July 31, 1973

To the Graduate Council:

I am submitting herewith a thesis written by William Clark Dickinson entitled "The Fishes of the Obion River System." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Zoology.

Major Professor

We have read this thesis and recommend its acceptance:

Accepted for the Council:

Vice Chancellor for
Graduate Studies and Research

THE FISHES OF THE OBION RIVER SYSTEM

A Thesis

Presented to

the Graduate Council of

The University of Tennessee

In Partial fullfillment

of the Requirements for the Degree

Master of Science

---

by

William Clark Dickinson

August 1973

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ABSTRACT

A survey was conducted to determine the species composition of fishes in the Obion River system in northwest Tennessee. This system, draining most of northwest Tennessee, has largely been subjected to channelization practices within the past 50 or 60 years. Within the drainage is Reelfoot Lake, a large, shallow lake offering a unique habitat to the system. This survey was conducted at various times during 1971 and 1973, while a large number of collections were reported from the records of other investigators. Collections were reported from a large number of streams within the system, with most records coming from the Reelfoot Lake area and the principle forks of the system. Survey methods employed by the collectors included seining, chemical application, and to a small extent, hoop netting and gill netting. A total of 183 collections are reported, and the results are presented in the annotated listing of species followed by a discussion of taxonomic, zoogeographic, and ecological considerations. Of the 110 species presumed to exist in the system, 100 were verified by records. The study revealed a somewhat more diverse fauna in the upper portion of the system than in the central and lower regions of the system. Reelfoot Lake and its tributaries and outlet (Running Reelfoot Bayou) had the richest fauna of any part of the system.

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INTRODUCTION

The purpose of this thesis is to report and discuss the results of an ichthyofaunal survey of the Obion River system in northwest Tennessee. The Obion system, draining most of the northwestern part of the state, is one of the largest river systems in West Tennessee. Reelfoot Lake, a large, natural lake within the system, offers a unique, ecological habitat which supports a rather diverse fish fauna.

The Obion system presents quite a challenge to the fish collector, with areas of deep water, mud, sand, and detritus, as well as steep channelized banks and other regions of limited accessibility.

At the initiation of this project there were a number of collection records available from the Obion system, particularly from Reelfoot Lake; however, no attempt had been made to determine the species composition of the entire system. Evermann (1915) reported no collection records from the Obion for himself as well as for several other chief investigators of that time, notably David S. Jordan. Although Hay (1882) reported on fishes of the lower Mississippi drainage, he mentioned no collections from the Obion system. In the late 1930's Baker published several papers on the fishes of Reelfoot Lake (Baker, 1937, 1938, 1939). Some later collectors mentioned in Taylor (1969) were Farrell in 1954, Ruhr in 1954, and Cross in 1964 and 1965. More recent records have been compiled from the collection summaries at the University of Tennessee Department of Zoology, while some records have been obtained from recent correspondence with investigators who conduct ichthyological work in the southern region.

It is hoped that the findings of this thesis will present a more complete list of the species composition for use by future investigators as well as contribute to the knowledge of the fishes of Tennessee.

CHAPTER I

DESCRIPTION OF THE RIVER

I. GEOGRAPHY AND GEOLOGY

The Obion River system originates in the uplands of Henry, Weakley, and Carroll Counties in northwest Tennessee. Each of the four principal tributaries--the North, the Middle, the South, and the Rutherford Forks are approximately 50 river miles long (Figure 1). The convergence of these forks near the Weakley-Obion County line forms the main river, which then continues through a valley about 50 miles long and merges with the Forked Deer River about three miles east of the Mississippi River (Tenn. State Planning Comm., 1936).

The origins of the Obion system generally lie upon the sandy clays of the Holly Springs Formation, the eastward component of the Wilcox Group (Pond, 1933). This formation slopes gradually in a westerly direction and meets the westward component of the Wilcox Group, the Grenada formation, which is also composed chiefly of sands and clays. The Grenada formation continues westward and meets the Pleistocene loess deposits at approximately the area where the four forks converge to form the main river. The loess continues the remaining distance to the alluvium of the extreme lower area of the river.

The areas of highest elevation (approximately 167-191 meters above mean sea level) are found in the eastern headwater regions, while the lowest area (approximately 75-83 meters above mean sea level) is located

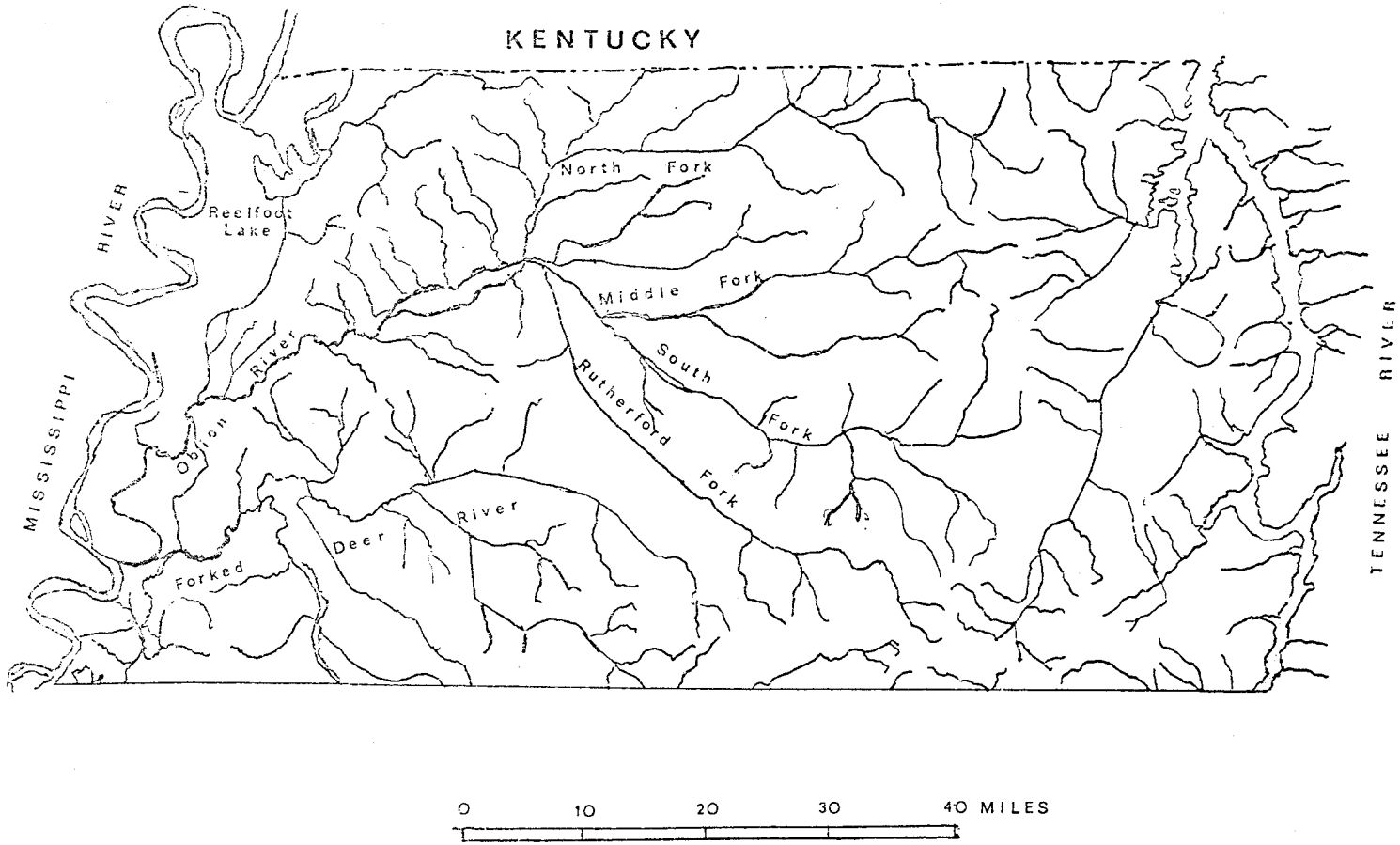

Figure 1. Obion River System.

near the confluence of the Obion-Forked Deer and the Mississippi Rivers. A smaller region of hills, with elevations of approximately 150 to 167 meters, is found in the northwestern portion of the system just east of Reelfoot Lake.

Reelfoot Lake, lying in the extreme northwestern portion of the state, drains into the lower Obion by way of Running Reelfoot Bayou (Figure 1). Separated from the Mississippi River to the north and to the west by only a few miles of alluvial flood plains, Reelfoot is the largest lake in the Mississippi drainage in West Tennessee. Its origin reportedly dates back to the New Madrid earthquakes of 1811-12, when sunk land areas, accompanied by subsequent flooding from nearby streams and the Mississippi River, caused the formation of the lake (Fuller, 1912).

II. ECOLOGY

Description of Habitat

Although the Obion River system is generally considered to be a lowland river system throughout its entirety, there are various habitats within the system that are considerably different. The headwater streams tend to have moderate currents with sand or sand and gravel substrates. Turbidity is usually low except during periods of excessive rainfall. The middle reaches of the river generally have similar characteristics but may have somewhat slower currents and increased turbidity. In the much flatter areas of the lower river, the streams are characterized as being sluggish and very turbid, with a heavy silt load. It should be

noted that some of the streams may deviate somewhat from the stream descriptions just mentioned due to effects of drainage undertakings in the past.

The streams in the extreme northwestern corner of the state, particularly the eastern tributaries to Reelfoot Lake, may be considered an exception when considering the stream descriptions mentioned above. Although these streams are located in the extreme western portion of the state, they flow through the hilly area east of Reelfoot Lake over clean sand and gravel substrates. These relatively clear streams are characterized by areas of shallow riffles, followed by medium to deep-sized pools. Examples of these streams are Indian Creek and Pawpaw Creek, tributaries to Reelfoot Lake and Reelfoot Bayou respectively. The headwaters of Mill Creek and Richland Creek (tributaries to the main Obion) originate in the same area and are quite similar to the Reelfoot tributaries.

Some of the streams throughout the system may be found in regions of dense forests or swamps; however, many of the streams pass through large areas of agricultural lands and may be exposed to excessive runoff from the bordering fields. Some of the smaller tributaries may become dry or intermittent during the warmer months of the year.

Sloughs and backwater areas of the tributaries and the river proper are common and offer habitat for a number of species; these will be mentioned later in the discussion of individual species in Chapter III.

Of particular note is the habitat afforded by Reelfoot Lake. This large, shallow lake of about 14,000 acres (Tenn. State Planning Comm.,

1937, in Kuhne, 1939a) provides extensive areas of thick cypress growth, dead trees, and submerged logs. The more shallow upper portion of the lake is largely covered by distinct communities of submergent, floating, and emergent vegetation. Baker (1937) describes the lake as "... characterized by abundant vegetation, a bottom practically without gravel, a fluctuating water level, shallow waters, high temperatures in summer, and few water currents." Thus, the lake provides a large variety of habitats which support a rather large, diverse fish fauna.

History of Drainage Undertakings

Much of the Obion River system has been subjected to large-scale drainage projects at various times since about 1910. Major drainage undertakings were generally conducted during two different periods of time. The following account of the earlier drainage projects, completed mostly by 1930, is taken largely from a 1936 report by the Tennessee State Planning Commission on drainage enterprises and land conditions in the Obion-Forked Deer watersheds.

As streamflow gradually became more poorly distributed following clearing and subsequent agriculture practices in the uplands, an acute flooding problem soon developed. In reaction to this problem, the Tennessee Legislature in 1909 enacted a law providing for the establishment of drainage districts and for supplying money for drainage projects. This act provided that "...the authorization for the establishment of drainage districts, the appointment of commissioners for the districts, the approval of bond issues and the employment of engineers were made functions of the county courts" (Tenn. State Planning Commission, 1936).

After the law was passed, drainage districts were set up throughout the Obion system, including alluvial lands along the main streams and the tributaries. The various drainage projects consisted mostly of ditches and were completed, for the most part, between 1910 and 1930.

The purpose of these drainage projects was to "...render fit for agriculture the lands previously too wet for crops and to reduce the damage from frequent floods" (Tenn. State Planning Commission, 1936). Apparently, many of the projects were not adequately maintained with the result that "...less than one-half of the included land was effectively drained and protected from damaging overflows" (Tenn. State Planning Commission, 1936).

After these earlier drainage undertakings, there was no major channelization work done in the Obion system until the early 1960's (personal communication, R. D. Fisher, Soil Conservation Service, Milan, Tennessee). This later phase of drainage work was conducted by the U. S. Army Corps of Engineers. The work was begun in the lower river, approximately 20 miles upstream from the confluence with the Forked Deer. It further proceeded upstream to the point where the major tributaries come together and then for several miles up the tributaries. Work on these projects was halted by Court Order in 1970.

CHAPTER II

SURVEY METHODS AND MATERIALS

The survey for this thesis was conducted from fall, 1971 to summer, 1973. Records of 183 fish collections are reported, with 77 of these contributed by the author. Of the remaining collection records, most were compiled from records of the following investigators: D. A. Etnier (University of Tennessee), R. W. Bouchard (Louisiana State University), J. E. Deck (University of Tennessee, Martin), and E. S. Cobb (Tennessee Game and Fish Commission). A few records were obtained from recent correspondence with other investigators who have conducted ichthyological work in the southern region. During the final preparation of this thesis, a few North, Middle, and South Fork Obion River collection records were obtained from F. B. Cross (University of Kansas). Due to limited time during this final preparation, these records were not included in the appendix tables. However, some of them are mentioned in the annotated listing of species in Chapter III.

