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Mahseers genera *Tor* and *Neolissochilus* (Teleostei: Cyprinidae) from southern Vietnam

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Abstract

Two new species and two new basin records of mahseers in the genera *Tor* and *Neolissochilus* are described from the upper Krong No and middle Đồng Nai drainages of the Langbiang Plateau in southern Vietnam. These new species and new records are known from streams and rivers in montane mixed pine and evergreen forests between 140 and 1112 m. Their populations are isolated in the Sre Pok River of the Mekong basin, the middle of the Đồng Nai basin, and the An Lão River. Both new species are differentiated from their congeners by a combination of the following characters: 23–24 lateral scales, 9–10 predorsal scales, 2/7 or 1/8 pelvic-fin rays, mouth position, median lobe of lower lip, rostral hood, colour in life and by divergent mitochondrial DNA. *Tor mekongensis* **sp. nov.** is differentiated from *Tor dongnaiensis* **sp. nov.** by the number of transverse scale rows (3/1/2 vs. 4/1/2), number of pelvic-fin rays (2/7 vs. 1/8), a blunt rostral hood vs. pointed, caudal-fin lobes that are equal vs. unequal, and by mitochondrial DNA (0.7% sequence divergence). Molecular evidence identifies both species as members of the genus *Tor* and distinct from all congeners sampled (uncorrected sequence divergences >1.9% for all *Tor* species for which homologous COI sequences are available). *Tor sinensis* is recorded in the Krong No and the Sre Pok rivers, further south of its known distribution. Polymorphism is described in *Neolissochilus stracheyi* with a *Tor*-like morph and a *Neolissochilus*-like morph.

Key words: Langbiang Plateau, *Tor dongnaiensis* **sp. nov.**, *Tor mekongensis* **sp. nov.**, *Tor sinensis*, *Neolissochilus stracheyi*, southern Vietnam

Introduction

Mahseer refers to a group of freshwater cyprinid fishes easily distinguishable by relatively large scales on their body compared to those of other cyprinid fishes (Desai 2003). The members belong to two genera, *Tor* and *Neolissochilus*. These two genera are distinguished by the presence of a continuous labial groove in *Tor* vs. an interrupted groove in *Neolissochilus,* and 10–14 gill rakers on the lower arm of the first gill arch in the former, and 6–9 in the latter (Rainboth 1985).

Tor is distinguished from other cyprinids by having a fleshy median mental lobe (Roberts 1999). There are 14 valid species of *Tor* in the trans-Himalayan region and southeast Asia (Eschmeyer 2015; Khare *et al*. 2014; Laskar *et al*. 2013; Kottelat 2013; Madhusoodana *et al*. 2011; Zhou & Cui 1996; Menon 1992). Among these species, six have been reported in southeast Asia; namely *T. ater* Roberts 1999, *T. lateravittatus* Zhou & Cui 1996, *T. polylepis* Zhou & Cui 1996, *T. sinensis* Wu 1977, *T. tambra* Valenciennes in Cuvier and Valenciennes 1842, and *T. tambroides* Bleeker 1854 (Kottelat 2013; Oijen & Loots 2012). However, the taxonomy and systematics of the genus *Tor* is not stable. While Eschmeyer listed in 2013 (cited in Khare *et al.* 2014) 36 species as valid, in 2015 only 14 are maintained. Characters on which the taxonomy is based may be plastic and responsible for taxonomic confusion (Mohindra *et al*. 2007). In this context molecular phylogenetic investigations would be useful, but to

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