

## Nematodes of the genus *Tylenchorhynchus* (Tylenchoidea:Nematoda) from the Canadian high Arctic<sup>1</sup>

R. H. MULVEY

Entomology Research Institute, Canada Department of Agriculture, Ottawa, Canada

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Three species belonging to the genus *Tylenchorhynchus* Cobb, 1913, including two new species, are recorded from the Canadian high Arctic. *Tylenchorhynchus arcticus* n. sp., *T. parobscurus* n. sp., and *T. leptus* Allen, 1955 are illustrated and described.

During June-August, 1962, the author collected soil samples from the Lake Hazen area of Ellesmere Island (81°49' N., 71°18' W.) in the Northwest Territories, Canada. Several of these samples contained specimens belonging to the genus *Tylenchorhynchus* Cobb, 1913, a stylet-bearing nematode. The present paper contains taxonomic descriptions of two new and one already described species.

Specimens were killed, fixed in 5% formol, and eventually glycerin mounts were prepared. Measurements were made by means of a "Visopan" projection microscope. Illustrations were prepared from camera lucida drawings. Type material is maintained in the Canadian National Collection of Nematodes (CNCN) at Ottawa, Canada.

### Taxonomy

#### *Tylenchorhynchus arcticus* n. sp.

(Figs. 1-5)

(10 females)— $L = 1.18$  mm (1.05-1.27);  $a = 39$  (33-41);  $b = 6.3$  (5.8-6.5);  $c = 17$  (15-19);  $V = 54$  (52-58); spear length = 34-38  $\mu$ ; tail length = 65-80  $\mu$ ;  $T/ABD = 3$ .

(5 males)— $L = 1.0$ -1.1 mm;  $a = 38$ -45;  $b = 5.9$ -7.3;  $c = 14$ -16; spicule length = 26-28  $\mu$ ; tail length = 60-70  $\mu$ .

*Female (holotype)*— $L = 1.27$  mm;  $a = 40$ ;  $b = 6.4$ ;  $c = 18$ ;  $V = 53$ ; spear length = 37  $\mu$ ; tail length = 70  $\mu$ . Collection No. 3079 CNCN, Ottawa. Type slide No. 192 deposited in CNCN, Ottawa, Canada.

*Male (allotype)*— $L = 1.2$  mm;  $a = 46$ ;  $b = 6.3$ ;  $c = 17$ ; spicule length = 27  $\mu$ ; spear length = 35  $\mu$ ; tail length = 70. Collection No. 3079, CNCN, Ottawa. Type slide No. 192a deposited in CNCN, Ottawa, Canada.

Lip region distinctly set off from body, with central cap-like structure and bearing six or seven annules, labial framework lightly sclerotized. Cuticle finely striated, lateral fields with six incisures, outer incisures aerolated. Stylet fairly slender with large knobs.

Spermatheca round, containing many sperm. Tail subcylindroid with bluntly rounded, smooth terminus. Phasmid midway in tail. Male similar to female in details of body and head. Spicules simple, ventrally curved, gubernaculum short.

