Mem. Inst. Oswaldo Cruz, Rio de Janeiro, Vol. *86* (4): 429-431 oct./dec. 1991

A NEW HELMINTH PARASITE OF FISH: *SPIROCAMALLANUS FREITASI* SP. N. (NEMATODA – CAMALLANIDAE)

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A new species of nematode is described, Spirocamallanus freitasi *sp. n. The worms were collected from fishes* (Bergiaria westermanni, Pimelodus maculatus *and* Pimelodus *sp.) living in Três Marias Dam (São Francisco River) in the State of Minas Gerais, Brazil.*

Spirocamallanus freitasi *sp. n. differs from* Procamallanus iheringi, P. amarali, P. macaensis, P. (Spirocamallanus) pimelodus, P. (S.) solani *and* P. (S.) pereirai *by having digitated larger spicule and from* P. cruzi *by having not digitated terminal parts of both spicules. It differs also from* P. (S.) intermedius *by having not larger spicule divided in two undigitated branches and six to nine sclerotized bands in the buccal capsule;* P. rarus *has three to four sclerotized bands and tridigitated larger branch of longer spicule, differing from* S. freitasi *sp. n.*

Key words: *Spirocamallanus freitasi* sp. n. – *Spirocamallanus* – helminths – fishes – São Francisco River – Brazil

The known Brazilian species of *Spirocamallanus* with long spicules are: *Procamallanus rarus* Travassos, Artigas & Pereira, 1928 found in *Pimelodella lateristriga* (Müll & Trosch) and in *Rhynodoras dorbignyi* Kröyer and *Procamallanus iheringi* Travassos, Artigas & Pereira, 1928 as a parasite of *Salminus hilarii* (Cuv. & Val.), *Hoplias* sp., *Tetragonopterus* sp., *Leporinus* sp. and unidentified species of Anostominae from Pirassununga, SP, described by Travassos et al. (1928); *Procamallanus amarali* sp. n. was described by Vaz & Pereira (1934) in *Leporinus* sp. from the Tietê River, SP; Vicente & Santos (1972) described *Procamallanus macaensis* sp. n. parasitizing *Menticirrhus americanus* (L.) caught at Macaé, RJ; *Procamallanus (Spirocamallanus) pimelodus* Pinto, Fábio, Noronha & Rolas, 1974 in *Pimelodus clarias* (L.) from Porto Esperança, MS and from Pirassununga, SP and *Procamallanus (Spirocamallanus) intermedius* Pinto, Fábio, Noronha & Rolas, 1974 in *P. clarias* from Porto Cabral, Paraná River, SP were described by Pinto et al. (1974); *Procamallanus (Spirocamallanus) solani* Pinto, Fábio, Noronha & Rolas, 1975 was described by Pinto et al. (1975) as a parasite of silurid fishes from the Amazonas River, PA; Guimarães et al. (1976) described *Procamallanus cruzi* Guimarães, Cristofaro & Rodrigues, 1976 in *Polydactylus virginicus* L. from Pituba, Salvador, BA. Pinto et al. (1984) recorded the presence of *Procamallanus (Spirocamallanus) pereirai* Annereaux, 1946 in Brazil.

MATERIALS AND METHODS

Six *Bergiaria westermanni* (Reinhardt, 1874), 27 *Pimelodus maculatus* Lacépède, 1803 and eight *Pimelodus* sp. from Três Marias Dam were necropsied.

The collected worms were washed with physiological saline solution (0.65%) and transferred to the fixative and preservative liquid of Railliet and Henry, later were cleared in Aman's lactophenol.

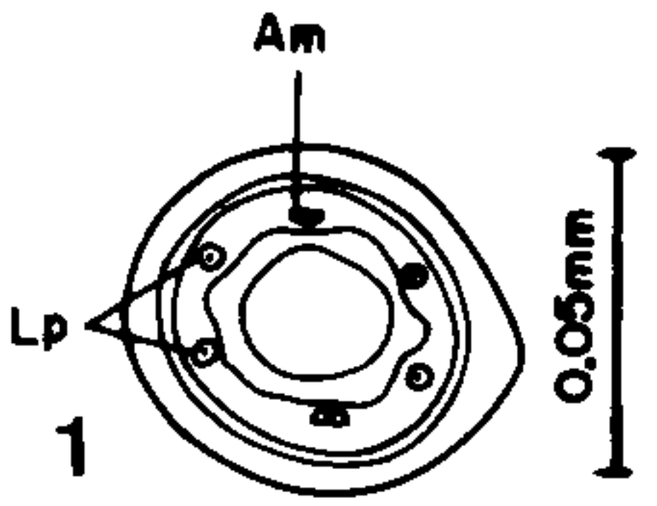
Measurements are in micrometers unless otherwise specified.

