NOTES ON SOME FLORIDA FISHES.

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At various times, in the publications of the United States National Museum and elsewhere, the validity of some species of Florida fishes described by us has been called in question by Professors Jordan and Gilbert, and several of our names have been referred to the synonymy of older species without adequate show of proof. In a preceding paper Professor Jordan reiterates some of these statements, and we now feel called upon to give our reasons for adhering to the names proposed by us. The fishes immediately concerning us at present are the following: *Lutjanus stearnsii*, *Lutjanus blackfordii*, and *Caulolatilus microps*. In addition to these three, we have studied *Sparus pagrus* and *Xyrichthys "lineatus,"* upon which we have some remarks to make.

1. Lutjanus stearnsii Goode & Bean.

Lutjanus stearnsii GOODE & BEAN, Proc. U. S. Nat. Mus., I, 1878, p. 179; JORDAN & GILBERT, Syn. Fish., N. A., 1883, p. 549.

Lutjanus caballerote POEY (specimen in U. S. National Museum, number 9862).

?? *Anthias caballerote* SCHNEIDER, Bloch Syst. Ichth., 1801, p. 310.

We have been aware for some time that the species of *Lutjanus* called *stearnsii* by us occurs in the West Indies, and upon comparison of our type with an example of *caballerote*, as determined by Poey, we find that the two are identical. We cannot understand, however, the apparent ease with which Schneider's description has been interpreted; to us it is completely useless for the purposes of identification. We prefer to use the name *stearnsii* for the present, and until one of the older names, *cynodon* or *griseus*, is demonstrated as applying to our species.

The example received from Professor Poey, measurements of which are given farther on, exhibits the following among other characters:

There are only eight developed gill-rakers on the first arch, one above and seven below the angle; the longest is one-half as long as the eye. There are seven rows of scales on the cheeks. The single patch of lingual teeth is twice as long as it is broad. The vomerines are in a triangular patch on the head, with a long, narrow backward extension. The palatines are in a broad band. The scales extend upon the membranes of the dorsal, anal, and caudal fins for about one-half their height, or rather more on the caudal. There are two very strong canines in the upper jaw, and two much smaller ones between these and the symphysis. The mandible is without enlarged canines.

The edge of the spinous dorsal membrane is black. The caudal has a narrow black margin. The included portion of the maxilla is brown. The scales of the body below the lateral line have median golden stripes, as in some species of *Mugil*.

Measurements.

Species, LUTJANUS CABALLEROTE Poey.

Current number of specimen	9862.	
Locality	Cuba.	
	Millimeters.	100ths of length.
Extreme length without caudal	242	.....
Length to end of middle caudal rays	293	.....
Body:		
Greatest height	82	34
Height at ventrals	82	34
Least height of tail	31	12.4
Head:		
Greatest length	90	37
Length of longest gill-raker	9	.....
Width of interorbital area	19	8
Length of snout	27	11
Length of operculum	27	11
Length of maxillary	31	12.4
Length of upper jaw	36	15
Length of mandible	43	17.8
Distance from snout to orbit	32	13
Diameter of orbit	20	8
Dorsal (*spinous*):		
Distance from snout	100	41.2
Length of base	69	28.5
Length of first spine	8	.....
Length of second spine	19	.....
Length of fourth spine (longest)	31	12.4
Length of last spine	20	
Dorsal (*soft*):		
Length of base	52	21.5
Length of first ray	23+	.....
Length of longest ray	32	13
Length of last ray	18	7.4
Anal:		
Distance from snout	173	71.5
Length of base	35	14.5
Length of first spine	9	.....
Length of second spine	22	9
Length of third spine	21	8.7
Length of first ray	33	13
Length of longest ray (second)	37	15
Length of last ray	21	8.7
Caudal:		
Length of middle rays	51	21
Length of external rays	57	23.5
Pectoral:		
Distance from snout	84	34.7
Length	61	25
Ventral:		
Distance from snout	94	39
Length	48	20
Branchiostegals	VII	.....
Dorsal	X, 14	.....
Anal	III, 8	.....
Pectoral	i, 16	.....
Ventral	I, 5	.....
Number of scales in lateral line	47	.....
Number of transverse rows above lateral line	7	.....
Number of transverse rows below lateral line	14	.....

2. Lutjanus blackfordii Goode & Bean.

Lutjanus blackfordii GOODE & BEAN, Proc. U. S. Nat. Mus., I, 1878, p. 176, (full description of adult); II, 1879, pp. 137, 138 (characters and measurements of young); GOODE, Game Fishes N. A., 1878, p. 16, with colored plate. JORDAN & GILBERT, Syn. Fish. N. A., 1883, p. 549.

Lutjanus campeachianus JORDAN & GILBERT, l. c., p. 971 (not *Mesoprion campeachanus* Poey, Mem. Cub., II, 1860, p. 149); JORDAN, Proc. U. S. Nat. Mus., VII, 1884, p. 35.

