Mem. Inst. Oswaldo Cruz, Rio de Janeiro, Vol. *86* (4): 433-436 oct./dec. 1991

A NEW SPECIES OF *LIMNODERETREMA* (TREMATODA, DIGENEA) FROM THE FRESHWATER ATHERINID FISH *BASILICHTHYS AUSTRALIS* EIGENMANN, 1927 FROM THE SOUTH OF CHILE

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Limnoderetrema tolosai *sp. n. (Trematoda, Digenea) within an autochthonous freshwater fish, the silverside* Basilichthys australis *Eigenmann, 1927, from Lakes Riñihue and Ranco in Southern Chile is described. The new species is distinguished from* Limnoderetrema minutum *(Manter, 1954) by the presence of one spine in the cirrus and cecal bifurcation nearer to ventral sucker than to pharinx. It is proposed* Limnoderetrema macrophallus *(Szidat & Nani, 1951) n. comb. (originally* Steganoderma). Limnoderetrema tolosai *differs from* L. macrophallus *since it cirrus has a distal spine and by its vitelline follicles distribution. It seems that* Limnoderetrema *spp. of South America are highly specific unlike* L. minutum *of New Zealand.*

Key words: fresh-water fish parasites – Trematoda – *Limnoderetrema tolosai* – South America

The trematode fish parasites of the Atherinidae family have scarcely been studied in Chile. There are only records of metacercariae of *Austrodiplostomum* sp., *Tylodelphis* sp. and *Conodiplostomum* sp., and adults of *Steganoderma* sp. in *Basilichthys australis* Eigenmann, 1927 from different streams of the Chilean central region (Bravo, 1981).

Bray (1987 a, b) reviewed the trematodes of the family Zoogonidae and recognized two species, which need to be confirmed as to their taxonomic situation, in freshwater fishes of South America: *Steganoderma macrophallus* Szidat & Nani, 1951 and *Steganoderma oviformis* Szidat, 1962 described in *Basilichthys microlepidotus* (Girard, 1854), at present considered as *Patagonina hatcheri* (Eigenmann, 1909) by Campos (1984), and *Aplochiton zebra* Jenyns, 1842 respectively.

In this paper a new species of *Limnoderetrema* Bray, 1987 is described in *B. australis*, a Chilean autochthonous fish from Lakes Riñihue (39° 49'S, 72° 19'W) and Ranco (40° 11'S, 72° 22'W).

This work was supported by the Fondo Nacional de Desarrollo Científico y Tecnológico (FONDECYT), Grants Nos. 1169/86 and 0069/89, and received partial aid from Dirección de Investigación de Universidad Austral de Chile (Grant S-89-17).

Received 13 November 1990.
Accepted 27 September 1991.

