

NEW SPECIES OF CEREAL NEMATODES OF THE MOSCOW SUBURBS

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In the course of 1956, while studying nematode fauna of cereal cultures on the territory of the Voroshilov collective farm fields in the Kuntsevo district, Moscow region, and also on the experimental farms of the K. A. Timiryazev Agricultural Academy, we observed some new species of nematodes. Descriptions of one species of the genus Rhabditis Dujardin, 1845 and of one species of the genus Aphelenchoides Fischer, 1898 are given below.

Rhabditis (Mesorhabditis) signifera nov. sp.

♀ L = 607.6  $\mu$ m; a = 23; b = 5.6; c = 10.8; v = 75%

♀ L = 543  $\mu$ m; a = 20.6; b = 4.2; c = 9; v = 75%

Body shape fusiform; taking the diameter at the head as a unit (6  $\mu$ m), we obtain the following series of diameters (indices): at the nerve ring 3.5, at the cardial bulb 3.7, at the anterior flexure of the ovary 4.7, at the vulva 4.2, and at the anus 2. Tail conical, with a pointed tip.

Cuticle annulated, with well pronounced limits between annules. The width of the annules is about 1  $\mu$ m.

The lateral field contains four longitudinal parallel lines which can be traced to the phasmids, which lie just behind the anus, but not to the tip of the tail.

Head rounded. Lips well-developed and bearing six large papillae, 3  $\mu$ m in length, on the anterior edge. Besides these labial papillae, four cephalic papillae are located behind the cephalic annule. With small magnifications, these papillae appear as dots ("signs"), whence the name of the species.

The stoma is rhabditoid, large, and reaches 15  $\mu$ m in length. Anterior ends of prorhabdions somewhat inwardly curved, isolating the cheilostom with thin walls. In the metastom two rather well developed teeth are visible, and apparently there are some tiny metastomatal teeth on the limit between mesostom and metastom. Collar lacking.

Amphids not noticeable; they probably lie on the apical end of the head.

Esophagus rhabditoid. Precorpus followed by a weak metacorpal bulb; isthmus rather compact; in its posterior part it is enveloped by the nerve ring which is not very wide. The width of the cardial bulb constitutes no more than half the body diameter. There is a crushing apparatus. Muscles of esophagus well developed.

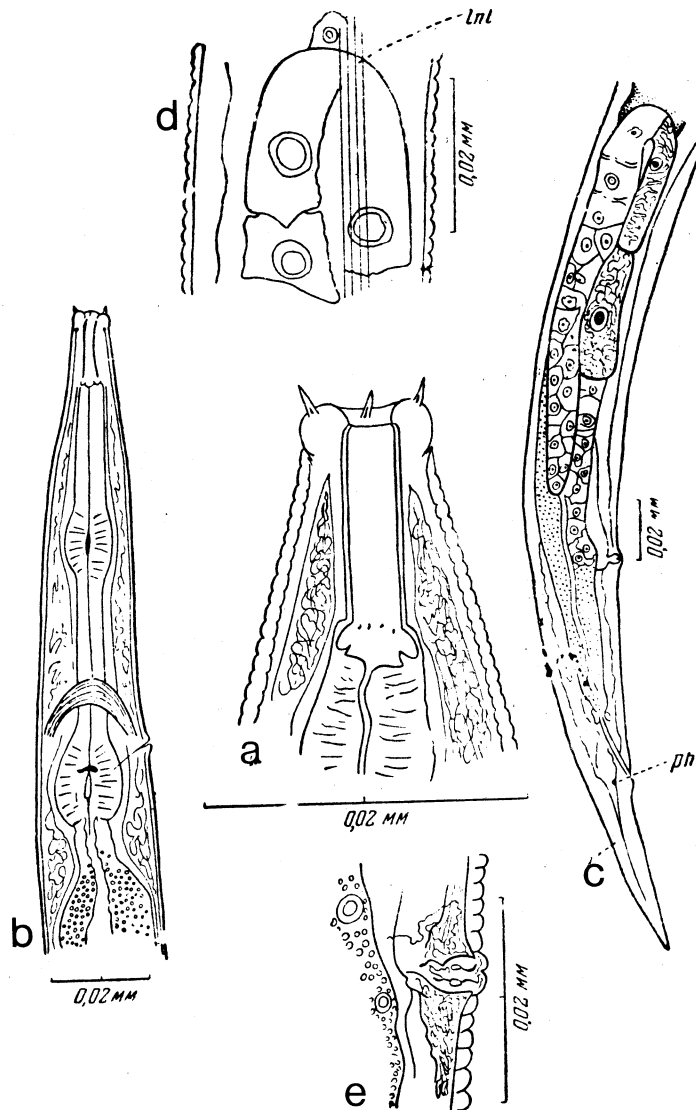


Figure 1. Rhabditis (M.) signifera nov. sp.

a - head; b - anterior end; c - posterior end; d - ovary at flexure to the opistodelphic location; e - area of the vulva; lnt - lateral field; ph - phasmid.

