

PHYLOGENY AND CLASSIFICATION OF ZOPHERIDAE *SENSU NOVO* (COLEOPTERA: TENEBRIONOIDEA) WITH A REVIEW OF THE GENERA OF ZOPHERIDAE (EXCLUDING MONOMMATINI)

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Abstract.— The relationships of the families Colydiidae, Monommatidae and Zopheridae are examined. Phylogenetic analyses were carried out using Hennig86 and based on 37 exemplar genera from each of these families and several possible outgroups coded for 59 morphological features (42 adult and 17 larval). Results of the analyses suggest that the three families form a monophyletic group, which may be divided into two subfamilies, Colydiinae and Zopherinae, and that the latter may be further divided into six tribes: Latometini (**trib. nov.**), Usechini, Monommatini, Phellopsini (**trib. nov.**), Pycnomerini (**sens. nov.**) and Zopherini (**sens. nov.**). The genera comprising the Zopherinae (excluding Monommatini) are keyed out and redescribed, and general remarks are made on the biology of the family. Three new genera are described: *Orthocerodes* **gen. nov.** (type species: *Sarrotrium australis* Blackburn, 1891), Australia; *Notorhocerus* **gen. nov.** (type species *N. valdivianus* **sp. nov.**), Chile and Zopher (type species: *Z. iviei* **sp. nov.**), Malaysia. Type species are designated for the genera *Docalis* Pascoe, 1860 (*D. degener* Pascoe, 1860) and *Elascus* (*E. crassicornis* Pascoe, 1860). *Pycnomorphus* Matschulski, 1858, and *Dechomus* Jacquelin du Val, 1859, are synonymized with *Pycnomerus* Erichson, 1842 (**syn. nov.**). *Cotulades brindabellae* **sp. nov.** is described, as is its larva. The following are also proposed: *Cotulades okei* **nom. nov.** (= *C. pilosus* Oke, 1932, not *Docalis pilosus* Carter, 1928) and *C. pilosus* (Carter in Wilson, 1928) (*Docalis*) **comb. nov.**



Key words.— Coleoptera, Zopheridae, Colydiidae, Monommatidae, phylogeny, classification, genera, new taxa.

REVISION OF THE TRIGONOPOID PLATYNOTINA (COLEOPTERA: TENEBRIONIDAE: PLATYNOTINI) FROM SOUTH AFRICA. PART V. GENERA *CRYPTICANUS* FAIRMAIRE, 1897 AND *ATROCRYPTICANUS* GEN. NOV.

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Abstract.— The genus *Crypticanus* Fairmaire, 1897 (type species: *Crypticanus cuneatus* Fairmaire, 1897) of the trigonopoid Platynotina is re-interpreted, revised and illustrated. Ten new species are described: *C. aequus*, *C. aeternus*, *C. bremeri*, *C. brzeskii*, *C. dentatus*, *C. iubatius*, *C. lacrimosus*, *C. robustus*, *C. simplex*, *C. supervacaneus*. The following synonym is proposed: *Crypticanus amaroides* (Fhreaus, 1870) (= *Melanopterus dilatipes* Koch, 1956). Lectotypes and paralectotypes are designated for: *Melanopterus marginicollis* Mulsant et Rey, 1854; *Melanopterus amaroides* Fhreaus, 1870; *Melanopterus edwardsi* Mulsant et Rey, 1854. Keys for species determination are provided. *Atrocrypticanus fraternus* **gen. and sp. nov.** of the trigonopoid Platynotina is described and illustrated.



Key words.— Coleoptera, Tenebrionidae, Platynotini, *Crypticanus*, *Atrocrypticanus*, new genus, new species, taxonomic revision, South Africa.

TWO NEW SPECIES OF *ATROCRATES* KOCH, 1956 FROM SOUTH AFRICA (COLEOPTERA: TENEBRIONIDAE: PLATYNOTINI)

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Abstract.— *Atrocrates bellamyi* sp. nov. and *A. robertsoniensis* sp. nov. are described and illustrated. The species belong to the generic group trigonopoid Platynotina from South Africa.



Key words.— Coleoptera, Tenebrionidae, Platynotini, *Atrocrates*, new species, South Africa.

REDESCRIPTION OF *DOUBLEDAYA DOHRNI* (GORHAM) COMB. NOV. (LANGURIIDAE: COLEOPTERA)

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Abstract.— Redescription of *Doubledaya dohrni* (Gorham) comb. nov. from *Callilanguria* is provided.



Key words.— Entomology, taxonomy, redescription, *Doubledaya dohrni*, Languriidae, Coleoptera, new combination.

REVISION OF THE GENUS *FLEUROPS* HUSTACHE, 1931 (COLEOPTERA: CURCULIONIDAE: BRACHYDERINAE)

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Abstract.— *Fleurops* Hustache, 1931 is re-defined as a monotypic genus. *Fleurops cinereus* Hustache, 1931 is redescribed and illustrated. *Euonychus conorrhinus* Marshall, 1941 and *Fleurops kivuanus* Marshall, 1950 are proposed as synonyms of *F. cinereus* Hustache. Lectotypes are designated for *F. kivuanus* Marshall and *E. conorrhinus* Marshall.



Key words.— Coleoptera, Curculionidae, Brachyderinae, Afrotropical Region, taxonomy, synonyms, *Fleurops*.

NOTES ON THE GENUS *MESTORUS* SCHÖNHERR, 1840 (COLEOPTERA: CURCULIONIDAE: BRACHYDERINAE)

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Abstract.— The genus *Mestorus* Schönherr, 1840 is transferred from the tribe Cneorrhinini (sensu Emden and Emden 1939) to the Barynotini. *Mestorus mazuri* sp. nov. is described from Mexico. Lectotype for *M. crinitus* Sharp, 1891 is designated. A key is provided to all the members of the genus *Mestorus*.



