

FISHES OF THE CONASAUGA RIVER DRAINAGE, POLK AND BRADLEY COUNTIES, TENNESSEE

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ABSTRACT

Collections of fishes from the Conasauga River drainage of Polk and Bradley Counties, Tennessee, from 1965 to 1969 revealed 63 species of fishes, 23 of which had not previously been reported from the state. Four species were encountered that are currently undescribed. *Catostomus commersoni* and *Hyentelium nigricans* are reported for the first time from the Mobile Bay system. Significant additional information is presented for *Hybopsis* sp. (of *H. amblops*), *H. aestivalis*, *Notropis asperifrons*, *N. caeruleus*, *Moxostoma poecilurum*, *Noturus munitus*, *Etheostoma (Ulocentra)* sp., *E. ditrema*, *E. trisella*, *Percina (Imostoma)* sp., *P. (Alvordius)* sp., and *P. shumardi*.

Tennessee waters drain into the Mississippi River indirectly through the Ohio, Cumberland, and Tennessee Rivers, and more directly through smaller streams in the western portion of the state. The one exception, the Conasauga River (Figure 1), is completely independent of the Mississippi River system. It originates on the north slopes of mountains in Fannin and Murray Counties, north Georgia, and flows north into Polk County, Tennessee. The river and its major tributaries in Polk County are characterized by clear, cool waters flowing swiftly over substrates that are predominantly boulder to medium gravel with scattered patches of fine gravel, sand, and silt. The lower portion of the river in Tennessee gradually becomes more sluggish, and long pools four to eight feet deep with gentle currents and finer substrates are more prevalent. Tributaries that arise in Bradley County (Mill, Sugar, and Coahulla Creeks) flow through cultivated land and are typified by turbid water, low gradients, and clay and silt substrates with rather infrequent gravel riffle areas. These creeks will be collectively referred to as the "lowland tributaries".

The Conasauga makes a short loop in Tennessee and then flows southward. Its waters move progressively through the Oostanaula, Etowah, Coosa, and Alabama Rivers, and finally reach the Gulf of Mexico through Mobile Bay some 125 miles east of the mouth of the Mississippi River. The Conasauga River biota has its affinities with that of the Mobile Bay system rather than with that of the Mississippi River system. Yet, with the exception of the redeye bass (*Micropterus coosae* Hubbs and Bailey) there are no published Tennessee records of fishes confined to the gulf Coastal drainage east of the Mississippi River.

In the fall of 1965 the authors began a survey of the fishes of the Tennessee portion of the Conasauga River.

About 30 collections were made by the authors during the past few years. Additional collections have been made by Ray Bouchard, Jack Webster, and Wayne Starnes. Most collections were made with 15-foot minnow seines. In addition gill nets and a 60-foot, small-mesh bag seine were used in wider and deeper portions of the river. Twenty-three species of fishes not previously reported from Tennessee waters were found during the survey.

Fish were identified by the authors, who wish to acknowledge Dr. John S. Ramsey, Auburn University, Dr. G. A. Moore, Oklahoma State University, and W. M. Howell, Samford University, in assisting in some of the identifications. Our thanks also to the many graduate students from the University of Tennessee Department of Zoology who assisted in the field work. Specimens have been deposited in the research collection at the University of Tennessee.

A list of the species encountered, with brief notes, follows. A more detailed account of the earlier collections appears in Stiles (1968). Nomenclature used conforms to that of Bailey, *et al.*, (1960), except for a few recent changes.

PETROMYZONTIDAE

Lampetra aepyptera (Abbott). Least brook lamprey. Six adults were collected in Minnewauga Creek on March 3, 1968. Ammocoetes that are probably referable to this species have been taken in several upstream localities.

Ichthyomyzon castaneus Girard. Chestnut lamprey. On March 28, 1969, a single small adult was found attached to an Alabama hogsucker (*Hyentelium etowanum* (Jordan)) in a pool above the bridge 1.6 air miles ENE of the junction of the Bradley-Polk County line and the Tennessee-Georgia border (hereafter called Boanerges Church bridge).

