

TWO NEW SPECIES OF PARASITIC NEMATODES OF WHEAT

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During the investigation of the nematode fauna of cereal cultures of the Chelyabinsk region in 1963, we observed two new species of nematodes infecting the root system of wheat of the Saratovskaya-29 variety. The present work is devoted to a description of these species.

PRATYLENCHUS URALENSIS SP. N. (Fig. 1)

27 ♀ ♀: L = 529 μ m, a = 24, b = 9, c = 22, V = 73.3%. The male was not observed.

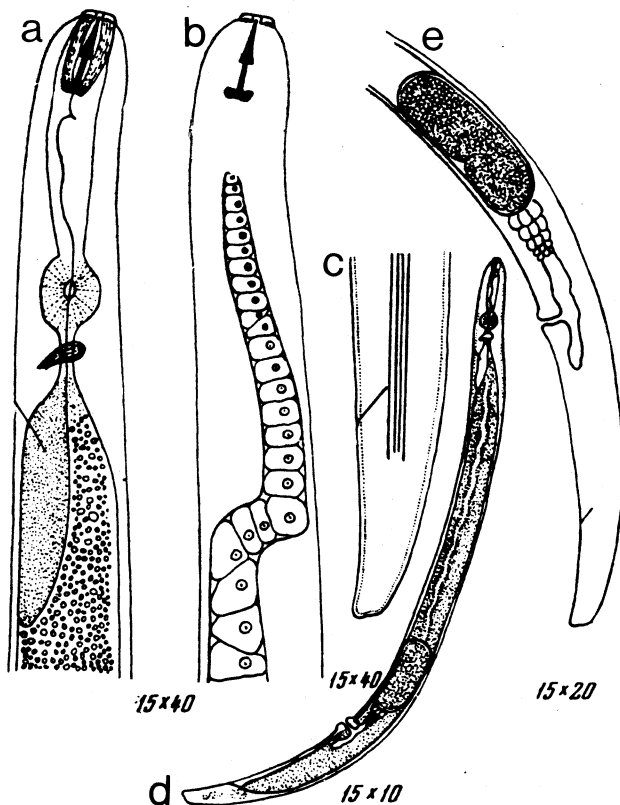


Fig. 1. Pratylenchus uralensis sp. n.

a - Anterior end of female body; b - extremity of the ovary; c - tail end of female; d - female; e - vulvar section.

Body slender, slightly narrowed toward both ends. Cephalic capsule 12 μ m in width, 2.1 μ m in height. The diameter of the body at the metacorporeal bulb is 14.7 μ m; at the vulva, 19 μ m; and at the anus 12 μ m. Cuticle with very fine annulation. It was not possible to measure the annule width. We, it seems, saw three annules which form the lip region. Amphids not noticeable. Lateral fields 5.5 μ m in width, occupying approximately 1/4 of the width of the body. Cheilostome cylindrical. Stylet powerful, 14 μ m long. Stylet knobs well developed. Knob width 3.6 μ m; height, 1.8 μ m. Cylindrical shaft of the stylet 5.4 μ m high; 0.9 μ m wide. Stylet cone 6.3 μ m in length. Protractors well apparent and parallel to the stylet axis. Dorsal esophageal gland orifice opens 3 μ m behind the stylet knobs. Esophagus tylenchoid, with a well developed, muscular bulb. Bulb length 12 μ m, width 10 μ m. Nerve ring situated behind the metacorporeal bulb, 4 μ m from its lower end. Esophageal glands 42 μ m in length. Mid intestine granulated for its entire length. Excretory pore located below the nerve ring, at 74 μ m from the anterior end of the head. Ovary lying along the ventral side of the body, and then makes a sharp turn to the dorsal side at the level of the esophageal glands and continues towards the stylet, stopping short of its knobs by 14 μ m. Oogonia and oocytes arranged in a single row. The egg has an index of 8.2 (egg length, 63 μ m, its width, 21 μ m). Preuterine gland well-developed. Posterior uterus a little less than the width of the body at vulva. Vulva lips strongly sclerotized. Tail not rounded; there are two tubercles visible on the end, and the ventral one is very much more elongated. Annulation not noticeable around the tail tip.

Differential diagnosis. Latylenchus uralensis sp. n. differs from other species of this genus by the very thin annulation of the cuticle, by the wide lateral field which occupies 1/4 of the body width, by the specific structure of the tail end, and by the more powerful and shorter stylet. The long single-row ovary ends close to the stylet knobs.

Ecological notes. We observed females in the tissues of the root system of wheat from June and July samples. Larvae were found in the crumpled loamy black earth around the roots.

