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THE « MERCATOR » SEA-ROBINS.

A revision of the triglid fishes of the genus *Prionotus* collected off the east coast of America, during the ninth cruise (1936) of the Belgian training ship « Mercator », together with a review of those taken on a subsequent voyage (1939),

by Gerard Warden TEAGUE (Montevideo, Uruguay).

The following revision clears up the status of *P. scitulus* var. *longipennis* DELSMAN, and, while rectifying the error that ascribed *P. evolans* (LINNÆUS) to the Venezuelan marine fauna, confirms the taking of *P. scitulus* JORDAN off Santa Margarita Island, Venezuela. It, furthermore, adds *P. carolinus* (LINNÆUS) to this same coastal fauna.

GENERAL REMARKS.

The standard length of this revision is the linear distance, with calipers, between the tip of the snout, at the median indentation, and the end of the hypural fan (caliper tip resting in the vertical bend that becomes evident when the caudal fin is deflected in a horizontal plane) ; the head length, the distance between the tip of the snout, at the median indentation, and the farthest (free) edge of the membranous flap of the opercle.

The major spines are measured from the tip of the spine to the points indicated in the revision. The gill rakers are only those that are definitely developed. The vertical scale count is taken along a vertical series, with a pored scale on the lateral line, issuing from, or near, the base of the last dorsal spine and leading to the vent. In the cases (and there are many) where the nominal vertical series runs too obliquely to meet the vent, the count below the pored lateral line is taken separately from the vent upwards to a pored scale. The pored scale count has been omitted from this revision because the condition of the scales in many of the specimens (1) would have called for an expenditure of time incommensurate with the value of a count that, with the possible exception of that of *P. brachychir* Regan, has no practical value in the diagnosis of the Atlantic species. On the other hand, the reviser of this collection has included a dimensional formula as an adjunct to the description of the caudal fin. This formula comprises : 1) the linear measurement of the upper lobe (or, say, the conjunction of the first branched ray and the proximal simple ray) from its tip to the bend at the end of the hypural fan ; 2) the distance between the tip of the membrane of the fifth branched ray and the end of the hypural fan ; 3) the distance from the tip of the lower lobe (or, say, the conjunction of the ninth branched ray and the proximal simple ray) to the end of the hypural fan. These dimensions are shown, in the order given, as percentages of the standard length. For further information regarding measurements, and the distribution and nomenclature of the cranial spines, see the explanations given in « The Sea-robins of America », Teague, 1951, Com. zool. Mus. Hist. nat. Montevideo, n° 61, vol. 3, pp. 2-4.

Branched rays. — When the last ray of the soft dorsal, or of the anal fin, is branched from the base upwards, as is usual, this is indicated by the addition of a 1/2 to the unit (e. g., A. 11 1/2).

(1) The condition of the scales is apparently due to initial errors in conservation, such as the slitting of the belly and gutting, instead of the making of a simple incision at the rear of the right humeral spine, and is no reflection on the subsequent conservation at the Royal Institute. On the contrary, the flexibility and excellent state of preservation of the dorsal, caudal and pectoral fins of the exhibits call for the reviser's unqualified admiration.

Proportions. — The greatest depth and width of body; the head length, the pectoral and pelvic fin lengths; the distance between the pectoral fin base and the posterior end of the anal base, are all shown as proportions of the standard length. All other proportions are obtained by dividing the length, width, or height, of the part into the head length.

The relative figures are shown in the following order : the *average proportion*; *the proportional range of the part in the* specimens examined; the number of specimens examined when this exceeds, or is short of, the number indicated in the intraductory paragraph.

Acknowledgements.

The present reviser of this small but extremely interesting collection of the triglid fishes of the genus *Prionotus* from the eastern sea-board of North and South America, is most grateful to Dr. V. Van Straelen, Director of the Institut royal des Sciences naturelles at Brussels, and to Dr. Serge Frechkop, Laboratory Director and Head Curator of the Section of Modern Vertebrates, of the said Institute, for the privilege of examining and revising this material, and for their spontaneous undertaking to publish the revision in the bulletin of the Institute. He is also indebted to the accomplished portrayer of African fishes, Marie-L. van Melle, for so kindly undertaking the drawings for this publication, and to Mademoiselle O. Besin and other officers of the Institute for their very kind and courteous attentions at the laboratory. He, furthermore, wishes to take this opportunity to thank Dr. Max Poll (more directly concerned with African fishes as author and as « Conservateur au Musée royal du Congo Belge » at Tervueren) for ensuring that he obtained the whole of the pertinent material; and, also, Dr. Ethelwyn Trewavas of the British Museum (Natural History) for so kindly introducing him to the said authorities of the Royal Institute.

Finally, he wishes to express his thanks to Dr. Ernest A. Lachner, Associate Curator of fishes of the U. S. National Museum, for his most kind and helpful attention to consultations concerning material at Washington.

