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A NEW ARMORED SEAROBIN FISH, *PERISTEDION UNICUSPIS*, FAMILY PERISTEDIIDAE, FROM THE STRAITS OF FLORIDA¹

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Exploratory fishing on the continental slope of the western North Atlantic by the U. S. Bureau of Commercial Fisheries has shown that armored searobins, *Peristedion* Lacépède, are an important component of the benthic fauna. Presence of three to five species of armored searobins in a single trawl haul is not unusual because the catch may have been made over a wide depth range on a steep slope on several different bottom types. The following catch of peristediids was made in the Straits of Florida off Cay Sal Bank, at *Silver Bay* station 2458: five specimens of *Peristedion antillarum* Teague; one *P. truncatum* (Günther); two *P. longispatha* (Goode and Bean); three *P. greyae* Miller (in press); and two specimens of a fish that I describe here as a new species, distinguished from the closely related *P. longispatha* and *P. greyae*.

The terminology, counts, and measurements follow the methods given by Miller (in press).

Harvey R. Bullis, Jr., made available to me for study the peristediids collected during the operation of the U. S. Bureau of Commercial Fisheries exploratory vessels, *Silver Bay* and *Oregon*, in the western Atlantic. The illustrations are by Grady W. Reinert.

Peristedion unicuspis new species

Cay Sal armored searobin

Figs. 1-3

Diagnosis: Single retrorse spine on posterior scutes of superomedian

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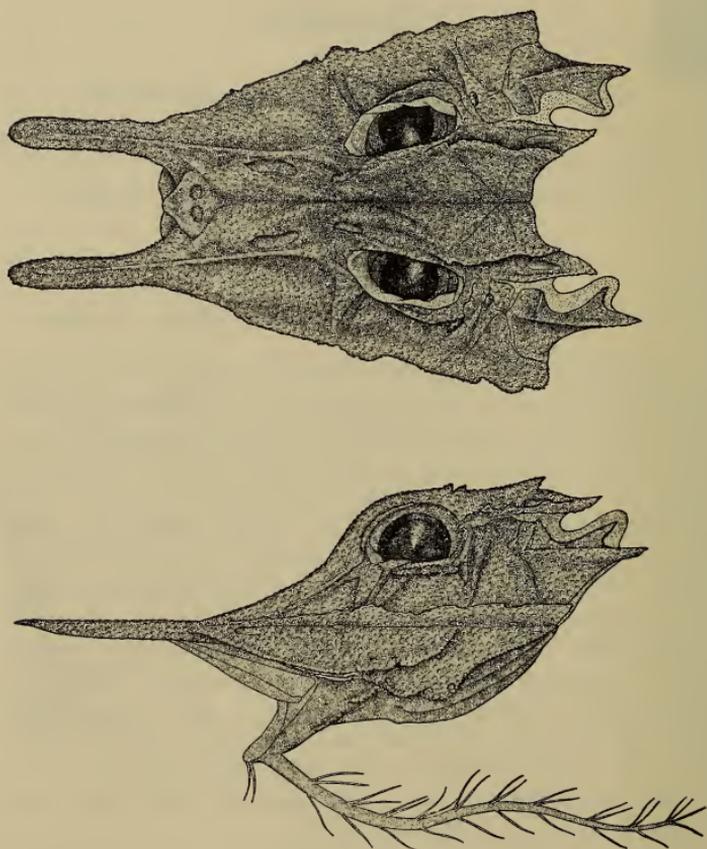


FIG. 1. *Peristedion unicuspis*, holotype. Dorsal and lateral views of head.

series; chin barbels 8 to 9, in 5 groups, arranged $2 + 2 + 2 + 1 + 1$ or $2 + 2 + 2 + 2 + 1$, on each side of mandibular symphysis; filamentous barbel very long, extending past middle of first ventral scute; first free ray of pectoral long, extending past distal end of pectoral joined rays and anal fin origin; no dark margin on second dorsal fin.

Holotype: USNM 200382, 146 mm standard length (SL), 170 mm total length (TL), collected at *Silver Bay* station 2458, lat. $23^{\circ}40'N.$, long. $79^{\circ}18'W.$, on 5 November 1960 with a balloon trawl fished at a depth of 290 fathoms.

