

## Two new species of Baikal nematodes of the genus *Asperotobrilus* (Nematoda: Enoplida: Tobrilidae)

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Two new species of Baikal nematodes of the genus *Asperotobrilus* Shoshin, 1991 are described. *A. aculeatus* sp. n. differs from the type species, *A. asper* Shoshin, 1991, in the large size, longer somatic setae, and supplemental organs in form of short somatic setae. *A. investis* sp. n. differs from *A. asper* in the shorter somatic and cephalic setae and larger annulation of cuticle. An improved diagnosis of the genus *Asperotobrilus* and a key to species are given.

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### Genus *Asperotobrilus* Shoshin, 1991

Type species *A. asper* Shoshin, 1991, by original designation.

**Diagnosis.** Cuticle distinctly annulated, covered with numerous, usually very long setae. Cephalic setae in two appreciably separated circles; setae of the anterior circle shorter than setae of the posterior circle. Cardiac glands large, rounded. Sexual system of females appreciably differentiated; vagina with well-developed muscles. Supplemental organs of males represented either by setae not distinguished from somatic ones, or by short setae. Ductus ejaculatorius very long, not less than 60% of total length of male reproductive duct. Tail conic.

#### Key to species of the genus *Asperotobrilus*

- 1(4). Somatic setae extremely long, not less than 7  $\mu\text{m}$  (usually 10-20  $\mu\text{m}$ ).
- 2(3). Supplemental organs of males as typical somatic setae . . . . . *A. asper* Shoshin, 1991
- 3(2). Supplemental organs of males as short setae . . . . . *A. aculeatus* sp. n.
- 4(1). Length of somatic setae not more than 4-5  $\mu\text{m}$  . . . . . *A. investis* sp. n.

#### *Asperotobrilus aculeatus* sp. n.

(Figs 1-9)

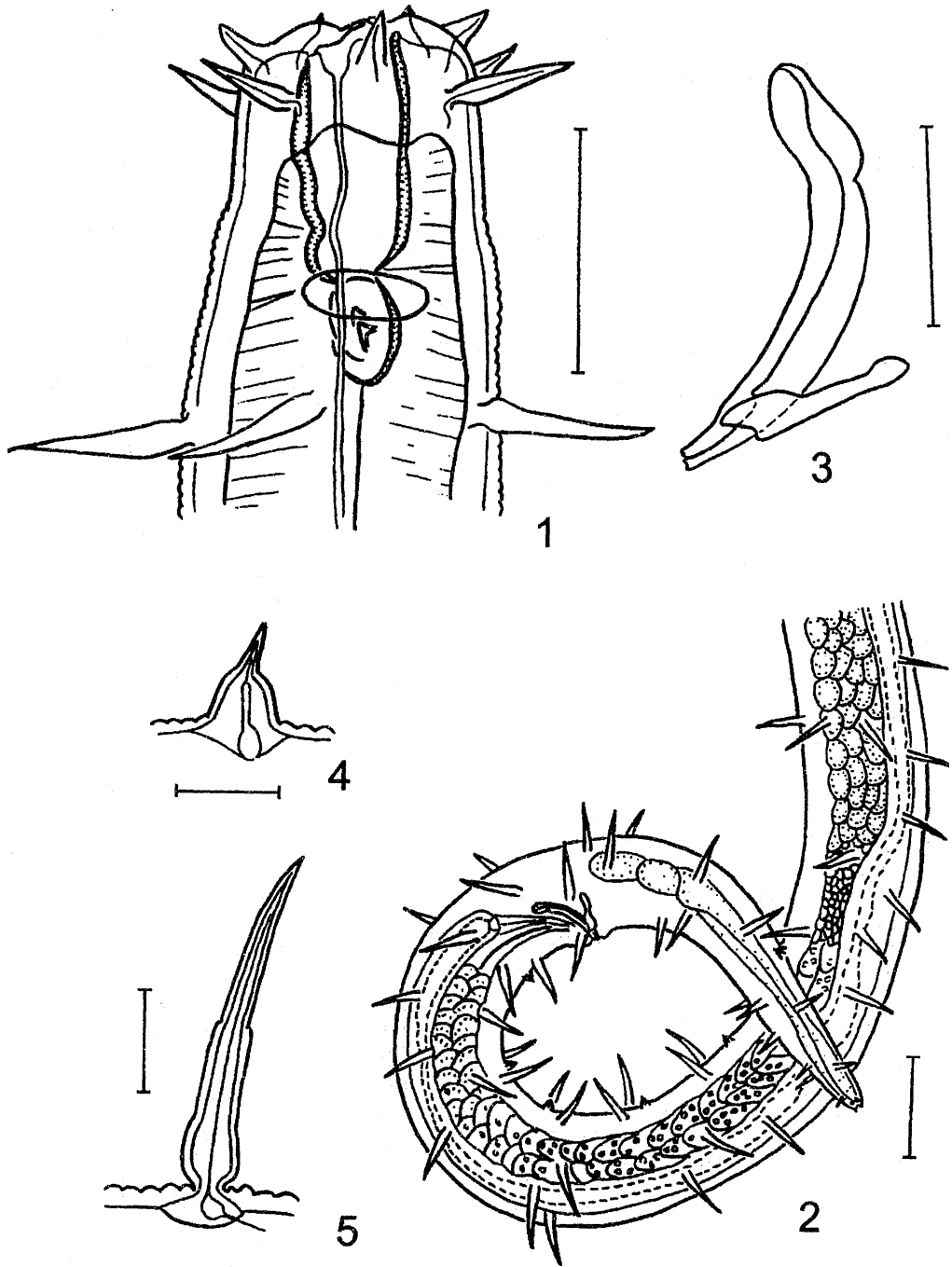
**Holotype.** ♂, Russia, Baikal Lake, region of Murino River mouth, depth 6 m, coarse sand, 14.VII.

