



A new species of *Ptychochromis* from southeastern Madagascar (Teleostei: Cichlidae)

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Abstract

We describe a new species in the endemic Malagasy cichlid genus *Ptychochromis*. *Ptychochromis mainty*, new species, is known from four individuals, all collected in the Fort Dauphin region of southeastern Madagascar, and shares a palatine morphology (eastern-type palatine) with other eastern congeners. *Ptychochromis mainty* is distinguished from all congeners by a nearly uniform dark brown to black pigmentation pattern in preservation and by the presence of a relatively continuous and expansive black longitudinal midlateral blotch in life, extending from the posterior margin of the opercle to the caudal peduncle. The new species is further distinguished from other eastern *Ptychochromis* species by having minimal or no overlap of the first supraneural with the dorsoposterior region of the supraoccipital crest (vs. marked overlap). We present a molecular-based phylogeny for all available *Ptychochromis* species, which supports the hypothesis that *P. mainty* is a distinct taxon. The new species is recovered as the sister taxon to *P. grandidieri* within a clade comprising species with an eastern-type palatine morphology. We present a geometric morphometric analysis that provides additional evidence to distinguish *P. mainty* from congeners.

Key words: Cichlidae, Madagascar, *mainty*, new species, phylogeny, Ptychochrominae, *Ptychochromis*

Introduction

Ptychochromis is endemic to Madagascar and members of the genus are distributed throughout eastern, far northern and northwestern Madagascar. Species of *Ptychochromis* occur in both fresh and brackish-water habitats, and are generally restricted to lowland rivers, streams, and shallow floodplain lakes. *Ptychochromis* currently comprises nine valid species (Stiassny & Sparks, 2006; Sparks & Stiassny, 2010), and all but one species (*P. grandidieri*) exhibit quite restricted geographic ranges (Fig. 1). Members of the genus historically occurred in southwestern Madagascar (viz., *P. onilahy* Stiassny & Sparks, 2006), however, based on a number of unsuccessful recent surveys to collect *P. onilahy* in the region, those populations are now considered likely to be extinct. Herein we describe a new species of *Ptychochromis* from extreme southeastern Madagascar, use geometric morphometrics to compare variation in overall body shape among *Ptychochromis* species with eastern-type palatines [the “eastern group” of Stiassny and Sparks (2006)], and report on the phylogenetic placement of the new species within the genus.

Material and methods

A morphological assessment of *P. mainty* included meristic counts and linear body measurements, following Sparks (2002, 2003) and Stiassny and Sparks (2006), and these data are presented in Table 1. Further observations were made from a cleared and stained (C&S) suspensorium, suborbital series and branchial basket isolated from a *P. mainty* specimen (AMNH 241979, paratype), following a Ridewood dissection (Bemis *et al.*, 2004). Specimens used for comparative analyses were cleared and stained using a modified protocol based on Taylor and Van Dyke