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PUNTIUS STREETERI, A NEW CYPRINOID FISH FROM BORNEO, AND *COBITOPHIS*, A NEW GENUS OF BORNEAN COBITIDÆ¹

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Mr. Daniel Denison Streeter traveled in Borneo in 1912 and, among other things, he collected three small fishes in the interior of Sarawak. These were presented to the American Museum, but remained unnoticed until recently. One is a *Rasbora argyrotænia* (Bleeker) taken in the Baloi River, twenty miles northeast of Kapit, a Dyak village at the junction of the Baloi and Balleh Rivers. The two other specimens, one a young *Puntius bramoides* (Cuvier and Valenciennes) and the second, the new species described below, were taken in the Baloi, near the Paran River, 150 miles above (south of) where the Linoh River enters the Baloi. Mr. Streeter tells me that the Paran is a river one hundred feet wide at its mouth, and extends three day's journey towards the northeast, with a range of hills five hundred feet high on its northwest bank. Bukit Batu ("Rock Mountain") lies twenty miles west-southwest from the Paran.

I am indebted to Mr. J. T. Nichols for the privilege of examining these fishes.

Puntius streeteri, new species

This small fish seems unique among the Bornean members of the genus in having the posterior side of the last osseous dorsal ray smooth, rather than serrated. In this it resembles only *P. brevis* Bleeker of all the species of the Archipelago.²

The body is distinctly compressed, particularly in the dorsal region, while the venter, though narrow, would appear somewhat flattened below, the body triangular in transverse section. The upper profile of the head and body is an almost uninterrupted curve, the highest point being at the dorsal insertion, and from there the curve is continued in a downward slope to the caudal fin. The ventral profile is flattened and but little convex.

¹Contributions from the Zoological Laboratory of Indiana University, No. 213.

²Whether we regard *Cyprinus sophere*, as restricted by Bleeker, or *Cyprinus puntio*, by tautonomy, as the type of *Puntius*, the name must pertain to fishes with an entire dorsal spine. I cannot agree to separating *Puntius*, *Capoeta* and *Barbodes* solely on the number of barbels, as Oshima, Herre, and others have done. This leads to an artificial arrangement, for the barbels certainly vary in some groups of related species. The serration of the dorsal spine seems to me a more stable character and its use would necessitate a different assignment of several species. Possibly it is best that they be left in the same genus, in which case *Puntius*, being the oldest name, must be used.

The head length enters the length of body $3\frac{1}{4}$ times, while the greatest depth goes 3 times in the same distance. The least depth of the caudal peduncle is $3\frac{3}{8}$ in the head. The diameter of the eye, which slightly exceeds the interorbital width, goes $3\frac{1}{2}$ in the head. The eye is considerably in advance of the center of the head length. The snout exactly equals the interorbital. The origin of the dorsal fin is midway between the tip of the snout and the caudal base, above the border of the seventh scale of the lateral line. The pectoral fins do not reach the origin of the pelvic fins by half the diameter of the eye, just extending to the vertical of the dorsal origin. The pelvics originate under the third dorsal ray, and extend backward to the insertion of the anal fin. The anal fin originates some distance behind the vertical of the end of the dorsal base and when depressed its tip just touches the origin of the

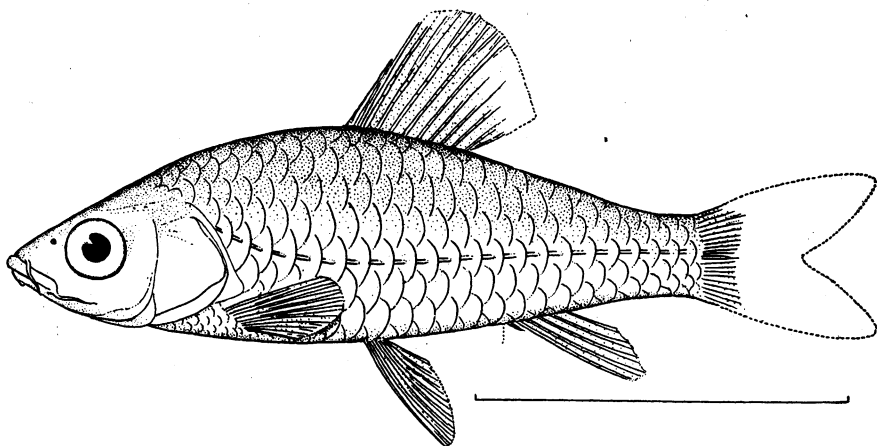


Fig. 1. *Puntius streeteri*, new species. Holotype.

lower caudal rays. The depressed tips of the long anterior dorsal rays reach farther back than do the posterior rays and they a little more than reach the vertical of the anal fin origin.

Dorsal fin with a short, almost hidden simple ray; another a little longer; a long osseous spine; another longer osseous spine; and $9\frac{1}{2}$ branched rays. The second (last) osseous spine is not serrated on each side of its posterior margin, but instead bears an entire, posteriorly projecting, wing-like structure along each edge, forming a cavity into which the first branched ray folds when the fin is depressed. The first osseous spine bears the same structure, but to a lesser degree. The second spine is injured at the tip and its height cannot be determined, but the first soft ray, which is probably about the same height, enters the head length $1\frac{1}{4}$ times. The dorsal margin is falcate when the fin is spread. The anal fin consists of two strong rays, coössified and inseparable, and 5 soft branched rays. As with the dorsal, the base is encased in a sheath of normal scales. The caudal fin is injured but it can be seen that it was well forked, and the origins of the rays are equally spaced along the caudal base, thus differing widely from *Puntius bramoides*, in which the central rays are

widely spaced and the outer ones crowded. The pelvic fins are large and each is composed of a strong first ray and 8 soft ones. The pectoral fins have one strong ray and 14 or 15 soft ones.