Prionotus grisescens TEAGUE.

Prionotus ophryas, LONGLEY and HILDEBRAND, 1941, Carnegie Inst. Washington Publ. 535 : 172.

Prionotus scitulus var. *longipennis* DELSMAN, 1941, Mém. Mus. roy. Hist. nat. Belg. (2), fasc. 21 : 75 (Florida, east coast).

Prionotus grisescens TEAGUE, 1951, Com. zool. Mus. Hist. nat. Montevideo, n° 61, vol. 3 : 14-16.

Counts and proportions in respect of a specimen (Reg. N° 8298) of 101 mm in standard length, taken 15-20 miles off the east coast of Florida, on March 24, 1936.

Depth of body 4,39; width, 4,39. Head length, 2,59. All in standard length. Snout length, 2,11; width, 2,29. Maxillary, 2,44. Orbit, 4,33. Interorbital width, 6,50. Nape length, 7,80; width, 4,33. All in head length.

Pectoral fin length, 1,58. Pectoral fin base to posterior end of anal base, 1,66. Pelvic fin, 3,06. All in standard length.

First dorsal spine, 1,86; second spine, 1,73; third, 1,86. Second soft dorsal ray, 2,00. Longest anal ray, 2,79. Opercular spine to anterior margin of opercle, 4,10. Preopercular spine to anterior margin of preopercle, 5,20. Humeral spine to edge of opercular flap, 9,75. All in head length.

D. X - 12 1/2. A. 11 1/2. Gill rakers, 0 + 1 + 5. Vertical scale count, 8 + 1 + 25. Pectoral fin rays, 14 + 3.

Rostral, preorbital, suborbital and supplementary preopercular spines absent. Preocular and postocular spines, strong, elevated. Sphenotic, very small, elevated. Pterotic and parietal spines, strong, elevated. Nuchal, strong, depressed. Postfrontal groove, absent.

Interorbital space, deeply concave. Orbit moderately large; eyes prominent. Rostral plates rounded, smooth. Opercular flap, scaled. Caudal fin subtruncate, outer rays produced : 32-30-35. Scales strongly ctenoid. Free pectoral rays, tapering.

First dorsal spine : median ridge strongly and unevenly serrate; serrations noticeably prominent and sharp to spiny on distal third. Second and third dorsal spines and first ray of soft dorsal, smooth.

Broad, stemmed and digitate supraocular cirrus present, followed below by three stumps corresponding to supplementary cirri. Long, tapering nasal cirrus also present.

Color in alcohol. — Dorsum and sides, brown, mottled with darker above, large brown patches invading the light area that marks the usual belly line of the genus. Head, ferruginous brown; preorbital region light above, but mottled with some dark blotches below. First dorsal fin : five oblique dark spots along distal half of first five interradial membranes; another series occupying proximal half of these membranes. Soft dorsal, mottled with dark clouds : one stretching obliquely from the lower portion of the distal half of the first interradial membrane to the proximal half of the sixth membrane; another, from the distal half of this same membrane to the posterior end of the fin, and filling the last three membranes. Caudal fin traversed by three broad, dark bands; one basal, one median, and one terminal. Anal fin : proximal half, or more, dark, opaque; distal half, light, opaque. Pelvic fin : basal third dark; distal two-thirds traversed by interrupted dark bars forming spots along rays with fin extended. Pectoral fin, black, with several series of dark spots traversing the upper half of the fin as far down as the seventh ray. Full color pattern, evidently, not yet developed.

Remarks. — The specimen reviewed above was taken at the same locality (apparently in the same haul) and on the same day as the catch of six specimens of *P. microlepis*.

Prionotus microlepis Longley and Hildebrand.

Prionotus microlepis Longley and Hildebrand, 1940, Carnegie Inst. Washington Publ. 517; Teague, 1951, Com. zool. Mus. Hist. nat. Montevideo, n° 61, vol. 3 : 23-24.

Prionotus scitulus var. *longipennis* Delsman, 1941, Mém. Mus. roy. Hist. nat. Belg. (2), fasc. 21 : 75 (Santa Margarita, Venezuela; Dry Tortugas; Florida, east coast).

Prionotus evolans, Delsman, 1941, Mém. Mus. roy. Hist. nat. Belg. (2), fasc. 21 : 76 (Santa Margarita, Venezuela).

Counts and proportions relating to two specimens (Reg. N° 6567) of 128 and 131 mm in standard length, respectively, taken 15-20 miles off the east coast of Florida, on March 24,

1936; to one (Reg. N° 6566) of 157 mm in length, taken 15-20 miles off the Dry Tortugas, S. Florida, on March 15, 1936, at a depth of 20-30 fathoms; to one (Reg. N° 6565) of 138 mm in length, taken 4-6 miles off Santa Margarita Island, Venezuela, on February 10, 1936, at a depth of about 20 fathoms; to another (Reg. n° 6561) of 142 mm in length, taken along with N° 6565; and, finally, to two (Reg. N° 8297) of 115 and 117 mm in length, respectively, taken two miles W. of Cape de la Vela, Colombia, on January 12, 1939, at a depth of 12-15 fathoms.

