

A new Nematoda (Thelastomatidae) parasite of Coleoptera larvae from Argentina

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Summary

Leidynema saltense n. sp. (Nematoda, Thelastomatidae), a parasite of larvae of *Cyclocephala modesta* (Coleoptera, Scarabaeidae) from Salta province, Argentina, is described and illustrated. This species is characterised by the presence of an intestinal caecum in the female, and four pairs of genital papillae in the male, one pair of which is large, ventral and pre-anal and three pairs are subventral and postanal.

Key words: *Leidynema saltense* n. sp.; Thelastomatidae; parasite; Coleoptera; Scarabaeidae

Introduction

Thelastomatids (Nematoda: Thelastomatidae) live in the alimentary canal of a variety of insects. The study of this family revealed the presence of various species (Adamson and Van Waerebeke 1992). One of these genera is *Leidynema*, which was first described by Schwenk (in Travassos 1929), with *L. appendiculatum* (Leidy, 1850) as type species. This is characterized by having a gut diverticulum and by the arrangement of the genital papillae in the male, with four pairs of genital papillae, one large ventral pre-anal and three subventral and postanal (Adamson and Van Waerebeke 1992). At present, six species belonging to this genus have been reported: *L. appendiculatum* (Leidy 1850) Chitwood 1932, *L. delatorrei* Chitwood 1932, *L. periplaneti* Farooqui 1967, *L. portentosae* Van Waerebeke 1978, *L. schwenkei* Farooqui 1967, and *L. socialis* (Leidy, 1850) Adamson and Van Waerebeke 1992. In this contribution, we report, describe and illustrate another species *Leidynema saltense* n. sp., a parasite of larvae of *Cyclocephala modesta* Burmeister (Coleoptera: Scarabaeidae) from Salta, Argentina.

Materials and methods

Larvae of *Cyclocephala modesta* Burmeister, found in Salta (n = 16), were collected by hand and then put in individual vials. In the laboratory, using Poinar's techniques (1975), the insects were kept at 5 °C for 10 min, and then they were dissected in Petri dishes with distilled water under a binocular microscope. The nematodes were found in the intestine of the insects and killed in distilled water at 60 °C for 2 min. They were then put in a solution of distilled water + TAF for 48 h (1:1); finally, we finished fixation in pure TAF. Fixed specimens were employed for drawing and measurements using a camera lucida microscope, and a micrometer in a Zeiss compound microscope. Measurements for the holotype male and allotype female are given in micrometers, and the mean value followed by the standard deviation is given in parenthesis.

Results

Genus *Leidynema* Schwenk (in Travassos 1929)

Leidynema saltense n. sp. (Fig. 1 A – F)

Diagnosis: *Leidynema saltense* n. sp. is identified by the presence of an intestinal caecum in the female (Fig. 1 A), and four pairs of genital papillae in the male, of which one pair is large, ventral and pre-anal and the other three pairs are subventral and postanal (Fig. 1 E, F).

Description: Cuticle striated throughout length of body in both sexes. Amphids small and pore-like. Mouth with eight labiopapillae. Stoma simple with thick walls (Fig. 1 G). Oesophagus divided into two cylindrical parts of which posterior is longer than anterior, distinct isthmus, and a valvular basal bulb (Fig. 1 A, B). Intestine with long caecum in females. Excretory pore at base of oesophagus.

