

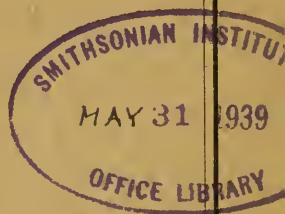
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VOLUME 98, NUMBER 14

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ON THE PRESIDENTIAL
CRUISE OF 1938

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ISAAC GINSBURG
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(PUBLICATION 3539)

CITY OF WASHINGTON
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TWO NEW GOBIOID FISHES COLLECTED ON THE PRESIDENTIAL CRUISE OF 1938¹

By ISAAC GINSBURG
U. S. Bureau of Fisheries

Two very interesting species of fishes, an eleotrid and a gobiid, which proved to be unknown to science, were collected during the 1938 Presidential cruise, on Old Providence Island. Both diverge from the known species in their respective genera to a remarkable extent, and present features that should prove to be of value in interpreting the phylogenetic relationship of some species in this difficult and interesting assemblage of related species.

Numerical values of measurements stated in this paper refer to percentages in standard length. The given length of a specimen represents the total length, including the caudal fin, unless otherwise stated.

PYCNOMMA ROOSEVELTI, n. sp.

Description.—Form elongate, body compressed, head conspicuously depressed. Snout blunt, especially when viewed from dorsal aspect. Mouth moderately oblique, terminal; a horizontal through distal margin of upper lip approximately bisecting eye; lower jaw slightly projecting. Maxillary medium, its posterior end approximately under middle of eye. Interorbital narrow. Tongue free, broad, with a nearly straight edge in front, only very slightly emarginate. Teeth in 3 rows, those in outer and inner rows enlarged; in upper jaw teeth in outer row strongly enlarged, extending nearly to angle of mouth, inner teeth moderately enlarged near symphysis only; in lower jaw outer enlarged teeth of about same size as outer teeth of upper jaw, nearly confined to front, not extending far on side, inner row extending about half the distance from symphysis to angle of mouth, the hindmost 2 or 3 very strongly enlarged, caninoid, the middle row of smaller teeth extending nearly to angle of mouth. No spine at angle of preopercle. Scales extending forward to a vertical approximately through origin of first dorsal, in about 26 oblique rows to base of caudal (some of the scales missing and accurate count not possible);

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line marking anterior boundary of scales roughly curved, convex anteriorly, resulting in bare areas above and below, that near dorsal profile tapering backward approximately to origin of second dorsal, that at ventral profile to anal opening; anterior scales cycloid, but moderately smaller than posterior ones, the latter moderately spinuliferous, the spinules few in number, confined to the median area, in a single row at margin; caudal with a transverse row of 4 scales at its base, the outer scale in the row, above and below, conspicuously modified, ovoid, the spinules at the side markedly long, gradually decreasing in length toward a median longitudinal line, the 2 middle scales in the row of nearly the same size as the outer ones but rounded in form with the spinules not modified, approximately the same as in adjacent scales on caudal peduncle; no scales on antedorsal distance,

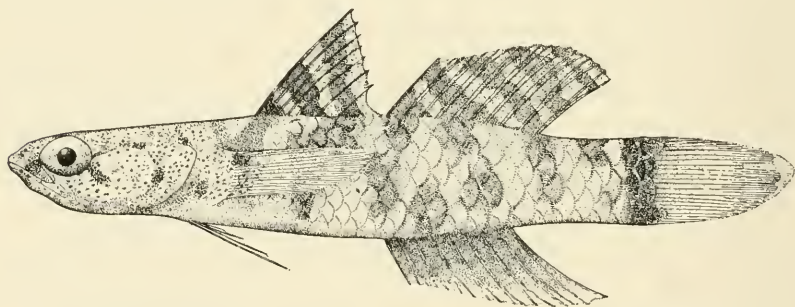


FIG. 1.—*Pycnomma roosevelti*; from the holotype, U.S.N.M. no. 108139; 20 mm. Drawn by Andrew Pizzini.

head, base of pectoral, throat, or midline of belly. First dorsal with 7 flexible spines, the first spine longest, reaching base of first or second dorsal ray, the others gradually decreasing in length. Second dorsal with 10, anal with 9 rays; those of anal nearly reaching a vertical through end of hypural, those of dorsal falling short of that vertical. Pectoral with 16 rays, its tip reaching a vertical approximately through origin of second dorsal. Ventrals completely separated, the tips falling at some distance short of anus. Caudal rather short. Mucous pores present on head.

