

***Aplectana artigasi* n.sp. (Nematoda: Cosmocercidae) from the Frog *Eupsophus calcaratus* (Anura: Leptodactylidae) in Southern Chile**

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A new species of nematode found in the intestine of Eupsophus calcaratus (Anura: Leptodactylidae) from Yaldad, Chile (45°5'S;73°43'W) is described. This new nematode is compared with other South American species of the genus. Aplectana artigasi differs from the only known Chilean species, Aplectana chilensis, as the former has a greater number of postanal papillae and a double papilla in the ventral region of the tail.

Key words: *Aplectana artigasi* n.sp. - Nematoda - intestine - Leptodactylidae - frogs - Chile

Nematode species of the genus *Aplectana* Railliet & Henry, 1916 are intestinal parasites of reptiles and amphibians (Travassos 1931, Yorke & Maplestone 1969, Baker 1980, 1987). In Chile, the genus is represented by *Aplectana chilensis* Lent & Freitas, 1948 from the toads *Rhinoderma darwini* Dumeril & Bibrón, 1841 (Puga 1994) and *Pleurodema thaul* (Benavides et al. 1996). *Aplectana* spp. are found in North America, Europe, Asia, South America and Africa (Travassos 1931, Baker 1980, Adamson & Baccam 1988, Dyer 1990). In South America about 19 species of *Aplectana* have been described from toads (Travassos 1931, Lent & Freitas 1948, Baker 1980, 1987, Baker & Vaucher 1986, Adamson & Baccam 1988).

In the present paper a new species of *Aplectana* is described from *Eupsophus calcaratus* (Günther, 1881) (Leptodactylidae), a toad of the temperate forests of Chile.

MATERIALS AND METHODS

Twenty six female and five male nematodes of the genus *Aplectana* were removed from the intestine of three adults of *E. calcaratus* from Yaldad (45°5'S; 73°43'W), on the Isla Grande of Chiloé, Chile. The nematodes were fixed in 70% ethanol and cleared in lactophenol for morphological study. Measurements are in µm, unless otherwise indicated. Ranges are followed by averages in parenthesis.

The following type material from the Helminthological collection of the Instituto Oswaldo Cruz, Brazil was studied: *A. crucifer* Travassos, 1925 (coll. No. 5173), *A. bonariensis* (Gutiérrez, 1945) (coll. No. 16600 a,b,c), *A. crossodactyli* (Baker, 1980) (coll. No. 30466 c,d) and *A. delirae* (De Fabio, 1971) (coll. No. 30591 m, j). Specimens of *A. chilensis* (coll. No. 231555) from Museo de Zoología de la Universidad de Concepción, Chile, were also studied.

DESCRIPTION

Aplectana artigasi n.sp.
(Figs 1-5)

Small slender worms. Cuticle bearing transverse striations from posterior to lips to tail. Triangular oral opening surrounded by one dorsal and two subventral lips. Each lip with a cuticular flap on anterior edge. Cephalic sense organs consisting of inner circle of 6 min papillae and a circle of four outer submedian papillae, one on each subventral lip and two on dorsal lip. Two large amphids present. Lateral alae narrow extending from 70-74 posterior to cephalic extremity to anal region in female and in males, beyond the anus. Anterior part of oesophageal corpus small compared to posterior one; isthmus small and bulb provided with valvular apparatus. Excretory pore a broad transverse slit with fringed border situated between anterior and medial region of the bulb.