Depth of body, 4,97 (4,58 to 5,30) ; width, 5,00 (4,74 to 5,30). Head length, 2,99 (2,92 to 3,20). All in standard length.

Snout length, 1,99 (1,83 to 2,13) ; width, 2,38 (1,86 to 2,76). Maxillary, 2,99 (2,75 to 3,20). Orbital width, 5,24 (4,70 to 5,87). Interorbital width, 8,14 (7,33 to 9,75). Nape length, 7,57 (6,71 to 9,80) ; width 6,69 (5,22 to 7,33). All in head length.

Pectoral fin length, 1,62 (1,47 to 1,74). Posterior end of anal base from pectoral base, 1,56 (1,44 to 1,62). Pelvic fin, 3,47 (3,28 to 3,84). All in standard length.

First dorsal spine : 2,04 (1,76 to 2,22) ; second spine, 1,79 (1,52 to 2,00) ; third, 1,72 (1,63 to 1,84). Second soft dorsal ray, 2,35 (2,11 to 2,59). Longest anal ray, 2,96 (2,61 to 3,64). Opercular spine to anterior margin of opercle, 3,06 (2,75 to 3,27). Preopercular spine to anterior margin of preopercle, 4,13 (3,67 to 5,00). Humeral spine to edge of opercular flap, 5,34 (3,39 to 6,67). All in head length.

D. X - 11 1/2 to 13 1/2. Gill rakers, 0 — 1 + 1 + 6 — 9. Vertical scale count, 6 — 8 + 1 + 19 — 24. Pectoral fin rays 13 + 3 (4).

Rostral spine small, retorse. Preorbital, suborbital and supplementary preopercular spines, absent. Preocular spine, stout, elevated, or just serrulations. Postocular, stout serrulate ridge, or curved serrulate crest. Sphenotic, traces of small serrulate ridge. Pterotic, serrulate ridge, sometimes curved. Parietal, a small serrulate ridge, usually curved, without a recognizable terminal spine (2). Nuchal, a stout, keeled ridge ending in

(2) This description of the parietal applies equally to that of the holotype (U. S. N. M. N° 108869) and to the said ridge in the cotypes (U. S. N. M. N° 117267), and, hereby, rectifies the earlier description (TEAGUE, 1951: 24). The writer is indebted to Dr. LACHNER for clearing up this point.

short spine. Postfrontal groove, deep, conspicuous, as in young *P. carolinus*.

Interorbital space, narrow, concave. Rostral plates rounded, bluntly serrulate. Opercular flap, conspicuously scaled. Caudal fin, subtruncate, outer rays produced (30-26-31), or truncate, with lower angle slightly produced (28-28-30). Free pectoral rays, tapering.

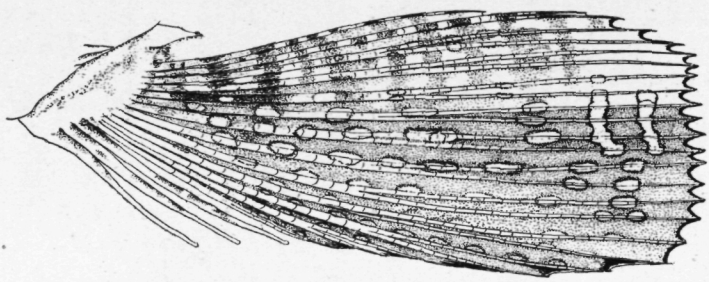


Fig. 1. — Pectoral fin (natural size) of a specimen of *P. microlepis* (N° 6565) of 138 mm in standard length, in the Inst. roy. Sci. nat. Belg., depicting a typical distribution of the ocelli in this beautiful Argus Sea-robin (*n. b.*, in the absence of coalescent ocelli in this specimen, these have been added by the illustrator in their usual position when present).

First dorsal spine : an unevenly serrate median ridge, flanked on either side by two granulate ridges. Second spine : a submedian serrate, or granulate, ridge, flanked by one or more granulate ridges. Third, a submedian serrate (3), or granulate, ridge, flanked by a granulate ridge, on opposite side to those of second. First soft dorsal ray : a minutely sharp to bluntly serrate median ridge on proximal quater.