RESULTS

Spirocamallanus freitasi sp. n.
(Figs 1-5)

Supported by Fundação de Amparo à Pesquisa do Estado de Minas Gerais – FAPEMIG. CNPq Fellows.

Received 16 October 1990.
Accepted 30 August 1991.



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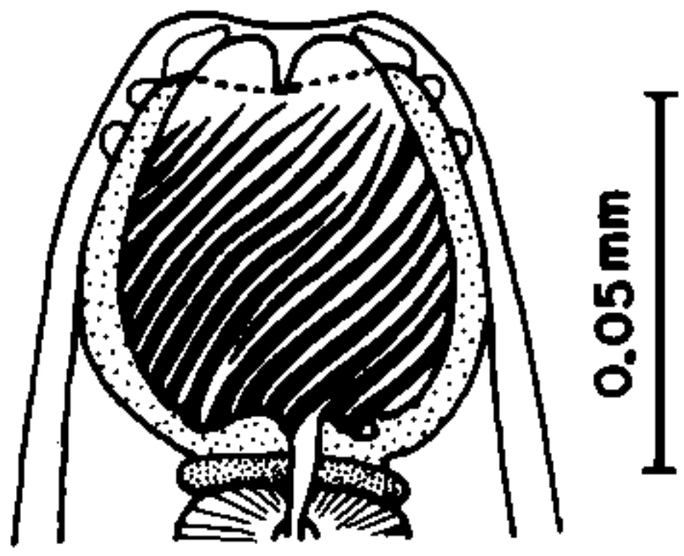

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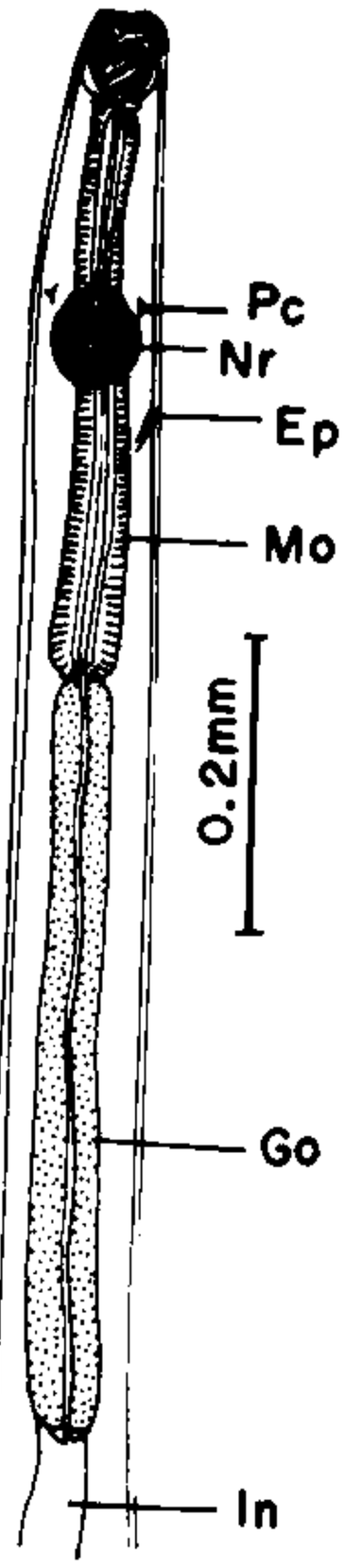

