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Helminths of the San Diego Alligator Lizard, (*Gerrhonotus multicarinatus webbi*) (Anguidae)

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ABSTRACT: Necropsy of 96 specimens of the San Diego alligator lizard (*Gerrhonotus multicarinatus webbi*) from Los Angeles County, California (USA) revealed the presence of two nematodes (*Physaloptera* sp. and *Oswaldocruzia pipiens*) and a cestode (*Oochoristica* sp.). Both *O. pipiens* and *Oochoristica* sp. represent new host records. Prevalence of helminth infection (all species) was only 4/96 (4%) indicating the lack of a helminth community and a depauperate helminth fauna in this host.

Key words: Nematode, cestode, prevalence, Anguidae, *Gerrhonotus multicarinatus webbi*, survey, depauperate helminth fauna.

The southern alligator lizard (*Gerrhonotus multicarinatus*) ranges from southern Washington (USA) to central Baja California, Republic of Mexico. Five subspecies are currently recognized (Behler and King, 1979). The purpose of this report is to describe the prevalence and intensity of helminths from the San Diego alligator lizard (*G. multicarinatus webbi*), a subspecies found in southern California. Telford (1965, 1970), in the only other surveys on the helminths of *G. multicarinatus webbi* found a nematode (*Physaloptera retusa*) and two cestode species (adult *Baerietta gerrhonoti* and larval *Mesocestoides* sp.).

We examined 96 *G. multicarinatus webbi* (42 males, 54 females). They were collected in the Puente Hills, north of Whittier (Los Angeles County, California, USA; 34°01′N, 117°57′W; elevation 150 m). They were captured by hand during March 1970 to November 1971; single specimens from 1959, 1963, 1964 and two from 1968 were included. Lizards were preserved and stored in neutral buffered 10% formalin.

The body cavity was opened by a longitudinal incision from vent to throat and the gastrointestinal tract was excised. Esophagus, stomach, and small and large intestines were examined separately. Each organ was slit longitudinally and examined under a dissecting microscope. Liver and body cavity were examined for presence of *Mesocestoides* sp. Each helminth was identified utilizing a glycerol wet mount. For detailed microscopy, nematodes were stained with iodine and cestodes were stained with hematoxylin.

Only four of the 96 specimens (4%) were infected with helminths. One specimen of *Oochoristica* sp. was found in the small intestine of a male alligator lizard, snout–vent length (SVL) 128 mm, collected May 1971. The scolex of this cestode lacked a rostellum but supported four simple, rounded suckers. In addition, uterine capsules each contained a single egg, which identified it as a linstowiid cestode of the genus *Oochoristica* (Conn, 1985).

Two third stage *Physaloptera* sp. larvae were found in the small intestine of a male alligator lizard (SVL 121 mm) collected May 1971. Two male and two female *Oswaldocruzia pipiens* were found in the stomach of a female alligator lizard (SVL 115 mm) collected July 1971. Likewise, two male and two female *O. pipiens* were found in the small intestine of a female (SVL 85 mm) from August 1971. The only genus of trichostrongylid nematodes reported from North American lizards is *Oswaldocruzia* (see Baker, 1987).

Prevalence for *Physaloptera* sp. was 1/96 (1%); prevalence for *O. pipiens* was 2/96 (2%) and for *Oochoristica* sp. it was 1/96 (1%). The finding of *O. pipiens* and *Oochoristica* sp. in *G. multicarinatus webbi* are new host and geographic records. Representative specimens were deposited in the U.S. National Parasite Collection (Beltsville, Maryland 20705, USA; accession numbers for *Oochoristica* sp., *Physa-*

loptera sp. and *O. pipiens* are 80817, 80818 and 80819, respectively.

We did not find *B. gerrhonoti* in the Puente Hills population. Telford (1965, 1970) found it to be common in a *G. multicarinatus webbi* population about 50 km west on the Palos Verdes Peninsula (Los Angeles County, California) along the Pacific Ocean. The coastal Palos Verdes population was from a cool, humid environment and was not exposed to high summer temperatures as was the inland Puente Hills population. It is thought these conditions may shorten the reproductive season of the Puente Hills population (Goldberg, 1972). It is conceivable that the cool, humid coastal environment is more conducive to nematotaeniid cestodes than the drier, hotter interior. This idea seems plausible when one considers that most nematotaeniid cestodes have been found in toads and frogs while linstowiid cestodes are typical of lizards (Schmidt, 1986). Thus, it might be expected that the cestode niche in a host population inhabiting a drier habitat would be filled by a different cestode such as *Oochoristica* sp.

Both populations, and in particular the Puente Hills population, are noteworthy in the small numbers of helminths they contained in terms of both species and individuals. However, this could be related to the diet of alligator lizards. Rather than being restricted to a selective insectivorous diet as are many lizards (Stebbins, 1985), alligator lizards eat a broad spectrum of prey that includes slugs, snails, sow bugs, insects, scorpions, spiders, bird eggs, young birds and small mammals (Stebbins, 1954, 1985). They are described by Behler and King (1979) as feeding on almost any invertebrate or vertebrate they could catch. In general, a nonselective diet is one of the several host criteria used to predict an isolationist species poor, low-density community of helminths versus an interactive community rich in species occurring at high densities (Pence, 1989).

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