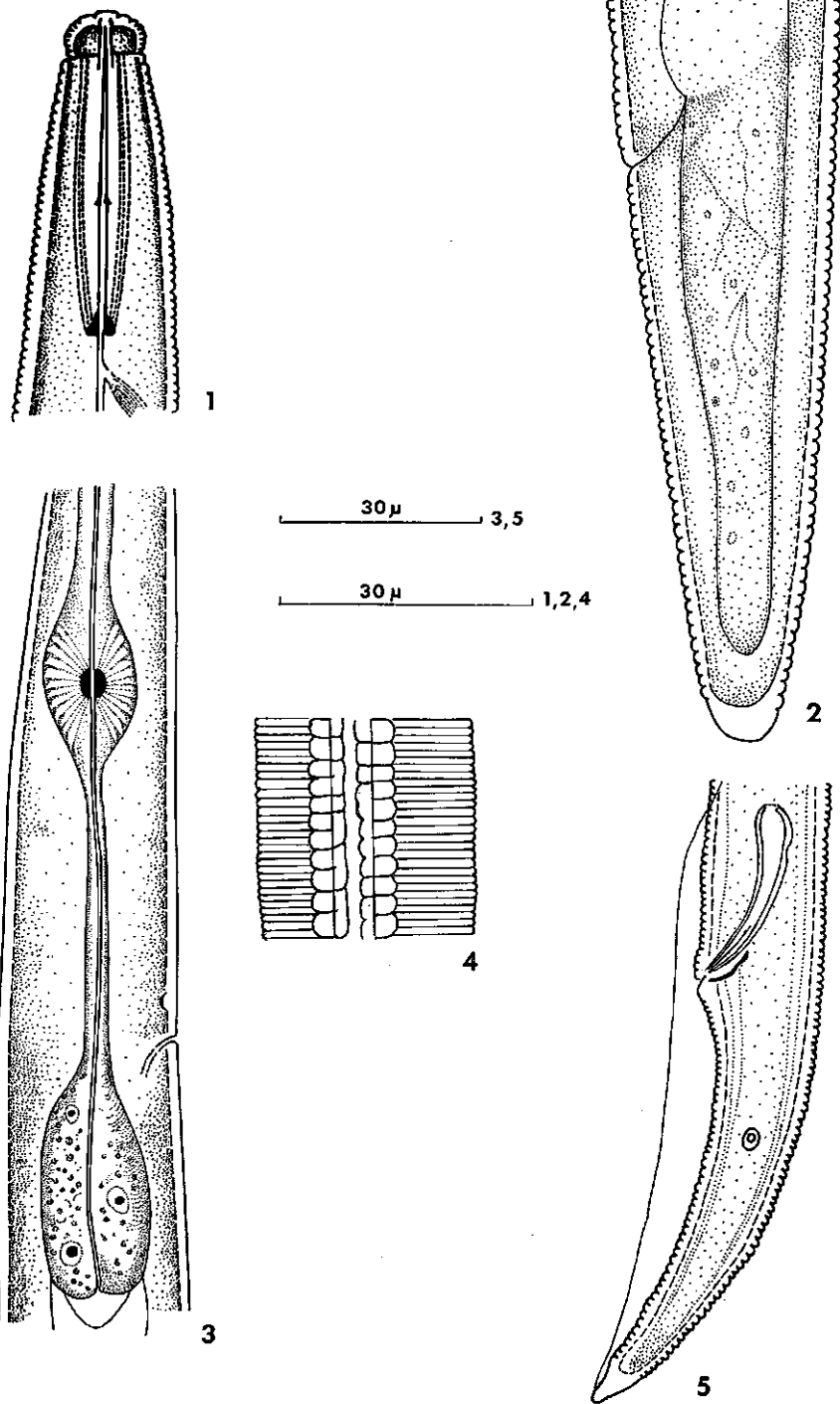
#### *Differential Diagnosis*

*T. arcticus*, according to Tarjan's key (1964), is closely related to *T. conicus* Allen, 1955, from which it differs in stylet length (41-44  $\mu$  for *T. conicus*) and in having a bluntly rounded tail terminus. From *T. macrodens* Allen, 1955 it differs in stylet length (41-48  $\mu$  for *T. macrodens*) and labial sclerotization, which is heavy and conspicuous for that species. It differs from *T. lineatus*, its closest relative, in relative spear length (25-28  $\mu$  for *T. lineatus*). *T. arcticus* n. sp. also resembles *Geocenamus tenuidens* Thorne, 1968.

