

NEW SPECIES OF THE GENERA *XIPHINEMA* AND *LONGIDORUS*
(NEMATODA, LONGIDORIDAE) FROM THE WEST CAUCASUS

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Three species of the family Longidoridae, including two new species, were found in the vicinities of Sukhumi (Abkhazian Autonomous republic) in 1987. Nematodes were fixed in TAF under gentle heating, then mounted in glycerol. The measurements and drawings were performed using glycerol slides. Holotype and paratypes were deposited in the Helminthological Laboratory of the USSR Academy of Sciences (Moscow).

Xiphinema riparia Chizhov, Subbotin, Romanenko & Kruchina n.sp.
(Fig. 1)

Materiel: Holotype, female, L = 2.89 mm; a = 49.1; b = 6.7; c = 99.2; c' = 0.7; V = 46; spear = 208 (128+80) μ m, body width = 59 μ m; tail length = 29 μ m; anal diameter = 43 μ m. Paratypes: 13 females: L = 2.7-3.24 (3.0) mm; a = 45.1-68.4 (54.6); b = 6.1-7.4 (6.6); c = 82.5-113.4 (95.6); c' = 0.6-0.8 (0.7); V = 43-47 (45); spear = 208-228 (213) μ m; odontostyle = 128-140 (131) μ m; odontophore = 78-88 (82) μ m; body width = 42-69 (55); tail length = 28-37 (32); anal diameter = 40-51 (45); hyaline part of the tail length = 7.2-11.5; diameter at hyaline part level = 20-32. 9 males: L = 2.75-3.21 (2.94) mm; a = 49.5-66.5 (57.6); b = 4.7-8.7 (6.5); c = 75-102 (88); c' = 0.6-0.9 (0.8); spear = 200-217 (210); odontostyle = 122-134 (130); odontophore = 76-86 (80); spicules = 59-69 (64); body width = 42-63 (52); tail length = 28-40 (34); anal diameter = 40-45 (43).

Type locality: deciduous forest in Sukhumi suburbs, in rhizosphere of trees; Abkhazian republic.

Type plant host: fig tree (*Ficus carica* L.)

Description: Habitus C-shaped in both sexes, but in males the tail region is more strongly curved. Cuticle with longitudinal striation, less distinct in tail region. Lip region slightly rounded, 14 μ m wide, slightly set off from the body. Cuticle 3-4 μ m thick at mid-body. Guiding ring 3.5-4 μ m in diameter at 114-131 μ m from anterior end. Nerve ring 230-253 μ m from anterior end. Esophagus 400-480 μ m long in females, 340-600 μ m in males. Muscular part of esophagus 100-110 x 23-26 μ m. Cardia elliptical. Prerectum 400-680 μ m long, rectum 28-34 μ m long. Tail rounded or hemispherical, sometimes with short digitiform terminal peg. Caudal papillae not observed.

Female: Amphidelphic with equal branches of gonads. Well differentiated oviduct. Postovarial foramen broadens toward the oviduct, which also swells near junction. Narrow uterus with 6-8 rows of 3-5 μ m high spikes on inner surface. "Z"-organ or pseudo-organ absent. Eggs in uterus=200-265 x 45-52 μ m.

Male: Testis length 1.73-2.24 mm. Four or five supplements: one preanal and 3-4 preanal with equal gaps between them. Sex ratio approximately 1:1.

