

THE MONOGENEAN *HAPLOCLEIDUS FURCATUS*
MUELLER, 1937 (PHYLUM PLATYHELMINTHES) ON
LEPOMIS CYANELLUS RAFINESQUE, 1819
FROM UTAH: A RANGE EXTENSION

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Key words: *Haploleidus furcatus*, *monogenean*, *range extension*, *Lepomis cyanellus*.

The green sunfish, *Lepomis cyanellus* Rafinesque, 1819, is native to the central eastern United States but has been widely introduced throughout the United States (Sigler and Miller 1963, Sigler and Sigler 1987). In 1890 the species was introduced into Utah, where many self-sustaining populations occur. Utah populations of *L. cyanellus* are generally stunted, and few individuals exceed 150 mm in length (Sigler and Miller 1963). This species of sunfish is host to many ecto- and endoparasites (Hoffman 1999).

We collected green sunfish from Red Lake, Utah County, Utah, during September 1997 using angling equipment. Seven fish were weighed (g), measured (mm; Table 1), and then examined for the presence of ectoparasites. We found a total of 162 monogeneans. These flatworms were collected, fixed, and stained by standard methods (Stoskopf 1993) and identified as *Haploleidus furcatus* Mueller, 1937. Stained specimens were sent to Delane Kritsky, Idaho State University, for generic confirmation. Slides deposited in the Manter Collection at the University of Nebraska were given the accession number HWML 39822. The prevalence of *H. furcatus* was 100% for the examined fish, with a mean intensity of 23.1 worms per fish (range = 6 to 43 worms per fish; Table 1).

Haploleidus furcatus is a parasitic fluke on the gills of many species of fish including *Lepomis cyanellus* (Hoffman 1999). The genus *Haploleidus* is characterized by a large set and a small set of anchoring hooks located on

the opisthaptor (attachment organ; Fig. 1) and the type II copulatory complex (Beverly-Burton and Suriano 1980, Beverly-Burton 1984).

Adults of this genus and other monogeneans lay eggs while on the gills, which can remain on the same host or be flushed out via gill ventilation. Eggs then incubate in the substrate before developing into free-swimming oncomiracidia (Cope and Burt 1981, 1982, 1985, Stoskopf 1993, Woo 1995).

Green sunfish are a documented host of *H. furcatus* in other regions of North America (Hoffman, 1999); however, this is the first published record of *H. furcatus* in Utah. Therefore, the range of *Haploleidus furcatus* has been extended to Red Lake, Utah County, Utah. We suspect that this monogenean was introduced to Red Lake with stocking of infested green sunfish in the late 1907s. According to the Utah Division of Wildlife Resources (C. Thompson personal communication), this was done by a group of local Boy Scouts.

Haploleidus furcatus in Red Lake infests the green sunfish, which is the dominant fish species in that body of water. Other resident fish species may also be infested with this parasite, suggesting the need for further research at Red Lake and nearby lakes and streams to learn more about host preference for *H. furcatus*. This is the first known record for *H. furcatus* in Utah and the Rocky Mountain region.

Taxonomic Summary

Parasite: *Haploleidus furcatus* Mueller 1937
Utah host: Green sunfish, *Lepomis cyanellus* Rafinesque, 1819

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TABLE 1. Length (mm) and weight (g) of green sunfish (*Lepomis cyanellus*) and number of *Monogenea* found on each fish.

Fish number	Standard length (mm)	Total length (mm)	Weight (g)	Number of <i>Monogenea</i>
1	115	140	48.3	31
2	128	158	76.8	20
3	110	128	52.0	6
4	138	168	89.5	7
5	121	149	66.4	21
6	90	114	34.2	43
7	105	130	42.1	34

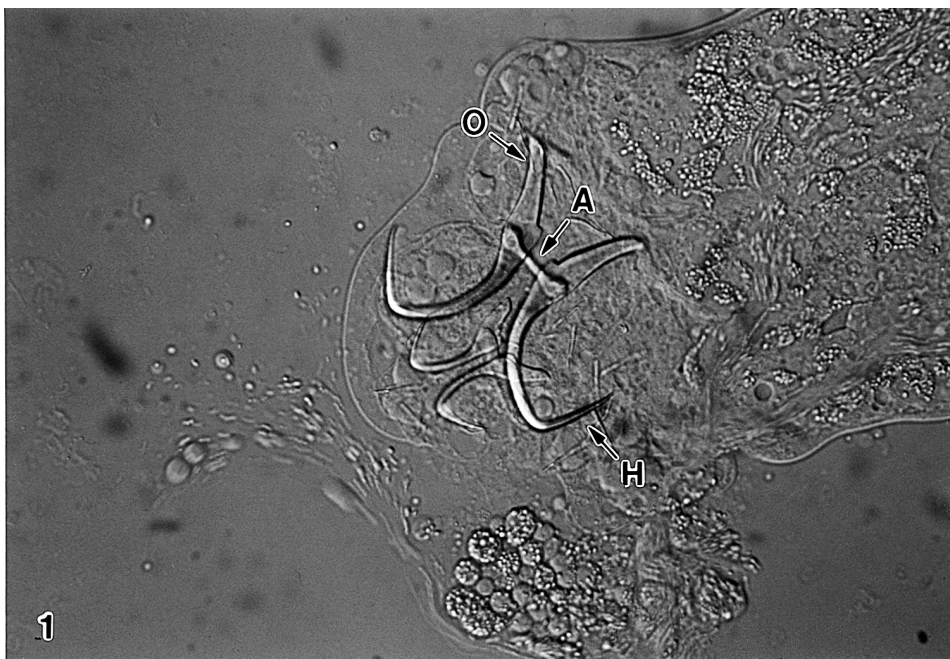


Fig. 1. Photomicrograph of *Haploclaidus furcatus* (magnification 100X). Identifying structures are marked as follows: A = anchor, H = hooks, O = opisthaptor.

Type host: Largemouth bass, *Micropterus salmoides* Lacepede, 1802

Other paratenic hosts: Spotted bass, *Micropterus punctulatus* Rafinesque, 1819; bluegill, *Lepomis macrochirus* Rafinesque, 1819; smallmouth bass, *Micropterus dolomieu* Lacepede, 1802

Site of infection: Gills

Type locality: Florida

Other localities: Alabama, Arkansas, California, Kansas, Louisiana, North Carolina, Ohio, Tennessee, Texas, Virginia, Washington, Wisconsin, West Virginia, Ontario (Canada)

Specimens deposited: HWML 39822, University of Nebraska (Manter Collection)

Comments: First record for *H. furcatus* in Utah and Rocky Mountain area

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