In the selection and location of collecting sites, the author made use of Tennessee Highway Department county road maps. Topographic information was obtained by use of U. S. Geological Survey Map NJ 16-10 (Dyersburg quadrangle).

The most common collection method employed by the author was seining, generally with a 10 foot, 3/16 inch mesh nylon seine. Other sizes of this type of net were also used, ranging from a six-foot seine to a 36-foot bag seine with a one-inch mesh.

Seining was the chief collection method used by the other principal investigators; however, chemical application was occasionally utilized, especially in the collections made by the Tennessee Game and Fish commission. Gill nets and hoop nets were used to a small extent, generally with limited success.

All collections made by the author were preserved in formalin and eventually were taken to the aquatic biology laboratory at the University of Tennessee for identification. Specimens were identified mostly during the summers of 1972 and 1973, with help from D. A. Etnier and R. W. Bouchard. Doubtful specimens were identified by use of taxonomic keys in Etnier (1970a, 1972a), Moore(1968), and Taylor (1969).

Many of the specimens collected by the author as well as most of those collected by Etnier and Bouchard have been deposited in the research collection at the University of Tennessee. Specimens collected by Deck are kept in the Biology Department at the University of Tennessee at Martin.

Survey work in the lower Obion was somewhat limited due to many periods of constant high water during the time of the project. Even during periods of dry weather the lower Obion may be quite imposing because of high, steep banks and deep, silty mud. For these reasons, most collections from the lower river were restricted to tributaries. Therefore, it has been necessary to speculate somewhat on the species that may exist in the lower river, as well as a few small oxbow lakes noted on the maps to occur near the Obion-Dyer County line.

CHAPTER III

FISHES OF THE RIVER SYSTEM

The following annotated listing of fish species includes all those collected by the author, as well as those collected by the other investigators mentioned in Chapter II. In addition, it includes several other species not reported by any of the investigators, but presumed to occur in the Obion River for various reasons discussed in the annotations. This listing follows the phylogenetic order set forth by Bailey et al. (1970). A species collection summary and collection data are provided in Appendix Tables I and II, pages 52 and 61 respectively.

Family Petromyzontidae

Ichthyomyzon castaneus (Girard)--chestnut lamprey. Five specimens of the chestnut lamprey were collected in April, 1965, by Dr. F. B. Cross (University of Kansas) from the Middle Fork Obion River, 4.5 miles west and one mile south of Paris, in Henry County. Apparently this species is rare in the Obion system, as no other records have been reported.

Lampetra aepyptera (Abbott)--least brook lamprey. Although ammocoetes of this species were collected on several occasions, adults were reported in only two collections, one from a tributary to the North Fork Obion in Henry County and the other from Thompson Creek in Weakley County.

Family Acipenseridae

Scaphirhynchus platorynchus (Rafinesque)--shovelnose sturgeon.

No shovelnose sturgeon were reported from the system. However, because of valid records of this species from the Mississippi River in West Tennessee (Pflieger, 1971, p. 467) and (Etnier, 1971), as well as accounts from local fishermen, it is presumed to occasionally enter the lower portion of the main river and possibly Running Reelfoot Bayou.

Family Polyodontidae

Polyodon spathula (Walbaum)--paddlefish. No specimens of paddlefish were collected by the author. However, Baker (1937) reported them in large numbers in the south end of Reelfoot Lake and in Running Reelfoot Bayou. Kuhne (1939b) reported that Reelfoot Lake produced about 12,000 pounds of paddlefish in 1937. The paddlefish is apparently much less common in the Obion system today.

Family Lepisosteidae

Lepisosteus oculatus (Winchell)--spotted gar. Most of the records of spotted gar have come from Running Reelfoot Bayou near the spillway of Reelfoot Lake, although two records are available from the Middle Fork Obion River. Baker (1938) did not report the spotted gar from Reelfoot Lake; however, it is possible that some specimens of spotted gar were misidentified as Lepisosteus platostomus, the shortnose gar.

Lepisosteus osseus (Linnaeus)--longnose gar. No specimens of this gar were collected by the author. However, it is reported from Reelfoot Lake, Running Reelfoot Bayou, Thompson Creek of the Middle Fork Obion, and from the lower Obion River. It seems to occur less frequently

than either the spotted or the shortnose gar.

Lepisosteus platostomus (Rafinesque)--shortnose gar. The shortnose gar was found to be moderately common in the Obion system. Baker (1937) reported the shortnose gar to be the most common of the gars in Reelfoot Lake. The author reports it mostly from the Reelfoot Lake area; however, it is reported from the main channel of the North Fork and main Obion River and is assumed to be fairly common throughout the larger streams in the system.

Lepisosteus spatula (Lacepede)--alligator gar. This large gar was not collected by the author. However, a photograph of an alligator gar is provided in one of Baker's Reelfoot Lake publications (1937) in which he described it as being somewhat rare. It is assumed to exist in small numbers in the lower portion of the main Obion River and possibly Reelfoot Lake.

Family Amiidae

Amia calva (Linnaeus)--bowfin. Bowfins were common in the more quiet waters of the system, such as Running Reelfoot Bayou, the lower portions of some creeks, and sluggish areas of the main channel.

Family Anguillidae

Anguilla rostrata (Lesueur)--American eel. This catadromus species was reported from Reelfoot Lake and the lower portion of Clear Creek in Carroll County. Several accounts of this species were also obtained from local fishermen.

Family Clupeidae

Alosa chrysochloris (Rafinesque)--skipjack herring. This species was misidentified as the Ohio shad, Alosa ohiensis (now in the synonymy of A. alabamae), by Baker in his 1939 Reelfoot Lake publication (Kuhne, 1939b). Large numbers of this species were reported to have entered Reelfoot Lake at the spillway. Although A. chrysochloris was not collected by the author, it was reported from the Mississippi River near the mouth of the Obion-Forked Deer system (Etnier, 1973a) and is assumed to enter the lower Obion.

Dorosoma cepedianum (Lesueur)--gizzard shad. Gizzard shad were found to be common in Reelfoot Lake and Running Reelfoot Bayou near the lake. They were widespread but not as abundant in other parts of the river such as the main channel and backwater pools.

Dorosoma petenense (Gunther)--threadfin shad. A single specimen of threadfin shad was reported in a 1972 Game and Fish Commission survey from the main river in Obion County. Stocking of the species in Reelfoot Lake has been attempted in recent years by the Game and Fish Commission (personal communication, E. S. Cobb, Tenn. Game and Fish Comm.). Small numbers of threadfin probably exist naturally in the lower river, as they have been reported from the Mississippi River near the mouth of the Obion-Forked Deer system (Etnier, 1973a).

Family Hiodontidae

Hiodon alosoides (Rafinesque)--goldeye. One specimen of goldeye was reported from the Washout at Reelfoot Lake by Baker in 1939. Another

specimen taken from Running Reelfoot Bayou and two specimens from the Middle Fork Obion River represent more recent records. This species is apparently uncommon in the system and is probably restricted to the larger waters.

Hiodon tergisus (Lesueur)--mooneye. No specimens of mooneye were reported from the Obion system. However, they have been collected in the Mississippi River in West Tennessee (Etnier, 1973a), and may occassionally enter the lower Obion.

Family Umbridae

Umbra limi (Kirkland)--central mudminnow. Although mudminnows were collected by the author on just one occasion, they were taken by other investigators, usually in the smaller streams and ditches. A few records are available from the upper, shallow region of Reelfoot Lake.

Family Esocidae

Esox americanus (Lesueur)--grass pickerel. Grass pickerel were common throughout most of the system, usually in small to medium streams. This species was generally collected in pool areas, especially along the edges of the stream. Records are also available from the shallow areas of Reelfoot Lake.

Esox niger (Lesueur)--chain pickerel. This larger predator species was reported only from Reelfoot Lake where it was listed as uncommon (Baker, 1938). Stocking of these fishes has been attempted in recent years in Garrett Lake, managed by the Game and Fish Commission, in Weakley County (personal communication, E. S. Cobb, Tenn. Game and Fish Comm.).

Family Cyprinidae

Campostoma anomalum (Rafinesque)--stoneroller. Stonerollers were taken only from the streams originating in the hilly region east of Reelfoot Lake. These streams provided moderate currents over clean gravel and sand substrates.

Carrassius auratus (Linnaeus)--goldfish. A single goldfish was reported in a 1972 Game and Fish Commission survey from Guins Creek in Carroll County. This species may occasionally be introduced into the system by discarded specimens from aquaria and bait buckets; however, large populations have apparently not been established.

Cyprinus carpio (Linneaus)--carp. Carp were common throughout most of the Obion system and were found in practically all types of habitat.

Hybognathus hayi (Jordan)--cypress minnow. Cypress minnows were reported rarely in the system, with most specimens coming from the Reelfoot Lake area. Here they were collected from several ditches and streams near the lake, as well as Running Reelfoot Bayou. In addition, the author collected this species in some backwater near the South Fork Obion in Weakley County.

Hybognathus nuchalis (Agassiz)--silvery minnow. This cyprinid was found to be widespread, but not as abundant as some other minnows in the system. It was generally reported from the main channel of the four main tributaries of the river, as well as a few of the larger creeks, Reelfoot Lake, and Running Reelfoot Bayou.

Hybopsis aestivalis (Girard)--speckled chub. No speckled chubs were collected in the Obion system. However, they were reported from the Mississippi River near the mouth of the Obion-Forked Deer system (Etnier, 1973a), and may occasionally enter the lower river.

Hybopsis storeriana (Kirtland)--silver chub. This species was reported from only one locality, the lower portion of Running Reelfoot Bayou. However, it may be fairly common in the lower portion of the river, as it has been taken at three localities in the Mississippi River near the mouth of the Obion-Forked Deer system (Etnier, 1973a).

Notemigonus crysoleucas (Mitchell)--golden shiner. This minnow was common throughout the system in pool areas of streams, ditches, backwaters, and also in Reelfoot Lake.

Notropis atherinoides (Rafinesqaue)-emerald shiner. The emerald shiner was reported rarely in the Obion system, with most records coming from Running Reelfoot Bayou and one from the North Fork of the river. It is probably more abundant in the open waters of the larger streams within the system, where moderate current and depth provide suitable habitat.

Notropis blennius (Girard)--river shiner. This species was recorded from a single locality in the lower portion of the main river. It is likely to be more abundant near the mouth of the river, as it has been collected in this area from the Mississippi River (Etnier, 1973a).

Notropis camurus (Jordan and Meek)--bluntface shiner. The bluntface shiner was the most abundant cyprinid in the system, occurring in sandy bottom streams of most sizes.

Notropis emiliae (Hay)--pugnose minnow. This minnow was

generally taken in standing water habitats such as Reelfoot Lake and old river bed sloughs, as well as from sluggish areas of some streams and backwaters.

Notropis fumeus (Evermann)--ribbon shiner. The ribbon shiner was extremely common in most types of streams throughout the system. However, it was not reported from Reelfoot Lake or its tributaries.

Notropis lutrensis (Baird and Girard)--red shiner. Red shiners were collected only in the western portion of the system, generally from streams originating in the hilly region east of Reelfoot Lake. This species is apparently a recent invader from west of the Mississippi River(Etnier, 1970a).

Notropis maculatus (Hay)--taillight shiner. This shiner was reported in a single collection from a ditch at the State Campground at Reelfoot Lake. It may be restricted to similar habitats of shallow, standing waters with abundant vegetation which was afforded at this locality.

Notropis shumardi (Girard)--silverband shiner. The silverband shiner, reported from several collections in the Mississippi River near the mouth of the Obion-Forked Deer (Etnier, 1973a) may enter the lower Obion.

Notropis umbratilis (Girard)--redfin shiner. This species was common throughout most of the creeks within the system, taken usually in pool areas over a variety of substrates. Specimens were occasionally taken from the main channel but usually in small numbers.

Notropis volucellus (Cope)--Mimic shiner. The mimic shiner was

not collected from the Obion, but it was taken from the Mississippi River near the mouth of the Obion-Forked Deer system (Etnier, 1973a). For this reason it is thought to occasionally inhabit the lower Obion.

Notropis whipplei (Girard)--steelcolor shiner. A single specimen identified as Notropis whipplei was taken from the North Fork Obion in Henry County. This represents the only specimen on record from the Obion system and possibly from the Mississippi drainage in West Tennessee. This matter will be discussed in more detail under the taxonomic discussions in Chapter IV.

Phenacobius mirabilis (Girard)--suckermouth minnow. The suckermouth minnow was reported from several streams ranging from small headwater creeks to larger streams, such as the North Fork Obion River in Henry County. In most cases it was collected in moderate currents over fine gravel substrates.

Phoxinus erythrogaster (Rafinesque)--southern redbelly dace. Ten specimens of this cyprinid were collected in 1971 by J. E. Deck (University of Tennessee, Martin) from Indian Creek, tributary to Reelfoot Lake. This may represent a relict population as it is believed to be the only record of the species from the Mississippi drainage in West Tennessee.

Pimephales notatus (Rafinesque)-bluntnose minnow. This species was common in most flowing water habitats except for the larger, more open waters found in the main channel, where it was occasionally reported.

Pimephales promelas (Rafinesque)--fathead minnow. Baker (1938, 1939) reported this minnow to be rare in Reelfoot Lake. Three specimens have recently been collected from tributaries to the Middle Fork Obion.

