

THE GENUS *LOBATOSTOMA* (TREMATODA: ASPIDOCOTYLEA) IN THE PACIFIC COAST OF SOUTH AMERICA, WITH DESCRIPTION OF *LOBATOSTOMA VERANOI* NEW SPECIES, PARASITE OF *MENTICIRRHUS OPHICEPHALUS* (TELEOSTEI: SCIAENIDAE)

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The presence of three aspidocotyleans trematodes in marine fishes from Perú and Chile is reported. One of them, *Lobatostoma veranoi* from the intestine of *Menticirrhus ophicephalus* (Sciaenidae) is considered a new species. Distinct characteristics of the new species are: a cirrus sac smaller than the pharynx; tail overlapping posteriorly the ventral disk; testis in the last third of the body and the presence of 64-66 marginal alveoli. The two other species are *Lobatostoma pacificum* Manter, 1940 found in *Trachinotus paitensis* Cuvier, 1830 from Perú and Chile and *Lobatostoma anisotremum* Oliva & Carvajal, 1984 from the intestine of *Anisotremus scapularis* (Tschudi, 1844) from Perú.

Key words: *Lobatostoma* – fish parasite – Sciaenidae – southeastern pacific

From the Pacific coast of South America only two species of parasites of the genus *Lobatostoma* Eckmann, 1932 (Aspidocotylea) have been described: *Lobatostoma pacificum* Manter, 1940 (named erroneously *Lobatostoma pacifica* by Bravo-Hollis & Caballero, 1979) and *Lobatostoma anisotremum* Oliva & Carvajal, 1984; parasites of *Trachinotus paloma* Jordan & Starks (= *T. paitensis* Cuvier) (Carangidae) and *Anisotremus scapularis* (Tschudi) (Pomadasyidae), respectively. During parasitological survey of marine fishes from the central Peruvian coast and northern Chilean coast, specimens of an undescribed species of *Lobatostoma* were obtained from the intestine of the sciaenid *Menticirrhus ophicephalus* (Jordan). The new species is described and illustrated below and is compared with the descriptions of other species of *Lobatostoma*. New geographical records for two previously described species are included.

MATERIALS AND METHODS

The fishes were obtained fresh from the fishmarket of Chorrillos (12°30'S, 76°50'W) and Callao (12°06'S, 77°10'W) in Perú and Antofagasta (23°42'S, 70°24'W) in Chile. The

parasites, collected from the intestine of the fish host, were washed in saline solution 0.87%, pressed between slides and fixed with AFA (Alcohol, Formalin, Acetic acid). Specimens were stained with Semichon's carmine, cleared in creosote and mounted in Canada balsam. Drawings were made with the aid of a camera lucida. All measurements are given in millimeters (mean and range between parentheses).

The following institutional abbreviations apply: USNMHC = United States National Museum, Helminthological Collection; MHNJP = Museo de Historia Natural Javier Prado, Perú; CHURP = Colección Helminológica, Universidad Ricardo Palma, Perú.

RESULTS

Lobatostoma pacificum Manter, 1940

Host: *Trachinotus paitensis* (Carangidae).

Site of infection: Intestine.

Locality: Chorrillos and Callao (Perú), Antofagasta (Chile).

Voucher specimens: MHNJP 1043 (2 specimens from Perú); MHNJP 1044 (2 specimens from Chile); CHURP 520 (4 specimens from Perú); CHURP 522 (10 specimens from Chile).

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Remarks: *Lobatostoma pacificum* was described as a parasite of *Trachinotus paloma* (synonym of *Trachinotus paitensis*, see Chirichigno et al., 1982) from the Galapagos Islands by Manter (1940). Posteriorly, the species was found by Bravo-Hollis & Caballero (1979) in the coast of Mexico. The discovery of this species in the coast of the southeastern Pacific of America is not a surprise, because the geographical distribution of the fish host includes the coast of Perú and northern Chilean coast (Chirichigno, 1974; Bahamonde & Pequeño, 1975).

Lobatostoma anisotremum Oliva & Carvajal,
1984

Host: *Anisotremus scupularis* (Pomadasyidae).

Site of infection: Intestine.

Locality: Chorrillos and Callao (Perú).

Voucher specimens: MHNJP 1042 (2 specimens) CHURP 521 (12 specimens).