1987 (Shoshin), microscope slide No. A-6331, Zoological Institute, St.Petersburg.

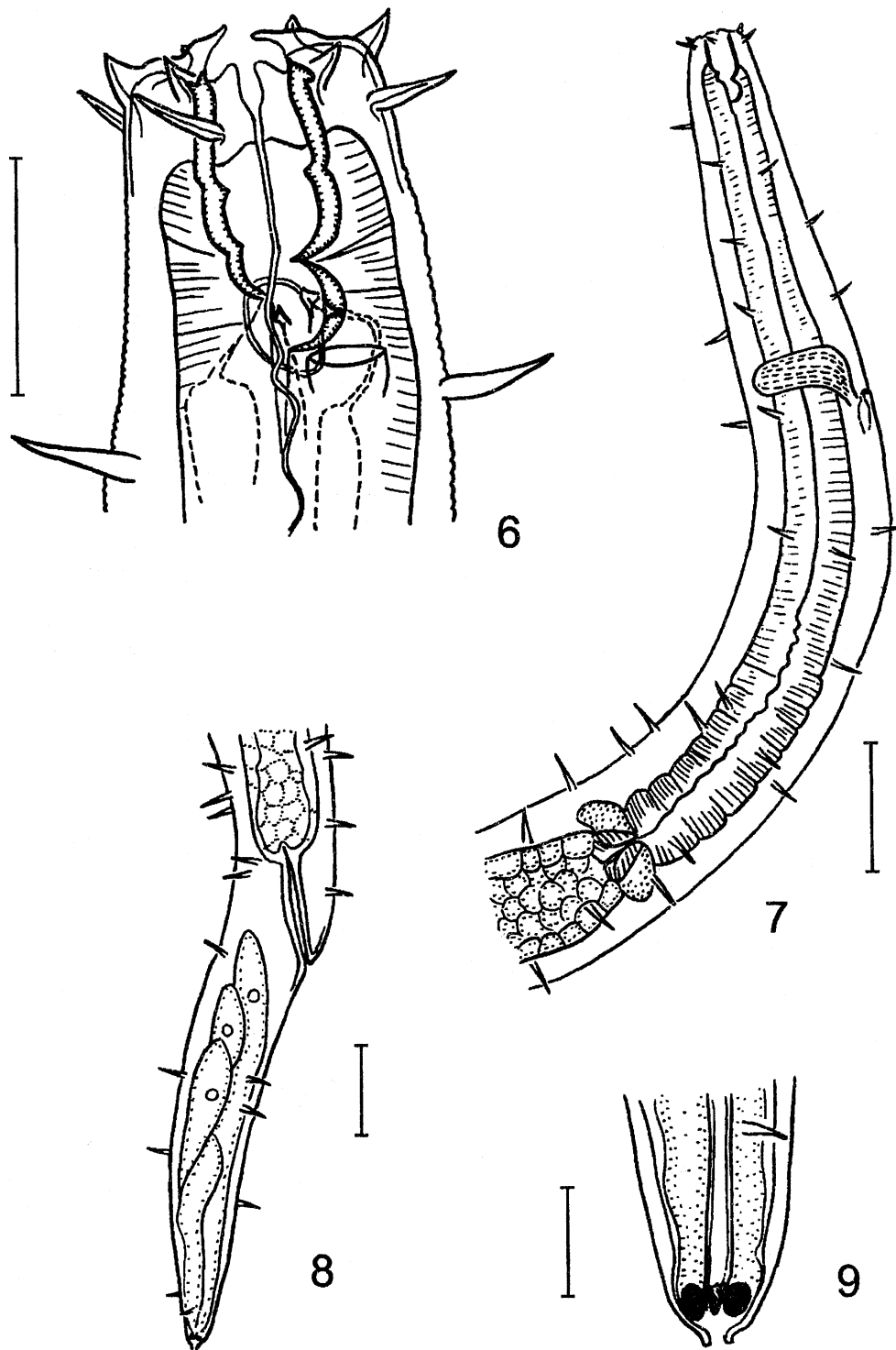
**Paratypes.** 5 ♀ and 6 ♂ from the same locality, depths 6 and 15-16 m.

**Description of holotype.** L = 1605  $\mu\text{m}$ , a = 29.2, b = 4.6, c = 10.7, c' = 3.9. Cuticle annulated. Somatic setae numerous, 19-21  $\mu\text{m}$  long. Head 18  $\mu\text{m}$  wide. Cephalic setae of anterior circle 4  $\mu\text{m}$ , of posterior circle 10  $\mu\text{m}$  long; circles of cephalic setae widely separated. Stoma with thick walls and well-expressed pockets; teeth large. Width of buccal cavity 10  $\mu\text{m}$ , depth 19  $\mu\text{m}$ ; total depth of stoma 30  $\mu\text{m}$ . Diameter of amphid 9  $\mu\text{m}$ . Oesophagus 350  $\mu\text{m}$  long. NR = 40%. Length of ductus ejaculatorius about 77% of total length of male sexual ducts. Diameter of spermia 5  $\mu\text{m}$ . Before cloaca, a line of 6 supplemental organs in form of short somatic setae. Spicules thin, slightly bent, with distinct proximal capitulum, 35  $\mu\text{m}$  long; gubernaculum 20  $\mu\text{m}$  long. Tail 150  $\mu\text{m}$  long.

