DESCRIPTIONS OF TWO NEW SPECIES OF FISHES, LUTJANUS BLACKFORDII AND LUTJANUS STEARNSII, FROM THE COAST OF FLORIDA.

By G. BROWN GOODE and TARLETON H. BEAN.

Recent explorations on the coast of Florida have brought to light several undescribed species of large fishes. Some of them have already been named by us. Two species of Pristipomatoid fishes are characterized below.

Lutjanus Blackfordii, *sp. nov.*, Goode & Bean.

The well-known Red Snapper of our Southern coast has, strangely enough, never been scientifically described. This is due to an erroneous identification of this species with a common West Indian form, *Lutjanus aya*, from which it differs in several particulars, notably in the size of the eye and of the scales.

The species is dedicated to Mr. Eugene G. Blackford of New York City, to whom the National Museum is indebted for many hundreds of specimens of rare fishes, and by whose vigilant study of the New York fish-markets several species have been added to the fauna of the United States.

We base our description upon a fresh specimen (No. 21,330), sent from Pensacola, Fla., May —, 1878, by Mr. Silas Stearns, which is twenty-six inches long, and weighs 11½ pounds; also two well-executed casts, one, No. 12,515, obtained by Mr. Milner, in Washington City market, 1874, thirty inches long, and one, No. 20,978, thirty-three inches long, obtained from the Savannah Bank, March, 1878, by Mr. Goode.

Diagnosis.—Body much compressed; its upper profile ascending from the snout, with a slight concavity in front of eye to the origin of the spinous dorsal, thence descending in a long curve to the base of the caudal; under profile much less arched. Upper and lower jaw of even extent. The greatest height of the body equal to length of head. Least height of tail equal to one-third of the distance from the snout to the pectoral. Greatest height of head slightly less than one-third of total length, including caudal and three-eighths of length without caudal. Præoperculum finely and evenly serrated, except at the angle, where the denticulations are coarser: a slight emargination above the angle, in which is received an elevation upon the interopercular bone, and two shallower emarginations above. The maxillary falls short of the vertical line from the anterior margin of the orbit, the mandibular bone of that from the middle of the orbit. Eye circular; its diameter contained seven and one-third times in the total length of the head. Length of snout nearly equal to that of maxillary. Length of mandible equal to half the height of the body at ventrals, and equal to or slightly less than distance from snout to centre of orbit. Distance of dorsal from snout about three times the length of snout; its length of base nearly equal to that of the pectoral. The length of its longest spine is equal

to twice the second anal spine, and about three times that of the first dorsal spine. The first dorsal ray is twice as long as the first dorsal spine, its longest ray nearly equal to the first ray of the anal.

Distance of anal fin from snout equal to two-thirds of total length (caudal excluded), twice as far from snout as is the pectoral; the length of its base slightly more than that of mandible; its first spine half as long as its second spine; its third spine slenderer, and slightly longer than the second; its first ray is about twice as long as its second spine; its longest ray equal to middle caudal ray, or, in young specimens, much longer; its last ray half the length of the first.

Caudal much emarginate, crescent-shaped; the median rays two-thirds as long as the external rays.

Pectoral midway between snout and anal; its length twice that of the maxillary. Distance of ventral from snout equal to the height of the body; its length three times that of second anal spine.

Radial Formula.—B. VII; D. X, 14; A. III, 9; C. + 17 +; P. I, 16; V. I, 5.

Scales.—8, 50, 15. Scales extending half the length of the anal rays on the membrane; on the external caudal rays nearly to tip, and with slight traces upon the spinous dorsal in front of the spines; and in the soft dorsal somewhat more extended.

Color.—Uniform scarlet. Centre of scales lighter, also belly, which is silvered; inside of axil of pectoral darker maroon.

This species is closely allied to the *Lutjanus torridus* of Cope, but differs in several particulars, notably (1) the smaller eye; (2) the greater number of dorsal and anal rays; (3) the smaller and more numerous scales; (4) the less emargination of the tail; (5) the shorter ventral fin (according to figure of Cope); (6) the higher occipital crest; and (7) in coloration.

Professor Cope's type measured 14 inches; ours range from 33 to 17½.

Lingual teeth in two patches; the anterior cordate, with emargination posteriorly; the other ovate-lanceolate, broadest anteriorly. Vomerine patch a quadilateral figure, with concave sides, and with the longest sides posteriorly. Palatine patches somewhat spatulate, broadest posteriorly.

Table of Measurements.