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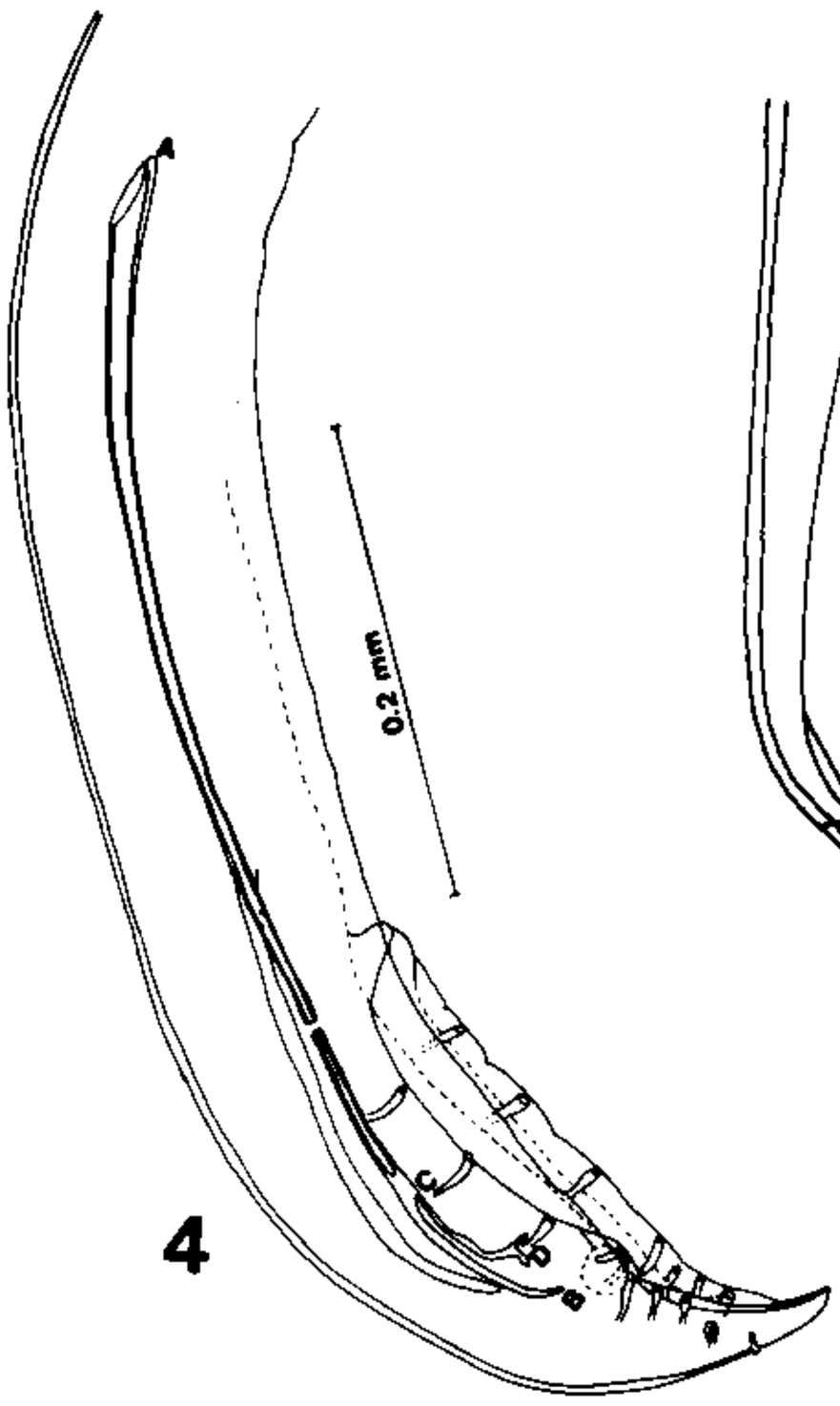

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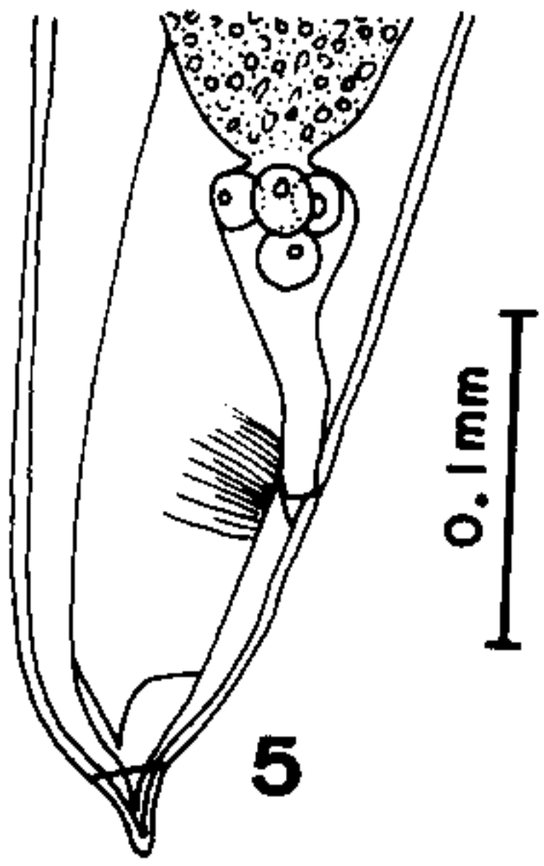

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Spirocamallanus freitasi sp. n.: Fig. 1: frontal view of the anterior extremity: Am = amphids; Lp = lateral papillae. Fig. 2: male buccal capsule. Fig. 3: male anterior region – Pc = cervical papillae; Nr = nerve ring; Ep = excretory pore; Em = muscular esophagus; Eg = glandular esophagus. Fig. 4: male caudal region. Fig. 5: female caudal region.

