

# ***Peritobrilus vipriensis* sp. n. (Enoplida: Tobrilidae) and *Allodorylaimus rarus* sp. n. (Dorylaimida: Qudsianematidae) from Northern Siberia**

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**Summary.** *Peritobrilus vipriensis* sp. n. and *Allodorylaimus rarus* sp. n. are described from fresh-water bodies of the Lena estuary from the Laptev Sea. *Peritobrilus vipriensis* sp. n. is similar to *P. heptapapillatus* and *P. peregrinator*, but differed from the first species by having a different stoma construction, shorter tail, and longer spicules, and from the second species by having shorter cephalic setae, a longer tail, fewer supplementary organs and longer spicules. *Allodorylaimus rarus* sp. n. resembles *A. bokori* from which it differs by having a shorter spear and longer spicules.

**Key words:** freshwater bodies, free-living nematodes, *Peritobrilus vipriensis* sp. n., *Allodorylaimus rarus* sp. n., Siberia.

During June and July 1990 a faunistic study was done on lakes in the "Lena-Estuary Reserve", situated in Northern Siberia at the mouth of the Lena river at its entry to the Laptev Sea. The samples contained numerous free-living nematodes, including two new species that are described here.

## **MATERIAL AND METHODS**

Samples were collected from three unnamed lakes of the Reserve: 1) a lake on Tit-Ary Island, situated in the main canal of the Lena river; 2) a lake on Dunaj Island in the main canal of the Lena river; 3) a lake on Tas-Ary Island in the Lena river. Each of these fresh-water lakes is small and shallow. The samples were muddy sand from a lake on Tit-Ary, detritus and moss from a lake on Dunaj Island, and silted moss from a lake on Tas-Ary Island. They were collected close to the bank of each lake at depths of 0.2-0.5 m, with a 0.08 mm size mesh hand-net. The samples were fixed with 4% formalin and the nematode specimens hand-picked from the samples and stained with methylene-blue and mounted in glycerin on slides. Head diameter was measured at the level of the cephalic setae and spicule length was measured along the chord.

## **DESCRIPTIONS**

### ***Peritobrilus vipriensis* sp. n. (Fig. 1A-J)**

**Holotype male:** L=2.42 mm, a=21.6, b=5.2, c=14.4, c'=3.0, suppl. 5, spic.=91  $\mu$ m.

**Paratype male:** L=2.79 mm, a=23.4, b=5.9, c=15.9, c'=3.0, suppl. 6, spic.=90  $\mu$ m.

**Paratype females (n=9):** L=2.58-2.91 (2.72) mm, a=16.7-20.8 (17.8), b=5.1-6.0 (5.4), c=7.8-8.8 (8.3), c'=4.9-6.0 (5.5), V=43.9-48.9 (46.3)%.

**Females.** Body curved ventrally. Cuticle finely striated, 1  $\mu$ m thick at midbody. Body setae numerous, irregularly distributed on body, 3-4  $\mu$ m long. Numerous crystals in the body cavity appearing as short rods, 7-9  $\mu$ m long. Cephalic end bluntly truncated; vestibulum not prominent. Cephalic diameter 32-40  $\mu$ m. Lips well developed. Inner labial papilla high and acute. Outer labial and cephalic setae joined. Outer labial setae and cephalic setae 14-15  $\mu$ m and 7-8  $\mu$ m long, respectively. Buccal cavity cup-shaped, with pockets almost entirely overlapping each other. Pockets with depth less than that of the buccal cavity and shaped as small rounded pits in the internal oesophageal lumen: one dorsal (ante-

rior), the other right subventral (posterior). Each pocket with an onchus (small immovable tooth), situated dorsal and ventral, respectively. Total length of the body cavity 31-34  $\mu\text{m}$ . Amphid apertures at the level of anterior margins of the pockets. Amphid apertures 10-12  $\mu\text{m}$  wide. Oesophagus 483-535 (502)  $\mu\text{m}$  long. Nerve ring at about one-third of oesophagus length. Cardial glands well developed, spherical. Maximal body width 140  $\mu\text{m}$ . Ovaries paired, antidromous, moderately sized. Gonaduct situated ventrally to the intestine. Vulva lips weakly sclerotized, not protruding outside the body contour. Spermatheca indistinct; spermatozoa observed in uterus. Uterus without muscular wall. Two glandular cells on each side of vulva. Vagina short, about 1/3 of corresponding body diameter in length. Uterus containing one to three eggs, 63-71x70-80  $\mu\text{m}$ . Tail slender, gradually attenuated, 308-340 (326)  $\mu\text{m}$  long. Subterminal setae absent. Three large caudal glands connected with a short conical spinneret.

