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Geographic variation in *Neolamprologus niger* (Poll, 1956) (Perciformes: Cichlidae) from Lake Tanganyika (Africa)

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Abstract

Intraspecific morphological variation in *Neolamprologus niger* from seven localities along the north-western shoreline of Lake Tanganyika (Luhanga, Bemba, Ubwari West, Ubwari East, Yungu, Kabimba and Kalemie) was investigated. As a result of geographical variation, the populations could be categorized into a northern, a central and a southern group. A clear clinal pattern was found for several meristics and measurements. The lack of knowledge on the geographical variation in African cichlids and its implication for further taxonomic research is discussed.

Key words: East African lakes, morphological variation, morphometry, taxonomy, biogeography, cichlids, Lamprologini

Introduction

Lake Tanganyika, situated in the East African rift valley, is the second oldest freshwater lake (9–12 million years) and features amongst the richest freshwater ecosystems in the world (Rossiter 1995). The lake is considered as a unique evolutionary reservoir for the cichlid fauna in the region and a spectacular example of adaptive radiation and explosive speciation within a single group of organisms (Sturmbauer 1998).

Lake Tanganyika has been subject to small and large water level fluctuations. Low water levels subdivided the lake in isolated basins for extended periods of time. For instance, about 200,000 to 75,000 years ago the level of the lake dropped 600 m below its present level, probably splitting the lake into three sub-basins for several tens of thousands of years. These three palaeolakes were probably hydrologically, chemically and biologically distinct (Scholz & Rosendahl 1988). Even nowadays, this event is still reflected in the distribution of many species (Snoeks 2000). Smaller lake level changes have also affected the littoral stenotopic populations by altering the habitat characteristics along the shoreline (Rossiter, 1995).

Lake Tanganyika contains a unique diversity of 200–250 cichlid species (Snoeks 2001; Salzburger *et al.* 2005), 97 % of which are endemic (Rossiter 1995). Almost 25% of the endemic cichlids in the lake belong to the substrate brooding Lamprologini (Hori 1983). Most of the species of the tribe are restricted to Lake Tanganyika though a few representatives are found in the Congo basin (Poll 1986). Lamprologini are characterized by a long, spiny anal fin with 4–10 spines and 5–9 soft fin rays and a dorsal fin with 17–24 spines and 8–12 soft fin rays (Poll 1986).

Neolamprologus niger was described by Poll (1956) as *Lamprologus niger* and subsequently placed into *Neolamprologus* by Colombe and Allgayer in 1985, based on the absence of bony elements in the infraorbital section of the lateral cephalic line.

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