FISHES OF THE KIAMICHI RIVER, OKLAHOMA

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A description of the Kiamichi River system and a brief history of ichthyological collecting within this drainage introduce an annotated checklist of 98 fish species with remarks on the distribution and probable abundance of each species. A total of 141 collections included 16 families and 88 species, of which 15 were new records for species of the Kiamichi River drainage.

KIAMICHI RIVER SYSTEMS

The source of the Kiamichi River is in the Kiamichi and Ouachita mountain ranges of southeastern LeFlore County, Oklahoma. It drains approximately 1,830 square miles, and flows in a westerly direction into Pushmataha County near the town of Clayton and then south by southeast through Choctaw County to its confluence with the Red River.

The Kiamichi River Basin is crescent shaped, 110 miles long, and varies in width from 5 to 30 miles. The stream flows through a succession of widely contrasting reaches, alternating from comparatively wide valleys to steep gorges having banks 80 to 90 ft in height. The river has a large number of tributaries; the major ones are Jackfork, Buck, Tenmile, Buffalo, Cedar, Gates, Anderson, and Pine creeks. The gradient varies from 1.5 ft/mile near the Pushmataha-Choctaw County line to more than 100 ft/mile near the source. The major part of the stream has an average gradient to 2.5 ft/mile. The southern section of the basin lies in the dissected Gulf Coastal Plain region, where the river meanders along a wide alluvial valley at an elevation of 425 ft, with gradient of 0.8 ft/mile. A combination of trellis and dendritic types of drainage patterns characterize the Kiamichi River and its tributaries. Stream flow of the Kiamichi River is fairly uniform, and consists of a series of pools and shoals during low rainfall. Flooding in the lower reaches of the river is caused usually by prolonged storms (2-6 days) of moderate to heavy rainfall. Springs are common throughout the drainage.

The Kiamichi River basin is situated within two major geomorphic provinces. The Ouachita-Mountain Province of the headwater region consists of long and sinuous mountain ridges of broadly folded Mississippian and Pennsylvanian sandstones towering above subparallel shale valleys. The lower drainage, which lies in the Dissected Coastal Plains Province and is composed of soft, south-dipping Cretaceous sands, gravels, and clays of the Gulf Coastal Plain, is slightly dissected by streams.

The principle vegetative types are oak-pine forest along the upper watershed and oak-hickory in the lower. In the lower drainage, there is a small section of tall-grass prairie and a large area of postoak-blackjack forest near the mouth of the river.

In order to survey the distribution of each species, the drainage was divided into three major sections: the headwaters, middle river, and lower river. The headwaters consist of the drainage from the source east of Big Cedar to the town of Tuskahoma. This section and its tributaries are composed of clear, fast-flowing water with large sandstone rocks, sand, and gravel. Many small falls and riffles with small, shallow pools between riffles are also present. Most tributaries in this area are small and flow only during rainy seasons. The middle section of the river, which begins at Tuskahoma and continues east of Antlers, is characterized by long deep pools with short riffles between the pools. The river becomes progressively turbid below Clayton, and is usually muddy below Antlers. The flow is more sluggish here and bottom substrate is fine gravel, silt, or mud. Within the river, dead trees and brush are common. The tributaries on the west side of the river are long, large, and slow-moving, with dense aquatic vegetation. The substrate is mainly clay or fine sediments. Tributaries on the east side are low-order streams which are short in length, clear, and fastflowing, with large rock and gravel substrates. The river below Antlers to the mouth at the

Red River has been designated as the lower segment. This area is characterized by a series of deep pools and sluggish flow. In areas where rock strata are uplifted, riffles exist. Dead trees and log drifts are common. Tributaries entering this segment of the Kiamichi are sluggish, with long pools and few riffles. Substrates are composed of clay and fine sediments. Most of these tributaries support dense populations of aquatic plants.

ICHTHYOLOGICAL COLLECTIONS

This study reviews investigations of the fish fauna of the Kiamichi River system in Oklahoma. Collections which provide data for this paper were made by the authors during 1972-1973, and included 141 sampling stations (Fig. 1). Data from collections by G. A. Moore, C. D. Riggs, A. I. Ortenburger, H. L. Lindsay, R. J. Miller, O. Ming, F. Wade, M. Power, J. M. Paden, G. E. Hall, A. D. Linder, L. V. Smith, A. Houser, and H. McCarley were also included. In addition, museum collections at the University of Oklahoma, Oklahoma State University, Southeastern State College, and the Natural History Museum of New York were examined.