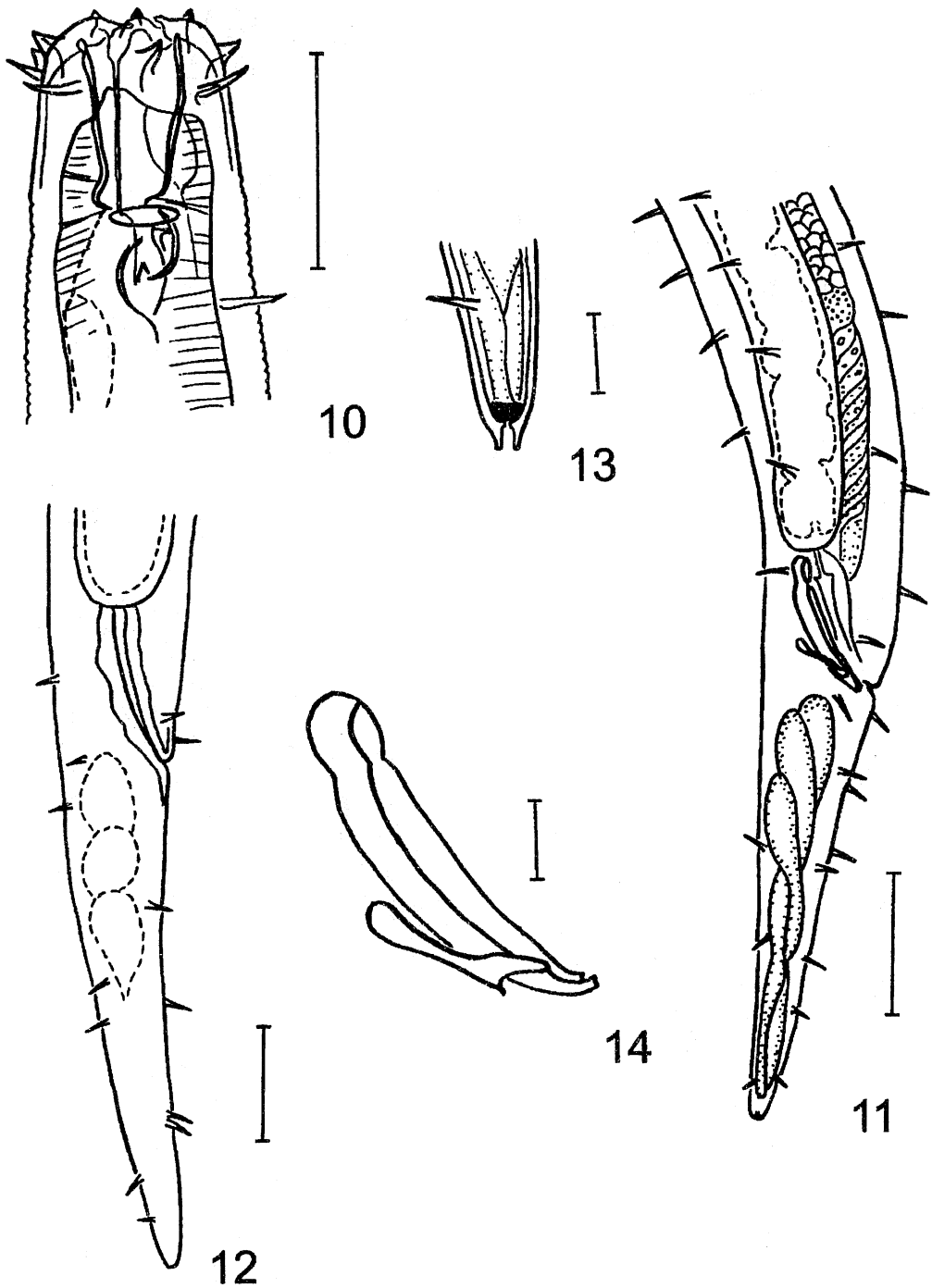
**Description of paratypes.** ♀ (n = 5): L = 1310-1520 (1410)  $\mu\text{m}$ , a = 18.6-22.4 (19.9), b = 4.2-4.7 (4.4), c = 9.9-11.8 (11.0), c' = 3.4-4.0 (3.7), V = 46.3-51.4 (48.4)%. Cuticle with a distinct annulus; somatic setae numerous, 10-11  $\mu\text{m}$  long. Head 18-20  $\mu\text{m}$  wide. Circles of cephalic setae separated; setae of anterior circle 4  $\mu\text{m}$ , of posterior circle 7-9  $\mu\text{m}$  long. Buccal cavity with thick, almost parallel walls, 9-10  $\mu\text{m}$  wide, depth 19-22  $\mu\text{m}$ ; total



