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MICROPTERUS PSEUDAPLITES, A NEW SPECIES OF BLACK BASS

BY CARL L. HUBBS

I

For many years but two species of black bass have been recognized. These comprise the Micropterinae, a distinct subfamily of the Centrarchidae, and have usually been referred to the one genus Micropterus. Very recently, however, it has been proposed[1] to separate out the large mouth black bass, *salmoides*, in a monotypic genus (Aplites), thus restricting the name Micropterus to the small mouth black bass (*M. dolomieu*). It has now become evident that there exists a second species of Micropterus, as thus delimited.

[1] Hubbs, Misc. Publ. Mus. Zool., Univ. Mich., No. 15, 1926, pp. 69 and 71.

II

This third species of black bass agrees with the type species of the genus (*M. dolomieu*) in having the pyloric caeca relatively few and not branched, the mouth of moderate size (the upper jaw is not extended to below posterior border of eye in yearlings, and scarcely to this point in adults), the preopercle scaleless, the soft dorsal and anal fins scaled on the membranes between the rays well out beyond the base, the outline of the spinous dorsal gently curved instead of angulated, and the whole dorsal only shallowly emarginate (the shortest dorsal spine is more than half, instead of only two-fifths to one-fourth the longest). It definitely approaches *M. dolomieu* in the coloration of the caudal in the young, in which the mediobasal region is orange, surrounded by a blackish margin. In all of these respects the newly recognized form differs trenchantly from *Aplites salmoides*. It differs further from that species in having the spots below the lateral band more definitely aligned into horizontal rows (this difference is especially conspicuous in the adults) and the mottlings above the band tending more toward the appearance of vertical bars. It is still further differentiated from *A. salmoides* in having the form in the young fish more nearly terete and the head more produced anteriorly.

The second species of Micropterus differs from *M. dolomieu* in having the dorsal soft rays as few and the body scales as large as in *salmoides* (the rays and scales in fact average slightly fewer than in that species). The pectoral rays, numbering 15, rarely 16, are fewer than in *dolomieu* (16 to 18) but more numerous than in *salmoides* (14, rarely 15). The cheek scales are also larger, the jaw somewhat longer and the margin of the spinous dorsal more elevated and rounded than in *dolomieu* (the shortest spine is two-thirds to half, instead of more than two-thirds the length of the longest); in these three respects the new form approaches *salmoides*. It differs from *dolomieu* as well as from *salmoides* in the slenderer form of the head and body in the young. The development of a

black lateral band (which fades with age like most of the color markings of the black basses) gives the new form so much the appearance of *Aplites salmoides* that most of the examples which have been reported on in the literature have been referred to that form, despite the fact that its real relationships appear to be more intimate with *Micropterus dolomieu.*

The new bass can not be regarded as a variant of either of the currently recognized species, nor as a hybrid between them, for its distinctive features are too numerous and trenchant, relatively even more constant than those of the other species. It is distinguished from *dolomieu* by at least ten, and from *salmoides* by no fewer than fourteen differences. Furthermore, it possesses a definite range, as shown later in this report, and appears to be common toward the center of this range, especially in Kentucky and Arkansas.

The new species here described has been mentioned four times in the literature as a variant, unnamed, of the large mouth black bass. In his paper, "On the zoological position of Texas,"[2] Cope mentioned that several of the black bass which he took in that state differ materially from Gill's description of the two species then referred to Micropterus. He selected, in illustration, an adult from Johnson Fork of the Llano River, Kimble County, and proceeded to detail its distinctive features in such a way as to leave no doubt in one's mind that he actually had the present new species at hand. This specimen came from the westernmost locality for the species, indicated on Plate II by an outline dot. Jordan and Gilbert[3] later recorded, as *Micropterus salmoides,* some specimens from Rio Colorado at Austin, Texas, but mentioned several of the characters of the new species as distinguishing these from "northern ones." These examples have been reexamined in the National Museum, and have been designated as paratypes of the new form. In 1898, Henshall[4] stated that he had caught in the St. Francis River, Arkansas, some black

[2] Bull. U. S. Nat. Mus., No. 17, 1880, p. 31.

[3] Proc. U. S. Nat. Mus., 9, 1886, p. 21.

