

to six short, dark bars forming spots with fin extended; some median whitish markings crossing rays but not interradi al membranes between. Pelvic fin plain; free pectoral rays unbarred.

Known distribution. Said to range from the coast of Maine to South Carolina, chiefly northward; rarely taken as far south as Charleston (1898: JORDAN and EVERMANN). The writer has examined material at the Am. Mus. of Nat. Hist. and the U. S. Nat. Mus. taken between Barnegat Bay, New Jersey, through Martha's Vineyard and Ocean City, Maryland, to Cape Charles and Hampton Roads, Virginia.

Remarks. The writer is unable to find any significant difference between the nominal species *affinis* and *carolinus*. On the contrary, these forms agree in such significant characters as the unique, broadly lanceolate expansion of the distal half of the free pectoral rays; the color pattern of the median fins, and in the gill raker and vertical scale counts.

The proportions of the body of *affinis* are within the range of *carolinus*. Among four young specimens of *carolinus* (91083) in the U. S. Nat. Mus., ranging in standard length from 110 to 133 mm., there may be seen a variation in the contour of the postfrontal groove that covers that observed in *affinis*. The absence of "dark saddle like blotches" on the back may be attributed entirely, or in part, to any one of the following reasons: (a) age of specimen when taken; (b) nature of preservative; (c) period in preservative before examination. In all the species that display similar dorsum markings (e.g. *alipionis*, *scitulus*, *tribulus*), the bars are especially intense at the juvenile stage, but become progressively paler as the fish matures. The holotype of *affinis* (87654) in the U. S. Nat. Mus., of 153 mm. in standard length, was taken between Kent Island and Thomas Point, Maryland (Chesapeake Bay) on January 21, 1916, but was not transferred, for examination, to the U. S. Nat. Mus., from the Bureau of Fisheries, until May 27, 1926. The four indubitable specimens of *carolinus* (91083) to which reference was made above, were taken off Cape Charles Light some six months later than the holotype of *affinis* (viz. on July 25, 1916) but were not transferred to the national collection until January 15, 1931, so that the describers of *affinis* did not have the benefit of their comparison. These specimens exhibit vestiges of the saddle-like blotches; in *carolinus* the bars are so broad that they tend to blend with the ground color as fading progresses, so that it is not surprising that in one case the markings are almost as indiscernible as in *affinis*. The cotype of *affinis* (131956) in the U. S. Nat. Mus. of 246 mm. in standard length, from Old Point Comfort, Virginia, is little more than a dessicated carcass of *carolinus*; but it does reveal definitely that in *carolinus* the absence of scales on the opercular flap is superficial, and that in this species the scales, although not apparent, are embedded.

PRIONOTUS ALATUS Goode and Bean

Prionotus alatus Goode and Bean, 1883, Bull. Mus. Comp. Zool., 19:210; Jordan and Evermann, 1898, Fishes of North and Middle America, pt. 2:2159-60.

Counts and proportions obtained from four specimens in the U. S. Nat. Mus. (92054; 46017; 117171, and 117266) ranging in standard length from 75 to 138 mm.

Description. Body of medium depth and breadth: depth, 4.55 (4.30 to 4.80); width, 4.90 (4.70 to 5.00). Head rather short: 2.65 (2.55 to 2.80). All in standard length.

Snout long and narrow: length, 2.00 (1.95 to 2.05); width, 2.55 (2.40 to 2.80). Mouth small: maxillary, 3.00 (2.90 to 3.10). Orbit of moderate size: width, 4.85 (4.70 to 5.20). Interorbital space very narrow: breadth, 8.10 (7.25 to 8.65). Nape very short and narrow: length, 7.25 (6.50 to 8.00); width, 6.60 (5.55 to 8.00). All in head length.

Pectoral fin very long: ninth ray often reaching caudal base; length, 1.65 (1.40 to 1.95); posterior end of anal base from pectoral base, 1.80 (1.65 to 2.05). Pelvic fin of medium length: 3.75 (3.55 to 4.25). All in standard length.

First dorsal spine high: 2.10 (1.85 to 2.45) 3; second spine, 1.85 (1.70 to 2.05) 3; third, 1.85 (1.75 to 2.00). Second soft dorsal ray, 2.35 (2.25 to 2.50). Longest anal ray, 3.25 (3.20 to 3.40). Opercular spine rather long: to anterior margin of opercle, 3.20 (3.00 to 3.40). Preopercular spine very long: to cleft, 3.75 (3.55 to 4.00); to anterior margin of preopercle, 2.60 (2.45 to 2.65); to centre of radiation on cheek, 1.75 (1.70 to 1.80). Humeral spine long: to edge of opercular flap, 4.55 (4.45 to 4.65) 3. All in head length.

D. X - 12½. A. 11½. Gill rakers, 0 to 1+1+6 to 8. Vertical scale count, 6 to 7+1+19 to 22. Pored scales, 50+3 (1). Pectoral fin rays, 13+3 (1).

Rostral and preorbital spines elevated, retrorse; suborbital sometimes present. Supplementary preopercular spine depressed, retrorse; ridge serrulate. Preocular spine strong, at end of serrulate striation; postocular, two superposed spinules. Sphenotic, a serrulate stump; pterotic, a serrulate ridge; parietal, a serrulate ridge ending in large serrations; nuchal spine depressed, serrulate. Proximal two-thirds of preopercular spine compressed dorso-ventrally and striated above as in *beanii*. Opercular, preopercular and humeral spines very sharply serrulate along median ridge almost to point. Postfrontal groove broad, conspicuous. Free pectoral rays tapering. Rostral plates, at maximum development, acutely produced. Opercular flap scaled. Caudal subtruncate. First dorsal spine: median ridge spiny, flanked on either side by one or two granulate ridges. Second spine: submedian ridge spiny, flanked on one side by a granulate ridge. Third: a pair of granulate ridges on opposite side to ridges of second. Fourth and fifth spines: granulate ridge on alternate sides. First soft dorsal ray: proximal quarter of median ridge spiny.

Color in alcohol. In different specimens, silvery gray, through brown to bronze above; light below, in first two colorings, but uniformly pigmented, above and below, in bronze colored specimens. Dorsal fins plain except for dark ocellus between fourth and fifth spines. Tip of caudal fin black; anal and pelvic fins plain. Pectoral fin light with diffuse black markings.

Known distribution. Coasts of South Carolina (Charleston) and Florida (Cape San Blas) to Tortugas Islands, Gulf of Mexico.

PRIONOTUS BIROSTRATUS Richardson

Prionotus birostratus Richardson, 1845, Voyage of the *Sulphur*. Ichthyology, pt. 2:81, pl. 42; Jordan and Evermann, 1898, Fishes of North and Middle America, pt. 2:2152-53.

Counts, proportions and description based upon RICHARDSON's own description and on figs. 4, 5 and 6 of Plate 42 of the Ichthyology.

Description. Total length 172 mm.; standard length 134 mm. Body depressed but very broad: depth, 5.15; width, 4.05. Head short: length, 2.90. All in standard length.

Snout very long and broad: length, 1.90; width, 1.75. Mouth of medium size: maxillary, 2.55. Orbit rather small: width, 5.10. Interorbital space narrow: breadth, 7.65. Nape short and rather narrow: length, 6.55; width, 5.75. All in head length.

Pectoral fin short: length, 2.45; posterior end of anal base from pectoral base, 1.70. Both in standard length.

First dorsal spine of moderate height: 2.40; second spine 2.10; third, 2.15. Third soft dorsal ray, 2.00. Longest anal ray, 3.05. Opercular spine very short: to anterior margin of opercle, 5.10. Preopercular spine of medium length: to cleft, 7.65; to anterior margin of preopercle, 3.85; to centre of radiation on cheek, 2.20. Humeral spine of moderate length: to edge of opercular flap, 5.10. All in head length.

D. X - 12½. A. 11½.

Rostral and preorbital spines small, elevated, retrorse; suborbital small, slightly elevated, retrorse; supplementary preopercular spine moderate, slightly elevated, retrorse. Preocular spine fairly strong, elevated; postocular moderate, blunt, depressed; sphenotic small, slightly elevated; pterotic and parietal spines small, depressed; nuchal moderate, depressed. Postfrontal groove absent. Interorbital space concave. Elevation of orbital region above snout abrupt; eyes moderately prominent. Rostral plates acutely produced; not divergent; bluntly serrulate. Opercular flap not scaled. Free pectoral rays tapering. Caudal fin truncate. Median ridge of first dorsal spine granulate; second and third spines granulate on alternate sides; median ridge of first soft dorsal ray granulate on basal quarter.

Color in alcohol. Color pattern not described; actual location of holotype not known: not in British Museum (*vide* Trewavas).

Known distribution. Only recorded specimen taken in the Gulf of Fonseca, Honduras.

PRIONOTUS GYMNOTETHUS Gilbert

Prionotus gymnotethus Gilbert, 1891, Proc. U. S. Nat. Mus., 559; Jordan and Evermann, 1898, Fishes of North and Middle America, pt. 2:2153-54.

Counts and proportions in respect of two specimens (holotype and cotype: 46674) in the U. S. Nat. Mus., of 88 and 94 mm. in standard length respectively.

Description. Body very deep and broad: depth, 3.43 (3.38 to 3.48); width, 4.15 (4.09 to 4.20). Head long; 2.31 (2.29 to 2.32). All in standard length.

Snout narrow and rather short: width, 2.55 (2.53 to 2.56); length, 2.26 (2.22 to 2.30). Mouth of moderate size: maxillary, 2.59 (2.53 to 2.64). Orbit very large: width, 3.85 (3.80 to 3.90). Interorbital space very narrow: breadth, 9.31 (9.12 to 9.50). Nape extremely short and rather narrow: length, 10.19 (10.13 to 10.25); width, 5.66 (5.47 to 5.84). All in head length.

Pectoral fin extremely short, much shorter than head length. 3.21 (3.03 to 3.38). Pelvic fin short: 4.19 (4.10 to 4.27). Both in standard length.

