuticle provided with 16–20 longitudinal ridges 2
– Cuticle provided with 30 or more longitudinal ridges or striae 3

2 Tail filiform, about 15 times anal body diameter, body contents extending into the anterior third or half of tail. – ♀: L = 0.68–0.72 mm; a = 34–36; b = 6.2–6.4; c = 3.3–3.5; V = ? ♂: L = 0.68 mm; a = 35; b = 6.3; c = 3.9. (Bangladesh.) .....
filiformis (TIMM, 1957) JAIRAJPURI & HOOPER, 1968
– Tail conoid, about 6 times anal body diameter, body contents extending almost to tail tip. – ♀: L = 0.71–0.74 mm; a = 26–29; b = 6.2–6.4; c = 6.4–7.2; V = 54–55%. ♂: L = 0.54 mm; a = 28; b = 7.6; c = 5.3; PO = 3. (Italy, Soviet Union [Georgia], Mongolia.) .....
costatus ANDRÁSSY, 1967

3 Tail 10–12 anal body diameters long; distance between vulva and anus 1.2–1.5 times as long as tail; body contents extending to tail tip 4
– Tail 5–8 (exceptionally to 10) anal body diameters long; distance between vulva and anus 2–2.7 times as long as tail; body contents leaving posterior part of tail free. 5

4 Cuticle with about 50 longitudinal striae; head sharply offset. – ♀: L = = 0.77–0.83 mm; a = 31–35; b = 6–7; c = 4.5–4.6; V = 44–48%. ♂ unknown. (Hungary, Soviet Union [Georgia]) .....
nannocephalus ANDRÁSSY, 1972
– Cuticle with 34–40 longitudinal striae; head not set off sharply. – ♀: L = 0.87–0.94 mm; a = 25–28; b = 6.0–7.1; c = 4.5–5.2; V = 45–48%. ♂ unknown. (Soviet Union [Georgia]). .....
andrassyi ELIAVA & ELIASHVILI, 1973

5 Longitudinal striae about 30. – ♀: L = 0.56–0.66 mm; a = 27–29; b = = 3.6–4.0; c = 7.0–8.2; V = 54–60%. ♂ unknown. (Hungary.) .....
bathybius ANDRÁSSY, 1972
– Longitudinal striae about 50 6

6 Body 0.5 mm long; head set off 7
– Body longer, up to 1 mm; head not set off 8

7 Cuticle, level with buccal tube, conspicuously swollen, much thicker than the latter; head very small, 2 μm wide. ♀: L = 0.55–0.59 mm; a = 25–29; b = 5.0–5.5; c = 7.0–8.2; V = 53–57%. ♂: L = 0.59 mm; a = 30; b = 5.1; c = 8.4; PO = 2. (Hungary.) ..... **autumnalis** sp. n.

– Cuticle, level with buccal tube not swollen, thinner than the latter; head wider. – ♀: L = 0.45–0.57 mm; a = 23–27; b = 4.1–6.7; c = 4.6–7.4; V = 52–56%. ♀: L = 0.44–0.57 mm; a = 22–26; b = 4.8–6.8; c = = 7.0–9.0; PO = 2–3. (Holland, Italy.) ..... **meyli** Loof, 1961

8 Vulva in the middle region of body; neck distinctly annulated. – ♀: L = = 0.70–1.04 mm; a = 31–38; b = 6.7–9.0; c = 5.5–9.9; V = 44–52%. ♂: L = 0.73–1.06 mm; a = 33–45; b = 6.6–8.6; c = 8.5–11.2; PO = = 2–3. (New Zealand, Antartica.) ..... **mowhitius** (Yeates, 1967) Jairajpuri & Hooper, 1968

– Vulva more back; neck not or inconspicuously annulated. – ♀: L = 0.62– –0.80 mm; a = 25–30; b = 4.9–5.5; c = 7.8–9.0; V = 56–58%. ♂: L = 0.73–0.80 mm; a = 27–30; b = 5.0–5.5; c = 11–12; PO = 3. (Holland, Switzerland, Hungary, England, Soviet Union [Moldavia, Estonia, Georgia], Ghana, Brasil, Chile.) ..... **oxycephalus** de Man, 1880

Labronema pusillum sp. n.
(Fig. 12A–E)

♂: L = 1.03–1.08 mm; a = 27–31; b = 4.1–4.3; c = 46–48; c' = 1.