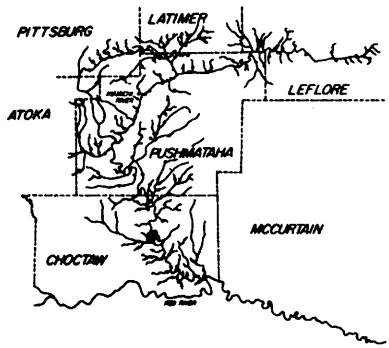

FIGURE 1. The Kiamichi River drainage system. Collecting sites are indicated by closed-circles.

Collections during 1972-1973 were the last to be made before completion of the Hugo Reservoir and subsequent inundation of riverine habitats. For this analysis, 23 collections were made within the river system above and below the Hugo Dam, 28 collections were made from the area to be inundated by Hugo, Clayton, and Tuskahoma reservoirs, and 84 collections were made from tributary streams entering the main river from its headwaters to its confluence with the Red River. In addition, 6 collections from swamps, ponds, and river-backwaters in the drainage were included in the study. Collections were made by various methods: gill nets, minnow seines, and electrofishing. Most collections from the lower, deep-water areas were made with gill nets, while in tributaries and shallow-water areas electrofishing and minnow seines were used. All specimens were placed in 10% formalin, washed, transferred to alcohol, and catalogued into the University of Oklahoma Museum of Zoology.

Seth Meek (1) made the first known fish collections from the Kiamichi River drainage in 1894. He collected at Walnut Creek near the town of Albion and at Flat Creek near Goodland, which is north of Hugo. Meek collected 36 species of fishes during his visit to the Kiamichi drainage.

In 1925 and 1927, the University of Oklahoma Biological Survey conducted two surveys, led by Dr. A. I. Ortenburger, in which a total of 21 species was collected in the headwaters near Tuskahoma and 17 species were recorded from that site (2). In 1927, Hubbs and Ortenburger reported 19 species from 13 localities west of the Arkansas state line (3). During the 1930's several other collections were made by M. Powers during surveys by the Oklahoma Biological Survey. Dr. G. A. Moore made many collections in Gates Creek and the Kiamichi River during the period from 1940 to 1965. Many other collections were made by W. A. Carter and J. M. Paden in the 1940's. During the 1950's, C. D. Riggs, A. P. Blair, G. E. Hall, A. D. Linder, and H. W. McCarley added collections of fishes from the drainage, mostly from tributaries. In 1963, a number of collections were made by H. Lindsay and L. Bates for the Biological Survey at the University of Oklahoma. O. Ming made a few collections of fishes from the area between 1962 and 1966. Recent collections were added by L. V. Smith and J. Pigg in 1967, R. J. Miller in 1969 and 1970, and F. W. Wade and J. Pigg in 1971. The collection by L. V. Smith in 1967 is located in the New York Natural History Museum.

In the following list of species of the

Kiamichi River drainage, the number of sampling stations at which a species occurred and the number of specimens collected by the authors are indicated in parenthesis. Dates underscored indicate times of known collections not reported in the literature.

ANNOTATED CHECKLIST

PETROMYZONTIDAE. Lampreys

1. *Ichthyomyzon gagei* Hubbs and Trautman. Southern brook lamprey (1-1). One specimen of this species was collected near Stanley by the authors. G. A. Moore, M. B. Trautman, and M. R. Curd collected the first specimen in Gates Creek near Fort Towson in 1950. A. P. Blair collected an ammocoete of questionable identity from the Kiamichi River near Big Cedar in 1953 (4). Rare in drainage.

POLYODONTIDAE. Paddlefishes

2. *Polyodon spathula* (Walbaum). Paddlefish (2-6). Six large paddlefish were collected by the authors in the lower sections of the Kiamichi River with gill nets. The paddlefish is taken regularly in gill nets near the mouth of the river by net-fishermen. The first state record for the paddlefish was in 1925, from the Kiamichi River by Ortenburger near Tuskahoma (2). Also reported by Hubbs and Ortenburger in 1929 (3).

LEPISOSTEIDAE. Gars

3. *Lepisosteus oculatus* (Winchell). Spotted gar (3-19). This species was common in the lower segment of the river, especially in areas of dense aquatic vegetation. Ratio of spotted to shortnose gar was 1:1 in this survey. First collected by Ming 1963 near Whitesboro, Oklahoma.