First dorsal spine extremely low: 3.95 (3.80 to 4.10); second and third spines high: second, 2.08 (2.00 to 2.16); third, 2.29 (2.17 to 2.41). Second soft dorsal ray, 2.68 (2.62 to 2.73). Longest anal ray, 3.77 (3.73 to 3.80). Opercular spine rather long: to anterior margin of opercle, 3.16 (3.15 to 3.17). Preopercular spine of medium length: to cleft, 4.94 (4.75 to 5.13); to anterior margin of preopercle, 3.43 (3.30 to 3.56); to centre of radiation on cheek, 2.26 (2.18 to 2.34). Humeral spine long: to edge of opercular flap, 4.52 (4.47 to 4.56). All in head length.

D. X to XI - 11½. A. 11½ (3). Gill rakers, 1+1+8. Vertical scale count, 6+1+17 to 19. Pored scales, 50 to 51+3 to 5. Pectoral fin rays, 12+3 (3).

Rostral and preorbital spines absent; suborbital minute, retrorse. Supplementary preopercular spine strong, recurved, elevated. Preopercular spine strong, elevated; postocular moderately strong, slightly depressed, granulate. Sphenotic, a compressed, granulate stump; pterotic, a compressed granulate ridge; parietal, a compressed granulate ridge; nuchal, a compressed granulate ridge ending in depressed

spine. Opercular, preopercular and humeral spines: median longitudinal ridge finely granulate. Postfrontal groove very broad and conspicuous. Interorbital space concave. Eyes prominent; orbital region abruptly elevated as in *loxias* and *xenisma*. Rostral plates acutely produced, divergent, strongly serrulate. Supraocular cirri present: small, separate, tapering; nasal flap much produced. Body unscaled from below humeral spine to vent. Opercular flap not scaled. Free pectoral rays tapering. Caudal fin subtruncate. First dorsal spine: median ridge minutely serrate; flanked by one or two granulate ridges. Second spine: median serrate ridge flanked on one side by a granulate ridge. Third: a pair of granulate ridges on opposite side to granulate ridge of second spine. Proximal quarter of median ridge of first soft dorsal ray granulate.

Color in alcohol. Yellowish brown above; lighter below. Basal half and distal third of first dorsal fin opaque; intervening space clouded with darker. Very small, dark ocellate blotch between fourth and fifth spines generally present. Soft dorsal unspotted but clouded with darker on posterior half of fin. Distal two-fifths of caudal dark; ferruginous blotch on base. Pectoral fin dusky; basal quarter light, especially below; distal quarter dark, edged with white. Anal and pelvic fins light. Free pectoral rays slightly dusky, unbarred.

Known distribution. Taken off Lower California in latitude N. 23°33'00", and longitude W. 110°37'00".

PRIONOTUS XENISMA Jordan and Bollman

Prionotus xenisma Jordan and Bollman, 1889, Proc. U. S. Nat. Mus., 169; Jordan and Evermann, 1898, Fishes of North and Middle America, pt. 2:2154-55.

Counts and proportions of the holotype and a cotype (41151), and of two other specimens (41164) in the U. S. Nat. Mus., ranging in standard length from 69 to 75 mm.

Description. Body extremely deep and broad: depth, 3.25 (3.15 to 3.45); width, 3.75 (3.65 to 3.85). Head very long: length, 2.30 (2.25 to 2.40). All in standard length.

Snout of medium breadth but very short: width, 2.35 (2.20 to 2.40); length, 2.45 (2.30 to 2.60). Mouth small: maxillary, 2.85 (2.70 to 3.05). Orbit very large: width, 3.80 (3.65 to 4.15). Interorbital space of moderate width: 6.60 (6.20 to 6.90). Nape very short and narrow: length, 7.35 (6.20 to 8.55); width, 6.50 (5.60 to 7.75). All in head length.

Pectoral fin extremely short; much shorter than head length;

length, 2.90 (2.80 to 3.00). Pelvic fin short: 3.95 (3.75 to 4.30). Both in standard length.

First dorsal spine very high: higher than second or third: 2.00 (1.95 to 2.05) 3; second spine, 2.30 (2.20 to 2.50); third, 2.35 (2.20 to 2.45). Second soft dorsal ray, 2.90 (2.60 to 3.10). Longest anal ray, 3.40 (3.25 to 3.45) 3. Opercular spine very long: to anterior margin of opercle, 2.85 (2.60 to 3.10). Preopercular spine long: to cleft, 5.55 (5.15 to 6.20), to anterior margin of preopercle, 2.95 (2.70 to 3.25); to centre of radiation on cheek, 2.10 (2.00 to 2.20). Humeral spine extremely long: 3.30 (3.10 to 3.45). All in head length.

D. X to XI - $11\frac{1}{2}$. A. $10\frac{1}{2}$. Gill rakers, 0+1+5 to 7. Vertical scale count, 5+1+17. Pored scales, 35 to 39+2 to 4. Pectoral fin rays, 12+3.

Rostral, preorbital and suborbital spines absent. Supplementary preopercular spine strong, elevated, retrorse. Preocular spine absent; postocular blunt, depressed; sphenotic, a granulate stump; pterotic, a granulate ridge. Parietal, an elevated, granulate ridge; nuchal, a depressed, granulate ridge ending in point. Opercular, preopercular and humeral spines finely granulate along median longitudinal ridge. Postfrontal groove conspicuous. Interorbital space concave. Eyes prominent; orbital region abruptly elevated as in *loxias* and *gymnotethus*. Rostral plates acutely produced, divergent, serrulate. Opercular flap not sealed. Free pectoral rays tapering. First dorsal spine: median ridge minutely granulate, flanked on either side by a pair of exactly similar ridges. Second and third spines: submedian, minutely granulate ridge flanked on alternate sides by pair of exactly similar ridges. First soft dorsal ray: proximal quarter of median ridge minutely granulate.

Color in alcohol. Yellowish brown above, paler below. Dark ocellate blotch between fourth and fifth dorsal spines. Soft dorsal traversed by four series of dark spots on anterior or broader half of fin; by three series on narrower half. Ferruginous blotch on caudal base. Pectoral fin plain black.

Known distribution. Holotype and specimens cited above taken in the Gulf of Panama in latitude N. $07^{\circ}57'00''$; longitude W. $78^{\circ}55'00''$; other specimens recorded by BREDER (Bull. Bing. Oceanograph. Collège. Vol. 2:39-40; 1926) from the nearby Pearl Islands (Archipelago de las Perlas).

PRIONOTUS BEANII Goode

Prionotus beanii Goode, in Goode and Bean, 1896, Oceanic Ichthyology, 468, pl. 112, fig. 383; Jordan and Evermann, 1898, Fishes of North and Middle America, pt. 2:2170-71.

Counts and proportions taken from the holotype (39318) in the U. S. Nat. Mus., of 112 mm. in standard length.

Description. Body very deep and rather broad: depth 3.75; width, 4.50. Head rather short: 2.70. All in standard length.

Snout long but rather narrow: length, 2.00; width, 2.45. Mouth small: maxillary, 2.85. Orbit rather small: width, 5.20. Interorbital space very narrow: breadth, 8.30. Nape of medium width but short: width, 5.20; length, 6.40. All in head length.

Pectoral fin very short: little longer than head length; length, 2.55; posterior end of anal base from pectoral base, 1.70. Pelvic fin short: length, 4.00. All in standard length. First dorsal spine rather low: height, 2.77; second spine (slightly damaged), 2.59; third, 2.18. Second soft dorsal ray, 2.37. Longest anal ray, 3.07. Opercular spine long: to anterior margin of opercle, 3.05. Preopercular spine long (although somewhat worn): to cleft, 4.90; to anterior margin of preopercle, 3.20; to centre of radiation on cheek, 2.00. Humeral spine of medium length: to edge of opercular flap, 5.20. All in head length.

D. X - 12½. A. 11½. Gill rakers, 0+1+7. Vertical scale count, 7+1+20 to 21. Pored scales, 52+4 to 7. Pectoral fin rays, 13+3.

Rostral, preorbital and suborbital spines elevated, retrorse, serrulate; supplementary preopercular spine depressed, worn. Preocular spine, a stump; postocular strong, slightly elevated; sphenotic serrulate, elevated; pterotic, a serrulate ridge with depressed spine; parietal serrulate, depressed; nuchal moderate, granulate, depressed. Proximal two-thirds of preopercular spine compressed dorso-ventrally. Opercular, preopercular and humeral spines bluntly serrulate along median ridge almost to point. Postfrontal groove broad, shelving posteriorly; medially shallow. Interorbital space concave. Rostral plates obtusely produced; bluntly serrulate. Opercular flap scaled. Free pectoral rays tapering. Caudal fin subtruncate. First dorsal spine: median ridge bluntly serrate; flanked on either side by a pair of granulate ridges. Second and third spines: submedian serrate ridge flanked on alternate sides by a pair of granulate ridges, and on opposite side, by a single granulate ridge. Fourth spine: a submedian granulate ridge. First soft dorsal ray: proximal half of median ridge bluntly serrate. First and second dorsal spines much thickened, laterally compressed and recurved over proximal two-thirds of length.

Color in alcohol. Yellowish brown above; lighter below. Dorsals plain, except for dark ocellate blotch between fourth and fifth spines, and slight darkening of posterior end of soft dorsal. Pectorals (in poor condition) lightish, with some diffuse black markings.

Known distribution. Holotype taken off Trinidad in latitude N. 11°07'00"; longitude W. 62°14'30".

Remarks. Specimens 8192 of 93 mm. in standard length and 86149 of 81 and 91 mm. in standard length, in the Am. Mus. of Nat. Hist. and the U. S. Nat. Mus., respectively, taken off Aransas Pass, Texas, and recorded by NICHOLS and BREDER in the Proc. Biolog. Soc. Washington (1924) Vol. 37:23, differ from the holotype (39318) in the normal contour of the rostral plates, the shorter and narrower nape, the longer opercular and preopercular spines, the sharply serrate and normal first and second dorsal spines and in the sharply serrulate median longitudinal ridge of the humeral and major cranial spines, but, against this, they agree in general morphology, the character of the postfrontal groove, and in the gill raker and vertical scale counts.

