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Results of the Archbold Expeditions. No. 71 Two New Fresh-Water Fishes from New Guinea

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The Fourth Archbold Expedition to New Guinea, of 1953, brought a collection of fresh-water fishes to the American Museum of Natural History which contains two species that seem not to have been previously described. There is also a single specimen of an exceedingly rare and peculiar snake-eel. Collecting fishes on this expedition was the responsibility of Geoffrey M. Tate; some fishes were also collected by Hobart M. Van Deusen, Leonard J. Brass, and Kenneth M. Wynn.

The following notes are from Brass and Van Deusen:

"The area covered by the expedition is in the extreme eastern part of Papua, east of longitude 149° E. The collecting stations on the mainland comprised a series of mountain camps on Mt. Dayman, in the Maneau Range, and camps in the rain forest zone, between Collingwood Bay on the north coast, and the escarpment of the Maneau Range. Collecting was also carried out on the Cape Vogel Peninsula between Collingwood Bay and Goodenough Bay. Goodenough Island (one of the D'Entrecasteaux group), which lies about 20 miles northeast of Cape Vogel, was also the scene of three collecting camps. The party was in the field from March 21 to the end of October.

"The two new species were taken in the narrow belt of rain forest between the coast and the escarpment to the south."

Achirophichthys kampeni (Weber and de Beaufort)

Brachysomophis (*Achirophichthys*) *kampeni* WEBER AND DE BEAUFORT, 1916, The fishes of the Indo-Australian Archipelago, vol. 3, pp. 316-317, figs. 150, 151; Humboldt Bay near mouth of Mbai River, New Guinea.

Perhaps the most interesting fish obtained by the Archbold expedition of 1953, is a single specimen of this rare aberrant snake-eel. Unfortunately, it is one of the few expedition fishes the labels of which were lost or disintegrated in transit, and its only datum one can be sure of is that it is from fresh waters of the mainland in the part of eastern Papua where collections were made.

Weber and de Beaufort place *kampeni* in *Brachysomophis* to which genus it is presumably related, but so entirely different in various respects that I cannot bring myself to do so. They had a single specimen 323 mm. long as type of their species. Ours of 505 mm. shows differences from it, the principal ones being that the jaws and cleft of the mouth are longer, the narrowed anterior part of the head is narrower and more pointed (depth at mid-eye three versus about two, from their figure, times in cleft of mouth); the eye is obscure versus "somewhat prominent" (which their figure does not show). These are just exaggerations of the peculiar shape of the head, which might be correlated with size or sex, and at least another specimen, to give some idea of individual variation, would be necessary to justify the assumption that more than one form of this eel occurs in New Guinea.

In our specimen the back part of the head is deep and somewhat compressed, about twice as deep as broad, and rounds down from behind the corner of the mouth to the elongate jaws, which make the front of the head narrow, conical, and pointed. Trunk and tail are terete; head about 12.25, trunk 34.25, tail 53.5 per cent of the total length. The eye is far forward, subcutaneous, obscure, its diameter one-half of its distance from the tip of the snout, which closes in front of the lower jaw. The cleft of the mouth is long, distance from tip of snout to corner of mouth 1.5 in that from corner of mouth to gill opening. Depth in cleft of mouth, at back of head, 1, at vent, 1.3, at mid-eye, 3; eye to tip of snout, 3; gill openings (placed low), as also their distance apart, 2.5; distance of origin of dorsal behind gill openings, 3.

Teeth about as described; vertical fins all very low; no pectoral. Color darker above, paler below, no noticeable markings.

Measurements comparable with those of the type specimen are as follows: head in length, 8.2, versus 8; depth 21.3 (head), 27.8 (vent), versus 29; head in trunk 2.8, versus 3; eye obscure, versus somewhat prominent, 16, versus 20 times in head, 2, versus 1.5 in snout. Cleft of mouth in head, 2.6, versus 3; dorsal origin behind gill-clefts, 1/8 head, versus 2/9 (1/7 in figure).