4. *Lepisosteus osseus* (Linnaeus). Longnose gar (6-61). This species was the most abundant gar in the Kiamichi River, as it was also in the lower river and tailwaters of Hugo Dam. The ratio of longnose gar to other species of gar was 3:1:1. First reported by Hubbs and Ortenburger (3).

5. *Lepisosteus platostomus* Rafinesque. Shortnose gar (3-19). Common in lower river and tributaries. This represents the first record of this species in the Kiamichi River.

AMIIDAE. Bowfin

6. *Amia calva* Linnaeus. Bowfin (3-5). Five specimens were collected by the authors during 1971-72. No other known records of this species in the Kiamichi River system have been reported. The bowfin was collected in the sluggish-flowing lower tributaries of the river's flood plain over muddy substrates. Each area was characterized by dense stands of dead trees and aquatic vegetation. Rare in the drainage system.

CLUPEIDAE. Herrings

7. *Alosa chrysochloris* (Rafinesque). Skipjack herring (2-10). Collected in gill nets in the lower regions of the river, with some occurring in mid-river areas near Antlers. Common only near the river mouth.

8. *Dorosoma petenense* (Günther). Threadfin shad (1-1). One specimen was collected by the authors in the Kiamichi River in 1972. Rare in the Kiamichi, but common in the Red River.

9. *Dorosoma cepedianum* (Lesueur). Gizzard shad (16-430). The gizzard shad was found to be common in the main river channel, tributary streams, and backwater ponds. It was rare in headwater tributaries. Collected by Ming 1963.

HIODONTIDAE. Mooneyes

10. *Hiodon alosoides* (Rafinesque). Goldeye (1-1). Uncommon; only one specimen was collected, in a gill net, by the authors near mouth of the river. Inhabits the lower segment of the river. Common in Red River.

11. *Hiodon tergisus* Lesueur. Mooneye (2-3). Authors collected three, with gill nets, in the lower sections of the river. Rare in the Kiamichi drainage.

ESOCIDAE. Pickerel

12. *Esox americanus* Gmelin. Grass pickerel (43-86). Present in one third of the collections, this species occurred mainly in mid-water tributaries, with

heavy plant growth and sluggish flowing waters. Common also in swamps and ponds in the flood plain of the river. Rare in headwaters and main river. First reported by Meek as *Lucius vermiculatus* (1). Later reported by Ortenburger and Hubbs (2) and Hubbs and Ortenburger (3). Also collected by Powell in 1931 and Moore and co-workers in 1950.

13. *Esox niger* Lesueur. Chain pickerel (0-0). Reported by Miller and Robinson (5) as occurring in Pushmataha County. Extremely rare within the Kiamichi River drainage. Also reported by Meek (1) in the Red River as *Lucius reticulatus.*

CYPRINIDAE. Minnows

14. *Compostoma anomalum* (Rafinesque). Stoneroller (81-1509). Abundant in the mid-river section and clear-water tributaries. Rare in the lower and headwater sections of the drainage. Reported by Meek (1), Hubbs and Ortenburger (2), and Ortenburger and Hubbs (3).

15. *Carassius auratus* (Linnaeus). Goldfish (0-0). Ming collected several specimens from Gates Creek in 1963, probably as a result of bait-bucket introductions. Also reported from Raymond Gary Lake by Bennett and Brown during a rotenone survey in 1967 (6).

16. *Cyprinus carpio* Linnaeus. Carp (11-50). Common throughout river and lower tributaries; rare in the headwaters. Collected by Moore 1957 in Gates Creek and Ming 1963 in Lake Raymond Gary. Reported in Raymond Gary Lake by Bennett and Brown in 1967 (6).

17. *Hybognathus nuchalis* Agassiz. Silvery minnow (8-158). Prefers quiet water in pools and backwater areas; common in the lower tributaries of the river. First collected by Moore, Trautman, and Curd in Gates Creek in 1950.

18. *Hybognathus placitus* Girard. Plains minnow (0-0). Collected in 1954 by Riggs in the Jackfork tributary. Common in the Red River, but rare in the Kiamichi River drainage.

19. *Hybognathus hayi* Jordan. Cypress minnow (1-1). This is the second report of this species occurring in Oklahoma. The authors collected one in a gill net near the mouth of the Kiamichi River; it was identified by M. M. Stevenson at U.O.M.Z.