Color in alcohol. — Dorsum and sides, light brown, somewhat spotted with darker; belly light. First dorsal fin,

(3) At the distal end of the secondary dorsal spines (2nd and 3rd), the writer has observed that the serræ have a tendency to become spiny. This was particularly noticeable on the distal fifth of the third dorsal spine of a specimen (N° 6567) of 133 mm in length, from the east coast of Florida.

much clouded with darker; pattern variable (e. g., a specimen [N° 6567] of 130 mm in length, shows oblique, dark cloudings running athwart the interradial membranes from the third to the sixth membrane, and a number of small, dark spots, coinciding vertically with first three dorsal spines; another [N° 6561] of 142 mm in length, has two conspicuous dark blotches on the fourth interradial membrane, the distal the darker). Soft dorsal traversed by a five-four-three series of rather diffuse, dark spots, their vertical axes coinciding with fin rays. Caudal fin, posterior margin fringed with deep black band, remainder of fin traversed by irregular dark bars, broad and narrow alternating; basic pattern not always discernible.

Anal fin, plain, opaque; pelvic also plain. Pectoral fin : upper third, light brown, this traversal as far down as fourth ray by some five to six diffuse, interrupted bars of darker, the two proximal to axil usually merging at fourth ray into a single very dark blotch, extending down to sixth ray from above; lower two-thirds, dark brown, traversed, from fourth or fifth ray from above to penultimate ray, by seven to eight, or even more, irregular series of brown-rimmed, blue ocelli, these sometimes coalescing in last two series on distal third as depicted in figure 1. In many of the specimens under review, the blue interior of the ocelli has disappeared, leaving only an all-brown ocellate spot. In some cases, all the ocelli are affected; in others, a few, apparently protected by the folding of the membranes near the axil, retain their blue centre.

Remarks. — Over and above the specimens reviewed above, the catch off the east coast of Florida, on March 24, 1936, included four more of this species (*P. microlepis*), and that off Cape de la Vela, on January 12, 1939, one more. A specimen was also taken off Port La Guaira, Venezuela, on January 6, 1939. The total number collected from all sources on the said two cruises was, therefore, 13.

Prionotus scitulus Jordan.

Prionotus scitulus Jordan in Jordan and Gilbert, 1882, Proc. U. S. Nat. Mus. 5 : 288; Jordan and Evermann, 1898, Bull. U. S. Nat. Mus. 47 (2) : 2157-2158; Delsman, 1941, Mém Mus. roy. Hist. nat. Belg. (2), fasc. 21 : 75 (Santa

Margarita, Venezuela ; Florida, east coast) ; TEAGUE, 1951, Com. zool. Mus. Hist. nat. Montevideo, n° 61, vol. 3 : 26-28.

Counts and proportions of a specimen (Reg. N° 6564) of 144 mm in standard length, taken 15 to 20 miles off the east coast of Florida, on March 24, 1936, and of another (Reg. N° 6563) of 168 mm in length, taken 4 to 6 miles off Santa Margarita Island, Venezuela, at a depth of about 20 fathoms, on February 10, 1936.

Depth of body 6,77 (6,54 to 7,00) ; width, 6,85 (6,54 to 7,15). Head length, 3,29 (3,27 to 3,30). All in standard length.

Snout length, 2,22 (2,00 to 2,43) ; width, 2,57 (2,55 to 2,59). Maxillary, 2,97 (2,93 to 3,00). Orbit, 5,30 (5,10 to 5,50). Interorbital width, 12,66 (12,57 to 12,75). Nape length, 7,65 (7,29 to 8.00) ; width, 6,34 (6,29 to 6,38). All in head length.

Pectoral fin length, 2,28 (2,18 to 2,37). Pectoral fin base to posterior end of anal base, 1,56 (1,54 to 1,57). Pelvic fin, 3,90 (3,79 to 4,00). All in standard length.

First dorsal spine, 2,35 (2,32 to 2,38). Second spine, 1,77 (1,70 to 1,83). Third, 1,61 (1,59 to 1,63). Second soft dorsal ray, 2,33 (2,22 to 2,44). Longest anal ray, 2,32 (2,20 to 2,43). Opercular spine to anterior margin of opercle, 3,96 (3,92 to 4,00). Preopercular spine to anterior margin of preopercle, 4,44 (4,25 to 4,63). Humeral spine to edge of opercular flap, 7,31 (7,29 to 7,33). All in head length.

D. X — 12 1/2 to 13 1/2. A. 12 1/2. Gill rakers 1 — 2 + 1 + 10. Vertical scale count, 8 — 9 + 1 + 30 to 31. Pectoral fin rays, 12 — 13 + 3.

Rostral spine, absent or diminutive. Preorbital and suborbital, absent. Supplementary preopercular spine, absent or diminutive. Preocular and postocular spines, strong, elevated. Sphenotic and pterotic, small, elevated. Parietal, strong, slightly elevated. Nuchal spine, depressed; ridge much keeled. Postfrontal groove, conspicuous.

Interorbital space, concave. Orbit rather small. Rostral plates rounded, bluntly serrulate. Opercular flap scaled. Caudal fin of one (N° 6564), roundly truncate (26 1/2 - 28 1/2 - 27), of the other (N° 6563), truncate, with outer rays slightly produced : 24 1/2 - 24 - 25 1/2. — Free pectoral rays, narrowly expanded on distal half. Scales very small.

