

RESEARCH NOTE

Occurrence of Cystacanthus of *Centrorhynchus* sp. (Acanthocephala: Centrorhynchidae) in Toads of the Genus *Eupsophus* in Chile

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In Chile, there are about 43 anuran species. However, research on their helminth fauna is limited to nine parasite species: the trematodes *Gorgoderina chilensis* Dioni, 1947, *Gorgoderina valdiviensis* Puga, 1979 and *Rudolphitrema chilensis* Puga, 1986; the cestodes *Ophiotaenia noei* Wolfhügel, 1950 and *Baerietta chilensis* Puga and Franjola, 1983; the nematodes *Aplectana chilensis* Lent and Freitas, 1948 *Cosmocerca chilensis* Lent and Freitas, 1948 and *Oswaldocruzia neghmei* Puga, 1981; and the acanthocephalan *Acanthocephalus caspanensis* Fernández and Ibarra, 1989. These helminths were reported from nine host species (S Puga 1994 *Bol Chil Parasitol* 49: 81-84).

This note presents the occurrence of cystacanthus of acanthocephalans of the genus *Centrorhynchus* in toads of the genus *Eupsophus* (Leptodactylidae) for the first time.

The genus *Eupsophus* includes endemic species that live in leaf beds of the temperate forests of South America (R Formas 1979 *Univ Kansas Mus Nat Hist Monograph* 7: 341-369).

Necropsies of 27 adult *E. calcaratus* from Yaldad (43°5'S, 73°43'W), on the island of Chiloé, and 10 *E. roseus* from Isla Teja (39°48'S, 73°15'W), in the city of Valdivia, were carried out between July 1994 and January 1995.

Adult male and female toads were collected by hand. Live acanthocephalans were placed in water at 4°C for about 10 hr, fixed in alcohol-formalin-acetic acid, preserved in 70% ethanol, and cleared in lactophenol. Liver samples infected with acanthocephalans were fixed in buffered neutral 10% formalin. Paraffin-embedded sections were cut and stained with hematoxylin and eosin. Drawings were made with the aid of a camera lucida.

Morphological characteristics (Figs 1-2) and measurements (in µm unless otherwise indicated) of three males were as follows: trunk 3.2-4.4 (3.9) mm long by 663-881 (795) at the greatest width. Proboscis 1.0-1.2 (1.1) mm long by 491-554 (517) at the greatest width, with 30-32 rows of 18-20 hooks each. Proboscis receptacle 1.1-1.2 (1.2) mm long. Lemnisci extending beyond the end of the proboscis receptacle to the level of the testes. Testes in ligament sac 94-117 (103) long by 62-78 (72) at the greatest width in two specimens, in other one 460-480 long by 420-460 wide.

Cystacanthus of *Centrorhynchus* sp. were found in liver and/or peritoneum of 3 (11.1%) *E. calcaratus* with one to three specimens per host; while in only one specimen (10%) of *E. roseus* 2 cystacanthus were found in the liver.

Specimens found in the hepatic tissue were surrounded by a fibrotic capsule (Fig. 3) as has been reported for other *Centrorhynchus* spp. in frogs (F Cox 1971 *J Biol Educ* 5: 35-51, O Amin 1982 *Classification of Living Organisms*, p. 933-940. In ED Parker, New York).

Centrorhynchus sp. is the first helminth reported for *E. calcaratus*. *O. neghmei* and *R. chilensis* have been reported previously for *E. roseus* (Puga *loc. cit.*).

The genus *Centrorhynchus* includes about 75 species (O Amin 1985 *Biology of Acanthocephala*, p. 27-72. In DWT Crompton, BB Nickol, Cambridge) the definitive hosts of which are diurnal or nocturnal rapacious birds (Falconiforms or Strigiforms). Their intermediate hosts are terrestrial isopods or insects, Orthoptera or Coleoptera, and their various paratenic hosts, amphibians, reptiles, and mammals, play a fundamental role in their transmission to birds (J Buron & Y Golvan 1986 *Ann Parasitol Hum Comp* 5: 581-592).

