

DESCRIPTION OF SIX NEW SPECIES OF FISHES FROM THE GULF
OF MEXICO, WITH NOTES ON OTHER SPECIES.

By DAVID S. JORDAN and BARTON W. EVERMANN.

In the months of March and April, 1886, the writers, accompanied by a party of students from the University of Indiana visited Pensacola, Fla., for the purpose of making collections of fishes. Through the kindness of Mr. Silas Stearns, Mr. Evermann and Mr. Charles H. Bollman were enabled to accompany the fishing boats to the "Snapper Banks" between Pensacola and Tampa Bay. From the "spewings" of the Snappers and especially from those of the Red Grouper (*Epinephelus morio*) a considerable number of species were obtained, some of which have not been included in any of the numerous similar collections heretofore made by Mr. Stearns and Dr. Jordan.

Six species in this collection appear to be new to science. The types of all these are in the United States National Museum.

1. *Callechelys muræna*, sp. nov. (No. 37996, U. S. N. M.).

Head, 7 times in trunk, 13 times in total length, the head being almost exactly one inch ($m. .024$) long, the trunk 7 ($m. 175$) and the tail 5 ($m. 127$), the whole specimen being 13 inches long, the tail proportionally shorter than usual in this group.

Body stouter and more compressed than in other species of this group, its depth at the gill-opening a little more than the length of the upper jaw, which is 3 in head. Mouth larger than in related species, but of the same general form, the lower jaw shorter and narrower than the upper. Eye small, not half as long as snout, placed over the middle of the upper jaw. Nostrils labial, the anterior in a short tube, the posterior without tube, and placed just before front of eye. Tip of lower jaw extending a little before front of eye.

Teeth small, all uniserial or nearly so, all of them more or less bluntly conical. Those in front of upper jaw larger than the others, those on front of lower jaw and on vomer also enlarged, those on maxillary small and nearly uniform. All the larger teeth directed more or less backwards.

Gill-openings rather small, somewhat oblique, the distance between them about half the height of one of them, which is a little more than the cleft of the mouth. Dorsal fin rather high, beginning on the head at a distance behind angle of mouth a little more than half the length of upper jaw. Anal, well developed, but lower than the corresponding parts of the dorsal. Tail projecting behind dorsal and anal. No trace of pectoral fins.

Color dark olive, closely mottled and spotted with confluent blotches of dark olive and blackish, the spots most distinct anteriorly, poste-

riorly confluent so that the tail is nearly plain dusky. Belly scarcely paler. No black around gill-opening. Dorsal and anal chiefly blackish, each with a conspicuous, narrow, pale margin.

A single specimen obtained on the Snapper Banks by Mr. Stearns. It has little resemblance to *Callechelys scuticaris* (= *C. teres*) or to *Callechelys bascanium*, being much stouter and more like *Muraena* in form and color.

2. *Steinegeria rubescens*, gen. & sp. nov. (*Bramidæ*).

Head $2\frac{2}{3}$ in length ($3\frac{1}{2}$ with caudal); depth 2 ($2\frac{1}{3}$). D. XI-I, 18; A. ii, 0; V. I, 5. Scales *ca.* 50—26. Length (No. 37991, U. S. N. M.) 5 inches.

Body ovate, considerably compressed, the greatest thickness a little less than half length of head. Anterior of profile from tip of snout to base of dorsal nearly straight. Outline of belly prominent, the axis of body being rather nearer dorsal than ventral outline. Breast and belly not carinate.

Head but little longer than deep, its upper surface flattish, the bones not very firm. Interorbital space nearly flat, with two ridges, about as broad as eye, which is $3\frac{1}{3}$ in head. Preorbital very narrow, somewhat cavernous, its edge sharply dentate; snout short, 5 in head.

Mouth very oblique, the lower jaw strongly projecting, the broad maxillary reaching to below middle of eye, its length half that of the head. Each jaw with a band of small cardiform teeth, those in front largest, especially in the lower jaw, but all of them small. A band of villiform teeth on each palatine bone, but none on the vomer; premaxillaries protractile. Lower jaw with conspicuous pores.

