

UNIOMERUS TETRALASMUS (SAY, 1830) (PELECYPODA: UNIONIDAE), A NEW DISTRIBUTION RECORD FOR A FRESHWATER MUSSEL COLLECTED FROM THE LOWER TENNESSEE RIVER DRAINAGE

RALPH N. BROWN AND W. JEFFREY PARDUE

*Tennessee Valley Authority
Muscle Shoals, Alabama 35660*

ABSTRACT

Unio merus tetralasmus (Say, 1830), a freshwater mussel first found from the Tennessee River drainage in Kentucky Reservoir, was recently collected from Hurricane Creek, a small tributary of the Tennessee River (Henderson and Hardin Counties, Tennessee). *Unio merus tetralasmus* is the only mussel found in Hurricane Creek, and its distribution within the creek is not uniform.

DESCRIPTION AND RESULTS

Biologists of the Tennessee Valley Authority (TVA) recently discovered a population of *Unio merus tetralasmus* in Hurricane Creek in Henderson and Hardin Counties, Tennessee. Although this species has been reported in nearby drainage systems, this discovery constitutes the first reported extension of its range into the Tennessee River System. [Two specimens were found in Kentucky River System.] Starrett (1971) identified a museum specimen collected from Phelps Lake near Havana, Illinois, in 1894 as *U. tetralasmus*. Referring to collections by H. H. Smith, Van der Schalie (1963) identified *U. tetralasmus* at three locations in the Cahaba River, Alabama. More recently, Kuckyr and Vidrine (1975) reported *U. tetralasmus* in the Tensas River, Louisiana. Simpson (1914) described Bayou St. John, New Orleans, as the type locality of *U. tetralasmus* and described its distribution as Alabama to Texas, northern to southern Missouri, and the Indian territory. The geographic distribution of all species and varieties of *Unio merus* is the Mississippi River drainage north to about latitude 40°, the Ohio River System, the Alabama River System, and southwest through Texas into northern Mexico. The Tennessee and Cumberland Rivers were specifically excluded from the range.

Hurricane Creek runs generally north to south at about 88°18'W. Live specimens were found from about 35°24'N to 35°26'N. Above 35°26'N scattered relic shells were found all the way to the headwaters. No relics or live specimens were found below 35°24'N.

Hurricane Creek is one of several small creeks that drain crop and pasture land on the north side of White Oak Swamp. The swamp is drained by White Oak Creek, which flows into the Tennessee River near Tennessee River mile (TRM) 173.6. Although a large assemblage of mollusks occurs in the Tennessee River near White Oak Creek, the occurrence of *U. tetralasmus* in the river has never been reported. No mussels were found during recent surveys of the creeks adjacent to Hurricane Creek.

All creeks flowing into White Oak Swamp appear physically similar, but the segment of Hurricane Creek from which *U. tetralasmus* was collected has one obvious distinguishing feature. The substrate in this segment is predominantly a hard, tightly packed clay, whereas the substrates of the other creeks and other segments of Hurricane Creek are predominantly loose sand and gravel. The stability of the clay substrate may be the factor that permits this species to survive in Hurricane Creek. Vidrine and Bereza (1977) describe the rivers in which they collected *U. tetralasmus* as "sandy bottomed" and "mud bottomed."

CONCLUSIONS

Discovery of mussels of different age classes indicates the presence of a reproducing population in Hurricane Creek. The host fish species necessary for completing the life cycle of *U. tetralasmus* is not known. There are no known barriers to fish migration between the Tennessee River and Hurricane Creek. Given that an abundant mussel fauna exists in the Tennessee River near Hurricane Creek, if a host fish is restricting distribution of *U. tetralasmus*, it may be a relatively uncommon species.

Other factors not examined to date, but meriting further study, include hydrology and water quality. Voucher specimens are deposited with the Division of Water Resources, Tennessee Valley Authority, Muscle Shoals, Alabama.

ACKNOWLEDGMENTS

The authors wish to thank John M. Bates for taxonomic confirmation and Dr. W. Michael Dennis for assistance in collecting specimens.

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