Figs 1-5. *Asperotobrilus aculeatus* sp. n. (male, holotype): 1, head; 2, tail; 3, spicule and gubernaculum; 4, short somatic setae functioning as supplemental organ; 5, somatic setae. Scales: Figs 1, 3 – 20  $\mu\text{m}$ ; Figs 4, 5 – 5  $\mu\text{m}$ ; Fig. 2 – 40  $\mu\text{m}$ .



Figs 6-9. *Asperotobrilus aculeatus* sp. n. (female): 6, head; 7, oesophagus; 8, tail; 9, spinnereta. Scales: Fig. 6 - 20  $\mu$ m; Fig. 7 - 40  $\mu$ m; Fig. 8 - 35  $\mu$ m; Fig. 9 - 5  $\mu$ m.



**Figs 10-14.** *Asperotobrilus investis* sp. n.: 10, head (holotype); 11, tail of male (holotype); 12, tail of female; 13, spinnereta; 14, spicule and gubernaculum. Scales: Fig. 10 – 15  $\mu\text{m}$ ; Figs 11, 12 – 25  $\mu\text{m}$ ; Figs 13, 14 – 5  $\mu\text{m}$ .

depth of stoma 29-32  $\mu\text{m}$ . Diameter of amphid 6-7  $\mu\text{m}$ . Oesophagus 310-340 (325)  $\mu\text{m}$  long. NR = 37-42 (40)%.  $Q_1 = 170-260$  (233)  $\mu\text{m}$ ;  $Q_2 = 145-260$  (197)  $\mu\text{m}$ . Tail thick, conic, 120-150 (130)  $\mu\text{m}$  long. Terminal complex of spinnereta with three tail cones corresponding to the number of ducts of caudal glands.

$\sigma$  (n = 6): L = 1285-1550 (1445)  $\mu\text{m}$ , a = 27.3-37.1 (31.1), b = 4.3-4.9 (4.7), c = 10.3-13.0 (11.4), c' = 3.7-5.6 (4.5). Somatic setae more numerous and longer than in females, their length 19-21  $\mu\text{m}$ . Head 16-18  $\mu\text{m}$  wide. Cephalic setae of anterior circle 4  $\mu\text{m}$ , of posterior circle 10  $\mu\text{m}$  long. Diameter of amphid 7-9  $\mu\text{m}$ . Oesophagus 280-350 (315)  $\mu\text{m}$  long. NR = 38-43 (40)%. Length of ductus ejaculatorius about 77% of total length of male sexual ducts. Diameter of spermia 5  $\mu\text{m}$ . Before the cloaca, a line of 5 supplemental organs in form of short somatic setae. Spicules thin, slightly bent, with distinct proximal capitulum, 27-35 (33)  $\mu\text{m}$  long; gubernaculum 17-20 (18)  $\mu\text{m}$  long. Tail 110-150 (130)  $\mu\text{m}$  long.

*Comparison.* The new species is rather similar to *A. asper* Shoshin, 1991, the type species of the genus, but differs from it in the distinctly larger size of body, longer somatic setae, and supplemental organs in form of short setae.

*Etymology.* From Latin "aculeatus" (covered with thorns), for numerous stout somatic setae.

***Asperotobrilus investis* sp. n.**  
(Figs 10-14)

*Holotype.*  $\sigma$ , Russia, Baikal Lake, Bol'shie Koty Bay, depth 23 m, silted sand, detritus, 16.VIII.1986 (Shoshin), microscope slide No. A-6332, Zoological Institute, St. Petersburg.