Cuticle 1.5–1.8 μm thick on mid-body, extremely finely striated, composed of two distinct layers. Head sharply set off, 15–16 μm wide; body at posterior end of oesophagus 2.3–2.4 times as wide as head. Lip region consisting of the usual six lips and six smaller inner liplets; the latter are sunk in the oral field and occupy about 1/3 of the entire width of the lip region. Amphids chaliciform, nearly half as wide as corresponding body diameter.

Spear 17–18 μm long, 1.2–1.3 times longer than head diameter, somewhat wider than cuticle at the same level, its dorsal wall distinctly longer than the ventral one. Orifice 1/3 of spear length. Guiding ring double but thin. Oesophagus strongly muscular, 252–257 μm long, expanding in 60–62% of its length. Cardia composed of a thin disc and a tongue-shaped process. Prerectum long, beginning a little anterior to the supplements, about 6 times the anal body diameter.

Testes two, spermatozoa oval, 5–6 μm long. Spicula dorylaimoid, 38–41 μm long. Preanal copulatory supplements 9–11, very flat, contiguous; row of supplements 76–82 μm, beginning at about one spiculum length before the spicula.

Tail 22–23 μm long, as long as anal diameter, conoid-rounded, somewhat bent ventrally, with 5 pairs of small papillae.

Female not found.

Holotype: Male on slide No. H–7858 in the collection of the author.

Type locality: Veresegyház, Hungary, grassy soil near a lake, May 1972.

The new species is close to *Labronema mauritiense* Williams, 1959 – both are small and have a similar shape of tail – but differs from it in the following characteristics: body shorter (♂ of *mauritiense* 1.5 mm), spear similarly shorter (*mauritiense:* 21.5–23.5 μm), oesophagus expanding behind the middle, genital supplements fewer (*mauritiense:* 21–24) and located more forward. *Labronema pusillum* sp. n. is one of the smallest representatives of the genus.

