

## Re-validation and re-description of an endemic and threatened species, *Aphanius pluristriatus* (Jenkins, 1910) (Teleostei, Cyprinodontidae), from southern Iran

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### Abstract

*Aphanius pluristriatus* (Jenkins, 1910) (Cyprinodontidae) is a poorly known species from Fasa, located in the Mond River drainage system, east of Shiraz, southern Iran. It has not been investigated since its first description, its validity has been questioned and a synonymy with *A. sophiae* (Heckel, 1849) has been suggested. In this study, we describe a new collection of *Aphanius* specimens from the Zarjan spring system, which is probably the same spring system from where Jenkins (1910) collected the type specimens of *A. pluristriatus*. The morphological characters of our new series of specimens are consistent with those of *A. pluristriatus* as originally described by Jenkins (1910). We emend the original description of *A. pluristriatus* and add morphometric and meristic data. A comparison with the related taxa *A. sophiae*, *A. farsicus* (former *A. persicus*) and *A. isfahanensis* reveals that *A. pluristriatus* can be separated from them by a smaller caudal peduncle index, higher number of flank bars, lower number of gill rakers, and higher J scale index. Therefore *A. pluristriatus* represents a valid species, which is at present restricted to the drainage system of the Mond River. We suggest that *A. pluristriatus* originated from an ancient *A. sophiae* population in the Kor River Basin during the Quaternary. At that time, the Kor River was draining to the Persian Gulf by the “Paleo-Kor River” and the Mond River. During the Late Quaternary or Holocene, the connection between the Kor River and the Persian Gulf has been blocked as a result of tectonic uplift (the Kor River Basin is endorheic today). Thus, *A. pluristriatus* most likely is the relict of an ancient *Aphanius* population from the Quaternary “Paleo-Kor River” drainage system.

**Key words:** Cyprinodontidae, taxonomy, Paleo-Kor River, species validity, Mond River, conservation

### Introduction

*Aphanius* is the only representative of the cyprinodontids in the Old World. Its distribution area includes coastal (brackish) and landlocked (freshwater to euryhaline) water bodies in the Mediterranean and Persian Gulf areas as far as Iran and Pakistan (Wildekamp 1993). The species diversity is highest in the endorheic basins of the mountainous regions of central Anatolia and the Iranian plateau (Coad 2000; Hrbek *et al.* 2002, 2006).

In Iran, *Aphanius* is represented by *A. dispar* (Rüppell, 1829), which is an euryhaline species also known as the Arabian (common) tooth-carp, and by six endemic species: *A. ginaonis* (Holly, 1929) or Genu tooth-carp from a hot spring near the Persian Gulf; *A. isfahanensis* Hrbek, Keivany & Coad, 2006 or Isfahan tooth-carp from the Zayandeh River Basin of central Iran; *A. farsicus* Teimori, Esmaeili & Reichenbacher, 2011 (former *A. persicus* (Jenkins, 1910)) or Farsi tooth-carp from streams and springs in the Maharl Lake Basin; *A. sophiae* (Heckel, 1847) or Soffia tooth-carp from the endorheic Kor River Basin; *A. vladikovi* Coad, 1988 or Zagros tooth-carp from the central Zagros Mountains (Coad & Keivany 2000); and *A. mesopotamicus* Coad, 2009 or Mesopotamian tooth-carp from the Tigris-Euphrates Basin in Iran and Iraq. These endemic species occur in restricted areas, and most of them are threatened due to drought, land-use change and/or pollution around their native habitats, as well as due to the introduction of exotic fishes into their habitats.