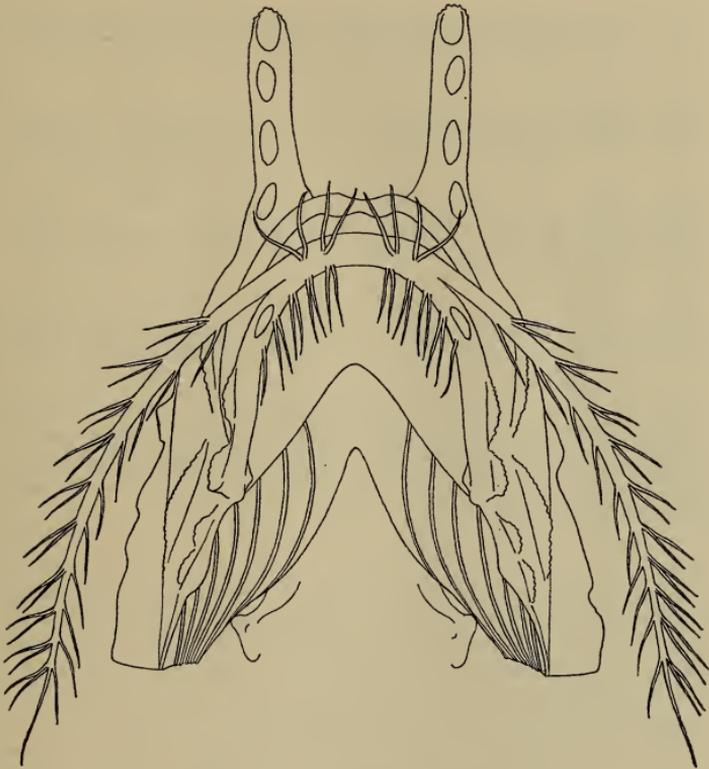


FIG. 2. *Peristedion unicuspis*, holotype. Ventral view of head, showing arrangement of barbels.

Paratype: USNM 200383, 138 mm SL, 157 mm TL; data as for holotype.

Description: Paratype counts are given in parentheses after holotype counts, if they differ.

Dorsal VIII-19 (VIII-20). Anal 20. Pelvic I-5. Pectoral 12 + 2. Lip barbels 4/2 : 4/2. Chin barbels 9/5 : 9/5 (8/5 : 8/5) in the following groups 2 + 2 + 2 + 2 + 1 (2 + 2 + 2 + 1 + 1). Gillrakers first arch: epibranchial 5; ceratobranchial 17; hypobranchial 4; total 26. Vertebrae 33. Branchiostegals 7.

Scutes: dorsal series 25; superomedian series 32; bicuspid spines 0; inferomedian series 24; accessory scutes 3 (2); ventral series 20; caudal series 2-1-2.

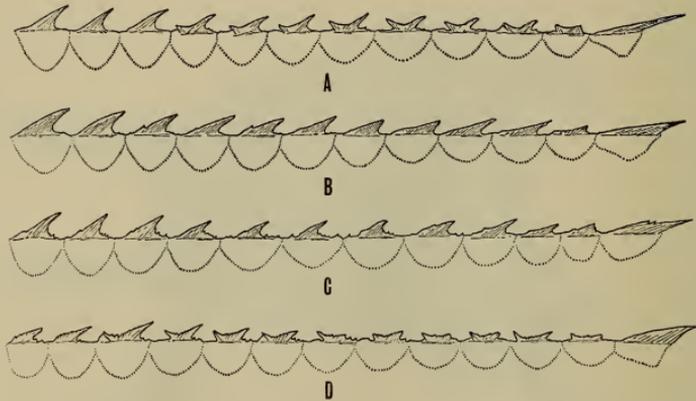


FIG. 3. Comparison of bicuspid spines of scutes of superomedian series: A, *P. greyae* adult (158 mm SL), B, *P. unicuspis* adult (146 mm SL), C, *P. longispatha* adult (158 mm SL), D, *P. longispatha* juvenile (90 mm SL).

Measurements of holotype and paratype in millimeters, expressed in parentheses as percentages of SL. Body depth at first dorsal spine 30.0, 26.5 (20.5, 19.2); at anal fin origin 16.9, 16.0 (11.6, 11.6). Body width at pectoral fin origin 29.8, 25.1 (20.4, 18.2). Head length 55.3, 51.0 (37.9, 37.0). Greatest head width 47.4, 44.5 (32.5, 32.2). Length of joined pectoral fin 27.1, 24.0 (18.6, 17.4). Length of first free pectoral finray 35.3, 30.2 (24.2, 21.9). Length of second free pectoral finray 27.1, 23.9 (18.6, 17.3). Pelvic fin length 25.4, 24.7 (17.4, 17.9).

