

## BRIEF NOTE

DESCRIPTION OF A PROTOLARVA MIMIC SHINER  
(*NOTROPIS VOLUCELLUS*)<sup>1</sup>WAYNE A. POTTER<sup>2</sup> and JEANNE M. POTTER,<sup>3</sup> NUS Corporation, Northern Environmenta Services Division, Manor Oak Two, 1910 Cochran Road, Pittsburgh PA 15220

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The mimic shiner, *Notropis volucellus*, (Cope) is common to many large rivers and drainages (Trautman 1957, Scott and Crossman 1973, Pflieger 1975), but little is known about its spawning and no descriptions are available for larval stages. Black (1945) speculated that spawning took place at night and perhaps the eggs were broadcast over aquatic vegetation at a depth of 15 ft to 20 ft. He also reported that female mimic shiner were ripe by June 20 and at least partly spent by July 9. In this study, we describe the characteristics of the protolarval stage of the mimic shiner.

Adult mimic shiner were collected during an ichthyoplankton drift study

maintained in a water bath at approximately 23 °C with the water aerated by gentle bubbling of air through a pipette.

The eggs were observed daily and dead eggs removed. Only one egg survived to hatch. The hatched larva was kept for 3 days and then was preserved. The developmental terminology for the larva (protolarva) used is that presented by Snyder *et al* (1977). The protolarva stage is characterized by the lack of formed rays in the finfold, and except near transition to the mesolarval stage, a straight notochord.

Manually stripped eggs were extruded individually into the river water in the finger bowl. Approximately 20 eggs

TABLE I  
*Selected morphometrics for a protolarva mimic shiner.*

	Total Length	Standard Length	Snout Length	Eye Diameter	Head Length	Prenal Length	Body Depth at Anus
Measurement (mm)	4.75	4.60	0.15	0.25	0.7	2.8	0.35
Total Length (%)	100.0	96.8	3.2	5.3	14.7	58.9	7.4

of the New River (Potter 1978) on 15 June 1976 in river water at 21.5 °C. One female and 2 males were found to be ripe; these fishes were artificially spawned by stripping the eggs and mill into a finger bowl partially filled with river water. The fertilized eggs were

were extruded, a number considerably less than the average 367 reported by Black (1945). The eggs were adhesive, demersal, and amber in color. One egg hatched 3 days after fertilization.

Measurements of total length, snout, preanal length and eye diameter were made using a dissecting microscope with an ocular micrometer following definitions found in Mansueti and Hardy (1967). The recently hatched larva was 4.5 mm total length with more yolk present anteriorly than posteriorly. The 3-day old larva was 4.75 mm long (table 1)

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with head length 14.7% of the total length. The eyes were inferior, pigmented, and oval to bean-shaped, and the mouth was subterminal and small (see fig. 1). Snout length was 3.2% of the total length, and the opercle were transparent and covered the gill chambers. Otoliths were not evident.

At the 13th or 14th myomere, the median finfold arose dorsally and was continuous to the anus. Under the 9th and 10th preanal myomere, the median finfold arose vertically. The pectoral fins were small and extended posteriorly for 2 to 3 myomeres. The urostyle was straight and no finrays were present.

This protolarva mimic shiner was very lightly pigmented. Only 2 macromelanophores were observed dorsally and

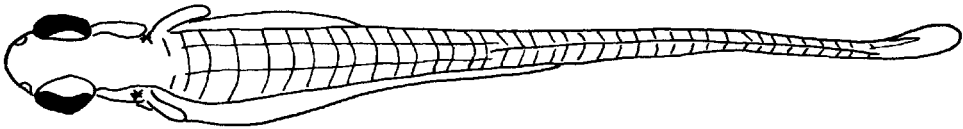
these were at the bases of the pectoral fins. Laterally, the macromelanophores at the bases of the pectorals were very evident (fig. 1). A double row of melanophores was observed along the ventral yolk sac, originating posterior to the pectorals and gradually coming together and concentrating near the anus. A single row of melanophores was observed ventrally from the anus to the caudal region. Twenty one preanal and 14 or 15 postanal myomeres were observed (table 2). This number compares favorably to the average number (36) and range (34 to 37) of vertebrae for the mimic shiner (Scott and Crossman 1973).

In a similar species (*Notropis stramineus*), Fish (1932) described a larvae at 5 mm having 19 or 20 preanal and 16 postanal myomeres, the yolk sac absorbed, and a single air bladder evident. The head was broader than deep; the snout was short and obtuse; and the tail was lophocercal. Although some differences were apparent between

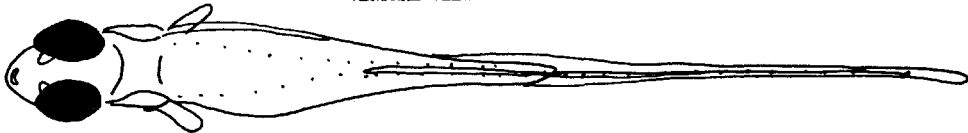
TABLE 2  
*Myomeres of protolarva mimic shiner.*

Preanal	Postanal	Total
21	14-15	35-36

DORSAL VIEW



VENTRAL VIEW



LATERAL VIEW

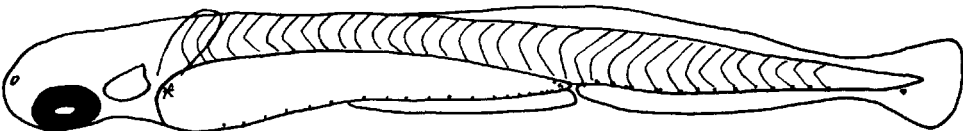


FIGURE 1. Protolarval stage of the mimic shiner (4.75 mm total length).

the protolarva mimic shiner and sand shiner, data are inadequate to separate these species with confidence.

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