APHELENCHOIDES EMILIAE SP. N. (Fig. 2)

17 ♀♀: L = 864 μ m, a = 28.8, b = 10.1, c = 17.1, V = 74.2%. 6 oo:
L = 570 μ m, a = 47.5, b = 15.8, c = 15.8.

Female. Body narrows toward both ends. Cephalic capsule distinctly separated from the body, 6 μ m wide, 3 μ m high. The body width at the metacorporeal bulb is 21 μ m, at the vulva is 30 μ m and at the anus is 15 μ m. Cuticle finely annulated. Lateral field not visible in the fixed specimens. Stylet 15 μ m in length with well-developed knobs of different size. Height of the dorsal knob 2.5 μ m, its width 1.2 μ m. Height of the lateroventral stylet knobs 1.5 μ m, their width 1 μ m. Height of the shaft of the stylet 8 μ m. Stylet cone 7 μ m in length. Protractors well-developed, fixed to the basal septa of the head. Esophagus aphelechoid. Metacorporeal bulb with a large lumen. Length of the bulb 19 μ m, its width 15 μ m. Nerve ring immediately behind the bulb. Esophageal glands 60 μ m

in length, situated dorsally. Excretory pore behind the nerve ring at a distance of 96 μ m from the head. Intestine granulated. Large drops of fat grouped in little islands scattered about the trophico-genital section. The end top of the single-row ovary reaches the dorsal side of the body; the egg in the lumen of the oviduct has an index of 16 (length of the egg 54 μ m, its width 21 μ m). Posterior uterus short, 15 μ m long. Vulva lips sclerotized. Tail conical; the tip ends bluntly in a kind of rectangle with a spine-like mucro on its apex.

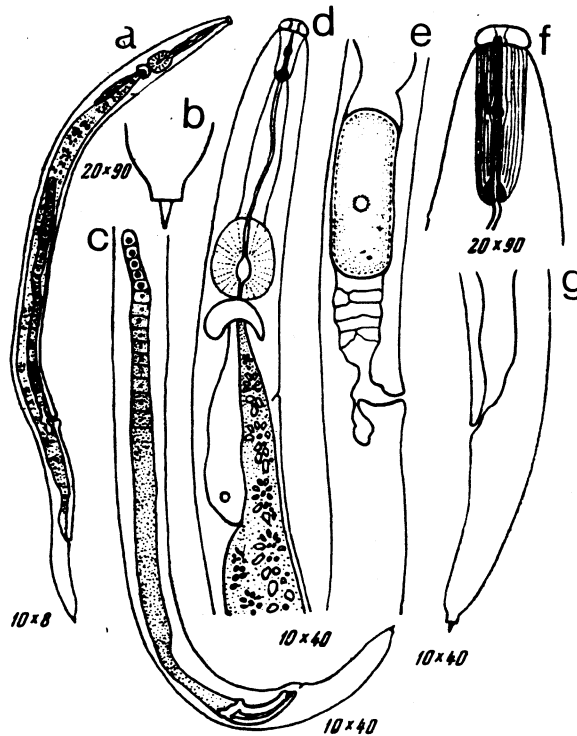


Fig. 2. Aphelenchoides emiliae sp. n.

(a) female; (b) tip of female tail; (c) genital system of the male; (d) front end of female body; (e) vulvar section; (f) head end of female; (g) tail end of female.

Male. Cephalic capsule 4.5 μ m in width and 3 μ m in height. The body at the metacorpul bulb is 12 μ m in width, and at the anus, 12 μ m. Cheilostom walls thickened. Stylet 12 μ m in length. Thickenings of the walls are visible at the base of the prostom in the form of two tubercles at a distance of 6 μ m from the top of the cephalic capsule. Metacorpul bulb oval-shaped, 15 μ m in length and 12 μ m in width. Excretory pore at a distance of 7 μ m from the posterior end of metacorpul bulb. The end of the testis is turned to the dorsal side. Spermatogonia visible in the form of five cells with relatively large nuclei. The width of the spermatocytes exceeds their length. Spicules typically aphelenchoid; their length is 18.7 μ m, their width near the apex is 3.7 μ m. Tail tip ends with a sharp mucro.

Differential diagnosis. Aphelenchoides emiliae sp. n. differs by the characteristic conical tail, the tip of which ends bluntly in a kind of rectangle with a spine-like mucro on its apex. The stylet has a characteristic structure: thickenings of the walls are visible at the base of the prostom and the knobs of the stylet are different in size. There are granulations of the intestine in form of large drops of fat which are grouped into little islands scattered about the trophico-genital section.