Measurements of holotype and paratype in millimeters expressed in parentheses as percentages of head length. Filamentous barbel length 51.1, 40.3 (92.4, 79.0). Lip barbel length 6.5, 6.4 (11.8, 12.5). Chin barbel length 4.1, 4.5 (7.4, 8.8). Snout length 26.0, 24.2 (47.0, 47.5), width 21.0, 19.8 (38.0, 38.9). Orbital length 14.3, 13.0 (25.9, 25.5), depth 10.1, 8.1 (18.3, 15.9). Interorbital width 10.8, 10.6 (19.5, 20.8). Rostral exertion length 19.1, 17.2 (34.5, 33.7); width between rostral exertions near their bases 11.5, broken on paratype (20.8, -); greatest width of rostral exertion at base 7.4, 6.9 (13.4, 13.5); width at middle of rostral exertion 3.8, 3.4 (6.9, 6.7); distance between tips of rostral exertions 7.2, broken (13.0, -). Distance between parietal spines 9.1, 9.8 (16.5, 19.2). Nape length 7.9, 6.7 (14.3, 13.1). First (posterior) serrated ridge on mandible, length 3.7, 3.9 (6.7, 7.6); width 1.4, 1.1 (2.5, 2.2). Second (anterior) ridge on mandible scarcely discernible, less than 0.2 mm wide. Fourth infraorbital ridge, length 9.1, 7.3 (16.4, 14.3); width 1.4, 0.8 (2.5, 1.6). First ventral scute, length 16.0, 14.0

(29.0, 27.5); width 13.2, 11.4 (23.9, 22.4). Second ventral scute, length 11.5, 10.3 (20.8, 20.2); width 12.6, 10.7 (22.8, 21.0).

Finrays. Pelvic spines smooth, $\frac{1}{2}$ to $\frac{3}{4}$ length of first pelvic soft-ray; spine translucent; pelvic fin connected to body by membrane between inner pelvic finray and lateral dorsal edge of first ventral scute. First anal finray $\frac{1}{2}$ length of second anal finray. First free pectoral finray long, greatly exceeding length of joined pectoral finrays.

Barbels. Filamentous barbel very long, reaching past middle of first ventral scute with many filaments on barbel. Lip and chin barbels slender, always tapering to point, none ending in enlarged, rounded knob.

Spines and ridges of head. Rostral, nasal, mesethmoid, lateral ethmoid, preocular, supraocular, postocular, and postfrontal spines absent. Frontal I spine very small, 0.4 mm. Frontal II spine small, 1.3 mm, immediately posterior to Frontal I spine (two spines on left side of paratype). Parietal spine small, 3.4 mm, slightly elevated, at posterior termination of parietal ridge; small secondary spine at anterior base of ridge (in paratype ridge, is flat and no secondary spine at anterior end of ridge). Pterotic spine small, 0.3 mm, on nearly obsolete ridge. Posttemporal spine blunt, small, 1.3 mm, at termination of long, low 8.2-mm straight ridge. Opercle spine small, with distal end bicuspid (unicuspid in paratype), at posterior end of 12.4-mm serrated opercular ridge. Perifacial rim: on second infraorbital, narrow, with two small spines followed by a slightly rounded protuberance; on third infraorbital, three separated sharp spines followed by a rounded protuberance with serrated edge; on preopercle, strong concavity posterior to orbit on left side, none on right side; three to five slight indentations on perifacial rim of holotype and paratype; ending posteriorly as wide shelf with posterior edge perpendicular to head. On second infraorbital, three very narrow ridges extending from corner of mouth to second infraorbital spines, nearly parallel to each other and to premaxillary, mouth closed. On fourth infraorbital, pronounced ridge beneath eye extending posteroventrad. On preopercle, dorsal ridge long, narrow, from corner of mouth posterodorsad, terminating below sensory organ on perifacial rim; anterior ventral ridge small, near edge of, and on preopercle, immediately behind posterior ridge of mandible; posterior ventral ridge small, on ventral edge of preopercle with two openings of preoperculo-mandibular canal on either side of ridge. On mandible, first posterior ridge strong, serrated; second ridge short, narrow, anterior to first ridge on left side, but absent on right side (absent in paratype). Rostral exertions of moderate length, 19.1 mm, and width at the base 7.4 mm; in normal position slightly divergent; nearly equal in width from rounded distal ends to base; lacking prominent serrations on distal ends.