This species is not common in the state and its sporadic occurrence may be due to occasional bait bucket introductions (Etnier, 1970a).

Pimephales vigilax (Baird and Girard)--bullhead minnow. Bullhead minnows were collected mostly in the larger, sluggish waters in the system where they were moderately abundant.

Rhinichthys atratulus (Hermann)--blacknose dace. The blacknose dace was collected only from streams originating in the hilly area east of Reelfoot Lake. In these streams it was usually taken over gravel substrates.

Semotilus atromaculatus (Mitchell)--creek chub. Creek chubs were quite abundant in pool areas of small to medium-sized streams throughout the system.

Family Catostomidae

Carpiodes carpio (Rafinesque)--river carpsucker. Baker (1938) reported occasional specimens of Carpiodes carpio from Bayou du Chien near the upper portion of Reelfoot Lake. Although not collected by the author, it has been collected from the Mississippi River not far from the mouth of the Obion-Forked Deer system (Etnier, 1973a). It is assumed to exist in small numbers throughout the system in the main river and larger tributaries.

Carpiodes cyprinus (Lesueur)--quillback. Three specimens of quillback were reported in a 1972 Game and Fish Commission survey from the main channel of the Obion River in Obion County. Specimens of Carpiodes difformis (Cope) reported as taken occasionally from Reelfoot

Lake (Baker, 1939) may have been specimens of Carpiodes cyprinus. Large numbers of quillback were reported in a 1963 collection from the Hatchie River in West Tennessee (Starnes, 1973). From the information mentioned above, Carpiodes cyprinus is assumed to exist in small numbers in the larger portion of the river and possibly Reelfoot Lake.

Catostomus commersoni (Lacépède)--white sucker. This species is represented in the Obion system by only a few specimens from streams in the Reelfoot Lake area. The author collected two specimens from rather clear pools in the upper part of Pawpaw Creek.

Cycleptus elongatus (Lesueur)--blue sucker. No records of blue sucker were reported from the Obion. However, this species was reported from the Hatchie River (Starnes, 1973) in West Tennessee and on one or two accounts by fishermen from the Obion. For these reasons, the blue sucker is thought to exist, although rarely, in the Obion.

Erimyzon oblongus (Mitchell)--creek chubsucker. E. oblongus was the most common of the suckers in the Obion system. It was taken from pools of streams with sand or mud bottom and often from backwater areas.

Erimyzon sucetta (Lacépède)--lake chubsucker. Two specimens of Erimyzon sucetta were collected by R. W. Bouchard in the upper portion of Reelfoot Lake in 1970. A photograph provided in Baker's 1939 Reelfoot Lake publication seems to be that of Erimyzon sucetta, but is referred to as the trinomen Erimyzon sucetta oblongus. This will be further discussed under the taxonomic considerations in Chapter IV.

Ictiobus bubalus (Rafinesque)--smallmouth buffalo. This buffalo was reported from Reelfoot Lake, Running Reelfoot Bayou, the Middle Fork

Obion, and the old channel of the main Obion River. This species probably exists in the main channel and larger tributaries throughout the system.

Ictiobus cyprinellus (Valenciennes)--bigmouth buffalo. This species was reported several times from Reelfoot Lake and Running Reelfoot Bayou. It was also reported from the lower portion of Pawpaw and Capps Creeks and from a ditch near the lower Obion River. The distribution of this species is probably similar to that of Ictiobus bubalus.

Ictiobus niger (Rafinesque)--black buffalo. Like the other Ictiobus, the black buffalo was reported from Reelfoot Lake and Running Reelfoot Bayou, while one record came from the old channel of the main Obion River. This species is presumed to exist in habitats similar to those mentioned for the other Ictiobus.

Minytrema melanops (Rafinesque)--spotted sucker. The spotted sucker was occasionally reported from medium to larger-size streams in the headwaters of the drainage, where it was typically collected in pool areas.

Moxostoma erythrurum (Rafinesque)--golden redhorse. Most golden redhorse records came from Indian and Pawpaw Creeks near Reelfoot Lake, although two records were available from the Middle Fork Obion. The single specimen collected by the author was taken from a pool area supplied with moderate current.

Moxostoma poecilurum (Jordan)--blacktail redhorse. This redhorse was much more abundant in the system than M. erythrurum. It was taken from the main channels of the Middle and South Forks as well as from

larger tributaries of these. Although the author did not collect this species, it is assumed that it was generally taken in pool areas surrounded by moderate current over sand substrate.

Family Ictaluridae

Ictalurus furcatus (Lesueur)--blue catfish. Four specimens of blue catfish were reported in a 1961 Game and Fish survey from the old channel of the main Obion River in Obion County. This species probably exists, though rarely, in the main channel throughout the system.

Ictalurus melas (Rafinesaue)--black bullhead. Black bullheads were common throughout the system, usually in small and medium-size streams, backwaters, and ditches. Records are also available from the North and Middle Forks of the Obion as well as Reelfoot Lake.

Ictalurus natalis (Lesueur)--yellow bullhead. Like I. melas, the yellow bullhead was collected in a variety of habitats, including Reelfoot Lake. However, it was not reported from the main channel.

Ictalurus nebulosus (Lesueur)--brown bullhead. The brown bullhead was reported only from Reelfoot Lake. Whether or not this species has originated there from artificial stocks is difficult to discern, because of its spotty distribution throughout the state. (Etnier, 1973b).

Ictalurus punctatus (Rafinesque)--channel catfish. Channel catfish were reported mostly from the main channel and larger tributaries throughout the system where they were generally not very abundant.

Noturus gyrinus (Mitchell)--tadpole madtom. Tadpole madtoms

were reported from ditches near Reelfoot Lake, Cypress Creek in Obion County, Clear Creek in Henry County, and from backwater near the South Fork Obion in Weakley County. Most of these habitats were shallow, mud-bottom areas with some vegetation.

Noturus hildebrandi (Bailey and Taylor)--least madtom. This madtom was found to be common in the Obion system. However, it was restricted to the upper portion of the system, mostly in Henry, Carroll, and eastern Weakley Counties. The author collected this species on several occasions; each time it was taken in moderate currents over sand with at least some fine gravel.

Noturus miurus (Jordan)--brindled madtom. This madtom was reported from several streams of different sizes, including the main channels of the North and Middle Fork Obion. The author collected this madtom in pools over gravel and detritus substrates.

Noturus phaeus (Taylor)--brown madtom. Restricted to the upper portions of the system, this madtom was common in small to moderate streams. The author collected this species several times, generally over sand and fine gravel with moderate currents. However, judging from the other localities reported for N. phaeus, it may occupy areas of pools and currents over sand substrates.

Noturus stigmosus (Taylor)--northern madtom. The northern madtom was reported in small numbers from the main channel of the North, Middle and South Forks of the river. The author collected the species from the main channel of the North Fork in moderate currents over shifting sand. The other records are presumed to have come from similar

habitats as they were all collected from the main channel. This madtom probably exists in the larger creeks where adequate habitat is afforded.

Pylodictis olivaris (Rafinesque)--flathead catfish. This large catfish was reported as uncommon in Reelfoot Lake (Baker, 1938). It has been more recently reported by the Game and Fish Commission from the old and new channels of the main river in Obion County and in lower Clear Creek in Carroll County. Its most probable occurrence in the Obion would be in the larger, sluggish portions of the main channel.

Family Aphredoderidae

Aphredoderus sayanus (Gilliams)--pirate perch. Pirate perch were very common in most sluggish waters throughout the system, particularly in ditches around Reelfoot Lake and sluggish pools of small to medium streams.

Family Cyprinodontidae

Fundulus chrysotus (Günther)--golden topminnow. The golden topminnow was reported only from the shallow portions of Reelfoot Lake and several ditches near the lake where abundant vegetation was afforded. At present, this represents the only locality for the species in the state. F. chrysotus is a southeastern species and apparently is near the northern limit of its range in Reelfoot Lake (Pflieger, 1971, p. 526).

Fundulus notatus (Rafinesque)--blackstripe topminnow. This topminnow was common in ditches around Reelfoot Lake and was taken in a few collections elsewhere such as in small sluggish creeks and the main Obion River. Judging from the available records, it seems that this

species is generally restricted to the lower two-thirds of the system while its close ally F. olivaceous was common throughout the entire system.

Fundulus notti (Agassiz)--starhead topminnow. Like F. chrysotus, this species was reported only from the quiet waters of Reelfoot Lake and nearby ditches, where adequate vegetation existed in shallow water.

Fundulus olivaceous (Storer)--blackspotted topminnow. The blackspotted topminnow was extremely abundant throughout the system in streams of all sizes where it was common in the sluggish pool areas. Although not collected with F. notatus in the backwater ditches of Reelfoot Lake, F. olivaceous was taken from creeks tributary to the lake. Baker (1939) apparently synonymized F. olivaceous and F. notatus as he used the trinomen F. notatus olivaceous (Putnam).

Family Poeciliidae

Gambusia affinis (Baird and Girard)--mosquitofish. Mosquitofish were common in the shallow areas of streams of all sizes throughout the system. They were also very abundant at the edges of Reelfoot Lake.

Family Atherinidae

Labidesthes sicculus (Cope)--brook silverside. Brook silversides were very abundant in Running Reelfoot Bayou near the spillway and from the more shallow portions of Reelfoot Lake. However, they were reported from no other locality in the system.

Menidia audens (Hay)--Mississippi silverside. Like the brook silversides, this species was limited in the system to Reelfoot Lake and

Running Reelfoot Bayou. However, it was taken more often than Labidesthes sicculus, and also was reported much farther downstream in Reelfoot Bayou.

Family Percichthyidae

Morone chrysops (Rafinesque)--white bass. The white bass was reported only from Reelfoot Lake, where it apparently exists in small numbers. Baker (1937) reported the white bass as declining rapidly in numbers by reports from commerical fishermen whose total catch for this species had dropped about 30% during the previous four years. A more recent record was that of two specimens collected by D. A. Etnier in 1968. The white bass probably enters the Obion near the mouth as it has been reported in the Mississippi River in northwest Tennessee. (Pflieger, 1971; Etnier, 1973a).

Morone mississippiensis (Jordan and Eigenmann)--yellow bass. The yellow bass was reported as quite common in Reelfoot Lake and was collected in Running Reelfoot Bayou as far down as Dyer County. Apparently the photographs of M. mississippiens and M. chrysops from Reelfoot Lake (Baker, 1937, pp. 49-50) are in reverse order with respect to the accompanying captions.

Family Centrarchidae

Centrarchus macropterus (Lacépède)--flier. Fliers were moderately common throughout the system, usually taken from roadside ditches near the main channel or Reelfoot Lake. They were also reported from the shallows of the lake and on occasions from pool areas of moderate streams.

Elassoma zonatum (Jordan)--banded pygmy sunfish. This very small sunfish was occasionally reported from the system, with most records coming from the Reelfoot Lake area. Here it was taken mostly from nearby ditches and the upper shallow regions of the lake. The author collected this species in a shallow, weedy, mud-bottomed area of Clear Creek in Henry County. Several other records are available from tributaries of the Middle Fork Obion. A series of 13 specimens was reported by Dr. F. B. Cross (University of Knasas) in a 1964 collection from the North Fork Obion River at U. S. 45E at the Obion-Weakley County line.

Lepomis cyanellus (Rafinesque)--green sunfish. This sunfish was one of the most commonly reported sunfish in the system, occurring in practically all types of habitats. It was very common in the sluggish areas of ditches and streams where it was often associated with L. macrochirus and L. megalotis.

Lepomis gulosus (Cuvier)--warmouth. The warmouth was common throughout much of the system, especially in the ditches and marshy areas near Reelfoot Lake, and in sluggish pool areas and backwaters of small to moderate streams. The author collected the species on several occasions from old river bed sloughs.

Lepomis humilis (Girard)--orangespotted sunfish. This small, ornamental sunfish seems to prefer habitats similar to that of L. gulosus, as they were collected together in several old river bed sloughs which typically had mud and detritus bottoms with cypress growth at the edges. The species was also reported several times from Running

Reelfoot Bayou and shallow portions of Reelfoot Lake. Eight specimens were collected in 1965 by Dr. F. B. Cross (University of Kansas) from the North Fork Obion at Tennessee Highway 118 in Weakley County.

Lepomis macrochirus (Rafinesque)--bluegill. The bluegill was the most common centrarchid reported from the system, inhabiting pool areas of streams of all sizes as well as sloughs and roadside ditches. It is the most common sunfish caught by anglers at Reelfoot Lake.

Lepomis megalotis (Rafinesque)--longear sunfish. Longear sunfish were quite common throughout the system, often collected with L. cyanellus and L. macrochirus. Although collected in a large variety of habitats including Reelfoot Lake, Running Reelfoot Bayou, ditches, and backwater areas, it seemed to be taken most often in pool areas of streams.

Lepomis microlophus (Gunther)--redear sunfish. Redear sunfish were reported from Reelfoot Lake, Thompson Creek Branch in Weakley County, and from Crooked Creek in Carroll County. They have reportedly been stocked in Carroll Lake, managed by the Game and Fish Commission, in Carroll County (personal communication, E. S. Cobb, Tenn. Game and Fish Comm.).