Remarks: The characteristics of the worms now studied are in agreement with those given by Oliva & Carvajal (1984) in the original descriptions of this parasite. The presence of *L. anisotremum* in the Peruvian coast is a consequence of its host's distribution, which includes the coast of Ecuador, Perú and Chile (Chirichigno, 1974).

Lobatostoma veranoi n. sp. (Figs 1-3)

Type host: *Menticirrhus ophicephalus* (Sciaenidae).

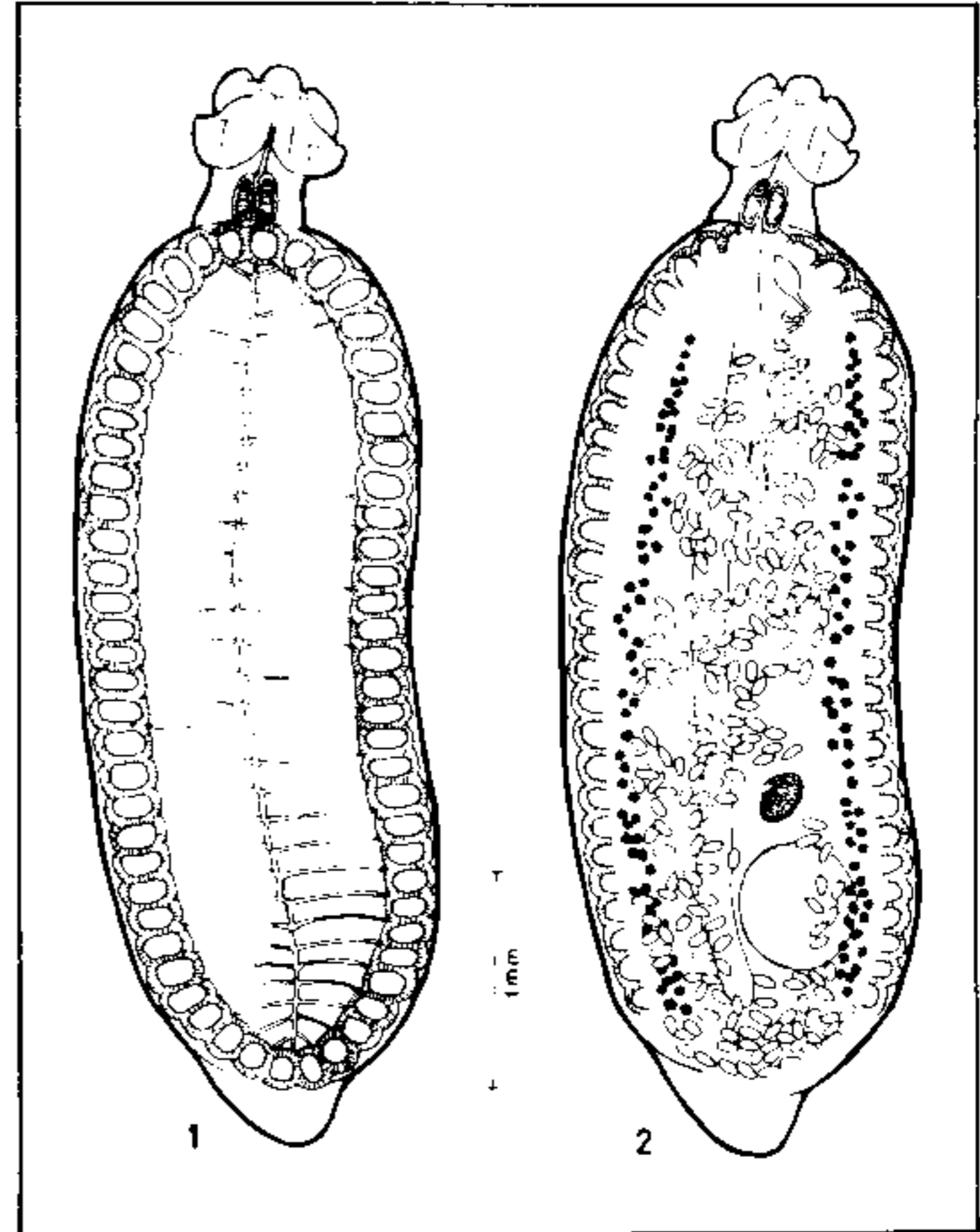
Site of infection: Intestine.

