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FOUR NEW GOBIES FROM NEW GUINEA

BY J. T. NICHOLS

The following four species of gobies from New Guinea in the collections of the American Museum of Natural History appear to be undescribed.

Mogurnda variegata, new species

An eleotrin goby allied to *Mogurnda mogurnda* and of much the shape figured for *Eleotris* [*Ophiocara*] *ophiocephalus* by Günther (1875, *Fische der Südsee*, pl. 112), the profile slanting down from the somewhat elevated back to the depressed snout in front of the eye, where it makes an upward angle at the

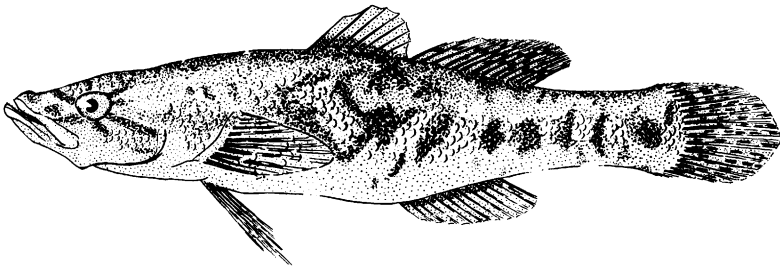


FIG. 1. *Mogurnda variegata*, type. Standard length, 75 mm.

raised nasal bones. Sides variegated with conspicuous dark blotching; dorsals and caudal sharply spotted or barred.

Dorsal VII to VIII-12 to 13; anal 13 to 14; scales 36 to 42. Eleven specimens with the same data; 10 of 46 to 81 mm. (standard length) have depth 4 to 4.6; one of 83 mm. is aberrant, back little elevated, depth 5.3.

The shape and color pattern of this fish are not unlike those of *Pogoneleotris microps* Weber, but its different fin-counts make its relationship thereto questionable.

DESCRIPTION OF TYPE: No. 18576, the American Museum of Natural History, from Lake Katuba, Delta Division, Papua, New Guinea, 1936, collected by the Richard Archbold New Guinea expedition.

Length to base of caudal, 75 mm. Depth in this length, 4.2; head, 3. Eye in head, 5.5; snout, 3.4; maxillary, 2.6; interorbital, 3.5; width of head, 2.2; least depth of peduncle, 2.5; its length, 1.6; longest ray of first dorsal, about 3.4; of second dorsal, about 2.8; of anal, 2.8; caudal, 1.6; pectoral, 1.9; ventral, 1.9.

Dorsal VII-13; anal 13. Scales, 37.

Back of head, and body compressed, snout depressed. Eye small, touching the upper profile, equidistant from tip of snout and front of opercle; interorbital flat. Mouth slightly oblique, jaws with pointed teeth in rather broad bands; tongue free, narrowed behind its broad, rounded subtruncate end; lower jaw projecting, its outer teeth exposed when the mouth is closed; maxillary reaching to under front of eye.

Dorsals narrowly separated, the first low, second and anal higher, reaching about to middle of peduncle when depressed; caudal rounded; pectorals narrowly rounded; ventrals narrow and pointed with filamentous tips, their base about under that of pectorals; origin of first dorsal equidistant from the axil of the second and front of the eye. Scales on sides moderately large, finely ctenoid; those on top of head appreciably larger, extend forward to a vertical about halfway between the nostrils; opercle and preopercle scaled; scales on preopercle and breast appreciably smaller than those on the sides; base of caudal with small scales.

Color pale brownish; top and sides of head with dark spots and bars, two conspicuous dark stripes backward and somewhat downward from eye across preopercle, the lower broken posteriorly. Sides with bold irregular dark blotches, tending to form a series along the mid-line, ending in a blackest rounded one at the caudal base, and only a few small faint marks below this series; another series along the sides of the back. Dorsals and caudal sharply spotted or barred with dark; anal dark along the base and dusky towards the margin; pectoral with a few faint

spots or bars, and more conspicuous dark blotch at the center of its base; ventrals pale.

Other specimens have a similar color pattern, back and sides boldly marked with dark, ventral surfaces usually immaculate; the dark marking tends to be more irregular mottling. Blotching or mottling may occupy more or less area than the pale ground color.

