serum (DMEM, GIBCO). Physiologic saline (0.85% NaCl) was utilized as a control medium for maintaining nymphs and eggs. Penicillin (10,000 IU/ml) and streptomycin (10,000 µg/ml) were included in both systems (MEM and DMEM) and cultures were maintained at 30°C in 5% CO₂ and the medium changed weekly.

Nymphs maintained in either MEM with serum or DMEM without serum remained viable and infective to hamsters or mice for at least 6 wk. Nymphs maintained in physiologic saline at 30°C died over a 1-wk period. Adult females survived for similar periods of time in both MEM and DMEM (3–6 wk) and produced from 75 to 4,200 eggs/wk in MEM. Egg production was not assessed in MEM nor were sufficient adults available for control cultures in saline. Adults were more difficult to maintain than nymphs, possibly because they were removed from the lungs of alligators that had died several hours earlier as opposed to nymphs that were recovered by dissection of freshly killed mosquitofish. However, the possibility that adults are more fastidious in their culture requirements than nymphs was not ruled out.

Eggs deposited in vitro contained a quadruped larva and the morphology of both the egg and larva strongly resembled that described by Esslinger for Porocephalus crotali (1962, Journal of Parasitology 48:457–462). Eggs kept in saline at 4°C contained live larvae for periods as long as 2 mo. Attempts to infect alligators with eggs obtained from in vitro cultures were unsuccessful.

These relatively simple culture techniques have allowed us to maintain both nymphs and adults of S. mississippiensis and to obtain large numbers of eggs and larvae. Exploitation and modifications of these methods may provide other workers with a tool for further investigations of S. mississippiensis as well as other species of pentastomes.

We thank Tracey Howell of Plant City Gator Jungle for his cooperation. This paper was published as Florida Agricultural Experiment Stations Journal Series No. 6746.

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**Research Note**

**Trematodes of Cuban Brown Anoles, Anolis sagrei sagrei, from Florida**

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**KEY WORDS:** Urotrema scabridum, Mesocoelium monas, new locality record.

King and Krakauer (1966, Quarterly Journal of the Florida Academy of Sciences 29:144–154) reported that the Cuban brown anole, *Anolis sagrei sagrei* Dumeril and Bibron, was an accidental introduction into Florida through 3 ports—Key West prior to 1931; Port of Palm Beach, 1960; Port Everglades (Broward County), 1964. Since those introductions, it has rapidly increased its range to become one of the most abundant reptiles in south Florida (King and Krakauer, 1966, loc. cit.). Although it is a very common species throughout its range, only 2 studies have been conducted to determine to what extent it is parasitized by intestinal helminths. Otero (1970, Ciencias 4:1–51) examined 21 *A. s. sagrei* collected in Cuba and found 2 nematodes, Cyrtosomum scelopori Gedoelt, 1919, and Skrjabinoptera phrynosoma (Ortlepp, 1922), and 2 trematodes, Urotrema scabridum Braun, 1900, and *U. wardi* Perez Vigueras, 1940. Price and Underwood (1984, Florida Scientist 47:205–207) examined 100 anoles collected in residential areas of Tampa, Florida, and reported 2 nematodes, Physaloptera squamatae Harwood, 1932 and *C. scelopori*, and 1 trematode, Mesocoelium monas (Rudolphii, 1819) Freitas, 1958.

Eighty-two adult Cuban brown anoles, *Anolis*
Table 1. Trematodes of Anolis sagrei sagrei from Florida.

<table>
<thead>
<tr>
<th>Locality*</th>
<th>Hosts examined/hosts infected</th>
<th>Trematodes</th>
<th>Number of worms recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broward</td>
<td>2/1</td>
<td>Urotrema scabridum</td>
<td>2</td>
</tr>
<tr>
<td>Dade</td>
<td>17/4</td>
<td>U. scabridum</td>
<td>44</td>
</tr>
<tr>
<td>Lee</td>
<td>2/0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monroe</td>
<td>22/0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polk</td>
<td>4/1</td>
<td>U. scabridum</td>
<td>1</td>
</tr>
<tr>
<td>Sarasota</td>
<td>35/3</td>
<td>Mesocoelium monas</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>U. scabridum</td>
<td>1</td>
</tr>
</tbody>
</table>

* Counties in Florida.

sagrei sagrei, were examined for intestinal platyhelminths between August 1977 to March 1986. All anoles were collected alive by hand from 6 Florida counties, and necropsied within a week after capture. Trematodes were fixed in lukewarm alcohol-formalin-acetic acid (AFA) with slight coverslip pressure, stained in Semichon's carmine or Harris' hematoxylin, dehydrated in ethanol, cleared in xylene, and mounted in Kleer-mount. Two species of trematodes were recovered; 1 a new locality record (Table 1).

Forty-eight specimens of the digenetic trematode Urotrema scabridum representing the first report for Anolis sagrei sagrei from the United States were removed from the small intestines of 7 anoles. Measurements and morphology of these worms correspond with those given by Otero (1970, loc. cit.). Urotrema spp. are normally parasites of bats. Anolis carolinensis and A. s. sagrei represent the reptilian hosts for Urotrema spp. (Otero, 1970, loc. cit.). Four specimens of Mesocoelium monas were recovered from the small intestines of 2 A. s. sagrei. Measurements and morphology of these specimens agree with the redescription presented by Nasir and Diaz (1971, Rivista di Parassitologia 32:149–158). This is the second report of M. monas parasitizing a Cuban brown anole. It should also be noted that all specimens of U. scabridum and M. monas contained numerous ova. Representative specimens of U. scabridum (No. 79345) and M. monas (No. 79344) have been deposited in the USNM Helminthological Collection, USDA, Beltsville, Maryland 20705.

We thank Grady Knight and Shawn Mack for help in collecting anoles.

Research Note

Excystation of Echinostoma revolutum Metacercariae (Trematoda) in the Domestic Chick

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KEY WORDS: Gallus domesticus, in vivo excystation, metacercarial cysts, echinostomes.

Although information is available on chemical excystation of Echinostoma revolutum metacercarial cysts (Fried and Butler, 1978, Journal of Parasitology 64:175–177), there are no detailed studies on the in vivo excystation of this parasite in the domestic chick. This note reports our observations on in vivo excystation of E. revolutum metacercariae in the domestic chick. Encysted metacercariae were obtained from the kidneys of experimentally infected Physa heterostropha snails as described in Fried and Weaver (1969, Proceedings of the Helminthological Society of Washington 36:153–155) and fed by pipet approximately 400 per chick in 3% NaHCO₃ to each of 14, day-old unfed domestic White Leghorn chicks. Groups of 2 chicks each were necropsied at 0.25, 0.5, 1.0, 2.0, 3.0, 6.0, and 24 hr postinfection and the number of encysted and excysted metacercariae in the gizzard, upper

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