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Contributions to the knowledge of dobsonflies of Puebla State, Mexico (Megaloptera: Corydalidae: *Corydalus*)

Hugo A Álvarez
Departamento de Biología, Instituto de Investigación en Ciencias-Naturales y Humanidades A.C. Justo Sierra 29-1, Maestro Federal. C.P. 72080. Puebla, México. E-mail: hugoalvarez01@gmail.com

Abstract

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Notes on life span of adults and hatching periods of dobsonflies *Corydalus magnus* and *Corydalus bidenticulatus* of Puebla State, Mexico, are presented. *C. bidenticulatus* males lived for a period of five days and females lived for a period of nine days; the only collected *C. magnus* female, lived for a period of 12 days. Hatching period in *C. magnus* was of 33 days and in *C. bidenticulatus* it was of 24 days. These results show that developmental time could be related to body size in each species.

Additional key words: Aquatic insects, mating behavior.

Resumen

Álvarez HA. 2014. Contribución al conocimiento de dobsonflies del Estado de Puebla, México. Entomotropica 29(2): 125-127.

Se presentan notas sobre el período de vida de los adultos y períodos de incubación de *Corydalus magnus* y *Corydalus bidenticulatus* del estado de Puebla, México. Los machos de *C. bidenticulatus* vivieron por un período de cinco días y las hembras vivieron nueve días; la única hembra colectada de *C. magnus* vivió por un período de 12 días. El período de incubación en *C. magnus* fue de 33 días, y para *C. bidenticulatus* fue de 24 días. Estos resultados muestran que el tiempo de desarrollo pudiera estar relacionado con el tamaño del cuerpo en cada especie.

Palabras clave adicionales: Comportamiento reproductivo, insectos acuáticos.

Introduction

There are few studies of reproductive biology and life history of dobsonfly genus *Corydalus* Latreille 1802. Adults can be reddish to grayish brown, sometimes pallid brown or almost entirely black with white spots in wings. In most species of this genus males present elongated mandibles with no dentition (Alvarez 2012, Contreras-Ramos 1998). Thirty four species of the exclusive American genus *Corydalus* are recognized being the most speciose among the New World dobsonflies (Contreras-Ramos 1999a, 2011). However, the most comprehensive literature on the biology of genus *Corydalus* is based on one species only, the eastern dobsonfly *Corydalus cornutus* (L.). In this study I present notes on the life span of adults and hatching

periods of *Corydalus magnus* Contreras-Ramos 1998 and the Mexican dobsonfly *Corydalus bidenticulatus* Contreras-Ramos 1998 (Figure 1).

Methods

Specimens of *C. magnus* were captured in Apulco Zacapoaxtla, in the Sierra Norte in northern Puebla State, and specimens of *C. bidenticulatus* were captured in Rancho El Salado Jolalpan, in the Sierra Mixteca in southwestern Puebla State, during the rainy season of 2010. Nocturnal black-light traps and white-light traps were set, following the methodology of Contreras-Ramos (1999b), near the riverside between 21:00 hrs and 23:00 hrs. We also collected specimens at street lights of towns, using entomological nets. All specimens of *C. bidenticulatus* and *C. magnus* were kept alive in terrariums with wet peat-moss and logs to record life span and promote the mating behavior. In order to obtain egg-masses, females were placed in individual plastic containers. After oviposition time span to hatching was recorded, and the females were returned to the terrariums. The specimens were identified with the key to Mexican Megaloptera (Contreras-Ramos 1997).

Results and Discussion

In terrariums, 7 males of *C. bidenticulatus* lived for a period of 5 days and 29 females of *C. bidenticulatus* lived for a period of 9 days; the only *C. magnus* female, lived for a period of 12 days. All *C. bidenticulatus* females produced one egg-mass each, except for one female, which produced two; the only *C. magnus* female produced one egg-mass. Hatching period in *C. magnus* was of 33 days from oviposition to hatching, and in *C. bidenticulatus* it was of 24 days.

The sister species *C. bidenticulatus* and *C. magnus* are closely related to *C. cornutus* (Contreras-Ramos 1998, 2011); adult life span in these

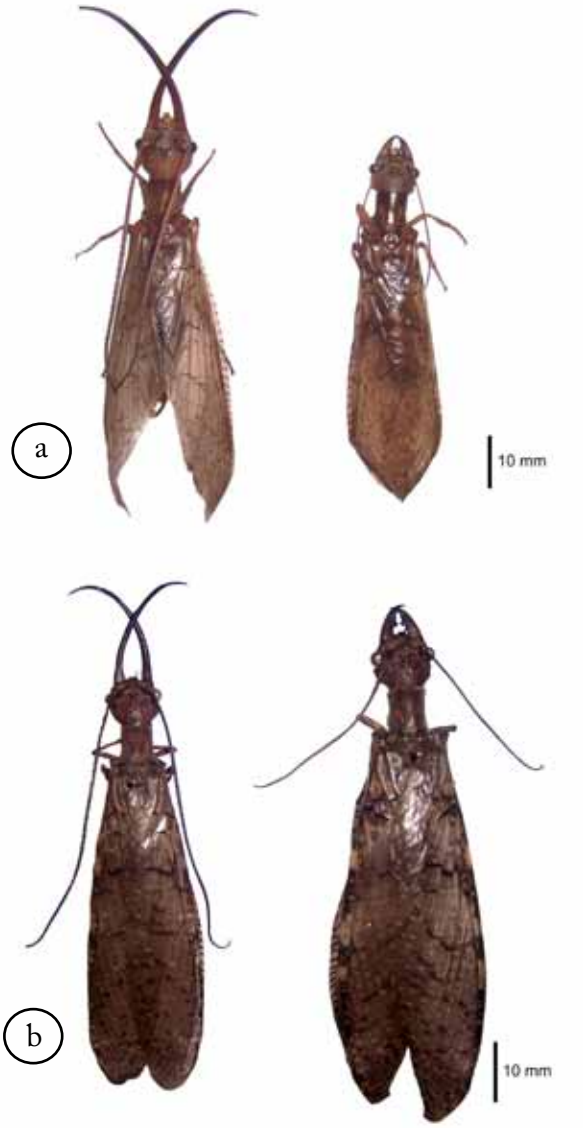

Figure 1. Habitus of Dobsonflies genus *Corydalus*, male (left) and female (right). *C. bidenticulatus* (a), *C. magnus* (b).

species are similar and consistent with other reports of adult life span of dobsonflies and other Megaloptera. Males lived approximately 50 % less than females (Contreras-Ramos 1998, Elliot 1996), probably because males have a higher energy cost locating females, or females need more time to produce eggs; however, this has not been investigated. In spite of their phylogenetic proximity, the species in this study

present different length of hatching periods; *C. magnus* presents 33 days and *C. bidenticulatus* presents 24 days. Moreover, for *C. cornutus* Brown and Fitzpatrick (1978) reported a period of 13 to 18 days. There have been reports of other groups of small-sized Megaloptera, that have short hatching periods, as for example *Platyneuromus soror* (Hagen) (Contreras-Ramos 1999c), and the British *Sialis* (Elliot 1996). The results in this study raise new questions for future research on Megaloptera fauna. For example, it is possible that developmental time could be related to body size in each species, comparison of life span, hatching periods and sexual size dimorphism between large and small species in different genera, should be investigated more thoroughly.

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