This form has likely sometimes been confused with *M. mogurnda*, of which I have compared a 97-mm. specimen from a branch of the Archer River, which empties into the Gulf of Carpentaria from the Cape York Peninsula. This has an entirely differently shaped, broader, less pointed head, shorter and deeper peduncle; interorbital in head, 2.5, width of head, 1.6, depth of peduncle, 2, its length, 1.8.

Gobius tigrellus, new species

A very small, delicate, fresh-water goby, resembling the subgenus *Rhinogobius* in appearance, with good-sized head, slender elongate body, and bold, unusual color pattern (numerous narrow black vertical bands crossing the body and caudal fin). Depth 4.7 to 6.5 in standard length; mouth slightly inferior; eyes superolateral, close together, of moderate size. Body covered with large, thin, ctenoid scales, head and mid-line of back before dorsal scaleless. Dorsal about VI-10; anal, 8; scales, 25. Ten specimens with identical data.

DESCRIPTION OF TYPE: No. 18574, the American Museum of Natural History, from Bernhard Camp, Idenburg River, Netherlands New Guinea (elevation 75 meters), April, 1939, collected by W. B. Richardson of the Richard Archbold New Guinea expedition.

Length to base of caudal, 22 mm. Depth in this length, 4.8; head, 3.1. Eye in head, 3.6; snout, 3; maxillary, 2.4; width of mouth, 2.4; width of head, 1.4; depth of peduncle, 2; its length, 1.4; longest dorsal spine, about 3; dorsal ray, about 1.7; anal ray, about 2; caudal, 1; pectoral, 1.1; united ventrals, 1.4.

Dorsal, about VI-10; anal, about 8. Scales, 25.

Greatest depth at back of head, which is slightly wider than deep, body tapering backward to the compressed peduncle; lateral profile slanting up from end of snout to over eye, then

very slightly convex back to the peduncle; ventrally down abruptly to under front of eye, thence almost straight backward.

Head blunt from the side; snout bluntly pointed from above. Eyes superolateral, close together; mouth moderately oblique, lower jaw included, maxillary about to under hind margin of pupil; teeth in the lower jaw good sized, pointed, slightly curved, in more than one row; inconspicuous or absent in the upper jaw. Gill membranes adnate to the sides of the broad, flat breast, under the opercle.

Fin rays very delicate, fragile, the counts uncertain. Dorsals close together, the first low, the second higher, especially posteriorly, its last ray reaching precurrent caudal rays when de-

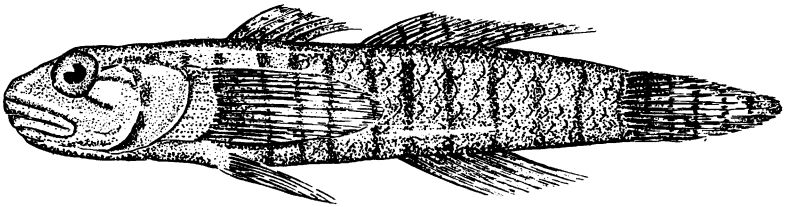


FIG. 2. *Gobius tigrellus*, type. Standard length, 22 mm.

pressed; anal similar to second dorsal, but less high; caudal pointed and with a few short precurrent rays. Pectorals bluntly pointed, not quite reaching to over anal origin; united ventrals free from the belly, short, broadly rounded.

Body covered with large, thin, ctenoid scales; mid-line of back before dorsal, breast, and belly back to the tips of the ventrals, and head scaleless.

Color pale, two narrow black streaks backward and downward from the eye across cheek and preopercle; several short black marks on top of head, and narrow black vertical stripes across the sides, nine on one side, 10 on the other from behind the pectoral base to the peduncle, the first extending only part way down. About seven similar cross stripes on the caudal, becoming faint distally, the first at the base of that fin; dorsals conspicuously barred; ventrals and anal somewhat dusky; pectorals pale.

The nine paratypes range from 15 to 23 mm. standard length; their depth varies from 4.7 to 6.5, cross stripes on sides of body from 9 to 12.