First dorsal spine, median ridge unevenly serrate. Second and third spines and first soft dorsal ray, smooth. Preopercular and humeral longitudinal spine ridges, minutely and bluntly serrate. Opercular spine ridge, barely distinguishable from other radiating, granulate striæ.

Color in alcohol. — Dorsum and sides, brown, and much spotted with darker down to belly line. Head, brown. Color pattern of first dorsal fin and of soft dorsal, respectively, as depicted in figure 2. Oblique dark spot on distal third of first interradial membrane of first dorsal fin, conspicuous in both the above mentioned specimens. Caudal fin, black, broken by lighter, on upper half of proximal two-thirds, into spotted area. Pelvic fin, plain, opaque. Anal fin, black, margined, above and below, with light band. Pectoral fin : interradial membranes, black, margined with lighter on tips; rays, light, uppermost two barred with darker.

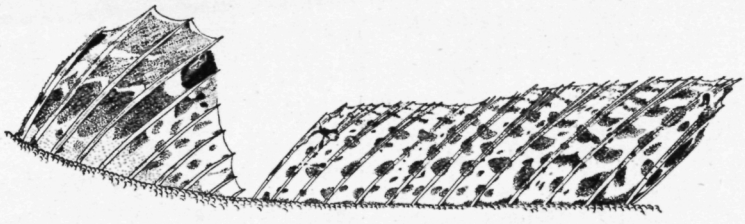


Fig. 2. — Dorsal fins (natural size) of a specimen (N° 6564) of *P. scitulus* of 144 mm in standard length, in the Inst. roy. Sc. nat. Belg. The artist, as will be observed, has taken full advantage of this beautiful specimen to illustrate, for the first time in the literature, the distribution of the dark spots, cloudings and light opaque streaks of the first dorsal fin, and, also, the striking and unique color pattern of the soft dorsal fin.

Remarks. — Along with the specimen (N° 6564) of 144 mm in standard length, another (N° 6564) of 166 mm in length, was also taken. This specimen was, evidently, like the holotypes of *P. roseus* and *P. ophryas,* the vomit of some large, predatory fish : the body has been largely stripped of its scales, and is white and swollen as though partially digested; both the pectoral and pelvic fins end in threads. The proportions, including

the narrow interorbital (12,25, in head length), correspond closely to those of the specimens reviewed above. A black portion of membrane adheres to the distal third of the first dorsal spine, and, also, to that of the fourth. The dorsal and anal ray (D. X - 13. A. 12 1/2) and gill raker (1 + 1 + 10) counts, and the conformation of the caudal fin (26 1/2-25-27), all correspond, also, to a *scitulus* diagnosis; nevertheless, it is as well to record the, apparently, rather exceptional development of the dorsal spine, and other, serrations : the median ridge of the first dorsal spine, and the submedian ridge of the second and third spines, respectively, are strongly and unevenly serrate, the fourth, smooth, and the proximal half of the first soft dorsal ray, bluntly serrate. The serrations of the longitudinal ridge of the preopercular and humeral spines, respectively, although blunt (through attrition ?), appear, also, to be exceptionaly pronounced.

The taking of the specimen (N° 6563) of 168 mm in length, off Santa Margarita Island, Venezuela, is of equal interest to zoogeographists as that of *P. carolinus* at the same locality on the same day, in that it extends the range of *P. scitulus* to the South American Continent.

Prionotus carolinus (Linnaeus).

Trigla carolina Linnaeus, 1771, Mantissa, pt. 2, p. 528.

Prionotus carolinus Cuvier in Cuvier and Valenciennes, 1829, Hist. Nat. Poissons, 4 : 90 (4to ed., pp. 66-68) ; Jordan and Evermann, 1898, Bull. U. S. Nat. Mus. 47 : 2156-2157, pl. 318, fig. 768; Teague, 1951, Com. zool. Mus. Hist. nat. Montevideo, n° 61, vol. 3 : 28-30.

Prionotus scitulus, Delsman, 1941, Mém. Mus. roy. Hist. nat. Belg. (2), fasc. 21 : 75 (Santa Margarita, Venezuela).

Counts and proportions corresponding to a specimen (Reg. N° 8229) of 159 mm in standard length, taken 4 to 6 miles off Santa Margarita Island, Venezuela, in about 20 fathoms of water, on February 10, 1936.

Depth of body, 5,13; width, 5,30. Head length, 2,94. All in standard length.

Snout length, 2,00; width, 2,46. Maxillary, 2,84. Orbital width, 5,40. Interorbital width, 8,30. Nape length, 7,20; width, 5,68. All in head length.