Current number of specimen	21,330.	
Locality	Pensacola, Fla.	
	Millim.	100ths.
Extreme length	560	
Length to end of middle caudal rays	654	
Body:		
Greatest height		37½
Height at ventrals		36½
Least height of tail		11
Head:		
Greatest length		37½
Width of interorbital area		8½
Length of snout		14
Length of maxillary		14½
Length of mandible		18
Distance from snout to centre of orbit		17½
Diameter of eye		5⅓
Dorsal (spinous):		
Distance from snout		43
Length of base		29
Length of first spine		4½
Length of second spine		10
Length of longest spine		13
Height at last spine		7½
Dorsal (soft):		
Length of base		22½
Length of first ray		8
Length of longest ray		(6th) 11½
Height at last ray		7½
Anal:		
Distance from snout		68½
Length of base		15½
Length of first spine		3
Length of second spine		6½
Length of third spine		7½
Length of first ray		12
Length of longest ray		(3d) 16½
Length of last ray		6
Caudal:		
Length of middle rays		16
Length of external rays		24
Pectoral:		
Distance from snout		33
Length		30
Ventral:		
Distance from snout		37
Length		19½
Branchiostegals	7	
Dorsal	X, 14	
Anal	III, 9	
Caudal	+17+	
Pectoral	I, 16	
Ventral	I, 5	
Number of scales in lateral line	50	
Number of transverse rows above lateral line	8	
Number of transverse rows below lateral line	15	
Weight, pounds	11½	

Table of Measurements—Continued.

Current number of specimen	A.		B.		C.		D.	
Locality	Gulf of Mexico.		Gulf of Mexico.		Gulf of Mexico.		Gulf of Mexico.	
	Millim.	100ths	Millim.	100ths	Millim.	100ths	Millim.	100ths
Extreme length	650	.....	520	.....	460	.....	380	.....
Length to end of middle caudal rays	752	(29½in)	613	(24in)	540	(21⅛in)	445	(17½in)
Body:								
Greatest height (behind ventrals)	.....	36	.....	37½	.....	36½	.....	37½
Height at ventrals	.....	35½	.....	36	.....	35½	.....	36½
Least height of tail	.....	11	.....	11	.....	11	.....	11
Head:								
Greatest length (to end of opercular flap)	.....	38	.....	38	.....	38	.....	37½
Width of interorbital area	.....	9	.....	8	.....	8	.....	8
Length of snout	.....	14½	.....	14	.....	14	.....	14
Length of upper jaw	.....	15	.....	15	.....	14½	.....	15½
Length of mandible	.....	18	.....	18	.....	17½	.....	18½
Distance from snout to centre of orbit	.....	17½	.....	18	.....	17½	.....	18
Diameter of eye	.....	5	.....	5½	.....	5½	.....	6
Dorsal (spinous):								
Distance from snout	.....	41	.....	43	.....	41½	.....	42½
Length of base	.....	26½	.....	27½	.....	27	.....	28
Length of first spine	.....	3½	.....	4	.....	3	.....	4½
Length of second spine	.....	9	.....	9	.....	9½	.....	10
Length of longest spine	.....	11½	.....	12½	.....	13½	.....	13½
Length of last spine	.....	6½	.....	8	.....	8	.....	9
Dorsal (soft):								
Length of base	.....	22	.....	22	.....	22½	.....	20½
Length of first ray	.....	7	.....	9½	.....	9½	.....	9½
Length of longest ray	.....	10	.....	13	.....	12	.....	12
Length of last ray	.....	6	.....	6	.....	6½	.....	6
Anal:								
Distance from snout	.....	68	.....	69	.....	70	.....	72½
Length of base	.....	15½	.....	15	.....	15	.....	15
Length of first spine	.....	3	.....	3½	.....	3½	.....	5
Length of second spine	.....	.....	.....	7	.....	7⅝	.....	9½
Length of third spine	.....	7	.....	8½	.....	8½	.....	9½
Length of first ray	.....	11	.....	12½	.....	12	.....	12
Length of longest ray	.....	14	.....	14½	.....	18	.....	16½
Length of last ray	.....	6½	.....	6½	.....	7	.....	7
Caudal:								
Length of middle rays	.....	15½	.....	18	.....	17	.....	17
Length of external rays	.....	21	.....	26	.....	26	.....	26
Pectoral:								
Distance from snout	.....	35	.....	35½	.....	34	.....	35½
Length	.....	27	.....	33	.....	32	.....	32
Ventral:								
Distance from snout	.....	38½	.....	38	.....	38	.....	39½
Length	.....	17	.....	20½	.....	20	.....	21
Branchiostegals	7	.....	7	.....	7	.....	7	.....
Dorsal	X, 14	.....	X, 14	.....	X, 14	.....	X, 14	.....
Anal	III, 9	.....	III, 9	.....	III, 9	.....	III, 9	.....
Caudal	+17+	.....	+17+	.....	+17+	.....	+17+	.....
Pectoral	I, 16	.....	I, 15–16	.....	I, 16	.....	I, 16	.....
Ventral	I, 5	.....	I, 5	.....	I, 5	.....	I, 5	.....
No. of scales in lateral line	50	.....	50	.....	50	.....	50	.....
No. of transverse rows above lateral line	9	.....	9	.....	9	.....	9	.....
No. of transverse rows below lateral line	16	.....	16	.....	16	.....	16	.....
Weight ..... pounds	15½	.....	8½	.....	5	.....	.....	.....

