Journal of Nematology 18(3):317–319. 1986.

Strelkovimermis spiculatus n. sp. (Mermithidae: Nematoda) Parasitizing *Aedes albifasciatus* Mac. (Culicidae: Diptera) in Argentina[1]

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Abstract: *Strelkovimermis spiculatus* n. sp. (Mermithidae: Nematoda), a parasite of the mosquito *Aedes albifasciatus* Mac. in Argentina, is described. Diagnostic characters of this species include a ventrally shifted mouth opening and spicules fused at the tips. The mermithid has been reared on *Culex pipiens* L. larvae in the laboratory.

Key words: *Aedes albifasciatus*, mermithid nematode, mosquito, *Strelkovimermis spiculatus*, taxonomy.

Mermithids were collected by the second author from larvae of the mosquito *Aedes albifasciatus* (Macquart) in the Miguelin River at Punta Lara in Buenos Aires, Argentina. Parasites brought to the laboratory were reared to maturity, and infective juveniles readily parasitized a laboratory colony of *Culex pipiens* larvae. Continuing cultures of the mermithid on *C. pipiens* were established and provided material for the present study. The mermithid nematode, new to science, is described here.

MATERIALS AND METHODS

Adults and postparasitic juvenile nematodes were killed in 60 C water, fixed in TAF, and processed to glycerin for taxonomic studies.

SYSTEMATICS

The nematodes were determined to be a new species in the genus *Strelkovimermis*. In the quantitative portion of the following description, measurements are given in micrometers unless otherwise noted. The range of the character is given in parentheses following the mean value.

Strelkovimermis spiculatus n. sp. (Figs. 1–12)

Mermithidae Braun, 1883, *Strelkovimermis* Rubzov, 1969.

Description: Medium length white nematodes with a smooth cuticle lacking noticeable cross fibers in adults and postparasitic juveniles; adult cuticle at nerve ring 4–10 thick; body with a series of nerve fibers passing through cuticle, especially around nerve ring; head homeocephalic, rounded, with six cephalic papillae arranged in a single plane; mouth shifted ventrally but not to level of head papillae; amphids medium in size; flask shaped, opening dorsal to, and at the same level as, the lateral head papillae. Amphidial pouches connected by a commissure; amphidial opening circular; six hypodermal cords; lateral cords containing two rows of nuclei in cross section; nuclei not visible in dorsal, ventral, and submedial cords; vulva opening elliptical; vulva flap absent; vagina S-shaped, first bend anterior; spicules paired but closely appressed and fused at tips; spicules short, approximately equal to the body width at cloaca; pharyngeal tube extends ⅓–⅕ of total body length.

Females (n = 23): Length 19 (15–23) mm; greatest width 200 (170–233); distance from head to nerve ring 200 (174–235); vulva 51% (46–53); length of vagina 206 (174–254); diameter of amphidial openings 5 (3–6); length of amphidial pouch 13 (11–16); vestigial anal opening located 105 (80–155) from tail tip; egg diameter 51 (41–58); tail tip may possess a faint "button."

Males (n = 24): Length 9 (4–15) mm; greatest width 115 (76–170); distance from head to nerve ring 176 (149–189); length of spicules 94 (79–111); width of spicules 13 (9–15); length of tail 120 (82–145); width of body at cloaca 95 (70–109); diameter of amphidial opening 5 (3–6); length of amphidial pouch 12 (10–13); tail with three rows of anal papillae, middle row double around cloacal opening.

Received for publication 26 August 1985.

[1] This investigation received financial support from the UNDP/World Bank/WHO Special Program for Research and Training in Tropical Diseases.