Lepomis marginatus (Holbrook)--dollar sunfish. No specimens of this sunfish were reported from the Obion as all specimens of this type collected by the author were identified as the very similar L. megalotis. However, the species was reported from the Wolf River (Medford, 1971) and also from the Hatchie River where it was reportedly taken from typical sunfish habitat in pool areas of several creeks (Starnes, 1973). Since sunfish habitat is probably quite similar throughout the Mississippi

drainage in West Tennessee, L. marginatus is assumed to exist in the Obion system.

Lepomis punctatus (Valenciennes)--spotted sunfish. Most records of this species were reported from a 1972 Game and Fish Survey of the South Fork Obion headwater tributaries in Carroll and Henry Counties. A large number of specimens were reported from this study. Other records come from Reelfoot Lake and tributaries of the North, Middle, and South Forks. The author collected the species on three occasions in headwater creeks where the habitat was pool areas with much cover over sand, mud, and some detritus.

Lepomis symmetricus (Forbes)--bantam sunfish. This species was reported only from the shallow portions of Reelfoot Lake and nearby ditches where the habitat was usually quiet water with abundant vegetation over mud and detritus.

Micropterus punctulatus (Rafinesque)--spotted bass. The spotted bass was common in the larger tributaries to the Middle and South Forks of the system where it was usually taken in pool areas. Occasionally it was taken in the main channel of the Middle Fork. However, no records were available from the lower Obion or Reelfoot Lake area. In a map depicting distribution of game fish in Tennessee (Kuhne, 1939b, p. 6) M. punctulatus is indicated as stocked, with no record of success, in Reelfoot Lake.

Micropterus salmoides (Lacépède)--largemouth bass. The largemouth bass was common in the Reelfoot Lake area with records from Running Reelfoot Bayou, ditches and streams near the lake, and from the lake itself. Other records were mostly from larger tributaries to the

Middle and South Forks of the system. As the author rarely collected this species, the habitat is generally assumed to have been pool areas of various sizes.

Pomoxis annularis (Rafinesque)--white crappie. White crappies were most commonly reported from the Reelfoot Lake area where they were quite abundant in the lake and in Running Reelfoot Bayou, while also being taken from nearby streams and ditches. They were much less common in the remaining portion of the system, with records from several medium to larger streams of the Middle, North, and South Forks.

Pomoxis nigromaculatus (Lesueur)--black crappie. The black crappie was the less common of the crappies, with records from Reelfoot Lake and nearby ditches, as well as Running Reelfoot Bayou. Other records are from old river bed sloughs, the main channel of the North and Middle Forks, and Thompson Creek Branch in Weakley County.

Family Percidae

Etheostoma asprigene (Forbes)--mud darter. No specimens of this darter were reported from the Obion. However, there are a few records of this species from the Mississippi River in West Tennessee (Etnier, 1972a), while two other West Tennessee records come from the Hatchie system (Starnes, 1973). E. asprigene has also been reported from the lowland drainage in Pemiscot County, Missouri, just across the Mississippi River from Reelfoot Lake (Pflieger, 1971, p. 553). From the above locality information, it is speculated that E. asprigene exists in the Obion, probably in the lower portion in the sluggish riffles and pools.

Etheostoma chlorosomum (Hay)--bluntnose darter. The bluntnose darter was reported from the North, Middle, and South Forks of the Obion,

usually from sluggish portions of creeks and backwater areas. However, four specimens were reported from the main channel of the lower Obion River in Dyer County in a 1967 collection by Dr. C. Swift (Los Angeles County Museum).

Etheostoma fusiforme (Girard)--swamp darter. Swamp darters were collected only from the Reelfoot Lake area, with most records coming from ditches near the lake and one record from lower Pawpaw Creek, tributary to Running Reelfoot Bayou. These ditches provided abundant vegetation and a detritus bottom with depths of water from 2-4 feet.

Etheostoma gracile (Girard)--slough darter. Slough darters were very common in sluggish areas of small to medium streams and were reported rarely from the main channel of the North, Middle, and South Forks. They were occasionally taken in backwaters and old river bed sloughs. Baker (1939) mentioned Etheostoma gracile as taken occasionally from Reelfoot Lake and Bayou du Chien in the upper portion of the lake. Apparently the single darter photograph in this publication (p. 38) which is mentioned as E. gracile (p. 36) is E. fusiforme.

Etheostoma histrio (Jordan and Gilbert)--harlequin darter. The harlequin darter is apparently rare in the Obion system as it was reported from only two collections. The earlier record was reported by Dr. F. B. Cross (University of Kansas) in a 1964 collection from the Middle Fork Obion at Tennessee Highway 22, 4.3 miles southeast of the intersection with Tennessee Highway 54, in Weakley County. The later record was reported by D. A. Etnier in a 1969 collection from the same locality. This darter is far outnumbered in the system by its ally, E. zonale. The habitat of the harlequin darter is apparently rather swift riffles over fine gravel substrates.

Etheostoma nigrum (Rafinesque)--Johnny darter. The johnny darter was the most common darter in the system and was reported from a number of small to medium streams of the North and Middle Forks as well as the main channel of these and the South Fork. It was rarely reported from the western portion of the system, with only two records reported from there. One locality was Richland Creek, tributary to the main Obion while the other was Indian Creek, tributary to Reelfoot Lake. This darter was generally taken in sluggish to moderate current over sand substrates.

Etheostoma parvipinne (Gilbert and Swain)--goldstripe darter. This darter was taken in only four collections by the author, although there were several other records available. The habitats afforded at these four localities were either sand or mud substrates and water 1-2 feet deep with moderate currents.

Etheostoma proeliare (Hay)--cypress darter. Cypress darters were not collected by the author, although several records were available from the Obion system, with all but one coming from the Reelfoot Lake area. Here this species was taken in most cases with E. fusiforme in the heavily vegetated backwaters and ditches. The only other record of this darter was from the South Fork Obion River at Tennessee Highway 22, in Carroll County.

Etheostoma spectabile (Agassiz)--orangethroat darter. The orangethroat darter was taken only from some of the streams that originate in the hilly region east of Reelfoot Lake, with the exception of a single specimen reported from a ditch at the Game and Fish station near

Reelfoot Lake. As this specimen was collected in March, it is probable that recent high water may have caused it to be transported to this rather atypical habitat for E. spectabile. The other localities reported for this species were creeks with sand and silty gravel substrates and areas of shallow riffles.

Etheostoma squamiceps (Jordan)--spottail darter. The spottail darter was collected only from the streams flowing into the Reelfoot Lake area, taken from habitat similar to that mentioned for E. spectabile. However, the spottail darter was much less common with a total of 21 specimens recorded from six localities.

Etheostoma zonale (Cope)--banded darter. Banded darters were collected in the upper portions of the system, with several records coming from the main channel of the North, Middle, and South Forks and a number of others from larger tributaries of these forks. When collected by the author, this species was taken in rather swift riffle areas over gravel substrates. It is assumed that the other localities reported from the Obion afforded similar habitats.

Etheostoma (Oligocephalus) sp. This ally of Etheostoma swaini (Jordan) was reported mostly from the eastern portion of the Obion system Here, it was usually collected in the riffle areas of small to medium streams over gravel and course sand substrates. A few collections were reported from the main channels of the North, Middle, and South Forks in the upper part of the system.

Etheostoma (Ulocentra) sp. This undescribed snubnose darter was taken in abundance only from Clear Creek in Henry County, from which

several series were collected. A total of five specimens from three other localities were also collected by the author. The habitats were generally muddy sand in shallow water with moderate currents and abundant cover on the banks.

Percina maculata (Girard)--blackside darter. This darter was not reported from the Obion system. However, it has been reported from other river systems of the Mississippi drainage in West Tennessee including the Wolf (Medford, 1971), the Hatchie (Starnes, 1973), and a recent record from the Forked Deer. P. maculata may exist, although probably in small numbers, in the Obion system.

Percina sciera (Swain)--dusky darter. Dusky darters occurred only in the upper portion of the system where they were fairly common in the medium streams and main channel of the North, Middle, and South Forks of the river.

Percina shumardi (Girard)--river darter. This species was represented from the Obion from a single collection made by Dr. C. Swift (Los Angeles County Museum) in 1967. The locality was the lower Obion River at Tennessee Highway 78 in Dyer County. The habitat was described as soft sand to mud, with scattered clay blobs, with the collection made close to shore in water one to five feet deep. This species was recorded from the Hatchie River from a single specimen from the main channel (Starnes, 1973). It probably occurs in small numbers in the main channel of the lower Obion.

Family Sciaenidae

Aplodinotus grunniens (Rafinesque)--freshwater drum. This species was reported several times, mostly from Running Reelfoot Bayou. Baker (1937, p. 52) reported more than 40,000 pounds of the fish were sold each year from Reelfoot Lake. Fairly recent surveys by the Game and Fish Commission yielded records from the Middle Fork Obion and the main Obion River. The species probably is moderately common in the main channel throughout most of the system.

CHAPTER IV

DISCUSSION

I. TAXONOMIC CONSIDERATIONS

Additional discussion is desirable at this point to clarify the status of several species reported from the Obion system. The following discussion concerns two darters of uncertain taxonomic status and two madtoms whose status have been recently determined. Also discussed is the possibility of a species reported from the Mississippi drainage in West Tennessee for the first time, as it may have been misidentified or misrepresented in past reports. Finally, consideration is given to the taxonomic status of two species listed from Reelfoot Lake by Baker (1938).

Two darters of the genus Etheostoma that occur in the Obion system are of uncertain taxonomic status at this time. The first to be mentioned, E. (Oligocephalus) sp., is closely related to E. swaini, the gulf darter. The questionable darter is fairly common in the headwater streams of the Obion with only a single record reported from the central portion of the system. It has also been reported from the Hatchie and Forked Deer Rivers in West Tennessee. Starnes (1973) compared meristic data from Hatchie River specimens with data from E. swaini of the Mobile drainage. The E. swaini data used in the comparison came from series used by Ramsey and Suttkus (1965) in describing E. ditrema, and Howell and Caldwell (1965) in their description of E. nuchale. It was found that

the mean lateral scale row count from Ramsey and Suttkus' series (43.9) and Howell and Caldwell's series (39.8) both differed from the mean count of the Hatchie specimens (48.2). The population from the Obion system appears to be identical with that from the Hatchie system. The darter in question will be identified as Etheostoma asprigene with use of available published keys. However, habitat preferences and differences in pigmentation of the predorsal and lateral areas will separate these two forms in West Tennessee (Etnier, 1972a). It seems likely that specimens of E. asprigene from the Wolf River (Medford, 1971) in West Tennessee were representatives of this undescribed darter, as it was mentioned as generally being taken in riffles of small, clear streams over gravel substrates.

The other undescribed darter occurring in the Obion is one of the snubnose darters (subgenus Ulocentra), which tends to be much less common than the former undescribed species. At present, one of the largest collections from West Tennessee has come from Clear Creek, tributary to the North Fork Obion River, in Henry County. A few other specimens from other localities in the Obion as well as some specimens from the Hatchie and Forked Deer Rivers in West Tennessee, have been reported. Investigations in the past have suggested that this darter represents the same taxon as the form from the tributaries to the lower Tennessee River in West Tennessee. However, more recent investigation of fresh specimens suggests that pigment differences in the two forms may indicate that two taxa are involved. The lower Tennessee River forms have two rows of dark pigment in the first dorsal fin, while Mississippi drainage forms

have only one. Habitat preferences may be somewhat different, as the Mississippi River form has been reported over sand or sand and mud, while the lower Tennessee River form has been taken over gravel and sand substrates. More work on these two forms is needed in the future in order to resolve their taxonomic status.

Two species of the genus Noturus (Ictaluridae) occurring in the Obion system will be considered next in the discussion. Noturus phaeus, a madtom catfish common in the upper tributaries of the system was recently described by Taylor (1969). The holotype of this species was taken in 1954 from the North Fork Obion River at Tennessee Highway 69 in Henry County, by C. E. Ruhr. This madtom was recognized as a species separate from N. funebris, with which it had formerly been synonymized.

The other madtom considered here is Noturus hildebrandi, for which a new subspecies, N. h. lautus was recently described (Taylor, 1969). The type locality for N. h. lautus was the same as that for Noturus phaeus, the North Fork Obion River at Tennessee Highway 69, in Henry County. N. h. lautus is the northern form of this species, while N. h. hildebrandi is the form in the southern part of its range.

Next to be discussed of taxonomic importance is Notropis whipplei, collected from the North Fork Obion River at Tennessee Highway 69, in Henry County. The single, large specimen, identified with assistance from D. A. Etnier, was a rather heavily tuberculate nuptial male. It was collected with six specimens of the very similar N. camurus, of which a few were also tuberculate.

Gibbs (1963) reported N. whipplei from the Loosahatchie and Forked

Deer River systems of the Mississippi drainage in West Tennessee. However, no specimens of N. camurus were mentioned by Gibbs (1961) as occurring in West Tennessee. The survey conducted by the author indicated that N. camurus was extremely common throughout most of the Obion and was also found to be quite abundant in the Hatchie system in West Tennessee (Starnes, 1973). Recent collections have frequently reported N. camurus from the Forked Deer system as well. It was also listed a number of times from the Wolf River (Medford, 1971) in the extreme lower portion of West Tennessee. As Gibbs apparently felt that West Tennessee forms were whipplei rather than camurus, it seems likely that his records of whipplei from the Forked Deer and Loosahatchie systems as well as whipplei reported from the Wolf River by Medford in 1971 may be misidentifications of N. camurus. Examinations of any future specimens of N. whipplei collected from the Mississippi drainage in West Tennessee would prove to be helpful in determining the range of this species in this part of the state.

