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A new species and new records of *Gymnolaelaps* Berlese from Iran (Acari: Laelapidae), with a review of the species occurring in the Western Palaearctic Region

OMID JOHARCHI[1] & BRUCE HALLIDAY[2]

[1]*Department of Plant Protection, Yazd Branch, Islamic Azad University, Yazd, Iran.*
E-mail joharchi@iauyazd.ac.ir, j.omid2000@gmail.com
[2]*CSIRO Ecosystem Sciences, GPO Box 1700, Canberra ACT 2601, Australia. E-mail Bruce.Halliday@csiro.au*

Abstract

This paper reports on five species of mites of the genus *Gymnolaelaps* associated with ants and soil in Iran—*G. artavilensis* **sp. nov.** from *Pheidole pallidula*, *G. laevis* (Michael) and *G. myrmecophilus* (Berlese) from *Tetramorium caespitum*, *G. myrmophila* (Michael) from *Formica* sp., and *G. obscuroides* Costa from soil. *Gymnolaelaps australicus* Womersley and *G. hospes* (Berlese) have also been reported from Iran, in association with *P. pallidula*, but those records are incorrect. A key to the species of *Gymnolaelaps* occurring in the Western Palaearctic Region is presented. We review the related genus *Laelaspisella* Marais & Loots, and transfer *Gymnolaelaps kabitae* Bhattacharyya and *G. canestrinii* (Berlese) *sensu* Costa to *Laelaspisella*.

Key words: *Pseudoparasitus*, *Nidilaelaps*, *Laelaspisella*, *Laelaspis*, myrmecophile

Introduction

The present paper continues a series that has the objective of increasing our knowledge of the little-known Iranian fauna of the mite family Laelapidae, based on extensive recent collecting of free-living and insect-associated species. We have previously reported on five species of Laelapidae associated with ants (Joharchi *et al*., 2011), on several genera associated with scarabaeid beetles (Joharchi & Halliday, 2011; Joharchi *et al*., 2012a), and reviewed the Iranian species of the genus *Laelaspis* (Joharchi *et al*., 2012b, 2012c). We now expand the study to include further species in the genus *Gymnolaelaps* Berlese, 1916, mainly associated with ants.

Gymnolaelaps has often been treated as a subgenus of *Hypoaspis* Canestrini, 1884. Karg (1978) made *Gymnolaelaps* a subgenus of a broadly conceived genus *Pseudoparasitus*, along with three other subgenera, but we here consider it to be a separate genus, following Lindquist *et al*. (2009). The genus *Gymnolaelaps* is superficially similar in morphology to *Laelaspis* Berlese, 1903 and *Pseudoparasitus* Oudemans, 1902. This problem was briefly discussed in the previous paper (Joharchi *et al*., 2011), which attempted to distinguish between these genera.

The most recent taxonomic change to the genus was by Shaw (2012), who removed *G. annectans* Womersley, 1955 and made it the type species of the new genus *Nidilaelaps* Shaw, 2012. We now remove several more species that have been wrongly placed in *Gymnolaelaps*, and move them into *Laelaspisella* Marais & Loots and *Laelaspis* Berlese. As a result of these changes, the genus *Gymnolaelaps* can now be defined more precisely, in both morphological and ecological terms.

Species of *Gymnolaelaps* have been collected in many parts of the world, almost always from ants' nests. The genus includes approximately 35 described species (Hunter, 1967; Gu & Guo, 1997; Afifi & Abdel-Halim, 1998; Joharchi *et al*., 2011). Seven identified species of *Gymnolaelaps* have previously been reported from Iran—*G. australicus* Womersley, 1956, *G. hospes* (Berlese, 1923), *G. messor* Joharchi *et al*., 2011, *G. myrmecophilus* (Berlese, 1892), *G. myrmophila* (Michael, 1891), *G. prestoni* Joharchi *et al*., 2011, and *G. vitzthumi* Womersley,

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