The mouth is fairly large and slightly inferior, the mandible but slightly shorter than the upper jaw. The premaxillary is protractile and the maxillary slightly more than reaches the vertical of the anterior eye margin. There are 4 barbels, the 2 rostral ones slightly more than half the eye diameter, the ones at the corner of the mouth three-fourths the same distance. Eye without a gelatinous membrane. Nostril depression rounded, its posterior margin confluent with the circumorbicular ridge. Vertical limb of preopercle not inclined. Gill membranes connected with the isthmus. Gill rakers 4+13, the upper $\frac{1}{2}$ the gill filaments, the lower very short.

The fold of the lower lip is not continuous, interrupted at the center by a small fleshy pad half the diameter of the eye in size, its posterior margin free.

The scales are large, their exposed surfaces but little deeper than long; the entire scale, viewed with anterior above, is broadly shield-shaped, apically evenly rounded. The nucleus is at the basal third. The apical radii number 11 to 12, of which perhaps 5 or 6 have their origin at the nucleus; at the apical margin their directions diverge but little. The basal radii are rather irregular; they number 6 or 7, of which 2 or 3 do not reach the nucleus. The basal circuli are rather crowded. The lateral line is complete, running down the center of the caudal peduncle, 22 scales from the opercle to the caudal base. There are 2 or 3 scales on the basal part of the caudal rays. In the predorsal line there are 9 or 10, those immediately behind the naked occiput being indistinct. There are $7\frac{1}{2}$ scale rows between the dorsal and pelvic fins, the lateral line row being the fifth below the dorsal. The caudal peduncle has 12 scales around it.

On the left side there are 2 small hooked teeth in the inner row of the pharyngeals. In the middle row there are 3 hooked ones. In the outermost row there are 5 teeth; the first 3 are hooked; the fourth is enlarged with a single almost straight large cusp and two lower cusps on one side, these latter forming a groove; the fifth tooth is smaller and scarcely hooked. The first tooth in each row is bent backwards and has a well-developed grinding surface. On the right side the teeth are similar in shape, but there is only a single tooth in the inner series, and the last tooth in the outer row is not present. This does not appear to be due to any loss of teeth in removal of the pharyngeal bones. The pharyngeal formula may be given as 5, 3, 2—1, 3, 4.

The coloration is plain yellowish-silvery on the sides, slightly darker above. There are no evident markings on fins or body.

A single specimen, No. 8481, A. M. N. H., 44.5 mm. in length to the base of caudal, Baloi River, near the Paran River, 150 miles above (south of) where the Linoh River enters the Baloi, Sarawak, Borneo, August 15, 1912, collected by D. D. Streeter.

The drawing of the holotype is not strictly accurate in the representation of the anal spines and a few minor details.

NOTES ON *Barbus*

I cannot see that the fish recently described as *Barbus mahakamensis* by Dr. E. Ahl¹ differs in any appreciable degree from *Puntius bramoides*. It certainly agrees very well with my specimen. Both have

¹Sitzb. Gesel. naturf. Freunde, Berlin, 1922, p. 34 (Mahakkam, Kutei, S. E. Borneo).

three and one-half scale rows between the lateral line and the pelvic fins, and the apparent difference of one spine in dorsal and anal can be ascribed to its being rudimentary in both fins and not counted by some authors. .

Dr. Herre has recently named a number of new species of *Barbodes* from the Philippines, which genus I prefer to regard as a synonym of *Puntius*. *Barbodes tras* Herre 1926 would seem from the description and figure to be very different from most of the small species placed by him in *Barbodes*. The species is, I believe, allied to the Indian *Barbus tor* group, which includes several African species such as *B. gorguari*. If my conjecture is right *B. tras* should have been placed in *Tor* (= *Labeobarbus*). It is possible some of the other *Barbodes* of Dr. Herre are not strictly congeneric, unless of course, we accept *Barbus* in its widest sense.

Some writers prefer the old heterogeneous assemblage *Barbus* to a classification similar to that of Weber and de Beaufort. The latter seems much easier and simpler to me, although *Barbus sensu lato* must still be used in certain geographic regions where the generic lines have not been thoroughly revised. Pellegrin has recently proposed a new subgenus of *Barbus* in Africa, *Hemigrammopuntius*,¹ indicating no genotype. As the type was not indicated in the Zoölogical Record, *Barbus salessi* Pellegrin is hereby designated genotype.

COBITOPHIS, new genus

It is very apparent that the two Bornean and Sumatran cobitid fishes, *Acanthophthalmus anguillaris* Vaillant and *A. vermicularis* Weber and de Beaufort, differ sharply from the others of the genus in the extremely attenuated, anguilliform body, and in having some part of the anal fin under the dorsal. They should undoubtedly be placed in a distinct genus, which may be called *Cobitophis*, with two species, *Cobitophis anguillaris*, the genotype, and *Cobitophis vermicularis*.

¹'Les Poissons des Eaux Douces de l'Afrique Occidentale,' 1923, p. 128.