Preopercle forming a nearly even curve, without distinct angle. Ascending limb of preopercle very finely serrulate, with some four or five coarser teeth about the angle. Other opercular bones very thin, with entire edges. Cheeks, opercles, maxillary and top of head closely covered with scales similar to those on rest of body, but a little smaller.

Gill-rakers rather short and wide apart, 8 or 9 developed on the lower part of the arch, the longest about one-third length of eye.

Body closely covered with membranous scales which are closely imbricated, deeper than long, each with a distinct median keel besides which are some smaller radiating ridges especially on the scales of the sides of the body. These ridges on the scales give the body a rough appearance, although they are not spinigerous. The keels on the scales form continuous ridges giving the whole body a striated appearance. Scales largest on middle of sides, becoming smaller on back and on belly. No distinct lateral line. Fins with few scales or none.

Dorsal spines very slender and flexible, some of them ending in filaments (all more or less mutilated in typical example.) Soft rays separated from spines by a deep notch extending nearly to base of fin. Soft dorsal elevated, the longest rays about $1\frac{1}{3}$ in head. Caudal lunate, its

peduncle very short and slender. Anal fin high, its spines short and slender, the longest ray $1\frac{1}{3}$ in head. No free anal spines. Ventrals inserted before pectorals, their length $1\frac{1}{5}$ in head. Ventrals not depressible into a fissure of the abdomen. Pectorals $1\frac{1}{5}$ in head. Vent well behind ventrals.

Color in life salmon red, rather bright and nearly uniform, darker on back, silvery under the chin. Fins all salmon, with black areas toward base on both dorsals and anal. Ventrals largely black. Lining of opercles pale.

A single specimen, in fair condition, was found by Dr. Jordan in the stomach of a Red Grouper, at Pensacola.

The species is evidently allied to *Grammicolepis*, *Pseues*, and other genera which have been lately placed in or near the *Bramidae*. We are unable, however, to find any described genus in which it can be placed, and we therefore regard it as the type of a new one, *Steinegeria*, the characters of which are included in the foregoing account. We may regard *Steinegeria* for the present as a member of the family of *Bramidae*, though the natural limits of that family are yet to be defined. We have named the genus in honor of our friend, Dr. Leonhard Stejneger, of the United States National Museum, in recognition of his most excellent work in the field of American ornithology.

3. *Serranus ocyurus*, sp. nov.

(*Serranus trifurcus* Jordan & Gilbert, Proc. U. S. Nat. Mus., 1882, 273, not *Perca trifurca* L.)

Very closely allied to *Serranus atrarius*, of which it is doubtless to be regarded as a geographical variety.

Head $2\frac{3}{4}$ in length ($3\frac{3}{4}$ in total); depth 3 ($4\frac{1}{2}$). D. X, 11; A. III, 7. Scales 5 to 6—50—14. Length of type (No. 37997, U. S. N. M.) $10\frac{1}{4}$ inches.

The description of *Serranus trifurcus* mentioned above was taken from young examples of this species. It applies well enough to the adult, so that a repetition is unnecessary. The type of *Serranus ocyurus*, compared with the ordinary *Serranus atrarius*, seems to differ chiefly in color and in the greater development of the caudal fin. There are also some differences in the gill-rakers, in the scales on the cheek, and in the armature of the preopercle. These differences are indicated in the following account:

Color pale olive, somewhat darker on the back; each side with three longitudinal rows of quadrate black blotches; the uppermost series obscure, along base of dorsal fin; the second distinct, and placed just below lateral line, the three anterior blotches of this series somewhat confluent; the lower series very distinct, jet-black, and not confluent, placed along side of belly, on the level of the axil of the pectoral. The blotches in each series correspond in position to those in the other series, so that, with dusky shades extending from one to another, they form

about seven dusky cross-bands. Some dark, inky spots on opercle and above base of pectoral. Opercle and preopercle with dusky shades. Chin with some dusky. Spinous dorsal plain. Soft dorsal with fine oblique bars on a pale ground, two of the dark blotches on body extending on its base. Last ray with two or three dark spots. Caudal fin with the middle rays black, the outer pale, all of them with darker spots, which become black on the median rays.