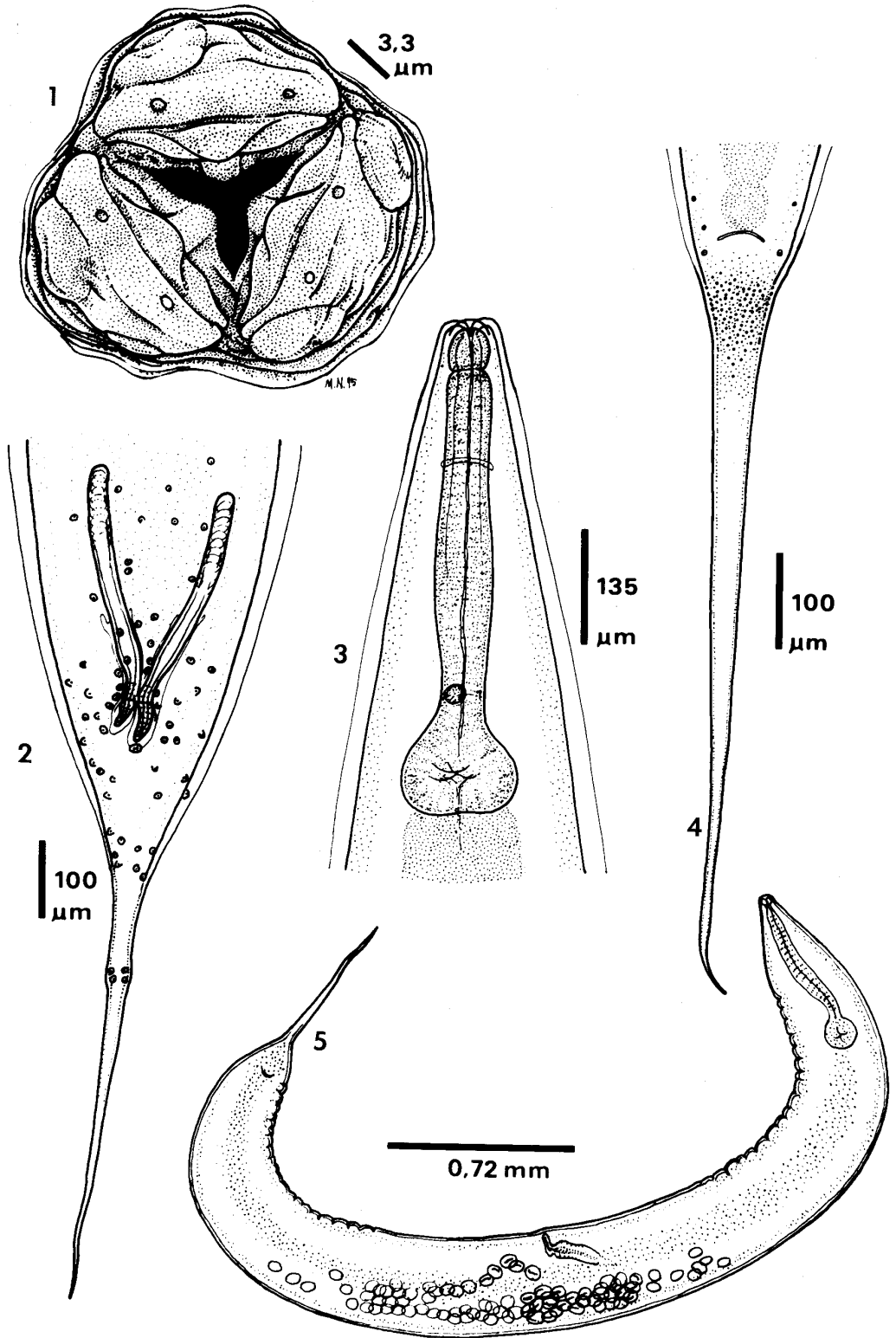
Female (11 specimens). Body 3.8-6 (5.2) mm long. Maximum width 350-490 (414.9). Buccal cavity 7-28 (12.5) long, anterior part of oesophageal corpus 28-56 (40.7) long, posterior region of oesophageal corpus 364-546 (427) long, isthmus 14-28 (25.2) long. Bulb 112-168 (133) long with 126-196 (155.6) wide. Nerve ring 174,5-227 (191.8) and excretory pore 434-546 (492.8) from

This work was supported by Grant no. S-94-34 (Dirección de Investigación y Desarrollo, Universidad Austral de Chile).