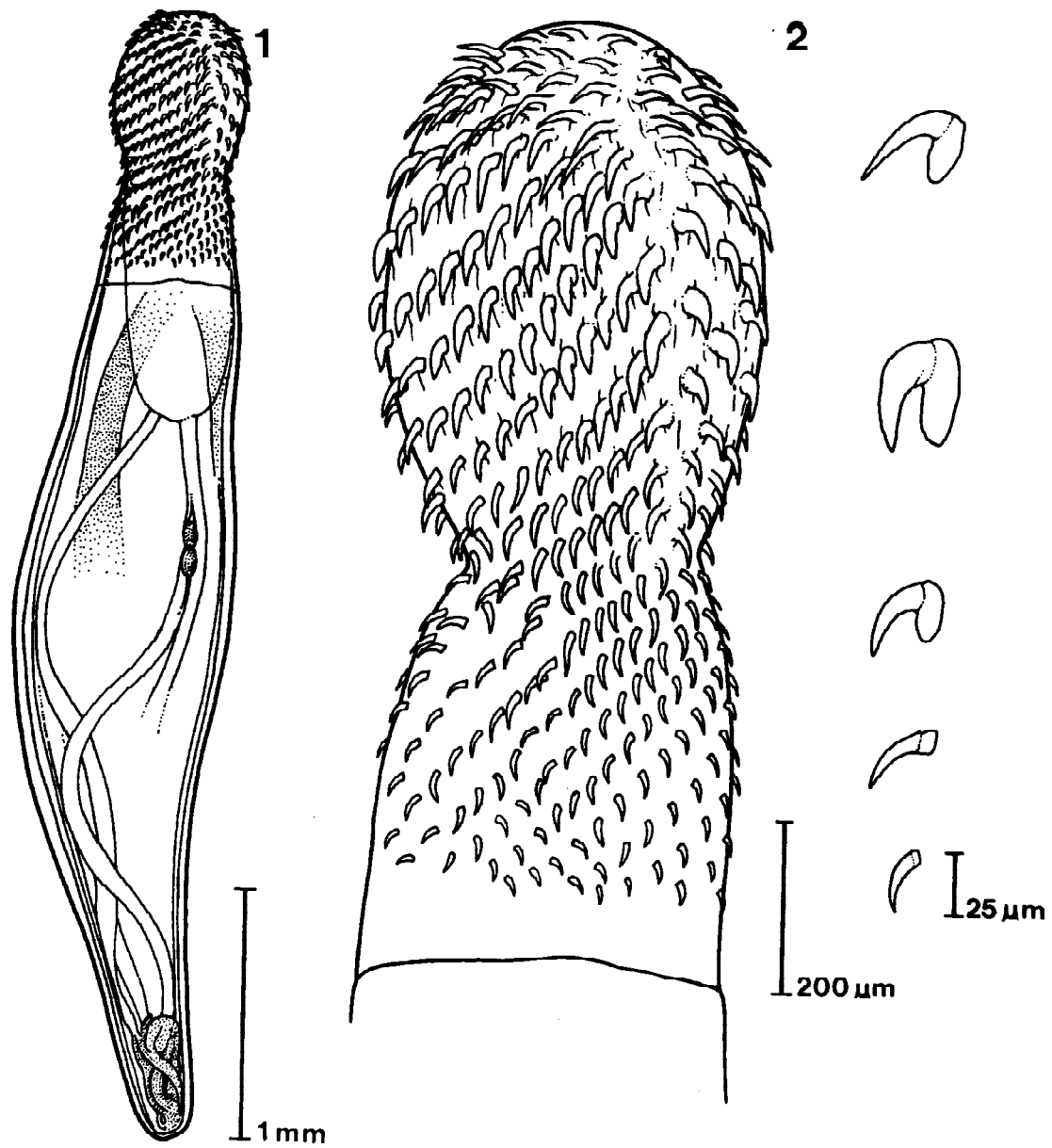
E. calcaratus and *E. roseus* perhaps serve as paratenic hosts for *Centrorhynchus* sp. for which the definitive and intermediate hosts are unknown.

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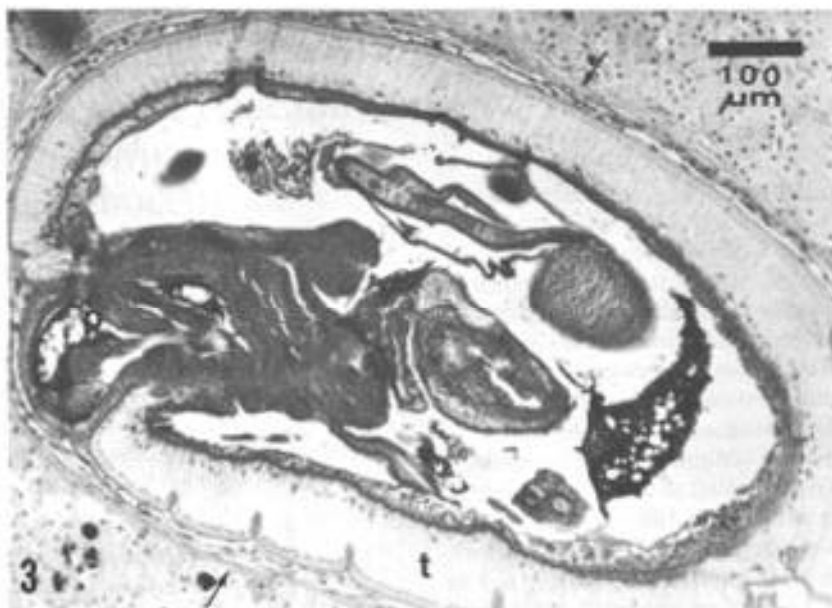
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Cystacanth of *Centrorhynchus* sp. in toads of genus *Eupsophus* from Chile. Fig. 1: general view. Fig. 2: proboscis with details of hooks.



Hepatic histological section with cystacanth of *Centrorhynchus* sp. in toads of genus *Eupsophus* from Chile. Fig. 3: cystacanth, surrounded by capsule (arrow) of the host, tegument (t), region of proboscis (p).

The diet of these hosts would be infected through the consumption of insects.

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