Gobius (Tamanka) fuscus, new species

A small goby with broad, depressed head; superolateral well-separated eyes; a slightly inferior curved mouth, with maxillary reaching to under eye; short, free, rounded ventrals, a short pointed caudal with conspicuous precurent rays; dorsal VI-9, anal 9 or 10; first dorsal low, but its first ray sometimes (probably a sex character) prolonged in a very long filament; second dorsal and anal higher, especially their posterior rays; scales about 38, moderately large on peduncle and sides, becoming small on nape and belly, extending on top of head to about the level of the hind margin of eye, present and of moderately small size on upper part of opercle, but head otherwise scaleless. Color more or less dusky or paler, with usually dark fins, and with a rounded dark spot, somewhat smaller than eye, at the base of caudal above its center. This species would probably be placed by Herre in his genus *Tamanka*.

DESCRIPTION OF TYPE: No. 16887, the American Museum of Natural History, from New Guinea, collected by Edwin Ruda, the largest of five specimens.

Length to base of caudal, 31 mm. Depth in this length, 5; head, 3.6; initial ray of first dorsal with filament, about 2.8.

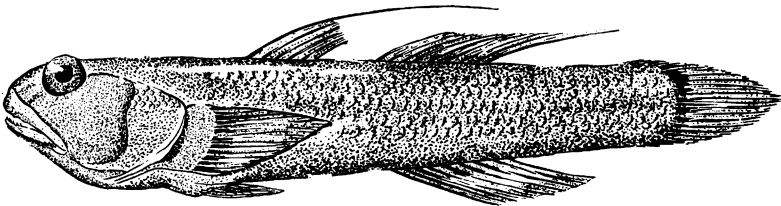


FIG. 3. *Gobius fuscus*, type. Standard length, 31 mm.

Eye in head, 4; snout, 4, interorbital, 4; maxillary, 2.4; width of mouth, 2; width of head, 1.2 1/2; depth of peduncle, 1.7; its length, 1.2; last dorsal ray, about 1.5; last anal ray, about 1.8; caudal, 1.4; pectoral, 1.5; united ventrals, 2.

Dorsal, VI-9; anal, 9 1/2. Scales, 38.

Upper profile (from the side) flat; head broader than deep, with gibbous cheeks; from above, the front of the head is broadly rounded, and the narrower body tapers back to the compressed peduncle. Eyes superolateral, well separated, the orbital rim raised above the flat interorbital; mouth slightly in-

ferior, curved, somewhat oblique, the maxillary to under the front of pupil. Teeth pointed, of moderate size, somewhat larger, more conspicuous, and in a broader band in lower than in upper jaw; gill-membranes attached to side of breast under middle of opercle.

Initial ray of first dorsal ending in a long filament which reaches back beyond the middle of the base of second dorsal, the fin otherwise low, not reaching front of second dorsal when depressed. Second dorsal higher, especially its posterior rays, the last with filamentous tip reaching precurrent caudal rays; anal similar to second dorsal but somewhat lower; caudal short, pointed, with conspicuous precurrent rays. Pectorals pointed; united ventrals free from belly, short, rounded behind.

Scales of moderate size but not noticeably ctenoid on peduncle and sides, becoming small on front of back, nape, and belly, very small, scarcely appreciable in front of pectorals and ventrals. Scales on top of head reach about to opposite the hind border of eye, a few most anterior (above the cheeks) slightly larger than those on nape, and about equal to those on operculum, the upper part of which is scaled. Head otherwise scaleless.

General color in preservative dusky, paler below, fins all darker, more or less blackish. Faint, irregular dark markings along the upper sides and onto the peduncle; and a rather conspicuous rounded blackish spot, smaller than eye, at the base of the caudal, above its center.

The four paratypes measure 22 to 28 mm. standard length, and in two of these (of which the largest is one) the dorsal filament is short, not reaching the front of second dorsal. On the other hand, in one of 22 mm. it reaches almost the middle of second dorsal base, in another of the same size about to its origin. These four smaller specimens have paler bodies than the type, the markings more distinct, posteriorly tending to form oblique streaks downward and forward, the last one or two meeting near the mid-line of body, a faint dark streak downward and backward at a wide angle. They also tend to have a dark shade downward and backward from the caudal spot, and curving towards a dark mark at the lower front base of the fin.