Pectoral fin length, 1,85. Pectoral fin base to posterior end of anal base, 1,57. Pelvic fin, 3,70. All in standard length.

First dorsal spine, 2,84; second spine, 2,16; third, 1,93. Second soft dorsal ray, 2,70. Longest anal ray, 2,25. Opercular spine to anterior margin of opercle, 3,72. Preopercular spine to anterior margin of preopercle, 3,72. Humeral spine to edge of opercular flap, 6,00. All in head length.

D.X. — 14 1/2. A. 12 1/2. Gill rakers, 1 + 1 + 12. Vertical scale count, 8 + 1 + 19 — 21. Pectoral fin rays, 13 + 3.

Rostral, preorbital, suborbital and supplementary preopercular spines, absent. Preocular, stout, elevated. Postocular, stout, depressed. Sphenotic, stout, elevated. Pterotic, a worn ridge. Parietal and nuchal spines, stout, depressed. Postfrontal groove, conspicuous.

Interorbital space, shallow, concave. Orbits, moderate. Rostral plates, rounded, bluntly serrulate. Opercular flap, not scaled. Caudal fin, deeply emarginate, upper lobe the longer : 35 - 27 - 31. Scales, strongly ctenoid. Free pectoral rays, greatly expanded on distal half, broadly lanceolate.

First dorsal spine : a median bluntly and minutely serrate ridge flanked on one side by a granulate ridge. Second spine : a submedian bluntly and minutely serrate ridge. Third : a submedian bluntly and minutely serrate ridge on opposite side to that of the second spine. First soft dorsal ray : a median bluntly and minutely serrate ridge on proximal fifth.

Color in alcohol. — Dorsum and sides, brown above, light below belly line. Dorsum, much spotted between dorsal fins and pored lateral line; some spots conspicuously dark alongside fins, these possibly the pigmental residue of the transverse dorsum bars so conspicuous in young.

First dorsal fin, smoky, opaque, medially traversed, as far as fifth interradial membrane, by translucent streak which encircles very large, black ocellus, occupying distal half of fourth membrane.

A light, opaque streak along base of membranes. A small, diagonal, translucent streak across distal third of sixth membrane, and another across the whole of the seventh. Soft dorsal

fin, smoky, opaque, traversed medially as far as eighth interradial membrane by translucent streak; another (milky) opaque streak along fin base. Caudal fin, blackish, and darkening progressively towards distal end of lower lobe; median and upper rays fringed with black. Anal fin, black; extremities of membranes, pale. Pelvic fin, plain, opaque. Pectoral fin, black, with a few light bars traversing fin rays from uppermost ray to fourth; free rays, smoky on proximal half. Upper two-thirds of branchiostegal region, black.

Remarks. — The taking of this fish off Santa Margarita Island, Venezuela, is of great interest insomuch as it extends the known range of *P. carolinus* to the South American Continent.

Prionotus pectoralis Nichols and Breder.

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

Prionotus evolans, Delsman, 1941, Mém. Mus. roy. Hist. nat. Belg. (2), fasc. 21 : 76 (Florida, east coast).

Prionotus pectoralis, Teague, 1951, Com. zool. Mus. Hist. nat. Montevideo, n° 61, vol. 3 : 41-42.

Counts and proportions of a specimen (Reg. N° 6562) of 139 mm in standard length, taken 15 to 20 miles off the east coast of Florida (Miami-Jacksonville) at a depth of 20 to 30 fathoms, on March 24/26, 1936.

Depth of body, 5,79; width, 4,96; Head length, 2,73. All in standard length.

Snout length, 2,32; width, 2,32. Maxillary, 2,32. Orbital width, 4,62. Interorbital width, 6,38. Nape length, 5,66; width, 4,64. All in head length.

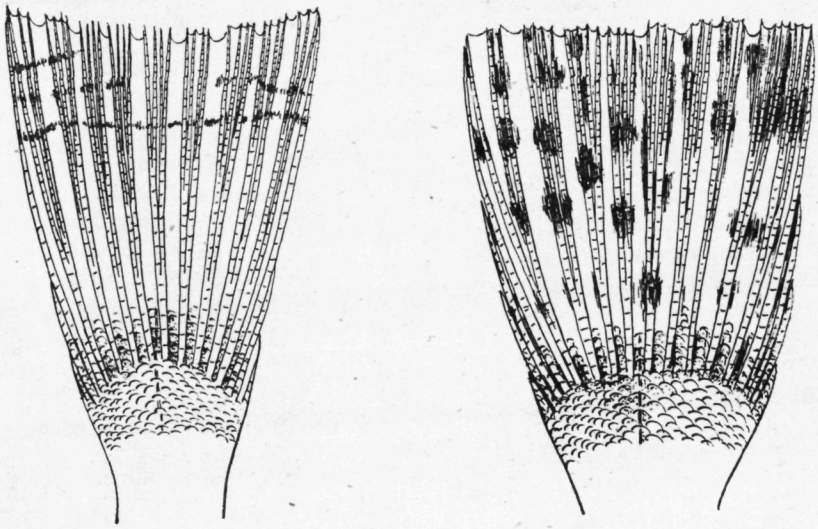
Pectoral fin length, 1,49. Posterior end of anal base from pectoral base, 1,56. Pelvic fin, 3,48. All in standard length.