Body with a diffusely and irregularly cross-banded color pattern, with 6 dark bands against an olive grayish background; the bands broad, somewhat oblique, diffuse, without sharp boundaries, sometimes more or less interrupted; a better-marked, darker, vertical band at base of caudal, partly on fin and partly on caudal peduncle; a transverse, diffusely dark area at anterior margin of opercle; a dark band

from front of eye running obliquely downward and forward, a more diffuse one back of eye running downward and backward; 2 narrow elongate spots on midline of nape; 2 small diffuse spots, one behind the other, back of eye; the 2 dorsals with dark, oblique, bandlike areas, alternated with lighter areas; other fins more or less dusky, anal darkest, becoming nearly black distad; a small dark spot on pectoral near its upper anterior corner, a larger, more diffuse blotch on its fleshy base, below.

Measurements.—The type, 16 mm. in standard length. Caudal about 27, ventral 27, pectoral 26, depth 17, least depth of caudal peduncle 14, head 30.5, postorbital part of head 21, head depth directly behind eye 15, head width at same point 19, maxillary 12.5, snout 7.5, eye 8, antedorsal distance 38.5.

Holotype.—U.S.N.M. no. 108139; Old Providence Island; August 6, 1938; obtained on the Presidential cruise; W. L. Schmitt collector; about 20 mm., the caudal slightly broken at posterior margin, but apparently representing nearly entire length.

Paratype.—Another specimen, 18 mm., obtained with the type.

Both specimens are probably males, judging by the anal papilla, but this structure is not decisively of the male type, and the sex of the two specimens is somewhat doubtful.

Distinctive characters and relationship.—This species agrees more nearly with *Pycnomma semisquamatum* Rutter from the Gulf of California, judged by the published account of that species, than with any other known American goby. It differs strikingly from that species in that the squamation extends much farther forward, to under the beginning of the first dorsal, instead of to under its end. The scales in *P. roosevelti* appear to be larger and there are one or two fewer rays in the vertical fins. This is the first species of *Pycnomma* from the Atlantic, and the second species of the genus now to be made known.

This species is named in honor of President Franklin D. Roosevelt.

GARMANNIA GEMMATA, n. sp.

Description.—Form elongate, head and body compressed. Mouth medium, oblique, terminal, a horizontal through distal margin of upper lip passing nearly through lower margin of eye; lower jaw slightly shorter in front than upper. Maxillary medium, its end falling below space between posterior margins of pupil and eye. Outer row of teeth in both jaws enlarged, smaller teeth behind; outer row of upper jaw extending nearly to angle of mouth, that of lower jaw nearly confined to front; lower jaw with 2 inner caninoids, a little

nearer angle of mouth than symphysis. Shoulder girdle without papillae. No fold in front of dorsal. Isthmus restricted, attachment of branchiostegal membrane at lower angle of pectoral base. Scales confined to caudal peduncle, extending forward to a vertical through base of last dorsal ray, ctenoid, large, imbricated, almost wholly covering caudal peduncle, 5 in a median longitudinal row to base of caudal; 4 large scales in a transverse row on caudal base; no other scales. First dorsal with 7 flexible spines, the first only a little prolonged in male, reaching base of first ray. Second dorsal with 12 or 13 rays; anal with 10 or 11 rays; tip of posterior dorsal rays falling a little short of a vertical through end of hypural, those of anal considerably short. Pectoral with 15 or 16 rays. Ventral short, ending at a consid-

