A Survey of Monogeneans on the Gills of Catostomid Fishes from Ohio (1983)

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A SURVEY OF MONOGENEANS ON THE GILLS OF CATOSTOMID FISHES FROM OHIO (1983)

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ABSTRACT. During 1979 and 1980, gills of 147 catostomid fishes, representing 12 host species from 9 localities in Ohio, were examined for monogenetic trematodes. Thirty-one percent were infected by at least one trematode. Three new host records and 10 new Ohio records are reported. The new host records established are Neodiscocotyle carpioditis from Ictiobus bubalus, and Dactylogyrus hamatus and Pseudomurraytrema etowanum from Hypentelium nigricans. The new Ohio records are Pseudomurraytrema paradoxum, Dactylogyrus apos, and Dactylogyrus ursus from catostomids collected in the Grand River, Ashtabula-Lake Co. border; Pseudomurraytrema etowanum, Pseudomurraytrema rogersi and Dactylogyrus hamatus from Silver Creek, Geauga Co.; Dactylogyrus duquesnei and Anonchohaptor anomalum from Salt Creek, Pickaway Co.; Neodiscocotyle carpioditis from Lake Erie, Lorain Co.; and Pseudomurraytrema alabarrum from Bridge Creek, Geauga Co. Specimens of most of the species collected were deposited in the U.S. National Museum.

INTRODUCTION

North American studies concerning the monogenetic trematodes of catostomid fishes are relatively sparse. In Canada, 3 prominent surveys have been conducted (Dechtiar 1972, Hanek and Molnar 1974, Threlfall 1974). In these surveys, a total of 1459 fishes were examined, of which only 136 representing 5 species, were catostomids. Surveys of monogenetic trematodes have also been conducted in the United States. The largest of these, spanning several years, was conducted in the Southeast. The catostomids examined were the black redhorse, Moxostoma duquesnei (Rogers and Mizelle 1966, Rogers 1969); the Alabama hog sucker, Hypentelium etowanum (Rogers and Mizelle 1966, Rogers 1968, Chein and Rogers 1971); the black jumprock, M. cervinum (Rogers 1968); the northern hog sucker, H. nigricans (Wellborn and Rogers 1967); the smallmouth buffalo, Ictiobus bubalus; the river carp, Carpiodes carpio; and the spotted sucker, Moxostoma melanops (Chein and Rogers 1971).

Surveys involving monogenetic trematodes have also been conducted in Ohio (Bangham 1937, 1941, 1972, Keurgar 1954, Pearce 1950). Although some Ohio surveys have involved catostomids, the number and diversity examined have been small. Only 214 specimens of suckers from Ohio waters have been examined. Of these, 95 represent one species, the common white sucker, Catostomus commersoni. The remaining individuals represent 8 additional species: spotted suckers; northern hog suckers; black red horses; quillbacks, Carpiodes cyprinus; greater redhorses, M. valencienni; Ohio shorthead redhorses, M. macrolepidotum breviceps; western lake chubsuckers, Erimyzon succetta; and golden redhorses, M. erythrum.

METHODS AND MATERIALS

Fish were collected by various means depending on the body of water being sampled. These methods included seining, gill netting, electroshocking, trawling, and trapping. Live fish were transported to a lab where their gills were examined. Trematodes were flattened, then fixed with AFA. After fixation the specimens were stained in borax carmine, dehy-
A survey of monogenetic trematodes from Ohio catostomids.