The thickened, laterally compressed and recurved first and second dorsal spines, the less serrate median ridge of the first dorsal spine, and the rather less serrulate median ridge of the humeral and major cranial spines, are very possibly aberrant characters in the holotype. The right hand preopercular spine in this specimen is broken, and the left, blunted; but, primarily, the greater length of these spines in the specimens from Aransas Pass may be attributed to age.

In none of these specimens are the fin membranes in sufficiently good condition for an appreciation to be made of their respective color patterns. It may be assumed, however, that the Aransas Pass specimens, if not the badly damaged holotype, had not yet reached the age of a properly developed color pattern. In all, there is an ocellate blotch between the fourth and fifth dorsal spines, but on the soft dorsal fin no transverse series of spots, or other pattern, can be discerned.

There remains to be considered the character of the rostral plates. In specimen 8192 in the Am. Mus. of Nat. Hist., the plates are prominent and squarish, with a rather sharp antero-lateral angle, as in young *alipionis*; in the holotype (39318) in the U. S. Nat. Mus., it is not so much the exsertion of the rostral plates that calls for comment (this being but slightly beyond normal), but the broadly rounded contour of the exsertions. Nevertheless, even this character may be nothing more than a variant: it does not give the impression of being a definitely fixed character as in *ruscarius* and *horrens*.

A further examination of the dorsal spines of specimen 8192 in the Am. Mus. of Nat. Hist. reveals a greater similitude with those of the holotype (39318) than the writer had observed previously. The following is a description: First dorsal spine: basal half of median ridge serrate; distal half bluntly serrate; ridge flanked by two granulate ridges on right and by three on left. Second spine: submedian bluntly serrate ridge flanked by three granulate ridges on right. Third spine: submedian granulate ridge flanked by two granulate ridges on left. Fourth: submedian bluntly serrate ridge flanked by two granulate ridges on right. First soft dorsal ray: proximal quarter of median ridge bluntly serrate. Both the first and second dorsal spines are somewhat thickened, laterally compressed and slightly recurved. It should be observed also that this is the only species with the exception of the rather closely related *alatus* in which the spinal ridges are either bluntly serrate, or granulate, as far back as the fourth spine.

PRIONOTUS RUSCARIUS Gilbert and Starks

Prionotus ruscarius Gilbert and Starks, 1904, Memoir Cal. Ac. Sci., 4:165; pl. 27; figs. 50 to 50a; Meek and Hildebrand, 1928, Marine Fishes of Panamá. Field Mus. of Nat. Hist., Publ. 249; Zool. Ser.; Vol. 15; pt. 3:850-52.

Counts and proportions of four specimens (50380; 94618; 125562 and 82689) in the U. S. Nat. Mus., ranging in standard length from 68 to 173 mm.

Description. Body of moderate depth but very broad: depth, 4.45 (4.00 to 5.25); width, 4.10 (3.95 to 4.30). Head rather long: 2.50 (2.35 to 2.55). All in standard length.

Snout of medium length but extremely broad: length, 2.20 (2.15 to 2.25); width, 2.00 (1.95 to 2.15). Mouth large: maxillary, 2.25 (2.15 to 2.30). Orbit rather small: width, 5.45 (4.85 to 5.90). Interorbital space extremely broad: breadth, 3.95 (3.80 to 4.05). Nape of medium length but rather broad: length, 5.70 (5.40 to 5.85); width, 4.80 (4.45 to 5.00). All in head length.

Pectoral fin very short: much shorter than head length, 3.00 (2.70 to 3.15); free rays short: 4.45 (4.25 to 4.90) 6. Pelvic fin of medium length: 3.85 (3.40 to 4.10). All in standard length.

First dorsal spine of moderate height: 2.25 (1.95 to 2.50); second spine, 2.00 (1.80 to 2.25); third, 2.25 (1.95 to 2.40). Second soft dorsal ray, 2.65 (2.50 to 2.75). Longest anal ray, 3.30 (3.00 to 3.60). Opercular spine of moderate length: to anterior margin of opercle, 3.35 (3.20 to 3.50). Preopercular spine long: to cleft, 6.10 (4.85 to 6.90); to anterior margin of preopercle, 3.20 (3.05 to 3.45); to centre of radiation on cheek, 2.15 (1.95 to 2.25). Humeral spine variable: to edge of opercular flap, 3.85 (3.40 to 4.95). All in head length.

D. $X - 11\frac{1}{2}$ to $12\frac{1}{2}$. A. 11 to $11\frac{1}{2}$. Gill rakers, 0 to $1+1+5$. Vertical scale count, 9 to $10+1+21$ to 24. Pored scales, 49 to $52+3$ to 7. Pectoral fin rays, $13+3$ (2).

Rostral, preorbital and suborbital spines all very stout, elevated, recurved; these increasingly larger in order given. Supplementary preopercular spine larger again, but less elevated. Preocular moderate, elevated; postocular strong, elevated in young; sphenotic small, strong, elevated; pterotic strong, elevated; parietal, a single, strong, elevated spine occupying the whole ridge, as in *horrens*; pair divergent. Nuchal spine strong, depressed. Worn or vestigial supplementary opercular spine present, as in *horrens*. Postfrontal groove: broad and very shallow vestigial trace present, as in *horrens*. Interorbital space broad and shallow. Rostral plates obtusely produced; bluntly serru-

PRIONOTUS RUSCARIUS Gilbert and Starks

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Counts and proportions of four specimens (50380; 94618; 125562 and 82689) in the U. S. Nat. Mus., ranging in standard length from 68 to 173 mm.

Description. Body of moderate depth but very broad: depth, 4.45 (4.00 to 5.25); width, 4.10 (3.95 to 4.30). Head rather long: 2.50 (2.35 to 2.55). All in standard length.

Snout of medium length but extremely broad: length, 2.20 (2.15 to 2.25); width, 2.00 (1.95 to 2.15). Mouth large: maxillary, 2.25 (2.15 to 2.30). Orbit rather small: width, 5.45 (4.85 to 5.90). Interorbital space extremely broad: breadth, 3.95 (3.80 to 4.05). Nape of medium length but rather broad: length, 5.70 (5.40 to 5.85); width, 4.80 (4.45 to 5.00). All in head length.

Pectoral fin very short: much shorter than head length, 3.00 (2.70 to 3.15); free rays short: 4.45 (4.25 to 4.90) 6. Pelvic fin of medium length: 3.85 (3.40 to 4.10). All in standard length.

First dorsal spine of moderate height: 2.25 (1.95 to 2.50); second spine, 2.00 (1.80 to 2.25); third, 2.25 (1.95 to 2.40). Second soft dorsal ray, 2.65 (2.50 to 2.75). Longest anal ray, 3.30 (3.00 to 3.60). Opercular spine of moderate length: to anterior margin of opercle, 3.35 (3.20 to 3.50). Preopercular spine long: to cleft, 6.10 (4.85 to 6.90); to anterior margin of preopercle, 3.20 (3.05 to 3.45); to centre of radiation on cheek, 2.15 (1.95 to 2.25). Humeral spine variable: to edge of opercular flap, 3.85 (3.40 to 4.95). All in head length.

D. $X - 11\frac{1}{2}$ to $12\frac{1}{2}$. A. 11 to $11\frac{1}{2}$. Gill rakers, 0 to $1+1+5$. Vertical scale count, 9 to $10+1+21$ to 24. Pored scales, 49 to $52+3$ to 7. Pectoral fin rays, $13+3$ (2).

Rostral, preorbital and suborbital spines all very stout, elevated, recurved; these increasingly larger in order given. Supplementary preopercular spine larger again, but less elevated. Preocular moderate, elevated; postocular strong, elevated in young; sphenotic small, strong, elevated; pterotic strong, elevated; parietal, a single, strong, elevated spine occupying the whole ridge, as in *horrens*; pair divergent. Nuchal spine strong, depressed. Worn or vestigial supplementary opercular spine present, as in *horrens*. Postfrontal groove: broad and very shallow vestigial trace present, as in *horrens*. Interorbital space broad and shallow. Rostral plates obtusely produced; bluntly serru-

late. Opercular flap scaled. Squamation of dorsum and sides strongly ctenoid. Vomerine teeth in two separate bands. Caudal fin subtruncate. Free pectoral rays expanded over proximal half; stout and short: over four times in standard length. First dorsal spine: proximal quarter smooth to granulate. Second and third spines and first soft dorsal ray smooth.

Color in alcohol. Dark olive brown above; lighter below. Fin ray markings similar to those of *horrens*: translucent patch on distal half of pectoral fin much more circumscribed; another smaller translucent patch between lower portion of dark basal bar and median transverse bar. Dark markings more intense: broader and darker bar connecting transverse bars along lower interradi al membranes. Anterior membranes of first dorsal fin clouded with darker; fringe of soft dorsal broader; spots absent.

Remarks. Specimen, no. 367 of 101 mm. in standard length in the Vanderbilt Marine Museum (Bull. Vand. Oceanogr. Mus., 1928. Vol. 1:26) taken off Punta Arenas, Costa Rica, presents an almost intermediate form between *ruscarius* and *horrens*: (a) the squamation of the dorsum and sides is not strongly ctenoid; (b) there is only one translucent patch (the distal patch) on the pectoral fin. Nevertheless, the specimen has been rightly classified as *ruscarius* and not as *horrens* because of the following overriding characters: (a) anal ray formula, $11\frac{1}{2}$; (b) vomerine teeth in two separate bands; (c) no marked contrast, except for pores, between pored scales and adjacent squamation; (d) free pectoral rays short (3.88 in standard length).

Known distribution. Taken in the Gulf of California in latitude N. $30^{\circ}37'30''$; longitude W. $113^{\circ}07'00''$, and adjacent waters; off Mazatlan, at mouth of gulf; in Magdalena Bay, Lower California; in the Gulf of Nicoya, Costa Rica; and also off Punta Chame, Panama.

PRIONOTUS HORRENS Richardson

Prionotus horrens Richardson, 1845, in Hind's Zool. Voy. Sulphur, Ichth., 79, pl. 42, figs. 1 to 3; Jordan and Evermann, 1898, Fishes of North and Middle America, pt. 2:2172-73; Meek and Hildebrand, 1928, Marine Fishes of Panama. Field Mus. of Nat. Hist., Publ. 249, Zool. Ser., Vol. 15, pt. 3:853-54.

