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RESEARCH ARTICLE

Labronema przhiboroi sp. nov. (Nematoda: Dorylaimida) from the Putorana Plateau (Eastern Siberia, Russia)

Labronema przhiboroi sp. nov. (Nematoda: Dorylaimida) с плато Путорана (Восточная Сибирь, Россия)

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Abstract. A new nematode species, *Labronema przhiboroi* **sp. nov.**, belonging to the family Dorylaimidae, has been found in the freshwater Lake Duluk on the Putorana Plateau in Eastern Siberia, at a depth of approximately one metre. This species is morphologically similar to the Far Eastern species *L. macrosoma* Alekseev, 1992, from which it can be distinguished by its smaller body size, shorter spicules, and more pronounced cuticular ridges.

Резюме. Новый вид нематод *Labronema przhiboroi* **sp. nov.** из семейства Dorylaimidae, обнаруженный в пресноводном озере Дулук (плато Путорана, Восточная Сибирь) на глубине около 1 м, морфологически близок к дальневосточному виду *L. macrosoma* Alekseev, 1992, от которого отличается меньшими размерами тела, более короткими спикулами и выраженными кутикулярными рёбрами.

Key word: Eastern Siberia, Nematoda, *Labronema*, new species

Ключевые слова: Восточная Сибирь, Nematoda, *Labronema*, новый вид

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Introduction

In the freshwater Lake Duluk, located on the Putorana Plateau in Eastern Siberia, a silt sample was collected from a depth of approximately one metre and preserved in 4% formaldehyde. This sample contained several specimens of nematodes, which have been identified as a new species to science, named *Labronema przhiboroi* **sp. nov.** This species belongs to the family Dorylaimida and the subfamily Labronematinae. The position of the genus *Labronema* within the family Dorylaimidae, rather than Qudsianematidae, is supported by the revision conducted by Peña-Santiago & Álvarez-Ortega (2014). In their study, which was based on molecular genetic data, *Labronema* was included in the family Dorylaimidae as the type genus of the new subfamily Labronematinae. This subfamily also includes the genera *Crassogula* Andrassy, 1991, *Crassolabium* Yeates, 1967 (syn. *Thonus* Thorne, 1974), *Labronemella* Andrassy, 1985, *Nevadanema*

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Alvarez-Ortega et Pena-Santiago, 2012, *Scalpelus* Ahmad, 2004, *Skibbenema* Van Reenen et Heyns, 1986, and *Torumanawa* Yeates, 1967.

Material and methods

The type specimens of the new species were stained with rose bengal and are deposited at the Zoological Institute of the Russian Academy of Sciences, St Petersburg, Russia (ZISP).

Description of the new species

Order **Dorylaimida**

Family **Dorylaimidae**

Subfamily **Labronematinae**

Genus ***Labronema*** Thorne, 1939

***Labronema przhiboroi* sp. nov.** (Figs 1, 2)

Holotype. Male, **Russia**, *Krasnoyarsk Terr.*, Putorana Plateau, Duluk Lake, 391 m a.s.l., 69°33.388′N, 94°08.675′E, 17.VI.2022, A.A. Przhiboro leg., microscope slide No. A-9865 (ZISP).

Paratypes. 3 females, 1 male, same data as for holotype (ZISP).

Description. The main morphometric characteristics are presented in Table 1. Male and female identical in habitus, including shape and size of short, cone-shaped tail with rounded apex. Cuticle thick, very finely transversely striated, with distinct longitudinal ridges that number between 20 and 26 in middle of body. Thickness of cuticle in anterior part of body 5.0–7.0 µm, in tail part 6.0–9.0 µm. Lip region separated from other body by slight narrowing. Amphids clearly visible only in dorsoventral view of anterior end of body (Figs 1A, 2B). Spear (odontostyle) with smooth walls, spear 1.5–2.0 times as long as labial region. Apertura of spear occupying one-third of its length. Guiding ring double, 18–20 µm high. Esopfagus (pharynx) uniformly expanding, divided into two parts at location of nerve ring, with posterior section noticeably wider than anterior section (Fig. 2A). Cardia conical (Fig. 2C). Lateral chord 20–25 µm.