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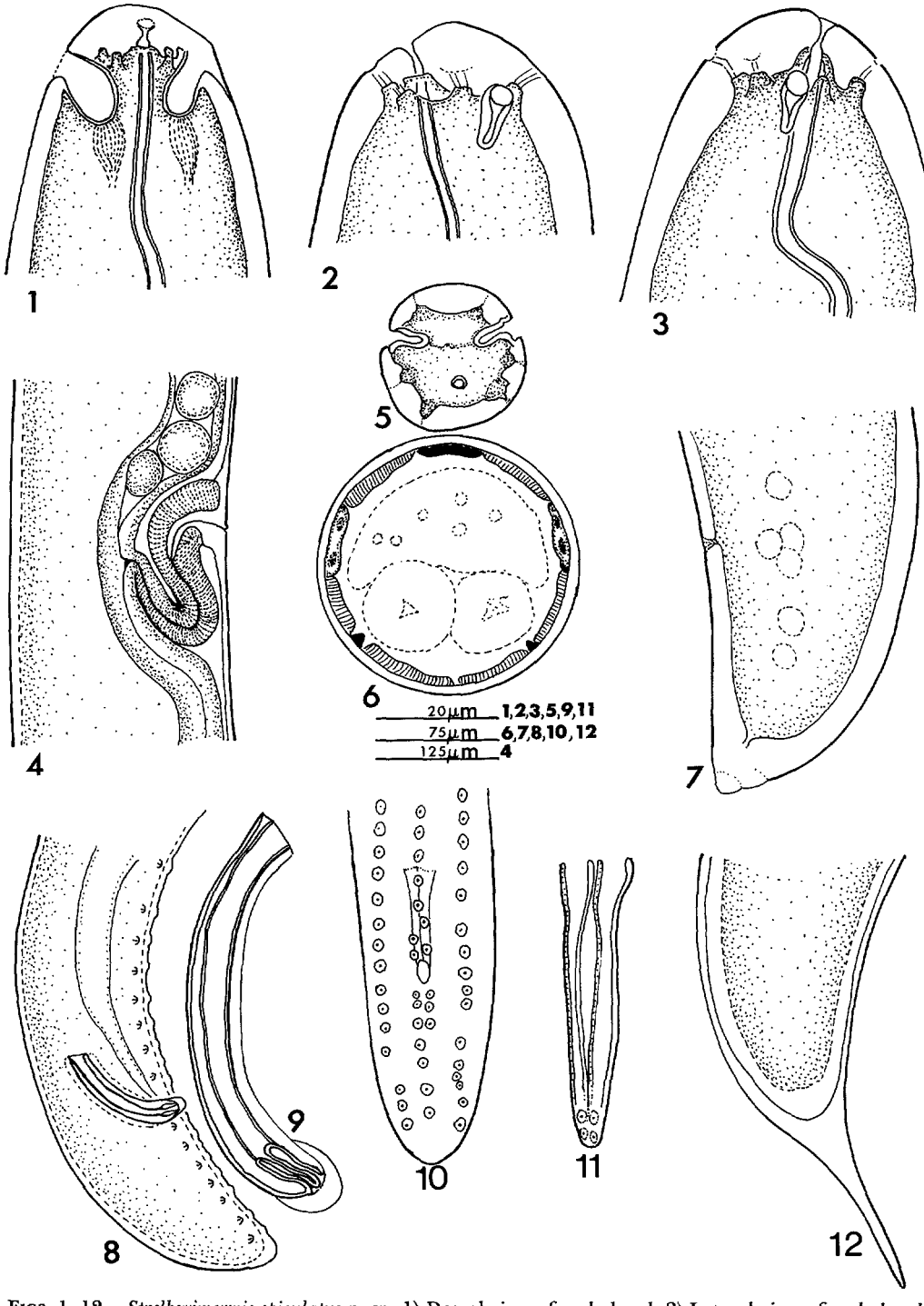

FIGS. 1–12. *Strelkovimermis spiculatus* n. sp. 1) Dorsal view of male head. 2) Lateral view of male head. 3) Lateral view of female head. 4) Lateral view of vagina. 5) En face view of male. 6) Cross section through male at midbody. 7) Lateral view of female tail. 8) Lateral view of male tail. 9) Lateral view of spicules. 10) Ventral view of male tail. 11) Ventral view of spicules. 12) Lateral view of tail of postparasitic juvenile.

Postparasitic juveniles (n = 10): Dimensions as in adults; tail with a spike-like appendage ranging from 75 to 110.

Type host: Aedes albifasciatus (Macquart) (Diptera: Culicidae).

Type locality: Miguelin River, Punta Lara, Partido de Ensenada, Buenos Aires, Argentina.

Type specimens: Holotype (male) and allotype (female) deposited at the Department of Nematology, University of California, Davis, California. Paratypes deposited in the collection of G. O. Poinar, Jr.

Diagnosis: The new species is placed in the genus *Strelkovimermis* Rubzov, 1969 as characterized by Rubzov (5). A character possessed by *S. spiculatus* but not shared by other species in the genus is the fusion of the spicules at the tip. Thus the genus *Strelkovimermis* is hereby emended to include forms that possess six head papillae arranged in one plane; small-medium sized amphids; six hypodermal cords; mouth terminal or shifted slightly to the ventral side; vagina elongate, simply curved or S-shaped; spicules short (less than twice body width at cloaca), paired, separate or fused at tip; and cuticle lacking distinct cross fibers. The genus includes the type species, *S. singularis* Strelkov (6) from midges, *S. viridis* Zahidov and Poinar (8) from midges, and *S. peterseni* (Nickle) (1) from mosquitoes. Additional distinguishing characters have been described for *S. peterseni* (3).

Discussion

The spicules of *S. spiculatus* are unique among the mermithids. Although separate, they overlap for most of their length and then the tips are fused. The fused tip is covered by a clear circular cap. Fused spicules have been described in the mermithids *Hydromermis churchillensis* Welch (7) and possibly members of the genus *Skrjabinomermis* (2). Fused spicules are rare among mermithids. Normally there are one or two separate spicules. If the spicules of *S. spiculatus* were considered single instead of paired, then this species could belong in the genus *Limnomermis* Daday, 1911. However, it is obvious that *S. spiculatus* possesses two spicules, suggesting that the genera of mermithids possessing single spicules, such as *Hydromermis* Corti, 1902 and *Gastromermis* Micoletzky, 1923, were derived from paired spicule forms. *S. spiculatus* also possesses most of the characters of the genus *Empidomermis* Poinar (4) with the exception of the number of hypodermal cords (six in *Strelkovimermis* and eight in *Empidomermis*).

Continuous culture of *S. spiculatus* has been accomplished in laboratory reared *Culex pipiens* larvae. A program to utilize this nematode for the biological control of mosquitoes in Argentina has been initiated.

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