Spines and scutes of body. Nuchal spine present, 3.0 mm, approximately $\frac{1}{2}$ size of first spine of dorsal series; small spine at anterior edge of nuchal ridge (lacking in paratype). Dorsal series: strong, sharp spines

on dorsal scutes, becoming slightly smaller posteriorly. Superomedian series: first scute at anterior end of arch bearing ridge terminating in small tubercle; scutes two, three, and four of arch may have large, sharp spines on ridges; spines strong, sharp, decreasing little in size posteriorly; few spines on posterior eight or nine scutes have extremely small anterior retrorse spines at bases, possibly indicating these spines may be bicuspid in young; superomedian spines located closer to dorsal spines than to inferomedian spines. Inferomedian series: inferomedian scute row arches ventrally immediately posterior to accessory scutes; small retrorse spine at anterior edge of base of main spine (not evident on paratype); posterior two scutes ventral to others in series, without small anterior retrorse spines; all main spines in series strong. Accessory scutes: three scutes between inferomedian and ventral series (two scutes in paratype). Ventral series: first ventral scute with obsolete spine, second with tubercle, third with small spine, fourth with large spine, size of succeeding spines decreasing posteriorly to small tubercle on scute at last anal ray; anterior edge of first ventral scute posterior to bony ridge of pelvic girdle (bony ridge visible beneath skin). Caudal series: two dorsal, one lateral, and two ventral scutes; edges of caudal spines smooth; distal end of lateral caudal spine extending posteriorly as far as ends of dorsal and ventral caudal spines.

Pigmentation. Body and head pale grey. Distal half of membrane between anterior five dorsal spines black. A few small, black pigment spots scattered sparsely on soft dorsal fin rays, no dark margin. Small black spot scarcely visible at middle of pale grey pectoral. Posterior portion of roof of mouth dusky. Peritoneum and air bladder membrane dusky.

Etymology: The species name *unicuspis*, derived from Latin—*unus* meaning one, and *cuspis* meaning point (named for the single, retrorse spine found on each posterior scute of the superomedian series of the adults), is regarded as a noun in apposition to the generic name. The species is given the common name, Cay Sal armored searobin, for the locality of capture.

Relationship: The two species most closely related to *P. unicuspis* are *P. greyae* and *P. longispatha*. These three species may be distinguished as follows:

- 1a. Two or three prominent, strong, serrated ridges on mandible; filamentous barbel moderately long, not reaching termination of perifacial rim; lip barbel half-counts 4/2, grouped 2 + 2; chin barbel half-counts 12-13/5, usually grouped 3 + 3 + 3 + 2 + 1 or 3 + 3 + 3 + 2 + 2; barbel tips pointed; rostral exertion spine present, nasal spine absent; bicuspid spines present in young and adults; accessory scutes present or absent; distal one-third of pectoral fin dark; wide, dark margin on soft dorsal fin; peritoneum and posterior portion of roof of mouth translucent .. *P. greyae* Miller
- 1b. One prominent, strong, serrated ridge on mandible 2

- 2a. Filamentous barbel very long, extending past termination of perifacial rim to posterior one-half of first ventral scute; lip barbel half-counts 4/2, grouped 2 + 2; chin barbel half-counts 8-9/5 grouped 2 + 2 + 2 + 1 + 1 or 2 + 2 + 2 + 2 + 1; barbel tips pointed; rostral exsertion spine and nasal spine absent in adults; bicuspid spines absent in adults; accessory scutes present; pectoral fin with single small, dark spot at center; lacking dark margin on soft dorsal fin; peritoneum and posterior portion of roof of mouth dusky *P. unicuspis* Miller
- 2b. Filamentous barbel moderately long, not reaching termination of perifacial rim; lip barbel half-counts 2/2, grouped 1 + 1; chin barbel half-counts 11-14/6, usually grouped 1 + 2 + 3 + 3 + 2 + 2 or 1 + 2 + 2 + 3 + 2 + 2; barbels generally with enlarged, rounded tips; rostral exsertion spine and nasal spine present in juveniles, absent in large adults; bicuspid spines or vestiges, present in juveniles and adults; accessory scutes absent; pectoral dusky; dark margin on soft dorsal fin; peritoneum and posterior portion of roof of mouth translucent
..... *P. longispatha* (Goode and Bean)

I have found ontogenetic differences in the bicuspid spines of *P. greyae*, *P. longispatha*, and *P. unicuspis*. In *P. greyae*, bicuspid spines in the posterior portion of the superomedian series were present in both the smallest and largest specimens examined. The number of bicuspid spines in the young of *P. longispatha* decreases and the number of unicuspid spines increases with growth of the fish. Loss of the small anterior cusp of the spine occurs first on anterior scutes and proceeds posteriorly. The small anterior cusp of the bicuspid spine in *P. longispatha* may be connected to the body by a membrane, making the bicuspid spine appear to be unicuspid. I speculate that young *P. unicuspis* also may bear bicuspid spines. The posterior superomedian scutes and the lateral caudal scutes of the three adults and one juvenile of these closely related species are shown in Fig. 3.

LITERATURE CITED

- MILLER, GEORGE C. In press. A new species of western Atlantic armored searobin, *Peristedion greyae*, (Pisces: Family Peristediidae). Bull. Mar. Sci.