[4] More about the black bass; Cincinnati, 1898, p. 29.

bass showing the variations observed by Cope for certain Texan examples. His specimens were probably also of the new species, which was taken in the same region by Meek. Finally, Kendall and Goldsborough,[5] by describing the coloration of the caudal fin in the young, showed that they too mistook examples of the new species for mere variants of the large mouth bass. Their examples of the new bass came from the Dry Fork of the Tug Fork of Big Sandy River, at Iaeger, West Virginia, as I have determined by re-examining their material now at the National Museum; their specimens from the Greenbrier River 8 miles above Hilton, West Virginia, are, however, *Aplites salmoides.*

III

A re-examination of the synonymies of the black basses is now required in order to determine whether any of the published names are available for the newly differentiated form. Each name may be considered separately.

Labrus salmoides Lacépède, Hist. Nat. Poiss., 3, 1802, p. 716 (Carolina). This name was given by Lacépède to the "trout" of Carolina. The species was known to him only through the manuscript figure and description made by Bosc. Gill,[6] Jordan and others formerly urged that this name should be used for the "small mouth" species, but it seems better to maintain the current association of the name with the large mouth bass. Since *M. dolomieu* is rare in the Carolinas and there confined to the mountainous regions, the natural presumption is that Bosc was not acquainted with that species. There is a possibility that the name *salmoides* was based on the new species here differentiated, but as yet that form is not known to occur in the Carolinas. Considering this distributional evidence, as well as the fact that Lacépède's figure shows a large mouth, it seems best to assume, with Vaillant and Bocourt (*l.c.*), and recent authors in general, that the name *salmoides* should be used for the large mouth or green bass.

[5] Bull. U. S. Bur. Fish., 27, 1907 (1908), p. 37.

[6] Proc. Amer. Assoc. Adv. Sci., 1873, pp. 55–72.

Micropterus dolomieu Lacépède, Hist. Nat. Poiss., 4, 1803, p. 325 (locality unknown). What uncertainties have been raised regarding the availability of this name, based on a mutilated fish of uncertain origin, seem to have been dispelled by the accounts of the type-specimen given by Cuvier,[7] Vaillant and Bocourt,[8] Jordan[9] and Henshall.[10]

Bodianus achigan Rafinesque, Amer. Mon. Mag., 1817, p. 120 (New York and Canada; probably Lake Champlain, according to Gill). By general agreement, this name has been recognized as having been based on the small mouth black bass. It is therefore to be regarded as a synonym of *Micropterus dolomieu.* Its type localities are distant from the range of the new species.

Calliurus punctulatuse Rafinesque, Ich. Ohiensis, 1820, p. 26 (Ohio River and small streams). The coloration of the caudal fin, the fin formula and the habitat ascribed to this form by Rafinesque all indicate, as has been generally recognized, that this nominal species is another synonym of *Micropterus dolomieu.*

Lepomis pallida Rafinesque, Ich. Ohiensis, 1820, p. 30 (Ohio River). This name has often been applied to the large mouth bass, but the original description contains little that is distinctive; Kirtland and Gill, in fact, both included the name in the synonomy of the small mouth bass. The statement "dorsal depressed or interrupted in the middle" does definitely indicate the fin structure in *salmoides,* but the assigned number of dorsal soft rays, 14, occurs only rarely in that species but commonly in *dolomieu.* (Neither character applies to the new form.) It seems best, however, to continue the association of this name, as well as the generic name Aplites, of which it is the type, with the species *salmoides.* Gill's assumption that the large mouth bass was not native to the Ohio basin was doubtless a false one. The type-locality of *pallida* may be restricted to the Ohio proper.

[7] Cuvier and Valenciennes, Hist. Nat. Poiss., 5, 1830, p. V.
[8] Miss. Sci. Mex. (Zool., Poiss.), 1874, pp. 139–143.
[9] Proc. U. S. Nat. Mus., 2, 1878 (1879), pp. 219–224.
[10] More about the black bass, Cincinnati, 1898, p. 13.

Lepomis trifasciata, L. flexularis, L. salmonea, and *L. notata* Rafinesque, *l.c.,* 1820, pp. 31–32 (Ohio River). These names have generally been quoted in the synonomy of *Micropterus dolomieu.* The fin formula and coloration as given by Rafinesque seem to admit of no other action. The type locality of each of these nominal species may be restricted to the Ohio River.

