

PHYLOGENY AND GENERIC CLASSIFICATION OF THE SUBFAMILY LYCOPERDININAE WITH A RE-ANALYSIS OF THE FAMILY ENDOMYCHIDAE (COLEOPTERA: CUCUJOIDEA)

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Abstract.— A cladistic analysis of the family Endomychidae based on adult and larval characters to resolve the relationships between its subfamilies is presented. Monophyly of the Endomychidae and all subfamilies was tested, and the family and all currently recognized subfamilies including the largest subfamily, Lycoperdininae are hypothesized to be monophyletic groups. Cladistic analysis was performed separately on adult and on the combined character sets. The adult data matrix was coded for 69 characters for 65 ingroup taxa (38 genera of Lycoperdininae and 27 genera from all remaining endomychid subfamilies, representing Eupsilobiinae, Danascelinae, Mycetaeinae, Leiestinae, Merophysinae, Anamorphinae, Pleganophorinae, Xenomycetinae, Endomychinae, Stenotarsinae and Epipocinae), and 4 outgroup taxa representing 3 families of Cucujoidea: Coccinellidae (*Sticholotis* and *Rhyzobius*), Corylophidae (*Holopsis*) and Cerylonidae (*Hypodacnella*). Combined matrix was prepared in two variants; first included all 69 taxa and 96 morphological, adult plus larval characters, and the second variant included 33 taxa (only those with known larvae) coded for 96 morphological, adult and larval characters. The shortest, most parsimonious solutions were investigated using NONA-WinClada and Hennig86. The monophyly of the largest subfamily Lycoperdininae was supported and based on the results of the analyses five generic groups may be recognized: *Daulis*-group, *Amphix*-group, *Amphisternus*-group, *Eumorphus*-group – monophyletic and *Lycoperdina*-group not supported by apomorphic characters. All 38 genera of Lycoperdininae are described, diagnosed and included in an identification key; the larvae of 10 genera are also described. The first larval descriptions are given for: *Amphisternus verrucosus* Gorham, *Acinaces* sp., *Amphix vestitus cinctus* (Fabricius), *Encymon immaculatus* (Montruzier). *Gerstaeckerus* nom. nov. is proposed here for *Engonius* Gerstaecker, 1857 (nec *Engonius* Perty, 1833). Type species are designated for the following genera: *Dioedes* Gerstaecker, 1857 (*Dioedes columbinus* Gerstaecker, 1857), *Eumorphoides* Guérin, 1858 (*Eumorphus tetraspilotus* Hope, 1832), *Enaisimus* Guérin, 1858 (*Eumorphus quadrinotatus* Gerstaecker, 1857), *Haplomorphus* Guérin, 1858 (*Eumorphus bipunctatus* Perty, 1831), *Heterandrus* Guérin, 1858 (*Eumorphus confusus* Guérin, 1857), *Rhachidophorus* Guérin, 1857 (*Cacodaemon hopei* Thomson, 1857 (= *Eumorphus hopei* Guérin, 1857)), *Olenus* Thomson, 1857 (*Trycherus senegalensis* Gerstaecker, 1857). *Daulis* Erichson and *Daulotypus* Lea, treated in the recent classification of Endomychidae (Tomaszewska 2000) as genera *incertae sedis*, are confirmed here to belong in Lycoperdininae. The following new synonym is proposed: *Evolocera championi* Sharp, 1891 (= *Adamia mexicana* Tomaszewska, 2000), consequently *Evolocera* Sharp, previously classified in Merophysinae, is moved here to Eupsilobiinae. The lectotype of *Evolocera championi* is designated here. The history of classification and the known aspects of the biology of the subfamily are provided.

The genus *Polymus* Mulsant, 1846 is treated here as *incertae sedis*, due to the unavailability of material for study.



Key words.— Coleoptera, Cucujoidea, Endomychidae, Lycoperdininae, genera, adults, larvae, morphology, phylogeny.