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Skrjabingylus lutrae n. sp. (Nematoda: Metastrongyloidea) from otter (*Lutra canadensis*)

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Skrjabingylus lutrae n. sp. from otter in Ontario is distinguished from other members of the genus by its short spicules (239–275 μ long) with globe-shaped tips, and a small buccal capsule. It is the only sinus worm known from otter (Lutrinae). First-stage larvae from the uteri of female worms and third-stage larvae from experimentally infected gastropods (*Mesodon roemori*) are described.

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Skrjabingylus lutrae n. sp., parasite de la loutre en Ontario, se distingue des autres espèces de ce genre par ses spicules courts (longueur = 239–275 μ) à bouts globulaires et par sa petite capsule buccale. Il s'agit de la seule espèce connue du genre *Skrjabingylus* parasite de la loutre (Lutrinae). On donne une description des larves de premier stade prélevées dans l'utérus de vers femelles ainsi que des larves de troisième stade prélevées sur des gastéropodes (*Mesodon roemori*) infectés artificiellement.

Introduction

According to Petrow (1927, 1928), von Linstow (1873) reported sinus nematodes in otter (Lutrinae) but as later pointed out by Dougherty and Hall (1955), von Linstow (1873) apparently made no mention of otter. Lesions in frontal bones resembling those caused by *Skrjabingylus* spp. in mustelids have been found in European otter (Haltenorth 1937; Hansson 1970) but sinus worms have not been studied from this host.

Nematodes found in the frontal sinuses of otter in Ontario represent a new species which is herein described.

Methods and Materials

Fresh and frozen otter carcasses were obtained from fur-trappers in central and northwestern Ontario during the fall of 1969 and 1970. Worms from the frontal sinuses were fixed in a 10% solution of glycerine in 70% alcohol and studied in glycerine. The following description is based on six male and five female worms from the sinuses of a single otter. In the following description the range is followed by measurements of the holotype (male) and the allotype (female).

Skrjabingylus lutrae n. sp. (Figs. 1–9)

General—Metastrongyloidea, Pseudaliidae Railliet 1916, *Skrjabingylus* Petrow 1927. Stout red worms. Body wall transparent in living worms. Teguminal sheath with inconspicuous annulations. Oral opening circular. Buccal cavity shallow with heavily cuticularized wall. Dorsal oesophageal gland opening into buccal cavity. Oral opening surrounded by internal circle of 6 papillae each on slight elevation, and external circle of 10 papillae. Laterodorsal and laterodorsal papillae larger than other papillae of external circle. Amphids pore-like. Oesophagus club-shaped, constricted at posterior end and slightly invaginated into the intestine. Deirids lateral, at the level of excretory pore.

Male—Length 9–12 (12) mm. Maximum width 500–630 (630) μ near middle of body. Lumen of buccal cavity 23–33 (24) μ in diameter; 10–18 (11) μ deep. Oesophagus 700–980 (780) μ long; maximum width 65–82 (65) μ. Nerve ring and excretory pore 210–390 (350) μ and 290–575 (575) μ, respectively, from anterior extremity. Subventral excretory glands 525–670 (670) μ long. Spicules 239–275 (259) μ long, 12–16 (16) μ wide near proximal end. Each spicule with two medially directed alae up to 9 μ wide. Alae supported by irregularly branched thickenings extending almost to the medial margin. Tip of spicule globe-shaped (Fig. 4). Gubernaculum thickened and bluntly tapered at both ends; 42–52 (52) μ long, 10 μ wide. Anus 50–62 (55) μ from posterior extremity. Tail with subterminal spike-like appendage 6–10 (7) μ long. Bursa reduced, consisting of two fleshy lateral lobes each with six pedunculated papillae (rays). One prominent medial papilla anterior to anus.

