

# A new genus and two new species of nematodes collected from dust of rotten trees in European Russia

V.G. Gagarin

Gagarin, V.G. 2000. A new genus and two new species of nematodes collected from dust of rotten trees in European Russia. *Zoosystematica Rossica*, 8(2), 1999: 205-209.

Two new species, one of them belonging to a new genus are described. *Tylenchodorus parietinus* gen. et sp. n. is described from specimens associated with tree dust of rotten birch. The new genus is similar to *Tylencholaimus* de Man, 1876, but has a cuticular ring in the stoma and a different oesophageal structure. *Hofmaenneria longicaudata* sp. n. collected from dust of pine trees is similar to *H. hazenensis* Mulvey, 1969, from which it can be distinguished by the presence of a caudal gland and spinneret, 10 cephalic setae and longer tail.

V.G. Gagarin, Institute of Inland Waters Biology, Russian Academy of Sciences, Borok 152742, Yaroslavl Prov., Russia.

## Introduction

The nematode fauna from the dust of rotten trees is very heterogeneous, comprised of soil, saprobiotic, xylobiotic and entomopathogenic species (Rühm, 1956). Blinova (1982) and Slobodyanyuk (1984) have reported nematodes associated with tree dust in various regions of Russia. Dust samples from rotten pine and birch trees growing in Borok, Yaroslavl Prov. of Russia were collected, and nematodes recovered were examined. Two new species found in these samples, one of them belonging to a new genus, are described below.

## Family TYLENCHOLAIMIDAE

### *Tylenchodorus* gen. n.

Typespecies *Tylenchodorus parietinus* sp. n.

**Description.** Tylencholaiminae. Body length up to 0.5  $\mu$ m. Cuticle and subcuticle smooth, non-striated. Lateral chord and epidermal pores not visible. Lip region angular, set off by a constriction, with inner disc-like structure around opening. Odontostyle small, thin; odontophore with basal knobs, 4 times as long as odontostyle. Guiding ring simple, thin. Stoma with distinct cuticular ring. Oesophagus separated into three parts: anterior part thin, with delicate, homogeneous tissue, always longer than two other parts com-

bined; middle part situated in region of oesophagus extension, with coarse, granular tissue; posterior part wide, cylindrical, its tissue having a muscular, fibrous structure. Prerectum 3.7-5.5 times as long as anal body width. Female gonads paired, opposed, re-flexed. Testes two. Spicula dorylaimoid, slender. Single precloacal pair of supplements present. Tail in both sexes elongate hemispheroid.

**Comparison.** The new genus is similar to *Tylencholaimus* de Man, 1876, from which it can be distinguished by the presence of a cuticular ring in the stoma and different oesophageal structure (Peña & Coomans, 1996).

### *Tylenchodorus parietinus* sp. n. (Figs 1-7)

**Holotype.** ♀, **Russia**, Yaroslavl Prov., Borok, dust of birch trees (*Betula pendula* L.), 10.VIII.1996, slide No. 71/70, Institute of Parasitology, Russian Academy of Sciences, Moscow.

**Paratypes.** 9 ♀, 4 ♂ collected with the holotype.

**Measurements.** See Table.

**Description. Female.** Body relatively small, slightly curved ventrally in fixed specimens. Cuticle and subcuticle smooth, without radial and transverse striae; thickness of cuticle 1.5  $\mu$ m. Body cylindrical, slightly tapering towards anterior end. Head 6.0-6.5  $\mu$ m in diameter, 0.2-0.25 times as wide as body diameter at oesophagus base. Lip region angular, disc-like inner portion sharply set off

Table. Measurements of *Tylenchodorus parietinus* gen. et sp. n.

Characteristics	Holotype female	Paratypes, 9 females		Paratypes, 4 males	
		Range	Mean	Range	Mean
L	412	360-432	409	411-444	425
a	24	19-27	23	21-25	23
b	3.3	3.3-3.7	3.5	3.3-4.0	3.6
c	27.5	27.4-30.9	28.8	27.4-31.7	29.9
c'	1.2	1.1-1.5	1.3	1.0-1.1	1.1
V	55.3	53.7-58.8	56.8	—	—
Oesophagus length, $\mu\text{m}$	123	101-123	116	105-136	118
Posterior end of oesophagus-vulva, $\mu\text{m}$	105	105-129	116	—	—
Vulva-anus, $\mu\text{m}$	169	140-178	163	—	—
Posterior end of oesophagus-anus, $\mu\text{m}$	—	—	—	280-302	293
Tail length, $\mu\text{m}$	15	13-15	14	14-15	14
Odontostyle+odontophore, length, $\mu\text{m}$	16	15-16	15	15-16	15
Prerectum length, $\mu\text{m}$	57	43-62	54	59-67	61
Prerectum length/anal body diameter	4.6	3.7-5.5	4.1	4.3-5.3	4.8
Spicules length, $\mu\text{m}$	—	—	—	13-14	14