Pseudomugil furcatus, new species

A pseudomugil with sharply forked caudal fin, its lobes narrow, with

filamentous tips. Dorsal, V or VI-8 or 9; anal, 16 or 17; scales, 29 or 30. Mouth small, lower jaw closing inside the upper. Teeth in jaws pointed, somewhat curved; those of the upper jaw, which extend back along the maxillary, somewhat larger than those of the lower, and the tips of a few of them usually showing when the mouth is closed. Origin of first dorsal appreciably before that of anal, its last ray over second or third of anal. Before being transferred to alcohol the caudal was yellow, with a narrow upper and lower margin, and the central rays, black. Six specimens of 29 to 37 mm. standard length, with the same data.

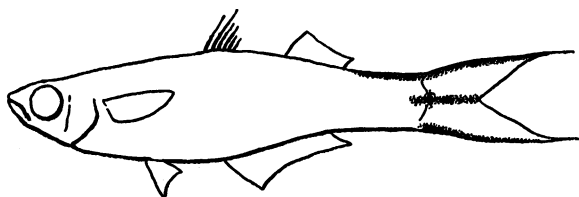


FIG. 1. *Pseudomugil furcatus* type. Standard length, 37 mm.

DESCRIPTION OF TYPE: A.M.N.H. No. 20223, from Peria Creek, Kwagira River, eastern Papua, New Guinea, pools in intermittent streams 10 miles from the coast, altitude, about 50 meters, August 24, 1953; collected by Hobart M. Van Deusen of the Archbold expedition.

Length to base of caudal, 37 mm. Depth in this length, 4; head, 4.5; caudal (to filamentous tip of upper lobe), 2.6. Eye in head, 2.4; snout, 3.6; interorbital, 2.3; maxillary, 2.4; greatest body width, 1.6; depth of peduncle, 1.6; its length, 1; pectorals broken; ventrals, 2.3; longest ray of first dorsal, 2.2; of second dorsal, 3; of anal, 2.

Dorsal, VI-8; anal, 17. Scales, 29.

Slender and compressed, with the back little elevated, top of the head flat, upper profile rising very gently, almost straight, lower descending more abruptly in a shallow convex curve to ventrals. Eye large, mouth sub-vertical, maxillary to about under the front margin of eye. Ventrals close together, reaching somewhat more than halfway to anal origin. General color pale; dark punctulate along the back, with a dark streak from first dorsal to nape, quite black from the second dorsal back, narrowly to the peduncle, joining the black edge of the upper caudal lobe; scales to well below the middle of the side anteriorly, the middle of the side posteriorly, with slight dark edges. A dark thread-like streak from behind the upper corner of the gill-cleft to where a black lengthwise band begins on the peduncle, to extend backward and cover the middle caudal rays. Outer edges of caudal, including edge of its narrow lobes, black; a

blackish lengthwise stripe on the midline below in front of the anal, which is pale with a dusky border. Dorsals dusky, ventrals pale.

The next largest specimen of 35 mm. has dorsal V-9; anal, 16; longest rays of first dorsal in head, 1.4, of second dorsal, 2; of anal, 1.4; ventrals 1.5, reaching three-fourths of the distance to anal. The lower lobe of the caudal is broken in the type; in this specimen both lobes are complete (the upper the longer) but not so long as in the type, the caudal being 3 versus 2.6 times in standard length. The difference in fin proportions may be due in part to breakage in the type, but not entirely; there is probably a sex difference.

A specimen of 30 mm. has dorsal V-9; its first ray is elevated, as long as head, and presumably these two specimens are males. The remaining three each have six rays in the first dorsal, in two of them its longest ray 2 in head, in the third the fin is broken so that this cannot be determined. It seems improbable that there should be a sex difference in the number of dorsal "spines," but equally or more so that more than one species is represented in this material.

