

OBSERVATIONS ON SPAWNING AND BREEDING COLORATION OF
MOXOSTOMA LACHNERI IN CHATTAHOOCHEE RIVER, GEORGIA

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ABSTRACT

Greater jumprock fish were observed spawning on 10 and 11 June 1976, in Chattahoochee River, Georgia, at 19° C in a manner similar to that described for non-nest-building species of *Moxostoma*. Spawning occurred in a gravel-bottomed trough in clear, rapid water. Bluish-gray breeding colors were developed on spawning individuals.

Since its original description by Robins and Raney (1956), *Moxostoma lachneri*, the greater jumprock, has not been studied intensively. Other than recent comments on its restricted distribution (Smith-Vaniz 1968; Dahlberg and Scott 1971) to the Apalachicola River drainage in Alabama and Georgia, virtually nothing has been reported about its breeding colors, reproductive behavior and ecological characteristics. This note reports observations made on a breeding habitat, colors and spawning behavior of a group of *M. lachneri* in the Chattahoochee River, Georgia.

SPAWNING

On 10 and 11 June 1976, a group of greater jumprock were observed moving upstream and congregating in rubble-bottom chutes in Chattahoochee River (Apalachicola drainage) under the route 17 bridge on the edge of Nacoochee (S of Helen), White County, Georgia (N34° 42', W83° 44'). **■** observed movements and spawning activities continuously from mid- to late-afternoon on both 10 and 11 June. The sky was clear on these dates and the activities observed took place in direct sunlight. The capture of a ripe male which readily released its milt indicated the spawning period was present. These spawning dates correspond with those of other *moxostomatins* which are largely spawners (Jenkins 1970).

Spawning activities occurred in a trough (ca. 0.5-1 m deep) which had a rubble and gravel bottom. Water was very clear and the current in the trough (or chute) area was strong. The entire trough was about 10 m². Water temperature was 19° C. Other species of *Moxostoma* have been found spawning at temperatures ranging from 11.1° to 22.2° C (Jenkins 1970; Scott and Crossman 1973).

Breeding adults were most often seen in groups of three or four, but groups of five and seven were common. All individuals in the trough faced upstream and moved slightly upstream or downstream slowly. When startled, individuals almost always moved downstream into deeper water with cover.

What was presumed to be the spawning act was very similar in most respects to what has been observed in other *Moxostoma* and many other catostomids (e.g., Reighard 1920; Bowman 1970; Burr and Morris 1977). That is, two males would align themselves on either side of a female and press their bodies tightly together with their caudal fins rubbing against the caudal region of the female. A rapid quivering of the bodies took place and then the trio separated and subsequently rejoined other individuals in the trough. I observed no overt territorial or aggressive behavior between rival individuals.

A female, Alabama hog sucker, *Hypentelium etowanum* (Jordan) was captured on 11 June from the same trough. This individual was ripe with ova and released eggs readily when held. Alabama hog suckers were present in groups of three and five and were probably spawning or getting ready to spawn during this period. Burr and Morris (1977) observed in Illinois that northern hog suckers, *Hypentelium nigricans* (Lesueur) were present on the spawning grounds of the shorthead redhorse, *Moxostoma macrolepidotum* (Lesueur). The spawning association between *Hypentelium* and *Moxostoma* is probably not intimate and only coincidental.

BREEDING COLORS

Greater jumprocks could not be captured with a seine, but were collected by the use of frog "gigs". Of the several specimens captured only one adult male (205 mm standard length) was preserved, the remaining specimens were quick frozen on dry ice for future isozyme studies. Robins and Raney (1956:13) noted no bright colors on non-breeding individuals. Before preservation I made the following color notes. The anal and caudal fins were a rich blue-gray. The blue-gray color of these fins was similar to color 15 nc in Jacobson's (1945:68) basic color guide; the fins were clearly more blue than gray. The remaining fins were more slate-gray with a slight wash of orange (especially the pelvic fins) and a little of the blue pigment. The bodies were iridescent silvery-black dorsally with some dark gradually fading ventrally. Upon preservation the blue pigment faded rapidly to gray except for the anal fin and the lower lobe of the caudal fin which retained some of their original blue. Males were tuberculate with a single file of small white tubercles on the rays of the lower lobe of the caudal fin. Large white tubercles were also present in a single file on all rays of the anal fin. No tubercles were present on the upper lobe of the caudal fin nor were they developed on other parts of the head or body. R. E. Jenkins (pers. comm.) has observed more extensive tuberculation on other individuals of *M. lachneri*.

As has been suggested for other *Moxostoma*, the tubercles probably function in maintaining contact between the sexes during the spawning act and serve as a stimulus for females during breeding (see review by Collette, 1977).

lachneri is a member of the subgenus *Scartomyzon* (Robins and Raney 1956). Published information on other members of the subgenus is mostly limited to taxonomy and distribution, and no observations of reproductive

behavior are known. Thus comparisons of reproductive characteristics of *M lachneri* and its closest relatives are not possible at this time. It is worth noting that the distinctive breeding coloration of *M. lachneri* is strikingly different from what has been reported in the other moxostomatini subgenera (e.g., *Moxostoma*, *Megapharynx*) which often have red or orange in certain or all fins at breeding time as well as other times. One other characteristic worth noting is that the greater jumprock is evidently a non-nest-building catostomid. Its breeding habits are therefore similar to most species in the subgenus *Moxostoma*, except *Moxostoma carinatum* which is characteristically a nest-builder (Hackney, et al. 1967).

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