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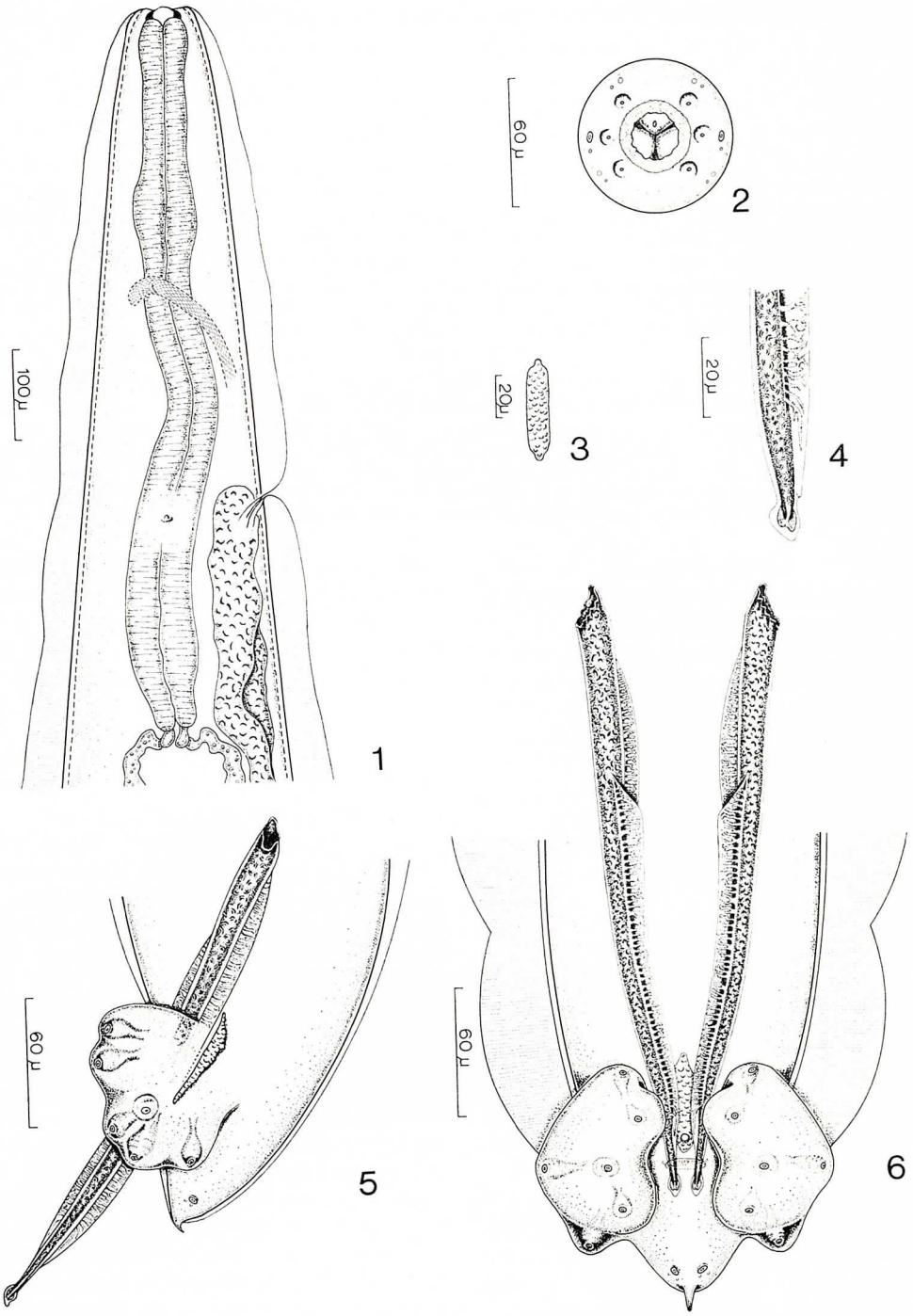

FIGS. 1–6. *Skrjabingylus lutrae* n. sp. Fig. 1. Anterior end male (holotype), lateral view. Fig. 2. Anterior end male (paratype), en face view. Fig. 3. Gubernaculum, ventral view. Fig. 4. Distal portion of spicule, ventral view. Fig. 5. Posterior end male (holotype), lateral view. Fig. 6. Posterior end male (paratype), ventral view.

Phasmids 28 μ from posterior extremity, accompanied by two minute adjacent papillae (not visible on all specimens).

Female—Length 22–26 (26) mm. Maximum width 800–990 (900) μ near middle of body. Lumen of buccal cavity 24–33 (25) μ in diameter, 12–19 (15) μ deep. Oesophagus 800–925 (880) μ long; maximum width 70–85 (83) μ. Nerve ring and excretory pore 225–325 (325) μ and 310–675 (635) μ from anterior extremity. Subventral excretory glands 500–650 (600) μ long. Vulva 11–13 (13) mm from anterior extremity; near middle of body. Anus and phasmids 200–260 (260) μ and 43 μ, respectively, from posterior extremity. A pair of minute lateral cuticular projections 12 μ from end of body. Tail terminating in digitiform extension 9–13 (10) μ long. Terminal portion of uteri and ovijector of mature females with first-stage larvae enclosed in thin egg capsules 67–74 μ by 43–50 μ in size (Fig. 9). Eggs released by females placed in water hatched within 2 days. First-stage larvae 363–432 μ long with narrow lateral alae and straight tapered tails without a dorsal spine. Oesophagus 153–182 μ long. Nerve ring and excretory pore 78–101 μ and 88–111 μ, respectively, from anterior extremity. Tail 30–43 μ long. Genital primordium not located.