Anal fin pale, slightly mottled, the tips of its rays dusky; ventrals dusky; pectorals entirely pale.

Caudal fin with its upper and lower lobes filamentous, much produced, the middle rays still longer, exerted for a distance nearly equal to $\frac{2}{3}$ length of head, the total length of the longest ray being half the length of the body.

Dorsal spines not filamentous, the longest $2\frac{1}{2}$ in head. Pectorals $1\frac{1}{2}$ in head, reaching a little past tips of ventrals.

Scales on cheeks a little larger than in *S. atrarius*, in about 7 rows. Serræ of preopercle smaller than in *Serranus atrarius*.

Gill-rakers shorter and farther apart than in *Serranus atrarius*, only 11 or 12 developed. (In *Serranus atrarius* about 20 are present.)

In spite of the striking differences in color, in which this species considerably resembles the very young of *S. atrarius*, the details of form and structure are almost identical in the two species, and the present should probably be considered as the Gulf representative of the *S. atrarius*.

4. *Scarus evermanni* Jordan, sp. nov.

Head $2\frac{5}{8}$ ($3\frac{1}{2}$ in total); depth $2\frac{5}{8}$. Length of type (No. 37990, U. S. N. M.) 3 inches.

Very close to *Scarus croicensis*, and similar to it in pattern of coloration except that the sharply-defined streaks on the sides of the breast are in *S. evermanni* inky-blue, in *S. croicensis* whitish.

In life, the type of *Scarus evermanni* was bright green, olivaceous above, paler below; the lower half of the body becoming posteriorly more and more yellow and on the lower half of the caudal peduncle bright light yellow; this color is brightest above front of anal.

A longitudinal band of bright crimson (fading to whitish in spirits) on body, on level of eye, but narrower than eye and growing fainter behind. Some crimson marks on the scales above this band forming a faint interrupted band below lateral line. Both these bands continued on head to eye with a band of green (brown in spirits) between them. Sides of belly each with three sharply-defined lines of indigo-black, like ink-marks, each on a row of scales; these stripes running from the breast to beyond front of anal. No spot on base of pectoral. Bright green on top of head above eyes, reddish below. Caudal fin green, its lower half yellow. Dorsal, anal, and pectorals (mutilated in the type), apparently all green, at least at base. Ventrals yellow.

In spirits, fading to brown, with one distinct pale lateral stripe on level of lower part of eye, and a fainter one above it. Blue-black streaks on sides of belly not fading in alcohol. A small dark spot on upper edge of caudal peduncle near base of caudal.

Teeth pale; no canines. Caudal fin (mutilated) apparently subtruncate in life. Scales on cheek in two rows. Generic characters as in other species of *Scarus* (*Pseudoscarus* Bleeker).

The type was obtained from the stomach of a Red Grouper, off Tampa Bay, by Mr. Charles H. Bollman.

5. *Scarus bollmani*, sp. nov.

Head, $3\frac{1}{5}$ in length ($3\frac{4}{5}$ in total); depth, $3\frac{1}{5}$. Length of largest example (No. 37993), 5 inches (125^m).

Closely allied to *Scarus punctulatus*, *S. virginalis*, etc., but differing from these in coloration.

In life, bright green, darker on the back, paler below. A broad lateral band mostly below level of eye and twice width of eye, of a brilliant orange-yellow color extending from gill-opening to opposite vent, where it ceases almost abruptly. The upper part of this band is a yellow streak more than half as wide as eye, and nearly on level of pupil. This is persistent and bright yellow in alcohol, while the orange fades to pale. Behind the vent, the side is a little brassy or yellowish, this shade scarcely contrasting with the green ground color. There is also in life, an ill-defined band of blood-red nearly a scale wide above and below the ground color. Base of pectoral with a blue-black mark, upper part of head dark green, below eye bright yellowish green, with some bluish markings on opercle.

