



Relationships of the New World cichlid genus *Hypsophrys* Agassiz 1859 (Teleostei: Cichlidae), with diagnoses for the genus and its species

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Abstract

Two monotypic Neotropical cichlid genera, *Hypsophrys* Agassiz 1859 and *Neetroplus* Günther 1867, are well known but poorly diagnosed. The possession of a single supraneural (versus two for most Middle American species), a strongly rounded snout with a small and slightly subterminal mouth (versus straight snout profiles with terminal mouth) provide morphological support for the sister-group relationship of *Hypsophrys* and *Neetroplus* recovered in recent molecular phylogenetic analyses. Based on these shared features *Neetroplus* is synonymized with *Hypsophrys*. In addition, the senior synonym *Hypsophrys unimaculatus* should no longer be improperly suppressed in favor of the more familiar, but junior, *H. nicaraguensis*.

Key words: *Cichlasoma*, Middle American Cichlidae, *Hypsophrys nicaraguensis*, *Neetroplus nematopus*, Neotropics, synonymy, taxonomy

Introduction

Until recently, the vast majority of Mexican and Central American cichlids were traditionally placed in the catch-all *Cichlasoma*, with only a few species placed in other, usually monotypic, genera (Chakrabarty, 2006a); included among these are *Petenia*, *Hypsophrys*, and *Neetroplus*. Although the relationships of Mexican and Central American cichlids have recently been elucidated (Hulsey *et al.* 2004, 2006; Chakrabarty, 2006a,b) and taxonomic reviews have clarified these relationships (Kullander, 2003), many taxonomic problems persist. Here, we diagnose two long-standing genera that lack adequate diagnoses. We also provide corroborative morphological character support for the sister-group relationship recovered in recent molecular phylogenetic studies.

Günther (1867) described *Neetroplus* as differing from *Heros* in “having a front series of flat incisor-like teeth.” This feature was used to simultaneously distinguish the genus and species (*Neetroplus nematopus*) from members of *Heros*. *Heros* at the time included the majority of cichlids from Central America. Subsequently, species of *Heros* were placed in various genera that now comprise the majority of species in the tribe Heroini (Kullander 1983, 1996). Several Central American cichlid taxa including members of *Tomocichla* and *Paraneetroplus* possess spatulate or incisor-like teeth, but these species have never been recovered as closely related to *Neetroplus*.

Hypsophrys unimaculatus Agassiz 1859, in the first mention of the genus and species, was described as “resembling *Chrysophrys*,” a genus in Sparidae, and was noted to have a single spot on the flanks with dorsal and anal fins that extend posteriorly over the caudal fin. This species was determined to be a senior synonym of *Hypsophrys nicaraguensis* (Günther 1864); however, Kullander & Hartel (1997) proposed keeping the younger name to preserve familiar nomenclature. There is no type material associated with *Hypsophrys unimaculatus* (Eschmeyer, 2007). Kullander & Hartel (1997) state “*Hypsophrys* is easily identified as being the