Etheostoma calliura Rafinesque, *l.c.,* 1820, p. 36 (Ohio River). For the same reasons this name has been and should be included in the synonomy of *M. dolomieu.* The type locality of *calliura* may also be restricted to the Ohio River.

Cichla fasciata Le Sueur, Jour. Acad. Nat. Sci. Phila., 2, 1822, p. 216 (Lake Erie, at Erie and Buffalo). Although the description of the shape of the dorsal fin applies better to *salmoides,* the account of the color and the fin formula preclude any doubt as to the pertinence of this name to the small mouth bass. The types were not taken within the range of *M. pseudaplites.*

Cichla ohiensis Le Sueur, *l.c.,* 1822, p. 218 (Ohio River). The shape of the dorsal and the number of dorsal rays originally ascribed to this nominal species agree best with these characters in *M. dolomieu.*

Cichla floridana Le Sueur, *l.c.,* 1822, p. 219 (East Florida). Two elements in the original description, the large size of the mouth and the shape of the dorsals, align this name with *salmoides,* although the dorsal soft rays are given as 15. Furthermore, since *Aplites salmoides* is the only species of black bass known to occur naturally in Florida, this name should be retained in the synonomy of that species.

Cichla minima Le Sueur, *l.c.,* 1822, p. 220 (lagoons connected with Lake Erie). Le Sueur's description of the shape of the dorsal, number of dorsal rays and size of scales seems to indicate that he had the young of *dolomieu.* The new species does not occur about Lake Erie.

Huro nigricans Cuvier and Valenciennes, 2, 1828, p. 124 (Lake Huron). There seems to be little question as to the identity of this form with *salmoides.* Lake Huron is well distant from the range of *M. pseudaplites.*

Centrarchus obscurus De Kay, N. Y. Fauna, Fishes, 1842, p. 30, pl. 17, fig. 48 (Onondaga Creek, New York). The original figure of *obscurus* is a faithful representation of *Micropterus dolomieu.*

Grystes nobilis Agassiz, Amer. Jour. Sci., 1854, p. 298 (Huntsville, Alabama). Since Agassiz described the jaw as extending well behind the eye, this nominal species must be retained in the synonomy of *A. salmoides.*

Grystes nuecensis Baird and Girard, Proc. Acad. Nat. Sci. Phila., 7, 1854, p. 25 (Rio Frio and Rio Nueces, Texas). All of the types of this species which I have examined, in the United States National Museum and the Museum of Zoology, University of Michigan, belong to *A. salmoides.*

Grystes megastoma Garlick, A Treatise on the Artificial Propagation of Certain Kinds of Fishes; New York and Cleveland, 1857, p. 108 (bays of Lake Erie). Garlick proposed this name for the large mouth black bass on the erroneous assumption that it had never been named before. The type-locality is not within the range of the new species.

Micropterus variabilis (Le Sueur) Vaillant and Bocourt, Miss. Sci. Mex. (Zool., Poiss.), 1874, p. 142 (Wabash River, Indiana). The accounts of Vaillant and of Jordan and of Henshall (*l.c.*) leave no doubt as to the identity of this nominal species with *M. dolomieu.*

Micropterus nuecensis treculii Vaillant and Bocourt, *l.c.*, 1874, p. 142 (San Antonio de Bexar, Texas). This nominal variety was separated from *nuecensis* (= *salmoides*) by reason of an individual variation in the number of dorsal spines. The deep body accredited to the type indicates that it was probably not a specimen of the new species.

From this survey of the twenty-one names which have been applied to the black basses, the conclusions are drawn that none of these designations can be applied to the species under consideration, and that the synonymies of the two previously recognized species were listed as accurately as possible by Jordan and Evermann.[11]

We may therefore refer the third bass to a new species.

[11] Bull. U. S. Nat. Mus., 47, pt. 1, 1896, pp. 1011–1012.

IV

Micropterus pseudaplites, new species

Kentucky Black Bass

Plate I

Holotype, Cat. No. 67030, Museum of Zoology, University of Michigan: a specimen 84 mm. long from tip of snout to base of caudal fin; collected June 10, 1925, by W. A. Clark, in Forbush Creek, tributary to Cumberland River, near Mill Springs, Kentucky. This specimen is selected as the type because it is small enough to show distinctly the diagnostic coloration, yet large enough to show the essential form of the adult.

