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CLASSIFICATION, NATURAL HISTORY, AND EVOLUTION OF EPIPHLOEINAE (COLEOPTERA: CLERIDAE). PART VI. THE GENERA *EPIPHLAEUS* SPINOLA AND *OPITZIUS* BARR

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Abstract.— New World genus *Epiphlaeus* is redefined and evolutionarily linked to its sister genus *Opitzius* Barr. *Epiphlaeus* includes six species as follows: *E. adonis* **sp. nov.**, *E. duodecimmaculatus* (Klug), *E. fundurufus* **sp. nov.**, *E. princeps* (Gorham), *E. pulcherrimus* (Gorham), *E. quattuordecimmaculatus* Chevrolat, and *E. tigrinus* **sp. nov.** The monotypic *Opitzius* is based on *O. thoracicus* Barr. Specimens of these two genera are variously deposited in 37 institutional and private collections. These checkered beetles frequent the surface of felled tree boles to forage on adults and immatures of lignicolous insects. Their large size and mobility make them very noticeable on the bark of fallen trees. It is postulated that they are participants in a mimetic ring with log-inhabiting mutillids and flies part of the mimetic mix. Hennigian principles were applied to 22 adult morphological characters, which yielded a nearly totally resolved phylogenetic hypothesis between *Epiphlaeus* and *Opitzius,* and among *Epiphlaeus* species groups. The combined geographical range of the inclusive species extends from northwestern Nicaragua to southeastern Brazil. It is hypothesized that ancestral *Epiphlaeus* – *Opitzius* evolved in South America with some descendants entering Insular Central America after closure of the Panamanian portals during the Miocene. Pleistocene climatic factors are thought to have influenced species diversity, and perhaps speciation events in conjunction with aspects of dispersal, vicariance, and taxon pulse dynamics.

Resumen.— El género Neotropical *Epiphlaeus* es redefinido y conectado por evolución al genero hermano *Opitzius*. *Epiphlaeus* comprende seis especies: *E. adonis* **sp. nov.**, *E. duodecimmaculatus* (Klug), *E. fundurufus* **sp. nov.**, *E. princeps* (Gorham), *E. pulcherrimus* (Gorham), *E. quattuordecimmaculatus* Chevrolat, y *E. tigrinus* **sp. nov.** El genero monotípico *Opitzius* es basado sobre *O. thoracicus* Barr. Especimenes de estos dos géneros, depositados en 37 museos y colecciones privadas han sido estudiados. Estos Cleridae frecuentan los troncos caídos para depredar adultos y larvas de insectos xilófilos. Su gran tamaño y su movilidad los hacen evidentes sobre la corteza de árboles caídos. Suponemos que forman complejos miméticos con algunos Mutillidae del mismo ambiente. Los principios Hennigianos fueron aplicados a los 22 caracteres morfológicos adultos, dando una hipótesis filogenética casi totalmente resulta entre *Epiphlaeus* y *Opitzius,* y entre los grupos de especies de *Epiphlaeus*. La distribución geográfica combinada de las especies incluidas se extiende desde el noroeste de Nicaragua hasta el sureste de Brasil. La hipótesis que formulamos es basada sobre un grupo ancestral *Epiphlaeus* – *Opitzius* que evoluciona en Suramérica con algunos descendientes entrando en la Centroamérica insular después del cierre del portal Panameño durante el Mioceno. Los factores climáticos del Pleistoceno pueden haber influenciado la diversidad de especies, y tal vez los eventos de especiación juntos con dispersión, vicarianza y dinámica de impulso de especies.

Key words.— Insecta, Coleoptera, Cleridae, Epiphloeinae, *Epiphlaeus*, *Opitzius*, systematics, Neotropics.

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REVISION OF THE GENUS *HEXARHOPALUS* FAIRMAIRE, 1891 (COLEOPTERA: TENEBRIONIDAE: CNODALONINAE), WITH DESCRIPTION OF *MALAYSPHENA* GEN. NOV.