Caudal fin green, its outer rays blackish. Other fins injured in both the typical examples, the dorsal bright green at base, ventrals pale.

Teeth pale. Two small blunt posterior canines in upper jaw, near angle of mouth. Caudal short, almost truncate, the middle rays a little shorter than outer ones. Two rows of scales on cheek.

Generic characters as in other species of *Scarus* (*Pseudoscarus* Bleeker).

Two specimens were obtained from stomachs of Red Groupers (*Epinephelus morio*), the first one by Mr. Charles H. Bollman, off Tampa Bay. The second was sent later by Mr. Stearns. The latter is especially the type of the foregoing description and is numbered 37993 on the Fish Register of the U. S. National Museum.

6. *Prionotus roseus*, sp. nov.

(*Prionotus scitulus* (not type) Jordan & Gilbert, Proc. U. S. Nat. Mus., 1882, 288, specimen from Pensacola.)

Head, $3\frac{1}{5}$ in length (4 with caudal); depth, 6 ($7\frac{1}{2}$). D. X — 12; A. 12. Scales (transverse series) 65–70; pores in lateral line 60–65. Length of type (No. 37989, U. S. N. M.), $6\frac{1}{2}$ inches.

Allied to *Prionotus scitulus*. Body quite slender, little compressed, narrowed above, the width of the nape between the occipital spines being about one-fifth the head. Head quite short, and rather high, the eyes prominent, so that the anterior profile forms a sharp angle at front of eye, and is somewhat concave. Snout rather narrow, $2\frac{1}{8}$ in head, its tip somewhat emarginate. Edges of snout finely serrulate and without spine. Surface of bones of the head comparatively smooth, the small granulations arranged in distinct, fine, radiating striæ.

Mouth small, the maxillary $3\frac{1}{4}$ in head, the mandible not quite reaching front of orbit. Band of palatine teeth narrow.

Eye moderate, $5\frac{1}{5}$ in head. (Apparently a slight cirrus above it, on one side, in typical example; possibly a result of mutilation.) Interorbital space narrow, deeply concave, its least width $7\frac{1}{4}$ in head. Orbital rim considerably elevated, both in front and behind, its edge granular-serrate. A shallow groove across top of head behind orbital rim, which does not end in a distinct spine. Occipital ridges weak, the inner pair without spines, the outer with short ones which reach somewhat beyond front of dorsal. Temporal region with an elevated roughish ridge, but without distinct spine. Preopercle with a single moderate spine, which has no smaller one at its base, either in front or below. Opercular spines small and sharp. Humeral spine moderate. No trace of spines on suborbital or preorbital, the head being provided with but five pairs of spines, including the humeral spine. Membranous flap of opercle scaly. Gill-rakers short and thickish, about eight developed, these little longer than the interspaces, and not half length of pupil, and nearly half as broad as high.

Scales small, those on the breast much reduced in size, about 12 between occiput and dorsal.

Spinous dorsal high, the first spine serrulate in front, shorter than the second, which is $1\frac{3}{5}$ in head. (Second dorsal and anal mutilated.) Caudal unequally and slightly lunate, the lower lobe the longer, $1\frac{1}{8}$ in head. Pectoral reaching nearly to last rays of dorsal, a little more than half length of body. Ventrals as long as head.

Coloration in spirits, grayish, unspotted, more dusky above. Dorsal dusky, with no very distinct markings. Caudal fin yellowish, marbled at base with dusky, its tip black. Pectorals mostly black. Lower fins pale.

In life the specimen was chiefly pinkish red, which color still persists on the inside of the opercles.

The type of this species was taken from the "spewings" of Red Groupers, off Tampa Bay, by Mr. C. H. Bollman. Mangled remains of others have been received from Mr. Stearns, and have been regarded by us as belonging to *P. scitulus*, but that species is not yet certainly known to occur in this region.