ESOCIDAE

Esox niger LeSueur. Chain pickerel. One small specimen was collected in a weed-choked pool in Sugar Creek near Union in southeast Bradley County.

CYPRINIDAE

Campostoma anomalum (Rafinesque). Stoneroller. Widespread and abundant.

Cyprinus carpio Linnaeus. Carp. This introduced cyprinid has apparently increased in abundance during

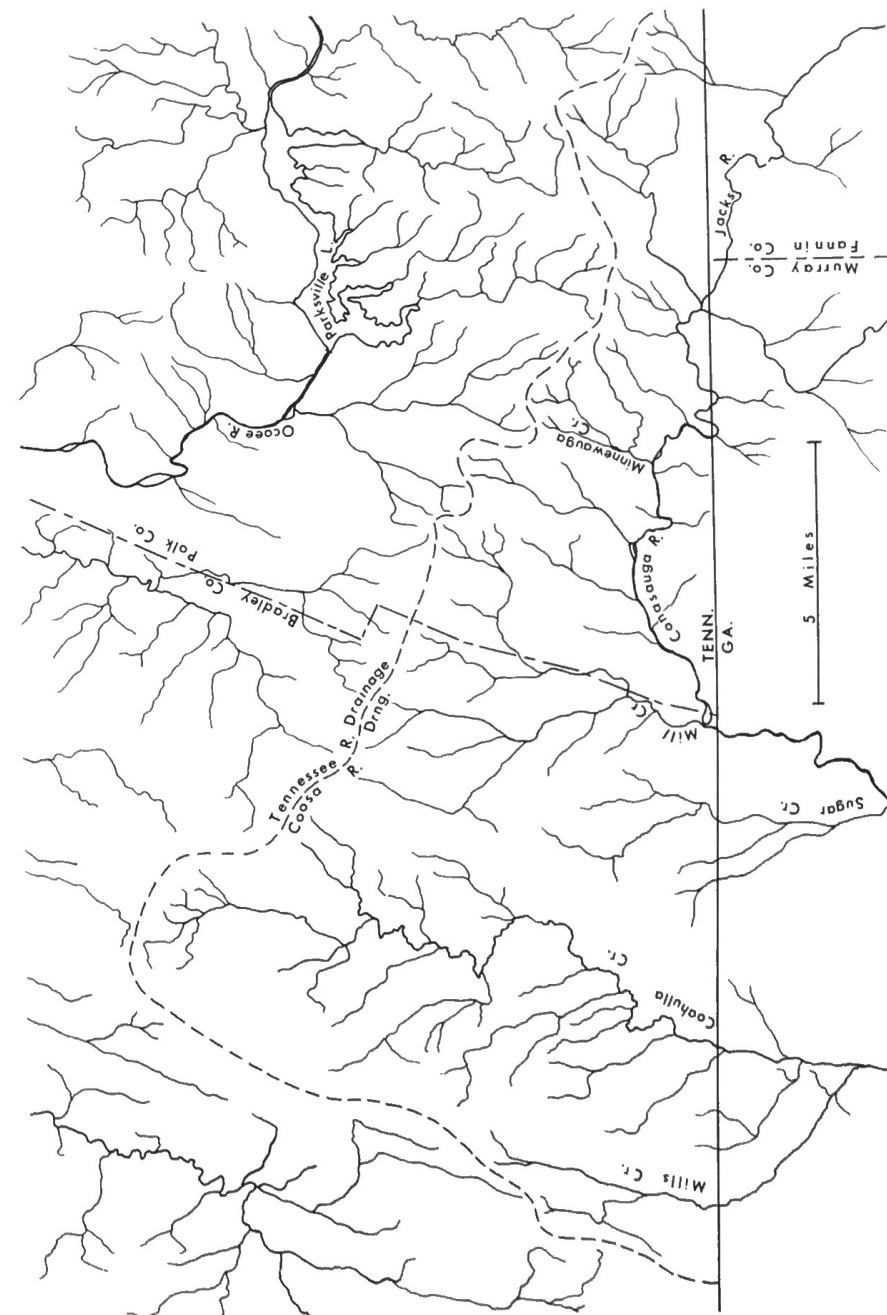


Fig. 1. Tennessee Portion of the Conasauga River, Polk and Bradley Counties, Tennessee.

the past few years. The junior author observed specimens in Mills Creek in November, 1968, and in the upper portion of the river in July, 1969. Local fishermen indicated that carp had not been apparent in the river prior to 1967.

