

UDC 632.651

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## SOME RECORDS OF PLANT PARASITIC NEMATODES (NEMATODA, TYLENCHIDA) FROM ESTONIA

As a result of determination of nematodes, collected by the author in 1977, and in previous years by E. Krall, five species of the genus *Pratylenchus* were found. Three of them — *P. fallax*, *P. flakkensis* and *P. neglectus* are new records for Estonia. Also a male specimen of *Rotylenchulus borealis* was found by the author. This is the first record of this genus in Estonia. Because of the cool summer season in 1977 the development of nematodes was delayed. This resulted in related small number of mature specimens collected in June and July.

### Fam. Pratylenchidae

*Pratylenchus crenatus* Loof, 1960 (Figs. 3, 4, 10, 11, 21).

10 ♀♀: L=438–588 μm; a=18.9–26.8; b=6.3–8.5; c=20.5–24.1;

V=79–86%; st=15.0–16.0 μm; o=2.5–3.5 μm.

Locality: Koiola, Võru district. Roots of oats. Coll. E. Krall, 1959 (Кралль, 1964). Besides that, recorded: Vastse-Kuuste, Põlva district. Roots of barley. Coll. E. Krall, 1969.

Our data for Koiola represent a redetermination of Krall's material. A variability of the postvulvar uterine branch and different degrees of reduction of spermatheca are observed. One specimen from Koiola has 6 lines on the lateral field.

*Pratylenchus fallax* Seinhorst, 1968 (Figs. 5, 13, 14, 15, 22, 30, 31).

10 ♀♀: L=418–462 μm; a=20.8–25.0; b=5.1–6.7; c=20.0–22.5;

V=74–80%; st=14.5–15.0 μm; o=3.0–3.5 μm.

4 ♂♂: L=362–406 μm; a=19.3–21.6; b=5.2–5.4; c=16.5–19.1;

st=14.0–14.5 μm; o=4.0–4.5 μm; sp=15 μm.

Locality: Pärnu (Papiniidu). Roots of black currant. Coll. E. Krall, 1963.

The large variability of the shape of spermatheca and of the sphincter of spermatheca is noted. These peculiarities are apparently related to the functional state of female reproductive system.

*Pratylenchus flakkensis* Seinhorst, 1968 (Figs. 7, 8, 17, 18, 25, 26, 32, 33, 34).

3 ♀♀: L=381–475 μm; a=23.0–30.0; b=5.5–6.4; c=16.8–17.4;

V=75–76%; st=16.5–17.5 μm; o=3.0–3.5 μm.

3 ♂♂: L=388–425 μm; a=31.0–34.0; b=4.8–5.1; c=14.4–20.0;

st=14.5 μm.

Locality: Pärnu. Roots of ornamental spruce *Picea sp.* Coll. A. Ryss, 1977.

A variability of the oesophageal glands arrangement is observed (Figs. 7, 8). The postvulvar uterine branch has different length and may contain oocytes.

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*Pratylenchus neglectus* (Rensch, 1924) Chitwood et Oteifa, 1952 (Figs. 6, 16, 23, 24).

7♀♀: L=338–456 μm; a=15.4–19.7; b=4.4–5.3; c=17.2–20.2;

V=77–82%; st=15.0–16.0 μm; o=4.5 μm.

Locality: Rannu, Tartu district. Roots of apple tree. Coll. A. Ryss, 1977.

Specimens of this species differ from other founded species by greater distance of dorsal oesophageal gland orifice from stylet base (4.5 μm as compared with 3.5 μm in other species).