Counts and proportions corresponding to five specimens (41235, 80981-82-83 and 82703) in the U. S. Nat. Mus., ranging in standard length from 112 to 186 mm.

Description. Body very deep and broad: depth, 3.50 (3.10 to 3.90); width, 3.85 (3.50 to 4.15). Head long: 2.40 (2.35 to 2.45). All in standard length.

Snout rather short, but extremely broad: length, 2.20 (2.10 to

2.30); width, 1.90 (1.80 to 2.05). Mouth very large: maxillary, 2.10 (2.05 to 2.20). Orbit rather small: 5.50 (4.80 to 6.00). Interorbital space extremely wide: breadth, 3.80 (3.55 to 4.00). Nape very broad and long: width, 4.00 (3.55 to 4.45); length, 4.70 (4.20 to 5.35). All in head length.

Pectoral fin very short: much shorter than head length, 3.05 (2.90 to 3.20); free rays long: 3.25 (3.10 to 3.30). Pelvic fin very short: 4.35 (4.15 to 4.55). All in standard length.

First dorsal spine of medium height: 2.50 (2.30 to 2.80) 4; second spine, 2.30 (2.15 to 2.45) 4; third, 2.50 (2.40 to 2.65) 4. Second soft dorsal ray, 2.80 (2.65 to 3.05). Longest anal ray, 3.10 (3.00 to 3.40). Opercular spine of medium length: to anterior margin of opercle, 3.55 (3.40 to 3.75). Preopercular spine rather long: to cleft, 6.80 (6.00 to 7.90); to anterior margin of preopercle, 3.30 (2.85 to 3.60); to centre of radiation on cheek, 2.10 (1.95 to 2.25). Humeral spine long: to edge of opercular flap, 4.40 (3.95 to 4.80). All in head length.

D. X - $11\frac{1}{2}$. A. $9\frac{1}{2}$. Gill rakers, 1+1+5. Vertical scale count, 8 to 9+1+20 to 26. Pored scales, 51 to 52+6 to 7. Pectoral fin rays, 13+3 (1).

Rostral, preorbital, suborbital and supplementary preopercular spines increasingly stout in order given; all recurved and occupying, even in adult, a straight line along marginal rim from angle of snout to preopercular spine. Preocular spine strong, elevated; postocular strong, depressed; sphenotic, a worn stump; pterotic strong, elevated; parietal, a single strong elevated spine without ridge; pair divergent. Nuchal spine strong, depressed. Worn, or vestigial, supplementary opercular spine present as in *ruscarius*.

Postfrontal groove vestigial. Interorbital space broad and shallow. Rostral plates obtusely produced; bluntly serrulate. Opercular flap scaled. With exception of pored scales, squamation of dorsum and sides not strongly ctenoid; but little rough to the touch. Vomerine teeth in a continuous band. Free pectoral rays slightly expanded on basal half; usually slender; long: less than three and a half times in standard length. First dorsal spine smooth or, at most, barely granulate on basal quarter; second and third spines smooth. Proximal quarter of first soft dorsal ray smooth or, at most, barely granulate. Caudal fin truncate.

Color in alcohol. Dark brown above; yellowish white below. First dorsal fin clouded with darker; no distinct ocellate blotch. Soft dorsal with discontinuous dark fringe; dark median cloud traversing posterior half. Caudal fin spotted with intensely dark, large brown spots, these forming two to three irregular bands across fin; some spots of distal band extending up interradiar membranes to median band.

Very dark, broad median and distal brown bars traversing pectoral fin; these connected by a narrow dark band below and by a lighter band above, leaving a large translucent patch on distal half of fin. Soft dorsal sometimes traversed by two to three series of spots, the higher number of series, in contradistinction to the general rule, occupying posterior portion of fin. Anal and pelvic fins plain.

Know distribution. Holotype taken along with that of *birostratus* in the Gulf of Fonseca, Honduras; other specimens taken later in the Gulf of Panama, in latitude N. 08°51'00"; longitude W. 79°31'30"; and, also, off Punta Chame, Panama.

Since writing the foregoing notes, the writer has had an opportunity to pay a brief visit to the Museo de Historia Natural "Javier Prado" at Lima, Perú.

There, among a small collection of local fishes on public view in a glass case, he was surprised to find a dried and varnished sea-robin with the legend "*Prionotus quiescens* Jordan and Bollman, Ancón". This was of special interest inasmuch as the writer is not aware of any recorded instance of the taking of a sea-robin in the Pacific on the continental shelf of western South America south of the equator.

Owing to the absence of the Curator, the writer was unable to obtain access to the specimen, but he is satisfied that the exhibit was either *horrens* or *ruscarius*, and definitely not *quiescens*, as tentatively indicated.

This bears out what the writer has emphasized in the preamble to this paper in regard to the difficulties confronting taxonomists who have been, hitherto, entirely dependent upon the existing literature.

PRIONOTUS PECTORALIS Nichols and Breder

Prionotus miles pectoralis Nichols and Breder, 1924, Proc. Biol. Soc. Washington, Vol. 37:21-24.

Counts and proportions of the holotype (86168) in the U. S. Nat. Mus., of 71 mm. in standard length.

Description. Body of medium depth but rather broad: depth, 4.45; width, 4.45. Head of moderate length: 2.55. All in standard length.

Snout rather short but moderately broad: length, 2.25; width, 2.25. Mouth large: maxillary, 2.35. Orbit large: width, 4.30. Interorbital space rather narrow: breadth, 7.00. Nape of moderate length but broad: length, 5.60; width, 4.65. All in head length.

Pectoral fin long: passing anal base; length, 1.60; posterior end of anal base from pectoral base, 1.80. Pelvic fin of medium length: 3.55. All in standard length.

First dorsal spine damaged; second spine of moderate height:

2.45; third, damaged; fourth, 2.35. Second soft dorsal ray, 2.55. Longest anal ray, 3.30. Opercular spine of medium length: to anterior margin of opercle, 3.50. Preopercular spine very short: to cleft, 8.00; to anterior margin of preopercle, 5.10; to centre of radiation on cheek, 2.55. Humeral spine of moderate length: to edge of opercular flap, 5.10. All in head length.

D. X - 12. A. $11\frac{1}{2}$. Gill rakers, 1+1+10. Vertical scale count, 7+1+21. Pored scales, 51+5. Pectoral fin rays, 13+3.

Rostral and preorbital spines small, elevated, retrorse; suborbital spine present: small, retrorse. Supplementary preopercular spine small, depressed. Preocular strong, elevated; postocular moderately elevated, accompanied by spinule; sphenotic small, elevated; pterotic small, depressed. Parietal spine worn, elevated; nuchal moderate, depressed. Postfrontal groove moderately conspicuous. Free pectoral rays fine, tapering. Interorbital space rather deeply concave. Rostral plates serrulate; moderately prominent. Opercular flap scaled. Caudal fin subtruncate; outer rays slightly produced. First dorsal spine (damaged): median ridge granulate; second spine: submedian ridge granulate; third, smooth. First soft dorsal ray: granulate on basal quarter.

Color in alcohol. Olive brown above; lighter below. Dorsal fins much clouded with dark chromatophores; first (damaged) with vestiges of dark blotch on distal third between fourth and fifth spines with, apparently, anterior extension. Pectoral fin black, relieved on upper third by whiteness of fin rays. Anal and pelvic fins plain. Caudal also plain. Unpigmented bar between dorsal fins as in *alipionis* and *aspersus*.

Remarks. In the absence of any discernible color pattern on the fins, it is difficult to show the exact relationship of this species with others of similar morphology. The unpigmented interdorsal bar, in the absence of evidence that this occurs in other species, points to a relationship with *alipionis* and *aspersus*, but in neither of these species does it appear that an immature fish of 77 mm. in standard length would possess pectoral fins that pass the posterior end of the anal base.

In the U. S. Nat. Mus. (see *Remarks* under *alipionis*) there is an adult specimen of *alipionis* of 227 mm. in standard length, from Jamaica, in which the pectoral fins just pass the posterior end of the anal base, but in a young specimen of 80 mm. in standard length, from the same source, the pectoral fins are much shorter.

It may be added here that in *alipionis* it has been observed (TEAGUE and MYERS, 1945. Bol. Mus. Nac., Rio de Janeiro, Zool. no. 31, p. 15) that the characteristic transverse series of spots on the soft dorsal fin appear at a very early stage in the fish's growth.

Known distribution. Holotype taken off Aransas Pass, Texas.

PRIONOTUS EVOLANS (Linnaeus)

Trigla evolans Linn. Syst. Nat. Ed., 12:498; 1766; Carolina (Coll. Dr. Alex. Garden).

Prionotus evolans Jordan and Evermann, 1898, Fishes of North and Middle America, pt. 2:168-69.

Counts and proportions taken from a specimen (1959) in the Am. Mus. of Nat. Hist., and from four others in the U. S. Nat. Mus. (76706; 76707 and 120496) ranging in standard length from 115 to 229 mm.

Description. Body of medium depth and width: depth, 4.60 (4.35 to 4.90); width, 4.80 (4.50 to 4.90). Head rather short: 2.55 (2.45 to 2.65). All in standard length.

Snout of moderate length and breadth: length, 2.12 (2.09 to 2.14); width, 2.35 (2.10 to 2.75). Mouth large: maxillary, 2.30 (2.25 to 2.35). Orbit small: width, 5.55 (5.15 to 6.20). Interorbital space wide: 5.30 (4.80 to 5.80). Nape very broad and long: width, 3.95 (3.90 to 4.20); length, 4.45 (4.20 to 4.60). All in head length.

Pectoral fin of medium length: 1.90 (1.80 to 2.15); posterior end of anal base from pectoral base, 1.70 (1.55 to 1.80). Pelvic fin of moderate length: 3.70 (3.35 to 3.95). All in standard length.