Type locality: Chorrillos, Perú.

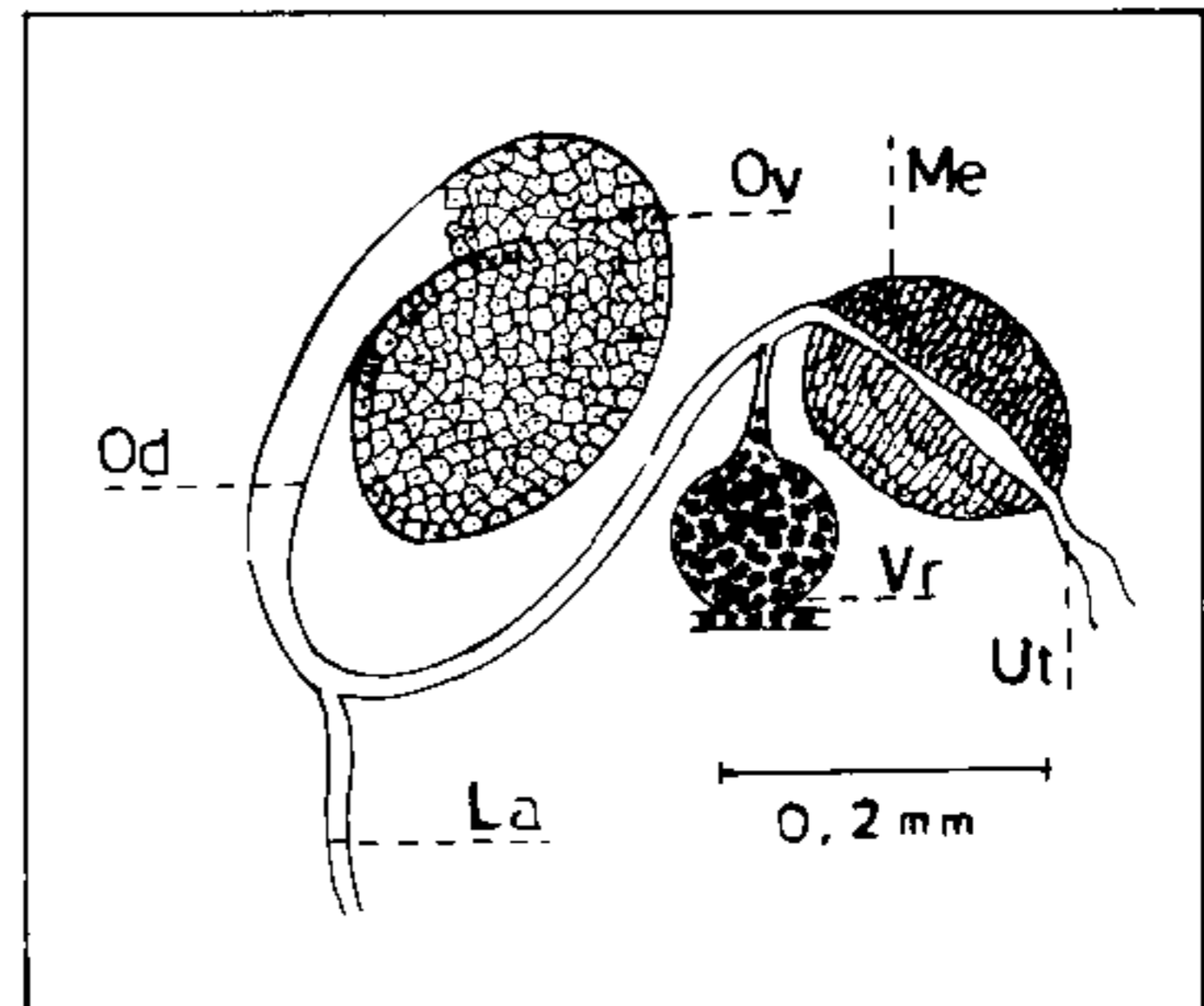
Other records: Callao, Perú.

Holotype: MHNJP 887 (one stained whole mount).

Paratypes: MHNJP 888 (one stained whole mount); USNMHC 80460 (one stained whole mount); CHURP 507-508 (five stained whole mount).



Lobatostoma veranoi n. sp. Fig. 1: entire worm, ventral view. Fig. 2: same, showing internal structure.