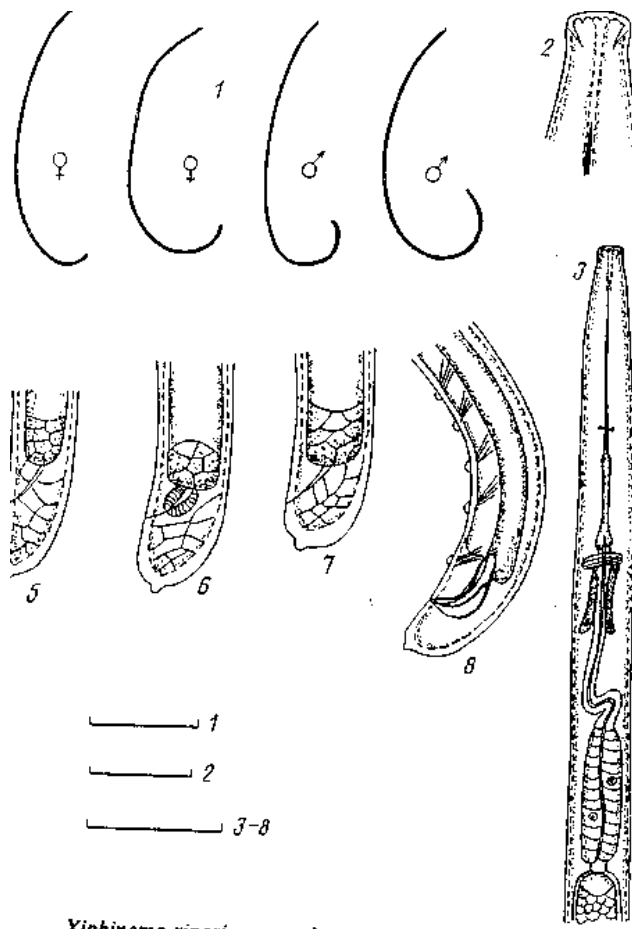


Fig.1. *Xiphinema riparia* n. sp. 1 - body shape variations; 2 - head end; 3 - anterior end; 4 - female gonad; 5-7 - tail shape variations (3d and 4th instar larvae and female); 8 - male posterior end; Scale: 1 - 1000 μ m; 2 - 20 μ m; 3 -8 - 100 μ m.

Differential diagnosis: This new species is similar to *X. vuittenesi* Luc, Lima, Weischer et Fleg, 1964 and *X. thorneanum* Luc, Loof et Coomans, 1986, but can be distinguished from the former by the presence of spikes on inner uterus surface, and from the latter by the longer odontostyle (128-140 vs. 89-105 μ m), as also by c' ratio (0.6-0.8 vs. 0.9-1.1) and absence of "Z" pseudo-organ.

Longidorus lignosus Chizhov, Subbotin, Romanenko et Kruchina sp. n.

(Fig.2).

Material: Holotype female, L = 4.75 mm; a = 59; b = 9.3; c = 128; c' = 0.7; V = 53; spear = 177 (123+54) μ m; body width = 80 μ m; tail length = 37 μ m; anal diameter = 57 μ m. Paratypes - 15 females: L = 4.11-5.69 (4.8) mm; a = 48-72 (59); b = 8.1-11.4 (9.3); c = 96-142 (127); c' = 0.6-0.8 (0.7); V = 50-54 (52); spear = 157-177 (167) μ m; odontostyle = 103-123 (114) μ m; odontophore = 48-60 (53) μ m; body width = 68-91 (81) μ m; tail length = 34-43 (38) μ m; anal diameter = 51-60 (57) μ m; hyaline part of the

tail length = 11-17 μm ; diameter on the hyaline part level = 37-40 μm . 13 males: L = 3.85-5.3 (4.72) mm; a = 52-74 (65); b = 7.6-11.5 (9.6); c = 96-133 (111); c' = 0.6-0.8 (0.7); spear = 160-177 (169) μm ; odontostyle = 108-123 (118) μm ; odontophore = 48-50 (51) μm ; spicules = 70-88 (74) μm , in one specimen spicules are of 57 μm length; body width = 62-83 (73) μm ; tail length = 37-76 (43) μm , anal diameter = 50-60 (56) μm .

Type locality: deciduous forest in Sukhumi suburbs, in rhizosphere of trees, Abkhazian republic.

Type plant host: fig (*Ficus carica L.*), also in rhizosphere of rhododendron (*Rhododendron sp.*) and Georgian oak (*Quercus iberica Stev.*).