by a deep constriction. Stoma with distinct cuticular ring. Odontostyle small, thin, 4  $\mu\text{m}$  long, aperture occupying one-third of its length. Odontophore 11-12  $\mu\text{m}$  long. Basal knobs of odontophore delicate, drop-like, sitting at short stalks. Guiding ring simple, thin. Opening of amphids cup-shaped, half as wide as body. Oesophagus slender, 101-123  $\mu\text{m}$  long, divided into three parts. Anterior part of oesophagus longest, tissue delicate, homogeneous. Middle part short, tissue coarse, granular. Posterior part with distinct bundles or radial muscles. Ratio of length of each part to the total oesophagus length 1 : 0.63 : 0.12 : 0.25. Cardia muscular, conoid, protruding to intestine. Rectum almost equal to anal body diameter; prerectum 3.7-5.5 times as long as anal body diameter. Genital system didelphic, amphidelphic. Vulva in form of a transverse slit; vagina directed inward and forward; ovaries short. Vulva region containing small oval cells. Vulva lips slightly protruded. Tail elongate hemispheroid, slightly longer than anal body diameter.

**Male.** General appearance similar to females. Odontostyle plus odontophore 15-16  $\mu\text{m}$  long. Oesophagus 105-136  $\mu\text{m}$  long, separated into three parts. Genital system diorchic, with opposed testes. Single precloacal pair of ventromedial supplements present. Spicules dorylaimoid, 13-14  $\mu\text{m}$  in span length. Tail elongate hemispheroid, similar to that of females.

**Etymology.** The species name means "living on walls".

## Family MONHYSTERIDAE

### *Hofmaenneria longicaudata* sp. n.

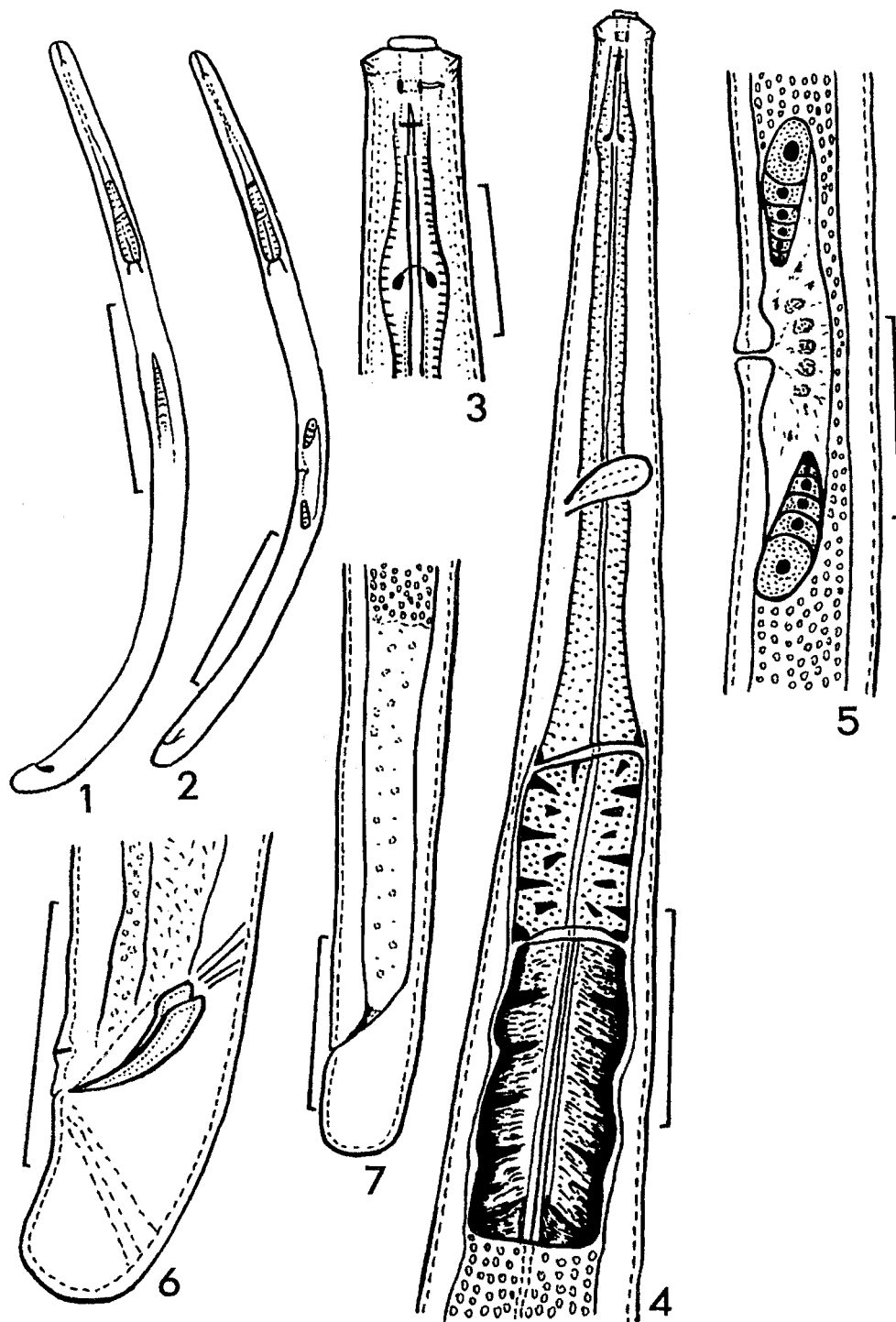
(Figs 8-11)