**Males.** Smaller than females. Somatic setae 5-6  $\mu\text{m}$  long, numerous, especially on the tail and the region of the supplements, where the setae are situated subventrally. Cephalic diameter 30-32  $\mu\text{m}$ . Oesophagus 460-469  $\mu\text{m}$  long. Maximal body diameter 115  $\mu\text{m}$ . Testes paired. Supplementary organs, 5 to 6 in number, equal in size, echinaceous, with unequal distances between them; the longest distance being between the cloaca and the nearest (posterior most) supplement and between the second and third supplements; the smallest distance being between the third and fourth supplements. Distance between supplements: cloaca to first, 73, 74  $\mu\text{m}$ ; first to second, 60, 58  $\mu\text{m}$ ; second to third, 64, 64  $\mu\text{m}$ ; third to fourth, 42, 36  $\mu\text{m}$ ; fourth to fifth, 55, 57  $\mu\text{m}$ ; and fifth to sixth, 53, 53  $\mu\text{m}$ . Gubernaculum 25-26  $\mu\text{m}$  long. Tail length 168-175  $\mu\text{m}$ . Three large caudal glands connected with a short conical spinneret.

**Type locality.** Northern Siberia, Lena river mouth, "Lena-Estuary Reserve". Four females and one juvenile collected on 12th June 1990 from an unnamed lake on Tit-Ary Island in the main Lena River canal, shore zone, 0.2 m deep, muddy sand; two males (including holotype), three females, and two juveniles collected on 5th July 1990 from an unnamed lake on Tas-Ary Island in the main Lena River canal, 0.5 m deep, silted moss; and two females and two juveniles collected on 25th June 1990 from an unnamed lake on Dunaj Island, the Lena River delta, shore zone, 0.3 m deep, moss and detritus.

**Type material.** Holotype male (slide 70/31), paratype male and nine paratype females deposited in the nematode collection of the Institute of Parasitology of the Russian Academy of Sciences, Moscow.

**Differential diagnosis.** The new species is similar to *Peritobrilus heptapapillatus* Joubert & Heyns, 1979 and *P. peregrinator* Tsalolikhin, 1983 because of the body length (2-3 mm), size of the longer cephalic setae (outer labial setae 40-50% of the corresponding cephalic diameter), and absence of subterminal setae at the tail tip. *Peritobrilus vipriensis* sp. n. differs from *P. heptapapillatus* by having a different stoma construction in which the pockets of the buccal cavity do not overlap, shorter tail (in *P. heptapapillatus* females  $c=5.7-7.2$ ,  $c'=10$ ), fewer supplementary organs (5-6 vs 7), and longer spicules (63-69  $\mu\text{m}$  along the chord in *P. heptapapillatus*). *Peritobrilus vipriensis* sp. n. differs from *P. peregrinator* by having shorter cephalic setae (outer labial setae in *P. peregrinator* 23-30  $\mu\text{m}$  long, being 50% of corresponding cephalic diameter; cephalic setae of *P. peregrinator* 12-15  $\mu\text{m}$ ), longer tail (females of *P. peregrinator*  $c=13.7-16.6$ ,  $c'=2.5-3.5$ ), fewer supplementary organs (*P. peregrinator* males have 6-10 supplementary organs), and spicule size (spicule length in *P. peregrinator* 65-70  $\mu\text{m}$ ) (Joubert & Heyns, 1979; Tsalolikhin, 1983).

### *Alloodylaimus rarus* sp. n. (Fig. 2 A-H)

**Holotype female:**  $L=1.99$  mm,  $a=27.3$ ,  $b=4.5$ ,  $c=22.9$ ,  $c'=2.4$ ,  $V=42.3\%$ .

**Paratype females** ( $n=10$ ):  $L=1.61-2.37$  (1.70) mm,  $a=21.3-34.3$  (26.6),  $b=3.8-5.2$  (4.4),  $c=15.2-23.4$  (19.6),  $c'=2.2-3.7$  (3.0),  $V=39.2-49.7$  (44.0)%.

