

Descriptions of three new species of *Melanochromis* (Teleostei: Cichlidae) and a redescription of *M. vermivorus*

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Abstract

The Lake Malawi genus *Melanochromis* included five species at its inception and was originally distinguished from *Pseudotropheus* on the basis of morphology including the arrangement of pharyngeal teeth. The diagnosis has been extended twice, first to include all elongate mbuna that possess horizontal stripes and U-shaped tooth bands and later to exclude mbuna that do not exhibit a sex-related reversal in their color pattern. We have further refined the diagnosis of the genus on the basis of the melanin pattern, resolved a longstanding dispute regarding the validity of *M. heterochromis*, re-evaluated the status of *M. vermivorus*, synonymized *M. mellitus* Johnson 1976 with *M. melanopterus* Trewavas 1935, moved *M. benetos* Bowers and Stauffer 1977 to *Pseudotropheus*, and described *M. kaskazini*, *M. wochepa*, and *M. mossambiquensis* from the eastern shore of the lake. *Melanochromis* is still paraphyletic as two species, *M. joanjohnsonae* Johnson 1974 and *M. labrosus* Trewavas 1935, are not congruent with the rest of the group, but, currently, a better alternative for these two could not be found.

Key words: Malawi, cichlid, mbuna, melanin pattern

Introduction

The small, rock-dwelling haplochromine cichlid fishes in Lake Malawi, Africa, are commonly referred to as mbuna. The genus *Melanochromis* Trewavas 1935—one of the dozen genera currently recognized within the mbuna—was originally distinguished from *Pseudotropheus* on the basis of the less numerous and less densely crowded pharyngeal teeth with those of the middle series becoming a little larger posteriorly in *Melanochromis*. Based on these characters, five new species were initially included in the genus: *Melanochromis melanopterus*, *M. vermivorus*, *M. brevis*, *M. perspicax*, and *M. labrosus*. Johnson (1975) proposed to classify the species in the genera *Melanochromis* and *Pseudotropheus* on the basis of their color pattern and suggested to include *P. auratus*, *P. johannii*, and *P. fuscus* in *Melanochromis* and to transfer *M. brevis* to *Pseudotropheus*. On the basis of the morphology of the lower pharyngeal jaw in *P. johannii* and in *P. auratus*, Burgess (1976) also placed these two species in *Melanochromis*. A few years later, Johnson (1978) reconsidered some of his propositions and returned *M. brevis* to *Melanochromis* and *P. fuscus* to *Pseudotropheus*. Two of the species originally included in *Melanochromis*, *M. labrosus* and *M. perspicax*, lack horizontal stripes; the latter has, on the basis of its color pattern, tentatively been placed in *Pseudotropheus* by Loiselle (1979) and by Ribbink *et al.* (1983). The generic placement of *M. labrosus* has always been disputed, and at some point it was questioned whether it belongs to any of the genera commonly referred to as mbuna (Burgess 1976; Loiselle 1978; Genner & Turner 2005). It currently resides in *Melanochromis*.

Trewavas (1984) extended her initial diagnosis of *Melanochromis* to include, among others, color pattern