Hybopsis aestivalis (Girard). Speckled chub. Known from swift, vegetated riffles in the lower portion of the river. Specimens were readily collected at the ford 0.5 mile above the Louisville and Nashville Railroad bridge. Occasional specimens were encountered downstream from this site.

Hybopsis sp. This ally of the more northerly bigeye chub (*Hybopsis amblops* (Rafinesque)) was represented by two specimens from Mills Creek, Bradley County, at the Tennessee-Georgia State line.

Notemigonus crysoleucas (Mitchill). Golden shiner. Widespread in the lowland tributaries, but not common.

Notropis asperifrons Suttkus and Raney. Burrhead shiner. This distinctive shiner is apparently quite rare in the Tennessee portion of the drainage. Specimens have been taken in and near the mouth of Minnewauga Creek, and in the river ¼ mile below the Boanerges Church bridge. Specimens were observed in the pool above the ford ½ mile above the Louisville and Nashville Railroad bridge. All localities were characterized by lack of any appreciable current, two-foot depths, and silty sand substrates.

Notropis caeruleus (Girard). Blue shiner. This fish was moderately abundant throughout the survey area, but seemed to prefer the cooler water of the upper portion of the river.

Notropis callistius (Jordan). Alabama shiner. Abundant throughout.

Notropis chrosomus (Jordan). Rainbow shiner. Present throughout the drainage but more abundant in the lowland tributaries.

Notropis chrysocephalus (Rafinesque). Striped shiner. A very common fish in many other drainages in the state, the striped shiner was infrequently encountered in the Conasauga River. It was abundant in a few spring outflows and overflow pools near the river.

Notropis lirus (Jordan). Mountain shiner. Present throughout the drainage, but more abundant in the lowland tributaries.

Notropis stilbius (Jordan). Silverstripe shiner. Moderately abundant in the warmer and more sluggish portions of the river and the lowland tributaries.

Notropis trichroistius (Jordan and Gilbert). Tricolor shiner. Probably more abundant than all other cyprinids combined, this fish was common in all portion of the main river and the larger tributaries.

Notropis venustus (Girard). Blacktail shiner. This fish occurred in moderate numbers in lower portions of the river and the lowland tributaries.

Notropis xanocephalus (Jordan). Coosa shiner. Widespread and abundant.

Phenacobius catostomus Jordan. Riffle minnow. This fish was formerly considered to be conspecific with an allied form in the Tennessee River drainage. Earlier records of this species from Tennessee refer to *P. crassilabrum* Minckley and Craddock (1962). *P. catos-*

tomus was rare and confined to swift waters of the main river.

Pimephales promelas Rafinesque. Fathead minnow. One specimen was taken in Coahulla Creek on April 5, 1969.

Pimephales vigilax (Baird and Girard). Bullhead minnow. Three specimens were taken in Coahulla Creek on April 5, 1969.

Rhinichthys atratulus (Hermann). Blacknose dace. This species was rarely collected, and was apparently confined to small mountain tributaries.

Semotilus atromaculatus (Mitchill). Creek chub. Abundant in some of the small mountain tributary streams.

CATOSTOMIDAE

Catostomus commersoni (Lacepede). White sucker. Two specimens were collected in Mills Creek near the Tennessee-Georgia State line on November 16, 1968. This represents the first record of this species from the Mobile Bay system.

Hyptelium etowanum (Jordan). Alabama hogsucker. Widespread and moderately abundant.

