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Description of the final-instarlarva and pupa of *Acanthacorydalis orientalis* (McLachlan, 1899) (Megaloptera: Corydalidae) with some life history notes

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Abstract

The giant dobsonfly species *Acanthacorydalis orientalis* (McLachlan, 1899) is endemic to China and is well-known because of its remarkable large adult body size and enlarged male mandibles. However, the immature stages of this species, as well as all other *Acanthacorydalis* species are poorly known. In this paper we describe the last-instar larvae and pupae of *A. orientalis* for the first time. Aspects of the bionomics of this species is also given.

Key words: Corydalinae, *Acanthacorydalis orientalis*, larva, pupa, bionomics

Introduction

The genus *Acanthacorydalis* van der Weele, 1907 (Megaloptera: Corydalidae: Corydalinae) is one of the most remarkable dobsonflies in the world by its large body size and enlarged male mandibles. *Acanthacorydalis* is endemic to Asia and mainly distributed in the Oriental realm, and there are eight species currently recorded from China, India, and Vietnam (Yang & Liu 2010). China has a rich fauna of *Acanthacorydalis* with six species distributed from the southern and southwestern to the northern China (Yang & Liu 2010). According to the author's investigation and unpublished data, the larvae of *Acanthacorydalis* are often used as traditional food and medicine in southwestern China, especially in Sichuan Province.

Among the *Acanthacorydalis* species, *Acanthacorydalis orientalis* (McLachlan, 1899) is the most well known species in China because it is widely distributed, frequently encountered in the field, and impressive by its remarkable appearance. After the original description, *A. orientalis* was redescribed in detail based on a large number of adult specimens by Liu *et al.* (2005) and Yang & Liu (2010). However, the immature stages of *A. orientalis*, as well as all the other *Acanthacorydalis* species are largely unknown and have never been formally described.

The taxonomy of megalopteran larvae are far behind the studies on the adults. Nevertheless, most extant genera of Megaloptera have their larvae described for at least one species (see Azevêdo & Hamada 2006, 2007: description of *Corydalus*; Contreras-Ramos & Harris 1998: description of *Platyneuromus*; Evans 1972: description of *Dysmicohermes*, *Neohermes*, and *Orohermes*; Flint 1973: description of *Protosialis*; Cuyler 1958, 1965: description of *Chauliodes* and *Nigronia*; Hayashi 2005: description of *Protohermes*, *Neochauliodes*, *Parachauliodes*, *Nipponosialis*, and *Sialis*; Liu *et al.* 2011, 2013: description of *Platychnauliodes* and *Taeniochauliodes*; Paulian 1951: description of *Madachauliodes*; Penny & Flint 1982: description of *Chloronia*; Price *et al.* 2012: description of *Leptosialis*; Theischinger 2000: description of *Apochnauliodes*, *Archichauliodes*, *Protochauliodes*, *Austrosialis*, and *Stenosialis*) except for *Acanthacorydalis*, *Anachauliodes*, *Ctenochauliodes*, *Haplosialis*, *Neoneuromus*, *Nevromus*, *Neurhermes*, *Indosialis*, and *Sinochauliodes*.

In this paper, we describe the last-instar larvae and pupae of *A. orientalis* for the first time, representing the first description of the immature stage of *Acanthacorydalis*, and provide information on some bionomic aspects of this species.