**Holotype.** ♀, **Russia, Yaroslavl Prov., Borok**, dust of pine trees (*Pinus silvestris* L.), 28.X.1966, slide No. 71/69, Institute of Parasitology, Russian Academy of Sciences, Moscow.

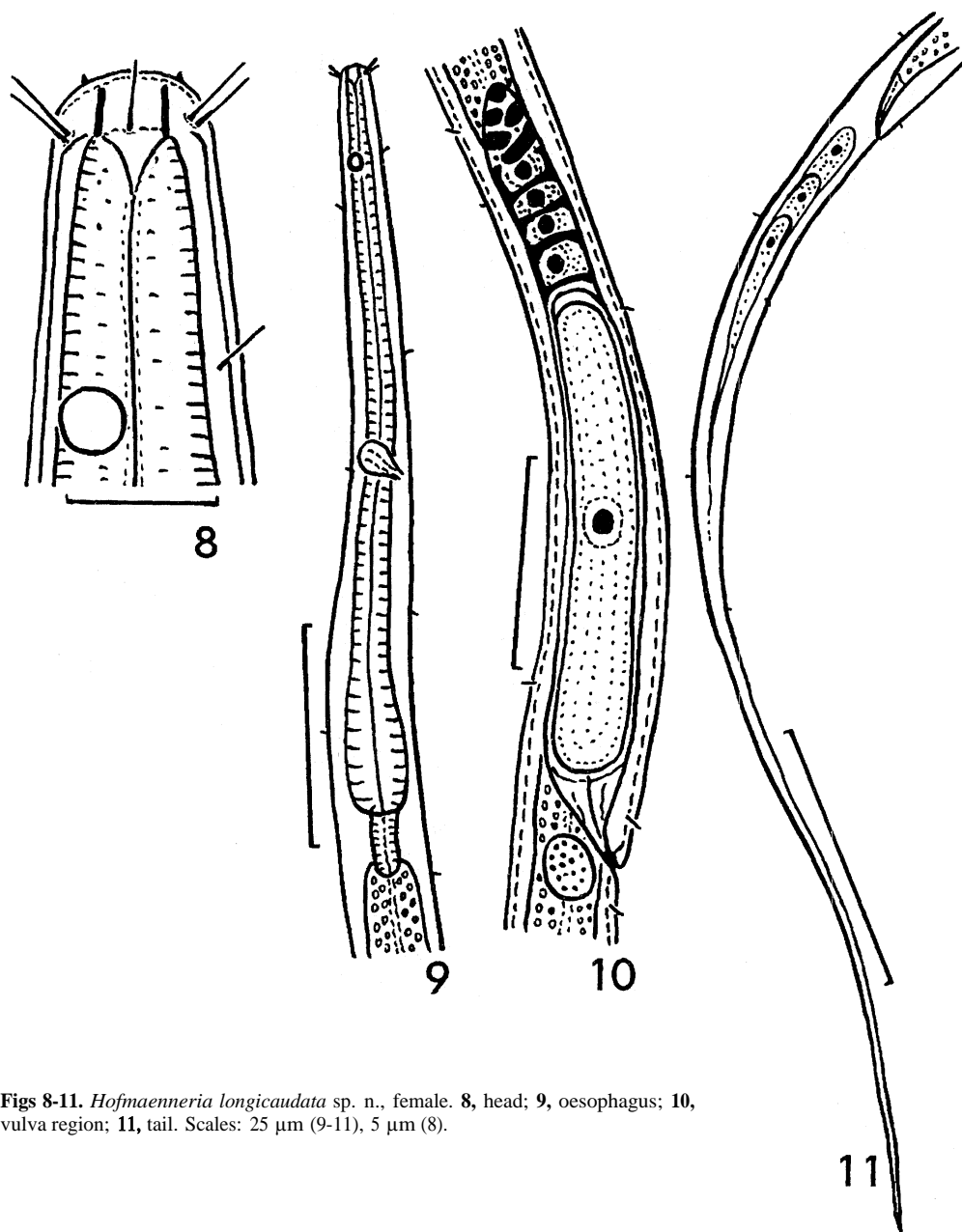
**Paratypes.** 2 ♀, collected with the holotype.