When we described the Red Snapper as a new species under the name *Lutjanus blackfordii* we were in possession of all the information concern-

ing Poey's *campeachianus* that was then available, and no one has, since that time, added anything but conjecture upon the relation of the Gulf form to the original of Poey's description. Indeed it is by no means certain that the type of that description is in existence. There is some ground for the belief that the specimen now purporting to be the basis of Poey's account is a later, erroneous identification of the Red Snapper. Any one who will compare our measurements of *Lutjanus blackfordii* on page 179 of Vol. I and 138 of Vol. II of the Proceedings above referred to with the description of *L. campeachianus* will observe the important discrepancies between our fish and that of Poey.

It will be found that the eye of *L. campeachianus* is very much larger, and that the scales above the lateral line are much more numerous than in *L. blackfordii*. We are not concerned with Poey's recent interpretation of the Red Snapper, and we do not consider that this should be allowed to enter into the the discussion. In *Lutjanus blackfordii* we have a species fully described and accurately figured. It is quite as impossible to reconcile our species with the description of *L. campeachianus* now as it was six years ago, and we cannot see the supposed necessity of uniting the two on the basis of our present knowledge.

3. **Caulolatilus microps** Goode & Bean.

The following notes were obtained from an example of *C. chrysops* in the British Museum:

The length of the longest gill-raker is 4½ millimeters. The opercular spine is short, but sharp. The preoperculum is finely denticulated on its posterior margin. The black axillary spot is not quite so long as the pupil. The twenty-first ray of the dorsal is somewhat produced, as well as the twentieth anal ray; and these rays are only once divided and not twice, like all the others. If the scales be counted obliquely upward and forward from the anal origin to the lateral line, we shall find 31 or 32 rows; if counted upward and backward, 28.

The most important differences between *C. microps* and *C. chrysops* will be observed in (1) the length of the snout, (2) the length of the dorsal spines and rays, (3) the length of the longest anal rays, (4) the length of the paired fins, and (5) the number of scales in the lateral line. We cannot attribute these discrepancies to a difference in age, and we believe that nothing is to be gained by attempting to estimate the relations of the species by an examination of the literature alone. It will be best to consider *microps* as an established species until its claim to distinctness can be more successfully controverted.

An examination of the table of measurements which follows will show the relations of the West Indian and Gulf forms under discussion. We believe that three clearly marked species are indicated.

Measurements of species of Caulolatilus.

	C. microps, 20971. Pensacola, Fla.		*C. chrysops* (Brit.Mus.). Barbadoes.		*C. cyanops*, 4750. Cuba.	
	Millimeters.	100ths of length.	Millimeters.	100ths of length.	Millimeters.	100ths of length.
Length to origin of middle caudal rays	620		290		330	
Body:						
Greatest height		28		28.6		24.3
Greatest width		14.5				12
Height at ventrals		28		28		24.3
Least height of tail		8		8		7
Length of caudal peduncle		10				11
Head:						
Greatest length		28		28.6		28
Distance from snout to nape				13.4		15
Greatest width		14		12.4		13.5
Width of interorbital area		7		8.6		8.5
Length of snout		14		8		10
Length of maxillary		12.5		*10.7		10.3
Length of mandible		13		12.4		12.5
Distance from snout to center of orbit		14.7				11
Diameter of orbit		4.8		6.9		7.5
Dorsal (*spinous*):						
Distance from snout		34		32.4		32.5
Length of base		12.5		13.4		13
Length of first spine		3.5		5		5
Length of second spine		5.5		6.9		6
Length of last spine		7.5		10		9.5
Dorsal (*soft*):						
Length of base		44.5		48.6		46
Length of first ray		7		11		10.5
Length of longest ray		8.5		16		13
Length of last ray		4.5		5		5
Anal:						
Distance from snout		55		54.5		51.5
Length of base		35.5		39.7		37.5
Length of first spine		3				3
Length of first ray		6		7.6		7.5
Length of longest ray		8.5		12.4		12
Length of last ray		4.5		4.8		5
Caudal:						
Length of middle rays		11.5		14.8		11
Length of external rays		16		22.7		17.5
Pectoral:						
Distance from snout		30.5		28		27.5
Length		23		27.6		26
Ventral:						
Distance from snout		34.5		32		31
Length		14		17		16
Branchiostegals	VI				VI	
Dorsal	VII, 25		VII, 23		VII, 24	
Anal	I, 23		I, 22		I, 22	
Pectoral	i, 16				i, 15	
Ventral	I, 5		1, 5		I, 5	
Number of scales in lateral line	Ab't 120		100		108	
Number of transverse rows above lateral line	13		11		10	
Number of transverse rows below lateral line	35		32		25	
Number of gill-rakers			19			

* This means the upper jaw; the maxilla alone is 9.6.