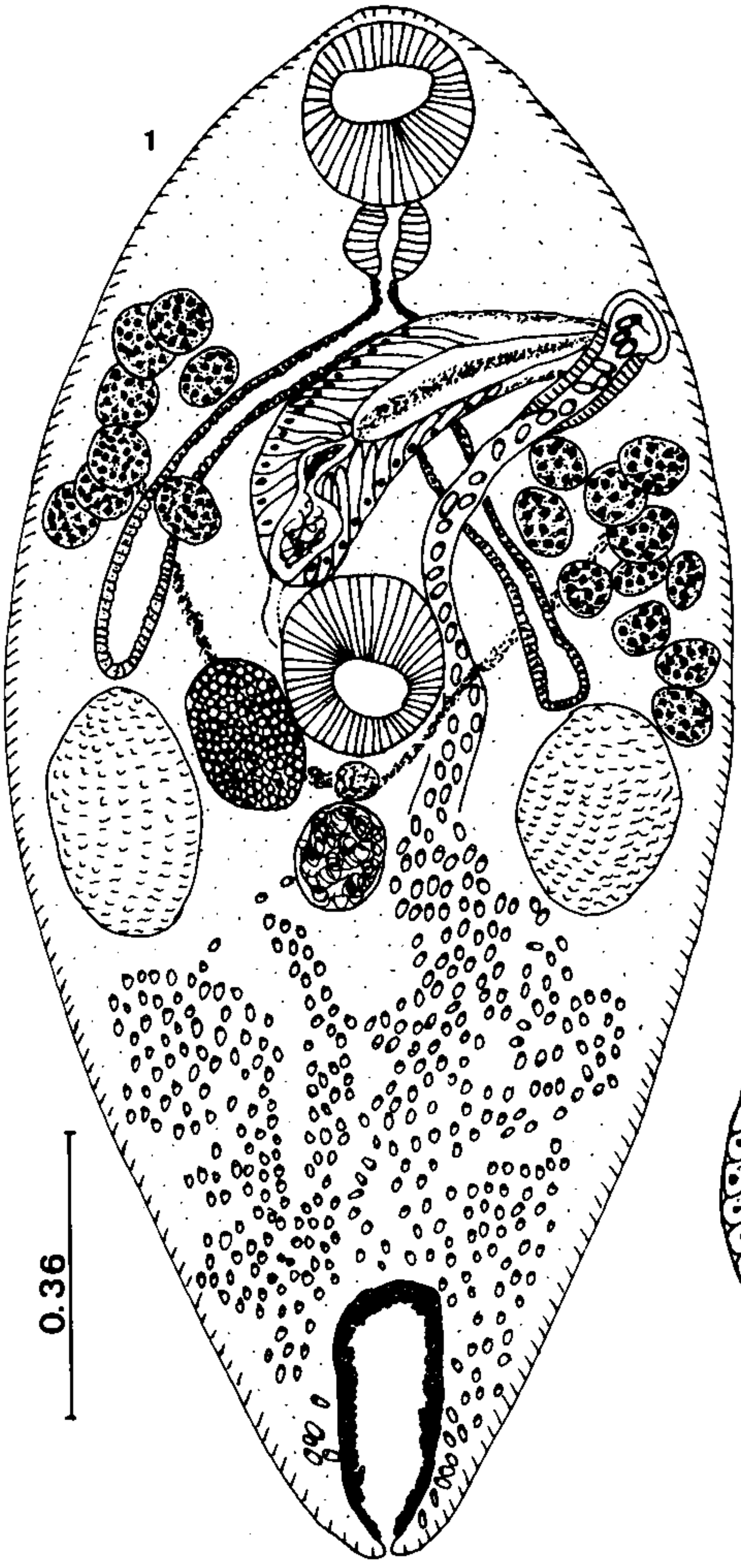
MATERIALS AND METHODS

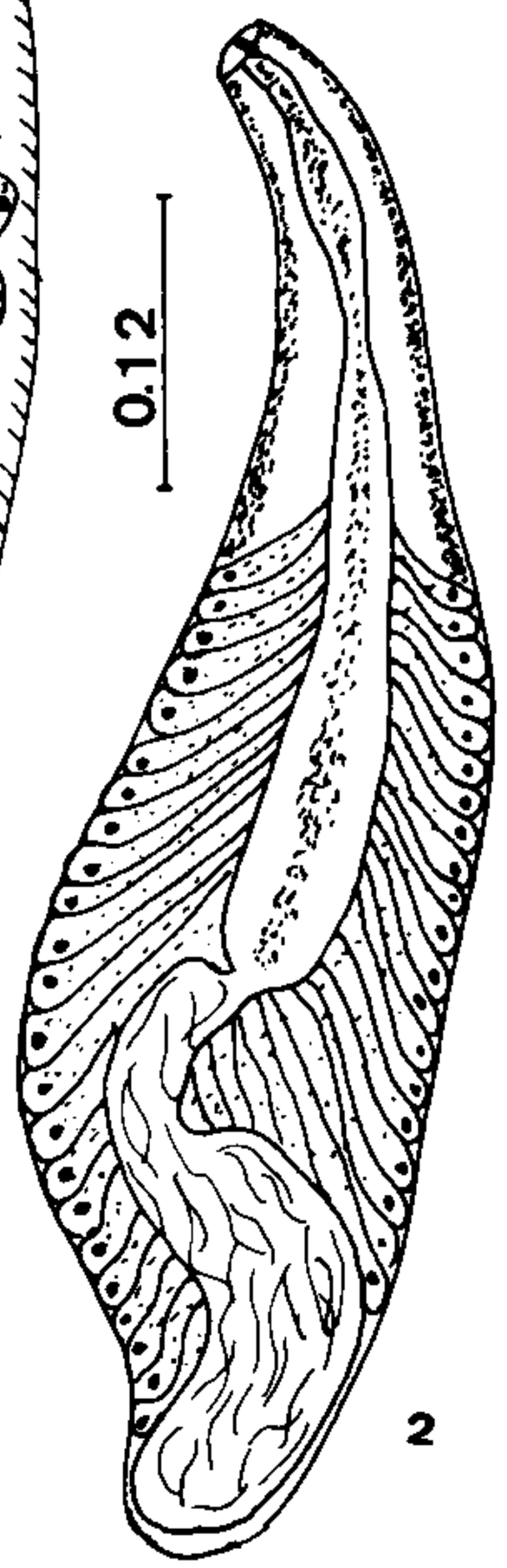
In seven fishes examined between 1987 and 1989, 232 specimens of *Limnoderetrema* were isolated, fixed in AFA under the pressure of a cover glass, dyed with Gower's acetic carmin and Mayer's hematoxylin, dehydrated, cleared in beechwood creosote and mounted in Canada balsam. Measurements are in mm unless otherwise stated. Ranges are followed by averages in parentheses.

Limnoderetrema tolosai sp. n.
(Figs 1-3)

Description: (based on 32 specimens) Zoogonidae Odhner 1902. Lepidophyllinae Stossich, 1903. *Limnoderetrema* Bray 1987: elongate fusiform body. Spinose tegument. Body 0.89-2.09 (1.60) long; maximum diameter 0.43-0.97 (0.71). Oral sucker 0.12-0.23 (0.20) long by 0.15-0.26 (0.21) wide; prepharynx short; pharynx 0.05-0.10 (0.08) long by 0.05-0.11 (0.08) wide; oesophagus 0.01-0.13 (0.07). Cecal bifurcation nearer to pharinx than to ventral sucker. Caeca pass laterally to ventral sucker, extend to anterior margin or anterior third of testes.