**Paratype male:**  $L=1.76$  mm,  $a=18.0$ ,  $b=4.1$ ,  $c=29.3$ ,  $c'=1.3$ , suppl. 6, spicul. = 63  $\mu\text{m}$ .

**Females.** Cuticle smooth, without visible cross-striation and longitudinal alae. Cuticle 1.5  $\mu\text{m}$  wide at midbody and 2.0  $\mu\text{m}$  in the tail. Lateral chord about one-fifth of the midbody diameter, without granular appearance. Lateral pores obscure. Labial region offset from the adjacent body by a deep, angular, constriction almost twice as wide as high and almost as wide as the body width at neck base. Head diameter 16-18  $\mu\text{m}$ . Labial and cephalic papillae prominent. Amphid opening at level of cephalic depression, its aperture occupying about half of the corresponding body width. Odontostyle 20-21  $\mu\text{m}$  long, 2  $\mu\text{m}$  wide. Odontophore linear, 36-38  $\mu\text{m}$  long. Guiding ring clear, double. Oesophagus mus-

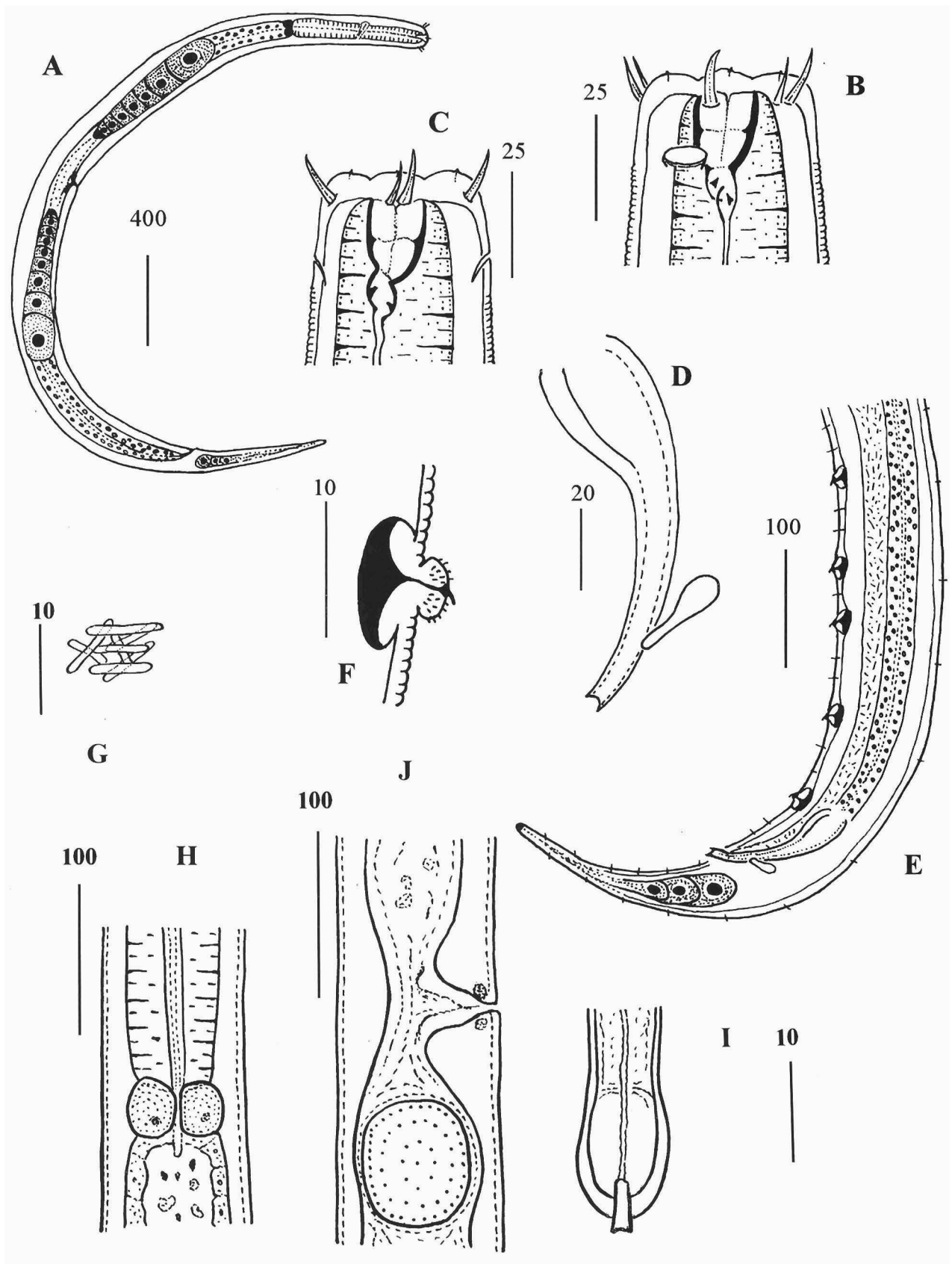


Fig. 1. *Peritobrilus vipriensis* sp. n. A: Female; B, C: Female head; D: Spicules and gubernaculum; E: Male posterior end; F: Supplement; G: Crystals; H: Female cardia region; J: Vulva region; I: Tail terminus. Scale bars in μm.