A great deal of work on the fishes of Reelfoot Lake was conducted by Dr. C. L. Baker in the late 1930's. Many of the names of fishes listed in his publications (1937, 1938, 1939) were different from combinations commonly used in the literature today. However, most of the species mentioned have been substantiated by more recent records with the exception of a few. One species in need of additional taxonomic consideration is Lepomis gibbosus (Linnaeus), the pumpkinseed sunfish. The pumpkinseed sunfish was described as being widespread and abundant in Reelfoot Lake (Baker, 1938). However, more recent evidence (Trautman, 1957, and Pflieger, 1971) on the range of this species in North

America seems to indicate that L. gibbosus would most likely be out of its range at Reelfoot Lake. Both sources suggest that gibbosus is a northeastern species, with Missouri on the southern edge of its range. The photograph of L. gibbosus (Baker, 1937, p. 44) is apparently that of another species, possibly L. microlophus.

Further taxonomic consideration should be given to the trinomen Erimyzon sucetta oblongus (Lacépède), listed from Reelfoot Lake (Baker, 1938, 1939). According to Baker (1939), this form seemed to be a hybrid or intergrade of E. sucetta and E. oblongus mostly on the basis of the location of Reelfoot Lake within the range of the two. Baker (1939, p. 9) also mentioned that E. succetta oblongus preferred the habitat of streams and creeks, although a few were known to occur in Reelfoot Lake. It would seem that the lake forms were primarily E. sucetta, the lake chubsucker, while the forms from creeks and streams were E. oblongus, the creek chubsucker. E. sucetta was collected in 1970 from the lake, and E. oblongus has been recently reported from Indian Creek, tributary to Reelfoot Lake.

II. ZOOGEOGRAPHICAL AND ECOLOGICAL CONSIDERATIONS

The following discussion concerns interesting zoogeographical and ecological relationships noted from this survey of the Obion system. A number of species were found to be distributed only in the upper portion of the system or in the Reelfoot Lake area. Among those restricted to the upper portion of the system were Noturus hildebrandi, Noturus phaeus, Noturus stigmosus, Percina sciera, Etheostoma zonale, and the undescribed

darter of the subgenus Ulocentra. The habitats for these species collectively ranged from small streams to the main channel of the North, Middle, and South Forks. Substrates varied from sand to sandy mud or sand and fine gravel, with currents being moderate and in some cases rather swift. These streams were noted as being clear to moderately turbid except during periods of excessive rainfall. It seems logical to assume that effects of sluggish currents, increased turbidity, and softer substrates have prevented these species from successfully inhabiting the lower and, to a great extent, the central portion of the system.

Of particular note are several species existing in the shallow, clear streams originating in the hilly area east of Reelfoot Lake, namely Phoxinus erythrogaster, Catostomus commersoni, Rhinichthys atratulus, Campostoma anomalum, Etheostoma spectabile, and Etheostoma squamiceps. These species were restricted within the drainage to these streams and are rare or absent in other tributaries to the Mississippi River in West Tennessee. At present, P. erythrogaster, E. squamiceps, and C. commersoni are not known from other Mississippi tributaries in West Tennessee, and may represent relict populations.

Some of the species confined to the standing water habitat of Reelfoot Lake or its backwaters were Notropis maculatus, Erimyzon sucetta, Fundulus chrysotus, Fundulus notti, Lepomis symmetricus, and Etheostoma fusiforme. At present, this is the only locality for E. sucetta and F. chrysotus known from the state. Whether or not some of these species exist in the three or four small oxbow lakes mentioned in Chapter II

remains to be investigated, as the author was unable to examine these habitats. However, judging from the extensive areas of cultivated land near the swamps in addition to the nearby drainage canals, it is probable that these small lakes may be altered from their original state and may not represent typical oxbow habitat. It is possible that the above mentioned and other species occurring in similar habitats of standing water may have occurred more often in the system before much of the swampy areas were altered by various drainage undertakings in the past. Considering the extent of channelization throughout much of the system, it is possible that the original range of some of these species may have been considerably reduced. In further considering the effects of drainage on distribution, other species which are abundant in the flowing waters of the drainage ditches throughout the system, such as *Notropis camurus*, *N. fumeus*, and *N. venustus*, may have been originally confined to the channel of the main river.

A number of species may be added to the Obion fauna by entrance of species from the Mississippi River into the mouth of the Obion-Forked Deer system. Several big river species can be speculated to enter the lower Obion by this route including the following: *Scaphirhynchus platorynchus*, *Hiodon tergisus*, *Hybopsis aestivalis*, *Notropis shumardi*, and *Notropis volucellus*. All of these have been collected from the Mississippi River in West Tennessee, with *H. aestivalis*, *N. shumardi*, and *N. volucellus* reported from three localities 8 to 15 river miles north of the mouth of the Obion-Forked Deer system (Etnier, 1971 and 1973a).

Last to be discussed is the possibility of faunal exchange between the Obion system and other systems close to the Obion in West Tennessee and western Kentucky. The next river basin lying due north of the central portion of the Obion system is Bayou du Chien. This basin is a separate basin from the Bayou du Chien in the northern part of Reelfoot Lake. Its main channel is separated from the main channel of the North Fork Obion by only 10-15 air miles in most places. Very small tributaries of this system and the Obion system become intermittent in the vicinity of the Tennessee-Kentucky State line. Whether flooding, stream capture, or any other mode of faunal exchange has occurred in this region is difficult to ascertain, as the author has limited knowledge of the fauna of Bayou du Chien. Evermann (1915) reported on fishes from Bayou du Chien and mentioned several common to the Obion system. It is interesting to note that Percina caprodes and Notropis cornutus were listed, as these have not been reported from the Obion. However, additional investigation is needed concerning the Bayou du Chien fauna before any relationships between the two systems can be substantiated.

Perhaps of more importance would be consideration of faunal exchange with the Forked Deer system to the south of the Obion. Some faunal exchange must have occurred between these two systems as they converge at a point about three air miles east of the Mississippi River. Thus, the two rivers may, in a sense, be considered as one large river system which includes a watershed area of approximately 4500 square miles (Tenn. State Planning Comm., 1936). Lateral faunal exchange has likely occurred between these two systems, possibly by means of flooding or stream

capture. A few of the species known to be common to the upper portions of both systems include: Noturus hildebrandi, Noturus phaeus, Etheostoma zonale, Etheostoma (Oligocephalus) sp., and Etheostoma (Ulocentra) sp. However, it is interesting that Hypentelium nigricans was not reported from the Obion, but has recently been collected from the Forked Deer.

Of most importance in considering faunal exchange is the possibility of exchange with the Tennessee River system to the east. Many of the smaller western tributaries to the lower Tennessee River overlap in certain areas between similar tributaries of the Obion. Recent investigations of the fauna of the western tributaries to the lower Tennessee River have produced records of a few species formerly considered to be much more typical of the Mississippi drainage fauna. These include: Umbra limi, Centrarchus macropterus, Etheostoma parvipinne, and Etheostoma proeliare. No perceivable evidence of faunal exchange between the Obion and Tennessee River systems exists at this time. However, future investigations of the lower Tennessee River fauna may help in determining the solution to this problem.

At this point it is interesting to note that several species absent from the Obion have been reported from systems adjacent to the Obion or from other systems in West Tennessee. Etheostoma stigmaeum, a species reported from the lower Tennessee River, was also collected from the Hatchie River (Starnes, 1973) and the Wolf River (Medford, 1971). Hypentelium nigricans, mentioned earlier from the Forked Deer, was also reported from the Hatchie and Wolf Rivers, as well as from western tributaries to the lower Tennessee. Notropis cornutus subspecies, already mentioned

from Bayou du Chien, has also been reported from the Hatchie River as well as western tributaries to the lower Tennessee River. Considering that Etheostoma nigrum is common in the Obion system, but was not reported from the Hatchie, and may be rare or absent in the Forked Deer, there exists a possibility that faunal exchange may have occurred at different places along the lower Tennessee River.

III. CONCLUSIONS

The fish fauna of the Obion River system includes a rather large number of species. However, many of these species were reported rarely from the system. Approximately 110 species are assumed to exist in the system, with 100 of these verified from collection records by the author and several other investigators. A greater variety of species was found in the headwater regions than in the central and lower portions of the system. Of particular note is a rich sunfish fauna which includes substantiated records of 14 species with one additional species speculated to be in the system. The ctalurid fauna is quite diverse, with 11 species represented, although a few were reported as uncommon.

It is evident that much of the river system has been altered by various drainage undertakings and the present fauna may be somewhat different in variety and distribution of species than it was 50 or 60 years ago. As much of the area embraced in the watershed of the Obion has been extensively cultivated for many years, chemical fertilizers and pesticides may have been introduced into the streams in rather large amounts during periods of excessive run-off. This in turn may have

altered the status of certain intolerant species within the system.

Reelfoot Lake, the most interesting portion of the Obion system, is a natural fish hatchery, providing not only a large biomass of fish, but also a great diversity of species. The lake, including its tributaries and Running Reelfoot Bayou, is speculated to contain approximately 77 species. Thus, it represents the area of richest fauna within the system.

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APPENDIX

TABLE I

SPECIES COLLECTION SUMMARY[a]

Species	Collection Number
Lampetra aepyptera	61, 94
Polydon spathula	1
Lepisosteus oculatus	2, 8, 11, 22, 29, 106, 116
Lepisosteus osseus	1, 2, 105, 174
Lepisosteus platostomus	1, 11, 17, 18, 21, 22, 86, 171
Lepisosteus spatula	1
Amia calva	1, 2, 22, 24, 29, 103, 105, 106, 116, 140, 144, 151, 154, 155, 171, 172
Anguilla rostrata	1, 151
Alosa chrysochloris	1
Dorosoma cepedianum	1, 3, 11, 16, 22, 23, 27, 29, 33, 90, 103, 104, 105, 106, 109, 123, 140, 151, 160, 171, 172, 173
Dorosoma petenense	173
Hiodon alosoides	1, 10, 104
Umbra limi	1, 17, 21, 32, 65, 94, 97, 114, 118, 141
Esox americanus	1, 6, 9, 10, 21, 32, 35, 40, 62, 64, 81, 88, 92, 94, 97, 103, 107, 114, 115, 120, 138, 142, 148, 149, 150, 152, 154, 155, 158, 159, 166, 172, 182
Esox niger	1, 143

TABLE I (continued)

Species	Collection Number
Campostoma anomalum	1, 5, 30, 31, 36, 37, 38, 39, 175, 177, 178
Carassius auratus	149
Cyprinus carpio	1, 4, 14, 16, 17, 21, 22, 24, 35, 42, 45, 46, 47, 58, 86, 103, 104, 105, 106, 119, 124, 151, 154, 171, 172, 173, 179, 183
Hybognathus hayi	1, 2, 8, 17, 24, 160
Hybognathus nuchalis	1, 2, 42, 43, 90, 94, 97, 100, 101, 102, 146, 170, 176
Hybopsis storeriana	3
Notemigonus crysoleucas	1, 2, 8, 10, 16, 17, 21, 23, 24, 25, 26, 33, 35, 40, 47, 49, 50, 54, 57, 58, 66, 76, 95, 99, 101, 110, 114, 118, 119, 121, 127, 131, 135, 137, 138, 140, 148, 151, 152, 154, 155, 159, 160, 172, 177, 179
Notropis atherinoides	2, 3, 29, 32, 46
Notropis blennius	174
Notropis camurus	42, 43, 46, 47, 53, 55, 56, 57, 59, 60, 63, 68, 69, 70, 71, 72, 73, 76, 80, 81, 83, 87, 88, 90, 91, 93, 94, 96, 97, 98, 99, 100, 102, 115, 116, 117, 118, 119, 120, 124, 125, 127, 130, 133, 135, 136, 139, 141, 142, 146, 156, 159, 164, 165, 166, 168, 169, 180, 182
Notropis emiliae	1, 2, 7, 8, 16, 42, 95, 97, 108, 123, 144, 159, 174, 181

TABLE I (continued)

Species	Collection Number
Notropis fumeus	3, 54, 55, 56, 57, 60, 66, 81, 87, 88, 91, 99, 101, 108, 109, 116, 118, 119, 124, 125, 127, 132, 133, 135, 136, 139, 140, 141, 146, 156, 158, 159, 161, 162, 166, 174
Notropis lutrensis	2, 24, 37, 52, 77, 175, 178
Notropis maculatus	8
Notropis umbratilis	2, 3, 5, 13, 15, 24, 30, 31, 36, 37, 38, 39, 50, 60, 64, 82, 87, 90, 94, 95, 97, 98, 100, 108, 146, 156, 164, 166, 167, 175, 177, 178, 182
Notropis venustus	3, 24, 33, 36, 37, 39, 43, 46, 47, 59, 75, 76, 80, 93, 94, 97, 98, 99, 100, 101, 108, 109, 118, 119, 165, 166, 170, 174, 180, 182,
Notropis whipplei	90
Phenacobius mirabilis	1, 37, 42, 43, 68, 73, 77, 78, 82, 90, 91, 94, 97, 102, 176, 177
Phoxinus erythrogaster	31
Pimephales notatus	5, 13, 24, 31, 36, 37, 38, 58, 94, 95, 97, 98, 99, 100, 108, 117, 118, 119, 136, 141, 142, 146, 175, 176
Pimephales promelas	1, 110, 135, 137
Pimephales vigilax	3, 7, 16, 27, 46, 159, 174, 177, 180
Rhinichthys atratulus	31, 36, 37, 177

