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Gastrointestinal Helminths of Fish-Eating Birds from Chiloe Island, Chile

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ABSTRACT: Of four species of fish-eating birds from Chiloé Island (Chile), three were infected with eight species of helminths. *Tetrabothrius* sp. was found in *Larus scoresbii*. *Tetrabothrius cylindraceus*, *Profilicollis antarcticus*, *Anomotaenia dominicanus*, *Stephanoprora denticulata*, *Capillaria* sp. and *P. antarcticus* were found in *Larus dominicanus*. *Contracaecum rudolphii* and *Corynosoma* sp. infected *Phalacrocorax olivaceus*. With the exception of *S. denticulata*, *C. rudolphii* and *Capillaria* sp., the above helminths are reported for the first time from Chile.

Key words: Helminth parasites, piscivorous birds, *Larus* spp., *Phalacrocorax olivaceus*.

Helminthological data on fish-eating birds of Chile are scarce (Torres et al., 1982, 1983a). Thus, in April 1989, 10 fish-eating birds were examined for gastrointestinal helminths as part of a research project in southern Chile at Lake Huillinco, Lake Natri, and the coastal zone of Yaldad, all on Chiloé Island (Table 1; between 42°30′ and 43°15′S).

The birds were killed by shotgun; the gastrointestinal tract was removed, kept at 4 C, and then within 4 hr examined for helminths (Torres et al., 1974). Helminths were preserved following techniques in Pritchard and Kruze (1982); cestodes and trematodes were dyed with Semichon's Acetic Carmin and Malzacher's stain.

With the exception of *Stephanoprora denticulata*, *Contracaecum rudolphii* and *Capillaria* sp., these helminths are reported for the first time in Chile (Table 1). In addition, *Profilicollis antarcticus* is recorded for the first time in *Larus dominicanus*; this acanthocephalan was described from *Chionis alba* (Gmelin) of the Shetland Islands (Antarctic) (Zdzitowiecki, 1985). *Chionis alba* lives in the Magallanes Strait and coasts of Tierra del Fuego up to Antarctica and migrates occasionally to Chiloé (Araya and Millie, 1986).

Anomotaenia dominicanus and *Tetrabothrius cylindraceus* have been recorded in *L. dominicanus* on the Falkland Islands (Odening, 1982) and in the Antarctic (Zdzitowiecki and Szelenbaum-Cielecka, 1984).

Contracaecum rudolphii was earlier reported in South America and Argentina (Szidat and Nani, 1951) and in Chile (Torres et al., 1982, 1983a) in *Phalacrocorax olivaceus* and *Larus* spp. The wide geographic distribution of *C. rudolphii* (Barus et al., 1978) and *S. denticulata* (Torres et al., 1983b) is related to the migration of some of their numerous definitive hosts; as in the case of *C. rudolphii* wide distribution may be attributed to the wide range of fishes that act as intermediate hosts.

Larvae of *Contracaecum multipapillatun* Von Drasche, 1882 have been reported in fish (*Mugil cephalus*) in the north of Chile (Fernández, 1987), but the definitive host has not been determined in this area.

In different fresh-water ecosystems of the south of Chile the infection by larvae of *Contracaecum* sp. in introduced (Torres and Cubillos, 1987) and autochthonous fishes (Torres et al., 1988) has been established. The predation, consumption of viscera, or spread of these fish by the fishermen is possibly contributing to the infection of the fish-eating birds which act as definitive hosts.

Stephanoprora denticulata was reported previously in *Podiceps major* and *Pelecanus thagus* in the Valdivia River estuary (Torres et al., 1982).

The material collected was deposited in the collection of the Institute of Parasitology, Universidad Austral de Chile, Valdivia, Chile (IPUAT N° 0038-0048).

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TABLE 1. Occurrence of helminth parasites in fish-eating birds from Chiloé Island, Chile.

Birds	Location	n[a]/n[b]	Infected birds (intensity)							
			TEC[c]	TES	AND	STD	COR	CAS	PRA	COS
1[d]	YA[e]	2/1	0	1 (1)	0	0	0	0	0	0
2	YA	1/1	1 (1)	0	0	0	0	0	1 (2)	0
2	LH	2/2	1 (1)	0	1 (2)	1 (2)	0	1 (1)	1 (9)	0
3	LH	1/0	0	0	0	0	0	0	0	0
4	LH	2/2	0	0	0	0	2 (27–83)	0	0	1 (3)
4	LN	2/1	0	0	0	0	1 (4)	0	0	0

[a] Number of birds sampled.
[b] Total of infected birds.
[c] TEC, *Tetrabothrius cylindraceus*; TES, *Tetrabothrius* sp.; AND, *Anomotaenia dominicanus*; STD, *Stephanoprora denticulata*; COR, *Contracaecum rudolphii*; CAS, *Capillaria* sp.; PRA, *Profilicollis antarcticus*; COS, *Corynosoma* sp.
[d] 1, *Larus scoresbii*; 2, *Larus dominicanus*; 3, *Ceryle torquatus*; 4, *Phalacrocorax olivaceus*.
[e] YA, Coastal zone of Yaldad (43°07'S, 73°44'W); LH, Lake Huillinco (42°38'S, 74°00'W); LN, Lake Natri (42°47'S, 73°50'W).

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