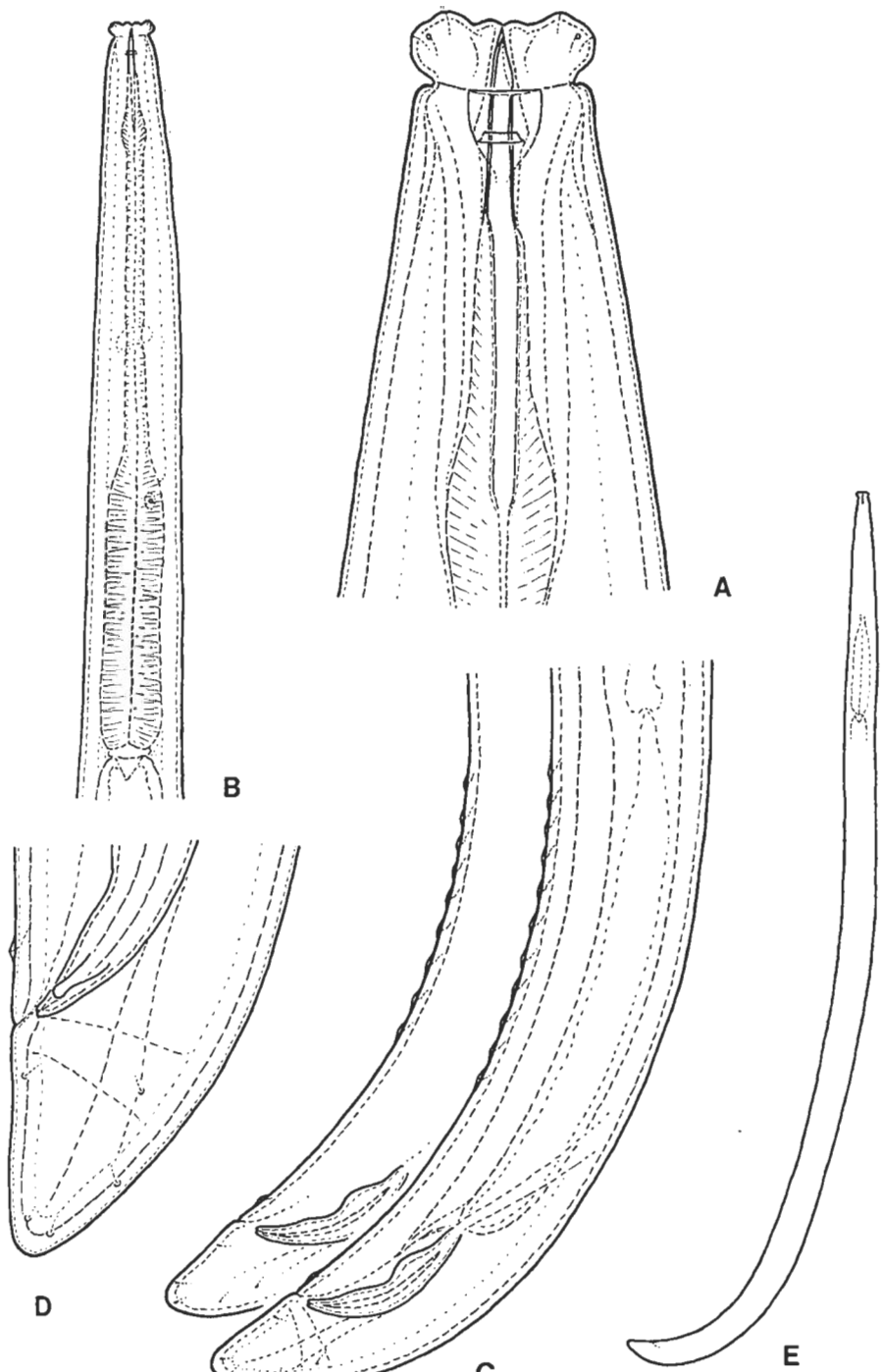

Fig. 12. *Labronema pusillum* sp. n. A: anterior end (1600×); B: oesophageal region (380×); C: posterior ends of males (570×); D: male tail (1200×); E: entire male (120×)

Qudsianematidae. Body 1.2 to 2.8 mm long. Cuticle finely striated radially. Head strongly offset, somewhat discolaimoid, oral field plate-like, sunk, with well separated inner liplets; field of inner liplets wider than one external lip. Spear very slender, about 15 times longer than wide, longer than one head diameter, with large orifice. Guiding ring double. Oesophagus strongly muscular, expanding near the middle. Female gonads paired. Preanal copulatory supplements 11 to 21, close, very low. Tail of both sexes similar, as long as or a little longer than anal body diameter.

Type-species: *Labronemella labiata* sp. n.

The genus *Labronemella* is very close to *Labronema* THORNE, 1939 but the head is *Discolaimus*-like, with deeply sunk oral field and well separated inner liplets, the spear very slender and comparatively long, and the guiding ring double.

Aquatic, semi-aquatic or terrestrial animals.

Five species may be ordered here:

L. andrassyi (BAQRI & KHERA, 1975) comb. n.
Syn. *Discolaimium andrassyi* BAQRI & KHERA, 1975

L. labiata sp. n.

L. loofi (AHMAD & JAIRAJPURI, 1983) comb. n.
Syn. *Labronema loofi* AHMAD & JAIRAJPURI, 1983

L. paesleri (PAETZOLD, 1955) comb. n.
Syn. *Labronema paesleri* PAETZOLD, 1955

L. ruttneri (SCHNEIDER, 1937) comb. n.
Syn. *Dorylaimus (Discolaimus) ruttneri* SCHNEIDER, 1937
Labronema ruttneri (SCHNEIDER, 1937) THORNE, 1939