TABLE I (continued)

Species	Collection Number
Semotilus atromaculatus	1, 30, 31, 37, 39, 42, 43, 48, 49, 51, 52, 55, 63, 68, 69, 70, 73, 82, 90, 92, 94, 101, 110, 111, 112, 113, 134, 141, 142, 150, 152, 153, 175, 177
Carpiodes carpio	1
Carpiodes cyprinus	1, 173
Catostomus commersoni	6, 15, 37
Erimyzon oblongus	5, 6, 13, 15, 55, 56, 62, 63, 65, 71, 94, 97, 101, 110, 112, 113, 118, 119, 136, 157, 159, 160
Erimyzon sucetta	1, 21
Ictiobus bubalus	1, 11, 22, 104, 171
Ictiobus cyprinellus	1, 2, 4, 11, 14, -2, 24, 29, 106, 179
Ictiobus niger	1, 11, 22, 171
Minytrema melanops	42, 56, 66, 95, 97, 105, 106, 130, 146, 148, 149, 155
Moxostoma erythrurum	5, 6, 15, 24, 37, 103, 104
Moxostoma poecilurum	97, 103, 104, 105, 106, 108, 109, 125, 130, 139, 146, 149, 152, 154
Ictalurus furcatus	171
Ictalurus melas	1, 4, 14, 15, 17, 21, 25, 35, 47, 58, 79, 86, 89, 110, 121, 135, 136, 138, 140, 141, 152, 179,
Ictalurus natalis	1, 9, 17, 21, 26, 35, 56, 58, 71, 97, 100, 121, 122, 128, 129, 138, 148, 149, 151, 152, 153, 154, 155, 159, 160, 179

TABLE I (continued)

Species	Collection Number
Ictaluras nebulosus	1, 14
Ictaluras punctatus	1, 11, 98, 99, 103, 104, 138, 143, 146, 151, 156, 163, 173
Noturus gyrinus	1, 8, 9, 34, 57, 59, 74, 76, 81, 160
Noturus hildebrandi	41, 42, 43, 56, 61, 73, 90, 91,94, 97, 98, 99, 108, 115, 116, 118, 124, 131, 132, 135, 146, 156
Noturus miurus	42, 43, 61, 66, 74, 80, 98, 102, 135, 176
Noturus phaeus	42, 43, 56, 57, 67, 74, 94, 96, 97, 98, 99, 102, 119, 134, 146
Noturus stigmosus	75, 93, 116, 146
Pylodictis olivaris	1, 151, 171, 173
Aphredoderus sayanus	1, 12, 17, 18, 19, 21, 24, 32, 34, 35, 40, 42, 56, 57, 62, 95, 97, 98, 101, 103, 114, 118, 147, 148, 149, 151, 152, 153, 154, 155, 159, 161, 172
Fundulus chrysotus	1, 8, 9, 12, 20, 21, 32, 34
Fundulus notatus	1, 8, 9, 12, 20, 24, 25, 26, 45, 77, 100, 160, 174
Fundulus notti	1, 9, 12, 20, 21, 25, 34, 35
Fundulus olivaceous	5, 24, 30, 31, 36, 40, 41, 42, 46, 48, 50, 52, 53, 55, 56, 62, 65, 71, 76, 80, 87, 92, 95, 97, 98, 108, 109, 111, 112, 114, 115, 117, 119, 121, 124, 125, 126, 127, 128, 129, 130, 136, 137, 138, 140, 142, 145, 147, 156, 174, 176, 177, 178, 180

TABLE I (continued)

Species	Collection Number
Gambusia affinis	1, 2, 3, 8, 9, 12, 17, 18, 21, 25, 32, 34, 35, 42, 44, 45, 48, 49, 51, 55, 56, 59, 71, 76, 90, 94, 95, 97, 98, 99, 101, 107, 111, 114, 115, 118, 119, 120, 121, 122, 123, 126, 128, 129, 136, 141, 145, 147, 159, 160, 174, 179, 180
Labidesthes sicculus	1, 2, 7, 10, 16, 28
Menidia audens	1, 3, 7, 10, 11, 16, 19, 23, 25, 27, 29, 33
Morone chrysops	1, 4
Morone mississippiensis	1, 3, 4, 7, 10, 19, 22, 23, 27, 28, 34
Centrarchus macropterus	1, 8, 17, 21, 32, 34, 47, 63, 90, 107, 114, 151, 153, 162, 179
Elassoma zonatum	1, 9, 21, 25, 32. 34, 40, 67, 74, 94, 107, 124
Lepomis cyanellus	1, 5, 6, 9, 13, 15, 21, 26, 29, 32, 38, 42, 43, 44, 47, 48, 49, 50, 52, 58, 59, 63, 71, 72, 76, 78, 79, 94, 96, 97, 100, 103, 105, 106, 107, 110, 111, 112, 114, 117, 118, 119, 121, 123, 126, 127, 128, 131, 132, 134, 136, 137, 138, 140, 141, 147, 149, 150, 151, 152, 153, 154, 155, 157, 159, 160, 162, 176, 177, 179, 182
Lepomis gulosus	1, 8, 9, 10, 16, 21, 24, 25, 34, 42, 47, 56, 57, 79, 84, 85, 103, 114, 118, 135, 140, 148, 149, 151, 142, 154, 155, 160, 165
Lepomis humilis	1, 2, 3, 9, 10, 11, 16, 19, 22, 29, 58, 84, 85, 181

TABLE I (continued)

Species	Collection Number
Lepomis macrochirus	1, 2, 7, 8, 9, 15, 16, 21, 22, 24, 25, 27, 32, 33, 34, 36, 42, 46, 47, 48, 49, 50, 52, 54, 58, 59, 63, 84, 85, 86, 93, 97, 100, 101, 103, 104, 105, 106, 108, 109, 110, 113, 114, 118, 119, 120, 121, 123, 126, 127, 128, 129, 135, 136, 137, 138, 142, 143, 145, 148, 149, 150, 151, 152, 153, 154, 155, 160, 161, 163, 171, 172, 173, 177, 178, 180, 182
Lepomis megalotis	1, 3, 4, 5, 6, 7, 8, 9, 15, 23, 24, 26, 27, 29, 30, 34, 38, 50, 56, 57, 62, 76, 97, 103, 104, 105, 114, 118, 125, 138, 140, 145, 148, 149, 150, 151, 152, 153, 154, 155, 156, 159, 160, 175, 176, 177, 178, 182
Lepomis microlophus	1, 4, 9, 100, 148, 163
Lepomis punctatus	1, 9, 19, 34, 56, 98, 119, 122, 146, 148, 149, 150, 152, 154, 155, 157, 161
Lepomis symmetricus	1, 9, 21, 32, 34, 35
Micropterus punctulatus	94, 97, 100, 103, 104, 105, 106, 109, 110, 138, 142, 148, 149, 150, 156, 159, 164
Micropterus salmoides	1, 4, 8, 9, 10, 14, 15, 17, 22, 25, 27, 34, 35, 56, 66, 105, 106, 143, 148, 151, 152, 153, 154, 155, 160, 163, 177
Pomoxis annularis	1, 2, 4, 8, 10, 16, 19, 22, 25, 27, 45, 58, 85, 103, 105, 106, 108, 123, 124, 138, 140, 151, 160
Pomoxis nigromaculatus	1, 10, 16, 17, 21, 22, 25, 29, 84, 86, 104, 138, 172

TABLE I (continued)

Species	Collection Number
Etheostoma chlorosomum	40, 54, 56, 66, 71, 74, 76, 80, 95, 144, 145, 159, 160, 174
Etheostoma fusiforme	1, 9, 12, 21, 24, 25, 34
Etheostoma gracile	1, 40, 42, 56, 57, 59, 61, 62, 63, 64, 65, 66, 74, 80, 94, 97, 110, 113, 121, 123, 126, 128, 129, 144, 146, 147, 159, 160, 167, 176
Etheostoma histrio	96
Etheostoma nigrum	6, 41, 42, 43, 53, 55, 56, 57, 60, 61, 63, 66, 67, 68, 70, 73, 74, 80, 81, 90, 92, 94, 96, 97, 98, 99, 108, 112, 119, 120, 124, 130, 132, 133, 134, 136, 138, 141, 146, 147, 156, 159, 176
Etheostoma parvipinne	55, 59, 63, 65, 92, 94, 118, 131, 141, 142
Etheostoma proeliare	1, 9, 12, 25, 34, 146
Etheostoma spectabile	5, 9, 13, 30, 31, 38, 175, 178
Etheostoma squamiceps	5, 13, 24, 31, 36, 37
Etheostoma (Oligocephalus) sp.	42, 43, 56, 57, 60, 61, 63, 66, 67, 69, 74, 76, 80, 81, 87, 92, 95, 96, 97, 98, 99, 146
Etheostoma zonale	42, 43, 56, 66, 73, 80, 87, 90, 91, 94, 96, 98, 99, 115, 124, 130, 131, 132, 139, 142, 146, 161
Etheostoma (Ulocentra) sp.	53, 57, 64, 67, 74, 81, 92, 141, 161
Percina sciera	42, 43, 56, 80, 87, 91, 94, 96, 97, 98, 99, 102, 131, 142, 146

TABLE I (continued)

Species	Collection Number
Percina shumardi	174
Aplodinotus grunniens	1, 2, 3, 10, 19, 22, 25, 103, 104, 171, 173

[a]See Table II for localities.

TABLE II

COLLECTION DATA[a]

Number	Locality	Date	Collectors
1	Reelfoot Lake (no specific localities known from Baker's work on Reelfoot Lake)	1936-1939	Baker (Southwestern University)
2	Running Reelfoot Bayou near spillway of Reelfoot Lake, Obion Co., Tenn.	Mar. 24, 1967	Etnier, Stiles, Goodwin
3	Running Reelfoot Bayou at dirt road 5.5 mi. south of Ridgely, 10 mi. northwest of Dyersburg, Dyer Co., Tenn.	Sept. 11, 1967	Swift (Los Angeles County Museum)
4	Reelfoot Lake, Obion and Lake Counties	July 17-19,1968	Mackiewicz, Smythe, Etnier
5	Indian Creek 0.3 mi. above Reelfoot Lake, Obion Co., Tenn.	Mar. 12, 1968	Bouchard, Smythe, Etnier
6	Indian Creek 0.3 mi. above Reelfoot Lake, Obion Co., Tenn.	July 19, 1968	Smythe, Etnier
7	Edgewater Beach at Reelfoot Lake, Lake Co., Tenn.	Mar. 11, 1968	Bouchard, Etnier
8	Ditch at State Campground, Reelfoot Lake, Obion Co., Tenn.	July 19, 1968	Smythe, Etnier

TABLE II (continued)

Number	Locality	Date	Collectors
9	Ditch at Tenn. Game and Fish Station, Reelfoot Lake, Lake Co., Tenn.	Mar. 11-13,1968	Bouchard, Mackiewicz, Smythe, Etnier
10	Running Reelfoot Bayou, Lake Co., Tenn.	Mar. 11-12,1968	Bouchard, Mackiewicz, Smythe, Etnier
11	Running Reelfoot Bayou, Obion Co., Tenn.	Dec. 14, 1968	Bouchard, Starnes
12	Ditch at Kiwanis Club Playground at Reelfoot Lake, Lake Co., Tenn.	Dec. 14, 1968	Bouchard, Starnes
13	Indian Creek off Tenn. 22, Obion Co., Tenn.	Dec. 14, 1968	Bouchard, Starnes
14	Reelfoot Lake (fishes retained from commercial hoop net), Obion Co., Tenn.	July 19,1968	Etnier
15	Indian Creek 1/4 mi. above Tenn. 22 near Reelfoot Lake, Obion Co., Tenn.	Aug. 27, 1969	Howell, Riggs, Stiles, Etnier
16	Reelfoot Lake at Kiwanis Funland, Lake Co., Tenn.	Aug. 27, 1969	Howell, Riggs, Stiles, Etnier
17	Ditch 3.8 mi. north of junction Tenn. 78 and Tenn. 22, Tiptonville, Lake Co., Tenn.	July 5, 1970	Bouchard et al.

TABLE II (continued)

Number	Locality	Date	Collectors
18	Ditch at checking station 6.5 mi. north of junction Tenn. 21 and Tenn. 78, Tiptonville, Lake Co., Tenn	July 15, 1970	Bouchard et al.
19	Reelfoot Lake at Tenn. Game and Fish Station on Tenn. 21, Lake Co., Tenn.	July 15, 1970	Bouchard et al.
20	Ditch at Kiwanis Club Playground on Tenn. 21, Reelfoot Lake, Lake Co., Tenn.	July 15, 1970	Bouchard et al.
21	Reelfoot Lake at Brewer's Bar and ditches along road from Walnut Log off Tenn. 22, Lake Co., Tenn.	July 9, 1970	Bouchard et al.
22	Running Reelfoot Bayou at Tenn. 21, Lake Co., Tenn.	July 6, 1970	Bouchard et al.
23	Reelfoot Lake at Tenn. Game and Fish Station on Tenn. 21, Lake Co.Tenn.	July 5, 1970	Bouchard et al.
24	Pawpaw Creek at county road 8165, Obion Co., Tenn.	July 13, 1970	Bouchard et al.
25	Ditch at Kiwanis Club Playground, Reelfoot Lake at Tenn. 21, Lake Co., Tenn.	July 5, 1970	Bouchard et al.