Besides the species above described as new, the following may be worthy of mention :

7. *Narcine brasiliensis* (Olfers).

Torpedo brasiliensis Olfers, *Torped.*, p. 19, tab. ii, fig. 4; Duméril, *Hist. Poiss.*, 514, pl. ii, figs. 3 and 3a, 1865 (Antilles and Brazil); Gray, *Cat. Chond. Brit. Mus.*, 102; Günther, viii, 453, 1870 (Pará; Caribbean Sea; Cuba; Jamaica); Henle, *Narcine*, 31, tab. i, figs. 1 and 2, 1834 (Rio Janeiro); Müller and Henle, *Plag.*, 129; Kner, *Novara, Fisch.*, 418; Goode and Bean, *Proc. U. S. Nat. Mus.*, 1882, 240; Bean and Dresel, *Proc. U. S. Nat. Mus.*, 1884, 170; Jordan, *Cat. Fish. N. A.*, 11, 1885.

Torpedo bancroftii Griffith, *Cuvier, Animal Kingd.*, x, pl. 34, 649, 1834.

Narcine brasiliensis Duméril, *Rev. Zool.*, 1852, 272.

Narcine brasiliensis corallina Garman, *Bull. Mus. Comp. Zool.*, xi, 234, 1881; Jordan and Gilbert, *Synopsis*, 877, 1882; Jordan, *Proc. U. S. Nat. Mus.*, 1884, 149; Jordan, *Cat. Fish. N. A.*, ii, 1885.

Narcine nigra, Duméril, *Rev. Zool.*, 1852, 276; Duméril, *Hist. Poiss.*, 515, pl. 11, figs. 4 and 4a, 1865 (Brazil).

Torpedo pictus Gronow, *Cat. Fish.*, Ed. Gray, 13, 1854 (Antilles and American Ocean).

Narcine umbrosa Jordan, *Proc. U. S. Nat. Mus.*, 1884, 105, 147 (Key West); Jordan, *Cat. Fish. N. A.*, 11, 1885.

From an examination of the material at hand we are convinced that the synonymy of this species should stand as here given. Three specimens in the museum of the Indiana University show three distinct styles of coloration, and no other constant differences being observable, they would seem to be specimens of different ages of one and the same species.

Specimen No. 2987, ♂, ten inches long, from Key West, is one of the two specimens upon which Dr. Jordan based his description of *N. umbrosa*. The coloration as then given by him and which is still verified by the specimen before us is as follows :

“Light brown; tip of snout blackish; a large black triangular area before each eye, covering most of the front of the disk; space between the eyes pale; space between the spiracles mostly pale; a round black blotch on median line behind this; a round blotch behind and outward from each spiracle; another near this on the outer edge of the disk; another behind this on the edge of the disk; a large transversely oblong blotch in line with this on each side of the median line; posterior part of disk with a dark blotch near the edge; a large black blotch between angle of pectoral and ventral; ventrals each with two dusky blotches, the posterior one on the claspers; a dusky blotch on the back of the tail between them, each dorsal in a distinct black cross blotch, which extends up on the fins; a dark blotch on the tip of each dorsal and three on the caudal; in all about thirty distinct dusky spots and blotches above, all of them larger than the eye. There are also some rows of dark dots, apparently the mouths of pores, along each side of the tail above, near its base, and along the sides of the disk.” Pale below; edge of pectorals dusky; ventrals showing slight traces of dusky along the edge; an irregular dark blotch on each side near the posterior angle of the pectoral.