Ventral sucker median behind the cirrus-sac 0.13-0.25 (0.24) long by 0.15-0.23 (0.19) wide. Ratio oral-ventral suckers 1:0.8-1.3 (1.03).





Limnoderetrema tolosai, n. sp. Fig. 1: adult. Fig. 2: cirrus sac. Fig. 3: spine on distal region of the cirrus. Bar = in mm.

Testes symmetrical; oval; left testis 0.19-0.34 (0.26) long by 0.13-0.25 (0.20) wide; right testis 0.22-0.40 (0.29) long by 0.14-0.36 (0.22) wide. Cirrus-sac claviform 0.30-0.70 (0.55) long by 0.08-0.19 (0.14) wide, extends from anterior margin of ventral sucker to left lateral genital pore found between pharynx and cecal bifurcation; saccular internal seminal vesicle with or without constrictions, 0.10-0.26 (0.16) long; pars prostatica surrounded by elongated prostatic cells with basal nuclei. Cirrus with a conspicuous spine in its distal portion, 9-16 (11.9) μm long by 4-6 (4.9) μm maximum wide.

Oval or rounded ovary usually located between testes but displaced between inner border of the right testis and right lateral border of the ventral sucker; 0.13-0.22 (0.18) long by 0.10-0.23 (0.15) wide. Seminal receptacle lateral or behind the ovary (Fig. 1). No Laurer Canal was observed. Vitelline follicles in lateral fields, from testes to oesophagus level, forming clusters in numbers of 8-12 on left and 7-10 on right with 0.04-0.12 (0.08) of maximum length. The majority of vitelline follicles were anterior to ventral sucker. Central vitelline receptacle behind ventral sucker. Uterus post-testicular; metraterm present. Eggs tanned 28-36 (32) μm long by 12-16 (14) μm wide.

Excretory vesicle saccular with terminal pore.

Host: Basilichthys australis Eigenmann, 1927.

Site: intestine.

Locality: Lakes Riñihue and Ranco, Chile.

Specimens: Instituto Parasitología Collection, Universidad Austral de Chile (IPUAT) No. 0048 (Holotype); No. 0049-0058 (Paratypes).

Etymology: the species is named in honour of Prof. Dr José Tolosa, the first leader in Parasitology at Universidad Austral de Chile.

Prevalence and intensity: at Lake Riñihue five fishes were infected with 19-93 (mean 37.8). One of two fishes from Lake Ranco were infected with 43 specimens.

DISCUSSION

The genus *Limnoderetrema* was created by Bray (1987b) and in it he included *L. minutum* (Manter, 1954) an intestinal and gall bladder parasite of different species of freshwater fishes (Galaxiidae, Anguillidae, Eleotridae and Retropinnidae) of New Zealand. *Limnoderetrema minutum* differs from *L. tolosai* in having unspined cirrus and oesophagus more long than pharynx, that originates two caeca near or slightly anterior to ventral sucker (Manter, 1954; Hine, 1977; Holton, 1983).

Bray (1987b) considers that *Steganoderma macrophallus* could correspond to the genus *Limnoderetrema*. We consider *S. macrophallus* as *Limnoderetrema macrophallus* (Szidat & Nani, 1951), n. comb.

Limnoderetrema macrophalus described in *P. hatcheri,* an endemic patagonian fish from Argentina (Szidat & Nani, 1951), differs from *L. tolosai,* since the cirrus has not a distal spine and vitelline follicles are distributed in both sides of ventral sucker (Szidat & Nani, 1951; paratype: prep. 58/2 No. 27917 b of the collection from Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires).

Morphological characteristics of specimens identified as *Steganoderma* sp. in *B. australis* from Chilean central region (Bravo, 1981) correspond to *L. tolosai.*

The genus *Basilichthys* is endemic to Chile (Campos, 1984) and *L. tolosai* is specific of *B. australis;* no infection by *L. tolosai* was present in the other fish species analyzed, that inhabit the Lakes Riñihue and Ranco, such as *Salmo gairdneri* Richardson 1836, *Salmo trutta* (L.), *Percichthys trucha* (Cuvier & Valenciennes, 1833), *Galaxias maculatus* (Jenyns, 1842) and the atherinid *Cauque mauleanum* (Steindachner, 1896) (Torres, 1990, not published). It seems that the species of *Limnoderetrema* of South America are highly specific unlike *L. minutum* of New Zealand which shows a wide spectrum of hosts.

ACKNOWLEDGEMENTS

To Dr R. A. Bray, Department of Zoology from British Museum (England) and Dr G. Pequeño, Instituto de Zoologia (Universidad

Austral de Chile), for their valuable comments on the manuscript. To Dr T. Stadler, Museo Argentino de Ciencias Naturales for the loan of the type specimen.

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