General: Worms round brown-yellowish at necropsy. Mouth opening round right in front, amphids two, lateral papillae four (Fig. 1). Buccal capsule wineglass shaped; undivided, with walls reinforced by 17 to 19 sclerotized spiral bands ending near the anterior extremity of buccal capsule. Small prominences teeth like at the bottom of buccal cavity (Fig. 2). Esophagus divided in anterior muscular portion shorter than posterior glandular portion, becoming broad to the posterior end. Cervical papillae at level of nerve ring (Fig. 3).

Males (n = 3): 4.36 – 7.40 mm long and 121 – 150 wide; buccal cavity 47 deep and 21 – 27 wide at its anterior extremity, 36 – 41 near the equatorial line and 16 – 21 at bottom. Sclerotized bands 17 – 18, reaching 44 – 45 in the buccal capsule height. Nerve ring 184 – 219 from anterior extremity. Cervical papillae and excretory pore 162 – 196 and 270 - 300 from anterior extremity, respectively. Muscular esophagus 369 – 412 long, 40 – 47 of maximum width; glandular esophagus 455 – 623 long, 42 – 53 of maximum width. Tail 86 – 100

long. Caudal alae present. Pedunculated caudal papillae well developed, being: three precloacal, one adcloacal and five postcloacal pairs. Spicules unequal, dissimilar. Larger spicule 465 – 534 long, from A to B (Fig. 4), becoming bifid at 392 – 457 (AC); resulting parts unequal in lenght, dissimilar; larger part undigitated, 73 – 77 long (CB), smaller part 60 – 66 long (CD), bifid at extremity. Smaller spicule 172 – 214 long.

Females (n = 3): 11.30 – 12.98 mm long and 227 – 266 wide; buccal cavity 47 – 50 deep, 21 – 24 wide at anterior extremity, 33 – 39 near equatorial line and 13 – 21 at the bottom. Sclerotized bands 18 – 19, reaching 45 – 48 in the buccal cavity height. Nerve ring 219 – 239 from anterior extremity. Cervical papillae at level of nerve ring (206 – 239). Excretory pore 291 – 339 from anterior extremity. Muscular portion of esophagus 412 – 492 long, 48 – 61 of maximum width; glandular portion 622 – 811 long, 52 – 63 of maximum width. Viviparous. Vulva in the first half of body, 4.01 – 4.80 mm from anterior extremity. Tail 70 – 106 long (Fig. 5). Posterior intestine 93 – 101 long, with four glandular cells near anterior intestine.

Type host: Bergiaria westermanni (Reinhardt, 1874).

Other hosts: Pimelodus maculatus Lacépède, 1803; *Pimelodus* sp.

Site of infection: intestine.

Type locality: Três Marias Dam, São Francisco River in the State of Minas Gerais, Brazil.

Specimens deposited: Helm. Coll. of the Instituto Oswaldo Cruz.

Etimology: the name *Spirocamallanus freitasi* sp. n. is a tribute of respect to the late parasitologist Professor Moacyr Gomes de Freitas.

DISCUSSION

In a first comparison *Procamallanus iheringi, P. amarali, P. macaensis, P. (Spirocamallanus) pimelodus, P. (S.) solani* and *P. (S.) pereirai* differ from *Spirocamallanus freitasi* sp. n. by having spicules without digitation. *Procamallanus cruzi* differ from *S. freitasi* sp. n. by having enlarged and digitated terminal parts of both spicules. *Procamallanus (S.) intermedius* has only six to nine sclerotized bands whereas there are 17 – 19 in *S. freitasi* sp. n. In *P. (S.) intermedius* the larger spicule is divided in two undigitated branches, whereas in *S. freitasi* sp. n. one branch of the spicule is digitated. Three to four sclerotized bands are seen in the buccal capsule of *P. rarus* and its longer spicule is branched in two parts and the larger one is tridigitated. Also, the arrangement of the caudal papillae in *S. freitasi* sp. n. differs from that of *P. rarus* but is similar to that of *P. (S.) intermedius.* However, the sclerotized bands of the buccal capsule of *P. rarus* and *P. (S.) intermedius* are sufficient to separate these species from *S. freitasi* sp. n.

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