Hyptelium nigricans (LeSueur). Northern hogsucker. A very large hogsucker (standard length 225 mm) was taken in a gill net above Boanerges Church bridge on March 27, 1969. This fish had a very distinct interorbital concavity, dull yellow lower fins, and eleven dorsal rays. This combination of characteristics indicates that this specimen represents a valid record of *H. nigricans* from the Mobile Bay system.

Ictiobus bubalus (Rafinesque). Smallmouth buffalo. Four small adults were taken in gill nets above Boanerges Church bridge.

Minytrema melanops (Rafinesque). Spotted sucker. Taken occasionally in the lower portions of the river and the larger lowland tributaries.

Moxostoma duquesnei (LeSueur). Black redborse. Moderately abundant in deeper portions of the lower river. Juveniles of this and the following species were frequently taken in the lowland tributaries.

Moxostoma erythrum (Rafinesque). Golden redborse. Adults were abundant in the deeper portions of the lower river.

Moxostoma poecilurum (Jordan). Blacktail redborse. We anticipated the occurrence of this lowland species in Coahulla Creek, but no specimens were taken until Robert Hitch collected one in the large pool above Boanerges Church bridge October 11, 1969. A second specimen has been added from this locality, and a third specimen was taken in a pool in lower Coahulla Creek, October 27, 1969.

ICTALURIDAE

Ictalurus melas (Rafinesque). Black bullhead. Known from Mill and Coahulla Creeks.

Ictalurus natalis (LeSueur). Yellow bullhead. Five adults were taken in the spring outflow below Boanerges Church bridge.

Ictalurus punctatus (Rafinesque). Channel catfish. Not well represented in our collections, but probably moderately abundant in the larger pools in the river.

Noturus teptacanthus Jordan. Speckled madtom. Taken frequently in or near riffles in the river and larger tributaries.

Noturus munitus Suttkus and Taylor. Frecklebelly madtom. This recently described species was previously known from the Pearl River, and from three records from the Cahaba and Tombigbee Rivers of the Mobile Bay system. Dr. R. D. Suttkus, B. A. Thompson, and R. C. Cashner of Tulane University collected four specimens in the riffle underneath the Tennessee Highway 74 bridge October 17, 1969.

CYPRINODONTIDAE

Fundulus olivaceus (Storer). Blackspotted topminnow. One juvenile was taken in Coahulla Creek at Tennessee State Highway 74, March 27, 1969.

Fundulus stellifer (Jordan). Southern studfish. Moderately abundant in quiet waters of the river.

POECILIIDAE

Gambusia affinis (Baird and Girard). Mosquitofish. Confined to ponds and sluggish tributaries.

CENTRARCHIDAE

Ambloplites rupestris (Rafinesque). Rock bass. Frequently taken by fishermen, but not common in our collections.

Chaenobryttus gulosus (Cuvier). Warmouth. Three small specimens were taken in an overflow pool about ¼ mile below Boanerges Church bridge.

Lepomis cyanellus Rafinesque. Green sunfish. Moderately abundant in spring outflows and the lowland tributaries.

Lepomis macrochirus Rafinesque. Bluegill. Not common in our collections, but probably fairly abundant in deeper pools in the river.

Lepomis megalotis (Rafinesque). Longear sunfish. Widespread and abundant.

Lepomis microlophus (Gunther). Redear sunfish. Present, but not common in the lowland tributaries.

Lepomis punctatus (Valenciennes). Spotted sunfish. This lowland species was present, but not common, in the lower portion of the river.

Micropterus coosae Hubbs and Bailey. Redeye bass. This small bass reaches sufficient abundance to provide a moderate sport fishery in the river.

Micropterus punctulatus (Rafinesque). Spotted bass. Fairly abundant in the river, but less abundant than *M. coosae*, particularly in the tributaries.

PERCIDAE

Etheostoma coosae (Fowler). Coosa darter. Widespread, and abundant in shallow water with gravel substrates and moderate current in the main river and tributaries.

Etheostoma ditrema Ramsey and Suttkus. Coldwater darter. Single specimens were taken in three areas near Boanerges Church bridge. One of these was taken in the spring outflow below the bridge. The other two specimens were taken in pools left isolated from the main channel by receding water levels. An apparently

successful population was found in Sugar Creek near Union in southeast Bradley County.