20. *Notemigonus crysoleucas* Rafinesque. Golden shiner (30-258). Common throughout the drainage, but very abundant in the quiet water of ponds, swamps and the large sluggish tributaries of the lowlands. Collected by University of Oklahoma Biological Survey 1951, Hall 1953, and Moore et al. 1963.

21. *Notropis amnis* Hubbs and Greene. Pallid shiner (8-32). Common in large, clean, mid-water tributaries and the main river. Rare in headwaters and near the mouth. Moore 1947 collected this species south of Talihina in the Kiamichi River. Meek (1) reported it as *Hybopsis amblops.*

22. *Notropis atherinoides* Rafinesque. Emerald shiner (4-77). Rare, except in the headwaters of the river. Reported by Meek (1) as *N. dilectus;* also reported by Ortenburger and Hubbs (2). Collected by Moore 1948 in Gates Creek and Riggs 1954 in Dry Creek. Rare in this drainage.

23. *Notropis atrocaudalis* Everman. Blackspot shiner (8-54). Common only in lowland tributaries on the east side of the river; rare elsewhere in the drainage. Collections by Riggs, 1954. University of Oklahoma Biological Survey 1955, Hall 1963, Lindsay and Bates 1963. Moore 1965 collected large numbers of this species from Gates Creek.

24. *Notropis blennius* (Girard). River shiner (0-0). Collected only by Meek near Goodland (1). Very rare in river system.

25. *Notropis boops* Gilbert. Bigeye shiner (84-3733). A common species in the Kiamichi River drainage; found in most areas except ponds and swamps. Rare in lower segments of the river. First reported by Ortenburger and Hubbs (2) and Hubbs and Ortenburger (3).

26. *Notropis buchanani* Meek. Ghost shiner (2-301). This notropid was collected in two locations, both in backwaters of the sluggish middle segment of the river.

27. *Notropis camurus* (Jordan and Meek). Bluntface shiner (0-0). Collected only by Riggs 1954 in Jackfork Creek. Rare in the drainage.

28. *Opsopoeodus emiliae* Hay. Pugnose minnow (13-28). Rare, but found in the middle-river area and clear lowland tributaries. Reported by Meek (1) and collected by Moore 1948 in Gates Creek.

29. *Notropis fumeus* Evermann. Ribbon shiner (9-1971). Abundant in the middle-river section near Stanley and in low-gradient streams, but rare elsewhere. First collected by Moore in Gates Creek in 1948 and Riggs in Mill Creek 1951.

30. *Notropis lutrensis* (Baird and Girard). Red shiner (7-136). Rare in the system except in the typical flood-plain tributaries near the mouth of the river. First collected by Moore et al., 1950.

31. *Notropis ortenburgeri* Hubbs. Kiamichi shiner (49-2226). Very common in all areas of the river except near the mouth, and lowland tributaries. Usually associated with small to moderate-sized upland streams. Reported by Hubbs and Ortenburger (3) and collected by University of Oklahoma Biological Survey in 1931 and Moore et al. in 1947.

32. *Notropis perpallidus* Hubbs and Black. Colorless shiner (2-9). A rare cyprinid; only the second and third collections were made by the authors in the Stanley region of the river in riffle areas of gravel substrates. One collection was made in 1965 by a University of Oklahoma Biological Station ichthyology class.

33. *Notropis rubellus* (Agassiz). Rosyface shiner (7-461). Common in the mid-river sections and tributaries with gravel substrates. Rare in headwaters and absent in lower regions of the river. Collected by Riggs 1959 in Dry Creek and Moore 1963.

34. *Notropis shumardi* (Girard). Silverband shiner (1-6). Six specimens were collected in the lower segment of Bird Creek. This shiner is restricted primarily to the large river and is often found in extremely turbid water.

35. *Notropis umbratilis* (Girard). Redfin shiner (74-4094). Probably the most abundant and widely distributed minnow in the drainage. Reported first by Meek (1), Ortenburger and Hubbs (2), and Hubbs and Ortenburger (3). Collected by Moore in 1948, and Riggs in 1951.

36. *Notropis venustus* (Girard). Blacktail shiner (23-383). Primarily restricted to the lower tributaries. Rare in headwaters and tributaries. Reported by Meek (1) as very common and collected by Moore in 1948.

37. *Notropis volucellus* (Cope). Mimic shiner (15-863). Common only in the middle section of the river in areas with gravel substrates. Rare elsewhere in drainage. Collected by Carter and Poole in 1947 and Moore in 1963.

