



Discovery of *Metacrangonyx* in inland groundwaters of Oman (Amphipoda: Gammaridea: Metacrangonyctidae)

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Abstract

A new species of metacrangonyctid amphipod crustacean is described from the Salalah coastal plain aquifer in south-western Oman. This is the easternmost record of the group, with representatives previously thought to span from Hispaniola in the Caribbean to the Sinai Peninsula in Egypt. *Metacrangonyx dhofarensis* sp. nov. is unique among metacrangonyctids in the display of a sexually dimorphic armature on pereopod IV. In addition, its hypertrophied coxal plate IV, reduced plates I-III, coxal plate VII lacking anteroventral lobe, and telson longer than broad are also distinctive. The same holds for the proximal segment of peduncle of antennule, provided with two hypertrophied robust setae on dorsolateral margin. The mandibles of the new species are devoid of palp, a feature shared only with *Metacrangonyx antennatus* Messouli, El Alami, Coineau & Boutin, 2008. The presence of metacrangonyctids on the coasts of the Arabian Peninsula is probably the result of a vicariant event rather than of an episode of trans-Arabian continental dispersal by a Middle East ancestor. This is in accord with the presumed marine origin of the family and with the existence of a shallow water marine continuum between the current south-western Omani coast and the peri-Mediterranean area –where most species of metacrangonyctids are located – until approximately 16 Ma.

Key words: Gammaridea, Metacrangonyctidae, stygofauna, subterranean waters, Arabian Peninsula

Introduction

Metacrangonyctids are a small group of exclusively stygobiont amphipods comprising 19 described species distributed in two genera, *Metacrangonyx* Chevreux, 1909, and the monotypic *Longipodacrangonyx maroccanus* Boutin & Messouli, 1988. They have a broad but punctuated distribution spanning Caribbean (Jaume & Christenson 2001), East Atlantic (Stock & Rondé-Broekhuizen 1986) and western Mediterranean islands (Chevreux 1909; Stoch 1997), but also continental territories such as the Dead Sea Depression and the Sinai Peninsula in the Middle East (Karaman 1989; Ruffo 1982), plus Morocco. In the latter country, with many species still pending description, they show a generalised distribution except on the Mediterranean coast (Balazuc & Ruffo 1953; Boutin & Messouli 1988a; 1988b; Karaman & Pesce 1980; Messouli *et al.* 1991; 2008; Oulbaz *et al.* 1998; Ruffo 1954).

Habitat preferences of metacrangonyctids are broad and cover anchialine caves and wells placed in coastal areas, hyporheic layers and associated alluvial aquifers in floodplains, and even springs and hypotelminorheic biotopes high up to 1,800 m a.s.l. in the High Atlas mountains. The family is considered to be of marine origin and its penetration into inland ground waters to be a passive, recurrent process mediated by past marine regressions (Boutin 1994).

Here we describe a new member of the family from two wells located in the south-west of the Sultanate of Oman (Arabic Peninsula) (Fig. 1). The material was originally collected by the late Prof. Jan H. Stock in the Salalah coastal plain (Dhofar Governorate) during a joint biological ground water survey by the Zoological Museum of the University of Amsterdam and the Oman Research Department of the Ministry of Regional Municipalities & Water Resources (Stock *et al.* 1997). In earlier years, several new stygobiont amphipods from this expedition throughout the north-east and south-east of the Sultanate have been described (Ruffo *et al.* 2003; Iannilli *et al.*