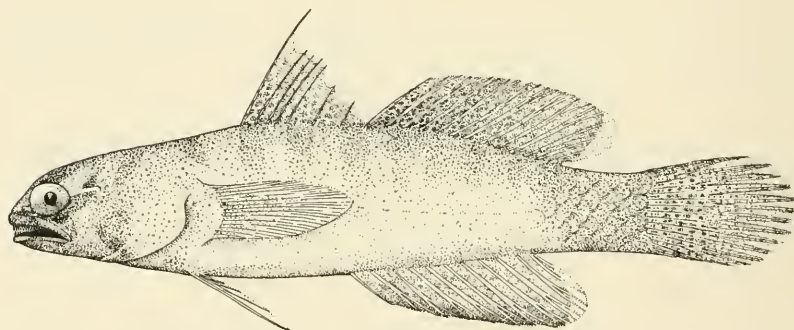


FIG. 2.—*Garmannia gemmata*; from the holotype; U.S.N.M. no. 107291; male, 19 mm. Drawn by Andrew Pizzini.

erable distance before anus; the interspinal membrane not well developed. Caudal short, rounded.

Body nearly uniformly and very moderately dusky; very feeble traces of cross-bands, somewhat better marked when viewed from dorsal aspect; the nearly evenly distributed chromatophores of two sizes, fine and coarser ones, the latter especially numerous on back and caudal peduncle; head darker than body, irregularly shaded. Caudal distinctively and prettily spotted, when viewed under magnification arrangement of very small individual spots as follows: in a large median area near base of fin 1 spot, usually elongate, set like a jewel in every fin ray joint, surrounded marginally by a light region; near upper and lower margins and posteriorly 2 smaller spots, one behind the other, often only 1 and sometimes 3 similar spots similarly set in every joint; the characteristic arrangements of spots disappearing

where rays split to form narrow branches. Anal with a supramarginal, black, diffuse band; rest of fin and other fins more or less dusky, the 2 dorsals darkest.

Measurements.—Female 14 mm. in standard length. Ventral 21.5, depth 23, least depth of caudal peduncle 13.5, head 27, postorbital part of head 18, head depth directly behind eye 16.5, head width at same point 14.5, maxillary 12, snout 7, eye 8, antedorsal distance 38. Caudal in a male 19 mm., 23.5.

Holotype.—U.S.N.M. no. 107291; Old Providence Island; August 6, 1938, obtained on the Presidential cruise; W. L. Schmitt collector; male 19 mm.

Paratypes.—Female 14 mm. in standard length, obtained with the type. Bingham Oceanographic Collection: Barahona Harbor, Santo Domingo; John C. Armstrong; July 13, 1933; female 13 mm. in standard length.

The specimen from Santo Domingo differs somewhat in color from the two from Old Providence Island. There is no trace of cross-bands. The prevailing color is considerably darker. It is almost uniformly dark all over, except a large conspicuously lighter area on side and underside of the belly. The lighter area is abruptly delimited from the dark shade on the back; the line of demarcation is a longitudinal through the upper angle of the pectoral. However, in the number of fin rays, the distinctive spotting on the caudal, and its general shape and appearance it agrees with the other 2 specimens. The scales are nearly all missing, but the traces of scale pockets left show that the extent of squamation is about the same as in those 2 specimens. It is apparently conspecific with them.

Distinctive characters and relationship.—This species shows a comparatively high degree of divergence from *Garmannia paradoxa* (Günther), the genotype, and the two are evidently relatively remote in their relationship. *G. gemmata* differs strikingly in having the squamation much less extensive and in having a compressed, instead of a depressed, head. Striking differences are also found in the lateral line organs. These structures which have been hitherto neglected in studies of the American gobies will be considered in a systematic manner in a later paper. The new species differs from *paradoxa* also in having fewer pectoral rays.