38. *Notropis whipplei* (Girard). Steelcolor shiner (32-508). Common in tributaries of the headwaters and middle sections of the river. Most common in large to medium-sized streams with clear water. Reported by Meek (1) and Ortenburger and Hubbs (2).

39. *Pimephales notatus* (Rafinesque). Bluntnose minnow (33-516). Common throughout the drainage except in the lower regions near the mouth. Apparently rare in lower tributaries. Reported first by Meek (1), Ortenburger and Hubbs (2), and Hubbs and Ortenburger (3).

40. *Pimephales vigilax* (Baird and Girard.) Bullhead minnow (12-71). Rare in upper and middle areas of the drainage, but common in lower regions, especially in pools and back-water areas. Appears to replace *P. notatus* in the lower drainage. Reported by Meek (1) as *Cliola vigilax*. Collected by Riggs in 1951, near Sawyer, and Moore in 1963.

41. *Pimephales promelas* (Rafinesque). Fathead minnow (0-0). Apparently

rare throughout the drainage; not collected in present survey. Bennett and Brown (6) reported it from Raymond Gary Lake, in 1967, where it may have been a bait-bucket introduction.

42. *Hybopsis aestivalis* (Girard). Speckled chub (0-0). Collected by Moore in 1955 in the river near Clayton. Rare in the drainage.

CATOSTOMIDAE. Suckers

43. *Carpiodes carpio* (Rafinesque). River carpsucker (5-78). Common in the lower and middle section of the river, but rare in headwaters. Very abundant below Hugo Dam. Collected by Ming in 1963.

44. *Carpiodes velifer* (Rafinesque). High-fin carpsucker (1-4). Authors collected four specimens in the tailwaters of Hugo Dam. Presently rare in the drainage, although Meek (1) reported the species to be common.

45. *Erimyzon oblongus* (Mitchell). Creek chubsucker (19-51). Occasional in the lower segment and tributaries of the river. Common in headwater tributaries. Reported by Meek (1) as *Erimyzon sucetta*. Also reported by Hubbs and Ortenburger (3) among others.

46. *Cycleptus elongatus* (Lesueur). Blue sucker (2-38). The authors collected large numbers of this sucker, in gill nets, below Hugo Dam in the tailwaters. Also common near the river's mouth. This is the first known record of this species in the Kiamichi.

47. *Ictiobus bubalus* (Rafinesque). Smallmouth buffalo (6-17). Common in the tailwaters of Hugo Dam, and in the lower segment of the river. Collected by Ming in 1963 near the town of Whitesboro.

48. *Ictiobus cyprinellus* (Valenciennes). Bigmouth buffalo (4-58). Large numbers were obtained in gill nets by net-fishermen in the lower sections of the river. Authors collected large numbers of this species in the tailwaters of Hugo Dam. Collected by Moore, in 1957, in Gates Creek and Ming, in 1963, in Kiamichi River.

49. *Ictiobus niger* (Rafinesque). Black buffalo (1-2). Rare in the Kiamichi River; collected only from tailwaters of Hugo Dam. The least abundant of the three recorded species of buffalo.

50. *Minytrema melanops* (Rafinesque). Spotted sucker (10-26). Common in slow-moving, headwater tributaries. Found throughout the drainage. Associated with *Moxostoma erythrurum* in most tributaries. The first specimen collected in the state was by Meek (1) from the Poteau River. He found it also in the Kiamichi River basin near Goodland. Also reported by Ortenburger and Hubbs (2) and Hubbs and Ortenburger (3).

51. *Moxostoma carinatum* (Cope). River redhorse (1-1). One specimen was collected near Stanley in the middle-river section. This is the only known record of this species from the Kiamichi River.

52. *Moxostoma erythrurum* (Rafinesque). Golden redhorse (9-12). Found in clear streams in the headwaters of the Kiamichi River. Reported by Meek (1) as *M. macrolepidotum duquesnei;* reported by Hubbs and Ortenburger (3).

ICTALURIDAE. Catfishes

53. *Ictalurus furcatus* (Lesueur). Blue catfish (2-4). Rare in the river. Least numerous of the three sport species of catfishes. First collections by Lindsay and Bates in 1963.

54. *Ictalurus melas* (Rafinesque). Black bullhead (14-472). Common in the lower streams; less common in the river. Very numerous in swamps and ponds in river flood plains. Reported by Meek (1), Ortenburger and Hubbs (2), and Hubbs and Ortenburger (3).