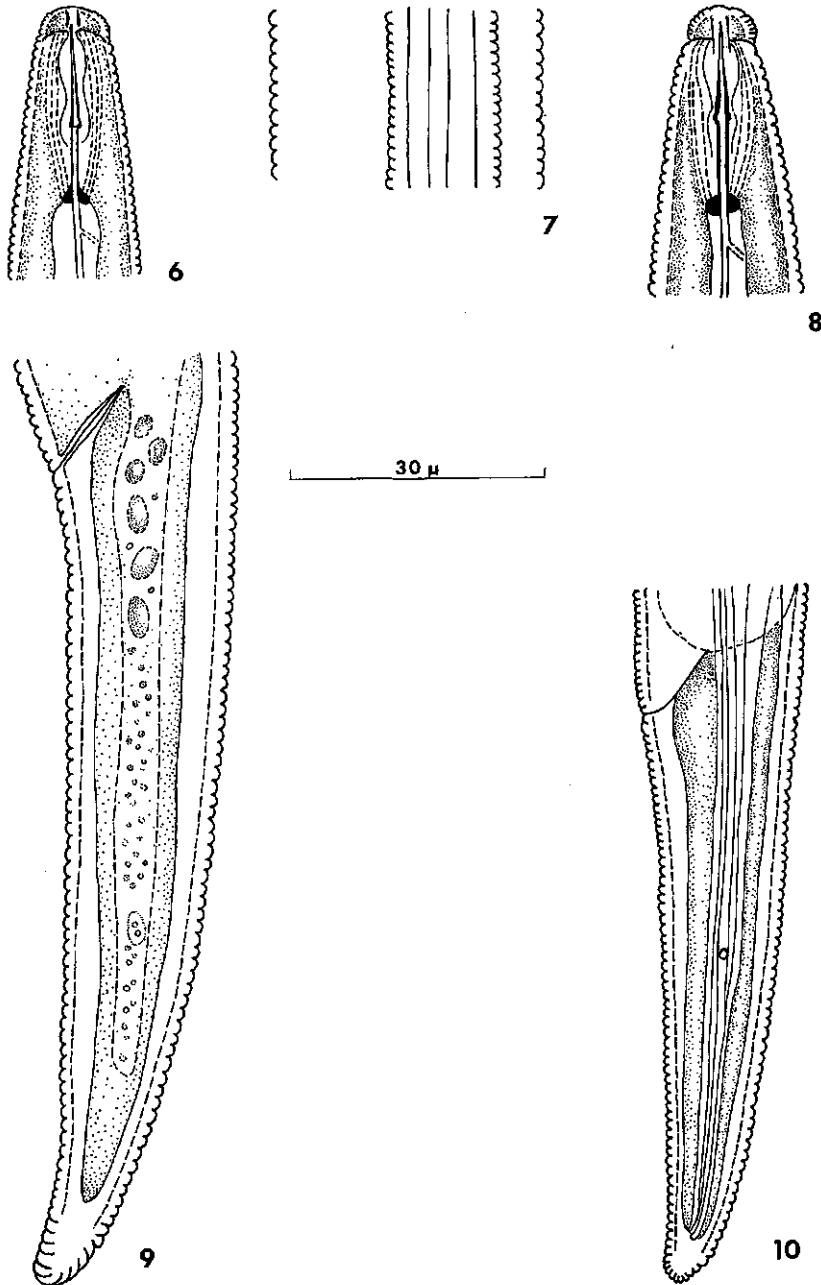
*Paratypes*—Eighteen females and five males distributed as follows: 12 ♀♀, 4 ♂♂, CNCN, Ottawa, Canada; 5 ♀♀, 1 ♂, Department of Nematology, University of California, Riverside; 2 ♀♀, U.S.D.A., Nematology Investigations, Beltsville, Maryland.

*Type locality and habitat*—Lake Hazen area close to Skeleton Lake, about the roots of grass growing in dry soil.

<sup>1</sup>An investigation associated with the program studies on Arctic insects, Entomology Research Institute, Canada Department of Agriculture (Paper No. 41).



