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A new species of *Balaustium* von Heyden, 1826 (Acari: Actinotrichida, Erythraeidae) from Spain

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Abstract

An erythraeid mite, *Balaustium hernandezi* **sp. nov.**, was found in large numbers in a greenhouse in Spain. The larva, deutonymph and female of the new species are described based on material obtained during experimental rearing. Data and information on feeding habits, food spectrum, mode of reproduction and life cycle are provided. The potential role of the species as a biological control agent is discussed.

Key words: Parasitengona, *Balaustium*, new species, biological control, Spain

Introduction

In November 2008, mites representing *Balaustium* von Heyden, 1826 were collected in a greenhouse under monitoring by Biobest N. V. on a *Bacillus thuringiensis* treated sweet pepper crop (*Capsicum annuum*) in El Ejido, a Spanish town in the Province of Almeria. Two years later, the mites were observed on other crops in the same area, including greenhouse cucumber (*Cucurbita pepo*) and aubergine (*Solanum melongema*). The biocontrol company established a rearing culture and started to work on its taxonomy and biology in cooperation with specialists in terrestrial Parasitengona mites.

The genus *Balaustium* belongs to the subfamily Balaustiinae Grandjean, 1947 and together with five other subfamilies comprises the large and diverse family Erythraeidae (Beron 2008). Both active post-larval forms (deutonymphs and adults) and free-living larvae of *Balaustium* are predatory or pollinivorous (Newell 1963; Welbourn 1995). The latter constitutes an unusual feeding habit among erythraeid mites, at least as far as larvae are concerned. Southcott (1961) mentioned that his attempt to observe the larvae of Balaustiinae parasitizing insects failed, due to the fact that most of the subfamily members are free-living in their larval stage.

Balaustium has a worldwide distribution and comprises 41 nominal species (Beron 2008; Ebeling 1934; Meyer & Ryke 1959), of which 37 are known either from larvae or active post-larval forms. The exceptions are *B. zhangi* Saboori, 2001, *B. kendalli* Welbourn, 1991, *B. murorum* (Hermann, 1804) and *B. cristatum* Meyer et Ryke, 1959 (Saboori 2001; Welbourn & Jennings 1991; Mąkol 2010; Meyer & Ryke 1959) for which both larvae and active post-larval forms have been described. Cadogan and Laing (1977, 1981) did not associate their studies on the biology and life cycle of *B. putmani* Smiley, 1968, with the morphological characteristics of the larval instar. In the present paper, the description of the larva, deutonymph and adult of a new species of *Balaustium* is provided, supplemented with data on its biology and notes on other members in the genus.

Material and methods

The mites were transferred to the laboratory of Biobest, where a rearing culture was established. Specimens used for light microscope studies were cleared in a 1 : 1 mixture of Nesbitt (Walter & Krantz 2009) and lactophenol

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