***Gobius (Glossogobius) brunnoides*, new species**

A dark-colored, fresh-water goby, superficially, at least, resembling *Gobius brunneus* of Japan, from a stream in New Guinea

5200 feet above sea level. We have no Japanese material for comparison, but there is every probability that it is different. Lower jaw appreciably projecting; tongue with a slight but definite notch in the center of its front margin. Caudal bluntly pointed, about as long as head. Dorsal VI-10 to 11; anal, 8. Scales about 33; a variable number, 20 or fewer, before the dorsal. Five specimens, 52 to 82 mm. standard length, with the same data.

DESCRIPTION OF TYPE: No. 19468, the American Museum of Natural History, from Nondugl, Wahgi Valley, New Guinea (altitude 5200 feet), July, 1950, collected by E. Thomas Giliard.

Length to base of caudal, 82 mm. Depth in this length, 5; head, 3.5. Width of head, in head, 1.5; eye, 5; snout, 3; in-

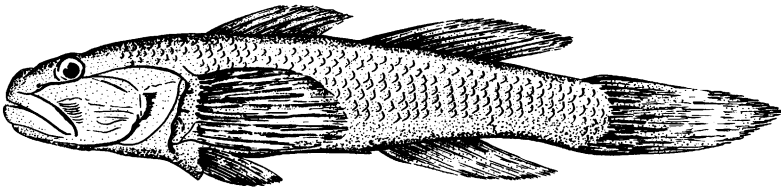


FIG. 4. *Gobioides brunnooides*, type. Standard length, 82 mm.

terorbital, 4.6; maxillary, 2.2; length of peduncle, 1.4; its depth, 3; longest ray of first dorsal, 2.5; of second dorsal, 1.7; of anal, 1.8; caudal, 1; pectoral, 1.2; ventral, 1.5.

Dorsal rays, VI-10 $1\frac{1}{2}$; anal, 8. Scales, 33; about 20 predorsal.

Head broader than deep; the body narrowing and well compressed from the origin of the second dorsal backward. Eyes superolateral, impinging on the upper profile; interorbital slightly concave. Snout blunt. Maxillary curving downward to under the middle of eye; lower jaw projecting. Teeth in two well-spaced series, of about equal size in each in the upper jaw, the outer larger, and the inner smaller than this, in the lower. Tongue broad, narrowing slightly to its subtruncate end, each side of which is convex, with a slight but definite notch in the middle between. Gill-membranes adnate to the sides of the isthmus (where concealed by the branchiostegals) under the preopercle.

First dorsal low; dorsal fins close together, their posterior rays longest; anal similar to second dorsal, shorter, beginning farther back and ending farther forward, its base five-sevenths that of the latter; caudal bluntly pointed, its precurrent rays in a fleshy keel; pectoral rounded; united ventrals a short, free, rounded disk, two-thirds as broad as long.

Scales finely ctenoid; on the top of the head, where they are smaller, they reach to over the margin of the preopercle; head otherwise scaleless; small, weak, embedded scales only on the breast before the pectorals. Conspicuous lines of raised pores cross the sides of the head (cheek and preopercle) backward from at or near the maxillary: an uppermost obliquely upward to the hind part of the eye; then two close together but diverging abruptly, converging more gradually farther back; below these one which forks; and a lowermost fifth is simple and a little shorter.

Color dusky brownish, paler along the ventral line; the sides with fine faint pale barring (from paler centers or bases of the scales). Fins in general darker; first dorsal with a blackish blotch at its hind margin.

Glossogobius koragensis Herre (1935, Field Mus. Nat. Hist., zool. ser., vol. 18, p. 419) from the Sepik River, New Guinea, north versus south of the mountain barrier, is described with a relatively longer head and higher scale-counts, especially the predorsal. The five specimens of *G. brunnoides* are consistent in their dusky brownish color, with slightly paler marks on the scales, and in having eight anal rays, that fin appreciably shorter than the second dorsal—characters that distinguish them from most of their close relatives.

Mr. Gilliard tells me that these specimens were taken from a stretch of stream with narrowly wooded banks, quiet at this season, with rapids above and below it, but a stream that is transformed annually during the rainy season into a mountain torrent. It rises in the southern watershed of the Bismarck Mountains and drains into the Wahgi River near Nondugl. The Wahgi is a tributary of the Purari, which in turn drains into the Gulf of Papua.

The figures of the four type specimens were drawn by Mrs. Evelyn Hastings.