Zootaxa 3641 (4): 379–383
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3641.4.4
http://zoobank.org/urn:lsid:zoobank.org:pub:CF5AD4DC-A704-4CC8-9D86-D66C3CFBF8C0

A new species of the genus *Promacrolaelaps* (Acari: Laelapidae) associated with *Propomacrus bimucronatus* (Pallas) (Coleoptera: Scarabaeidae) in Iran

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Abstract

We describe a new species of mite from Iran - *Promacrolaelaps propomacrus* **sp. nov.** (Acari: Laelapidae). The new species was collected in association with the beetle *Propomacrus bimucronatus* (Pallas) (Coleoptera: Scarabaeidae: Euchirinae) in holes in the trunk of oak trees. The genus *Promacrolaelaps* is redescribed and distinguished from the related genus *Hypoaspis* Canestrini *sens. strict.*

Key words: *Promacrolaelaps,* Laelapidae, Coleoptera, *Propomacrus,* Iran

Introduction

This paper continues a series which has the objective of increasing our knowledge of the little-known Iranian fauna of Laelapidae, based on extensive recent collecting of insect-associated species. We have previously reported on several genera associated with scarabaeid beetles (Joharchi & Halliday, 2011). We now expand that study to include the genus *Promacrolaelaps* Costa.

The genus *Promacrolaelaps* was described for a single species associated with the scarab beetle *Propomacrus bimucronatus* (Pallas) in Israel. The genus is superficially similar in morphology to *Hypoaspis* Canestrini *sens. strict*. Species in both genera have long setae on the dorsal shield and on some leg segments, and these setae often appear wavy in slide-mounted specimens. Species in both genera are also similar in their biology, occurring in symbiotic relationships with Coleoptera, especially with the family Scarabaeidae. The discovery of the second species of *Promacrolaelaps* allows us to develop a clearer concept of the genus. Many authors have used the genus *Hypoaspis* in a very broad sense, to include species that would be better placed in other genera. Clearer definitions of *Hypoaspis* and related genera will allow a better analysis of the evolutionary and ecological relationships between these mites and their associated insects.

Materials and methods

Beetles of the family Scarabaeidae were collected from holes in the trunk of oak trees in oak forests in the south of Kamfiruz region, Fars, Iran, in 2010–2011. Beetles were placed individually in vials of 70% ethanol. Mites were removed from the beetles, cleared in Nesbitt's solution and mounted in Hoyer's medium. The nomenclature used for the dorsal idiosomal chaetotaxy is that of Lindquist & Evans (1965), the leg chaetotaxy is that of Evans (1963a), the palp chaetotaxy that of Evans (1963b), and names of other morphological features mostly follow Evans & Till (1979). Specimens are deposited in the Acarological Collection, Department of Plant Protection, Yazd Branch, Islamic Azad University (YIAU), in the Jalal Afshar Zoological Museum, College of Agriculture, University of Tehran, Iran (JAZM), and in the Australian National Insect Collection, CSIRO Ecosystem Sciences, Canberra ACT, Australia (ANIC).

Accepted by O. Seeman: 20 Mar. 2013; published: 26 Apr. 2013