

4.—DESCRIPTION OF A NEW SPECIES OF SHAD (*ALOSA ALABAMÆ*) FROM ALABAMA.

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On April 10, 1896, the United States Fish Commission received from Tuscaloosa, Ala., through the kindness of Mr. J. H. Fitts, of that city, four specimens of shad which had been caught in the Black Warrior River. Upon comparing these specimens with numerous examples of the common shad (*Alosa sapidissima*) from the Potomac and other shad streams of the Atlantic coast, they were found to belong to an entirely distinct and undescribed species.

In view of the importance of this discovery, it is thought desirable to publish this preliminary description in advance of a more complete report upon the species.

Alosa alabamæ Jordan & Evermann, new species.

Types: No. 47689, U. S. National Museum, a female, total length 15 inches; and No. 47690, U. S. National Museum, a male, total length 15 inches.

Type locality: Black Warrior River, Tuscaloosa, Ala.

Collector: J. H. Fitts, esq.

Description of female: Head $4\frac{3}{8}$; depth 3; snout $4\frac{1}{2}$; eye $4\frac{1}{4}$; maxillary $2\frac{1}{4}$. Dorsal 15; anal 20; scales 55, —16 in a crosswise series; scutes 21+15; vertebrae 54; gillrakers 24+44 and 25+43=68.

Body deep; back gently and evenly arched from tip of snout to origin of dorsal fin, thence descending in a regular curve to base of caudal fin; ventral outline nearly straight from tip of mandible to ventrals, and also from there to base of caudal. Head small, snout pointed; upper lip with a small notch, into which fits the tip of the slightly projecting lower jaw; maxillary narrow; cheek much deeper than long; teeth on tongue and maxillary scarcely perceptible.

Origin of dorsal nearer snout than base of caudal, the fin low, the longest ray shorter than the base, or about equal to snout and eye; base of anal somewhat greater than that of dorsal, or equal to length of pectoral. Gillrakers 68, the longest about equal to length of snout. Peritoneum pale.

Color as in *Alosa sapidissima*; the caudal, dorsal, and pectoral fins rather darker tipped.

The male differs from the female only in being somewhat more slender.

This species differs from *Alosa sapidissima* chiefly in the fewer gill-rakers, its sharper, more pointed snout, smaller notch in upper jaw, more projecting mandible, and more slender maxillary. It seems to reach maturity at a much smaller size than the common shad.

The difference in the number of gillrakers is remarkable, and, with the other differences, shows clearly that the Alabama shad is a perfectly distinct species.

In 1882, Dr. Jordan collected a number of young shad at Pensacola, Fla., and believing them to be new, sent a description of the supposed new species to the National Museum. The manuscript was subsequently withdrawn and has never been published, though he has never had much doubt as to the distinctness of the species.

An examination of the Pensacola specimens, now in the National Museum, shows them to be identical with those from Black Warrior River.

This is undoubtedly the native shad of the Gulf of Mexico and tributary streams, though it is probably less abundant in those waters than *Alosa sapidissima*, which has been extensively introduced there by the United States Fish Commission.

While studying the specimens of the Alabama shad, a large number of shad from the Atlantic coast streams were examined.

The following table shows the number of gillrakers in the various specimens examined:

Table showing number of gillrakers in shad from different waters.

River.	No.	Number on first arch on right side.	Number on first arch on left side.
Black Warrior River	1	24+44= 68	23+45= 68
	2	24+44= 68	24+45= 69
	3	24+42= 66	24+43= 67
	4	*24+40=	23+41= 64
Pensacola, Fla.	1	22+34= 56	22+36= 58
	2	23+36= 59	23+39= 62
	3	22+38= 60	22+36= 58
	4	20+40= 60	20+40= 60
	5	20+38= 58	21+39= 60
	6	23+38= 60	21+38= 59
	7	20+39= 59	20+40= 60
North Carolina	1	40+58= 98	41+59=100
	2	43+61=104	43+63=106
	3	40+58= 98	39+58= 97
	4	35+62= 97	34+61= 95
	5	37+62= 99	39+57= 96
	6	36+60= 96	37+60= 97
Potomac River	1	36+60= 96	36+60= 96
	2	37+67=104	36+66= 99
	3	37+67=104	38+68=106
	4	37+67=104	37+68=105
	5	37+56= 93	37+56= 93
	6	37+64=101	37+65=102
	7	37+57= 94	37+60= 97
	8	40+62=102	39+66=105

Table showing number of gillrakers in shad from different waters—Continued.

River.	No.	Number on first arch on right side.	Number on first arch on left side.
Susquehanna River.....	1	36+66=102	35+64= 99
	2	36+67=103	39+67=106
	3	36+66=102	37+68=105
	4	34+64= 98	34+64= 98
Delaware River.....	1	35+65=100	35+64= 99
	2	36+64=100	37+68=105
	3	39+70=109	38+69=107
	4	36+65=101	37+68=105
	5	39+66=105	37+64=101
	6	34+63= 97	38+66= 98
	7	39+68=107	40+68=108
	8	43+73=116	45+73=118
Hudson River.....	1	37+58= 95	38+62=100
	2	37+56= 93	38+59= 97
	3	*37+46= 83	*37+47= 84
	4	41+68=109	41+66=107
	5	40+69=109	40+69=109
	6	43+76=119	44+75=119
	7	42+69=111	40+68=108
Connecticut River.....	1	40+68=108	38+68=106
	2	34+66=101	36+68=104
	3	35+66=101	34+67=101
	4	37+70=107	40+65=105
	5	39+67=106	38+68=106
	6	39+70=109	39+68=107
	7	40+69=109	42+67=109
	8	39+70=109	43+67=110
	9	40+68=108	39+69=108
	10	41+75=116	41+75=116

* Mutilated; count uncertain.

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