

diameter of the eye. The length of the lower jaw and that of the post-orbital portion of the head are equal. There is a black lateral band following the course of the lateral line and continued around the nose, most distinct in the young specimen.

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**DESCRIPTION OF A NEW SPECIES OF AMIURUS (A. PONDEROSUS)
FROM THE MISSISSIPPI RIVER.**

By **TARLETON H. BEAN.**

The United States National Museum received from Dr. J. G. W. Steedman, of Saint Louis, Mo., chairman of the Missouri Fish Commission, on the 8th of November, 1879, a Catfish which weighed 150 pounds at the time of shipment. After comparing this with the other described species of *Amiurus* I am unable to identify it with any of them. The most distinguishing character of the species is its many-rayed anal, in which it resembles *Ichthaelurus* rather than *Amiurus*, though it has the skull-structure of the latter.

The specimen which forms the type of the present description was sent at the request of Prof. Spencer F. Baird, United States Commissioner of Fish and Fisheries, to whom Dr. Steedman wrote the following information: "Your letter requesting the shipment to you of a large Mississippi Catfish was received this morning. Upon visiting our market this P. M. I luckily found two—one of 144 lbs., the other 150 lbs. The latter I ship to you to-night by express. . . . I purchased it from an old fish-dealer of 30 years' experience in our market; and he assures me that the largest Mississippi Catfish he has met in that time weighed 198 pounds. (He says he has *heard* of Catfish weighing 250 and 300 pounds, but he does not believe the stories.) This is the only variety, he says, which reaches 100 lbs. There is another species which sometimes attains 65 lbs. in weight. My informant (and he is *practical* authority among us) enumerates six well-marked varieties of Catfish in the Mississippi waters. . . ."

The admission of this species into the genus *Amiurus* will necessitate a modification of the definition of the genus so far as the limits of variation in the anal rays are concerned; and will leave only the lack of contiguity between the supra-occipital and the second interspinal to distinguish *Amiurus* from *Ichthaelurus*. A plaster cast and the skeleton of the type are preserved.

DESCRIPTION.—The catalogue number of the type is 23388; its length, to the origin of the middle caudal rays, is 57.2 inches, to the end of the same rays, 61 inches. The distance from the middle of the base of the caudal to the end of the upper caudal lobe is 8 inches.

The shape of the body resembles that of *A. nigricans*; the caudal, however, is emarginate and not deeply forked as in that species.

In the description and table of measurements the length of body is to be understood to mean the length to the origin of the middle caudal rays—57.2 inches.

The greatest height of the body (.29) is contained $3\frac{1}{2}$ times in its length, and equals twice the length of the external caudal rays (.14). Its greatest width (.18) is contained $5\frac{1}{2}$ times in length of body, and equals $\frac{2}{3}$ of the length of the head (.27). The height of the body at the ventrals (.29) equals the greatest height. The least height of the tail (.084) equals the length of the snout (.084), which is contained $3\frac{1}{4}$ times in the length of the head. The length of the caudal peduncle (.16) equals twice its least height.

The length of the head (.27) is contained $2\frac{2}{3}$ times in length of body, and equals 3 times that of the ventral (.09). The width of the mouth (.168) equals twice the length of the snout (.084), and is contained 6 times in length of body. The extent of the intermaxillary band of teeth (.106) nearly equals the distance from the snout to the orbit (.108). The greatest width of the head (.22) equals $\frac{4}{5}$ of its greatest length. The distance between the eyes (.15) is slightly more than half the length of the head, and equals the length of the mandible (.15). The length of the intermaxillary (.108) equals the distance from the snout to the orbit (.108), and is contained $2\frac{1}{2}$ times in the length of the head. The length of the maxillary barbel of the right side (.16) equals that of the caudal peduncle, and nearly equals the width of the mouth. The remaining barbels except the nasal are too imperfect to admit of description. The distance from the lower nostril to the eye (.06) equals 4 times the long diameter of the eye (.015). The distance from the upper nostril to the eye (.056) is contained slightly more than $4\frac{1}{2}$ times in the length of the head.