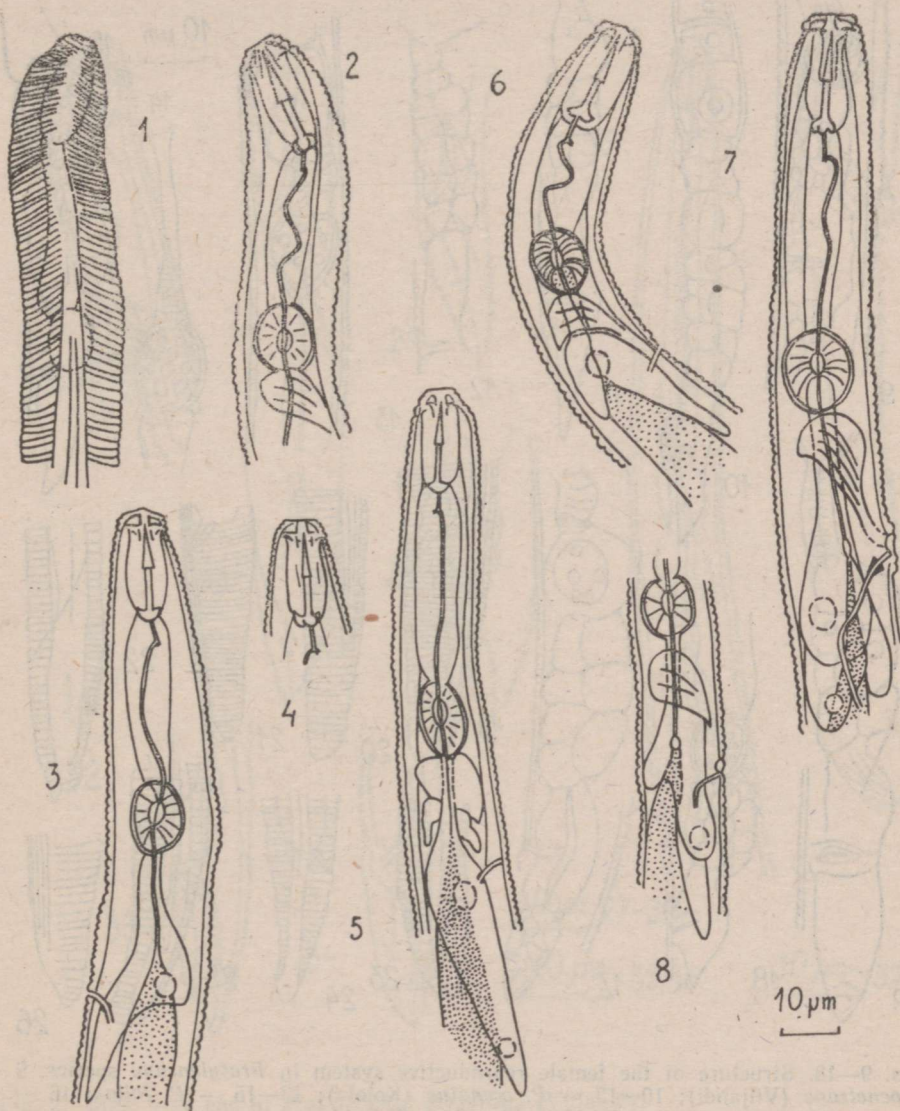
*Pratylenchus penetrans* (Cobb, 1917) Sher et Allen, 1953 (Figs. 1, 9, 19, 20, 27, 28, 29).

10♀♀: L=363–494 μm; a=20.0–25.6; b=4.6–6.3; c=15.6–25.5;

V=77–83%; st=15.5–16.0 μm; o=3.0–3.5 μm.

3♂♂: L=389–406 μm; a=25.3–28.2; b=5.1–5.6; c=14.4–16.2;

T=60–64%; st=15.5 μm; o=3.5 μm; sp=17.0 μm.



Figs. 1–8. Female head ends and glandular parts of oesophagus in *Pratylenchus* species. 1, 2 — *P. penetrans* (Viljandi); 3, 4 — *P. crenatus* (Koiola); 5 — *P. fallax*; 6 — *P. neglectus*; 7, 8 — *P. flakkensis*.

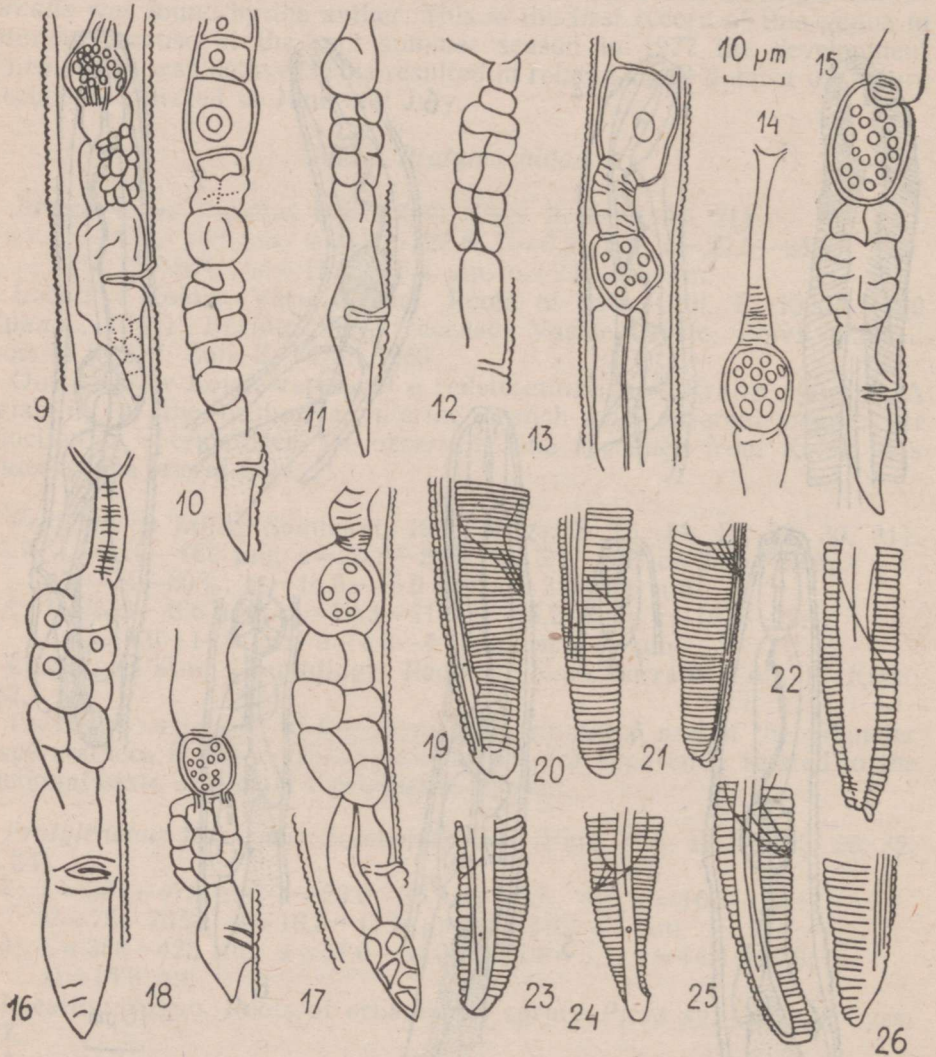
Locality: Viljandi (Västriku). Roots of apple tree. Coll. A. Ryss, 1977.

