

Revalidation and redescription of *Potamon elbursi* Pretzmann, 1976 (Brachyura, Potamidae) from Iran, based on morphology and genetics

Research Article

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Abstract: In the current study, we redescribe and revalidate a freshwater crab species of the genus *Potamon* Savigny, 1816, from northern Iran. *Potamon elbursi* Pretzmann, 1962, differs from the species it has been synonymised with, *Potamon persicum* Pretzmann, 1962, mainly by the shape of the first gonopods in males. Consistent and marked genetic divergence was also recognised in the mitochondrial 16S rRNA and cytochrome oxidase subunit I genes. This study elevates *P. elbursi* to species rank and therefore increases the number of valid species of the genus *Potamon* to a total of twenty-two.

Keywords: Mitochondrial genes • Morphological features • Species complex

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1. Introduction

Potamon Savigny, 1816, is a well known freshwater crab genus with a distribution ranging from the Middle East through southern Europe and the far north of Africa [1]. Currently, there are a total of twenty-one recognized species in the genus *Potamon* [2]. The phylogeny and taxonomy of the genus in the Middle East has only recently been studied and dealt with in detail by few specialists. Pretzmann [3-9] was the first to extensively survey freshwater crabs in the Middle East, introducing a remarkable number of new species and subspecies (as well as other infraspecific categories) of *Potamon*. Brandis *et al.* [10,11] studied the first male gonopods (G1) of *Potamon* from different museum collections, mainly gathered by Pretzmann. This survey resulted in the description of two new species and elevation of three subspecies to species level, while many of Pretzmann's subspecies and other infraspecific taxa were synonymised. In the process, Brandis *et al.* [10] synonymised four subspecies/species with *Potamon persicum* Pretzmann, 1962: *Potamon (persicum) elbursi* Pretzmann, 1976, *Potamon (persicum) kermanshahi* Pretzmann, 1962, *Potamon (magnum) vangölium* Pretzmann, 1976, and

Potamon armenicum Pretzmann, 1962. More recently, A. Keikhosravi and C.D. Schubart (unpublished data) documented noticeable diversity within *P. persicum* based on molecular and morphological evidence, that is probably related to the diverse topography and climate within the species' range. We thus consider *P. persicum* to represent a species complex, to which we will refer to as the *Potamon persicum* complex, and the constituent units / species need to be redescribed.

With the present study, we provide sufficient genetic and morphological evidence that freshwater crab populations of *P. persicum* inhabiting streams in the Alborz Mountain Range are distinct and the corresponding taxon described by Pretzmann [3] requires revalidation and elevation to species rank, *i.e.* *Potamon elbursi* Pretzmann, 1962. Therefore, these specimens are here redescribed and the species revalidated as the eighth species of *Potamon* from Iran.

2. Experimental Procedures

A total number of seventy two individuals from seven populations were collected in 2011. Specimens were preserved in 70% ethanol. One walking leg from each

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