<table>
<thead>
<tr>
<th>Host</th>
<th>Number Examined</th>
<th>Percent Infected</th>
<th>Parasites</th>
<th>USNM Coll. No.</th>
<th>Locality</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Minytrema melanops</em></td>
<td>2</td>
<td>100</td>
<td><em>Pseudomurraytrema alabarum</em></td>
<td></td>
<td>Bridge Creek, Geauga Co.</td>
</tr>
<tr>
<td><em>Carpiodes carpio</em></td>
<td>11</td>
<td>0</td>
<td></td>
<td></td>
<td>Davenport Pd., Pickaway Co.</td>
</tr>
<tr>
<td><em>C. cyprinus cyprinus</em></td>
<td>3</td>
<td>67.7</td>
<td><em>Neodiscocotyle carpioditis</em></td>
<td>76456</td>
<td>Lake Erie, Lorain Co.</td>
</tr>
<tr>
<td><em>C. c. hinei</em></td>
<td>4</td>
<td>100</td>
<td><em>Neodiscocotyle carpioditis</em></td>
<td>76456</td>
<td>Lake Erie, Lorain Co.</td>
</tr>
<tr>
<td><em>Ictiobus bubalus</em></td>
<td>1</td>
<td>100</td>
<td></td>
<td></td>
<td>Davenport Pd., Pickaway Co.</td>
</tr>
<tr>
<td><em>I. cyprinellus</em></td>
<td>9</td>
<td>0</td>
<td></td>
<td></td>
<td>Davenport Pd., Pickaway Co.</td>
</tr>
<tr>
<td><em>I. niger</em></td>
<td>3</td>
<td>0</td>
<td></td>
<td></td>
<td>Davenport Pd., Pickaway Co.</td>
</tr>
<tr>
<td><em>Hypentelium nigricans</em></td>
<td>37</td>
<td>56.8</td>
<td><em>P. paradoxum</em></td>
<td>77647</td>
<td>Grand River, Ash.-Lake Co.</td>
</tr>
<tr>
<td><em>Moxostoma anisurum</em></td>
<td>7</td>
<td>100</td>
<td><em>Dactylogyrus apos</em></td>
<td>77642</td>
<td>Grand River, Ash.-Lake Co.</td>
</tr>
<tr>
<td><em>M. duquesnei</em></td>
<td>12</td>
<td>58.3</td>
<td><em>P. rogersi</em></td>
<td>77646</td>
<td>Grand River, Ash.-Lake Co.</td>
</tr>
<tr>
<td><em>M. erythraum</em></td>
<td>11</td>
<td>27.3</td>
<td><strong>D. hamatus</strong></td>
<td>77645</td>
<td>Grand River, Ash.-Lake Co.</td>
</tr>
<tr>
<td><em>M. macrolepidotum</em></td>
<td>1</td>
<td>100</td>
<td><em>P. etowanum</em>*</td>
<td>77643</td>
<td>Salt Creek, Vinton Co.</td>
</tr>
<tr>
<td><em>Catostomus commersoni</em></td>
<td>34</td>
<td>1</td>
<td><em>Dactylogyrus</em> (undescribed)</td>
<td></td>
<td>Chagrin River, Lake Co.</td>
</tr>
</tbody>
</table>

*New state record
**New state record and new host record

RESULTS AND DISCUSSION

One hundred forty-seven catostomids representing 12 species were collected during this investigation. Forty-four fish, or 31% were infected by one or more gill flukes. Of 73 fish examined from Davenport Pond, Pickaway Co., and the Chagrin River, Lake Co., only one common white sucker was infected with a single specimen of *Octomacrun lanceatum*. This represents an infection rate of approximately 1.3%. The infection rate of the remaining 74 fishes taken from all other localities was 58.1%.

The present paper reports 3 new host records and 10 Ohio records (table I). *Neodiscocotyle carpioditis* was first described in Canada by Dechtiar (1967) on quillback collected from both the western and eastern ends of Lake Erie. This study reports *N. carpioditis* from quillback and smallmouth buffalo from the central basin of Lake Erie, Lorain Co. This is the first report of *N. carpioditis* infesting the smallmouth buffalo and the first report of its presence in Ohio waters. *Pseudomurraytrema etowanum* Rogers 1965, and *Dactylogyrus hamatus* Rogers and Mizelle 1966, are reported from northern hogsuckers collected from Silver Creek, Geauga Co. This paper is the first report of *P. etowanum* and *D. hamatus* parasitizing northern hogsuckers and the first record of their occurrence in the state of Ohio. Seven additional Ohio records are reported: *D. duquesnei* Mueller 1938, from black redhorse collected from Salt Creek, Pickaway Co.; *D. apos* Mueller 1938, from northern hogsuckers from the Grand River at the Ashtabula-Lake Co. border; *D. ursus* Mizelle and Donohue 1944, from silver redhorses, *Moxostoma anisurum*, from the Grand River at the Ashtabula-Lake Co. border; *Anonchohaptor*
anomalum Mueller 1938, from golden redhorses from Salt Creek, Pickaway Co.; *Pseudomurraytrema alabarrum* Rogers 1966, from northern hogsuckers from Bridge Creek, Geauga Co.; and *P. paradoxum* Kritsky and Hathaway 1969, from northern hogsuckers from the Grand River at the Ashtabula-Lake Co. border.

**LITERATURE CITED**


—— 1941 Parasites from fish of Buckeye Lake, Ohio. Ohio J. Sci. 41: 441-448.