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Abstract.— *Hexarhopalus* Fairmaire, 1891, a tenebrionid genus from Southeast Asia, is revised. The genus *Leprocaulus* Fairmaire, 1896 is transferred to *Hexarhopalus* and demoted to subgenus. The following 20 species are described as new: *H.* (*Leprocaulus*) *jendeki* **sp. nov.** from India; *H.* (*L.*) *eva* **sp. nov.**, *H.* (*L.*) *kubani* **sp. nov.**, *H.* (*L.*) *lilligi* **sp. nov.**, *H.* (*L.*) *pacholatkoi* **sp. nov.**, *H.* (*s. str.*) *problematicus* **sp. nov.** and *H.* (*L.*) *seniori* **sp. nov.** from Thailand; *H.* (*L.*) *sinjaevi* **sp. nov.** from Vietnam; *H.* (*L.*) *cameroni* **sp. nov.**, *H.* (*s. str.*) *loebli* **sp. nov.** and *H.* (*L.*) *merkli* **sp. nov.** from West Malaysia; *H.* (*L.*) *andoi* **sp. nov.**, *H.* (*s. str.*) *bouchardi* **sp. nov.**, *H.* (*s. str.*) *bremeri* **sp. nov.**, *H.* (*L.*) *crockeri* **sp. nov.**, *H.* (*L.*) *kaszabi* **sp. nov.**, *H.* (*L.*) *masumotoi* **sp. nov.** and *H.* (*L.*) *tibangi* **sp. nov.** from Borneo; *H.* (*L.*) *schawalleri* **sp. nov.** from Laos; and *H.* (*L.*) *grimmi* **sp. nov.** from Sumatra. The following synonyms are proposed (junior synonym first): *Laosocryptobates* Pic, 1928 and *Apteroleprocaulus* Kaszab, 1983 = *Hexarhopalus* Fairmaire, 1891; *Pseudocoelophus* Pic, 1922 = *Leprocaulus* Fairmaire, 1896; and *Leprocaulus vietnamicus* (Kaszab, 1980) = *Hexarhopalus difformis* (Pic, 1922). The following species are transferred or re-transferred from the genus *Leprocaulus* to the genus *Hexarhopalus* (*Leprocaulus*): *Hexarhopalus montanus* (Kaszab, 1982) **comb. nov.**, *H. difformis* (Pic, 1922) **comb. nov.**, *H. borneensis* (Kaszab, 1982) **comb. nov.**, *H. sumatranus* (Kaszab, 1982) **comb. nov.**, *H. attenuatus* (Pic, 1922) **comb. nov.**, *H. loeffleri* (Kaszab, 1982) **comb. nov.**, *H. rotundicollis* (Pic, 1922) **comb. nov.**, *H. punctithorax* (Kaszab, 1982) **comb. nov.**, *H. particularis* (Pic, 1922) **comb. nov.** and *H. clavipes* (Fairmaire, 1896) **comb. nov.** *Derosphaerus granulipennis* Blair, 1919 is transferred to the genus *Hexarhopalus* as *H. granulipennis* (Blair, 1919) **comb. nov.** The following species are transferred from the genus *Hexarhopalus* to the genus *Misolampidius* Solsky, 1875: *Misolampidius foveipennis* (Fairmaire, 1894) **comb. nov.**, *M. entomogonoides* (Allard, 1896) **comb. nov.** and *M. indicus* (Allard, 1877) **comb. nov.** Distributions of and keys to *Hexarhopalus* species are presented. Taxonomy, relationships and ecology of this genus are discussed. *Laosocryptobates tuberculatus* Pic, 1928 (type species of the genus *Laosocryptobates*) is transferred to the genus *Hexarhopalus* as *Hexarhopalus tuberculatus* (Pic, 1928) **comb. nov.** *Malaysphena* **gen. nov.** is established for five Kaszab's species of the genus *Laosocryptobates* (syn. of the genus *Hexarhopalus*) and the following new combinations are proposed: *Malaysphena clavipes* (Kaszab, 1960) **comb. nov.**, *M. parva* (Kaszab, 1960) **comb. nov.**, *M. punctipes* (Kaszab, 1960) **comb. nov.**, *M. rotundipennis* (Kaszab, 1960) **comb. nov.** and *M. rugosipes* (Kaszab, 1960) **comb. nov.**

Key words.— Taxonomy, Coleoptera, Tenebrionidae, Cnodaloninae, Coelometopinae, *Hexarhopalus*, *Leprocaulus*, *Apteroleprocaulus*, *Pseudocoelophus*, *Necrobioides*, *Glyptotus, Misolampidius*, *Laosocryptobates*, *Malaysphena*, revision, new genus, new species, new synonyms, new combinations, key, bionomy, distribution, Oriental Region.