55. *Ictalurus natalis* (Lesueur). Yellow bullhead (38-110). Common throughout the drainage. More widely distributed than the black bullhead. Usually associated with clear water conditions. Reported by Ortenburger and Hubbs (2) and others.

56. *Ictalurus nebulosus* (Lesueur). Brown bullhead (0-0). The only record is one specimen collected in the Kiamichi River by Meek (1), who reported it as *Ameiurus nebulosus.*

57. *Ictalurus punctatus* (Rafinesque). Channel catfish (17-198). The most abundant catfish in the drainage, this species has been stocked by the Oklahoma Department of Wildlife Conservation in Hugo Reservoir. Very common in the tailwaters of Hugo Dam. Reported by Ortenburger and Hubbs (2).

58. *Pylodictis olivaris* Rafinesque. Flathead catfish (3-9). Rare in most of the drainage system, but common in deep water in the lower segment of the river. Many are caught by net-fishermen in the river near its mouth. Reported by Meek (1) as *Leptops olivaris;* collected by Moore in 1950.

59. *Noturus gyrinus* (Mitchell). Tadpole madtom (2-2). Rare, throughout drainage. Collected twice in a small spring-fed stream in the Gates Creek area by the authors. Collected by Moore in 1955 and Ming in 1963.

60. *Noturus nocturnus* (Jordan and Gilbert). Freckled madtom (9-18). Rare; collected only in the middle-river section near Stanley, and in lower tributary streams near the mouth of river. Collected by Meek (1) from Walnut Creek; collected by Moore in 1950.

ANGUILLIDAE. Eels

61. *Anguilla rostrata* (Lesueur). American eel (4-5). Rare, but occurs in both clear-water streams and the deeper muddy waters near the mouth. Ming, in 1963, collected one near Whitesboro, Oklahoma in the Kiamichi River.

CYPRINODONTIDAE. Topminnows or Killifishes

62. *Fundulus notatus* (Rafinesque). Blackstripe topminnow (53-386). Common in quiet-water areas of the more permanent tributaries. Occurred in one-third of the sampling stations. Rare in the river itself. First reported by Meek (1) as *Zygonectes notatus;* also Ortenburger and Hubbs (3).

63. *Fundulus olivaceus* (Storer). Blackspotted topminnow (29-123). Common in headwaters and middle river sections and tributaries, but rare in the lower areas of the drainage. Collected by Moore in 1948 and Riggs in 1959.

POECILIDIE. Livebearers

64. *Gambusia affinis* (Baird and Girard). Mosquitofish (79-1854). Very numerous throughout the drainage. Found in sluggish streams, swamps, ponds and quiet-water areas of the river. First reported by Meek (1) and Ortenburger and Hubbs (2).

APHREDODERIDAE. Pirate perch

65. *Aphredoderus sayanus* (Gilliams). Pirate perch (12-26). Fairly common in swamps, sluggish streams, and ponds of the lower sections of the river. Widely distributed throughout drainage. First collected by Moore in 1958 and again by Hall in 1953, both in Gates Creek. Also reported in Raymond Gary Lake by Bennett and Brown (6).

SERRANIDAE. Basses

66. *Morone chrysops* (Rafinesque). White bass (12-27). Occurs in lower and middle sections of the river. Absent from tributaries.

CENTRARCHIDAE. Sunfishes

67. *Chaenobryttus gulosus* (Cuvier). Warmouth sunfish (12-27). Common in quiet sluggish streams of the lower drainage, swamps, and backwaters of the river. Reported by Ortenburger and Hubbs (2); collected by Moore in 1950 and Ming in 1963.

68. *Lepomis cyanellus* Rafinesque. Green sunfish (101-1439). One of the most numerous species; widely distributed throughout the entire drainage except in the lower segments of the river main channel. Very common in small, clear streams. Reported by Meek (1), Ortenburger and Hubbs (2), and and Ortenburger (3).

69. *Lepomis humilis* (Girard). Orange-spotted sunfish (22-66). Common in some of the silty sluggish streams and swamps of the middle and lower river segments. Meek (1) lists this species as the most common sunfish in the drainage. Reported by Ortenburger and Hubbs (2), as *Allotis humilis,* from near Tuskahoma.