The many paratypes come from numerous localities, listed in the following section. They vary in length from 10 to 278 mm., the majority being half-grown fish larger than the type. The species may not attain as large a size as the two other forms.

The *body* of the young and half-grown is slender and trimly constructed, for the contours are long, gentle sweeps; depth, 3.8 (2.8 to 3.8)[12] in length to caudal. The *head* is slender and produced anteriorly; length from tip of premaxillaries to end of opercular membrane, 2.75 (2.8 to 2.95). The *mouth* is low, rising anteriorly only to the level from the lower border of eye. The whole form of the body and the head suggests a "wall eye" (*Stizostedion vitreum*). In the adult, however, the form becomes chunky, as in the other black basses.

The *opercle* ends in a rounded, flat, bony point, often approaching a spine in form, and much larger than a second projection on the upper posterior margin of the bone. The preopercular margin is widely rounded and entire. The *head* is flat between the eyes, and the bony *interorbital* is almost as wide as the eye (wider than the eye in the adult); *eye,* 4.8 (4.6 to 6.4) in head. When viewed from the side the upper margin of the *snout* is somewhat gibbous, but the tip is rather sharply

[12] Measurements and counts in parentheses are those of paratypes, all larger than the type. In general the extreme measurements, most unlike those of the type, represent the characters of the adults.

pointed; *snout,* 3.5 (3.4 to 3.95) in head. The *preorbital* is rather narrow, and the *suborbitals* very slender; the margins of both are entire. The *upper jaw* is moderately broad and rather long, but does not extend backward to below posterior margin of eye (scarcely to this point in adult); 2.15 (2.1 to 2.35) in head. The *supplementary maxillary* is conspicuously developed, more than one-fourth as wide as pupil. The mandible is rounded, heavy and projecting at tip, but does not break the dorsal contour; the rami are not sharply elevated within the mouth; length of mandible, 1.75 (1.7 to 1.9). The depressible *teeth* are in villiform bands in the jaws, and increase in size inward; they form a triangular patch on the vomer, long bands on the palatines, and an oblong patch on the tongue. The *gill-rakers* are slender, firm and denticulate; the longest is about one-half as long as eye; they number 1 + 3 to 5, not counting a spiny knob and even slighter rudiments on the upper limb. The *pyloric caeca* are few, large and not united basally.

The *scales* are of the usual centrarchid type, with squared basal corners, strong basal radii, the focus apicad from center, and the ctenii strong and in a triangular area. Scales, 59 (59 to 66, usually about 62) in lateral line to end of hypural. The scales are reduced in size on the nape and belly; they extend forward to or almost to a line joining the posterior margins of the orbit, but are lacking on the interorbital, snout, suborbitals and jaws; they are well developed on the opercle and subopercle, but very weak on the interopercle, and lacking on the preopercle where exposed. The cheek scales are small, in about 14 rows. Moderate sheaths are developed at the base of the dorsal and anal fins; the extreme bases of the soft-rayed portions of these fins are scaled and the rather leathery membranes out beyond this very base carry some long narrow scales, as in *M. dolomieu.*

The *dorsal fin* is moderately emarginate, since the shortest spine is two-fifths to one-half as long as the longest. The outline of the spinous dorsal is gently rounded. The second dorsal is almost as high as long; its outline is rounded. The *cau-*

dal is emarginate, and each lobe is rounded, as is also the *anal fin.* The *pectoral* is rather short and rounded, and does not extend as far back as the *pelvic,* which in turn reaches a little more than half way to the front of anal (in large adults only half way to anus). Fin-rays: dorsal, X, 12 (11 or 12); anal, III, 10 (9 or 10); caudal (principal rays), 17; pectoral, 15 (rarely 16).

The most striking color feature of the immature fish is the lengthwise blackish streak, which closely simulates that of *Aplites salmoides.* This band starts at the tip of the upper jaws but is faint across the snout and upper part of cheek (two narrower markings, slightly divergent, are developed farther down on the cheek); it merges into the dusky anterior two-thirds of the opercle, but becomes intensified to form a very black, somewhat ocellated spot on the opercle toward its tip; on the trunk it is imperfectly broken up into vertically oblong areas, but is more solid on the tail; it ends at the base of the caudal in a black spot, somewhat elongated vertically, just beyond which a few dark specks are evident. Beyond and about this spot the caudal is almost as brightly colored with orange as it is in *M. dolomieu*; the orange area is narrowly bordered with blackish on the upper and lower margins of the fin, and broadly edged with blackish on the lobes; these dark markings of the lobes are arched outward, but do not extend to the two tips of the fin, which are pale. A few dark spots are developed on the soft dorsal medially, and less distinctly on the anal; the other fins have no definite markings. The back above the band is rather faintly marked with dark mottlings, many of which have lighter centers, and most of which are vertically elongated. The sides below the band are marked with several rows, progressively shortened ventrally, of small, dark spots. With age these markings as a whole grow faint, but the horizontal dark streaks below the lateral line become more conspicuous. In large examples most of the scales show a vertical dark dash.

