

PARASITIC NEMATODES OF THE FAMILY LONGIDORIDAE (THORNE, 1935)
MEYL, 1961, ON CURRANT AND RASPBERRY

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Ectoparasitic nematodes belonging to the genera *Longidorus* Micoletzky, 1922, and *Xiphinema* Cobb, 1913, are widely distributed in berry plantations in central, southern and western regions of the USSR. In a large number of plantations they cause a reduction in the growth and development of the plants, and in individual cases, they actually cause plant death. Fundamental damage is caused by the capacity of some species in these genera such as *X. index* Thorne & Allen, 1950, *X. diversicaudatum* (Micoletzky, 1927) Thorne, 1939, *L. attenuatus* Hooper, 1961, *L. elongatus* (de Man, 1876) Thorne & Swanger, 1936, etc., to transmit virus diseases of plants.

During 1980 we conducted a study of nematodes associated with berry bushes on Vazrob Mountain Botanical Station (Kondar district, south slope of mount Gissarskiy, Tadzhikistan). *X. index* was found associated with diseased currant bushes and *L. tardicauda* Merzeevskaya, 1951, was found associated with raspberries. In 1981-1982, on the experimental agriculture of the Rossoshanski fruit-berry experimental station (Voronezh province), K.V. Metlitskaya discovered *L. attenuatus* and *X. brevicolle* Lordello & da Costa, 1961, on currant, and, on raspberry, *X. diversicaudatum* and *Longidorus olegi* sp. nov., a description of that appears below.

Having compared the specific population structures of the longidorids that were discovered, we also recorded the soil types and climatic conditions pertaining in the areas from which the nematodes were recovered. *X. index* and *L. tardicauda* were recorded in Tadzhikistan, an area with a tropical climate, in grey earth requiring irrigation and in brown earth, whereas *X. brevicolle*, *X. diversicaudatum*, *L. attenuatus* and *L. olegi* sp. nov. were recorded in RSFSR, an area with a temperate and cool climate, in black earth with a larger than average humus content.

Longidorus olegi Kankina & Metlitskaya sp. nov.

Females (n = 2). L = 7.85-8.98 (8.41) mm; a = 107.9-119.2 (113.5); b = 15.1-18.6 (16.8); c = 163.6-177.3 (170.4); c' = 0.86-0.88 (0.87); V = 51.3-54.0% (52.6%), stylet 163.2-168.6 (165.9) μ m.

Males (n = 3). L = 6.80-8.17 (7.38) mm; a = 107.0-118.6 (111.3); b = 13.6-21.6 (16.7); c = 142.9-145.4 (144.4); c' = 0.9-1.0 (0.9); T = 32.8-42.7% (38.4%), stylet 162.4-168.0 (164.5) μ m, spicules 62.4-73.2 (66.2) μ m.

Holotype female: L = 8.98 mm; a = 119.2; b = 18.6; c = 177.3; c' = 0.88; V = 51.3%; stylet = 168.6 μ m. Body elongated, more tapered towards the anterior end, and assumes the shape of the letter "C" after application of a 4%-5% solution of hot formalin. Head rounded, not detached from the outline of the body and occupying about 2/3 of the body's diameter at the level of the guide ring. Amphids with two parts, their openings are very small with prominent slits

