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The larva of *Aphylla protracta* (Hagen, 1859), and a redescription of the larva of *A. angustifolia* Garrison, 1986 (Odonata: Gomphidae)

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Abstract

The larva of *Aphylla protracta* is described and figured. It is characterized by 3rd antennomere subcylindrical, flattened on ventral surface, 4.2 times longer than its widest part. Abdomen with dorsal protuberances well developed on S2–4, reduced on S5, vestigial or absent on S6–9; lateral spines lacking entirely, tergites 5–8 with minute reddish setae, tergite 9 with abundant, small, reddish setae on most of its surface and the whole posterior margin; S10 cylindrical, very long, five times longer than its base, much longer than S6+7+8+9. Also, a redescription and figures of *A. angustifolia* are provided, and a comparison of both species is made. Mainly differences between both species were found in abdominal dorsal protuberances and the presence/absence of small setae on abdominal tergites.

Key words: Anisoptera, larval description, Veracruz, Michoacán, Mexico

Resumen

Se describe e ilustra la larva de *Aphylla protracta*. Esta se caracteriza por tener el 3er antenómero subcilíndrico, aplanado ventralmente, 4.2 veces más largo que su mayor anchura. Abdomen con protuberancias dorsales bien desarrolladas en los S2–4, reducidas en S5 y vestigiales o ausentes en S6–9; sin espinas laterales, terguitos 5–8 con diminutas sedas rojizas, terguito 9 con sedas rojizas pequeñas y abundantes en la mayor parte de su superficie y en la totalidad del margen posterior; S10 cilíndrico, muy largo, cinco veces más largo que su anchura basal, más largo que S6+7+8+9. Asimismo, se proporciona la redescipción de *A. angustifolia*, y se hace la comparación de las dos especies. Las principales diferencias entre ambas especies se encontraron en las protuberancias dorsales del abdomen y en la presencia/ausencia de pequeñas sedas en los terguitos abdominales.

Palabras clave: Anisoptera, descripción larval, Veracruz, Michoacán, México

Introduction

The New World genus *Aphylla* comprises 24 species known to date (Garrison et al. 2006), most of them inhabiting South America. The larvae of only seven species have been described, six of them curiously by supposition and under other genera or species. According to Garrison (1986), the genus *Aphylla* is represented in Mexico by two species: *A. angustifolia* Garrison and *A. protracta* (Hagen). However, Novelo-Gutiérrez (2014) recently found a specimen of *A. tenuis* Selys in the state of Chiapas, raising to three the number of species of *Aphylla* for Mexico. Needham (1940) described, by supposition, the apparently penultimate instar larva of *A. angustifolia* as *A. protracta*. In this paper, a detailed description and illustrations of the true larva of *A. protracta* are provided, as well as a redescription of the larva of *A. angustifolia*, both from specimens reared to emergence.

Methods

Larvae were collected with a D-frame aquatic net and maintained alive until emergence in the laboratory; those

Discussion

Morphologically, the larvae of *Aphylla protracta* and *A. angustifolia* are very similar, although they can be separated under close inspection by the following features (in parentheses those of *A. protracta*): Third antennomere 5 times longer than its widest part (4.2 times); abdominal dorsal protuberances reduced on S6–9 (vestigial or absent on S6–9); abdominal tergites 5–9 mostly lacking minute reddish setae including posterior margins (tergites 5–8 with some minute reddish setae, mainly on middle third of posterior margins, tergite 9 with abundant, small, reddish setae on most of its surface and entire posterior margin). Moreover, F-0 larvae of *A. protracta* appear larger in stature, with 36.8–43.4 mm of total length (38.2–39 mm in *A. angustifolia*). On the other hand, Needham et al. (2014, p. 128), in their key to *Aphylla* larvae, stated the presence of “three teeth before end hook” as a feature for the separation of *A. angustifolia*. However, I found this feature variable as in *A. protracta* (3–4 teeth), and even more, this variation was observed in a single individual (one side with three teeth the other one with four).

Garrison (1986) mentioned that both species are sympatric, at least, in Lago de Catemaco, Veracruz State, Mexico. I found the two species at Laguna Miradores, Veracruz, which represents the second record of sympatry for both species.

Most of the exuviae of *A. protracta* were found in a vertical position in tall grasses and stems of *Eichhornia crassipes* (Mart.). One exuvia of *A. angustifolia* was collected vertically on a grass stem, another quite horizontal on the muddy shore of a lagoon (Fig. 11); another larva collected in the same lagoon emerged on a cobble and molted horizontally in the laboratory.

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