*Paratypes.* 3  $\sigma$ , 3  $\sigma$  from the same locality.

*Description of holotype.* L = 665  $\mu\text{m}$ , a = 17.5, b = 3.8, c = 7.4, c' = 3.9. Cuticle with large annuli. Somatic setae numerous, thin, 4-5  $\mu\text{m}$  long. Head 13  $\mu\text{m}$  wide; cephalic setae of anterior circle 3  $\mu\text{m}$ , of posterior circle 4  $\mu\text{m}$  long. Buccal cavity with thin walls, 6  $\mu\text{m}$  wide, depth 16  $\mu\text{m}$ ; teeth large; pockets

wide; total depth of stoma 24  $\mu\text{m}$ . Diameter of amphid 6  $\mu\text{m}$ . Oesophagus 175  $\mu\text{m}$  long. NR = 45.7%. Length of ductus ejaculatorius 65% of total length of male sexual ducts. Diameter of spermia 2.5-3  $\mu\text{m}$ . Somatic setae before cloaca do not differ from other somatic setae. Spicules thin, bent, with proximal capitulum, 26  $\mu\text{m}$  long; gubernaculum 12  $\mu\text{m}$  long. Tail 90  $\mu\text{m}$  long.

*Description of paratypes.*  $\sigma$  (n = 3): L = 920-1020 (955)  $\mu\text{m}$ , a = 19.2-21.4 (20.2), b = 4.1-4.3 (4.2), c = 7.8-9.3 (8.8), c' = 4.2-4.6 (4.4), V = 48.0-54.1 (50.3)%. Cuticle with large annuli. Somatic setae numerous, thin, 4-5  $\mu\text{m}$  long. Circles of cephalic setae separated; setae of anterior circle 3  $\mu\text{m}$ , of posterior circle 4  $\mu\text{m}$  long. Buccal cavity with thin walls, its width 6-7  $\mu\text{m}$ , depth 16-18  $\mu\text{m}$ ; teeth large; pockets wide; total depth of stoma 27-28  $\mu\text{m}$ . Diameter of amphid 4-5  $\mu\text{m}$ . Oesophagus 215-235 (225)  $\mu\text{m}$  long. NR = 39.5-42.6 (41.4)%.  $Q_1 = 115-175$  (143)  $\mu\text{m}$ ;  $Q_2 = 110-130$  (118)  $\mu\text{m}$ . Tail thin, conic, 100-130 (110)  $\mu\text{m}$  long. Terminal complex of spinnereta with one common tail cone.

$\sigma$  (n = 3): L = 745-945 (873)  $\mu\text{m}$ , a = 20.1-27.0 (23.6), b = 4.0-4.3 (4.1), c = 9.3-9.9 (9.7), c' = 3.0-3.9 (3.4). Head width 13-16  $\mu\text{m}$ . Cephalic setae of anterior circle 2-3  $\mu\text{m}$ , of posterior circle 3-4  $\mu\text{m}$  long. Buccal cavity 6  $\mu\text{m}$  wide, its depth 16  $\mu\text{m}$ ; total depth of stoma 24-26  $\mu\text{m}$ . Amphid larger than in females, its diameter 6-7  $\mu\text{m}$ . Oesophagus 175-230 (203)  $\mu\text{m}$  long. NR = 43.2-45.9 (44.6)%. Length of ductus ejaculatorius 60-65% of total length of male sexual ducts. Diameter of spermia 2.5-3  $\mu\text{m}$ . Spicules thin, bent, with proximal capitulum, 26-28  $\mu\text{m}$  long; gubernaculum 13-15  $\mu\text{m}$  long. Tail 75-100 (90)  $\mu\text{m}$  long.

*Comparison.* The new species is close to *A. asper* from which it differs in the shorter somatic and cephalic setae and larger annulation of the cuticle.

*Etymology.* From Latin "investis" (naked, bald), for absence of long somatic setae.

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