



<http://dx.doi.org/10.11646/zootaxa.3721.5.4>

<http://zoobank.org/urn:lsid:zoobank.org:pub:9432129B-C405-4189-8214-83F20C7FD5AC>

Comparative description of larvae of the European species of *Distoleon* Banks: *D. annulatus* (Klug, 1834) and *D. tetragrammicus* (Fabricius, 1798) (Neuroptera, Myrmeleontidae)

FERNANDO ACEVEDO¹, VÍCTOR J. MONSERRAT¹ & DAVIDE BADANO²

¹Departamento de Zoología y Antropología Física, Facultad de Biología, Universidad Complutense, Jose Antonio Novais, 2, 28040 Madrid, Spain. E-mail: facevedoramos@gmail.com; artmad@bio.ucm.es

²Istituto per lo Studio degli Ecosistemi, Consiglio Nazionale delle Ricerche, Traversa La Crucca 3, Regione Balduina, 07100 Li Punti, Sassari, Italy. E-mail: davide.badano@gmail.com

Abstract

The third instar larva of *Distoleon annulatus* (Klug, 1834) is described for the first time and compared with the larva of the other known species of the genus in Europe: *D. tetragrammicus* (Fabricius, 1798). Diagnostic characters of the larvae of the genus *Distoleon*, as well as the interspecific differences, are provided and illustrated. Larvae of *Distoleon* appear to be morphologically conservative and they are mainly recognized by means of the pigmentation pattern.

Key words: antlions, Nemoleontini, larval morphology, Europe

Introduction

The family Myrmeleontidae, commonly known as antlions, includes about 2000 described species in the world (Stange 2004), representing the largest family of Neuropterida. The larvae of most species develop in sandy habitats, therefore the success of the family has been attributed to this specialization (Mansell 1996). The larvae of some antlions construct pitfall traps, but most of them do not dig these remarkable structures, thus they are difficult to find in the field, which explains the scarce number of adequately described larvae (Stange & Miller 1990; Stange 2004).

The genus *Distoleon* Banks, 1910 is included in the tribe Nemoleontini by Stange & Miller (1990) and Stange (2004), a group presenting as typical common character three parallel teeth on the mandible which gradually increase in length toward the apex (with some exceptions, such as the genus *Glenurus*) (Stange & Miller 1990; Stange 2004). The genus *Distoleon* comprises at least 120 species distributed all across the Old World in tropical and temperate areas (Aspöck *et al.* 1980, 2001; Stange 2004). The larvae of this genus do not construct pitfalls traps and they are ambush predators, awaiting passing prey below the surface of sandy soils. The biology and larval stages were known only for the European *D. tetragrammicus* (Fabricius, 1798) (Brauer 1854; Hagen 1873; Redtenbacher 1884; Steffan 1975; Gepp & Hölzel 1989; Satar *et al.* 2006; Gepp 2010; Krivokhatsky 2011; Badano 2013) and for few Far Eastern species (Stange *et al.* 2003; Stange 2004). No available information exists on the larvae of the other European species *D. annulatus* (Klug, 1834), because the only alleged existing account on the larva of this taxon (Willmann 1977) is erroneous and it actually refers to *Gymnocnemia variegata* (Schneider, 1845), as clearly demonstrated by Cesaroni *et al.* (2010). *D. annulatus* is an Afro-Iranian endemic faunal element (Aspöck *et al.* 1980, 2001) reaching southernmost Europe. On the contrary, *D. tetragrammicus* is widespread in the western Palaearctic and it is particularly common in southern Europe (Aspöck *et al.* 1980, 2001).

A comparative study of the third instar larvae of the two European *Distoleon* species was conducted in order to investigate the distinctive characters useful in the identification of the genus and species, besides illustrating them by means of light microscopy.