TABLE II (continued)

Number	Locality	Date	Collectors
26	Ditch at State Campground, Reelfoot Lake at Tenn. 21, Obion Co.,Tenn.	July 5, 1970	Bouchard et al.
27	Edgewater Beach of Reelfoot Lake at Tenn. 21, Lake Co., Tenn.	July 5, 1970	Bouchard et al.
28	South end of Reelfoot Lake, Lake Co., Tenn.	June 28, 1971	Deck et al.
29	Spillway below Reelfoot Lake, Lake Co., Tenn.	June 28, 1971	Deck et al.
30	Reelfoot Creek northeast of Hornbeak, Obion Co., Tenn.	June 28, 1971	Deck et al.
31	Indian Creek east of Samburg, Obion Co., Tenn.	June 22, 1971	Deck et al.
32	Reelfoot Lake at Reelfoot Biological Station, Obion Co., Tenn.	June 22, 1971	Deck et al.
33	South end of Reelfoot Lake, Lake Co., Tenn.	June 22, 1971	Deck et al.
34	Reelfoot Lake and ditches near Tenn. Game and Fish Station, Lake Co., Tenn.	Aug. 12, 1972	U. T. Ichthyology Class

TABLE II (continued)

Number	Locality	Date	Collectors
35	Ditch along both sides of road from Proctor City, 1 mi. east of Tenn. 78, Lake Co., Tenn.	Aug. 11, 1972	U. T. Ichthyology Class
36	South Branch of Pawpaw Creek, 1.5 air mi. southwest of Hornbeak, Obion Co., Tenn.	June 3, 1972	Dickinson, Dean
37	Pawpaw Creek at junction of North and South Branches. Obion Co., Tenn.	Dec. 28, 1972	Dickinson, Deck
38	Cane Creek (branch of South Reelfoot Creek) at county road 8166, Obion Co., Tenn.	Dec. 28, 1972	Dickinson, Deck
39	Pawpaw Creek at junction with Atkins Creek, Obion Co., Tenn.	Dec. 28, 1972	Dickinson, Deck
40	Walnut Fork Creek at Tenn. 69, Henry Co., Tenn.	Dec. 12, 1968	Bouchard, Starnes
41	North Fork Obion River at Tenn. 69, Henry Co., Tenn.	Dec. 12, 1968	Bouchard, Starnes
42	North Fork Obion River at Tenn. 69, Henry Co., Tenn.	Aug. 28, 1969	Howell, Riggs, Stiles, Etnier
43	North Fork Obion River at Tenn. 69, Henry Co., Tenn.	July 7, 1970	Bouchard et al.

TABLE II (continued)

Number	Locality	Date	Collectors
44	Roadside ditch along U. S. 45W 1.5 mi. south of Union City, Obion Co., Tenn.	Sept. 15, 1971	Dickinson, Deck
45	Hoosier Creek at U. S. 45W, Obion Co., Tenn.	Sept. 15, 1971	Dickinson, Deck
46	North Fork Obion River 1 mi. east of Rives, Obion Co., Tenn.	Sept. 15, 1971	Dickinson, Deck
47	North Fork Obion River at U. S. 45E, Weakley Co., Tenn.	Sept. 21, 1971	Dickinson, Deck
48	Richland Creek at county road 8011, Weakley Co., Tenn.	Sept. 21, 1971	Dickinson, Deck
49	Pursley Creek in Union City Grove Creek Park, Obion Co., Tenn.	Sept. 22, 1971	Dickinson, Deck, Morton, Pitts
50	Deer Creek at county road 8010, Obion Co., Tenn.	Sept. 22, 1971	Dickinson, Deck, Morton, Pitts
51	Harris Fork Creek at county road 8010, Obion Co., Tenn.	Sept. 22, 1971	Dickinson, Deck Morton, Pitts
52	Hoosier Creek 1/4 mi. south of Tenn. 22, 2.5 air mi. west of Union City, Obion Co., Tenn.	Oct. 18, 1971	Dickinson, Deck, Skiles

TABLE II (continued)

Number	Locality	Date	Collectors
53	North Fork Obion River 1 mi. north of Whitlock, Henry Co., Tenn.	Oct. 30, 1971	Dickinson, Deck, Vaughn, Pitts
54	Phillips Creek 2 mi. north of Whitlock, Henry Co., Tenn.	Oct. 30, 1971	Dickinson, Deck, Vaughn, Pitts
55	Birds Creek 1/2 mi. west of Whitlock, Henry Co., Tenn.	Oct. 30, 1971	Dickinson, Deck, Vaughn, Pitts
56	Tributary to North Fork Obion River at bridge 2 air mi. north, northwest of Whitlock, Henry Co., Tenn.	Oct. 30, 1971	Dickinson, Deck Vaughn
57	Clear Creek 2.5 air mi. southwest of Puryear, Henry Co., Tenn.	Oct. 30, 1971	Dickinson, Deck Vaughn
58	Ditch between U. S. 45W and North Fork Obion River near junction of U. S. 45W and county road 8219, Obion Co., Tenn.	Nov. 11, 1971	Dickinson, Deck
59	Cypress Creek at county road 8009, Obion Co., Tenn.	Nov. 11, 1971	Dickinson, Deck
60	Unnamed tributary to North Fork Obion River 1.25 air mi. south of county road 8172, 3 air mi. southeast of Jones Mill, Henry Co., Tenn.	Dec. 18, 1971	Dickinson, Deck

TABLE II (continued)

Number	Locality	Date	Collectors
61	Tributary to North Fork Obion River at bridge 2 air mi. north northwest of Whitlock, Henry Co., Tenn.	Dec. 18, 1971	Dickinson, Deck
62	Old river slough of North Fork Obion River at Tenn. 89, Weakley Co., Tenn.	Dec. 22, 1971	Dickinson, Deck
63	Unnamed tributary near its junction with North Fork Obion River at county road 8191, Weakley Co., Tenn.	Dec. 22, 1971	Dickinson, Deck
64	Hurricane Creek at road connecting county roads 8191 and 8153, Weakley Co., Tenn.	Dec. 22, 1971	Dickinson, Deck
65	Old Knob Creek at county road 8153, Weakley Co., Tenn.	Dec. 22, 1971	Dickinson, Deck
66	Tributary to North Fork Obion River, at bridge 2 air mi. north northwest of Whitlock, Henry Co., Tenn.	Mar. 11, 1972	Dickinson, Deck, Benedict
67	Clear Creek 2.5 air mi. southwest of Puryear, Henry Co., Tenn.	Mar. 11, 1972	Dickinson, Deck, Benedict
68	Unnamed tributary to Sandy Branch 1 mi. east of Midway, Henry Co., Tenn.	Mar. 11, 1972	Dickinson, Deck, Benedict

TABLE II (continued)

Number	Locality	Date	Collectors
69	Kennedy Branch of Cane Creek 1 air mi. west of Henry County line, Weakley Co., Tenn.	Mar. 31, 1972	Dickinson, Deck, Benedict
70	Cane Creek, 0.6 air mi. west of Henry County line, Weakley Co., Tenn.	Mar. 31, 1972	Dickinson, Deck, Benedict
71	Unnamed tributary to Cane Creek 1 air mi. west of Henry County line on county road 8256, Weakley Co., Tenn.	Mar. 31, 1972	Dickinson, Deck, Benedict
72	Cane Creek at county road 8256, Weakley Co., Tenn.	Mar. 31, 1972	Dickinson, Deck, Benedict
73	North Fork Obion River at Tenn. 69, Henry Co., Tenn.	Mar. 31, 1972	Dickinson, Deck, Benedict
74	Clear Creek 2.5 air mi. southwest of Puryear, Henry Co., Tenn.	Mar. 31, 1972	Dickinson, Deck, Benedict
75	North Fork Obion River 1 mi. east of Rives, Obion Co., Tenn.	Apr. 11, 1972	Dickinson, Deck, Benedict, Vaughn
76	Cypress Creek at county road 8009, Obion Co., Tenn.	Apr. 11, 1972	Dickinson, Deck, Benedict, Vaughn
77	Hoosier Creek 1/4 mi. south of Tenn 22, 2.5 air mi. west of Union City, Obion County, Tenn.	Apr. 18, 1972	Dickinson, Deck

TABLE II (continued)

Number	Locality	Date	Collectors
78	Hoosier Creek at road connecting U. S. 51 with old U. S. 51 northeast of Troy, Obion Co., Tenn.	Apr. 18, 1972	Dickinson, Deck
79	North Fork Obion River at U. S. 45E, Weakley Co., Tenn.	Apr. 25, 1972	Dickinson, Deck
80	Tributary to North Fork Obion River at bridge 2 air mi. north northwest of Whitlock, Henry Co., Tenn.	Apr. 27, 1972	Dickinson, Deck
81	Clear Creek 2.5 air mi. southwest of Puryear, Henry Co., Tenn.	Apr. 27, 1972	Dickinson, Deck
82	Mayo Creek at county road 8013, Weakley Co., Tenn.	Apr. 27, 1972	Dickinson, Deck
83	North Fork Obion River at county road 8191, Weakley Co., Tenn.	Apr. 27, 1972	Dickinson, Deck
84	Old river slough of North Fork Obion River 1.5 air mi. southwest of Tenn. 22 bridge, near Union City, Obion Co., Tenn.	May 2, 1972	Dickinson, Deck, Benedict, Brown
85	Old river slough of North Fork Obion River (east side of river) 1.5 air mi. south of Tenn. 22 bridge, near Union City, Obion Co., Tenn.	May 16, 1972	Dickinson, Deck, Benedict

TABLE II (continued)

Number	Locality	Date	Collectors
86	North Fork Obion River 1 mi. east of Rives, Obion Co., Tenn.	May 18, 1972	Dickinson, Deck
87	Tributary to North Fork Obion River at bridge 2 air mi. north northwest of Whitlock, Henry Co., Tenn.	June 2, 1972	Dickinson, Deck, Benedict
88	North Fork Obion River 3/4 mi. southeast of Jones Mill, Henry Co., Tenn.	June 6, 1972	Dickinson, Deck
89	North Fork Obion River at U. S. 45E, Weakley Co., Tenn.	June 6, 1972	Dickinson, Deck
90	North Fork Obion River at Tenn. 69, Henry Co., Tenn.	June 6, 1972	Dickinson, Deck
91	North Fork Obion River at Tenn. 69, Henry Co., Tenn.	Aug. 19, 1972	Sisk (Murray State Univ.)
92	Terrapin Creek 1 mi. east of Midway, Henry Co., Tenn.	June 3, 1972	Sisk (Murray State Univ.)
93	Middle Fork Obion River at Tenn. 22, Weakley Co., Tenn.	June 14, 1965	Jenkins (Roanoke College)
94	Thompson Creek at Tenn. 54, Weakley Co., Tenn.	Dec. 13, 1968	Bouchard, Starnes
95	Old Town Creek at Tenn. 54, Henry Co., Tenn.	Dec. 13, 1968	Bouchard, Starnes

TABLE II (continued)

Number	Locality	Date	Collectors
96	Middle Fork Obion River at Tenn. 22, Weakley Co., Tenn.	Aug. 28, 1969	Howell, Riggs, Stiles Etnier
97	Thompson Creek at Tenn. 54, Weakley Co., Tenn.	July 7, 1970	Bouchard et al.
98	Old Town Creek at Tenn. 54, Henry Co., Tenn.	July 7, 1970	Bouchard et al.
99	Middle Fork Obion River at Tenn. 22, Weakley Co., Tenn.	July 11, 1970	Bouchard et al.
100	Thompson Creek Branch west of Como, Weakley Co., Tenn.	July 6, 1971	Deck et al.
101	Cane Creek south of Mt. Pelia, Weakley Co., Tenn.	Oct. 5, 1971	Dickinson, Deck
102	Middle Fork Obion River 10 mi. southwest of Paris, Henry Co., Tenn.	Sept. 15, 1971	Douglas (Northeast Louisiana University)
103	Middle Fork Obion River 3.3 mi. southeast of Como, Henry Co., Tenn.	Sept. 14, 1971	Tennessee Game and Fish Commission
104	Middle Fork Obion River 4.25 mi. southwest of Como at bridge on county road 8019, Weakley Co., Tenn.	Sept. 14, 1971	Tennessee Game and Fish Commission

TABLE II (continued)

Number	Locality	Date	Collectors
105	Thompson Creek 3 mi. west of Como, 1/3 mi. south of Tenn. 54, Weakley Co., Tenn.	Sept. 15, 1971	Tennessee Game and Fish Commission
106	Capps Creek 2.5 mi. west of Como about 1/4 mi. downstream from county road 8019, Weakley Co.,Tenn.	Sept. 15, 1971	Tennessee Game and Fish Commission
107	Old channel of Middle Fork Obion River 2 air mi. north of Gleason, Weakley Co., Tenn.	Apr. 4, 1972	Deck, Brown, Huffstutter
108	Middle Fork Obion River at bridge farthest north, 2.3 air mi. north of Gleason, Weakley Co., Tenn.	Apr. 6, 1972	Deck, Brown, Huffstutter
109	Middle Fork Obion River 1/3 mi. upstream from bridge farthest north, 2 air mi. north of Gleason Weakley Co., Tenn.	Apr. 7, 1972	Deck, Brown, Huffstutter
110	Old channel of Middle Fork Obion River at county road 8019, Weakley Co., Tenn.	Apr. 12, 1972	Deck, Brown, Huffstutter
111	Steel Branch 1.5 air mi. south of Tenn. 54, 3 air mi. north of Gleason, Weakley Co., Tenn.	Apr. 6, 1972	Deck, Brown, Huffstutter