The distance of the first dorsal from the snout (.365) is contained $2\frac{2}{3}$ times in length of body, and equals 3 times the length of its first ray (.122). The length of the first dorsal base (.082) nearly equals that of the snout. The length of the dorsal spine (.105) is contained $2\frac{1}{2}$ times in that of the head. The length of the last dorsal ray (.05) equals $\frac{1}{3}$ of the distance between the eyes.

The distance of the adipose dorsal from the snout (.81) equals nearly 3 times the length of the head. Its length of base (.043) is contained 6 times in the distance of the pectoral from the snout (.26). Its greatest height (.06) equals the distance between the lower nostril and the eye (.06), and is contained $4\frac{1}{2}$ times in the length of the head.

The distance of the anal from the snout (.67) is contained $1\frac{1}{2}$ times in length of body, and equals 3 times the greatest width of the head; its distance from the anus (.035) is contained 3 times in the length of the dorsal spine, and 8 times in that of the head. The length of the anal base (.26) equals the distance of the pectoral from the snout (.26), and

is contained $3\frac{1}{5}$ times in length of body. The length of the first anal ray (.01) is contained 8 times in the least height of tail. The ninth and longest anal ray (.077) is nearly as long as the base of the first dorsal (.08). The length of the last anal ray (.033) equals $\frac{1}{2}$ that of the middle caudal rays (.066), which is contained 15 times in the length of body.

The proportion between the middle and external caudal rays (.14) is as $3\frac{1}{2}$ to 8, both being measured from the middle of the origin of the middle caudal rays. The length of the external caudal rays is contained 7 times, and of the middle caudal rays, 15 times in the length of body.

The distance of the pectoral from the snout (.26) is somewhat more than twice the length of the pectoral (.125).

The distance of the ventral from the snout (.56) equals 4 times the length of the external caudal rays. The length of the ventral equals $\frac{1}{3}$ of the length of the head and $\frac{1}{11}$ of the length of body.

Radial formula: B. VIII; D. II, 6; A. III, 32; P. I, 11; V. I, 7.

Color:—Upper part of body and head bluish slate; lower parts whitish.

The length of the ovaries is 17 inches, and the weight 5 pounds avoirdupois. The diameter of the eggs is from $\frac{1}{12}$ to $\frac{1}{10}$ of an inch. They are not readily separable and are apparently far from maturity.

Amiurus ponderosus differs considerably from *A. nigricans* as will be seen in the measurement tables. *A. ponderosus* has (1) a deeper body; (2) a much wider mouth; (3) a wider interorbital space; (4) the intermaxillary and the intermaxillary band of teeth longer; (5) the maxillary barbel only $\frac{2}{3}$ as long as the head instead of $\frac{6}{7}$ as in *nigricans*; (6) the long diameter of the eye contained $17\frac{1}{2}$ times in the length of the head instead of 9 to 11 as in *nigricans*; (7) the first ray of the dorsal less than $\frac{1}{2}$ as long as the head; (8) the longest anal ray less than $\frac{1}{3}$ as long as the head; (9) the caudal rays shorter and the caudal not forked; (10) the pectoral considerably less than $\frac{1}{2}$ as long as the head (more than $\frac{1}{2}$ in *A. nigricans*); (11) the ventral contained 3 times in length of head ($2\frac{1}{4}$ in *A. nigricans*); (12) anal rays, III, 32.

Table of measurements.

Species: *Amiurus ponderosus*.