First dorsal spine extremely low: 3.90 (3.70 to 4.00). Second spine, 3.10 (2.95 to 3.35). Third, 2.80 (2.60 to 3.00). Second soft dorsal ray, 2.65 (2.30 to 2.95). Longest anal ray, 3.10 (2.85 to 3.25). Opercular spine rather long: to anterior margin of opercle, 3.50 (3.10 to 3.70). Preopercular spine short: to cleft, 6.90 (5.65 to 8.00); to anterior margin of preopercle, 4.20 (3.65 to 4.90); to centre of radiation of cheek, 2.40 (2.20 to 2.55). Humeral spine of medium length: to edge of opercular flap, 5.65 (4.60 to 7.75) 4. All in head length.

D. X - $11\frac{1}{2}$ to $12\frac{1}{2}$. A. $11\frac{1}{2}$. Gill rakers, 3 to 5+1+13 to 18 (14). Vertical scale count, 7 to 9+1+21 to 22. Pored scales, 52+2 to 3 (1). Pectoral fin rays, 13+3 (2).

Nuchal and all smaller cranial spines similar to those of *trigla* but proportionally smaller. In juvenile fishes, supplementary preopercular spine not dwarfing spine proper; supraocular rim not elevated obliquely. Postfrontal groove absent. Interorbital space slightly concave in young; flat in adult. Rostral plates bluntly serrulate. Opercular flap scaled. Caudal fin subtruncate: outer rays slightly produced. Free pectoral rays tapering.

First dorsal spine: median ridge either bluntly serrate, flanked on either side by a granulate ridge, or just granulate, without supplementary flanking ridges. Second and third spines: one to three granulate ridges on alternate sides. First soft dorsal ray: proximal quarter of median ridge granulate.

Color in alcohol. Upper parts dark yellowish brown; lower lighter; pores on lateral line much darkened. Conspicuous narrow brown band extending across ventro-lateral area as far as the vertical from the sixth soft dorsal ray; thence, to caudal base, breaking up into a series of spots. Dark ocellate blotch between fourth and fifth spines of first dorsal fin, with posterior projection to sixth spine. Soft dorsal plain, or traversed by five series of pinhead spots; these aligned vertically on fin rays. Caudal fin plain, excepting dark blotch on base. Anal translucent, with opaque fringe. Pectoral fin plain brown, or brown traversed by from 25 to 30 dark wavy lines, sometimes partially obscured over median part of fin by nearly equally dark background. Free pectoral rays plain or barred with darker.

Known distribution. On the basis of specimens in the U. S. Nat. Mus. the range for *P. evolans strigatus* extends from Katama Bay, Massachusetts, to Ocean City, Maryland; and *P. evolans evolans*, from Hampton Roads, Virginia to North Carolina.

The writer has not come across any evidence that the two races overlap, but he has found evidence that adult specimens of *tribulus* have been confused with *evolans strigatus*.

Remarks. Examples of young *evolans strigatus*, between 66 and 85 mm. in standard length from Katama Bay, Massachusetts and Ocean City, Maryland, show only a few wavy lines on the pectoral fin, some broader than others, and others, again, that give the impression of being forked as in *tribulus*. Were these scanty markings to persist into maturity, there would then exist an intermediate form between the two subspecies.

PRIONOTUS TRIBULUS (Cuvier)

Trigla tribulus Cuvier, 1829, Regne Animal; Ed. 2; Vol. 2:161. America.

Prionotus tribulus Cuvier, in Cuvier and Valenciennes, 1829, His. Nat. Poiss., 4:98, pl. 74, New York, Carolina; Jordan and Evermann, 1893, Fishes of North and Middle America, pt. 2:2171-72.

Counts and proportions obtained from a specimen (2577) in the Am. Mus. of Nat. Hist., and from five others (25306; 75054; 43066; 59094 and 127229) in the U. S. Nat. Mus., ranging in standard length from 78 to 279 mm.

Description. Body very deep and broad: depth, 4.05 (3.55 to 4.40); width, 4.15 (3.90 to 4.55). Head long: 2.35 (2.25 to 2.45). All in standard length.

Snout broad and rather long: width, 2.20 (1.90 to 2.35); length, 2.08 (2.00 to 2.12). Mouth very large: maxillary, 2.10 (2.00 to 2.20). Orbit small: width, 5.50 (4.65 to 6.30). Interorbital space very wide: breadth, 4.85 (4.20 to 5.40). Nape very broad and long: width, 4.20 (4.00 to 4.50); length, 4.65 (4.15 to 5.40). All in head length.

Pectoral fin of medium length: 2.05 (2.00 to 2.20); posterior

end of anal base from pectoral base, 1.75 (1.65 to 1.85). Pelvic fin of moderate length: 3.60 (3.40 to 3.80). All in standard length.

First dorsal spine extremely low: 3.85 (3.50 to 4.40); second spine, 2.90 (2.45 to 3.30); third, 2.70 (2.50 to 3.10). Second soft dorsal ray, 2.75 (2.50 to 2.95). Longest anal ray, 3.20 (2.95 to 3.40) 5. Opercular spine rather long: to anterior margin of opercle, 3.20 (3.10 to 3.50). Preopercular spine of medium length: to cleft, 5.55 (4.50 to 6.65); to anterior margin of preopercle, 3.50 (2.90 to 4.35); to centre of radiation on cheek, 2.25 (1.95 to 2.65). Humeral spine long: to edge of opercular flap, 4.65 (4.00 to 5.70) 5. All in head length.

D. X - $11\frac{1}{2}$ to $12\frac{1}{2}$. A. $10\frac{1}{2}$ to $11\frac{1}{2}$. Gill rakers, 2+1+8 to 12. Vertical scale count, 6 to 7+1+19 to 23. Pored scales, 50 to 51+3 to 7 (3). Pectoral fin rays, 13+3 (2).

Smaller cranial spines and supraocular ridge wear rapidly and gradually lose their initial character at an early stage; spines and supraocular ridge in juvenile specimens as follows: Rostral and preorbital spines elevated, recurved; suborbital spine elevated, retrorse; supplementary preopercular spine elevated, recurved; at earliest stage dwarfing preopercular spine proper; preocular spine moderate, elevated. Supraocular rim steeply oblique, forming hornlike angular process, modified later to form postocular spine. Sphenotic, pterotic and parietal spines elevated, recurved; nuchal spine very long and obliquely elevated. Postfrontal groove absent. Interorbital space concave. Rostral plates bluntly serrulate. Opercular flap scaled. Caudal fin subtruncate: outer rays slightly produced. Free pectoral rays tapering.

First dorsal spine: median bluntly serrate ridge flanked on either side by one or two granulate ridges. Second and third spines: submedian bluntly serrate or granulate ridge, flanked on alternate sides by two or three granulate ridges. First soft dorsal ray: basal quarter of median ridge bluntly serrate or granulate.

Color in alcohol. Dark olive brown above; light olive to white below. First dorsal fin: lower half opaque and clouded with darker; upper half translucent, except for dark ocellate blotch between third and fifth spines. Soft dorsal traversed by from five to six series of dark spots. Caudal and anal fins, both translucent, with opaque fringe. Darkish brown blotch on caudal base. Pelvic fin plain. Free pectoral rays barred with darker. Pectoral fin brown traversed by from seven to (exceptionally) as many as eighteen wavy lines; these sometimes alternately thick and thin; a few often forked above or below; others discontinuous.

Known distribution. The range for this species is said to extend from Long Island to Brazos Santiago on the Mexican border (1898: JORDAN and EVERMANN). The writer has examined specimens from Chesapeake Bay (1), through North and South Carolina, Mississippi (Biloxi) to Louisiana.

PRIONOTUS VANDERBILTI, new species

Figure 3

Prionotus roseus, Borodin, N. A. 1934, Scientific Results of the yacht "Alva" Mediterranean Cruise, 1933, Bull. Vand. Mar. Mus., Vol. I; Art. 4:118.

Counts and proportions of the holotype (1305) in the Vanderbilt Marine Mus., of 236 mm. in standard length.

Description. Body robust, of medium depth and width: depth (51 mm.), 4.63; width (49 mm.), 4.82. Head very short: (77 mm.), 3.06. All in standard length.

Snout of medium length but very broad: length (36 mm.), 2.14; width (38 mm.), 2.03. Mouth rather large: maxillary (32 mm.), 2.41. Orbit rather small: width (15 mm.), 5.13. Interorbital space broad: width ($13\frac{1}{2}$ mm.), 5.70. Nape of medium width, but very long: width (16 mm.), 4.81; length (16 mm.), 4.81. All in head length.

Pectoral fin rather long, but not passing anal base: length (143 mm.), 1.65; posterior end of anal base from pectoral base (151 mm.), 1.56. Both in standard length.

First dorsal spine exceptionally low; distal end not produced beyond interradi al membrane; height (18 mm.), 4.28; second spine (36 mm.), 2.14; third ($38\frac{1}{2}$ mm.), 2.00. Third soft dorsal ray (33 mm.), 2.33. Opercular spine of medium length: to anterior margin of opercle (23 mm.), 3.35. Preopercular spine very short: not passing opercular flap: to cleft (7 mm.), 11.00; to anterior margin of preopercle (17 mm.), 4.53; to centre of radiation on cheek (28 mm.), 2.75. Humeral spine short: (11 mm.), 7.00. All in head length.

D. X - $12\frac{1}{2}$. A. $11\frac{1}{2}$. Gill rakers, 1+1+9. Vertical scale count, 9+1+26. Pored scales, 51+2. Pectoral fin rays, 13+3. Caudal fin rays, 1+9+1.

Rostral and preorbital spines small, retrorse; suborbital absent; supplementary preopercular spine minute, retrorse. Preocular spine small, elevated; postocular stout, depressed; sphenotic minute, elevated; pterotic minute, depressed. Parietal spine minute, depressed; nuchal, short, depressed. Postfrontal groove absent. Interorbital space shallowly concave. Rostral plates bluntly serrulate. Opercular flap scaled. Free pectoral rays: distal half expanded; narrowly lanceolate. Caudal fin subtruncate; outer rays, especially at lower angle, slightly produced. First dorsal spine: median ridge granulate over proximal third, flanked on either side by a granulate ridge reaching distal quarter. Second and third spines: a pair of granulate ridges on alternate sides. First dorsal ray: proximal quarter of median ridge granulate.