Besides that, this species was noted in following localities: Kassari, Hiiumaa district. Roots of barley. Coll. E. Krall 1969; Polli, Viljandi district. Roots of black currant. Coll. A. Ryss, 1977; Rannapungerja, Kohtla-Järve district. Roots of *Festuca* sp. Coll. A. Ryss, 1977; Taevaskoja, Põlva district. Roots of barley. Coll. E. Krall, 1969.

Substantial variability in the structure of tail could be established (Figs. 19, 20). Some specimens, founded at Rannapungerja possessed 2 annules in lip region.

Fam. *Hoplolaimidae*  
Subfam. *Radopholinae*

*Rotylenchulus borealis* Loof et Oostenbrink, 1962 (Figs. 35, 36, 37).  
1♂: L=456 µm; a=36.5; b=4.5; c=9.1; st=8.8 µm; sp=12.5 µm.



Figs. 9—18. Structure of the female reproductive system in *Pratylenchus* species. 9 — *P. penetrans* (Viljandi); 10—12 — *P. crenatus* (Koiola); 13—15 — *P. fallax*; 16 — *P. neglectus*; 17—18 — *P. flakkensis*.  
Figs. 19—26. Structure of tail tip in females of *Pratylenchus* species. 19, 20 — *P. penetrans* (Viljandi); 21 — *P. crenatus* (Koiola); 22 — *P. fallax*; 23, 24 — *P. neglectus*; 25, 26 — *P. flakkensis*.

Locality: Pärnu. Roots of blue grass *Poa sp.* under an ornamental spruce *Picea sp.* Coll. A. Ryss, 1977.

By determination the last revision of this genus (Dasgupta et al., 1968) has been used.

### Discussion

All of record *Pratylenchus* species belong to the *P. penetrans*-group. The most convenient for differentiation is *P. fallax*, which differs from *P. penetrans* by the structure of tail tip and by the shape of spermatheca (Seinhorst, 1968, 1977). However, because of considerable variability of the latter character in *P. penetrans*, its diagnostic value is questionable now.