Key to the species of Labronemella

1 Body length under 2 mm; spicula about 50 μm long. 2
– Body length over 2 mm; spicula generally longer than 50 μm 3

2 Smaller species, 1.2–1.5 mm; prerectum of male beginning within the row of supplements. – ♀: L = 1.24 mm; a = 30; b = 3.7; c = 66; V = 51.5%. ♂: L = 1.51 mm; a = 35; b = 3.3; c = 69; spear = 22 μm: PO = 15. (Sumatra.) ..... **ruttneri** (SCHNEIRER)
– Larger species, 1.5–1.9 mm; prerectum of male beginning well anterior to the supplements. – ♀: L = 1.50–1.86 mm; a = 30–33; b = 3.9–4.0; c = 79–89; V = 54–56%; spear = 23–26 μm. ♂: L = 1.74 mm; a = 30; b = 4.0; c = 92; PO = 14. (India). ..... **andrassyi** (BAQRI & KHERA)

3 Field of inner liplets about as wide as one outer lip; spear 21–24 μm long. – ♀: L = 2.04–2.80 mm; a = 33–39; b = 4.2–5.1; c = 76–112; V = = 47–52%; spear = 21–24 μm. ♂: L = 2.10–2.60 mm; a = 36–44; b = 4.1–5.0; c = 71–93; PO = 19–21. (Germany.) ..... **paesleri** (PAETZOLD)
– Field of inner liplets nearly twice as wide as one outer lip; spear 27–31 μm long. 4

