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HEDRURIS SIREDONIS BAIRD, 1858 (NEMATODA: HABRONEMATOIDEA) FROM AMBYSTOMA SP. (AMPHIBIA: AMBYSTOMATIDAE) OF LAGUNA QUECHOLAC, PUEBLA, MEXICO

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ABSTRACT

Of eighty-five *Ambystoma sp.* collected from Laguna Atexcac, Laguna Quecholac, and Laguna de la Mina Preciosa, Puebla, Mexico, three from Laguna Quecholac were infected with *Hedruris siredonis* Baird, 1858.

INTRODUCTION

Hedruris Nitzsch, 1821, the only genus of the habronematid family Hedruridae, comprises 24 nominal species distributed throughout the world in frogs, salamanders, freshwater turtles, lizards, and freshwater and marine fish (Baker, 1982). In a comparative morphological study of the five *Hedruris* described from North America, Baker (1986) concluded that the only valid two species are *H. pendula* (Leidy, 1851) Chandler, 1919 parasitic mainly in freshwater turtles of eastern North America and *H. siredonis* Baird, 1858 reported only from salamanders (Ambystomatidae, Salamandridae, Plethodontidae) throughout North America. Thus, *Hedruris tiara* Van Cleave and Mueller, 1932 was synonymized with *H. pendula*, whereas *H. brevis* Walton, 1930 and *H. chandleri* Freitas and Lent, 1941 were synonymized with *H. siredonis*. In a later report, Muzzall and Baker (1987)

reported *H. siredonis* from green frogs, *Rana clamitans* and bullfrogs, *R. catesbeiana* of New Hampshire. This constituted the first report of *H. siredonis* in North American frogs. The present report is concerned with *H. siredonis* recovered from *Ambystoma* sp. of Laguna Quecholac, Puebla, Mexico.

MATERIALS AND METHODS

Eighty-five *Ambystoma* sp. collected from Laguna Atexcac, Laguna Quecholac, and Laguna de la Mina Preciosa, Puebla, Mexico during July 1981 were examined for helminths. Nematodes removed from the stomachs of three salamanders from Laguna Quecholac were killed and fixed in hot glycerin-alcohol (nine parts 70% ethanol, one part glycerin) and cleared for study in glycerin. Representative specimens were deposited in the USNM Helminthological Collection, Beltsville, Maryland.

RESULTS AND DISCUSSION

Few reports are available on *Hedruris siredonis* in salamanders from Mexico. Baird's description of *H. siredonis* from *Ambystoma mexicanum* (Shaw, 1789), Mexico (no precise locality) proved inadequate as it was based on a single immature female specimen (see Baird, 1958). Later, Caballero and Bravo Hollis (1938) gave a detailed description of *H. siredonis* based on several mature males and females taken from *Ambystoma*, collected from Laguna Xochimilco, District Federal, Mexico, identified by them as *A. tigrinum* (Green, 1825). As pointed out by Dyer and Brandon (1973), in the absence of preserved host specimens, it is impossible to verify their actual identity. This difficulty arises because of inconsistency in older publications in aplying the specific names *tigrinum* and *mexicanum* (e.g. Freitas and Lent, 1941 a,b; see also discussion in Smith, 1969), and because both species may occur sympatrically in parts of Mexico.

Dyer and Brandon (1973) reported *Hedruris siredonis* from three species of salamanders from Mexico, namely, *Ambystoma ordinarium* Taylor, 1940 from San Jose Lagunillas, Michoacán (USNM Helm. Coll., No. 72188), *A. sp.* from Zacapu Michoacán (USNM Helm. Coll., No. 72188) and *A. subsalsum* Taylor, 1943 [=*A. tigrinum* (Green, 1825)] from Laguna Alchichica, Puebla (USNM Helm. Col., No. 72189). Later, salamanders designated as *A. subsalsum* from a neotenic population of *Ambystoma* endemic in Laguna Alchichica were compared by Brandon et al. (1981) with the holotype of *A. subsalsum* Taylor (1943) and with *A. tigrinum* from several populations in Puebla, Tlaxcala, and Hidalgo. These investigators concluded that the holotype is identifiable as *A. tigrinum* and is specifically different from the Laguna Alchichica neotenes designated as *A. taylori*. Thus, the salamander host of *H. siredonis* taken at Laguna Alchichica are *A. taylori* nec *subsalsum*. Later, Dyer (1984) reported *H. siredonis* in 5 of 34 *A. taylori* collected from Laguna Alchichica, Puebla (USNM Helm. Coll., No. 77156) amending the report by Dyer and Brandon (1973).

The salamanders designated by Dyer and Brandon (1973) as *Ambystoma sp.* from the municipality of Zacapu, Michoacán were later determined to be a new species, *Ambystoma andersoni*, by Krebs and Brandon (1984) thereby amending the report of Dyer and Brandon (1973).

Of eighty-five *Ambystoma sp.* collected from Laguna Quecholac, Laguna Atexcac and Laguna de la Mina Preciosa, three from Laguna Quecholac were infected with *H. siredonis*. Measurements of two males and five females from two *A. sp.* are as follows. Male: total length 10.9-11.7 mm; esophagus 1310-1400 μm long, nerve ring 225-240 μm, deirids 182-220 μm and excretory pore 280-300 μm from anterior extremity; spicules 180 μm long; tail 460 μm long. Female: total length 12.9-15.4 mm; esophagus 1520-1542 μm long; nerve ring 252-260 μm, deirids 250-265 μm and excretory pore 345-347 μm from anterior extremity; vulva 500-542 μm from anus; eggs 55-60 μm long and 34-38 μm wide. Embryonated eggs with fully developed larvae bear opposite peripheral swellings which are circular when viewed on end. Representative specimens are deposited in the USNM Helm. Coll., No. 804056.

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