FIGS. 1-5. *Tylenchorhynchus arcticus* n. sp. 1. Female head. 2. Female tail. 3. Female esophagus. 4. Lateral incisures. 5. Male tail and spicule.



FIGS. 6, 7, 9. *Tylenchorhynchus parobscurus* n. sp. 6. Female head. 7. Lateral incisures. 9. Female tail. FIGS. 8, 10. *Tylenchorhynchus leptus*. 8. Female head. 10. Female tail.

*Tylenchorhynchus parobscurus* n. sp.

(Figs. 6, 7, 9)

(5 females)— $L = 1.36$  mm (1.25–1.50);  $a = 43$  (41–46);  $b = 6.3$  (5.7–6.8);  $c = 14$  (13–16);  $V = 51$  (50–53); stylet length = 22  $\mu$ ; tail length = 80–115  $\mu$ ;  $T/ABD = 4.5$ .

(1 male)— $L = 1.2$  mm;  $a = 39$ ;  $b = 6.0$ ;  $c = 13$ ; spicule length = 30  $\mu$ ; stylet length = 22  $\mu$ ; tail length = 90  $\mu$ .

*Female (holotype)*— $L = 1.35$  mm;  $a = 41$ ;  $b = 6.4$ ;  $c = 14$ ;  $V = 51$ ; stylet length = 22  $\mu$ ; tail length = 100  $\mu$ ;  $T/ABD = 4.5$ . Collection No. 3079 CNCN, Ottawa. Type slide No. 193 deposited in CNCN, Ottawa, Canada.

*Male (allotype)*— $L = 1.2$  mm;  $a = 38$ ;  $b = 5.4$ ;  $c = 18$ ; spicule length = 30  $\mu$ ; stylet length = 22  $\mu$ ; tail length = 65  $\mu$ . Collection No. 3079. Type slide No. 193a deposited in CNCN, Ottawa, Canada.

Lip region continuous with body, annules six or seven, cephalic sclerotization inconspicuous. Stylet slender with distinct knobs. Lateral lines six, outer ones crenate. Excretory pore slightly forward of anterior end of basal bulb. Hemizonid three to four annules anterior to excretory pore.

Spermatheca rounded, filled with sperm. Body cuticle fairly coarsely annulated. Tail subcylindrical, with annules extending around terminus. Phasmids obscure. Intestine extending posteriorly into tail.

Male with characters similar to female. Spicules tylenchoid. Gubernaculum short, slightly curved.

*Differential Diagnosis*

*T. parobscurus* n. sp. keys to *T. obscurus* Allen, 1955 (according to Tarjan, 1964) but differs significantly in body length (0.63–0.79 mm for *T. obscurus*) and  $T/ABD$  ratio (3.0 for *T. obscurus*). In addition, *T. obscurus* has a slightly longer stylet.

*Paratypes*—Five females and one male, distributed as follows: 4 ♀♀, 1 ♂ in CNCN, Ottawa, Canada; 1 ♀ in Nematology Department, University of California, Riverside.

*Type locality and habitat*—About 200 ft south of Skeleton Lake, about the roots of grass.

*Tylenchorhynchus leptus* Allen, 1955

(Figs. 8, 10)

(2 females)— $L = 0.76, 0.80$  mm;  $a = 28, 27$ ;  $b = 5.8, 5.7$ ;  $c = 12.3, 11.4$ ;  $V = 55, 54$ ; stylet length = 24, 23  $\mu$ ; tail length = 62, 70  $\mu$ ;  $T/ABD = 3.5$ .

Allen (1955) first described this species. The Lake Hazen females fit his description very well. Lip region slightly set off from body, lateral lines six, spear robust with very large knobs.

Spermatheca absent. Tail subcylindrical with annulated terminus. Phasmids relatively large, midway in tail.

Male unknown.

*Habitats and localities*—Collection Nos. 3045 and 3059. Sandy soil about the roots of *Salix* sp., dry moss, and grass, northeast slope of Mount McGill.

**Acknowledgments**

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