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Characteristics: Refer to key.

County Records: Obion

Dates of collection: June - July

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Characteristics: Refer to key.

County Records: Knox

Dates of collection: June

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A NEW SPECIES OF *GYRODACTYLUS*
 (TREMATODA: MONOGENEA) FROM THE GOLDEN SHINER¹

WILLIAM J. NOWLIN

Department of Biology, North Texas State University, Denton, Texas

ABSTRACT

Gyrodactylus wellborni n. sp., a new species of monogenetic trematode from the body and fins of the golden shiner, *Notemigonus crysoleucas* (Mitchill) is described. The host was collected in the vicinity of Auburn, Alabama. Other monogenetic trematodes reported from the golden shiner are *Dactyogyrus parnicirrus* Seamster, 1948; *Dactyogyrus aureus* Seamster, 1948; *Gyrodactylus rachelae* Price (In press). The new species is morphologically described.

INTRODUCTION

Putz and Hoffman (1963) listed 23 known species of *Gyrodactylus* for North American in addition to describing two new species. Since 1963 Mizelle and Krisky (1967), Wellborn and Rogers (1967), Crane and Mizelle (1967), Rogers (1965) and C. Price (In press) have reported additional species causing the total to exceed 45. On a world-wide basis there are approximately 200 species of *Gyrodactylus*.

Gyrodactylus is a cosmopolitan genus of Monogenea and the most successful of monogenetic trematodes in parasitizing a broad range of hosts. In North American alone, this genus has been reported from at least 13 families of teleosts; world wide, *Gyrodactylus* has been reported from species of more than 20 families of fishes. *Gyrodactylus* members are viviparous. Most mature forms exhibit well-formed embryos, complete with full complement of haptor armament, within the uterus.

It is often possible to observe a smaller embryo within the uterus of the first embryo. *Gyrodactylus* species are ectoparasitic and are found on both marine and freshwater hosts.

MATERIALS AND METHODS

The hosts harboring *Gyrodactylus* species were collected from an experimental pond in the vicinity of Auburn, Alabama. Parasites were removed and handled as suggested by Rogers and Wellborn (1965). During the process, the gills and bodies were placed in separate containers, and the bodies were placed in another container. *Gyrodactylus* species were obtained from the bodies of the fishes. Measurements and illustrations were made microscopically with the aid of a filar micrometer ocular and camera lucida, respectively. All measurements are given in microns. Measurements were made according to the methods described by Mizelle and Kritsky (1967). The average measurements are given first, then minimal and maximal measurements are enclosed in parentheses.

DESCRIPTION OF SPECIES

Gyrodactylus, wellborni, n., sp.

- Host and locality: *Notemigonus crysoleucas* (Mitchill), the golden shiner; Auburn, Alabama.
 Location on host: Body and Fins.
 Specimens studied: Six.

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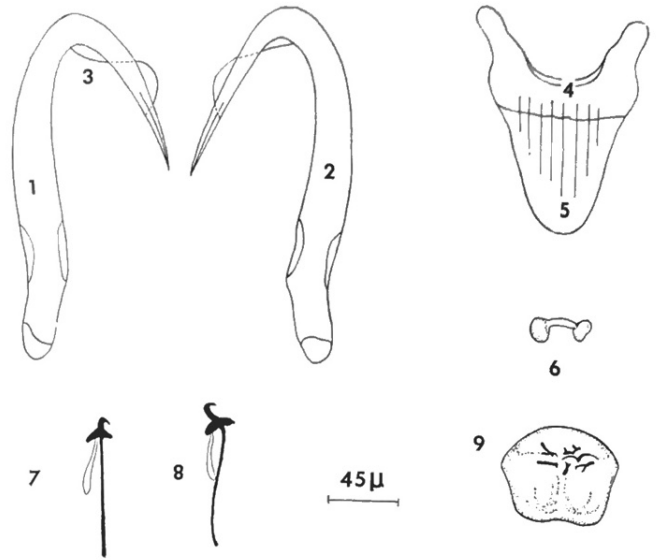
Type specimens: Holotype deposited in Helminthological collection (63004) of the U.S. National Museum, Washington, D.C. Paratype in author's collection.

Description: A robust gyrodactylid of moderate size, provided with a thin, smooth cuticle; the body length is 437 (385-491), width of body is 103 (86-131) slightly posterior to midlength. The cephalic lobes are moderately developed with a spicule in each lobe. The eye-spots are lacking. Head organs are present in the anterior cephalic lobes; cephalic glands are present but poorly defined in the pharyngeal region. The pharynx is elliptical. The peduncle is short and narrow with the effect that the haptor is well set off from the body proper. The haptor is well-defined and the circle of haptoral hooks forms an umbrella-like pattern posteriorly. The haptor length and width varies greatly.

One pair of anchors is ventrally located. Each anchor (Figs. 1, 2), is composed of: a solid superficial root; a base, width of anchor base is 10 (9-11); a fold; knob; shaft; and point. The total length of anchors is 90 (89-93). The arc membrane is well developed (Fig. 3). The superficial bar (Fig. 4) is wide with an enlarged end which extends ventrally along the base of the superficial root; the posterior border has a conspicuous striated shield (Fig. 5); bar length is 36 (32-38). The deep bar is slightly curved in its midregion (Fig. 6); bar length is 13 (12-16). Hooks (Figs. 7, 8), 16 in number are alike in shape and size; length of hooks is 31, (25-32). Each hook is composed of: a shank, a heel, a toe, a shelf, a shaft, a point, and a posterior projecting structure which extends a considerable distance along the shaft length. The vitelline glands are globular or in clumps and situated in the posterolateral portion of the body proper. The gonads are ovate and located post-testicular. Uteri of two specimens contained single embryos which bore well-developed haptoral armament; two possessed no embryo. In two of the specimens a second embryo could be noted in the uteri of the first. The cirrus disc (Fig. 9) is subspherical, armed with six or more spinelets. Intestinal crura are non-confluent in the posterior region of the body.

Remarks: Members of the genus *Gyrodactylus* are morphologically homogeneous. It is becoming increasingly difficult to establish the nearest relative of newly described species as *Gyrodactylus* abounds in both marine and freshwater habitats. It is the author's opinion that affinities should be established irrespective of habitats involved. The closest apparent morphological relative of this new form is *G. armatus* Crane and Mizelle, 1967, which was described from *Leptocottus armatus* Girard, a marine host. *Gyrodactylus wellborni* is from *Notomigonus crysoleucase*, a freshwater host. Although these two species resemble each other in various aspects of the sclerotized parts, the following morphological differentiations are noted: the length of anchors, the shape of bars, cirrus disc, and the longitudinal striations on the conspicuous shield (Figs 1-7 Crane and Mizelle, 1967).

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GYRODACTYLUS WELLBORNI SP.N.

ILLUSTRATIONS

Figs. 1-9 *Gyrodactylus wellborni* sp. n.

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|-------------------------|---------------------|
| Fig. 1. left anchor | Fig. 6. deep bar |
| Fig. 2. right anchor | Fig. 7. hook |
| Fig. 3. arc membrane | Fig. 8. hook |
| Fig. 4. superficial bar | Fig. 9. cirrus disc |
| Fig. 5. shield | |

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