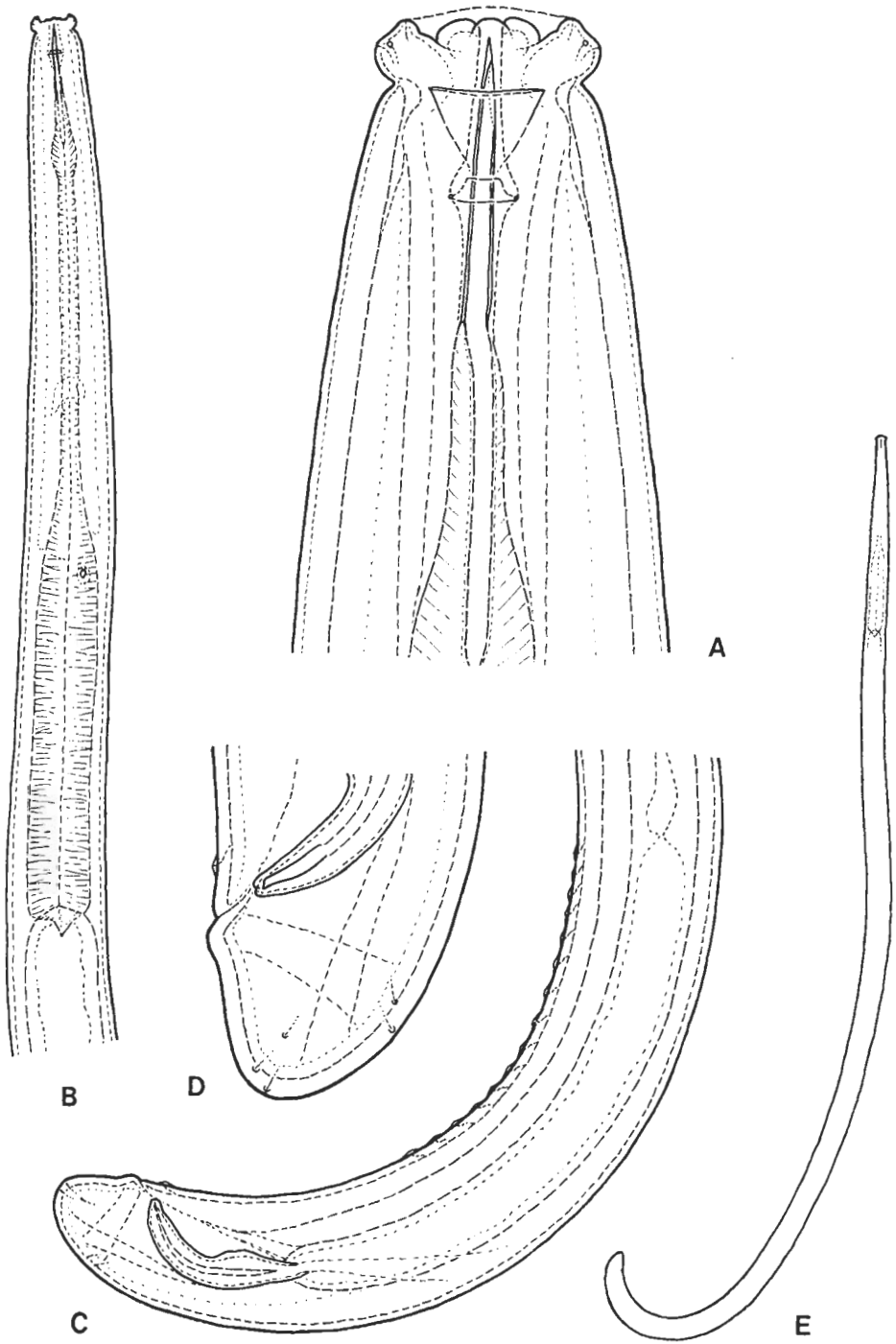

Fig. 13. *Labronemella labiata* gen. n., sp. n. A: anterior end (1200×); B: oesophageal region (270×); C: posterior body of male (380×); D: male tail (800×); E: entire male (60×)

4 Orifice 1/4 of spear length; spicula plump. – ♀: L = 2.27–2.55 mm; a = = 41–44; b = 4.1–4.7; c = 86–106; V = 52–57%; spear = 27–29 μm. ♂: L = 2.06–2.22 mm; a = 36–40; b = 4.2–4.5; c = 84–91; PO = = 11–19. (India.) ..... **loofi** (AHMAD & JAIRAJPURI)

– Orifice 1/3 of spear length; spicula comparatively slender. – ♀ unknown. ♂: L = 2.54 mm; a = 48; b = 5.4; c = 84; PO = 15. (Hungary.) ..... **labiata** sp. n.

Labronemella labiata sp. n.

(Fig. 13A–E)

♂: L = 2.54 mm; a = 48; b = 5.4; c = 84; c' = 0.8.

Cuticle not annulated but finely radially striated, 3.5 μm thick on mid-body. Head set off by constriction, 23 μm wide and 7 μm high; body at posterior end of oesophagus 2.3 times as wide as head. Outer lips discolaimoid or ear-like. Oral field deeply sunk in head contour, with six small rounded liplets. Field of inner liplets 11 μm wide, half as wide as entire head diameter and 3 μm high. Amphids chaliciform, half as wide as corresponding body diameter.

Spear 31 μm long, 1.3 times head diameter, 2 μm thick in the middle part, i. e. about 15 times as long as thick, somewhat thinner than cuticle at the same level. Guiding ring double, around the middle of spear. Orifice 1/3 of spear length. Oesophagus uniformly muscular, expanding a little behind the middle, its total length is 460 μm. Prerectum 235 μm long, 6 times as long as anal body diameter.

Spermatozoa spindle-like, 8–9 μm long. Testes two. Spicula 65 μm long, dorylaimoid, rather weakly cuticularized. In addition to the adanal pair, 15 preanal supplementary organs are present; they are flat, almost contiguous, 140 μm long in a row. Tail 30 μm long, only 0.8 anal body diameter, broadly rounded, with 5 pairs of small papillae.

Female not found.

Holotype: Male on slide No. H–7870 in the collection of the author.

Type locality: Veresegyház, Hungary, sandy soil around grass roots, May 1972.

The distinguishing characteristics between *Labronemella labiata* sp. n. and the other four species of the genus are to be found in the key.

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