



Descriptions of five new species in the genus *Metriaclima* (Teleostei: Cichlidae) from Lake Malaŵi, Africa

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Abstract

Five new species of rock-dwelling cichlids from Lake Malaŵi are described. All five species phenotypically resemble *Metriaclima aurora* based on the absence of a black band in the dorsal fin and occupying the rock-sand interface of the lake. Differences in overall shape, meristics, and coloration distinguish these new species from each other and from previously described species within this group. The new species *Metriaclima glaucos*, *M. mossambicus*, *M. nkhunguensis*, and *M. xanthos* originate from the Mozambique coast of the lake, while *M. sciasma* is restricted to Tanzanian waters.

Key words: Cichlids, Lake Malaŵi, *Metriaclima*

Introduction

The rock-dwelling haplochromine cichlids of Lake Malaŵi, collectively referred to as mbuna, are a diverse group of fishes consisting of twelve genera. The mbuna genus *Metriaclima* was originally described by Stauffer *et al.* (1997) to accommodate species in the *Pseudotropheus zebra* complex (Ribbink *et al.* 1983). The characters of the genus *Metriaclima* that distinguish it from other mbuna genera include a moderately-sloped ethmo-vomerine block with a swollen rostral tip, the presence of bicuspid teeth in the anterior portion of the outer row of both jaws, the lower jaw at a 45° angle to a line from the tip of the snout to the middle of the caudal peduncle (Stauffer *et al.* 1997), the lower jaw is often slightly longer and thicker than the upper jaw, a large part of the upper dental arcade is normally exposed when the mouth is closed, the tips of the teeth in the premaxilla and dentary are in a V-shaped line with the anteriormost in upper and lower jaw furthest apart, the placement of the bicuspid teeth in the outer row along the sides of the jaws does not follow the contour of the jaw bone, and the jaws are abducted to a near 180° angle during feeding so that the body is aligned at a perpendicular angle to the substrate to remove diatoms and loose algal strands from algae attached to the substrate (Konings & Stauffer 2006).

In addition to expanding the diagnosis of *Metriaclima*, Konings & Stauffer (2006) recognized three phenotypically similar assemblages within the genus: 1. a Blue-Black barred group associated with *M. zebra*, 2. a Black Dorsal group associated with *M. flavifemina*, and 3. an Aurora group associated with *M. aurora*. Both the Black Dorsal group and the Aurora group are found in the intermediate habitat along the coast of Lake Malaŵi, where the transition between rocks and sand occurs and are distinguished from one another by the presence or absence of a black band in the dorsal fins of males (Konings 2001). Males hold territories mainly over the sand near rocks and excavate beneath rocks to construct their spawning burrow. These species are most commonly found at depths of 3–20 m. The members of the Aurora group are characterized by their habitat preference (sand-rock interface), the absence of a black submarginal band in the dorsal fin, and by a light brown coloration of most females exhibiting no (or only faintly present) vertical bars and a yellow margin in the dorsal, anal, and caudal fins. Five described species were initially recognized as part of the Aurora group: *Metriaclima aurora*, *M. chrysolallos*, *M. benetos*, *M. hajomaylandi*, and *M. barlowi* (see Konings & Stauffer 2006), while putative members were recognized at several localities along the eastern shore of Lake Malaŵi in Malaŵi, Mozambique, and Tanzania (Fig. 1).