Several related forms of *Pseudomugil* are described from Australia and New Guinea, from any of which *furcatus* differs in having the caudal fin longer and more deeply forked, a larger number (16 or 17) of anal rays (versus 10 to 12), as many as six dorsal spines in four of our six specimens. Its caudal measures 2.6 to 3 in standard length, versus 3.9 in *P. signatus* (in which it is rather long and well forked); 4.5 to 4.6 in *novae-guineae*. Its closest resemblance is with *P. s. affinis* Whitley (1935, Rec. Australian Mus., vol. 19, p. 228, fig.; 1932, Scientific reports . . . Great Barrier Reef expedition, vol. 4, p. 279) from the Low Isles, northern Queensland, in color pattern as well as otherwise. But in *affinis* it is the dorsal soft-rays that are in increased number, 12 or 13 versus six to nine.

TATEURNDINA, NEW GENUS

Small eleotrin gobies, with seven or more rays in the first dorsal as in *Mogurnda*, but much the body form of *Eviota*, and a single row of rather large conical teeth in the front of each jaw. Head and body well compressed. Head small, blunt; eye rather large, far forward, its diameter about equaling the convex interorbital; snout short; mouth small, oblique, lower jaw somewhat projecting; isthmus rather broad, gill membranes attached slightly behind margin of preopercle; tongue subtruncate. The possibility that this is a "larval" stage of *Mogurnda* has been considered, and discarded as highly improbable, though the smallest *Mogurnda* available for comparison measures about 50 mm. versus about 30 mm. in standard length.

In naming this genus *Tateurndina*, attention is called to the material addition to knowledge of the fauna of the New Guinea area, which should be credited to the labors of two brothers, Geoffrey M. Tate and George H. H. Tate.

Tateurndina ocellicauda, new species

DESCRIPTION OF TYPE: A.M.N.H. No. 20222, from Peria Creek, Kwagira River, eastern Papua, New Guinea, pools in intermittent streams 10 miles from the coast, altitude about 50 meters, August 24, 1953; collected by Hobart M. Van Deusen of the Archbold expedition.

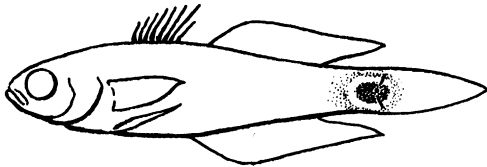


FIG. 2. *Tateurndina ocellicauda*, type. Standard length, 31 mm.

Length to base of caudal, 31 mm. Depth in this length, 4; head, 3.8. Eye in head, 3; interorbital, 3; snout, 5; maxillary, 4; greatest width (at back of head), 2.5; depth of peduncle, 1.9; its length, 1.6; pectoral, 1.3; ventral, 1.4; longest ray of first dorsal, 2; of second dorsal and of anal, 1.3; caudal, 0.9.

Dorsal, VIII-13; anal, 15. Scales, 34.

Head and body compressed, symmetrical in outline, about equally convex above and below. Head small, blunt, its profile rounding; eye large, lateral, placed well forward, snout short; interorbital convex, equaling the diameter of eye; mouth small, oblique, lower jaw somewhat projecting; maxillary to under front margin of eye; isthmus rather broad, gill membranes attached slightly behind margin of preopercle; (tongue subtruncate—from a paratype).

A single row of rather large, well-spaced, slightly curved conical teeth in the front of each jaw, those of the lower, which project slightly forward, closing over those of the upper.

Vertical fins high, especially the posterior rays of second dorsal and of anal, which reach onto the base of caudal when depressed; caudal rounded. Dorsal origin very slightly behind that of anal. Pectorals reaching to over origin of anal, ventrals (which are narrow, their bases approximate) not reaching quite so far.

Body, sides of head, and top of head to over the mid point between

front of eye and tip of snout covered with moderate-sized scales ; a scale-less area from front of eye to and across end of snout.

Color brownish, paler below. A large, conspicuous, longitudinally oval black blotch at the base of caudal, partly surrounded by a bright band across peduncle in front of it, which is now whitish, but was yellow or orange when the specimens were placed in alcohol. Fins more or less dusky, to blackish in the case of the second dorsal and anal.

There are two paratypes of about this same size, which have dorsal, VII, 13, anal, 14 ; and dorsal VIII, 14, anal, 15 ; scales 33 and 35, also several fry of 13 mm. and less, readily identified by the caudal ocellus (A.M.N.H. No. 20180), all with the same data as the type.