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SYNONYMICAL NOTES ON *APOGONIA CUPREOVIRIDIS* AND *A. NIGROOLIVACEA* (COLEOPTERA: SCARABAEOIDEA: MELOLONTHIDAE: DIPLOTAXINI)

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Abstract.— Abstract. Based on study of primary types of some Palaearctic *Apogonia* Kirby, 1819 species, the following new synonymies are established: *Apogonia cupreoviridis* Kolbe, 1886 = *A. nigroolivacea* Heyden, 1886 **syn. nov.** = *A. cupreoviridis miyakona* Nomura, 1965 **syn. nov.** *Apogonia cupreoviridis* is redescribed and compared with closely related *A. bicarinata bicarinata* Lewis, 1896. The occurrence of *A. cupreoviridis* in Japan is confirmed.

Key words.— Taxonomy, type designation, new synonymy, Scarabaeidae, Melolonthinae, Diplotaxini, *Apogonia*

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TWO NEW SPECIES OF THE GENUS *BAETIS* LEACH, 1815 (EPHEMEROPTERA: BAETIDAE) FROM CYPRUS

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Abstract.— Two new species, namely *Baetis* (*Baetis*) *mirkae* **sp. nov.** (larva, female subimago, and male imago) and *Baetis* (*Rhodobaetis*) *irenkae* **sp. nov.** (larva and male imago), from Cyprus are described and their critical diagnostic characters illustrated. The former is a representative of the subgenus *Baetis* s. str. (the *B. lutheri* species-group) showing close relationships mainly to *B.* (*B.*) *lutheri* Müller-Liebenau, 1967 and *B.* (*B.*) *vardarensis* Ikonomov, 1962; the latter is classified within the subgenus *Rhodobaetis* Jacob, 2003, being related mainly to *B.* (*R.*) *ilex* Zimmermann, 1978. Affinities of these new species to all representatives of respective related species-group and *Rhodobaetis* are discussed in detail and brief notes to their biology and distribution are presented. Based on data available so far, a detailed biogeographical analysis directed mainly to chorology and faunistic origin of 8 Palaearctic representatives of the *B. lutheri* species-group and 26 species of *Rhodobaetis* (incl. *B. irenkae* **sp. nov.** described below) is offered.

Key words.— Ephemeroptera, Baetidae, *Baetis*, *Rhodobaetis*, *Baetis lutheri* species-group, new species, Cyprus, Rhodos, taxonomy, distributional analysis.

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FOSSIL MAYFLY COLLECTIONS OF THE MUSEUM FÜR NATURKUNDE, HUMBOLDT UNIVERSITY, BERLIN. II. REDESCRIPTION OF *BALTAMELETUS OLIGOCAENICUS* DEMOULIN, 1968 WITH NOTES ON AMELETIDAE MCCAFFERTY, 1991 (INSECTA: EPHEMEROPTERA) FROM THE EOCENE BALTIC AMBER

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Abstract.— The holotype of *Baltameletus oligocaenicus* Demoulin, 1968 preserved in Eocene Baltic amber and housed in the W. Simon amber collection at the Museum für Naturkunde, Humboldt University, Berlin is redescribed and illustrated. *Baltameletus* Demoulin, 1968 can be attributed to the family Ameletidae McCafferty, 1991 by a combination of following characteristics: (**1**) lateroparapsidal suture of mesothorax relatively elongate; (**2**) epimeron of mesothorax with membranous area between anepimeron and katepimeron; (**3**) mesonotal suture stretched backward medially and anterior paracoxal suture complete; (**4**) furcasternal protuberances contiguous; (**5**) hind wings well developed with RS, MA and MP triads; (**6**) tarsi 5-segmented with first tarsal segment fused with tibia; (**7**) forceps with two distal segments; (**8**) all tarsal claws dissimilar. This fossil genus clearly differs from all other representatives of the family Ameletidae by the following combination of characteristics: (**1**) unpaired projection of the vertex; (**2**) dorsally contiguous compound eyes (**3**); 2–3 mainly simple veins stretching from CuA to basitornal margin of forewing. Additionally, some data on the fossil representatives of Ameletidae are given.

Key words.— Ephemeroptera, Ameletidae, *Baltameletus oligocaenicus*, *Ameletus*, *Electroletus*, *Metreletus*, Eocene, Baltic amber.