Color in alcohol. Dark brown sparsely spotted with darker above; lighter below. First dorsal fin plain without ocellate blotch, but clouded with darker; soft dorsal also clouded and bearing vestiges of transverse series of dark spots. Pectoral fin brown; intensely and irregularly marked from uppermost ray to seventh with smallish, dark brown spots. Caudal and anal fins plain.

Remarks. This species differs from other species of the genus in the extremely short first dorsal spine* and in the color pattern of the pectoral fin. In its proportions, it is nearer to *salmonicolor* than to any other species, but differs from *salmonicolor* in the two above mentioned characters; the concavity of the interorbital space, the higher vertical scale count; the higher number of gill rakers; the extremely short preopercular spine; and in the lanceolate free pectoral rays.

All the smaller cranial spines, especially on the right hand side (where some are absent) are very much worn, but all, excepting the suborbital, are represented. Unfamiliarity with the process of wear in these spines appears to have led to the identification of this form with *roseus*.

Known distribution. Holotype taken off Fisher's Island, Florida.

Dedication. This species is named in honor of William K. Vanderbilt, the founder of the Vanderbilt Marine Museum.

PRIONOTUS SALMONICOLOR Fowler

Prionotus salmonicolor Fowler, 1903, Proc. Acad. Nat. Sciences, Philadelphia: Vol. 55:333-36.

Counts and proportions corresponding to the holotype (24343) in the Acad. of Nat. Sciences, Philadelphia, of 203 mm. in standard length.

Description. Body broad but low: depth, 5.20; width, 4.30. Head short: length, 2.90. All in standard length.

Snout long and broad: length, 2.05; width, 2.20. Mouth of moderate size: maxillary, 2.70. Orbit rather small: width, 5.40. Interorbital space broad: breadth, 5.85. Nape of medium width but very long: width, 5.00; length, 4.65. All in head length. Pectoral fin long: just passing anal base, 1.55 in standard length.

First dorsal spine low: 2.90; second spine, 2.35; third, 2.25. Opercular spine of medium length: to anterior margin of opercle, 3.35. Preopercular spine very short: to cleft, 7.80; to anterior margin of preopercle, 4.40; to centre of radiation on cheek, 2.65. All in head length.

D. X - 12½. A. 11½. Gill rakers, 1+1+7 to 8. Vertical scale

* With rare exceptions: see extreme range of *P. tribulus*.

count, 9+1+22 to 23. Pored scales, 50 to 51+3 to 7. Pectoral fin rays, 13+3.

Rostral and preorbital spines retrorse, elevated; suborbital absent; supplementary preopercular spine small, depressed. Preocular spine strong, elevated (with two to three spinules); postocular moderate, elevated (an extra spine superposed on left); sphenotic and pterotic spines moderate, elevated. Parietal spine moderate, elevated; nuchal moderate, depressed. Postfrontal groove absent. Interorbital space flat. Rostral plates bluntly serrulate. Opercular flap sealed. Caudal fin obliquely truncate: lower angle produced. Free pectoral rays tapering. First dorsal spine: median ridge granulate.

Color in alcohol. Olive brown above, lighter below. Soft dorsal fin traversed by a four-three series of dark spots. Caudal, anal and pelvic fins plain. Pectoral fin brown; on upper half, dark, roundish spots of varying size and uneven distribution.

Known distribution. Holotype taken at New River, Florida.

PRIONOTUS JAMAICENSIS, new species

Figures 4-5

?*Prionotus punctatus* (not of Bloch) Cuvier and Valenciennes, 1829, Hist. Nat. Poiss., 4:93 (p. 68 of quarto ed.).

?*Rubio volador* (not *Prionotus rubio* of Jordan) Parra, 1787, Descrip. diferentes piezas de Hist. Nat., lamina 38, pagina 98. Havana.

Counts and proportions of the holotype (30114) in the U. S. Nat. Mus., of 105 mm. in standard length.

Description. Body of medium depth and width: depth (22 mm.), 4.77; width (22 mm.), 4.77. Head rather short: (38½ mm.), 2.73. All in standard length.

Snout short and broad: length (17 mm.), 2.26; width (17 mm.), 2.26. Mouth large: maxillary (17½ mm.), 2.20. Orbit large: (9 mm.), 4.28. Interorbital space of medium width: (6 mm.), 6.42. Nape of moderate length and breadth: length (6½ mm.), 5.92; width (8 mm.), 4.81. All in head length.

Pectoral fin of medium length: (51 mm.), 2.06; posterior end of anal base from pectoral base (64 mm.), 1.64. Pelvic fin short: (27 mm.), 3.89. All in standard length.

First dorsal spine of moderate height: (15 mm.), 2.57; second and third spines very high, of equal length: (19½ mm.), 1.97. Second soft dorsal ray (15 mm.), 2.57. Longest anal ray (12 mm.), 3.21. Opercular spine rather long: to anterior margin of opercle (12

mm.), 3.21. Preopercular spine short: to cleft (5 mm.), 7.70; to anterior margin of preopercle (10 mm.), 3.85; to centre of radiation on cheek (16 mm.), 2.41. Humeral spine long: to edge of opercular flap (9 mm.), 4.28. All in head length.

D. X - 12½. A. 11½. Gill rakers, 1+1+7 to 8. Vertical scale count, 9+1+23. Pored scales, 52+6 to 7. Pectoral fin rays, 13+3. Caudal rays, 1+9+1.

Rostral and preorbital spines slightly elevated, retrorse; sub-orbital spine vestigial; supplementary preopercular spine small, depressed. Preocular spine moderately strong, elevated (more precisely, the uppermost of three strong spinules); postocular of medium strength, depressed. Sphenotic spine remarkably developed as a slightly recurved and depressed, sharp, conical spine, similar to, but slightly shorter than, the pterotic. Pterotic strong, conical, depressed. Parietal and nuchal spines strong, depressed. Postfrontal groove vestigial. Interorbital space concave. Rostral plates angular, serrulate. Opercular flap scaled. Caudal fin truncate. Free pectoral rays tapering. First dorsal spine: median ridge bluntly serrate; flanked on right by a granulate ridge. Second spine: a granulate ridge on left; third, smooth. Proximal quarter of median ridge of first soft dorsal ray granulate.

Color in alcohol. Body olive yellow above; lighter below and on snout. A sprinkling of small, round, ferruginous brown spots on dorsum; these present principally on either side of first dorsal fin as in *aspersus*. First dorsal fin: dark patch, but no ocellus, present on distal half of interradi al membranes between third and fifth spines; lower half of fin pale, opaque. Soft dorsal fin: a series of round, ferruginous brown spots with vertical projection on, and slightly forward of, rays, commencing with four transverse rows on first two rays and diminishing thence to three. Pectoral fin brown, with a few transverse bars of darker between uppermost fin ray and sixth, these breaking up into diffuse spots on membranes with fin extended; one series of four large spots conspicuously dark. Caudal fin traversed from first simple ray to fifth branched ray by three series of ferruginous brown spots. The remains of a triangular group of three large, round spots present on caudal base as in *alipionis*. Anal and pelvic fins plain.

Known distribution. Waters adjacent to the Island of Jamaica. Holotype obtained through the courtesy of the authorities of the Institute of Jamaica Museum.

Remarks. This species appears to be intermediate between *alipionis* and *aspersus*, and if found off Cuba, may have been the original of PARRA's *Rubio volador*, with the dimensions of which, judging by PARRA's figure (1787), it largely agrees. However, the pattern of small, round spots covering the pectoral fin of PARRA's figure and the paucity of details in the description preclude the identification of *jamaicensis* with *volador*. JORDAN'S

nomen specificum novum is still more unacceptable, inasmuch as *Prionotus rubio* is based on a heterogeneous mixture of PARRA's *volador*, POEY and other authors' *Prionotus punctatus*, and specimens that have now disappeared of material collected by JORDAN himself at Havana.

Prionotus jamaicensis differs from both *alipionis* and *aspersus* in the exceptional character of the sphenotic spine, the higher first, second and third dorsal spines, the parity of length between the second and third dorsal spines, the bluntly serrate median ridge of the first dorsal spine, and in the different vertical alignment of the spots on the soft dorsal fin.

In general development, in the vertical distribution of the soft dorsal spots, and in the presence of spots (in *jamaicensis*, definitely rounded; in *aspersus*, in specimens examined, not clearly rounded) on the dorsum, *P. jamaicensis* more closely resembles *aspersus* than *alipionis*, but the vertical scale count of *jamaicensis* equals the maximum recorded for *alipionis*, which, in turn, exceeds that of *aspersus*.

Since writing the above the writer has had the opportunity, through the courtesy of the curators of the Institute of Jamaica Museum, to examine the only specimen of *Prionotus* in the museum. This specimen (labelled *P. punctatus*) was taken near Rockport inside the bay formed by the Palisadoes at Kingston, on August 25, 1925. A glance at the cranial spines revealed it to be clearly another example of *jamaicensis* and not of *alipionis*.

This second example of the new species confirmed what appeared evident in the holotype, that both the sphenotic and the pterotic spines (when overlap in the holotype), and not the sphenotic alone, form together a good diagnostic character that distinguishes *jamaicensis* from the closely related forms *alipionis* and *aspersus*. It may be added here that the sphenotic spine emerges from a small shield-like basal process which the writer has not observed in the other species.

The proportions of the specimen from Rockport, which was 118 mm. in standard length, were remarkably close to those of the holotype (30114). The principal differences noted were: (a) sphenotic spine slightly shorter; (b) pectoral fin longer (1.71 in standard length); (c) dorsal ray formula X-11½; (d) gill-raker count 1-1-7 on both sides; (e) median ridge of first dorsal spine granulate rather than bluntly serrate; second and third spines with a pair of granulate ridges on alternate sides.

The second and third dorsal spines appeared to be of equal height, but a slight twist in the former precluded an accurate measurement. This specimen, unfortunately, had not been prepared with the same skilled care as the holotype, nor had it been preserved in the same solution, so that the writer was unable to make any accurate scale readings, or to discern any color pattern on the fins or body. Nevertheless, he has no hesitation in citing this example as a paratype of *P. jamaicensis*.

