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Rediscovery of the troglobious paligrade *Eukoenia draco* (Peyerimhoff 1906) (Paligradi: Eukoeniidae), with notes on the adaptations to a cave-dwelling life

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Abstract

Several females, a male, and an immature of the species *Eukoenia draco* (Peyerimhoff, 1906) have been captured recently in Majorca, more than a century after its description. The male of this enigmatic species is described for the first time and the female is redescribed, with new data and figures. The level of adaptation of this species to a cave-dwelling life is discussed and compared with those of other troglotic species of paligrades. Comparison of *E. draco draco* with *E. draco zariquieyi* (Condé, 1951) reveals substantial differences that lead us to consider *E. zariquieyi* stat. nov. as a full species.

Key words: *Eukoenia draco*, *Eukoenia zariquieyi*, Majorca, troglobite, paligrades

Introduction

Paligradi (Arachnida) is one of the least studied orders of arthropods. Paligrades occur in many parts of the world, where they inhabit soil and litter; other species are restricted to caves and endogean ecosystems (Condé 1996; Harvey 2003).

Two species have been reported from the island of Majorca (Balearic Islands, Spain): *Eukoenia draco* (Peyerimhoff, 1906) from “Coves del Drac”, Manacor, and *E. mirabilis* (Grassi & Calandruccio, 1885) (reported as *Koenua cf. mirabilis*) from 1 immature specimen, Cape Formentor (Condé 1955). Peyerimhoff (1908) reported a specimen from Puig Maior, Torellas, Majorca, as ‘*Kaenua*’ without any further data about sex, instar or species.

Recently, new captures of paligrades have been accomplished on the island of Majorca. Two specimens were collected from Coves des Pirata in Majorca, which Vadell *et al.* (2006) reported as *Eukoenia* sp. One of these two specimens is studied and discussed in the present work. The other specimen was originally deposited by its collector in the Museu Balear de Ciències Naturals (MBCN); we requested it on loan, but unfortunately the specimen was lost in the mail. This specimen was photographed and is shown in Photo 27 in Vadell *et al.* (2006). A further 6 specimens have been collected in Cova des Pas de Vallgornera, Majorca, by the same collector, and are studied here.

These specimens belong to *Eukoenia draco draco*, which has thus been recaptured after more than a century since its description, and it is here reported for two new caves in Majorca. For the first time, the male of this species is described. We provide new data, drawings and a redescription for the male and female of this species. This allows a reinterpretation of the taxonomic status of *Eukoenia draco zariquieyi*, which Condé (1951) considered uncertain until more information on *E. draco draco* became available.

Material and methods

The specimens captured in Cova des Pas de Vallgornera (Llucmajor, Mallorca) were collected in the context of the studies on cave-dwelling arthropods conducted by Mateo Vadell, Museu Balear de Ciències Naturals (MBCN),