



Phylogenetic review of dobsonflies of the subfamily Corydalinae and the genus *Corydalus* Latreille (Megaloptera: Corydalidae)

ATILANO CONTRERAS-RAMOS

Instituto de Biología, Departamento de Zoología, Universidad Nacional Autónoma de México, México, D.F., Mexico.

E-mail: acontreras@ibiologia.unam.mx

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Abstract

Phylogenetic relationships of the World genera of dobsonflies, subfamily Corydalinae, are reappraised, as well as those of species of the New World genus *Corydalus*, both on the basis of morphological characters. Previous phylogenetic hypotheses of dobsonfly genera by Glorioso, Penny, and Contreras-Ramos, respectively, are re-evaluated, and a fourth revised phylogeny is presented. Ninety-five characters of 10 taxa, one outgroup and nine ingroup taxa, were used in the updated analysis of Corydalinae. It recognizes four lineages, with *Chloroniella* as sister to the other three, of which the *Nevromus* lineage (*Acanthacorydalis* + *Nevromus* + *Neoneuromus*) is sister to the *Corydalus* lineage (*Chloronia* + *Platyneuromus* + *Corydalus*), and both as a group are sister to the *Protohermes* lineage (*Protohermes* + *Neurhermes*). The main changes in the updated Corydalinae phylogeny are the placement of *Chloroniella* as sister to all other dobsonfly genera, and the placement of *Acanthacorydalis* as a member of the *Nevromus* lineage. Previously, Penny had proposed *Chloroniella* as sister to all dobsonfly genera except the *Protohermes* lineage, and both Glorioso and Penny, respectively, placed *Acanthacorydalis* as sister to the *Corydalus* lineage. About *Corydalus*, its species phylogeny is herein updated, as four species from Venezuela were added to the genus after its taxonomic revision. For the new phylogeny, 120 characters of 35 taxa, two outgroup and 33 ingroup taxa, were used. It produced a strict consensus of two trees, better resolved than the previous one. The *C. arpi* species group is moved to sister of all other species except the *C. cephalotes* species pair, while the *C. batesii* species group is conserved, being the only unresolved group within the phylogeny. Two of the species added, *C. hayashii* and *C. mayri*, belong to the well defined *C. arpi* species group, of Guayana Shield affinity, whereas *C. crossi* is sister to a large and widespread group beginning with the *C. nubilus* species group, and *C. clavijoi* is sister to *C. tessellatus* within the latter group.

Key words: Phylogeny, dobsonfly, Corydalinae, *Corydalus*, classification