(*Pseudaplites*: so named in allusion to the fact that although the species seems most intimately related to *Micropterus*

dolomieu, its coloration approaches that of *Aplites salmoides* so closely that it has been confounded with that species in the literature.)

V

Almost nothing is known to me concerning the economic importance or the habits of the Kentucky black bass (as the new species may be known). The largest example seen is 278 mm. long from tip of snout to base of caudal, or 13½ inches over all; it was three and a half years old when caught. With age it becomes fat, and as Mr. Percy Viosca, Jr., informs me, is of very fine flavor. All that can be said of its optimum habitat is that what records we have suggest that it chooses situations overlapping those most frequently selected by the other two species. In fact it has been taken a number of times with each of the others: with *salmoides* in muddy bayous, and with *dolomieu* in swift rocky creeks. In one case, all three species have been obtained in a single pool. Concerning its geographical distribution, however, fairly definite knowledge is at hand.

Broadly stated, the range of *Micropterus pseudaplites* may be given as the Gulf of Mexico drainage north of Mexico and Florida, east of the one hundredth meridian, south of the fortieth parallel; and the Atlantic drainage of Georgia (see Plate II). The paratypes in the United States National Museum, the Field Museum of Natural History, and the Museums of Zoology of the University of Michigan, the University of Oklahoma and Cornell University, were taken in the southern parts of West Virginia, Ohio and Indiana; in various parts of Kentucky; in the Atlantic and Gulf drainages of Georgia; in Alabama and Louisiana; in various places in Arkansas; in southeastern Kansas, and in Oklahoma and Texas. The detailed data are listed below.[13]

[13] Acknowledgments are due to Barton A. Bean and Earl Reid, of the U. S. National Museum; Alfred C. Weed, of the Field Museum, and others, for their courtesy in placing the black basses of their collections in my hands for study.

West Virginia

U. S. Nat. Mus., 56953: Dry Fork of Tug Fork of Big Sandy River, Ohio Basin, at Iaeger, McDowell County (recorded as *Micropterus salmoides* by Kendall and Goldsborough, Bull. U. S. Bur. Fish., 27, 1907 (1908), p. 37).

Ohio

A number of specimens have been collected by E. L. Wickliff in the Ohio River drainage of southern Ohio, but the exact localities have been lost.

Indiana

U. S. Nat. Mus., 40720: Big Pigeon River, at Evansville (recorded by Jordan, Bull. U. S. Fish. Comm., 8, 1888 (1889), p. 166, as *Micropterus salmoides*). 40708: Wabash River at New Harmony, Posey County (recorded by Jordan, *l.c.*, p. 164, as *M. salmoides*; other specimens of the same lot are true *salmoides*). 66433: Wabash River at Mackey's Ferry, Posey County (recorded by Jordan, *l.c.*, p. 164, as *M. salmoides*). 66436: Wabash River at Durkee's Ferry; collected by B. W. Evermann. 69178: Wabash River at New Harmony; collected by C. Juday.

Kentucky

U. S. Nat. Mus., 41040: Little Sandy River; collected by Gilbert and Henshall (recorded by Woolman, Bull. U. S. Fish. Comm., 10, 1890 (1892), p. 286, as *Micropterus salmoides*). 63882: Greensburg (recorded with true *dolomieu* as *Micropterus dolomieu* by Woolman, *l.c.*, pp. 255 and 258). 63883: Kuttawa (recorded by Woolman, *l.c.*, p. 263, as *M. dolomieu*).