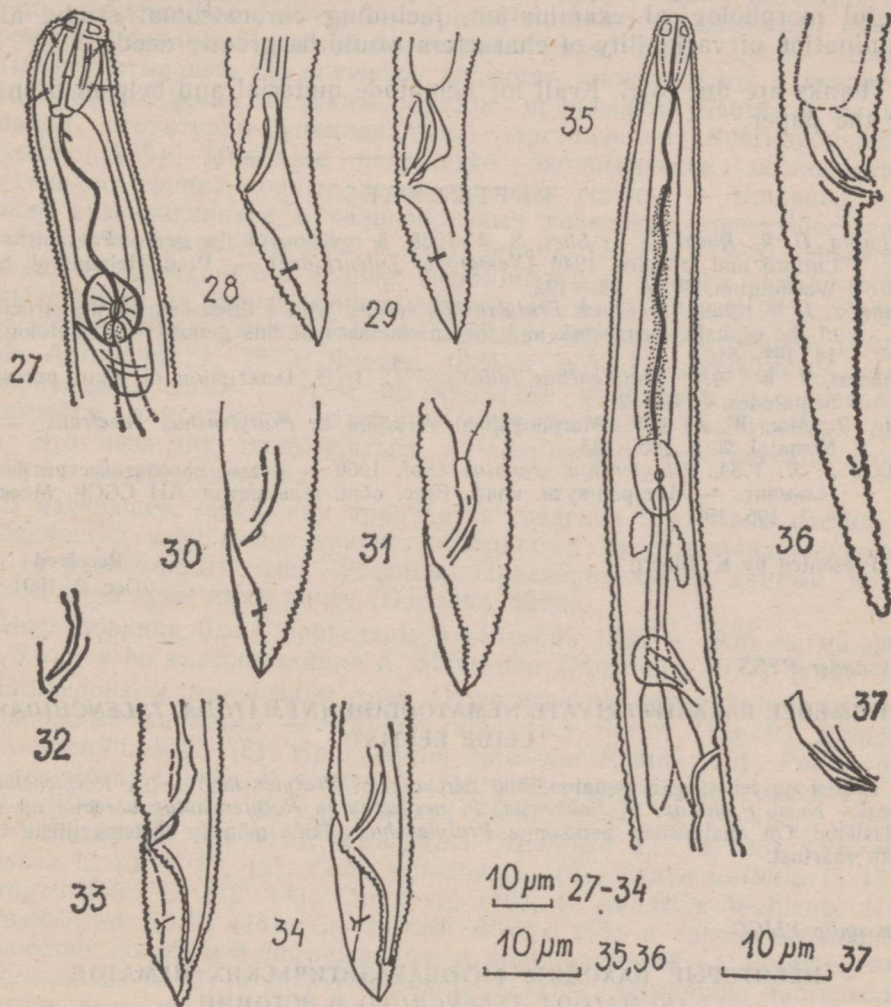


Fig. 27. Male head end in *Pratylenchus penetrans* (Viljandi).

Figs. 28—34. Spicules and tail ends in males of *Pratylenchus* species, 28, 29 — *P. penetrans* (Viljandi), one specimen at different focusing; 30, 31 — *P. fallax*, one specimen at different focusing; 32—34 — *P. flakkensis*, one specimen at different focusing.

Figs. 35—37. *Rotylenchulus borealis*, male. 35 — head end; 36 — tail end; 37 — spicules.

Very close to *P. penetrans* is the parthenogenetic species *P. crenatus*, which differs from the first by absence of males, by the shape of spermatheca and by the structure of tail tip (Seinhorst, 1968). But the latter character in *P. penetrans* is considerably variable. For this species existence of progenetic lines without males and the reduction of spermatheca in females are known (Tarte, Mai, 1976). All of this makes doubtful the species rank of *P. crenatus* and needs the precision of its diagnosis.

The same relations take place between *P. flakkensis* and the parthenogenetic species *P. neglectus*. However, all specimens of *P. neglectus*, founded by the author, had greater distance between dorsal oesophageal gland orifice and the stylet base (4.5  $\mu\text{m}$  as compared with 3.5  $\mu\text{m}$  in *P. flakkensis*). *P. flakkensis* is very close to *P. penetrans*, and differs from it by presence of only two annules in labial region as compared with three annules in *P. penetrans*. However, a population of *P. penetrans* has been found with a variation in this character (Rannapungerja population).

All of the founded species present a group of dangerous and difficult for determination plant parasited. A precision of their diagnoses, the careful morphological examination, including chromosomal study, also examination of variability of characters would be greatly needed.

Thanks are due to E. Krall for nematode material and help in preparing the paper.

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Presented by K. Elberg

Received  
Dec. 3, 1991

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#### TAIMEDEL PARASITEERIVATE NEMATOODIDE (NEMATODA, TYLENCHIDA) LEIDE EESTIST

Eestist on leitud viis nematoodiliiki perekonnast *Pratylenchus* ja liik *Rotylenchulus borealis*. Neist *P. fallax*, *P. flakkensis*, *P. neglectus* ja *Rotylenchulus borealis* on siin esmasleitud. On analüüsitud perekonna *Pratylenchus* liikide mõnede süstemaatiliste tunnuste väärtust.

Александр РЫСС

#### НЕКОТОРЫЕ НАХОДКИ ФИТОПАЗИТИЧЕСКИХ НЕМАТОД (NEMATODA, TYLENCHIDA) В ЭСТОНИИ

В Эстонии обнаружено 5 видов рода *Pratylenchus* и *Rotylenchulus borealis*. Виды *P. fallax*, *P. flakkensis*, *P. neglectus* и *Rotylenchulus borealis* найдены в Эстонии впервые. Обсуждается значение отдельных систематических признаков видов, относящихся к роду *Pratylenchus*.