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FIRST RECORD OF THE GENUS *VARMA* DISTANT, 1906 (HEMIPTERA: FULGOROIDEA: TROPIDUCHIDAE) FROM CHINA, WITH DESCRIPTIONS OF TWO NEW SPECIES

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Abstract.— Two new species of the Oriental planthopper genus *Varma* Distant, 1906 (Hemiptera: Fulgoroidea: Tropiduchidae) are described and illustrated: *V. gibbosa* Wang et Liang **sp. nov.** (China: Xizang) and *V. bimaculata* Wang et Liang **sp. nov.** (China: Xizang), they represent the first record of the genus *Varma* Distant from China. A diagnosis of the genus and a key to the species of *Varma* are provided.

Key words.— *Varma*, *V. gibbosa*, *V. bimaculata*, Tropiduchidae, first record, new species, China.

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DORYCTINAE (HYMENOPTERA: BRACONIDAE) OF OGASAWARA ISLANDS (JAPAN)

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Abstract.— The diversity of the braconide wasps of the subfamily Doryctinae from Ogasawara (Bonin) Islands, Japan, is studied. Twelve new species are described from these islands: *Doryctes (Doryctes) boninus* **sp. nov.**, *D. (Neodoryctes) makiharai* **sp. nov.**, *Heterospilus micronesianus* **sp. nov.**, *H. nishijimus* **sp. nov.**, *H. pacificola* **sp. nov.**, *H. striatiscutum* **sp. nov.**, *H. watanabei* **sp. nov.**, *Ecphylus* (*Sactopus*) *hahajimus* **sp. nov.**, *Spathius asanderoides* **sp. nov.**, *S. chichijimus* **sp. nov.**, *S. ogasawarus* **sp. nov.**, and *S. sugiurai* **sp. nov.** Three species, *Rhoptrocentrus piceus* Marshall, 1897, *Ontsira palliata* (Cameron, 1881) and *Heterospilus rubrocinctus* (Ashmead, 1905), are firstly recorded for this territory. A key for determination of the all doryctine taxa of the Ogasawara Islands is given.

Key words.— Hymenoptera, Braconidae, Doryctinae, new taxa, new records, Ogasawara Islands, Japan

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TAXONOMY AND NATURAL HISTORY OF A SPECIES RICH ASSEMBLAGE OF JUMPING SPIDERS (ARANEAE: SALTICIDAE); A LONG – TERM STUDY OF A SUBURBAN SITE IN ZIMBABWE

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Abstract.— The results of a nine year inventory of jumping spiders in a suburban study-site, a one-hectare garden in Harare, Zimbabwe, are presented. The full list of garden salticids comprises 47 species, among them 12 are described as new: *Dendryphantes arboretus, D. hararensis, Evarcha ignea, E. zimbabwensis, Langelurillus ignorabilis, L. orbicularis, Phlegra procera, Pseudicius elegans, P. refulgens, Rhene cancer, Thyenula hortensis* and *Tularosa arcana*. For two species, *Evarcha prosimilis* (Wesołowska et Russell-Smith, 2000) and *Xuriella prima* Wesołowska et Russell-Smith, 2000, the previously unknown females are described. Nomen novum, *Evarcha prosimilis* is proposed for *Evarcha similis* Wesołowska et Russell-Smith, 2000, preoccupied by *E. similis* Caporiacco, 1941. Four specific names are synonymised: *Quekettia georgii* Peckham et Peckham, 1903 with *Hispo inermis* (Caporiacco, 1947), *Heliophanus clarus* Peckham et Peckham, 1903 with *Phintella aequipes* (Peckham et Peckham, 1903), *Thyene magdalenae* Lessert, 1927 with *Thyene australis* Peckham et Peckham, 1903 and *Viciria morigera* Peckham et Peckham, 1903 with *Viciria mustela* Simon, 1902. The last species was transferred to the genus *Evarcha*, new combination *E. mustela* is proposed. New combination *Mexcala natalensis* is proposed (ex *Cosmophasis natalensis* Lawrence, 1942). The generic name *Quekettia* Peckham et Peckham, 1903 is recognized as a junior synonym of *Hispo* Simon, 1886 by synonymisation of the only species of *Quekettia*. Eight species are recorded from Zimbabwe for the first time: *Bianor albobimaculatus, Heliophanus pygmaeus, Hispo inermis, Icius insolidus, Mexcala natalensis, Sonoita lightfooti, Thyene thyenoides and Xuriella prima*. The natural history (micro-habitat, behaviour and phenology) of each species is presented where available.

Key words.— Taxonomy, new species, synonyms, Afrotropical Region, salticid diversity, suburban garden.