4. Xyrichthys psittacus (L.) Goode & Bean.

Coryphæna psittacus LINNÉ, Syst. Nat., ed. xii, 1766, p. 448.
Coryphæna lineata GMELIN, Syst. Nat.

The type of *Coryphæna psittacus*, labeled by Linné, and marked No. 20 (evidently the No. 20 referred to on page 313, Correspondence with Linné by Garden, as a fish of surpassing beauty), is the species which we have for some time known as *Xyrichthys lineatus*. Linné's descrip-

tion agrees fully with this example except in the count of the dorsal, which, for some unknown reason, is $\frac{9}{29}$ instead of $\frac{9}{22}$, as Linné would have made it. All the other fin-rays are correctly given.

The length of the type to the caudal base is 151 millimeters, and the characters are as follows: D. IX, 12; A. III, 12, the last of the dorsal and anal rays double; V. 6; P. 11; C. 14; scales 2 above lateral line; tubes about 24 in all.

The lateral line is interrupted under the 10th ray of the dorsal; the accessory line begins on the median line, under the end of the upper lateral line, and consists of five short tubes.

The height is one-third of the length to caudal base; the head one-fourth. The eye is about equal in length to the upper jaw, and is placed at the top of the head.

Coryphæna psittacus has been supposed to be a *Pseudoscarus* (Günther, Cat. Fish. Brit. Mus., IV, 225), but we must now find another name for the species to which the Linnæan name has been wrongly applied.

5. Sparus pagrus Linné.

Pagrus argenteus Goode & Bean, Proc. U. S. Nat. Mus., II, 1879, p. 133.
Sparus pagrus Jordan & Gilbert, Syn. Fish. N. A., 1883, p. 556.

We have again examined the Gulf Porgee, and compared it directly with a specimen of about equal size which was recently obtained from Leghorn. Although there is some difference in the general appearance of the two forms, we cannot distinguish them as separate species. The life colors we have not observed, but so far as the condition of the two in spirits is concerned we believe that the subjoined table of measurements, together with the remarks now to follow, will substantiate our original statement of the identity of the two.

The example from Leghorn has 17 gill-rakers on the first arch, 9 of which are below the angle; it has 7 rows of scales on the cheeks; 4 canines in the front of the upper jaw; 6 in the front of the lower jaw; 2 rows of large molars in the upper jaw, and a short, imperfect inner row, consisting of a few small molars developed only anteriorly; 2 rows of molars in the lower jaw, with an accessory inner row of minute ones similar to those in the upper jaw.

The Pensacola specimen also has 17 gill-rakers on the first arch, 8 to 9 of them below the angle.

It seems almost unnecessary to add more than to call attention to the close correspondence in the measurements of the two individuals which we have recently compared.

Measurements.

Species, SPARUS PAGRUS Linné.

Current number of specimen	(34)	21339.
Locality	Leghorn, Italy.	Pensacola, Fla.
	Millimeters.	Millimeters.
Length to end of middle caudal rays	382	390
Length to origin of middle caudle rays	340	346
Body:		
Greatest height	133	133
Greatest width	53	56
Height at ventrals	133	133
Least height of tail	38	34
Length of caudal peduncle	50	52
Head:		
Greatest length	108	112
Distance from snout to nape	53	59
Greatest width	54	57
Height of preorbital	33	35
Width of interorbital area	34	32
Length of snout	36	43
Length of operculum	30	30
Length of upper jaw	45	45
Length of mandible	45	45
Distance from snout to orbit	50	54
Diameter of eye	26	26
Dorsal (*spinous*):		
Distance from snout	146	145
Length of base	115	109
Length of longest spine (4th)	48	43+
Length of first spine	15	20
Length of second spine	37	26+
Length of third spine	44	37+
Dorsal (*soft*):		
Length of base	66	64
Length of first ray	34	29
Length of longest ray	40	39
Length of last ray	36	39
Anal:		
Distance from snout	230	226
Length of base	60	63
Length of first spine	15	12
Length of second spine	31	26
Length of third spine	31+	27
Length of first ray	38	30+
Length of longest ray	38	35
Length of last ray	31	35
Caudal:		
Length of middle rays	42	44
Length of external rays	88	85
Pectoral:		
Distance from snout	110	115
Length	126	122
Ventral:		
Distance from snout	126	127
Length	74	72
Length of appendage	23	24
Dorsal	XII, 10	XII, 10
Anal	III, 7	III, 8
Pectoral	ii, 13	ii, 14
Ventral	I, 5	I, 5
Number of scales in lateral line	56	56
Number of transverse rows above lateral line	7	7
Number of transverse rows below lateral line	15	15
Number of rows on cheeks	7	7
Number of gill-rakers	17	17