

# The endemic Iranian Cave-fish, *Iranocypris typhlops*: two taxa or two forms based on the mental disc?

by Payam Sargeran, Majid Bakhtiyari, Asghar Abdoli, Brian W. Coad, Koorosh Sarvi, Mehdi Rahmati Lishi and Abdolmajid Hajimoradloo

**Abstract.** The objective of this study was to investigate morphometric and meristic characteristics of *Iranocypris typhlops*, comparing new material having a mental disc with those lacking a disc. 24 morphometric and 9 meristic variables were measured. Statistical analyses used cluster and discriminant methods, which showed significant morphometric differences between the two groups (Wilk's Lambda,  $p < 0.05$ ). Additionally, fish with a disc had less pectoral and pelvic rays compared to fishes without a disc. Fishes without a disc generally had a bipartite swimbladder; in contrast, fishes with a disc had unipartite and bipartite swimbladders in an equal ratio. There may also be some differences in feeding habits between these two groups. Fish with a disc can attach to and graze on the substrate. A significantly longer intestinal length in fishes with a disc may also be indicative of a detrital feeding habit.

**Key words.** Iranian cave-fish, *Iranocypris typhlops*, mental disc, morphology, multivariate analysis.

## Introduction

The Iranian Cave-fish *Iranocypris typhlops* (Persian name Mahi-ye Kur-e ghar) belongs to the family Cyprinidae and was discovered by E. W. KAISER in 1937 (BRUUN & KAISER 1944). It is found in a well-like pool, the natural outlet of a subterranean limestone system of the Zagros Mountains in the Ab-e Sirum or Ab-e Serum Valley near Tang-e Haft railway station in Lorestan Province, south-west Iran (BRUUN & KAISER 1944, SMITH 1953, MOVAGHER 1973, GREENWOOD 1976, COAD 1996, PROUDLOVE 1997). The pool is at 33°04'N, 48°36'E and lies at an altitude of 740 m in an oasis named Baq-e-lavan or Bagh-e Loven. The pool lies in the Dez River drainage of the Tigris River basin.

These fishes have a pink body colour, are without eyes, have a rounded body and the head is somewhat flattened. They have two pairs of barbels; the first pair located on the upper lip and the other on the joint line between the upper and lower lips near the mouth corner. The mouth is sub-terminal. The body has scattered cycloid scales and an ill-defined lateral line. It is recognised as a vulnerable species according to the IUCN Red Data Book (IUCN 2007).

Recent observations have revealed the presence of a mental disc in some specimens. We decided to investigate morphometric and meristic characteristics of this species with and without a mental disc, in order to find out whether analysis of the two forms warrants designation of two taxa.

## Material and methods

A total of 44 fishes were collected on three trips to the cave system and fixed in 96% ethanol. Nine specimens had a mental disc. Fig. 1 shows the heads of two fishes, with and without a disc.