Mus. Zool., Univ. Mich., 72063: Kentucky River at Quicksand, Breathitt County; collected by Wm. J. Hamilton, Jr. 73266: Quicksand Creek, tributary to Kentucky River, Breathitt County; collected by Leonard Giovannoli, with *M. dolomieu*. 73265: Boone's Creek, Fayette County; collected by Leonard Giovannoli, who also collected *M. dolomieu* in this creek. 72853: Rockcastle River, 4 miles from Living-

ston; collected by John Humphries and M. N. Walsh, with *M. dolomieu.* 67022 and 67030: Forbush Creek, a stony and rocky creek tributary to Cumberland River, near Mill Springs; collected by W. A. Clark, with *M. dolomieu.* 67099: Cub Creek, a muddy bottom tributary to Cumberland River, near Mill Springs; collected by W. A. Clark. 66790: South Fork Creek, a stream with a gravel and slate bottom, 2½ miles northeast of Dunnville; collected by W. J. Clench, with true *dolomieu.* 65074: Beaver Dam Creek; collected by H. R. Becker and L. A. Sager.

Field Mus. Nat. Hist., 14470 and 14471: Boothe (Woolman collected fishes in the Rolling Fork of Salt River at this station, but recorded no Micropterus for the locality).

Cornell Univ. Mus., 706: Kentucky River at Quicksand, Breathitt County; collected by Wm. J. Hamilton, Jr.

Georgia

U. S. Nat. Mus., 17112: Augusta; collected by William Phillips. 13542: Little River, on top of Lookout Mountain, near Rome; collected by M. M. Towers. 31142: Etowah River basin near Rome (recorded by Jordan and Brayton, Bull. U. S. Nat. Mus., No. 12, 1878, p. 46, as *M. pallidus*).

Alabama

U. S. Nat. Mus., 63148: Courtland (recorded by Gilbert, Bull. U. S. Fish. Comm., 9, 1889 (1891), pp. 150 and 152, as *M. salmoides*).

Louisiana

U. S. Nat. Mus., 16915: Tangipahoa River; collected by Fred Mather.

Mus. Zool., Univ. Mich., 72134: near Minden; collected by Percy Viosca, Jr., who retains a paratype from the same locality.

Kansas

Mus. Zool., Univ. Mich., 61272: Big Hill Creek, Labette County; collected by the Kansas Biological Survey.

Arkansas

All of the specimens known from this state were collected by S. E. Meek, and all, excepting those labelled Clarksville and North Fork of Chadron River, at Martinsville, were recorded by him as *Micropterus salmoides.*

U. S. Nat. Mus., 62005: Russelville; taken and recorded with true *salmoides* (Bull. U. S. Fish. Comm., 14, 1894, p. 85). 61997: North Fork of Chadron River, Martinsville (Meek recorded *salmoides* from this locality, but not from this stream). 61995: Martinsville (*l.c.,* p. 85). 61988 and 61992: Little Red River, Judsonia (*l.c.,* p. 83). 62002: Mulberry River, Mulberry (*l.c.,* p. 85). 61994: Polks Bayou, Batesville (*l.c.,* p. 79). 61990: Black River at Black Rock (*l.c.,* p. 79). 61999: Spring River, Black Rock (*l.c.,* p. 79). 61989: White River, Batesville (*l.c.,* p. 79). 62000: East Fork of Chadron River, Conway (*l.c.,* p. 85). 62003: Little Red River at Kinderhook (*l.c.,* p. 83). 61996: Arkansas River, Mulberry (*l.c.,* p. 85). 61998: Strawberry River, Smithville (*l.c.,* p. 79).

Field Mus. Nat. Hist., 1353: Clarksville (Meek collected here but did not record *salmoides* from this locality). 2172: Marked Tree (Bull. U. S. Fish. Comm., 15, 1895, p. 348). 2177: Fort Smith (*l.c.,* p. 343). 14467–14469: Greenway, taken with true *salmoides,* and so recorded (*l.c.,* p. 348).

Oklahoma

U. S. Nat. Mus., 61991: Sallisaw: collected by S. E. Meek.

Mus. Zool., Univ. Mich., 72865: a vegetation-crowded pond along railroad two miles north of Wister, Le Flore County (recorded by Ortenburger and Hubbs, Proc. Okla. Acad. Sci., 6, 1926, p. 137).