No. 3501, ♀, from Pensacola. This specimen is fourteen inches long. In color it is of a darker brown than No. 2987; tip of snout with a blackish area near its edge; a large black blotch covering space from each eye forward and outward to edge of disk; space between the eyes plain, that between the spiracles with two dark blotches containing paler centers; a large triangular area of pale bounded by dark extending backward and outward from each spiracle; a similar area on the median line behind the spiracles; behind this and on the middle of the back is a much larger space similarly inclosed by an irregular dark line; on a line between this and the edge of the disk is a much smaller one; in front of this and nearer the median line is another larger one; pectorals with three or four groups of dark lines and spots; two pairs of such spots on the tail in front of dorsal fins; each dorsal in a dark cross-blotch which extends up on the fins; a black blotch on the anterior edge of each dorsal, and three on the caudal. Pale below, with edges of pectorals and ventrals dusky. The position of the markings is almost identical with that in specimen No. 2987. The only material difference in the coloration is that the larger specimen is darker and the spots and blotches have taken on the forms of lines inclosing areas of the general color of the back.

The third specimen (No. 1525, ♀, from Pensacola) measures seventeen inches in length. Above, it is almost uniform dark brown; below, pale, with two small dark spots just back of the mouth; another on each side near the middle of the pectoral fin; edges of the pectorals dusky.

8. *Sidera nigromarginata* (Girard).

(*Neomuraena nigromarginata* Girard.)

This species was first described in the Mexican Boundary Survey, from a specimen collected at Saint Joseph's Island, Texas, in 1853, by Gustav Würdemann. Since that time no other specimens have been seen, and Girard's specimen has been regarded as being identical with *Sidera ocellata*. The spots in Girard's plate were seen to be too small for *ocellata*, but this was thought to be the fault of the artist. The one specimen, a foot in length, which we have, was found dead on the beach of Santa Rosa Island by Mr. Evermann, and it agrees so exactly with Girard's plate that we have no hesitancy in referring it to that species, which we now believe to be a valid one and sufficiently distinct from *Sidera ocellata*.

The markings in *S. nigromarginata* are much finer than in *S. ocellata*. Color rather pale olive (in spirits), with a broad dusky shade along sides. Everywhere, except on belly, with round stellate pale olive spots of unequal size, the largest scarcely larger than the pupil. Spots on head and anterior parts smaller than the others. Dorsal and anal fins mostly black, the color on the dorsal formed of round black blotches, which are more or less confluent. No black around gill-opening.

Mouth smaller than in *S. ocellata*, the gape 3 in head. Head $2\frac{1}{2}$ in trunk. Tail a little longer than head and trunk.

Teeth smaller than in *Sidera ocellata*, some of those in the upper jaw slightly serrate behind.

9. *Myrophis punctatus* Lütken.

? *La Murène Myre* Lacépède Hist. Nat. Poiss., ii, pl. 3, f. 3, 1798 (not descr.; not *Muræna myrus* L.).

? *Muræna longicollis* Cuvier, Règne Animal 313, 1828 (no descr.; based on Lacépède).

Myrophis longicollis Kaup, Apodes, 30, 1858 (Surinam); Peters, Ak. Wiss., Berl., 1864, 397; Jordan, Proc. Acad. Nat. Sci. Phila., 1883, 282.

Myrophis punctatus Lütken, Vid. Med. Naturl. Foren., Kjoben., 1, 1851; Jordan, Proc. U. S. Nat. Mus., 1884, 33 (name only) (Pensacola); Jordan, Cat. Fish. N. A., 54, 1885.

Myrophis microstigmus Poey, Repert. Fis. Nat., ii, 250, 1867; Jordan & Gilbert, Synopsis, 900, 1883.

Myrophis lumbricus Jordan & Gilbert, Proc. U. S. Nat. Mus., 1882, 261 (Galveston); Jordan & Gilbert, Synopsis, 899, 1883 (Galveston); Jordan, Cat. Fish. N. A., 54, 1885.