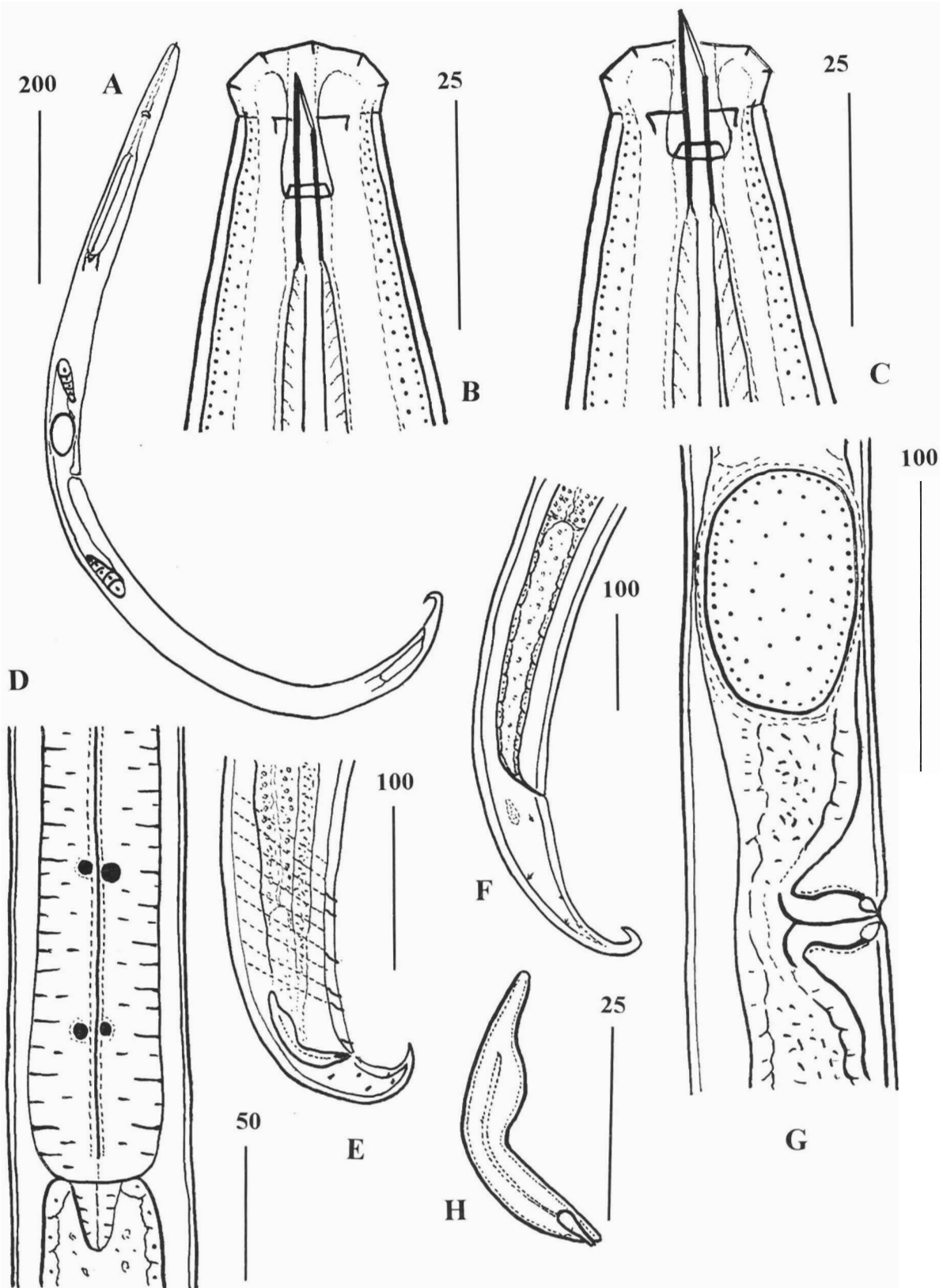


Fig. 2. *Allodorylaimus rarus* sp. n. A: Female; B, C: Female head; D: Cardia region; E: Posterior end of male; F: Posterior end of female; G: Vulva region; H: Spicules and lateral guiding pieces. Scale bars in  $\mu\text{m}$ .