Intestine granulated by fatty inclusions; its lumen comparatively narrow. The length of the rectum is 20  $\mu$ m; that is, it is almost twice as big as the anal body diameter. Rectal glands small.

Excretory pore situated quite behind the nerve ring. Females monodelphic, prodelfic; however, the ovary, resembling [the corresponding structure] in the cephalobids, is at first directed forward and then is folded back (Figure 1). The oogonia in it are arranged in two rows. The vulva bears prominent lips. There were no eggs in our specimens.

Ecological notes. Rhabditis signifera was observed in the roots of maize July 13, 1956 (six females on the Voroshilov collective farm of the Kuntsevo district, Moscow region) and in the roots of spring wheat July 1 and August 4, 1956 (phytopathological experimental section of the Timiryazev Agricultural Academy--Two females and two larvae).

Taxonomical notes. We ascribed this species to the subgenus Mesorhabditis because of the absence of a collar and because of the structure of the stoma. It belongs to the group with a single ovary and is closest to Rhabditis tenuispicola Korner 1954, described by Korner, from which it is distinguished: by the cephalic papillae which are lacking in R. tenuispicola; by the phasmids which are moved toward the anus; by the location of the vulva; and by the structure of the crushing apparatus and of the cardial bulb.

Holotype: female of the species described from the roots of spring wheat, phytopathological section, Timiryazev Agricultural Academy; one specimen to the Helminthological Laboratory Museum, USSR Academy of Sciences, No. 5 "k" (2), August 4, 1956.

Aphelenchoides clarolineatus nov. sp.

♀ L = 704  $\mu$ m, a = 359.8 [sic]; b = 8; c = 16.3; V = 71.3%

Diameter of the head behind the cheilostom 6  $\mu$ m, at the metacorpul bulb 15.5  $\mu$ m, at the beginning of the ovary 17  $\mu$ m, at the vulva 17.5  $\mu$ m, and at the anus 9  $\mu$ m.

Head clearly offset; cephalic tubercles high and rounded. Body slender. Tail slender, very characteristic, in the form of a thin, elongated cone with a blunted top, having the shape of a blunt isosceles triangle on the tip of which is a short mucro.

Cuticle finely annulated; the width of the annules is a little more than 1  $\mu$ m. Lateral fields well marked, about 5  $\mu$ m in width. Cheilostom funnel-shaped. Stylet thin, with weak knobs; its rear end split. Stylet length 11  $\mu$ m. The protractors are well apparent. Esophagus corpus thin and clear; metacorpul bulb oval, 14  $\mu$ m in length and 9  $\mu$ m in width.

Nerve ring 8  $\mu$ m, wide at a distance of approximately 8  $\mu$ m from the rear edge of the metacorpul bulb. The esophageal glands are on the dorsal side of the mid-intestine and reach 62  $\mu$ m in length; three nuclei are well apparent. On straining with polychromous blue according to Paramonov, we seemed to see a section of the canal of the dorsal esophageal gland which runs into the lumen of the bulb. Mid-intestine thin, with a clear lumen; on the mid-intestine walls, nuclei are noticeable with staining by polychromous blue. In our specimen the cytoplasm of the cells of the intestine is vacuolized in places. Posterior intestine poorly visible, about 27  $\mu$ m in length. An anal protuberance is not distinct.

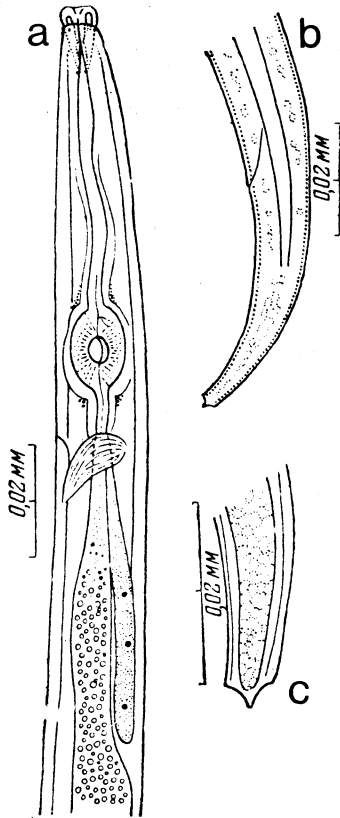


Figure 2. Aphelenchoides clarolineatus nov. sp.

a - anterior end; b - tail; c - tail extremity.

The genital tract is shifted to the dorsal side of the body at the place where the oviduct meets the ovary. The oocytes lie in a single row. On top of the ovary the epithelial membrane of the genital tract appears very clearly in the form of a transparent cap. Posterior uterine sac is short.

Differential diagnosis. Aphelenchoides clarolineatus differs from other species of the genus by the wide lateral field and the large oval bulb and elongated conical tail, the tip of which ends with a blunted top having the form of an isosceles triangle and with a very short mucro on its tip.

Holotype: Roots of couch grass Agropyron repens, Moscow region, Kuntsevo district, one female of the species described, author's specimen No. 1 "k", May 5, 1956.

#### LITERATURE

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