Key words.— Coleoptera, Curculionidae, Brachyderinae, Neotropical Region, taxonomy, *Mestorus mazuri* sp. nov.

NATURAL HISTORY DATA AND STRUCTURAL FEATURES OF LARVAE OF REPRESENTATIVES OF ANTHIINI (COLEOPTERA: CARABIDAE) WITH REGARD TO THEIR PHYLOGENETIC RELATIONSHIP

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Abstract.— The larval characters and natural history data of five species of *Thermophilum* Hope, *Pachymorpha sexguttata* Fabricius, two species of *Cypholoba* Chaudoir and *Eccooptera* sp are described and analysed phylogenetically. All taxa share the following peculiar larval apomorphies: a row of setae instead of two ground plan setae FR8,9 on adnasale, a membranous bulge between nasale and maxilla, antennomeres II+III fused, lacinia enlarged and fused with stipes, posterior claws reduced. Three different groups based on their natural history data are found. One group with a large number of eggs from which hatch comparatively small larvae. A second group with a medium number of eggs which are fixed on the ceiling of the substrate holes. Both groups pass three active larval instars as in most other carabids. A third group with few, large eggs, a short first instar period, an unsclerotized second instar larva which is inactive, does not feed but pupates.

The phylogenetic analysis confirms the sistergroup relationship of Helluonini and Anthiini, and the monophyly of Anthiini. Genus *Eccooptera* Chaudoir is the sistergroup of the large sized Anthiini including genus *Cypholoba*. The "Cypholobini" are non-monophyletic. *T. sermaculatum* Fabricius is distinguished in several characters from the rest of *Thermophilum* species and should be excluded from this genus. The maintenance of a monophyletic genus complex *Anthia* s.l. Weber implies the convergent development of peculiar natural history characters in *Cypholoba* and *T. sermaculatum*. *Pachymorpha sexguttata* and parts of the genus *Thermophilum* form a well supported monophyletic group. Therefore, *Pachymorpha* Hope cannot be separated generically.



Key words.— Carabidae, Anthiini, phylogeny, larvae, development, behaviour.

NYMPHALIDAE OF RONDÔNIA, BRAZIL: A NEW SPECIES OF *ADELPHA* FROM THE AMAZON BASIN (LEPIDOPTERA: LIMENITIDINAE)

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Abstract.— A new species of *Adelpha*, *A. amazona*, is described from Brazil and Peru.



Key words.— *Adelpha amazona* new species, Amazon basin, Neotropical.

LASIUS FULIGINOSUS (LATR.) ON A SANDY DUNE – ITS LIVING CONDITIONS AND INTERFERENCE DURING RAIDS OF *FORMICA SANGUINEA* LATR. (HYMENOPTERA: FORMICIDAE)

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Abstract.— The paper gives a description of a *Lasius fuliginosus* Latr. colony on a sandy dune, the ants' way of life in this beyond-optimum habitat, and their attitude towards other ant species (*Formica sanguinea* Latr., *F. cinerea* Mayr and *F. fusca* L.) revealed during raids of blood-red ants in the neighbourhood. The results are discussed in the context of hierarchical organization of ants species assemblages.



Key words.— Ants, *Lasius fuliginosus*, *Formica sanguinea*, *Formica cinerea*, *Formica fusca*, territoriality, interspecific hierarchy, competition, ecology.

PLESIOBIOSIS BETWEEN *FORMICA FUSCA* L. AND *FORMICA AQUILONIA* YARR. (HYMENOPTERA: FORMICIDAE)

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Abstract.— An unusual case of plesiobiosis of two competitive ant species, *Formica fusca* L. (non-territorial opportunistic form) and *Formica aquilonia* Yarr. (territorial form), is described. *F. fusca* was nesting on the edge of the latter's mound, after the *F. aquilonia* colony had experimentally been transferred to the site. We discuss the possible significance of our finding to the evolution of social parasitism in ants.



Key words.— Ants, *Formica fusca*, *Formica aquilonia*, competition, plesiobiosis, compound nests, evolution of social parasitism.

THE TRIBE FORMICOXENINI (HYMENOPTERA: FORMICIDAE) IN POLAND – A TAXONOMIC REVIEW AND KEYS FOR IDENTIFICATION

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Abstract.— A taxonomic review of 18 species of the tribe *Formicoxenini* occurring in Poland is presented, together with information on their geographical ranges, distribution in Poland, and biology. The following species are discussed: *Formicoxenus nitidulus* (Nyl.), *Harpagoxenus sublaevis* Mayr, *Epimyrma ravouxi* (E. André), *Doronomyrmex kutteri* (Buschinger), *Leptothorax (Leptothorax) acervorum* (F.), *L. (L.) muscorum* (Nyl.), *L. (L.) gredleri* Mayr, *L. (Myrafant) albipennis* (Curtis), *L. (M.) affinis* Mayr, *L. (M.) clypeatus* (Mayr), *L. (M.) corticalis* (Schenck), *L. (M.) interruptus* (Schenck), *L. (M.) nadigi* Kutter, *L. (M.) nigriceps* Mayr, *L. (M.) nylanderii* (Foerst.), *L. (M.) parvulus* (Schenck), *L. (M.) tuborum* (F.), and *L. (M.) unifasciatus* (Latr.). Keys for identifying the genera and the species are included.



Key words.— Ants, *Formicoxenini*, *Formicoxenus*, *Harpagoxenus*, *Epimyrma*, *Doronomyrmex*, *Leptothorax*, taxonomy, zoogeography, biology, fauna, Poland, catalogue, key.