**Measurements.** Holotype, ♀: L = 483  $\mu\text{m}$ , a = 44, b = 4.6, c = 3.4, c' = 20.6, V = 54.2%. Paratypes, 2 ♀: L = 391, 415  $\mu\text{m}$ ; a = 40, 42; b = 4.1, 4.4; c = 3.3, 3.4; c' = 18.7, 20.2; V = 55.2, 55.0%.

**Description. Female.** Body small, thin; posterior end of tail curved ventrally. Cuticle smooth; somatic setae thin, 2.0-2.5  $\mu\text{m}$ . Labial region not set off from neck, 4.5  $\mu\text{m}$  wide. Labial papillae small, conoid. Ten cephalic setae arranged in two circles. Length of cephalic setae about 3  $\mu\text{m}$  (65-70% of labial region width). Opening of amphids circular, about 2.5  $\mu\text{m}$  in diameter. Anterior margin of amphids situated 11-12  $\mu\text{m}$  from anterior end of body (2.2-2.4 times labial region width). Stoma distinct, extensive, prismatic, 4  $\mu\text{m}$  long and 3.5-3.7  $\mu\text{m}$  wide; its walls strongly cuticularized. Oesophagus slender, slightly swollen proximally, 104  $\mu\text{m}$  long in holotype, 87 and 95  $\mu\text{m}$  long in paratypes. Nerve ring at 50-60% of oesophagus length. Cardia cylindroid, 7  $\mu\text{m}$  long. Renette and its excretory pore not visible.



Figs 1-7. *Tylenchodorus parietinus* gen. et sp. n. 1, general view of male; 2, general view of female; 3, head of female; 4, oesophagus of female; 5, vulva region; 6, tail of male; 7, posterior end of female. Scales: 100  $\mu$ m (1, 2), 30  $\mu$ m (5, 7), 20  $\mu$ m (4, 6), 10  $\mu$ m (3).



Figs 8-11. *Hofmaenneria longicaudata* sp. n., female. 8, head; 9, oesophagus; 10, vulva region; 11, tail. Scales: 25  $\mu$ m (9-11), 5  $\mu$ m (8).

Rectum equal to anal body diameter. Ovary simple, straight, comparatively short. Vulva lips not protruding. Vagina oblique. Posterior uterus sack absent. Postvaginal cell absent. One egg in the uterus of holotype,  $60 \times 10 \mu$ m. Egg length 5.7 times vulva body diameter. Tail slender, thread-shaped. Tail length 1.9-2.1 times distance between vulva and anus. Spinneret elongate, 3  $\mu$ m long.

*Comparison.* The new species is similar to *H. hazenensis* Mulvey, 1969, from which it can be distinguished by the presence of caudal glands (absent in *H. hazenensis*), 10 cephalic setae (6 in *H. hazenensis*), and a longer tail ( $c = 3.3-3.4$  vs  $c = 4.0-4.6$  in *H. hazenensis*) (Mulvey, 1969).

*Etymology.* The species name means "having a long tail".

# Acknowledgements

The author thanks the Russian Foundation for Basic Research for financial support (grant No. 98-04-48029).

# References

**Blinova, S.L.** 1982. *Entomopatogennye nematody – parazity vreditelei lesa: semeistvo Rabbiditidy* [Entomopathogenous nematodes – parasites of forest pests: family Rhabditidae]. 134 p. Nauka, Moscow. (In Russian).

**Mulvey, R.H.** 1969. Soil-inhabiting nematodes of the orders Araeolaimida, Chromadorida, Enop-

lida and Monhysterida from the Canadian high Arctic. *Can. J. Zool.*, **47**: 365-382.

**Peña, S.R. & Coomans, A.** 1996. Revision of the genus *Tylencolaimus* de Man, 1876. General discussion and key to the species. *Nematologica*, **42**: 440-454.

**Rühm, W.** 1956. Die Nematoden der Ipiden. *Parasitol. Schriftenr. Jena*, **6**: 1-437.

**Slobodyanyuk, O.V.** 1984. *Entomopatogennye nematody: dvukrylykh: otryad Tylenchida* [Entomopathogenous nematodes of Diptera: order Tylenchida]. 200 p. Nauka, Moscow. (In Russian).

*Received 17 November 1998*