This fish was considered at the Institute to be a rarity for Jamaica, and the writer was been unable to obtain any fresh material either near Kingston or in the vicinity of Ocho Rios and Port Antonio, on the northern coasts of the island, of either *jamaicensis* or *alipionis*.

PRIONOTUS ASPERSUS Meek and Hildebrand

Prionotus aspersus Meek and Hildebrand, 1928, Marine Fishes of Panama. Field Mus. of Nat. Hist.; Publ. 249; Zool. Ser.; Vol. 15, pt. 3:856-57.

Counts and proportions recorded from the holotype (81613) in the U. S. Nat. Mus., of 108 mm. in standard length, and from a paratype (8496) in the Field Mus. of Nat. Hist., of 101 mm. in standard length.

Description. Body deep and broad: depth, 4.18 (4.04 to 4.32); width, 4.22 (4.12 to 4.32). Head rather short: 2.65 (2.59 to 2.70). All in standard length.

Snout of moderate length, but broad: length, 2.14 (2.11 to 2.17); width, 2.20 (2.16 to 2.23). Mouth rather large: maxillary, 2.40 (2.35 to 2.44). Orbit rather small: width, 5.10 (5.00 to 5.20). Interorbital space rather narrow: breadth, 7.19 (7.09 to 7.28). Nape of medium length but broad: length, 6.11 (5.72 to 6.50); width, 4.52 (4.45 to 4.59). All in head length.

Pectoral fin of moderate length; 2.09 (2.06 to 2.12); posterior end of anal base from pectoral base, 1.65 (1.64 to 1.66). Pelvic fin of moderate length; 3.67 (3.60 to 3.74). All in standard length.

First dorsal spine rather low: 2.73 (2.69 to 2.76); second spine, 2.26 (2.22 to 2.29); third, 2.24 (2.11 to 2.36). Second soft dorsal ray, 2.56 (2.44 to 2.67). Longest anal ray, 3.17 (3.08 to 3.25). Opercular spine of medium length; to anterior margin of opercle, 3.60 (3.55 to 3.64). Preopercular spine very short: to cleft, 8.35 (7.80 to 8.90); to anterior margin of preopercle, 4.27 (4.21 to 4.33); to centre of radiation on cheek, 2.44 (2.35 to 2.52). Humeral spine of moderate length: to edge of opercular flap, 5.27 (5.20 to 5.33). All in head length.

D. \bar{X} - $11\frac{1}{2}$. A. 11 to $11\frac{1}{2}$. Gill rakers, 1+1+8 to 9. Vertical scale count, 7 to 8+1+21 to 22. Pored scales, 51+1 to 4. Pectoral fin rays, 13+3.

Rostral spine small, retrorse; preorbital small, retrorse; sub-orbital, vestiges present. Supplementary preopercular spine small, depressed. Preocular spine moderate, elevated; postocular moderate, elevated. Sphenotic small, slightly elevated; pterotic small, depressed. Parietal spine small, depressed. Nuchal moderate, depressed. Post-frontal groove vestigial. Interorbital space concave. Rostral plates rounded, bluntly serrulate. Opercular flap scaled. Caudal fin sub-truncate. Free pectoral rays tapering. First dorsal spine: median ridge very lightly granulate at base; second, lightly granulate; third, smooth. First soft dorsal ray: proximal quarter of median ridge lightly granulate.

Color in alcohol. Upper parts dark brown; lower light, with fairly distinct line of separation along ventro-lateral area, from height of humeral spine to caudal base. A few small, diffuse, ferruginous brown spots on dorsum. A darkish blotch between fourth and fifth spines of first dorsal fin. On soft dorsal fin, four transverse series of spots as far as sixth ray; thence, three series to last ray; spots intensely pigmented and aligned vertically along rays. Caudal fin traversed by dark bar across median area of distal half of fin, forming spots on branched rays with fin extended; some spots on proximal half; a triangular series of three large, round spots on base, as in *alipionis*. Upper half of pectoral fin traversed by two to three broad, dark brown bars, flanked by single and double whitish bars, as in *alipionis*. With spreading of fin, dark bars resolving into four elongate spots on membranes; white bars, into elongate spots on fin rays. Free pectoral rays plain. Anal and pelvic fins also plain. Short, colorless, transverse bar between dorsal fins, as often in *alipionis*.

Known distribution. Holotype taken in the Mindi Cut, Canal Zone; other specimens off Colon and Porto Bello, Panama.

Remarks. In life, this species, which is extremely close to *alipionis*, is described as having brownish red spots forming indistinct bars on sides of body; a description which could apply to those of *alipionis*.

PRIONOTUS ALIPIONIS Teague and Myers

Prionotus punctatus (not of Bloch) Cuvier and Valenciennes, 1829, Hist. Nat. Poiss., 4:93 (p. 68 of quarto ed.); Jordan and Evermann, 1898, Bull. U. S. Nat. Mus., no. 47, pt. 2:2169.

Prionotus alipionis Teague and Myers, 1945. A new gurnard from the coast of Brazil, Bol. Mus. Nac., Rio de Janeiro; Zool. no. 31:1-19.

Counts and proportions compiled from two specimens (86730 and 83282) of 293 and 150 mm. in standard length respectively, in the U. S. Nat. Mus., and from another (969) of 170 mm. in the Am. Mus. of Nat. Hist.

Description. Body of medium depth but rather broad: depth, 4.70 (4.60 to 4.90); width, 4.50 (4.40 to 4.65). Head rather short: 2.62 (2.58 to 2.66). All in standard length.

Snout rather short and broad: length, 2.15 (2.10 to 2.20); width, 2.25 (2.20 to 2.30). Mouth large: maxillary, 2.35 (2.25 to 2.45) 2. Orbit rather small: width, 5.35 (5.10 to 5.50). Interorbital space of medium breadth, 6.75 (6.10 to 7.15). Nape rather long and broad: length, 5.30 (5.00 to 5.75); width, 4.80 (4.45 to 5.20). All in head length.

Pectoral fin of medium length: 2.10 (1.75 to 2.55)*; posterior

* This proportion corresponds to the very short fin of specimen no. 86730 of 393 mm. in standard length, taken off Punta del Este, Uruguay. This fish is the largest sea-robin in the U. S. Nat. Mus. The pectoral fins of the adult fishes collected and examined by the writer at Rio de Janeiro were of medium length.

end of anal base from pectoral base, 1.65 (1.55 to 1.75). Pelvic fin short: 3.95 (3.75 to 4.30). All in standard length.

First dorsal spine very low: 3.14 (3.00 to 3.33); second spine, 2.56 (2.38 to 2.75); third, 2.30 (2.15 to 2.55). Second soft dorsal ray, 2.75 (2.55 to 3.15). Longest anal ray, 3.41 (3.25 to 3.67). Opercular spine of medium length: to anterior margin of opercle, 3.25 (3.15 to 3.45). Preopercular spine very short: to cleft, 7.80 (6.60 to 9.15); to anterior margin of preopercle, 4.45 (4.25 to 4.80); to centre of radiation on cheek, 2.60 (2.45 to 2.75). Humeral spine of medium length: to edge of opercular flap, 4.96 (4.40 to 5.70). All in head length.

D. X - $11\frac{1}{2}$ to $13\frac{1}{2}$ (7). A. $11\frac{1}{2}$ (7). Gill rakers, 1+1+6 to 9 (8). Vertical scale count, 8 to 9+1+21 to 23 (6). Pectoral fin rays, 13 (rarely 12)+3.

Rostral and preorbital spines elevated, retrorse; suborbital very small and weak, retrorse, in young; usually absent in adults. Supplementary preopercular spine small, depressed. Preocular and postocular spines moderate, elevated. Sphenotic spine small, slightly elevated; pterotic small, depressed; parietal small, depressed; nuchal moderate, depressed. Postfrontal groove absent or, at most, vestigial. Interorbital space concave. Rostral plates rather pronounced and angular in young; usually rounded and less prominent in adults; bluntly serrulate. Opercular flap scaled. Caudal fin subtruncate. Free pectoral rays tapering. First dorsal spine: median ridge granulate; sometimes median ridge smooth, flanked on either side by a strongly granulate ridge. Second and third spines granulate on alternate sides. First ray of soft dorsal: proximal quarter of median ridge slightly granulate.

Color in life. Upper parts olivaceous, intensely mottled with brown; belly white. Vento-lateral area traversed by a rather widely spaced series of large, elongate to round, ferruginous spots, these merging into ruby-red below. Dark ocellate blotch between fourth and fifth spines of first dorsal with posterior projection. Soft dorsal traversed by a four-three, rarely five-four, series of chestnut brown spots, of which the median series very sharply rounded and intensely pigmented; spots not lying uniformly on vertical projection of rays. Caudal fin traversed by two to three dark bars that become resolved into spots at spreading of fin. Conspicuous triangular pattern of three large, round, ferruginous brown spots on caudal base. Anal fin translucent with opaque border. Pelvic fin pigmented with olive brown and ruby red on distal third. Free pectoral rays barred with brown. Pectoral fin olivaceous brown, traversed sparingly by interrupted bands of dark brown and, occasionally, white; fin partially fringed by narrow cobalt blue border when fish attains about 120 mm. in standard length.

Known distribution. On continental shelf: from Fortaleza (Ceará) in northeastern Brazil, through Natal, Salvador (Bahia), Victoria, Rio de Ja-

neiro, Florianopolis, Rio Grande (Brasil), Punta del Este (Maldonado, Uruguay), Mar del Plata to Patagonia (GÜNTHER, 1860. Cat. Fishes Brit. Mus., 2:191), (Argentina). In West Indies: Cuba and Jamaica. Under *P. punctatus*, POEY (1868. Synop. Pisc. Cubens., p. 304) cites Puerto Rico, and CUVIER and VALENCIENNES (1829), Martinique.

Remarks. The proportions shown above are, as stated, based upon the dimensions of three adult specimens of which one is of very large size. TEAGUE and MYERS (1945) show a wider range due to the inclusion of two young fishes. In this paper the author has consistently enumerated the pectoral rays as from the uppermost ray below, but in reading the paper by TEAGUE and MYERS it should be remembered that the first webbed ray *sensu stricto* is that which follows directly after the last (third) free ray, the free rays occupying an *anterior* position to the webbed rays.