TABLE II (continued)

Number	Locality	Date	Collectors
112	Tumbling Creek 1 air mi. west of Henry County Line, Weakley Co., Tenn.	Apr. 20, 1972	Deck, Brown, Huffstutter
113	Unnamed tributary to Middle Fork Obion River 2 air mi. west of Henry County Line, Weakley Co., Tenn.	Apr. 20, 1972	Deck, Brown, Huffstutter
114	Unnamed tributary to Middle Fork Obion River at Tenn. 22, 2.5 air mi. southeast of Dresden, Weakley Co., Tenn.	May 4, 1972	Deck,Brown, Huffstutter
115	Middle Fork Obion River at county road 8092, Henry Co., Tenn.	May 11, 1972	Deck, Brown, Huffstutter
116	Middle Fork Obion River 3.5 air mi. southeast of Como, Henry Co., Tenn.	May 11, 1972	Deck, Brown, Huffstutter
117	Old Town Creek at Tenn. 54, Henry Co., Tenn.	May 11, 1972	Deck, Brown, Huffstutter
118	Old Town Creek at Briarpatch Lake, 1.5 air mi. north of Tenn. 54, Henry Co., Tenn.	May 25, 1972	Deck, Brown, Huffstutter
119	Old Town Creek at bridge 1/2 mi.north of Tenn. 54, Henry Co., Tenn.	May 25, 1972	Deck, Brown, Huffstutter
120	Middle Fork Obion River .3 air mi. east of junction with Trainer Creek, Henry Co., Tenn.	May 25, 1972	Deck, Brown, Huffstutter

TABLE II (continued)

Number	Locality	Date	Collectors
121	Cane Creek south of Mt. Pelia, Weakley Co., Tenn.	Sept. 27, 1972	Deck, Bell, Cox, Priest
122	Cane Creek 2 air mi. east of Obion County line, Weakley Co., Tenn.	Sept. 28, 1972	Deck, Bell, Cox
123	Middle Fork Obion River at U. S. 45E, Weakley Co., Tenn.	Oct. 5, 1972	Deck, Bell, Benedict, Cox, Priest
124	Spring Creek at Tenn. 54, Weakley Co., Tenn.	Fall, 1972	Deck et al.
125	Spring Creek at county road 8015, Weakley Co., Tenn.	Fall, 1972	Deck, Bell, Cox, Priest
126	Mud Creek 1.5 air mi. east of U. S. 45E, 2 air mi. northeast of Sharon, Weakley Co., Tenn.	Oct. 19, 1972	Deck, Bell, Cox, Priest
127	Spring Creek at county road 8018, Weakley Co., Tenn.	Fall, 1972	Deck, Bell, Cox, Priest
128	Mud Creek 3 air mi. west of Dresden, 1.5 air mi. south of Tenn. 22, Weakley Co., Tenn.	Fall, 1972	Deck et al.
129	Mud Creek at junction with Chestnut Branch, 1/4 mi. south of Tenn. 22, Weakley Co., Tenn.	Oct. 19, 1972	Deck, Bell, Cox, Priest

TABLE II (continued)

Number	Locality	Date	Collectors
130	Spring Creek at highway between Gleason and McKenzie, Weakley Co., Tenn.	Apr. 5, 1973	Deck, Smithson, Stokes
131	Caledonia Creek at county road 8092, Henry Co., Tenn.	Apr. 19, 1973	Deck, Stokes
132	Spring Creek 3 air mi. south of Gleason, 1 air mi. north of Tenn. 124, Weakley Co., Tenn.	Apr. 5, 1973	Deck, Smithson, Stokes
133	Spring Creek at county road 8015, Weakley Co., Tenn.	Apr. 5, 1973	Deck, Smithson, Stokes
134	Spring Creek at last bridge on headwaters, Henry Co., Tenn.	Apr. 19, 1973	Deck, Stokes
135	Trainer Creek at last bridge downstream before reaching Middle Fork Obion River, Henry Co., Tenn.	May 3, 1973	Deck, Smithson, Stokes
136	Middle Fork Obion River .3 air mi. east of junction with Trainer Creek, Henry Co., Tenn.	May 3, 1973	Deck, Smithson, Stokes
137	Tributary to Trainer Creek 2.3 air mi. northwest of Henry, Henry Co., Tenn.	May 3, 1973	Deck, Smithson, Stokes

TABLE II (continued)

Number	Locality	Date	Collectors
138	Thompson Creek Branch at county road 8019, Weakley Co., Tenn.	May 10, 1973	Deck, Smithson, Stokes
139	Thompson Creek at Tenn. 54, Weakley Co., Tenn.	May 10, 1973	Deck, Smithson, Stokes
140	West Branch of Old Town Creek 1.3 air mi. northeast of Como, Henry Co., Tenn.	May 17, 1973	Deck, Smithson, Stokes
141	Middle Fork Obion River at next to last bridge upstream, Henry Co., Tenn.	May 24, 1973	Deck, Smithson, Stokes
142	Middle Fork Obion River at last upstream bridge, 2 air mi. southwest of Paris, Henry Co., Tenn.	May 24, 1973	Deck, Smithson, Stokes
143	Garrett Lake (managed by Tenn. Game and Fish Comm.) on Thompson Creek headwaters, Weakley Co., Tenn.	June 18, 1973	Personal communication, Mr. Eugene Cobb (Tenn. Game and Fish Comm.)
144	Old river slough of Middle Fork Obion River at Tenn. 54, Weakley Co., Tenn.	June 16, 1973	Dickinson, Boronow, Clark
145	Carroll Lake tailwater at Tenn. 22, Carroll Co., Tenn.	Aug. 20, 1969	Howell, Riggs, Stiles, Etnier

TABLE II (continued)

Number	Locality	Date	Collectors
146	South Fork Obion River at Tenn. 22, Carroll Co., Tenn.	Aug. 26, 1969	Howell, Riggs, Stiles Etnier
147	Crooked Creek at Tenn. 22, Carroll Co., Tenn.	July 11, 1970	Bouchard et al.
148	Crooked Creek below Tenn. 77, Carroll Co., Tenn.	June 21, 1972	Tenn. Game and Fish Commission
149	Guins Creek at North Huntingdon, last bridge above mouth, Carroll Co., Tenn.	June 19, 1972	Tenn. Game and Fish Commission
150	Guins Creek above and below most upstream bridge, Henry Co., Tenn.	June 20, 1972	Tenn. Game and Fish Commission
151	Clear Creek above and below last bridge above mouth, Carroll Co., Tenn.	June 22, 1972	Tenn. Game and Fish Commission
152	Carver Creek below last bridge above mouth, Carroll Co., Tenn.	June 20, 1972	Tenn. Game and Fish Commission
153	DeMoss Creek below last bridge above mouth, Carroll Co., Tenn.	June 22, 1972	Tenn. Game and Fish Commission
154	Little Beaver Creek at last bridge above mouth, Carroll Co., Tenn.	June 20, 1972	Tenn. Game and Fish Commission

TABLE II (continued)

Number	Locality	Date	Collectors
155	Beaver Creek below Westport Road bridge, Carroll Co., Tenn.	June 21, 1972	Tenn. Game and Fish Commission
156	Guins Creek at county road 8038, Carroll Co., Tenn.	Aug. 5, 1972	Dickinson, Deck, Benedict
157	Carver Creek below last bridge above mouth, Carroll Co., Tenn.	Aug. 5, 1972	Dickinson, Deck, Benedict
158	Crooked Creek 1 mi. south of Tenn. 77, Carroll Co., Tenn.	Aug. 5, 1972	Dickinson, Deck Benedict
159	Backwater of South Fork Obion River at Tenn. 76, Carroll Co., Tenn.	June 15, 1973	Dickinson, Boronow, Clark
160	Backwater of Dolan Creek near South Fork Obion River, 4.5 air mi. southeast of Greenfield at Gibson County line, Weakley Co., Tenn.	June 16, 1973	Dickinson, Boronow, Clark
161	Little Beaver Creek at bridge 1.5 air mi. east southeast of Huntingdon, Carroll Co., Tenn.	June 17, 1973	Dickinson, Boronow, Clark, Deck
162	Humble Branch of Beaver Creek 3 air mi. east of Tenn. 22, Carroll Co., Tenn.	June 17, 1973	Dickinson, Boronow, Clark, Deck

TABLE II (continued)

Number	Locality	Date	Collectors
163	Carroll Lake (managed by Tenn. Game and Fish Comm.) on Clear Creek headwaters, Carroll Co., Tenn.	June 18, 1973	Personal communication, Mr. Eugene Cobb (Tenn. Game and Fish Comm.)
164	Buggy Branch of Rutherford Fork Obion River at county road 8037, Carroll Co., Tenn.	Aug. 5, 1972	Dickinson, Deck, Benedict
165	Rutherford Fork Obion River 1/2 mi. east of Kenton, Obion Co., Tenn.	June 7, 1973	Dickinson, Deck
166	Rutherford Fork Obion River at bridge 1 air mi. north of Henderson County line, Carroll Co., Tenn.	June 15, 1973	Dickinson, Boronow, Clark
167	Cane Creek 3.3 air mi. north of Henderson County line, Carroll Co., Tenn.	June 15, 1973	Dickinson, Boronow, Clark
168	Rutherford Fork Obion River 1.5 air mi. east of U. S. 70, Carroll Co., Tenn.	June 15, 1973	Dickinson, Boronow, Clark
169	Rutherford Fork Obion River at county road 8036, Carroll Co., Tenn.	June 15, 1973	Dickinson, Boronow, Clark
170	Rutherford Fork Obion River at county road 8179, Gibson Co., Tenn.	June 16, 1973	Dickinson, Boronow, Clark

TABLE II (continued)

Number	Locality	Date	Collectors
171	Obion River (Old Obion River), Turnpike Levee, about 4.5 air mi. southeast of Troy, Obion Co., Tenn.	Aug. 21, 1961	Tenn. Game and Fish Commission
172	Old Obion River channel at new concrete bridge, Turnpike Levee, about 4.5 air mi. southeast of Troy, Obion Co., Tenn.	Sept. 22, 1971	Tenn. Game and Fish Commission
173	Obion River (new channel), Turnpike Levee, about 5 air mi. southeast of Troy, Obion Co., Tenn.	July 14, 1972	Tenn. Game and Fish Commission
174	Obion River at Tenn. 78, about 8 mi. north northwest of Dyersburg, Dyer Co., Tenn.	Sept. 11, 1967	Swift (Los Angeles County Museum)
175	Stream at U. S. 51, 1.5 mi. south of Troy, Obion Co., Tenn.	Mar. 25, 1967	Etnier, Stiles, Goodwin
176	Richland Creek at county road 8005 Obion Co., Tenn.	Dec. 15, 1968	Bouchard, Starnes
177	Richland Creek at county road 8005 Obion Co., Tenn.	Mar. 10, 1968	Bouchard, Mackiewicz, Smythe, Etnier
178	Mill Creek at U. S. 51, Obion Co., Tenn.	June 3, 1972	Dickinson, Dean

TABLE II (continued)

Number	Locality	Date	Collectors
179	Roadside drainage ditch .4 mi. east of Obion River, 1.8 air mi. south of Tenn. 20, Dyer Co., Tenn.	Aug. 11, 1972	U. T. Ichthyology Class
180	Obion River 2 mi. east of Tenn. 78, near Bogota, Dyer Co., Tenn.	Oct. 9, 1972	Dickinson, Etnier, Berry, Henson, Oakberg
181	Obion River (old river bed) near Turnpike Levee, about 4.5 air mi. southeast of Troy, Obion Co., Tenn.	June 7, 1973	Dickinson, Deck
182	Mill Creek about 1 mi. east of Obion, Obion Co., Tenn.	June 7, 1973	Dickinson, Deck
183	Cool Springs Branch 2.5 air mi. south of Obion Co. line, Gibson Co., Tenn.	June 7, 1973	Dickinson, Deck

[a]Numbers 1 through 39 -- Reelfoot Lake, Running Reelfoot Bayou, and their tributaries
Numbers 40 through 92 -- North Fork Obion River
Numbers 93 through 144 -- Middle Fork Obion River
Numbers 145 through 163 -- South Fork Obion River
Numbers 164 through 170 -- Rutherford Fork Obion River
Numbers 171 through 183 -- Main Obion River

VITA

William Clark Dickinson was born in Murray, Kentucky, on June 5, 1946. He resided in Ripley, Tennessee, from 1949 to 1964. He attended Ripley Grammar School and later Ripley High School, from which he graduated in 1964. In June 1968, he received the Bachelor of Science degree in Education, with an endorsement in biological science, from the University of Tennessee at Martin. During the next four years he taught in public school systems in Lauderdale and Obion Counties. He entered the Graduate School at the University of Tennessee in June 1970, and continued during the summers of 1971 and 1972. In September 1972, he began full time graduate work, and received the Master of Science degree in Zoology in August of 1973. He is married to the former Cathy Jones of Memphis, Tennessee.