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Genus-level revision of the family Phalacridae (Coleoptera: Cucujoidea)

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Abstract

A pre-phylogenetic revision of the family Phalacridae at the genus level is presented. Twenty-eight new generic synonymies are established as follows: *Acylomus* Sharp 1888 (=*Liophalacrus* Sharp 1888, **syn. nov.**; *Ganyrus* Guillebeau 1894, **syn. nov.**; *Podocesus* Guillebeau 1894, **syn. nov.**; *Tinodemus* Guillebeau 1894, **syn. nov.**; *Ledorus* Guillebeau 1895, **syn. nov.**; *Astenulus* Guillebeau 1896, **syn. nov.**; *Afronyrus* Švec 2006, **syn. nov.**), *Apallodes* Reitter 1873 (=*Litolibrus* Sharp 1889, **syn. nov.**; *Sphaeropsis* Guillebeau 1893, **syn. nov.**; *Gyromorphus* Guillebeau 1894, **syn. nov.**), *Augasmus* Motschulsky 1858 (=*Megischius* Guillebeau 1896, **syn. nov.**; *Nematolibrus* Sahlberg 1913, **syn. nov.**), *Entomocnemus* Guillebeau 1894 (=*Stilbomimus* Champion 1924, **syn. nov.**), *Grouvelleus* Guillebeau 1892 (=*Ochrolitoides* Champion 1924, **syn. nov.**; *Litotarsus* Champion 1925, **syn. nov.**), *Litochrus* Erichson 1845 (=*Merobrachys* Guillebeau 1895, **syn. nov.**), *Litostilbus* Guillebeau 1894 (=*Pseudolitochrus* Liubarsky 1993, **syn. nov.**), *Ochrolitus* Sharp 1889 (=*Gorginus* Guillebeau 1894, **syn. nov.**), *Olibroporus* Casey 1890 (=*Parasemus* Guillebeau 1894, **syn. nov.**), *Olibrosoma* Tournier 1889 (=*Lichrotus* Lyubarsky 1993, **syn. nov.**), *Phaenocephalus* Wollaston 1873 (=*Phalacratomus* Scott 1922, **syn. nov.**; *Heterostilbus* Champion 1924, **syn. nov.**), *Phalacrinus* Blackburn 1891 (=*Sphaerostilbus* Champion 1924, **syn. nov.**), *Pseudolibrus* Flach 1889 (=*Biophytus* Guillebeau 1894, **syn. nov.**; *Polyaloxus* Guillebeau 1894, **syn. nov.**), *Pycinus* Guillebeau 1893 (=*Ochrodemus* Guillebeau 1893, **syn. nov.**; *Radinus* Guillebeau 1893, **syn. nov.**; *Euphalacrus* Champion 1925, **syn. nov.**). Ten new genera and seven new species are described: *Antennogasmus*, **gen. nov.** (type species: *A. cordatus*, **sp. nov.**), *Austroporus*, **gen. nov.** (type species: *A. victoriensis* (Blackburn)), *Malagasmus* Gimmel, **gen. nov.** (type species: *M. thalesi*, **sp. nov.**), *Malagophytus*, **gen. nov.** (type species: *M. steineri*, **sp. nov.**), *Neolitochrus*, **gen. nov.** (type species: *N. pulchellus* (LeConte)), *Paracylomus*, **gen. nov.** (type species: *P. asiaticus* (Champion)), *Platyphalacrus*, **gen. nov.** (type species: *P. lawrencei*, **sp. nov.**), *Ranomafanacrinus*, **gen. nov.** (type species: *R. nigrinus*, **sp. nov.**), *Steinerlitrus*, **gen. nov.** (type species: *S. warreni*, **sp. nov.**), *Sveculus*, **gen. nov.** (type species: *S. lewisi*, **sp. nov.**). Generic reassignments resulted in 194 **new combinations**. Nine **new names** have been established for junior primary and secondary homonyms: *Acylomus bicoloratus* **nom. nov.** for *Tinodemus bicolor* Švec 2002; *Acylomus lyubarskyi* **nom. nov.** for *Olibrus capriviensis* Lyubarsky 1998; *Acylomus sveci* **nom. nov.** for *Tinodemus reticulatus* Švec 2002; *Acylomus orientalis* **nom. nov.** for *Stilbus similis* Švec 1992; *Acylomus zdeneki* **nom. nov.** for *Afronyrus snizeki* Švec 2006; *Apallodes championi* **nom. nov.** for *Litolibrus ocellatus* Champion 1925; *Olibrus peringueyi* **nom. nov.** for *Olibrus consanguineus* Péringuey 1892; *Augasmus exquisitus* **nom. nov.** for *Litochrus pulchellus* Blackburn 1895; *Litochrus pronotalis* **nom. nov.** for *Augasmus bimaculatus* Lyubarsky 1996. A type species is designated for *Phalacrinus* Blackburn 1891 (*P. australis* Blackburn 1891). Six new species-group synonymies are established: *Acylomus ergoti* Casey 1890 (=*Tinodemus grouvellei* Guillebeau 1894, **syn. nov.**), *Acylomus curvolineatus* (Champion 1924) (=*Tinodemus meridianus* (Švec 1992), **syn. nov.**; *Olibrus stuporatus* Lyubarsky 1994, **syn. nov.**), *Xanthocomus attenuatus* (Casey, 1890) (=*Xanthocomus concinnus* (Casey, 1916), **syn. nov.**; *Stilbus thoracicus* Casey, 1916, **syn. nov.**; *Stilbus quadrisetosus* Casey, 1916, **syn. nov.**). One name, *Olibrus sternalis* Casey 1916, is resurrected from synonymy. Lectotypes are designated for 23 nominal species. One genus and two species are excluded from Phalacridae: *Sternosternus* Guillebeau 1894 (with its type and only species, *S. grouvellei* Guillebeau 1894) and *Parasemus parvopallidus* Lea 1932, both of which belong in Hydrophilidae. All 34 resulting genera in the family Phalacridae are keyed, described, and illustrated. A phylogenetic hypothesis based on analysis of a matrix of 98 morphological characters was created using parsimony. Results of these analyses were not robust enough at deep levels to create a new subfamilial or tribal classification, but nine genus-groups have been hypothesized.

Introduction

The beetle family Phalacridae, commonly known as shining mold beetles or shining flower beetles, is a moderate-sized family within the superfamily Cucujoidea. Species occur nearly worldwide in terrestrial environments. Prior to this study, the group included approximately 635 described species and 52 described genera (see Lawrence *et al.* 2010 for a generic summary). The family reaches its peak species diversity in tropical regions, and a significant but less diverse fauna occurs in temperate regions. Members are totally absent from polar regions, and appear to be absent from much of the Pacific island region and the most isolated islands of the other oceans. No native species are known from New Zealand or Chile, but at least one introduced species is established in the former (Thompson and Marshall 1980). Based on the few published accounts and personal observations, most members of the family feed on fungi, but a significant number are palynophagous (pollen-feeding) on angiosperm flowers, and at least one species (newly described herein) likely feeds on cycad pollen.

The Phalacridae are a morphologically well-defined group, but among the most poorly known beetles taxonomically. Most species are unidentifiable outside of Europe, and genera have been virtually unidentifiable outside of the Holarctic region using existing literature.