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THE MORMYRID GENERA HIPPOPOTAMYRUS AND CYPHOMYRUS

By George S. Myers

The tropical African teleostean fishes of the family Mormyridae have long been famed among zoologists for the enormous size of the cerebellum and for their electrogenic organs. They produce regular electrical discharges, each fish maintaining an electrical field about itself, by means of which it seems to navigate and locate objects and other fishes. Each species so far tested has shown identifiably different discharges. The value of such an electrical system to the fish is probably great. Atz and Coates (1957) have given references to some of the recent literature on the subject and Lissmann (1958) has reviewed the function and evolution of electric organs in fishes.[1]

The generic classification of the Mormyridae, although unchanged by two generations of ichthyologists, is chaotic both zoologically and nomenclaturally. In fact, the generic names, if one tries to base them on the type concept, form a veritable Gordian knot which will take the utmost care to disentangle. Some of the best known generic concepts now go under names the obvious types of which are traditionally placed in other genera. Even the name *Mormyrus* itself is in this category.

The taxonomic classification is in equal confusion. Perhaps this is really fortunate, for any nomenclatural revision without an accompanying extensive taxonomic revision would be so clearly ill-advised as to preclude general acceptance. The system of classification and nomenclature still followed is the artificial one of Boulenger (1909), in which several separate and distinctive genera are lumped, and some of the genera accepted are only poorly defined. A nomenclatural revision, if accompanied by the necessary extensive upheaval of the currently recognized genera, might be

[1] The parallelism between the snout forms (and electrogenic properties) of mormyrids and gymnotids is stressed by Atz and Coates and by Lissmann. This has probably been pointed out previously. Two generations of advanced students in ichthyology at Stanford will recall my own references to the parallelism.

easier to accept than a mere juggling of names. Such a revision has been in progress for some time, but has not yet been completed. In the meanwhile, there seems to be no reason to withhold notes on *Hippopotamyrus* and upon a new genus that I have recognized.

Genus *HIPPOPOTAMYRUS* Pappenheim

Hippopotamyrus Pappenheim, 1906, p. 260 (original proposal and description; type species, by monotypy: *H. castor* Pappenheim).
Paramyomyrus Pellegrin, 1927, p. 297 (original proposal and description; type species, by monotypy: *P. aequipinnis* Pellegrin).

The history of this apparently monotypic genus illustrates the weakness of Boulenger's system of mormyrid classification. Pappenheim (1906; 1907) recognized *H. castor* as a distinct new genus and species of the family, from Cameroon. Boulenger (1909, p. 77) reduced Pappenheim's genus to the synonymy of *Marcusenius*, with the key characters of which *H. castor* disagrees in possessing a pair of enlarged median mandibular teeth, recalling somewhat those of *Myomyrus*. Nearly twenty years after Boulenger's revision, Pellegrin, who had had extensive experience with African fishes, obtained material of the same species, which he also recognized as representing a distinctive genus. However, because Boulenger had sunk Pappenheim's genus into *Marcusenius* in his "Catalogue of the Fresh-Water Fishes of Africa", Pellegrin found no obvious genus with which to identify his material, and described it as a new genus and species, *Paramyomyrus aequipinnis*. Pellegrin later figured his fish in a popular magazine (Pellegrin, 1932, p. 143). While Pellegrin should obviously have been more circumspect, the chief fault lies in the artificial nature of both Boulenger's keys and classification, two phases of systematics which that author often confused. It is also a comment on Holly's key to Cameroon fishes (Holly, 1930) that he recognized (p. 222) both "*Marcusenius castor*" and "*Paramyomyrus aequipinnis*" on the same page! Poll (1957, p. 93) still accepts *Paramyomyrus*. So far as I am aware, the identity of these two genera and species has not hitherto been pointed out. *Hippopotamyrus* may be diagnosed as follows:

Dorsal fin origin approximately opposite that of anal fin, the length of the two fins approximately equal. Body moderately elongated, the vertebrae less than 50 in number. Teeth in each jaw in a single series. Mouth definitely inferior in position, the lower jaw lacking a slender dermal appendage. Snout rounded. Median (symphysial) pair of teeth in lower jaw considerably larger than the others.

Only one species is known, *Hippopotamyrus castor*, from Cameroon, of which *Paramyomyrus aequipinnis* is a synonym.

Genus *CYPHOMYRUS*, novum

TYPE SPECIES: *Marcusenius psittacus* Boulenger.

Dorsal fin origin situated definitely anterior to anal fin origin. Dorsal fin with more rays than anal fin, and with its base longer than that of anal fin. Base of anal fin over half as long as base of dorsal fin. Mouth definitely inferior, or the chin with a short bulbous protuberance which hides the essentially inferior position of the mouth. Teeth present only in the middle of the jaws, the median symphysial pair in the lower jaw not greatly enlarged. Body compact, deep, compressed, predorsal profile of back convex or humped. Origin of pelvic fins closer to base of pectoral fin than to origin of anal fin. Gill openings restricted, not extending

below base of pelvic fin. Vertebrae 50 or fewer.

This genus, removed from the polyphyletic assemblage called *Marcusenius* by Boulenger, is an obviously compact phyletic entity. The deeper bodied species of *Cyphomyrus* greatly resemble marine carangids of the genus *Trachinotus*. Species:

Cyphomyrus wilverthi (Boulenger). Congo.
Cyphomyrus psittacus (Boulenger). Congo.
Cyphomyrus macrops (Boulenger). Congo.
Cyphomyrus discorhynchus (Peters). Zambezi, Tanganyika, Nyasa.
Cyphomyrus plagiostoma (Boulenger). Congo.
Also other species described subsequent to Boulenger's Catalogue.

The name is derived from *kuphos* (Greek), a hunchback, and *muros* (Greek), the often-used combining form of *mormuros*, a kind of fish, later transferred to the mormyr, an Egyptian mormyrid.

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