

**Article XIV.**—THE SCALES OF THE CYPRINID GENUS  
*BARILIUS*

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PLATE XVIII

In American Museum Novitates, No. 57 (1923), Mr. J. T. Nichols described an interesting fish from West Africa as *Barilius engrauloides*. He remarked that the origin of the dorsal fin was unusually far back, and the fish seemed more or less intermediate between *Barilius* and *Engraulicypris*. This made me wish to see the scales of *B. engrauloides*, and Mr. Nichols has very kindly sent a couple from the type specimen, one a lateral line scale, the other from just below it, over the ventral fin. The scales of this fish may be described thus:

Length slightly over 3, width about 3.5 mm.; apex broadly rounded; base moderately convex, subtruncate, with obtuse but evident lateral corners; apical radii about 9, delicate, widely spaced; basal radii one or two, short and rudimentary; nucleus about one-third length of scale from base; apical circuli parallel with margin, fine and dense; lateral circuli vertical, much more widely spaced than apical, not continuous with apical, but no distinct interval between the two sets; basal circuli more crowded than lateral, but continuous with them.

This is a genuine *Barilius* scale and is quite distinct from that of *Engraulicypris*. The type of *Engraulicypris* is *pinguis* Günther (= *sardella* Günther), a peculiar elongated fish from Lake Nyassa and Upper Shiré. The lateral circuli are widely spaced and essentially transverse, with a very wide space between them and the closely placed apical circuli; the latter, if prolonged, would cut them almost at right angles. The scales are thin and easily deciduous.

With this genus Boulenger unites *Neobola*, which is represented by several species of more ordinary looking fishes, with the mouth extending more or less below the eye. In *N. argentea* Pellegrin, the scale is extremely broad, and the lateral circuli are subvertical, yet fail to meet the apical ones. The apical radii are obsolete, whereas they are well developed in *Engraulicypris sardella*. My *N. argentea* is from Bugala, Lake Victoria (Brit. Museum). The type of *Neobola* is *N. bottegi* Vinciguerra, a species with remarkably long pectoral fins. Apparently *Neobola* is a valid genus, but it is not certain that *N. argentea* is entirely congeneric with the type. Unfortunately, the scales of the type species are not available. For the present, the two species just cited, and also

*brevianalis* Boulenger and *minutus* Boulenger, may be referred to *Neobola*, leaving *sardella* as the exponent of *Engraulicypris*. Furthermore, *Engraulicypris congicus* Nichols and Griscom, 1917, will stand as *Neobola congica*.

So far as the scales go, *Barilius vagra* Hamilton-Buchanan, belonging to the subgenus *Shacra* Bleeker (with 4 barbels) and *B. barila* Hamilton-Buchanan, belonging to the subgenus *Bendilisis* according to Day (with two barbels) are strictly congeneric. *B. vagra* has weak basal radii, but in *B. barila* these are nearly or quite obsolete. As a matter of fact, the type of *Bendilisis* Bleeker is not *B. barila* but *B. bendelisis* Hamilton-Buchanan, and on this latter basis the subgenus has some standing, on account of the spotted scales, which are quite broad and have the apical radii strong and spreading. If *Shacra* and *Bendilisis* are regarded as inseparable, the former has priority of place. The African species and also several of the Asiatic have lost the barbels. *Barilius barila* is not only to be excluded from *Bendilisis*, but it is actually the type of the genus *Barilius* Hamilton-Buchanan. The barbels are small and the African species are in general quite congeneric.

A really distinct subgenus or genus is represented by *B. andersoni* from Yunnan Fu, and *B. polylepis* from Tongchuan Fu, Yunnan, both collected by J. Graham (Brit. Museum). In these the lateral circuli are continuous with the apical ones, and all are widely spaced. The scales are broad, and only apical radii are developed. The basal corners are very obtuse or quite obsolete. For this group the name **Anabarilius** (type *andersoni*) may be appropriate. The two species were described by Regan in 1904. The subgenus *Raiamas* Jordan (*Bola* Günther), for *Barilius bola* Hamilton-Buchanan, belongs according to Day to the same group (which he wrongly calls *Barilius* s. str.) as *B. bakeri* Day, which is the type of *Pteropsarion* Günther. These fishes are, however, differently marked, and differ very greatly in the number of scales in lateral line. The character of the scales is unfortunately unknown, but I have scales of *B. tileo* Hamilton-Buchanan, which seem to be strictly congeneric with *B. bola*. In *B. tileo* the scales are about as broad as long, of a perfectly ordinary *Barilius* type with six apical radii and rudimentary basal ones. *B. tileo*, as seen by me, had the upper row of spots along the side considerably larger than the lower, the lower spots being very small. In *B. bola* this difference does not obtain.

**PLATE XVIII**

Parts of sides of scales, to show relation of lateral (laterobasal; *B. circ.*) and apical circuli, the latter between or beyond the radii (*R.*).

Fig. 1. *Barilius neavii* Boulenger.

Fig. 2. *Barilius engrauloides* Nichols.

Fig. 3. *Barilius (Anabarilius) polylepis* Regan.

Fig. 4. *Barilius (Anabarilius) andersoni* Regan.

Fig. 5. *Neobola argentea* Pellegrin.

Fig. 6. *Engraulicypris sardella* Günther.