Lutjanus Stearnsii, *sp. nov.*, Goode & Bean.

A single specimen of the Mangrove Snapper of Pensacola was sent by Mr. Silas Stearns, to whom the species is dedicated, as a slight acknowledgment of his services in securing for the United States National Museum large collections of fishes from the Gulf of Mexico and fresh waters adjacent to Pensacola, Fla.

Upon this individual (catalogue number 21,337), our description is based, having been drawn up from the fresh specimen. Its length is 19¾ inches. Besides the alcoholic preparation, the Museum has also a cast and a color-sketch.

Diagnosis.—This species may be readily distinguished from *L. Blackfordii* by its different color, lower and less compressed body, shorter head, shorter pectorals and ventrals, and by other characters which appear in the table of measurements.

Body similar to that of *L. Blackfordii* in shape. It greatest height equals length of head, twice length of mandible, and twice that of ventral. Its height at ventrals equals four times width of interorbital area. Least height of tail equals first anal ray and twice the last dorsal ray. Greatest length of head equals greatest height of body, twice length of mandible, and twice ventral length. The width of interorbital area equals one fourth of height at ventrals and two-thirds of least height of tail. Length of snout equals second anal ray. Length of maxillary equals twice length of second dorsal spine, which equals second anal spine. The mandible equals the ventral in length. Eye contained slightly more than six times in greatest length of head.

Distance of dorsal from snout equals three times, and base of spinous dorsal twice length of snout. First dorsal spine about equal to first anal. Second dorsal spine equals second anal and twice first anal.

Longest dorsal spine (fourth) equals one-third of greatest length of head. Last dorsal spine about equal to half distance from snout to centre of orbit. Base of soft dorsal equals three times second spine of dorsal. First ray of dorsal equals three-fourths of first anal ray, which equals least height of tail. Longest dorsal ray (fourth) equals twice diameter of eye, and the last equals half of least height of tail.

Distance of anal from snout equals slightly more than six times least height of tail; its length of base somewhat exceeds length of second anal ray. First anal spine equals half the second, which is half the length of upper jaw. Third anal spine equals half second anal ray, which equals length of snout. First anal ray equals least height of tail; second equals length of snout, and last equals half length of snout.

Middle caudal rays equal one-sixth and superior external rays one-fourth of total length. Inferior external rays slightly less than length of pectoral.

Distance of pectoral from snout about equal to length of head. Its length almost twice least height of tail.

Distance of ventral from snout nearly three times length of snout; its length equals half length of head.

Radial Formula.—B. VII; D. X, 14; A. III, 8; C. + 17 +; P. I, 15; V. I, 5.

Scales.—6, 45, 14.

Color.—General color scarlet below, shading into reddish or purplish brown above. Plum color on sides and top of head. Below the lateral line, the posterior half of the exposed portion of the scales is white tinted with scarlet; the basal portion reddish and much darker. Under part of head light scarlet. Vertical fins darker than the body. Pectoral and ventral white roseate.

Teeth.—Vomerine teeth in a patch shaped like a spear, with concave cutting edges and acutely produced angles.

Table of Measurements.

Current number of specimen	21,337.	
Locality	Pensacola, Fla.	
	Millim.	100ths.
Extreme length without caudal	430	
Length to end of middle caudal rays	501	(19¾ in.)
Body:		
Greatest height		34
Height at ventrals		32
Least height of tail		12
Head:		
Greatest length		34
Width of interorbital area		8
Length of snout		13
Length of operculum		11
Length of maxillary		14
Length of mandible		17
Distance from snout to centre of orbit		15½
Diameter of eye		5½
Dorsal (spinous):		
Distance from snout		39½
Length of base		26
Length of first spine		3⅓
Length of second spine		7
Length of longest spine		(4th) 11½
Length of last spine		7½
Dorsal (soft):		
Length of base		21
Length of first ray		9
Length of longest ray		(4th) 11
Length of last ray		6
Anal:		
Distance from snout		73
Length of base		13½
Length of first spine		3½
Length of second spine		7
Length of third spine		6½
Length of first ray		12
Length of longest ray		(2d) 13
Length of last ray		6½
Caudal:		
Length of middle rays		16½
Length of external rays { superior		25
Length of external rays { inferior		23
Pectoral:		
Distance from snout		33½
Length		23½
Ventral:		
Distance from snout		38½
Length		17
Branchiostegals	7	
Dorsal	X. 14	
Anal	III, 8	
Caudal	+17+	
Pectoral	I, 5	
Ventral	I, 15	
Number of scales in lateral line	45	
Number of transverse rows above lateral line	6	
Number of transverse rows below lateral line	14	

A NOTE ON THE GULF MENHADEN, BREVOORTIA PATRONUS, GOODE.

By SILAS STEARNS.

The Gulf Menhaden are first seen about Pensacola in April. They enter the harbor in small schools, swimming at the surface, rippling the water as they go. I have never seen any large schools, perhaps not more than four or five barrels in one body; but the number of small schools which might be seen in a few hours at the right place and in a