After a careful examination of fourteen specimens, all from Pensacola, we have with some hesitancy reached the conclusion indicated in the synonymy here given. A few of these specimens were secured with a seine near Pensacola, but the majority were taken from the stomachs of Red Groupers and Red Snappers brought in by the fishing smacks. A number of the latter are in very good condition but a few have been more or less mutilated in the process of digestion. To the eye, four of these specimens appear to have the head much larger and the cleft of mouth much greater than in the others, but when the measurements are taken, this apparent difference proves tangible only to the eye, as no important differences in the proportion of parts can be made. The largest specimens are usually but not always those with the largest mouth. There also appears to be a difference in the plumpness or stoutness, but the most plump as well as the most slender are found among those of the large-mouth pattern. There is also considerable variation as to the relative distance of the beginning of the dorsal from the gill-opening, but the variation as shown by the small-mouthed specimens is equaled by that in the others; in all, however, it is nearer the vent than the gill-opening. It is probable that these differences are due to a difference in sex. In coloration and general form of body they agree very well with the description of *M. lumbricus* as given by Professors Jordan and Gilbert.

The name *Muræna longicollis* Cuvier based on a poor figure only, without a description, is apparently too doubtful to be adopted for this species or any other.

10. *Trachurus trachurus* L.

(*Caranxomorus plumieranus*. Lacépède.)

Specimens similar to others from the North of Europe.

11. *Pronotogrammus vivanus* Jordan & Swain.

Numerous examples, in excellent condition, taken from the stomach of the Hind (*Epin. drummond-hayi*).

In life, carmine, deepest on the back, becoming a clear violet on the sides. Back and sides everywhere freckled with golden olive, this color on the sides forming reticulations around the violet. Belly silvery, flushed with red. Golden olive about the eye; a bright golden stripe from eye to base of pectoral above; another from snout along lower border of eye to middle of base of pectoral. Another fainter above, from eye backwards.

Dorsal fin carmine, the rays tinged with red, the filaments carmine. Caudal fin carmine, with golden on the rays anal wholly of a very bright yellow. Pectoral all light carmine. Ventrals yellow on anterior rays, the last rays carmine.

This species is very closely related to *Pronotogrammus multifasciatus* from Cape San Lucas, the type of the genus *Pronotogrammus*. These two species differ considerably from the type of *Anthias*, and it is not unlikely that the former generic name should be retained for them.

In *P. vivanus*, the fourth and fifth dorsal spines are longest, the latter $2\frac{1}{4}$ in head, and with a slender filament attached to its membrane, the filament being $1\frac{1}{3}$ in head. Similar, but shorter filaments are attached to the 6th, 7th, 8th, and 9th spines.

Both caudal lobes ending in filamentous prolongations, the total length of the lobes being $2\frac{1}{3}$ in body. Pectorals and ventrals short.

12. *Epinephelus niveatus* (Cuv. & Val.).

Epinephelus flavolimbatus Poey.

One specimen about two feet long obtained. This agrees with the account of *Epinephelus niveatus* given by Jordan & Swain in all respects but the color. It seems probable that *E. flavolimbatus* is the adult of *E. niveatus*, but if so, the change in coloration is very remarkable.

Color in life, brownish flesh-color, unspotted, a clear blue streak from eye to angle of preopercle. No spots or blotches anywhere, and no black on caudal peduncle. Whole dorsal with a narrow edge of bright yellow. Dorsal pectorals, anal and caudal dusky, anal and caudal without pale edging. Ventrals dusky. A very faint moustache of dark olive, along the maxillary.

13. *Pomacentrus caudalis* Poey.

14. *Callionymus* (? *bairdi* Goode & Bean).

One specimen, somewhat mutilated.

15. *Scorpæna occipitalis* Poey.

16. *Dactyloscopus tridigitatus* Gill.

One specimen taken with the seine on Santa Rosa Island; the first record of the species from north of Key West.

17. *Ophidium beani* Jordan.

18. *Phycis floridanus* Bean.

Taken in great numbers with the seine in shallow waters near the shore, where it took the hook readily. A few obtained from the Snap-

per Banks. According to the fishermen, this species has never before been known to enter the shallow waters. It is thought that the excessive cold preceding the date of our visit has caused this temporary change in the habits of this interesting species.

19. *Etropus crossotus* Jordan & Gilbert.

20. *Haliutichthys reticulatus* Mitchill.

INDIANA UNIVERSITY,
September 17, 1886.