Etheostoma jordani Gilbert. Greenbreast darter. This was the most abundant darter in the river. It preferred swift riffles associated with coarse substrates in the main river, but juveniles were occasionally taken in the tributary streams.

Etheostoma (Ulocentra) sp. We have taken only three specimens of this darter. Each of these specimens was taken in clean gravel areas adjacent to riffles that contained abundant vegetation. The species differs from *E. (Ulocentra) coosae* in having a blunter snout, "U"-shaped lateral blotches that subtend pale green vertical bars, and five rather than six branchiostegal rays. Specimens have been taken in the riffle below the Boanerges Church bridge, and at the ford 0.5 mile above the Louisville and Nashville Railroad bridge.

Etheostoma rupestre Gilbert and Swain. Rock darter. This species was rare in the larger portions of the river. It showed a preference for swift riffles associated with aquatic vegetation, and was more abundant at downstream locations.

Etheostoma stigmaeum (Jordan). Speckled darter. Fairly abundant in its preferred habitat of silty sand substrates, shallow water, and gentle currents.

Etheostoma trisella Bailey and Richards. Trispot darter. Prior to this survey this poorly known species was known only from the holotype and two other specimens. We have collected scattered specimens in the lower portion of the river and in Mill, Coahulla, and Sugar Creeks. The Tulane University collection that contained the four specimens of *Noturus munitus* included 125 specimens of *E. trisella*. Most of these were taken in quiet waters over sand and silt substrates mixed with rubble near the middle of the channel at the Tennessee Highway 74 bridge. This large assemblage of *E. trisella* at a locality where they had been rare or absent from previous collections is difficult to evaluate. It is possible that populations of this magnitude had been present during previous collections, but were overlooked due to our failure to adequately sample the environment preferred by this species. It is also possible that the assemblage represented downstream movement of juveniles and a few adults from a very successful spring, 1969 spawning in adjacent Mill Creek. This species was usually taken in shallow pools in the lowland tributaries, but was collected in riffles in Mill Creek.

Percina (Imostoma) sp. Narrowsaddle darter. This undescribed ally of *P. uranidea* had previously been known from five specimens from Shoal Creek, Cherokee County, Georgia, August 8, 1948. This locality has since been inundated by Altoona Reservoir. We have taken five specimens from the river between Boanerges Church bridge and the Georgia state line. Additional specimens have been collected by R. D. Suttkus, B. A. Thompson, and R. C. Cashner of Tulane University, at the Tennessee Highway 74 bridge, and in the Conasauga River in north Georgia. Collections have usually been made over silt-free rubble and sand substrates with moderate current and one- to two-foot depths. Many of the collections have been from

the relatively quiet waters adjacent to or near the head of swift riffles.

Percina caprodes (Rafinesque). Logperch. Not common, but widespread in the river and lowland tributaries.

Percina (Alvordius) sp. Bridled darter. This slender, dark species prefers gentle current over sand and detritus substrates and moderate depths. It was not abundant in the Tennessee portion of the drainage, but was taken rather consistently in suitable habitats.

Percina nigrofasciata (Agassiz). Blackbanded darter. Widespread in the river, and abundant below the Tennessee Highway 74 bridge and in pools and deep runs in the larger tributaries. The abundance of this species in the lower portion of the river appears to be associated with decreasing abundance of *P. palmaris*.

Percina palmaris (Bailey). Bronze darter. Abundant in swift riffles in the river, but absent from tributary streams.

Percina shumardi (Girard). River darter. This is

another lowland form that barely penetrates the Tennessee portion of the Conasauga River. We have taken only two specimens, both from below the riffle 0.4 river mile below the Tennessee Highway 74 bridge.

Stizostedion vitreum (Mitchill). Walleye. One adult was taken in a gill net above Boanerges Church bridge.

COTTIDAE

Cottus carolinae (Gill). Banded sculpin. Very common and widespread throughout the survey area.

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