

PRESENCE OF *OCTOSPINIFEROIDES CHANDLERI* BULLOCK, 1957 IN  
*HETERANDRIA BIMACULATA* FROM CATEMACO, VERACRUZ AND  
CONSIDERATIONS ABOUT THE ACANTHOCEPHALANS OF FRESH WATER  
FISHES OF MEXICO

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México has a very rich and diversified fauna of fresh water fish composed by over 500 species distributed in 47 families (Miller, 1986. *An. Esc. Nal. Cienc. Biol. Mex.*, 30: 121-153). The parasitological studies in some of these families have revealed a great helminthological richness, among which, in order to their diversity, trematodes are outstanding; in contrast, acanthocephalans are very rare and, until today, only one species that matures in fresh water fishes of México had been found. The discovery of a second species and some considerations about the previous acanthocephalan record are the reason of the present paper.

The analysis of 10 "guatopotes" *Heterandria bimaculata* from Lake Catemaco, Veracruz, México, revealed the presence, in eight of them, of one to four *Octospiniferoides chandleri* Bullock, 1957 (Acanthocephala: Neoechinorhynchidae), having collected a total of 12 parasites. The morfometric characteristics of our material coincide with those described by Bullock (1957, *J. Parasitol.*, 43: 97-100; 1966, *J. Parasitol.*, 52: 735-738).

Other host species from Lake Catemaco, Veracruz that were studied are: *Xiphophorus helleri* (33 hosts examined), *Poeciliacatemaconis* (24), *Poeciliopsis catemaco* (16) (Poeciliidae), *Dorosoma petenense* (30) (Clupeidae), *Bramocharax (Catemaco) caballeroi* (12) (Characidae), *Rhamdia guatemalensis* (40) (Pimelodidae) and *Cichlasoma fenestratum* (120) (Cichlidae).

From the 273 hosts analyzed during this sampling, only two acanthocephalan species were collected: *O. chandleri* and *Neoechinorhynchus golvani* Salgado Maldonado, 1978

(Neoechinorhynchidae), the latter parasitizing 19.55% of 120 *C. fenestratum* examined, with an intensity of one to 55 worms per host and an abundance of 1.25 helminths per fish studied.

*Neoechinorhynchus golvani* is the only adult acanthocephalan that has been collected from fresh water fish in México; it is specific on autochthonous cichlids (Cichlidae) from South-east México (G. Salgado Maldonado, 1985, *Universidad y Ciencia*, 2: 57-66; Osorio Sarabia, et al., 1987, *Universidad y Ciencia*, 4: 5-31).

Pineda López, et al. (1985, *Usumacinta*, Gobierno del Estado de Tabasco. Dir. de Educación Superior e Inv. Científica. Villahermosa, Tabasco, México, 196-270) studied a total of 10 species of autochthonous cichlids from several fresh water bodies in Tabasco: *C. synspilum*, *C. urophthalmus*, *C. champotonis*, *C. fenestratum*, *C. gedesi*, *C. pearsi*, *C. rectangulare*, *C. bifasciatum*, *C. motaguense* y *Petenia splendida*, and listed 42 helminths species, from which the only acanthocephalan collected was *N. golvani*. Its host list includes *C. urophthalmus*, *C. fenestratum*, *C. gedesi*, *C. pearsi*, *C. rectangulare*, *C. motaguense* and *P. splendida*.

The helminthological analysis of 556 *C. urophthalmus* during 20 months from 1986 to 1988 in Celestún coastal lagoon, Yucatán, México, showed the presence of *N. golvani* in only one month with a very low prevalence (0.53%). Another acanthocephalan species was also collected in the course of these samplings, *Dollfusentis chandleri* Golvan, 1969 (Iliiosentidae), although we consider this finding as the result of an accidental infection, since this species normally parasitizes marine fishes (Y. J. Golvan, 1969, *Mem. Mus. Nat. Hist.*, 57: 1-

373; G. Salgado Maldonado, 1976, *An. Inst. Biol. Univ. Nal. Aut. Méx.*, 47: 19-34).

Additionally, the presence in Mexican fresh waters of two species of cystacanths maturing in birds and using fishes as paratenic hosts, has been reported. G. Salgado Maldonado & Osorio Sarabia (*Ciencia y Desarrollo*, mayo-junio, 1987: 41-57) analyzed four species of fishes from Lake Pátzcuaro, Michoacán, 216 *Chirostoma estor*, 178 *Goodea atripinis*, 209 *Micropterus salmoides* and 184 *Cyprinus carpio*), and recorded the presence of 10 helminth species, three trematodes, two cestodes, four nematodes and a unique acanthocephalan larvae, *Arhythmorhynchus brevis* Van Cleave, 1916 collected from the four fish species and whose final host in the study area is *Nictycorax nycticorax* (G. Salgado Maldonado, 1980, *An. Inst. Biol. Univ. Nal. Auton. Mex.*, 50: 35-50).

*A. brevis* cystacanth has also been collected in 3.3% of 120 *C. fenestratum* and 30% of 10 *H. bimaculata* examined from Lake Catemaco, Veracruz.

*Hexaglandula mutabilis* (Rudolphi, 1919) Petrochenko, 1950 cystacanth, is also associated with autochthonous Mexican cichlids: Osorio Sarabia et al., 1987 (*loc. cit.*) recorded it in *Petenia splendida* and *C. urophthalmus* from fresh water bodies in Tabasco.

G. Salgado Maldonado (1982, *Aquatic Biota of México, Central America and the West Indies*. In S. H. Hurlbert, & A. Villalobos Figueroa (eds) San Diego, Ca.) recorded the occurrence of some other acanthocephalan species parasitizing fishes of coastal lagoons and other estuarine environments in México: *Caballerorhynchus lamothei* Salgado Maldonado, 1976 from *Diapterus olisthostomus* (Gerridae);

*Dollfusentis bravoae* Salgado Maldonado, 1976 from *Pomadasys crocro* (Pomadasyidae), *Eugerres plumieri*, *D. olisthostomus* (Gerridae); *Floridosentis mugilis* (F. Machado, 1951) Bullock, 1962 from *Mugil cephalus*, *M. curema* (Mugilidae); *N. roseum* Salgado Maldonado, 1978 from *Achirus mazatlanus* (Soleidae) and *Pseudoleptorhynchoides lamothei* Salgado Maldonado, 1976 from *Centropomus robalito* (Centropomidae). Nevertheless, it is noted that in all cases listed above the hosts are marine fishes that have adapted to a temporary estuarine existence; the helminthological fauna affecting them is directly related with the estuarine environment.

However, the fact that *F. mugilis* seems to be a typical component of the estuarine fauna (J. Juárez Arroyo, & G. Salgado Maldonado, 1989, *An. Inst. Biol. Univ. Nal. Auton. Méx.*, 60: 279-298) is to be noticed. In the same way, *C. lamothei* completes its life cycle within the estuarine ambient, since the cystacanths of this species have been found in *Discapseudes holothuisi* (Tanaidacea) from Alvarado coastal lagoon in Veracruz.

The distribution analysis of the fresh water fish acanthocephalans in the central American area of México (the southward of the Mexican plateau, in a general way), without an exhaustive sampling, could seem premature; however, the intensive studies of fresh water fish parasites in México over a long time, preclude the possibility that this paucity of acanthocephalans is due to lack of study, and the scarcity of acanthocephalan species in fresh water fishes in this region is now an evident pattern.

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