Lobatostoma veranoi n. sp. Fig. 3: female reproductive system. La: Laurer's canal; Me: Mehl's gland; Od: Oviduct; Ov: Ovary; Ut: Uterus; Vr: Vitelline reservoir.

Description (based on 8 whole mounts): total length 5.39 (4.12-5.96) anterior end with 5 lobes, two ventral and three dorsally located, being the central the smaller. Ventral disk 4.16 (3.48-4.69), about 77.4% of the total length of the body. The total number of alveoli varies from 124-130, of which 64-66 are marginal and two rows of 30-32 centrally located. Average

length of tail 0.51 (0.34-0.69). Prepharynx 0.38 (0.31-0.56), pharynx rectangular, longer than wide 0.21 (0.18-0.23) by 0.19 (0.17-0.22). Esophagus short, intestinal caecum reach posterior end of body. Testis ovoid 0.67 (0.58-0.78) long by 0.57 (0.52-0.76) wide, in posterior third of body. Vas deferens coiled, smaller than pharynx 0.16 (0.11-0.18) in diameter. Seminal vesicle undifferentiated. Ovary pear-shaped, located anteriorly to the testis, with a dextral posterior projection. Laurer's canal begins just from the "U" curve of the oviduct, which subsequently conform the first portion of the uterus which is surrounded by Mehli's gland. To this zone is confluent the common vitelline duct, comes from a round and compact vitelline reservoir. Vitelline glands arranged in two parallel rows, beginning at the level of the 5 lateral alveoli of the ventral disk. Uterine coils occupying practically all the body portion related with the ventral disk. Eggs elliptical, embrionated, 0.103 (0.076-0.122) by 0.059 (0.053-0.069).

Etymology: the specific name is in honor of Dr. Raúl Verano Montesinos, for his contribution to the marine parasitology in Perú.

Remarks: at present, nine species of the genus *Lobatostoma* have been described. They are: *L. ringens* (Linton, 1905); *L. kemostoma* (MacCallum & McCallum, 1913); *L. pacificum* Manter, 1940; *L. albulae* Yamaguti, 1968; *L. manteri* Rohde, 1973; *L. jungwirthi* Kritscher, 1974; *L. platense* Mañe-Garzón & Holcman-Spector, 1976; *L. hanumanthai* Narashimhulu & Madhavi, 1980 and *L. anisotremum* Oliva & Carvajal, 1984. *L. jungwirthi*, described by Kritscher (1974) from *Geophagus brachyurus* is the only species in the genus which is a parasite of a fresh-water fish. Narashimhulu & Madhavi (1980) claimed that *L. albulae* is not a valid species, because the lack of adequate description and the absence of real differences with *L. ringens*. The figure given by Yamaguti (1968) is inadequate and is not possible to define characters which permit the recognition of the new species, moreover, the description is superficial, because the number of alveoli is not given. Thus, only eight species are considered valid members of the genus *Lobatostoma*. The main criteria accepted for the identification of species in this genus are the presence of a tail overlapping the ventral disk, the relative position of testis, size of the cirrus sac in relation to the pharynx and the number of central and

marginal alveoli in adult worms (Rohde, 1973; Rohde & Sandland, 1973; Narashimhulu & Madhavi, 1980; Oliva & Carvajal, 1984). Criterion such as the relative size of the tail, expressed as a proportion of the ventral disk, as pointed out by Mañe-Garzón & Holcman-Spector (1976) is not adequate. The study of the specimens of *L. pacificum* from Antofagasta, showed that the relative size of the tail varies from 8.9% to 35.7% of the body size, and depends deeply on the degree of contraction of the worm when was fixed. Most adequate character is the presence of a tail longer than or smaller than the ventral disk.

Lobatostoma veranoi n. sp. resembles those species characterized by the presence of a tail smaller than the ventral disk and overlapping posteriorly the ventral disk, testis located in the posterior third of body. The species with the above mentioned characteristics are *L. ringens*, *L. manteri*, *L. hanumanthai* and *L. anisotremum*. The number of marginal alveoli in the new species is greater than in the above mentioned species, with the exception of *L. anisotremum*. Both, *L. veranoi* n. sp. and *L. anisotremum* have a similar number of marginal alveoli (64-66). The new species is easy to recognize because it is the only one in the genus with a cirrus sac smaller than pharynx.

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