Current number of specimen..... Locality.....	23388 ♀. Mississippi River, near Saint Louis, Mo.		
	Inches and 10ths.	100ths of length without caudal.	Times in length of body.
Length to origin of middle caudal rays.....	57.2		
Length to end of middle caudal rays.....	61.0		
Body:			
Greatest height.....	16.7	29.00	3½
Greatest width.....	10.5	18.00	5½
Height at ventrals.....	16.6	29.00	3½
Least height of tail.....	4.8	8.39	12
Length of caudal peduncle.....	9.3	16.00	6½
Head:			
Greatest length.....	15.7	27.44	3½
Width of mouth.....	9.6	16.78	6
Greatest width.....	12.5	21.85	4½
Width of interorbital area.....	8.6	15.00	6½
Length of snout.....	4.8	8.39	12
Extent of intermaxillary band of teeth.....	6.1	10.66	9½
Extent of intermaxillaries.....	6.2	10.84	9½
Length of right maxillary barbel.....	9.3	16.00	6½
Length of mandible.....	8.5	15.00	6½
Distance from lower nostril to eye.....	3.5	6.11	4½ (in head).
Distance from snout to orbit.....	6.2	10.84	9½
Distance from upper nostril to eye.....	3.2	5.59	4½ (in head).
Diameter of orbit.....	.9	1.57	17½ (in head).
Dorsal (first):			
Distance from snout.....	20.9	36.54	23½
Length of base.....	4.7	8.21	12½
Length of first spine.....	6.0	10.49	9½
Length of first ray.....	7.0	12.23	8
Length of last ray.....	2.8	5.00	20
Dorsal (adipose):			
Length of base.....	2.5	4.37	23
Distance from snout.....	46.4	81.11	1½
Greatest height.....	3.5	6.11	4½ (in head).
Anal:			
Distance from snout.....	38.4	67.00	13½
Distance from anus.....	2.0	3.49	8 (in head).
Length of base.....	15.0	26.22	3½
Length of first ray.....	.6	1.05	26 (in head).
Length of longest ray (9th).....	4.4	7.69	13
Length of last ray.....	1.9	3.32	8½ (in head).
Caudal:			
Length of middle rays.....	3.8	6.04	15
Length of external rays.....	8.0	14.00	7
Pectoral:			
Distance from snout.....	15.0	26.22	3½
Length.....	7.2	12.58	8
Ventral:			
Distance from snout.....	32.0	56.00	1½
Length.....	5.2	9.09	11
Branchiostegals.....	VIII		
Dorsal.....	II, 6		
Anal.....	III, 32		
Pectoral.....	I, 11		
Ventral.....	I, 7		

Table of measurements.

Species: *Amiurus nigricans*.

Current number of specimen..... Locality	19092. Saint John's River, Florida. G. B. Goode.		20802. (Skin.) Normal, Illi- nois.		11116. (Skin.) Sandusky, Ohio.		11117. (Skin.) Sandusky, Ohio.	
	Inches and 10ths.	100ths of length without caudal.	Inches and 10ths.	100ths of length without caudal.	Inches and 10ths.	100ths of length without caudal.	Inches and 10ths.	100ths of length without caudal.
Length to origin of middle caudal rays	18.5							
Length to end of middle caudal rays	20							
Body:								
Greatest height		.25						
Height at ventrals		.24						
Least height of tail		.09						
Length of caudal peduncle		16½						
Head:								
Greatest length		27	7.7		7.3		7.8	
Width of mouth		11½						
Greatest width		20						
Width of interorbital area		12½						
Length of snout		10						
Extent of intermaxillary band of teeth		7½	2.5		2.3		2.5	
Extent of intermaxillaries		8½						
Length of left maxillary barbel		21½	*		*		*	
Length of mandible		14	6.6		6.4		6.3	
Distance from lower nostril to eye		7						
Distance from snout to orbit		11½						
Distance from upper nostril to eye		5						
Diameter of orbit		3	.7		.75		.8	
Dorsal (first):								
Distance from snout		37½						
Length of base		8						
Length of first spine		10½						
Length of first ray		15½	4		4		4	
Length of last ray		6						
Dorsal (adipose):								
Length of base		6½						
Distance from snout		78½						
Greatest height		7½						
Anal:								
Distance from snout		63½						
Distance from anus		4½						
Length of base		20½						
Length of first ray		13½						
Length of longest ray		11½	3.3				3.5	
Length of last ray		4½						
Caudal:								
Length of middle rays		8½						
Length of external rays	3.6	20						
Pectoral:								
Distance from snout		24						
Length		16½	4.1		4.1		4.3	
Ventral:								
Distance from snout		52						
Length		12						
Branchiostegals	VIII							
Dorsal	II, 6		II, 6					
Anal	III, 23		III, 24		III, 23		III, 25	
Pectoral	I, 10		I, 9					
Ventral	I, 7		I, 7					

* Extends beyond end of head.