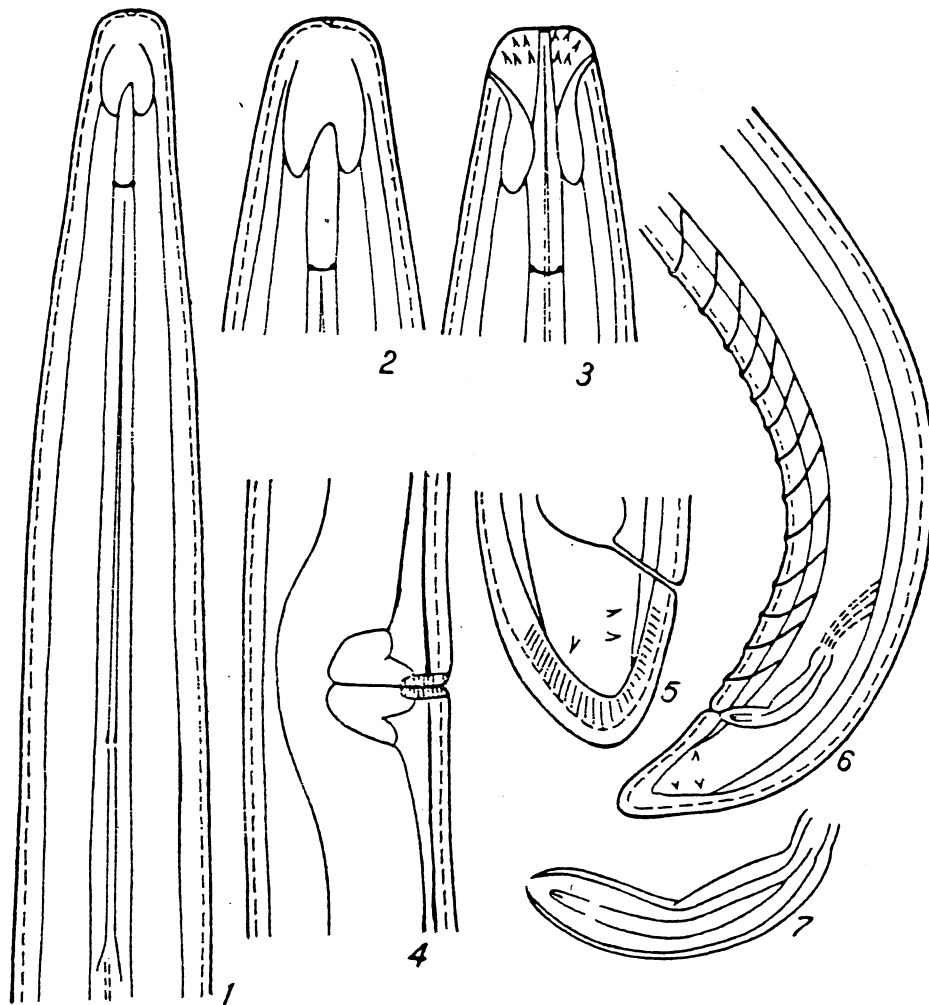


Fig. *Longidorus olegi* sp. nov. (orig.): 1-5: female; 6-7: male. 1-3: anterior end of the body; 4: section of the body in the vulva region; 5-6: posterior end of the body; 7: spicules.

situated posterior to the lateral lips. Amphidial cavities large, pocket-shaped reaching half way from the anterior end of the body to the guide ring. Stylet thin, odontostyle 112-116 μm long and odontophore 50.4-52.2 μm long. Guide ring 32.5 μm from the anterior end of the body. Nerve ring located immediately behind the base of the odontophore. Oesophagus dorylaimid-like, but lying further back with the enlarged section (122.2-143.0 μm long) occupying more than 1/3 of the entire length. Oesophageal-intestinal valve a conical bulge. Two symmetrical reproductive tracts, the anterior one 691-743 μm long and the posterior one 707-873 μm long. Vulva a transverse slit, vagina occupying about half the width of the body. Prerectum 500-517 μm in length (9 times greater than the anal body diameter). Tail 48.0-50.7 μm in length, of conical shape, with 3 pairs of caudal pores. Internal layer of the tail cuticle radially striated.

Allotype male: $L = 8.17$ mm; $a = 118.6$; $b = 21.6$; $c = 142.9$; $c' = 1.0$; $T = 42.7\%$; stylet = $168 \mu\text{m}$; spicules = $73.2 \mu\text{m}$. In appearance it resembles the female, with the exception of the tail extremity, with dorsal and ventral narrowing, and slightly elongated and rounded. Sometimes on the tail there is an "exterior mucro" $8 \mu\text{m}$ in length. Spicules paired and with lateral supporting appendages forked. Tail with one pair of anal and 9 to 12 pairs of supplements present.

Differential diagnosis: *Longidorus olegi* sp. nov. is most related to *L. macrosoma* Hooper, 1961, *L. goodeyi* Hooper, 1961, and *L. apulus* Lambertini & Bleve Zacheo, 1977. It differs from *L. macrosoma* in the length of stylet (162.4 - $168.6 \mu\text{m}$ compared with 197 - $230 \mu\text{m}$); in the prerectum (in the new species it is 9 times longer than the anal body diameter, compared with *L. macrosoma* in which it is 20 to 30 times longer); in the dimensions of the spicules in the male (63 - $73 \mu\text{m}$ compared with 108 - $115 \mu\text{m}$) and in the number of supplements (10 - 13 compared with 15 - 19); and also in the shape of the anterior of the body and in the length of the amphidial pouches. In *L. olegi* the labial region is smoothly tapered and rounded, the amphids are in two parts, symmetrical and occupy half the distance from the anterior of the body to the guide ring. In *L. macrosoma* the head is tapered and flat, the amphidial pouches reach almost the guide ring. It differs from *L. goodeyi* in its longer body length (7.80 - 8.98 mm compared with 5.6 - 7.7 mm), in its amphids symmetrically positioned (in *L. goodeyi* the amphids are asymmetric with the ventral lobe reaching the guide ring), in the frequent presence of males (in *L. goodeyi* males are rare) and in the shorter tail of the female ($c = 163.6$ - 177.3 compared with $c = 99$ - 154). The new species differs from *L. apulus* in the smaller index "a" and "c'" ($a = 107$ - 119 , $c' = 0.86$ - 0.88 compared with $a = 123$ - 154 , $c' = 0.9$ - 1.2 in *L. apulus*), in the dimensions of the odontostyle and the odontophore (odontostyle is 112 - $116 \mu\text{m}$, odontophore 50 - $52 \mu\text{m}$ compared with 91 - $112 \mu\text{m}$ and 60 - $80 \mu\text{m}$ respectively in *L. apulus*), in the length of the prerectum (500 - $517 \mu\text{m}$ compared with 280 - $350 \mu\text{m}$) and also in the rounded shape of the labial region that is continuous with the outline of the body, whereas in *L. apulus* the labial region is flattened and slightly set off from the body.

Host-plant and distribution: the type locality is in the rhizosphere of raspberry variety 'Newburg' at the experimental farm of the Rossoshanski fruit-berry experimental station in the Rossoshanski region of the Voronezh province. The holotype (female) No. 660 and the allotype (male) No. 661 are kept at the Institute for Zoology and Parasitology, Academy of Science in Tadzhik SSR, Dushanbe, the paratypes Nos. 29 (4) and 29 (16) are at the Regional Scientific Research Institute for Horticulture in the non-black earth belt, Moscow.

LITERATURE

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