



<http://dx.doi.org/10.11646/zootaxa.3811.1.6>

<http://zoobank.org/urn:lsid:zoobank.org:pub:E4DBCC2F-F66B-4977-882D-E494AE68639A>

A new species of *Corydalus* Latreille, 1802 (Megaloptera, Corydalidae) and first record of *C. clavijoi* Contreras-Ramos, 2002 and *C. nubilus* Erichson, 1848 from Colombia

ADRIAN ARDILA-CAMACHO

Universidad Distrital Francisco José de Caldas, Laboratorio de Entomología, Bogotá – Colombia.

E-mail: aardilac88@mail.com

Abstract

A new species of the dobsonfly genus *Corydalus* from the Colombian Andean region is described and illustrated. This species is unique in having the longest tenth gonostyli of all known species of the genus and is apparently closely related to members of the *C. nubilus* group. In addition, *C. clavijoi* Contreras-Ramos and *C. nubilus* Erichson are recorded for the first time from Colombia and new Colombian locality records are provided for other known species. A key to Colombian species of *Corydalus* is included.

Key words: taxonomy, *Corydalus*, new records, new species, Neotropics

Introduction

The genus *Corydalus* Latreille, 1802 is the most diverse group of megalopterans in the New World including 35 species distributed from southeastern Canada to Argentina with exception of the Greater and Lesser Antilles (Contreras-Ramos 1998; Contreras-Ramos 2002; Contreras-Ramos & von der Dunk 2010). Upon review of the genus, eight species are reported from Colombia: *C. affinis* Burmeister, 1839, *C. armatus* Hagen, 1861, *C. batesii* MacLachlan, 1868, *C. clauseni* Contreras-Ramos, 1998, *C. colombianus* Contreras-Ramos, 1998, *C. flavicornis* Stütz, 1914, *C. peruvianus* Davis, 1903, and *C. tessellatus* Stütz, 1914, the last being a doubtful record because the locality data is questioned (Contreras-Ramos 1998). Members of this group are medium to large (male forewing length 33.5–85.3 mm; Contreras-Ramos 2002) and show great intraspecific variation (Glorioso 1981). Usually males are sexually dimorphic having long and robust mandibles with reduced dentition, although, in certain species from South America are short and similar to those of females (Contreras-Ramos 1998). Antennae are generally filiform in both sexes, in some species may be dimorphic, being thicker and longer in the males; the maxillary and labial palpi have four and three segments, respectively; although, in two primitive species there exists a partial subdivision in the last segments of both (Glorioso 1981; Contreras-Ramos 1998). The wings are large, semitranslucent, with cryptic pigmentation and complex venation.

The immature stages of *Corydalus* are distinguished from other Neotropical genera of Corydalinae such as *Chloronia* Banks by having head and thoracic nota usually patterned (Fig. 1), in *Chloronia* only two pairs of lateral spots on mesonotum are generally observable. Moreover, it is separated from *Platyneuromus* Weele by having erect secondary macrosetae on abdominal terga dark, often conspicuously striated and apparently closed at the tip, in *Platyneuromus* are usually clear and smooth, tubular or widened at the apex. Many *Corydalus* species have the submental projections short and blunt, generally not surpassing the anterior edge of the mental plate (Contreras-Ramos & Harris 1998). Larvae occur in lotic ecosystems, feeding on a wide variety of invertebrates or even as scavengers (Contreras-Ramos 1998; Azevêdo & Hamada 2006). Larvae are usually found under rocks, logs or submerged decaying vegetation, passing through 11 instars before of the pupation. Adults are mainly crepuscular or nocturnal and are often collected at lights (Contreras-Ramos 1999).

In view of the lack of a regional study of the Corydalidae of Colombia, the objective of the present study is to

- Posteromedian projection of ninth sternite large (nearly as long as sternum); ninth gonostylus unguiform with a conspicuous apical claw. 4
- 4. Posteromedian projection of ninth sternite thumblike; tenth gonostyli short, subequal in width and length, subquadrate (Contreras-Ramos 1998, Fig. 31B, C). *C. tessellatus* Stitz
- Posteromedian projection of ninth sternite acuminate; tenth gonostyli extremely long, digitiform, acute at apex (Figs. 3, 4) *C. muzoensis* sp. n.
- 5. Ninth gonostylus elongate, subcylindrical or flattened. 6
- Ninth gonostylus subclavate or subglobose 7
- 6. Male mandibles usually elongate with reduced dentition; ninth gonostylus and ectoproct subequal in shape and length, absence of apical claw in the ninth gonostylus, apices of the tenth gonostyli slightly convergent (Contreras-Ramos 1998, Fig. 2B) *C. affinis* Burmeister
- Male mandibles elongate with discrete dentition and conspicuous basal protrusion; ninth gonostylus longer than the ectoproct, subcylindrical with small apical claw; ectoproct with apex narrow; tenth gonostyli divergent (Contreras-Ramos 1998, Fig. 11B). *C. colombianus* Contreras-Ramos
- 7. Forewing with contrasting pigmentation pattern (Fig. 2c); ectoproct apex without conspicuous apical curvature although it may be slightly widened (Contreras-Ramos 1998, Fig. 7B). *C. batesii* McLachlan
- Forewing without contrasting pigmentation pattern; ectoproct with apical curvature well developed (Contreras-Ramos 1998, Fig. 4B) 8
- 8. Antenna dark brown to black; forewing pale to dark golden-brown; ninth gonostylus distinctively subglobose; area adjacent to the tenth gonocoxite with long setae (Contreras-Ramos 1998, 10B) *C. clauseni* Contreras-Ramos
- Antenna pale yellow or greenish yellow to pale brown or dark brown; forewing pale yellowish brown to dark greenish or grayish brown; ninth gonostylus subclavate (Contreras-Ramos 1998, Figs. 4A, B); area adjacent to the tenth gonocoxite with short setae. 9
- 9. Forewing basally clear, with distal half, area surrounding R₁ cell, and area adjacent to forking of MP₁₊₂ and MP₃₊₄ dark (Fig. 2e); tenth gonocoxite with moderate anteromedian projection (Contreras-Ramos 1998, Figs. 17C, D) *C. flavicornis* Stitz
- Forewing more or less uniformly colored (Figs. 1b, f); tenth gonocoxite without anteromedian projection (Contreras-Ramos 1998, Figs. 4C, 29C) 10
- 10. Antenna (including scape and pedicel) pale brown or pale greenish brown to dark brown, apically infusate; tenth gonostyli subequal in width and length, less than half length of the tenth gonostylus surpassing the posterior edge of the tenth gonocoxite; pregenital sacs well developed (Contreras-Ramos 1998, Figs. 4C, D, F) *C. armatus* Hagen
- Antenna (including the scape and pedicel) yellow to yellow-green, distal third infusate; tenth gonostyli typically about twice as long as wide, about half of gonostylus surpassing the posterior edge of the tenth gonocoxite; pregenital sacs apparently absent (Contreras-Ramos 1998, Figs. 29B, C, D). *C. peruvianus* Davis