First dorsal spine, 2,62; second spine, 2,13; third, 2,08; fourth, 2,27. Second soft dorsal ray, 2,37. Longest anal ray, 3,00. Opercular spine to anterior margin of opercle, 3,19. Preopercular spine to anterior margin of preopercle, 4,25. Humeral spine to edge of opercular flap, 4,86. All in head length.

D. X. — 12 1/2. A. 11 1/2. Gill rakers, 1 + 1 + 8. Vertical scale count, 9 to 10 + 1 + (approximately) 21. Pectoral fin rays, 12 — 13 + 3.

Rostral and preorbital spines, small, elevated, retrorse. Suborbital, vestigial. Supplementary preopercular spine, small, depressed. Preocular, stout, elevated. Postocular, stout, partially elevated. Sphenotic, stout, elevated. Pterotic and parietal, slightly elevated ridge ending in small, stout spine. Nuchal, stout, depressed. Postfrontal groove sutured, position discernible.

Interorbital space, broad and rather shallowly concave. Rostrum, rather exceptionally bifurcate, as in holotype; plates, moderately prominent, rounded, bluntly serrulate. Opercular flap, scaled. Caudal fin, subtruncate, outer rays slightly produced (26 - 25 - 27). Free pectoral rays, tapering.



A B

Fig. 3. — A) Caudal fin of a specimen (N° 6562) of *P. pectoralis* of 139 mm in standard length in the Inst. roy. Sci. nat. Belg. at Brussels (× 1 1/2); B) Caudal fin of specimen (N° 8300) of *P. alipionis* of 159 mm in standard length in the said Institute (× 1 1/2).

First dorsal spine : a strongly granulate median ridge, flanked on either side by two granulate ridges. Second and third spines : two to three granulate ridges on alternate sides.

First soft dorsal ray : proximal half of median ridge, strongly granulate ; this flanked on one side by another granulate ridge.

Color in alcohol. — Dorsum and sides, brown, as far down as belly line, pale below. A number of moderately large, diffuse, brown spots on dorsum, principally between base of first dorsal fin and pored lateral line. Head, ferruginous brown above, lighter below on preorbital region. First dorsal fin, much speckled with dark chromatophores ; dark cloudings at distal end of second, third and fourth interradial membranes, but no ocellate blotch. Proximal three quarters of fifth membrane, nearly as dark. Second dorsal fin, badly preserved, but showing traces of a five-four-three transverse series of rather large, diffuse spots, with vertical alignment along rays (4). Caudal fin, plain, but traversed on distal third by two submarginal fine lines ; the commencement of a third across upper lobe. Base of fin with large, ferruginous brown blotch. Anal fin, in poor condition ; apparently opaque, without color pattern. Pelvic fin, plain, opaque, but somewhat colored with ferruginous brown on proximal quarter. Pectoral fin, black, with a few transverse white bands across uppermost ray and membrane. Free pectoral rays, plain.

Remarks. — The finding of the above reviewed specimen in the « Mercator » collection, has enabled the writer to fill in the gaps in the description of the species left open in his earlier work (Teague, 1951 : 41-42), on account of the immature state and defective condition of the holotype at Washington. It, also, confirms the writer's original diagnosis of the conformation of the caudal fin. This fin, in fact, more closely resembles that of *P. tribulus,* or of *P. evolans,* than that of *P. alipionis*. Figure 3 shows, very clearly, the morphological differences that separate the two fins.

(4) This is the first record of this important diagnostic character. Dr. Lachner, in response to a request from the writer, has examined some recently acquired material at the U. S. National Museum, and has found the same pattern of spots in the larger specimens of this species. As to the smaller, he writes, « In the very small specimens (about 50 mm) the outer portion of the fin is brownish pigmented, and the pigment appears to be concentrating in spots near the rays. »

Prionotus alipionis TEAGUE and MYERS.

Prionotus evolans, DELSMAN, 1941, Mém. Mus. roy. Hist. nat. Belg. (2) fasc. 21 : 76 (Santa Margarita, Venezuela).

Prionotus alipionis TEAGUE and MYERS, 1945, Bol. Mus. nac. Rio de Janeiro, Zool., n° 31 (n. s.) : 1-18, figs. 1-2; TEAGUE, 1951, Com. zool. Mus. Hist. nat. Montevideo, n° 61, vol. 3 : 52-54.