Infective larva—First-stage larvae injected into laboratory reared gastropods, *Mesodon roemori* (Pfeiffer), developed to the third-stage in 14 days at 25°C. Larvae were 814–933 μ long and active in pepsin when digested from snail tissue. Wide lateral alae extended from about 10 μ behind the anterior extremity to within 30 μ of the posterior end. The oesophagus was 180–206 μ long. The nerve ring, excretory pore, and genital primordium were 110–125 μ, 126–146 μ, and 510–530 μ, respectively, from the anterior extremity. The tail was 71–82 μ in length. In en face view the oral opening was triangular and cephalic papillae were arranged as in adults (Fig. 7). The wall of the buccal capsule was slightly cutilarized and asymmetrical in lateral view, being extended ventrally (Fig. 8).

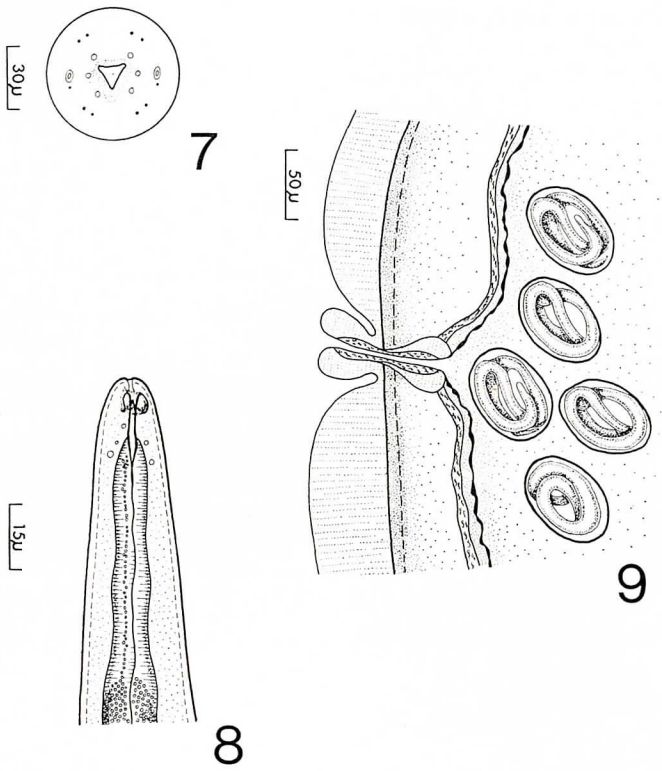

FIG. 7. Third-stage larva *S. lutrae*, en face view. FIG. 8. Third-stage larva *S. lutrae*, lateral view. FIG. 9. Vulva of *S. lutrae* with eggs in ovijector, lateral view.

Host—Lutra canadensis canadensis (Schreber).

Location—Frontal sinuses.

Locality—Filley Township, District of Sault Ste. Marie, Ontario (type locality); also Districts of Pembroke and Parry Sound, Ontario.

Specimens—United States National Museum Helminthological Collection Nos. 71981 (holotype), 71982 (allotype), 71983 (paratypes).

Prevalence of S. lutrae n. sp. in otter—Of 118 otter examined from widely scattered regions in Ontario, only 9 (8%) had *S. lutrae*. The number of otter examined and the number infected (in parentheses) from each of 10 administrative districts designated by the Ontario Department of Lands and Forests were as follows: Kenora, 11 (0); Fort Francis, 2 (0); Geraldton, 5 (0); Chapleau, 33 (0); North Bay, 8 (0); Sault Ste. Marie, 11 (5); Pembroke, 2 (2); and Parry Sound, 24 (2). The latter three districts comprise much of the southernmost limit of otter distribution in central Ontario.

Discussion

Skrjabingylus lutrae n. sp. is distinguished from all members of the genus, except *S. nasicola* (Leuckart 1842), by short spicules. The spicules of *S. lutrae* (239–275 μ) are only slightly longer than those of *S. nasicola* (180–232 μ) (Lankester 1970) but have a globe-shaped tip distinctly different from the boot-shaped tip of the spicules of *S. nasicola*. The buccal cavity of *S. lutrae* (males 23–33 μ, females 24–33 μ) is smaller than that of *S. nasicola* (males 40–42 μ, females 42–60 μ). The appearance of cephalic papillae differs in the two species. The six papillae of the inner circle are each on a slight elevation of tissue in *S. lutrae*. These six papillae in *S. nasicola* are not elevated but the pairs of submedian papillae of the external circle are. In addition, the wall of the buccal capsule of the third-stage larvae of *S. lutrae*, although asymmetrical in lateral view as in the third-stage larva of *S. nasicola*, is less heavily sclerotized than that of *S. nasicola*.

Examination of mink (*Mustela vison* Schreber) in districts from which otter were collected suggests *S. lutrae* is specific to otter. In the Chapleau district where no otter had sinus worms, 31 of 42 (74%) mink had *S. nasicola*. In the district of Sault Ste. Marie where both mink and otter had sinus worms, those in mink were *S. nasicola* and those in otter were *S. lutrae*.

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