Mus. Zool., Univ. Oklahoma, 5470: creek nine miles east of Broken Bow, in tributary of Little River, McCurtain County; taken with *Aplites salmoides* (recorded by Ortenburger and Hubbs, *l.c.,* p. 137). 5471: Little River, one mile east and six miles north of Valliant, McCurtain County, on shallows just above deep stretch of river; collected with *M. dolomieu* (recorded by Ortenburger and Hubbs, *l.c.,* p. 137).

Several lots from west Cache Creek, in Wichita National Forest, Comanche County: to be deposited in the Museums of Zoology of the University of Oklahoma and the University of Michigan; in several cases taken with *A. salmoides,* and in one very deep hole with both *salmoides* and *dolomieu.*

Texas

Field Mus. Nat. Hist., 6524: Buffalo Bayou, Houston (recorded as *M. salmoides* by Evermann and Kendall, Bull. U. S. Fish. Comm., 12, 1892 (1894), p. 113).

U. S. Nat. Mus., 46260: Rio San Marcos, at San Marcos (recorded by Evermann and Kendall, *l.c.,* as *M. salmoides*). 36572: Rio Colorado, Austin (recorded by Jordan and Gilbert, Proc. U. S. Nat. Mus., 9, 1886, p. 21, as *M. salmoides,* but with a note mentioning several characters in which these specimens differed from "northern ones").

PLATE I

The Three Species of Black Bass

FIG. 1 (top). *Micropterus dolomieu:* young of the year from Kentucky; somewhat reduced.

FIG. 2. *Micropterus pseudaplites:* a young specimen from the same locality; somewhat reduced.

FIG. 3. *Micropterus pseudaplites:* the holotype; somewhat reduced.

FIG. 4. *Aplites salmoides:* a yearling specimen from Michigan; to the same scale as Figures 1 to 3.

FIG. 5. *Micropterus pseudaplites:* another view of the specimen shown in Figure 2; enlarged.