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Received 9 January 1997

Accepted 30 July 1997



Aplectana artigasi n.sp. Fig. 1: en face view. Fig. 2: caudal region of male, ventral view. Fig. 3: anterior end of male. Fig. 4: caudal end of female, ventral view. Fig. 5: entire female worm, lateral view.

anterior end, respectively. Vulva to anterior 2.3-3.3 (2.8) mm and posterior extremity 2.1-2.9 (2.5) mm, respectively. Tail 690-952 (823.3) long, slender, sharply pointed. Eggs in uteri, thin shelled with embryos in different stages of development up to larvae, 69-124.2 (100.8) long 41.4-82.8 (67.9) wide.

Male (3 specimens). Length 3-4 (3.4) mm. Maximum width 294-350 (322). Buccal cavity 14 long, anterior part of oesophageal corpus 28, posterior region of oesophageal corpus 294-378 (340.7) long. Isthmus 14 long. Bulb 98-182 (126) long, 112 maximum wide. Nerve ring 150.7 and excretory pore 378-434 (406) from anterior end, respectively. Spicules 322-364 (345.3) long, curved ventrally in distal part. Without gubernaculum. Tail 528-780 (619.3) long, slender, sharply pointed. Preanal region with up to 14 pairs of papillae. One unpaired papilla on anterior lip of anus and one pair adanal. Ten to 14 pairs of papillae on the tail, from this, 6 last pairs were constant in number and position. One unpaired double papilla on ventral region of tail.

Host type: *Eupsophus calcaratus* (Günther, 1881) (Anura: Leptodactylidae)

Site of infection: intestine

Locality: Yaldad (43°5'S;73°43'W), Isla Grande de Chiloé, Chile

Type material: deposited in the Instituto de Parasitología Collection, Universidad Austral de Chile (IPUAT) No. 0249 (Holotype male), No. 0250 (Allotype female) and No. 0251 (Paratypes). Etymology: this species is dedicated to our professor Dr Jorge Artigas Jara in recognition of his contributions to the development of Parasitology and Public Health in Chile.

REMARKS

A study of one female and one male of *A. chilensis* (coll. No. 231555), from *P. thaul* (Benavides et al. 1996) showed the characteristics of the original description of Lent and Freitas (1948), but the male specimen showed one unpaired papilla on the anterior lip of the anus, a characteristic that was not mentioned in the original paper.

Examination of the poorly processed type material of *A. crossodactyli* (coll. No. 30466 c, d), *A. delirae* (coll. No. 30591 m, 30591 j) and *A. crucifer* (coll. No. 5173) did not reveal details of the spicules and gubernaculum. Specimens of *A. bonariensis* (coll. No. 16600 a, b, c), considered by Baker (1987) as a synonym of *A. hylambatis*, showed a gubernaculum and spicules.

The type material of *A. chilensis* and *A. meridionalis* was requested for study from the Museo de Montevideo, Uruguay, but unfortunately

it was not received.

Compared with descriptions of the above mentioned species by Miranda (1924), Travassos (1931), Lent and Freitas (1948), da Silva (1954), Pallarés and Maciel (1974) Baker (1980), Baker and Vaucher (1986) and Dyer (1990), the new species can be distinguished from *A. membranosa*, *A. micropenis*, *A. vellardi*, *A. hylambatis*, *A. lopesi*, *A. elenae*, *A. paraelenae*, *A. pudenda*, *A. travassosi*, and *A. macintoshii* because it does not have a gubernaculum. *A. artigasi* n.sp. has a smaller number of caudal papillae than *A. crucifer* and *A. meridionalis* with 11 and 14 pairs of papillae respectively. The new species differs from *A. chilensis* because it has a larger number of postanal papillae, and it has an unpaired double papilla on the ventral region of the tail. The described species also differs from *A. crucifer* because it presents a prominent papilla on the anterior border of the anus and from *A. meridionalis* because its spicules are two or three times longer.

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