Female. Genital system didelphic–amphidelphic. Vulva looking like transversal slit, with sclerotised pieces present, vagina muscular, 33–42 µm

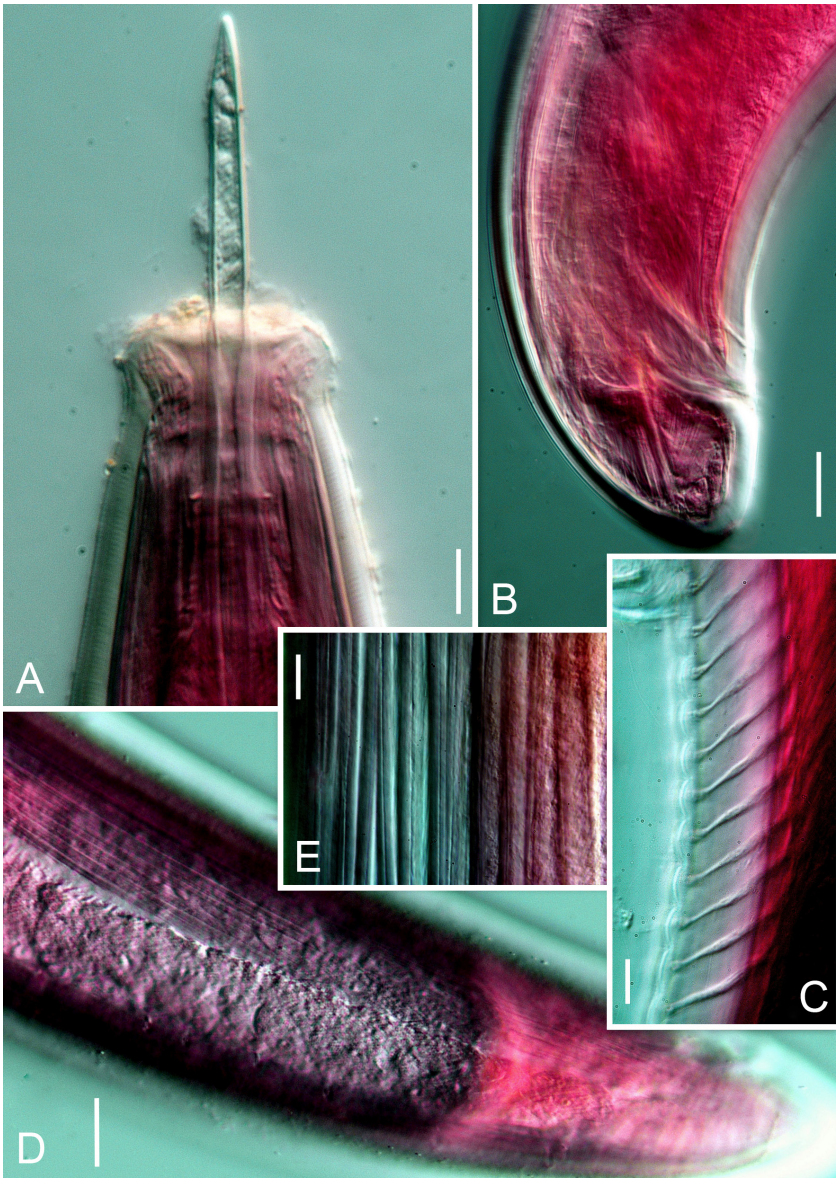


Fig.1. Morphology of *Labronema przhiboroi* **sp. nov.**, holotype (A–C, E) and paratype (D). **A**, anterior part of the body (double guiding ring and transversely striated cuticle); **B**, male tail; **C**, fragment of a supplementary row; **D**, female tail (cuticle ridges against the background of prerectum); **E**, cuticle ridges. Scale bars: 10µm (A, C, E) and 20 µm (B, D).