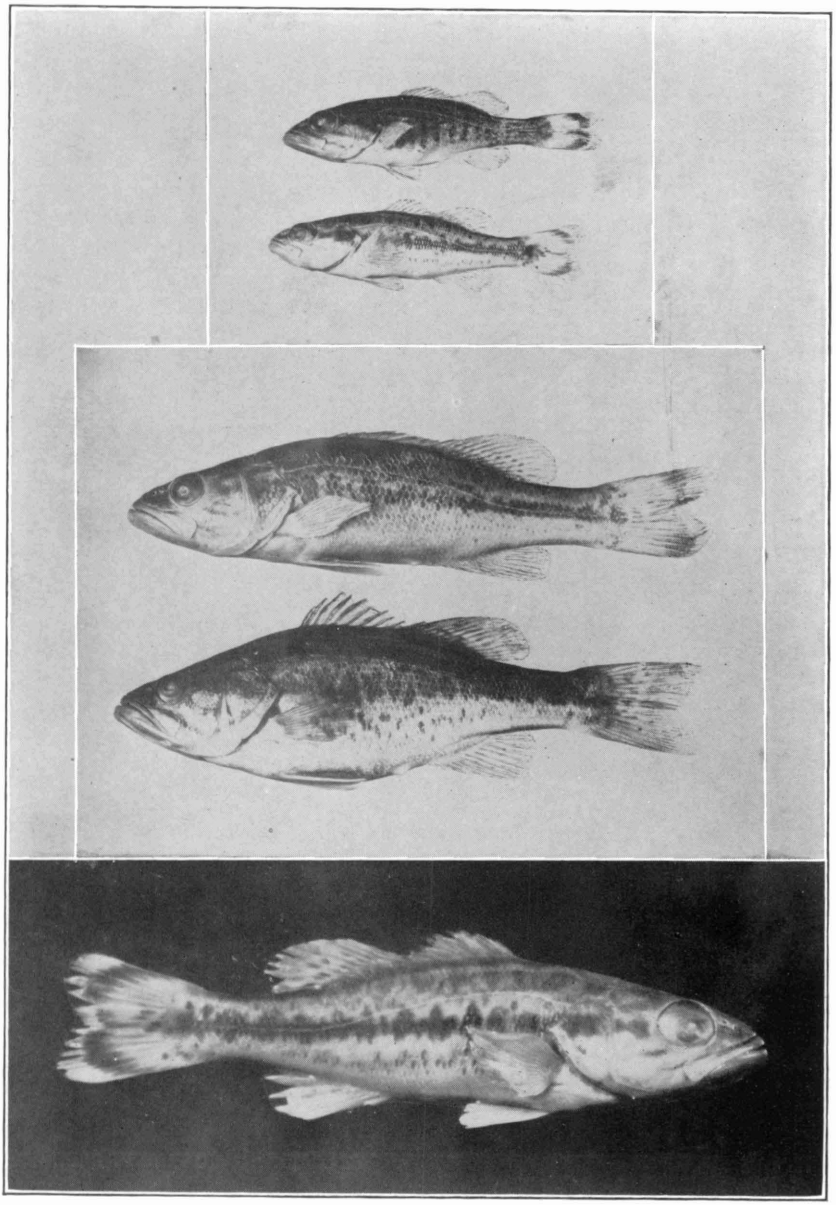
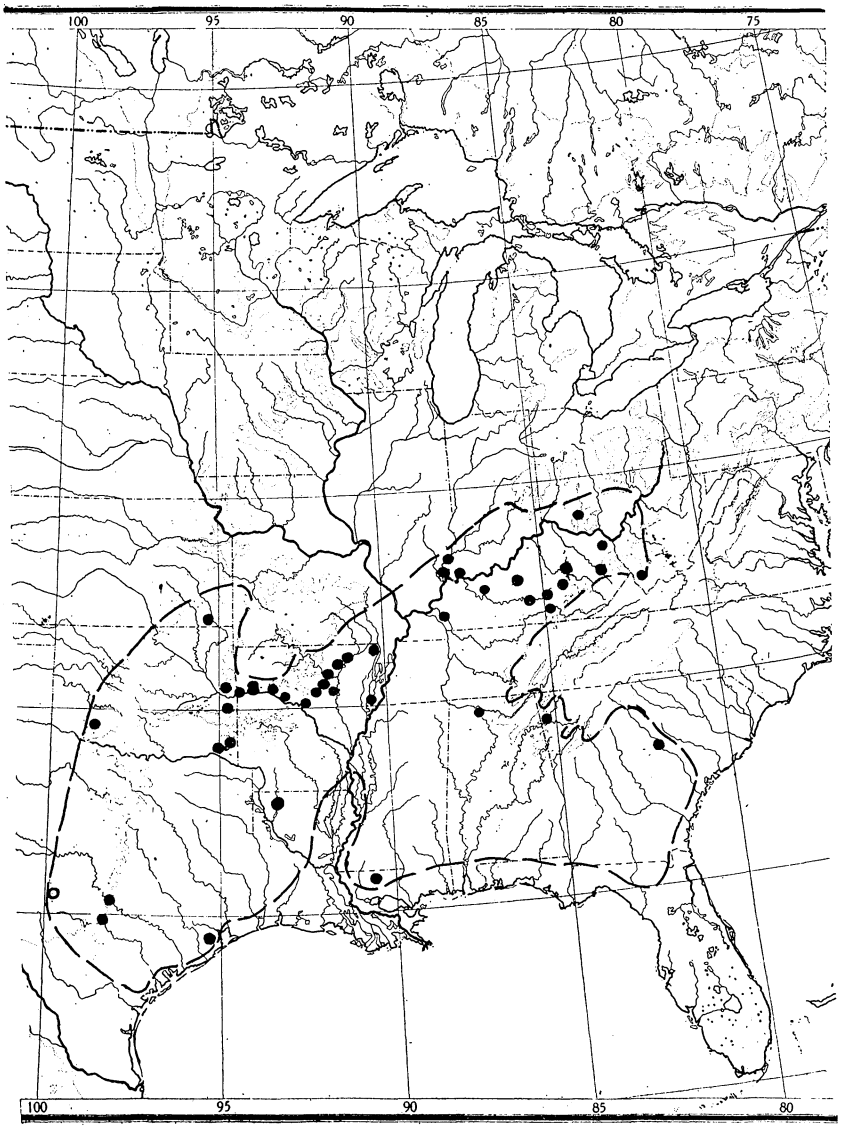


PLATE II

The Geographical Distribution of *Micropterus pseudaplites*

The solid dots represent record-stations for specimens actually examined, as listed in the final section of this paper. All of these specimens are designated as paratypes. The actual locality represented by the dot for southern Ohio is not known.

The outline dot, at the extreme western limit of the range of the species, represents an acceptable locality record for which the material has not been seen by the present author.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