Acknowledgments

I want to express special gratitude to Carlos E. Sarmiento, Erika Valentina Vergara and Francisco Serna of the Universidad Nacional de Colombia, Santiago Madriñán and Oscar Mahecha of the Universidad de Los Andes, Giovany Fagua and Dimitri Forero of the Universidad Javeriana, Alexander Garcia of the Universidad Distrital “Francisco José de Caldas”, Nancy Carrejo of the Universidad del Valle and Claudia Alejandra Medina of the Instituto Humboldt from Villa de Leyva, for their kindness in allowing me to review the specimens of the genus *Corydalus* in their respective collections. Special thanks also to Atilano Contreras-Ramos of the Universidad Nacional Autónoma de México for his steady support and for corroborating the identity of the new species, Efraín Henao of the Universidad Nacional de Colombia and Jorge Ari Noriega of the Universidad de Los Andes for their collaboration and critical review of the manuscript.

References

- Aspöck, U. & Aspöck, H. (2008) Phylogenetic relevance of the genital sclerites of Neuropterida (Insecta: Holometabola). *Systematic Entomology*, 33, 97–127.
<http://dx.doi.org/10.1111/j.1365-3113.2007.00396.x>
- Azevêdo, C.A.S. & Hamada, N. (2006) Description of last-instar larva of *Corydalus nubilus* Erichson, 1848 (Megaloptera: Corydalidae) and notes on its bionomics. *Zootaxa*, 1177, 57–68.
- Contreras-Ramos, A. (1998) *Thomas Say Publications in Entomology: Monographs. Systematics of the Dobsonfly Genus Corydalus (Megaloptera: Corydalidae)*. Entomological Society of America, 360 pp.
- Contreras-Ramos, A. (1999) Métodos para estudios en Sistemática de Megaloptera (Insecta: Neuropterida) con base en morfología. *Dugesiana*, 6, 1–15.
- Contreras-Ramos, A. (2002) Six new species of dobsonflies from Venezuela (Megaloptera: Corydalidae: Corydalinae). *Aquatic*

Insects, 24, 55–75.

<http://dx.doi.org/10.1076/aqin.24.1.55.4909>

Contreras-Ramos, A. (2011) Phylogenetic review of dobsonflies of the subfamily Corydalinae and the genus *Corydalis* Latreille (Megaloptera: Corydalidae). *Zootaxa*, 2862, 1–38.

Contreras-Ramos, A. & Harris, S.C. (1998) The immature stages of *Platyneuromus* (Corydalidae), with a key to the genera of larval Megaloptera of Mexico. *Journal of the North American Benthological Society*, 17, 489–517.

<http://dx.doi.org/10.2307/1468368>

Contreras-Ramos, A. & von der Dunk, K. (2010) A new species of *Corydalis* Latreille from Venezuela (Megaloptera, Corydalidae). *ZooKeys*, 67, 11–19.

<http://dx.doi.org/10.3897/zookeys.67.702>

Cover, M.R. & Resh, V.H. (2008) Global diversity of dobsonflies, fishflies, and alderflies (Megaloptera; Insecta) and spongillafly, nevrorthids, and osmylids (Neuroptera; Insecta) in freshwater. *Hydrobiologia*, 595, 409–417.

<http://dx.doi.org/10.1007/s10750-007-9035-z>

Glorioso, M.J. (1981) Systematics of the dobsonfly subfamily Corydalinae (Megaloptera: Corydalidae). *Systematic Entomology*, 6, 253–290.

<http://dx.doi.org/10.1111/j.1365-3113.1981.tb00440.x>

Wootton, R.J. (1979) Function, homology and terminology in insect wings. *Systematic Entomology*, 4, 81–93.

<http://dx.doi.org/10.1111/j.1365-3113.1979.tb00614.x>