cular, 395-479 (443)  $\mu\text{m}$  long. Nerve ring encircles the oesophagus at about 30-31% of oesophageal length from head end. Cardiamuscular, elongated, triangular. In some specimens pharyngeal gland visible, but outlets obscure:  $\text{DN}=61-63\%$ ;  $\text{S}_1\text{N}=73\%$ ,  $\text{S}_2\text{N}=88-90\%$ . Females amphidelphic; ovaries antiodromous;  $\text{G}_1=510-550 \mu\text{m}$ ,  $\text{G}_2=540-600 \mu\text{m}$ . Vulva a transverse slit-like opening. Pores and papilla absent in vulva region. Vagina extending inwards about half of the body diameter; *pars proximalis vaginae* 30-32  $\mu\text{m}$  long, with weakly sigmoid contours; *pars refringens vaginae* consisting of two well developed and triangular sclerotizations; *pars distalis vaginae* very short. Uterus shorter than oviduct, frequently containing spindle-shaped, 10  $\mu\text{m}$  long sperm. Uterus containing 1-2 eggs; 74-91x48-64  $\mu\text{m}$ . Uterus separated from oviduct by a prominent sphincter. Ovaries variable in length, usually not reaching the oviduct-uterus junction. Prerectum well developed, 42-120  $\mu\text{m}$  long. Tail hook-like, 70-123  $\mu\text{m}$  long.

**Male.** Cuticle smooth. Labial region 16  $\mu\text{m}$  wide. Spear length 20  $\mu\text{m}$ . Guiding ring double. Oesophagus 429  $\mu\text{m}$  long. Prerectum 91  $\mu\text{m}$  long; anterior end at the level of anterior supplements. Spicules typically dorylaimoid, 63  $\mu\text{m}$  long. Lateral guiding pieces 7  $\mu\text{m}$ . Six small supplementary organs, not touching one another. Second last supplement from anterior edge of body at the level of the spicule proximal endings. Tail hook-like, as in females, 60  $\mu\text{m}$  long. Five pairs of papilla on the tail.

**Type locality.** Northern Siberia, Lena river delta. Male, five females (holotype) and nine juveniles collected on 12th June 1990 from an unnamed lake on Tit-Ary Island in the Lena river main canal, shore zone, 0.2 m deep, muddy sand; six females and seven juveniles collected from an unnamed lake

on Tas-Ary Island in the Lena river main canal, 0.5 m, silted sand.

**Type material.** Holotype female, paratype females and male deposited in the nematode collection of the Institute of Parasitology, the Russian Academy of Sciences, Moscow. Holotype on slide 70/27.

**Differential diagnoses.** The new species resembles *Allodorylaimus bokori* (Andrássy, 1959) in body length, relative tail sizes of male and juveniles, and the number and position of the supplementary organs. The latter species was described from a single male and several juveniles found in a puddle inside Baradla Cave, Hungary (Andrássy, 1959). *Allodorylaimus rarus* sp. n. differs from *A. bokori* by having a shorter spear (20  $\mu\text{m}$  vs 24  $\mu\text{m}$ ) and longer spicules (60  $\mu\text{m}$  vs 52  $\mu\text{m}$ ).

## ACKNOWLEDGEMENT

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Гагарин В.Г. *Peritobrilus vipriensis* sp. n. (Enoplida: Tobrilidae) и *Allodorylaimus rarus* sp. n. (Dorylaimida: Quadsianematidae) из Северной Сибири.

**Резюме.** *Peritobrilus vipriensis* sp. n. и *Allodorylaimus rarus* sp. n. описаны из пресноводных водоемов в эстуарии Лены в море Лаптевых. *Peritobrilus vipriensis* sp. n. близок к *P. heptapapillatus* и *P. peregrinator*, но отличается от первого вида иным строением стомы, коротким хвостовым концом и более длинными спикулами, а от второго вида - короткими головными щетинками, более длинным хвостовым концом, меньшим количеством супплементарных органов и более длинными спикулами. *Allodorylaimus rarus* sp. n. сходен с *A. bokori*, от которого отличается более коротким копьём и длинными спикулами.

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