70. *Lepomis macrochirus* Rafinesque. Bluegill (77-621). The third most abundant sunfish; widely distributed throughout

the drainage. Common in streams. Reported by Meek (1) as *Lepomis pallidus*, Ortenburger and Hubbs (2), and Hubbs and Ortenburger (3).

71. *Lepomis marginatus* (Holbrook). Dollar sunfish (0-0). One specimen collected by Ming in 1963 three miles east of Whitesboro.

72. *Lepomis megalotis* (Rafinesque). Longear sunfish (109-1004). The most common sunfish in the Kiamichi River drainage; occurred in more samples than any other species. Widely distributed in all waters throughout the drainage. Reported by Meek (1), Ortenburger and Hubbs (2), and Hubbs and Ortenburger (3).

73. *Lepomis microlophus* (Gunther). Redear sunfish (8-68). Rare except in Gates Creek below Raymond Gary Lake and in several swamps and ponds in the lower sections of the drainage. Collected by Ming in 1963 and Bates and Lindsay in 1963.

74. *Lepomis punctatus* (Valenciennes). Spotted sunfish (0-0). Rare throughout drainage. Ming in 1963 collected three specimens from Raymond Gary Lake. Bennett and Brown reported many specimens of this sunfish after a rotenone survey of Raymond Gary Lake in 1967 (6).

75. *Micropterus dolomieui* Lacépède. Smallmouth bass (2-4). Rare; only four specimens were collected, one below Raymond Gary Lake in Gates Creek and three in the river near Stanley. This is the first known report of the species from this drainage. Samples were from areas of clear fast-flowing waters.

76. *Micropterus punctulatus* (Rafinesque). Spotted bass (45-114). Numerous in the tributaries with clear water and rocky substrates. Less common in the river. Reported by Ortenburger and Hubbs (3) as *M. pseudaplites*.

77. *Micropterus salmoides* (Lacépède). Largemouth bass (41-220). Very common in all areas, including the area to be inundated by Hugo Reservoir. There has been heavy stocking of this species in the lower Kiamichi River. Reported by Meek (1), Ortenburger and Hubbs (2), and Hubbs and Ortenburger (3). In addition, there has been stocking of *Micropterus salmoides floridanus*, the Florida largemouth bass, also stocked in the Hugo Reservoir in 1973.

78. *Pomoxis annularis* Rafinesque. White crappie (19-120). Common in lower river and tailwaters below Hugo Dam. Rare in headwaters of the drainage. Reported by Meek (1) to be scarce.

79. *Pomoxis nigromaculatus* (Lesueur). Black crappie (5-14). Rare, except in swamps and backwaters in the lower sections of the river. This is the first known report of this species in the Kiamichi River. Also reported from Raymond Gary Lake by Bennett and Brown (6).

ELASSOMATIDAE. Pygmy sunfishes

80. *Elassoma zonatum* Jordan. Banded pygmy sunfish (4-44). Rare, except in the area at the upper end of Raymond Gary Lake, where taken by Moore in 1948, and an area four miles north of Hugo, which will be inundated by Hugo Lake. Found only in spring runs and swampy pools with dense aquatic vegetation.

PERCIDAE. Perches

81. *Ammocrypta vivax* Hay. Scaly sand darter (1-1). One specimen was collected by Smith and Pigg east of Antlers in 1967. Moore also collected one specimen in the Kiamichi River near the town of Kiamichi. Rare throughout the drainage.

82. *Etheostoma chlorosomum* (Hay). Bluntnose darter (5-9). Confined primarily to quiet backwater pools of the river. Reported by Meek (1) and collected in Gates Creek by Moore in 1965. Scarce in drainage.

83. *Etheostoma gracile* (Girard). Slough darter (24-62). Common in sluggish flowing lowland tributaries and swamps in the lower flood plain of the river which are rich in organic debris and vegetation. Reported by Meek (1) as *Etheostoma fusiforme*, and by Ortenburger and Hubbs (2) as *Hololepis fusiforme*.

84. *Etheostoma microperca* Jordan and Gilbert. Least darter (0-0). Rare in this

drainage. Only records are by Meek (1).

85. *Etheostoma nigrum* Rafinesque. Johnny darter (5-5). Occurs uncommonly in headwaters of the river and headwater tributaries. Reported by Hubbs and Ortenburger (3) and collected by Moore in 1943.

86. *Etheostoma parvipinne* Gilbert and Swain. Goldstripe darter (1-1). Rare; occurs only in certain areas of the drainage, e.g., in Gates Creek below Raymond Gary Lake. Moore and Cross (7) collected this species the first time in the state from the same area.