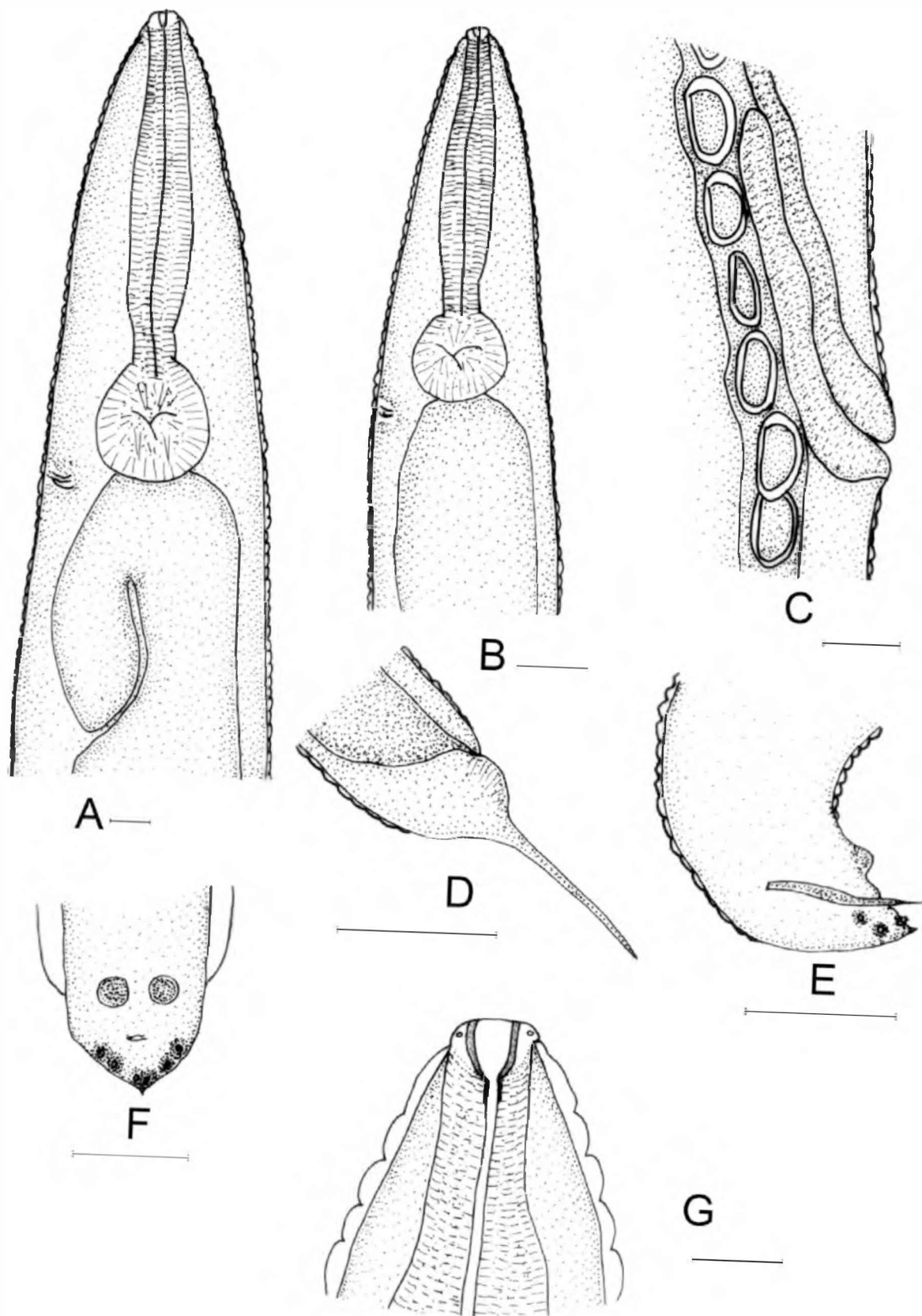


Fig. 1. *Leidyneia saltense* n. sp. A. Anterior end of female, ventral view. B. Anterior end of male, ventral view. C. Vagina and uterus with eggs. D. Posterior end of female. E. Posterior end of male, lateral view. F. Posterior end of male, ventral view. G. Stoma region of the female. Bars = 50 μ m.

Vulva protruding near middle of body (Fig. 1 C). Vagina long. Eggs ellipsoidal, smooth shell without filaments. Female with a cuticular flap to protect the anus. Tail of female long and filiform (Fig. 1 D). Male with lateral alae all along the body (Fig. 1 F). Single spicule (Fig. 1 E). Four pairs of genital papillae, one large ventral pre-anal and three subventral and postanal; no tail appendage (Fig. 1 F).

Male (n = 9): Total length: 656 μm (642.87 ± 86.06); diameter of labiopapillae: 22 μm (21.95 ± 1.63); oesophagus length: 190 μm (188.39 ± 31.72); distance from anterior end to excretory pore: 186 μm (183.14 ± 32.71); greatest width: 83 μm (82.31 ± 9.98); spicule length: 54 μm (53.98 ± 1.63); tail length: 60 μm (59.98 ± 1.63).

Female (n = 18): Total length: 3,990 μm ($3,199.41 \pm 712.58$); diameter of labiopapillae: 39 μm (41.89 ± 3.56); oesophagus length: 432 μm (462.22 ± 46.76); distance from anterior end to excretory pore: 460 μm (452.2 ± 39.44); greatest width: 325 μm (315.02 ± 79.84); vagina length: 284 μm (304.08 ± 58.88); vagina width: 46 μm (45.24 ± 0.96); V: 48.8 % (48.74 ± 0.96); length and width of eggs: 62 μm (61.98 ± 1.63) x 38 μm (38.93 ± 2.58).

Type host: *Cyclocephala modesta* Burmeister (Coleoptera: Scarabaeidae)

Type locality: Lesser, Salta, Argentina. Col. Camino, april 15th 2000.

Type material: deposited in the Helminthologica collection, N° 4847, Museo de La Plata, Paseo del Bosque s/n, 1900 La Plata, Argentina.

Etymology: The name refers to the geographical site of collection.

Discussion

The genus *Leidyneema*, with the type species *L. appendiculatum* (Leidy 1850) Chitwood 1932, is clearly defined as having a gut diverticulum. *Leidyneema saltense* n. sp. is close to six species *L. appendiculatum*, *L. delatorrei* Chitwood 1932, *L. periplaneti* Farooqui, 1967, *L. portentosa* van Waerebeke, 1978, *L. schwenki* Farooqui, 1967, and *L. socialis* (Leidy, 1850), in the shape of the oesophagus and intestine, vulva near midbody, a single spicule, and the caudal extremity abruptly truncate with short terminal spine.

L. appendiculatum can be separated by the presence in the male of a pair of large subventral pre-anal, a pair of subventral postanal and a pair of small subdorsal papillae; the male has no lateral alae but the female has prominent lateral alae, the tail ends in a spine-like projection. *L. delatorrei* differs by having a pair of large lateroventral pre-anal papillae, and postanal papillae: one pair just posterior to the anus, then two pairs, and a pair at the base of the tail appendage. *L. periplaneti* differs because the male lacks

lateral alae and has one pair of pre-anal, one pair of adanal and three pairs of postanal papillae. *L. portentosa* is distinguished because the male has three pairs of thick papillae: two pairs ventral grouped, and other pair reduced, ventral cuticular protuberances and the spicule long and thin. *L. schwenki* differs by having two pairs of pre-anal papillae and three pairs of postanal papillae. *L. socialis* can be characterized by the male having many postanal papillae, only a single central one, then two well developed pairs near the caudal appendage with many small papillae. Biswas and Chakravarty (1963) described another species, *L. stylopygi*, from India, but this is considered by Kloss (1966) and Farooqui (1967) as a synonym of *L. appendiculatum*.

Leidyneema saltense n. sp. is characterized mainly by the intestine with a caecum in female, and the male with four pairs of genital papillae as described above.

This is the first record of the genus *Leidyneema* in Salta Province, Argentina.

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