The author, while in Brazil, had an opportunity to examine a very large amount of fresh material, ranging in size from the smallest juvenile specimens to those of the largest size, which had been collected on all the principal trawling grounds from Fortaleza (Ceará) to Rio Grande (Rio Grande do Sul).

He subsequently examined preserved and fresh material from as far south as Mar del Plata, Argentina. In this examination, it was observed that whereas the ventro-lateral body spots of specimens from the southern part of the observed continental range maintained their oblique, elongate form, those of specimens from the northern end of the range tended to become rounded.

An examination of a specimen of *P. alipionis* (4691) in the U. S. Nat. Mus., of 140 mm. in standard length, bearing the legend "*P. punctatus* Poey; Cuba", did not reveal any significant difference between it and the race occupying the American continental shelf, but a specimen (9641) of Jamaican provenance of 227 mm. in standard length, had a longer pectoral fin than any observed by the writer on the continent, viz. 1.60 (142 mm.) in standard length, as compared with 1.61 (141 mm.) corresponding to the distance between the posterior end of the anal base and the pectoral base. A much younger specimen, of 80 mm. in standard length, in the same jar had a relatively short pectoral fin, viz. 2.29 (35 mm.) in standard length.

PRIONOTUS LONGISPINOSUS, new species

Figures 6-7 •

Prionotus punctatus, Nichols and Breder, 1924, Proc. Biol. Soc. Washington, Vol. 37:23.

Counts and proportions of the holotype (8189) of 88 mm. in standard length, in the Am. Mus. of Nat. Hist.

Description. Body very deep and rather broad: depth (24 mm.), 3.65; width (19½ mm.), 4.50. Head (34 mm.) rather short: 2.60. All in standard length.

Snout short and broad: length (15 mm.), 2.25; width ($15\frac{1}{2}$ mm.), 2.20. Mouth large: maxillary (15 mm.), 2.25. Orbit very large: width (9 mm.), 3.80. Interorbital space narrow: breadth ($4\frac{1}{2}$ mm.), 7.55. Nape of medium length, but very broad: length (6 mm.), 5.65; width ($8\frac{1}{2}$ mm.), 4.00. All in head length.

Pectoral fin of moderate length (46 mm.): 1.90; posterior end of anal base from pectoral base (52 mm.), 1.70. Pelvic fin of medium length (23 mm.): 3.85. All in standard length.

First dorsal spine of moderate height (13 mm.): 2.62; second spine, damaged; third (18 mm.), 1.90; second soft dorsal ray, damaged; third ray ($16\frac{1}{2}$ mm.), 2.05. Longest anal ray ($12\frac{1}{2}$ mm.), 2.72. Opercular spine exceptionally long: to anterior margin of opercle ($12\frac{1}{2}$ mm.), 2.70. Preopercular spine extremely long: to cleft (11 mm.), 3.10; to anterior margin of preopercle ($14\frac{1}{2}$ mm.), 2.35; to centre of radiation on cheek (20 mm.), 1.70. Humeral spine also extremely long: to edge of opercular flap ($9\frac{1}{2}$ mm.), 3.58. All in head length.

D. X - $12\frac{1}{2}$. A. $11\frac{1}{2}$. Gill rakers, 1+1+9 to 10. Vertical scale count, 8+1+19. Pored scales, 51 to 52+1 to 4. Pectoral fin rays, 13+3. Caudal fin rays, 1+9+1.

Rostral and preorbital spines retrorse, elevated; suborbital small, retrorse, elevated; supplementary preopercular spine retrorse, elevated. Preocular spine moderate, elevated; postocular weak, depressed; sphenotic absent; pterotic weak, depressed. Parietal spine small, compressed. Nuchal strong, depressed, subtending vertical from origin of dorsal fin. Postfrontal groove vestigial. Interorbital space concave. Rostral plates bluntly serrulate. Opercular flap scaled. Caudal fin emarginate. Free pectoral rays tapering. First dorsal spine: median ridge lightly granulate over proximal two-thirds. Second and third spines smooth. First soft dorsal ray smooth.

Color in alcohol. Yellowish above, paler below. First dorsal fin defective; no ocellate blotch visible. Soft dorsal and anal fins lightly speckled with chromatophores; no transverse series of spots visible on soft dorsal. Caudal fin plain. Pectoral fin light brown; traversed almost throughout by irregular bands of horizontally elongate, sharply defined, small, white spots of even size, these lying directly upon fin rays and their branches; no single spot covering both branches at forks as in *maculatus*.

Remarks. This species (*P. longispinosus*) differs from other species of the genus in the combination of extremely long, conical, major spines (opercular, preopercular and humeral spines), and in the color pattern of the pectoral fin. It is closest in general characters to *maculatus*.

Known distribution. Holotype taken in the Gulf of Mexico.

PRIONOTUS MACULATUS, new species

Figures 8-9

Counts and proportions corresponding to the holotype (111593) and two cotypes (111594) in the U. S. Nat. Mus., ranging in standard length from 147 to 151 mm.

Description. Body of medium width but deep: width, 4.87 (4.78 to 4.93); depth, 4.27 (4.20 to 4.35). Head rather short, 2.62 (2.58 to 2.69). All in standard length.

Snout of medium width but short: width, 2.36 (2.29 to 2.48); length, 2.39 (2.31 to 2.50). Mouth rather large: maxillary, 2.37 (2.34 to 2.41). Orbit very large: width, 3.93 (3.80 to 4.07). Interorbital space very narrow: breadth, 8.36 (7.86 to 8.46). Nape broad and rather long: width, 4.51 (4.23 to 4.75); length, 5.35 (5.18 to 5.62). All in head length.

Pectoral fin of medium length: 1.94 (1.74 to 2.19); posterior end of anal base from pectoral base, 1.68 (1.65 to 1.72). Pelvic fin short, 4.08 (3.89 to 4.32). All in standard length.

First dorsal spine low: height, 2.80 (2.75 to 2.85) 2; second spine, 2.25 (2.13 to 2.37) 2; third, 2.04 (1.96 to 2.11) 2. Second soft dorsal ray, 2.30 (2.16 to 2.48). Longest anal ray, 2.86 (2.62 to 3.08). Opercular spine rather long: to anterior margin of opercle, 3.20 (3.11 to 3.35). Preopercular spine of medium length: to cleft, 6.02 (5.70 to 6.46); to anterior margin of preopercle, 3.60 (3.45 to 3.68); to centre of radiation on cheek, 2.28 (2.24 to 2.34). Humeral spine long: to edge of opercular flap, 4.33 (4.24 to 4.38). All in head length.

D. X - $11\frac{1}{2}$ to $12\frac{1}{2}$. A. $11\frac{1}{2}$. Gill rakers, $1+1+7$ to 9. Vertical scale count, $7+1+21$ to 22. Pored scales, $51+1$ to 8. Pectoral fin rays, $13+3$ (2). Caudal fin rays, $1+9+1$.

Rostral and preorbital spines elevated, retrorse; suborbital retrorse, very small or vestigial; supplementary preopercular spine small, depressed, retrorse. Preocular spine small, elevated; postocular small, of variable elevation; sphenotic small, slightly elevated; pterotic small, depressed; parietal weak, depressed; nuchal moderate, depressed. Postfrontal groove absent. Interorbital space deeply concave. Eyes prominent; orbital region rather abruptly elevated. Rostral plates rounded, bluntly serrulate. Opercular flap scaled. Caudal fin shallowly lunate in young; deeply emarginate in adult; upper lobe usually the longer. Free pectoral rays tapering. First dorsal spine smooth to slightly granulate on median ridge over proximal two-thirds of length; second and third spines smooth. First soft dorsal ray smooth.

Color in alcohol. Gray above; albescent low down on ventral area. Black ocellate blotch on distal half of interrarial membrane between fourth and fifth spines, with posterior extension. Large opaque gray cloud covering antero-inferior angle of first dorsal fin to just beyond fourth spine, reappearing, on basal third of fin, beyond fifth spine. Another narrower cloud on distal third of fin, from first spine, to "ocellus", leaving translucent streak serpentine between cloudings and around, or below, ocellate markings. General distribution of cloudings remarkably constant.

Soft dorsal fin traversed by four series of dark spots, these aligned vertically along rays. Interrarial membranes of soft dorsal and anal fins speckled with dark chromatophores; these more intense on anal fin, but confined to distal two-thirds of same; both the residue of conspicuous pigmentation in life. Upper half of caudal fin diffusely spotted; lower half blackish, darkening progressively towards lower lobe. Pectoral fin plain black, or patterned sparingly with pale, round spots. Maximal pattern about six transverse series; spots lying directly upon fin rays and their branches from second upper ray to penultimate ray; these sufficiently large, or diffuse, to appear as single units on forks of rays. Free pectoral rays plain.

Principal measurements in millimetres of the holotype and cotypes of
Prionotus maculatus

	Holotype	Cotypes	
Standard length in mm.	147	148	153
Depth	35	34	36
Width	30	30	32
Head length	57	55	59
Snout	24	22	25½
Snout, greatest width	23	24	25½
Maxillary	24	23½	24½
Orbit	15	14	14½
Interorbital (bony) width	6½	6½	7½
Nape length	11	10½	10½
Nape width	12	13	13
Pectoral fin	67	85	81
Pectoral base to posterior end of anal base	89	86	91
Opercular spine to anterior margin of opercle	17	17½	19
Preopercular spine to anterior margin of preopercle	16½	15	16
First dorsal spine	20	20	—
Second dorsal spine	24	26	—
Third dorsal spine	27	28	—

Remarks. This species (*P. maculatus*) differs from all the other species of the genus in the color pattern of the pectoral fins, and from all the Atlantic species, with the exception of *longispinosus*, *brachycheir*, *murieli* and (immature) *griseocens*, which differ in other respects, in the large, prominent orbits.

Known distribution. Coast of Louisiana. Holotype and cotypes taken in latitude N. 28°09'00"; longitude W. 91°32'00".