87. *Etheostoma proeliare* (Hay). Cypress darter (3-8). Found in both clear headwater streams and in sluggish-flowing tributaries of the lower river segment. Uncommon throughout the drainage. Collected by Blair in 1948.

88. *Etheostoma radiosum* (Hubbs and Black). Orangebelly darter (70-937). The most abundant darter in the drainage. Widely distributed throughout the river drainage, but rare in deeper sections of the river. Reported by Meek (1) as *Etheostoma whipplei*, and as such by Ortenburger and Hubbs (2) and Hubbs and Ortenburger (3).

89. *Etheostoma spectabile* (Agassiz). Orangethroat darter (2-112). Rare in drainage, except in two small streams north of Hugo. Both of these streams contain large populations of *E. spectabile, E. radiosum*, and their hybrids. Reported by Meek (1) as *Etheostoma lepidum*. Also collected in 1951 by Riggs.

90. *Percina caprodes* (Rafinesque). Logperch (11-56). Common in the middle section of the river and its tributaries. Prefers deep riffles with gravel substrates. Reported by Meek (1) as *Etheostoma caprodes*.

91. *Percina copelandi* (Jordan). Channel darter (10-56). Common in the middle sections of the river. Usually occurs in clear fast-flowing tributaries at the interface between pools and riffles. Collected in 1950 from Gates Creek by Moore, Curd, and Trautman.

92. *Percina phoxocephala* (Nelson). Slenderhead darter (5-10). Associated with clear fast-flowing tributaries, of the middle-river segment. Collected in 1963 by Moore and by Bates and Lindsay in 1963.

93. *Percina maculata* (Girard). Blackside darter (0-0). Moore 1955 collected one specimen from Gates Creek. Bailey 1955 collected six specimens from Tenmile Creek. Uncommon in this drainage.

94. *Percina sciera* (Swain). Dusky darter (20-83). Common in many tributaries, with fast-flowing water and sandy to sand-gravel bottoms, of the lower segment of the river. Collected by Moore in 1948, and by Riggs in 1951.

95. *Percina uranidea* (Jordan and Gilbert). Stargazing darter (0-0). The only record for this species is that of Meek (1) near Goodland in Flat Creek. Reported as *Etheostoma ouachitae*. This species has not been verified for the state; this questionable record may be based upon a misidentification according to Miller and Robison (5).

SCIAENIDAE. Freshwater Drums

96. *Aplodinotus grunniens* Rafinesque. Freshwater drum (7-299). Common in lower regions of the river and numerous in the tailwaters below Hugo Dam. Reported to be scarce by Meek (1) and also Hubbs and Ortenburger (3).

ATHERINIDAE. Silversides

97. *Labidesthes sicculus* (Cope). Brook silversides (62-1990). Found throughout the entire drainage and in most tributaries. Less common in lower segment of the river. Prefers calm clear water, but inhabits many small streams that have considerable current. Reported by Meek (1), Ortenburger and Hubbs (2), and Hubbs and Ortenburger (3).

98. *Menidia audens* Hay. Mississippi silversides. (1-3). Rare; only three specimens were collected at the mouth of Bird Creek, near the Red River. First known record of this species in the Kiamichi drainage.

In addition to the above listed species, a number of other species can be expected to

occur in the drainage. The following species have been collected from the Red River near the mouth of the Kiamichi River:

1. *Ammocrypta clara* Jordan and Meek. Western sand darter.
2. *Astyanax mexicanus* (Filippi). Mexican tetra.
3. *Hybopsis storeriana* (Kirtland). Silver chub.
4. *Lepisosteus spatula* Lacépède. Alligator gar.
5. *Notropis potteri* Hubbs and Bonham. Chub shiner.
6. *Notropis stramineus* (Cope). Sand shiner.
7. *Phenacobius mirabilis* (Girard). Suckermouth minnow.
8. *Pimephales promelas* Rafinesque. Fathead minnow.
9. *Pimephales tenellus* Girard. Slim minnow.
10. *Scaphirhynchus platorynchus* (Rafinesque). Shovelnose sturgeon.
11. *Stizostedion canadense* (Smith). Sauger.
12. *Notropis bairdi* Hubbs and Ortenburger. Red River shiner.
13. *Notropis cornutus* (Mitchell). Common shiner.
14. *Moxostoma duquesnei* (Lesueur). Black redhorse.

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