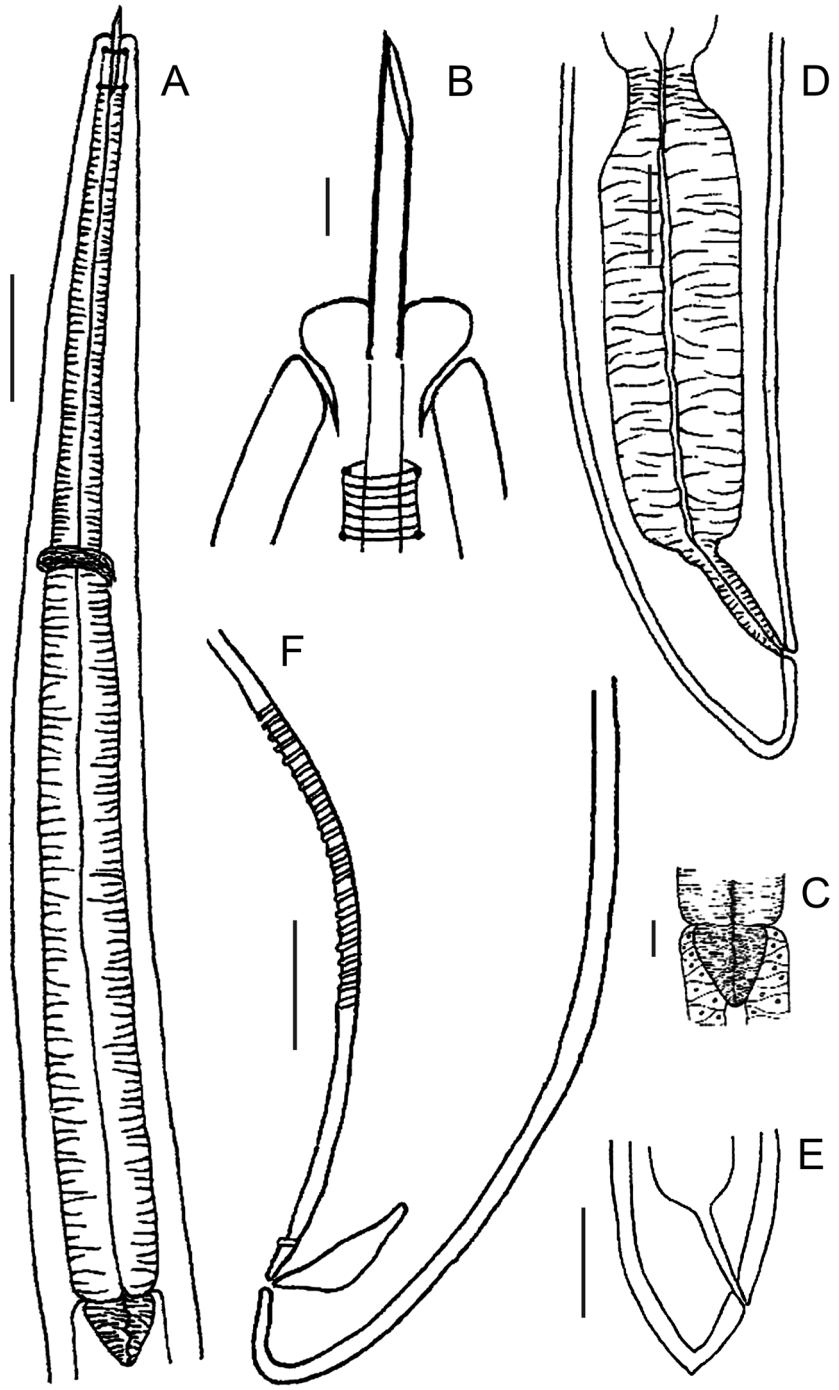


Fig. 2. Morphology of *Labronema przhiboroi* **sp. nov.**, holotype (B, F) and paratype (A, C–E). **A**, esophagus; **B**, head (spear and amphids); **C**, cardia; **D**, female tail (rectum and prerectum); **E**, variation of the female tail; **F**, male tail (supplementary row). Scale bars: 10 μm (A), 50 μm (C, D, E, F) and 100 μm (B).

in depth, ovaries paired, antidromic, strongly curved. Genital tract filled with very small sperms. Eggs 122–127 × 45–49 μm. Prerectum voluminous, sphincter between prerectum and midgut very strong, between prerectum and rectum noticeably weaker.