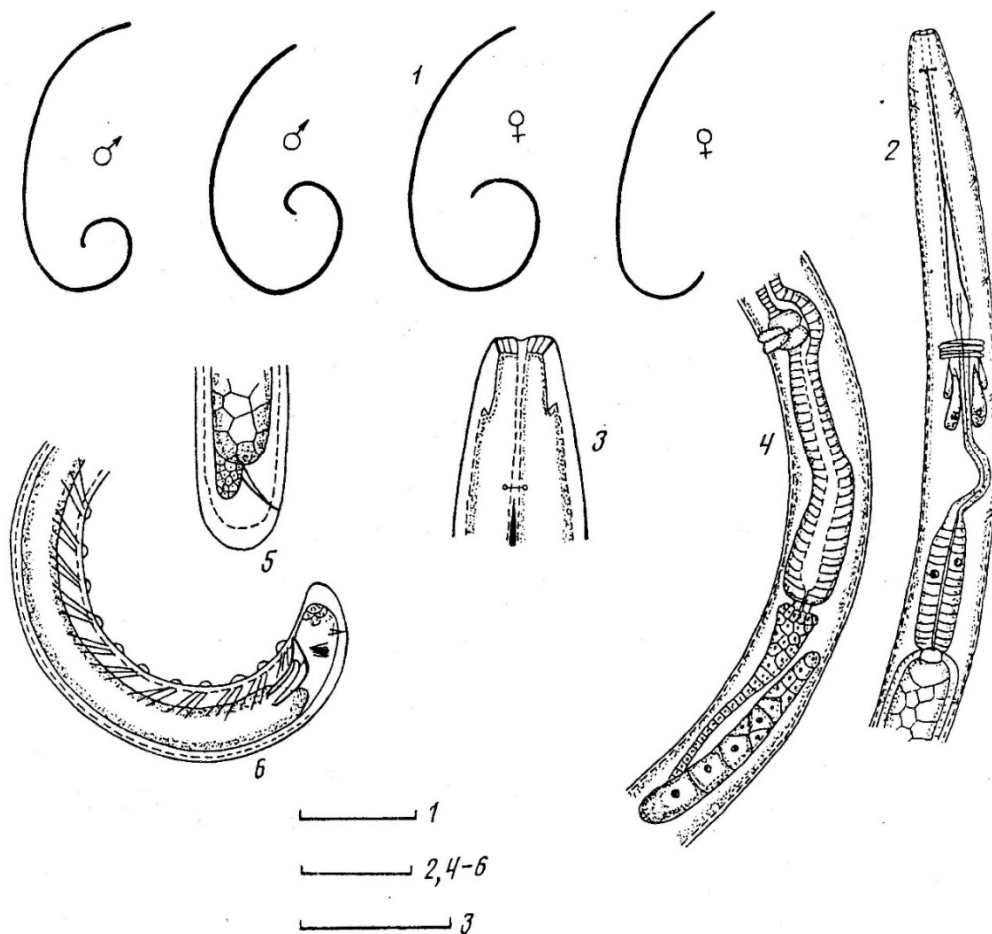


Fig. 2. *Longidorus lignosus* n. sp.

1 - body shape variations; 2 - anterior end; 3 - head end; 4 - female gonad; 5 - female tail shape; 6 - male posterior end. Scale – 1: 1200 μm ; 2,4,5,6: 80 μm ; 3: 35 μm .

Description. Body habitus from C-shaped to helicoid in both sexes after the fixation under gentle heating. Cuticle with longitudinal striation. Cuticle 5-6 μm thick at mid-body. Amphids pocket-like, with the pouch length equal to the width of lip region. Lip region flattened, 16-18 μm wide, conoid, continuous with the body. Four pairs of cervical pores situated close to guiding ring level, ventral pores along the entire esophagus region. Nerve ring 12-14 μm wide, at 237-254 μm from anterior end. Esophagus 400-560 μm long, with dimensions of

muscular part 115-130 x 25-32 μm . Cardia elliptical. Prerectum with caecum, 240-570 μm long, penetrate the space behind the rectum base level, rectum 45-57 μm long.

Female: Amphidelphic, with nearly equal branches 600-800 μm in length. Oviduct well differentiated; postovarial foramen broadens toward the uterus and connected with the latter through short and narrow sphincter. Eggs – 172 x 57 μm in uteri. Tail hemispherical - rounded dorsally and only slightly arcuate ventrally.

Male: Paired testes, of equal length=2.54-3.43 mm. From 10 to 12 supplementary organs. Tail rounded, conoid, ventrally curved. Only one dorsoventral papilla is distinct.

Differential diagnosis: The new species is close to *L. macrostoma* Hooper, 1961 in the lip region structure but differs from it in shorter length (4.11-5.69 vs. 7.9-11.9 mm), and less slender body ("a" ratio 48-72 vs. 77-142), and also by "c" ratio value (96-142 vs. 148-262) and position of guiding ring (28-35 vs. 37-48 μm from the anterior end). By its tail shape and "a" ratio value, *L. lignosus* sp. n. resembles *L. taniwha* Clark, 1963 but can be distinguished by the longer spear (157-177 vs. 111-117 μm), "c" ratio value (96-142 vs. 149-163), and also head end shape. In the shape of head end, and in the values of "a", "b", "c", "c'" and V ratios *L. lignosus* sp. n. is close to *L. jonesi* Siddiqi, 1962 but can be differentiated from the latter by the longer body (4.11-5.69 vs. 3.17-3.8 mm), "c" ratio value (96-142 vs. 140-185), spear length (157-177 vs. 107-120 μm) and by the position of guiding ring (28-35 vs. 57-68 μm from anterior end).

Summary

In the West Caucasus near Sukhumi two nematode species from the family Longidoridae, *Xiphinema riparia* n. sp. and *Longidorus lignosus* n. sp., were found in mixed forest rhizosphere. *X. riparia* differs from *X. vuittenezi* by presence of spines in the uterus, from *X. thorneanum* by a larger odontostyle, lower c' ratio and absence of "Z" pseudo-organ. *L. lignosus* differs from *L. macrosoma* by a shorter body, and lower ratios a and c; from *L. taniwha* by a longer stylet and lower c ratio; and from *L. jonesi* by a longer body and lower ratio c.