Counts and proportions corresponding to a specimen (Reg. N° 8301) of 140 mm in standard length, taken 4 to 6 miles off Santa Margarita Island, Venezuela, at a depth of about 20 fathoms, on February 10, 1936, and of another (Reg. N° 8300) of 159 mm in length, taken off the port of La Guaira, Venezuela, at a depth of 4 fathoms, on January 6, 1939.

Depth 4,21 (4,18 to 4,24) ; width, 4,46 (4,38 to 4,54). Head length, 2,67 (2,65 to 2,69). All in standard length.

Snout length, 2,11 (2,08 to 2,14) ; width, 2,20 (2,17 to 2,22). Maxillary, 2,20 (2,17 to 2,22). Orbit 4,86 (4,72 to 5,00). Interorbital width, 6,23 (5,78 to 6,67). Nape length, 5,36 (4,72 to 6,00) ; width, 4,67 (4,33 to 5,00). All in head length.

Pectoral fin length, 1,99 (1,89 to 2,09). Pectoral fin base to posterior end of anal base, 1,64 (1,62 to 1,65). Pelvic fin, 3,74 (3,59 to 3,88). All in standard length.

First dorsal spine, 2,74 (one) ; second spine, 2,34 (2,31 to 2,36) ; third, 2,24 (2,22 to 2,26). Second soft dorsal ray, 2,52 (2,31 to 2,73). Longest anal ray, 3,61 (3,47 to 3,75). Opercular spine to anterior margin of opercle, 3,03 (3,00 to 3,06). Preopercular spine to anterior margin of preopercle, 3,88 (3,75 to 4,00). Humeral spine to edge of opercular flap, 6,06 (6,00 to 6,12). All in head length.

D. X. - 11 1/2 to 12 1/2. A. 11 1/2. Gill rakers, 1 + 1 + 7 — 9. Vertical scale count, 9 + 1 + 21 — 22. Pectoral fin rays, 12 — 13 + 3.

Rostral and preorbital spines, small, elevated, retrorse. Suborbital, vestigial trace. Supplementary preopercular spine, small, depressed. Preocular, stout, elevated. Postocular, stout, depressed. Sphenotic, small, stout, elevated. Pterotic, small, depressed. Parietal, small, depressed spine at end of low ridge. Nuchal, stout; ridge keeled. Postfrontal groove, absent.

Interorbital space, broad, concave. Orbits, moderate. Rostral plates, rounded, bluntly serrulate. Opercular flap, scaled. Caudal fin, unevenly truncate (24 1/2 - 23 - 25) to subtruncate (26 1/2 - 24 - 27). Scales strongly ctenoid. Free pectoral rays, tapering.

First dorsal spine, median ridge granulate, flanked on one side by similar ridge; second spine, submedian granulate ridge, flanked by similar ridge; third, submedian granulate ridge on opposite side to that of second, flanked by similar ridge. First soft dorsal ray, median ridge, on proximal quarter, granulate.

Color in alcohol. — Dorsum and sides, grayish brown, belly light. Head brown. First dorsal fin, spotted with darker; the remains of an ocellate blotch on distal half of fourth interradial membrane. Soft dorsal : a four-three horizontal series of rather diffuse, dark spots; vertical axes of same coinciding roughly with rays, but uppermost series along distal border of fin displaced somewhat to rear, remaining series, until the posterior rays are reached, with forward displacement.

In the specimen (N° 8300) of 159 mm in length, taken off La Guaira, Venezuela, the spots are smaller (and darker), and so allow a five-four-three horizontal alignment. On the posterior half of the fin, the vertical alignment in both the specimens under review adheres very closely to the radial projection, but with the smaller spots, this is more marked.

Remarks. — If the closely related species *P. aspersus* Meek and Hildebrand (Panama, east coast), were nothing more than a geographical race of *P. alipionis,* and assuming that the centre of dispersal of the latter species existed in the vicinity of Rio de Janeiro, it would be expected that by the time *P. alipionis* reached Venezuelan waters, it would be difficult to separate the two, but this is not the case: even a superficial glance, at once distinguishes the heavy, coarse-looking body of *P. alipionis,* from the rotund, compact form of such examples of *P. aspersus* as have been collected to date. Moreover, 1) the vertical scale count above the pored lateral line of the former, reveals, in the above mentioned specimens, the highest number of scales recorded to date; 2) there are no ferruginous brown spots between the dorsal fin bases and the lateral line of *P. alipionis,* and 3) the vertical distribution of the soft dorsal spots of the specimens under review is essen-

tially the same as that characterising those from the hypothetical centre of dispersal, and further south.

P. alipionis develops a cobalt-blue border to the pectoral fin when it attains a standard length of, roundly, 120 mm (TEAGUE and MYERS, 1945), but no such border has been reported, as yet, in respect of *P. aspersus*; nor do we know whether, or not, in its development, it ever reaches even the medium mature size of the warm-water examples of *P. alipionis*.

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