Male. Genital system diorchic, with opposite testes. Testes 550–600 μm long. Vas deferens poorly distinguishable; ductus ejaculatoris extending beyond supplementary row, length of which 175–180 μm. Distance between adcloacal supplement and beginning of supplementary row 130–145 μm. Spicules typical dorylaimoid, but thin and weakly sclerotised [which is characteristic of the genus *Labronema*]. Adcloacal supplement bifurcated [similar to that of *L. neopacificum* Rahman et al., 1987 (Alvarez-Ortega et al., 2010: fig. 5E) and *Talanema baqrii* (Khan et al., 1989) (Imran et al., 2021: fig. 3F)], looking like a single one, similar to one of supplementary row but actually consisting of two supplements positioned parallel to right and left of midventral line.

Comparison. Of the twelve freshwater species within the genus *Labronema*, the new species is most closely related to *L. macrosoma* Alekseev, 1992, which was described from the Frolovka River at its confluence with Lake Khanka in the Primorskiy Territory, the southern region of the Russian Far East (Alekseev, 1992). The most significant species–specific differences include the following: the new species has smaller overall linear dimensions, a relatively shorter (in females, *c′*= 0.8 *vs.* 0.6), cone-shaped (not rounded) tail, a more posterior position of the vulva (*V*% = 52 *vs.* 46), significantly shorter spicules (60 μm *vs.* 126 μm), and a longer supplementary row with the same number of supplements (180 μm *vs.* 130 μm). From another mor-

Table 1. Morphometry of *Labronema przhiboroi* **sp. nov.**

Characters	Holotype, male	Paratype, male	Paratypes, females (n = 3)	
			Min–max	Mean
L	4217.0	3663.0	3921.0–4698.0	4242.0
a	32.0	26.0	32.0–48.0	38.0
b	4.0	4.0	4.0	4.0
c	124.0	94.0	100.0–111.0	107.0
Body wide	132.0	143.0	97.0–123.0	114.0
Esophagus (pharynx)	1030.0	944.0	873.0–1063.0	959.0
NR%	28.0	27.0	25.0–28.0	27.0
Trophico-genital part	3153.0	2680.0	3009.0–3592.0	3244.0
V%	–	–	52.0	52.0
Vagine	–	–	33.0–42.0	37.0
Vulva–anus	–	–	1844.0–2184.0	1985.0
Tail	34.0	39.0	37.0–43.0	40.0
Vulva–anus / tail	–	–	47.0–52.0	50.0
Q_1	–	–	583.0–931.0	757.0
Q_2	–	–	893.0–1127.0	1010.0
Anal diameter	51.0	48.0	45.0–53.0	47.0
Anal body diameter / tail	1.5	0.8	0.7–0.9	0.8
Rectum	–	–	73.0–77.0	75.0
Prerectum	–	–	80.0–204.0	140.0
Spicule	61.0	58.0	–	–
Supplements	24.0	29.0	–	–
Head diameter	28.0	23.0	25.0–28.0	26.0
Spear	42.0 × 4.0	45.0 × 4.0	40.0–44.0	42.0
Aperture of spear	11.0	12.0	12.0–14.0	13.0
Cardium	23.0	23.0	20.0–30.0	24.0

Note. All absolute measurements are expressed in micrometres (μm).

phologically similar freshwater species, *L. loeffleri* Andrassy, 1978, found in Lobuche Lake in Nepal, the Himalayas (Andrássy, 1978), *L. przhiboroi* **sp. nov.** primarily differs in the presence of cuticular ridges, a double guide ring, a distinct shape of the cardia, and the length of the spicules (60 μm *vs.* 122 μm).

Habitat. Lake Duluk is an oligotrophic cold lake located on the river of the same name. The silt sample was collected from the bottom slope about 15–20 m from the lake shore.

Etymology. The species is named in honour of Dr Andrey A. Przhiboro, who collected the specimens from the lake of the Putorana Plateau.

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