

MORPHOLOGY, PHYLOGENY AND EVOLUTION OF THE SUPERFAMILY PLECTOIDEA ÖRLEY, 1880 (NEMATODA: PLECTIDA)

OLEKSANDR HOLOVACHOV

*Department of Zoology, Biological faculty, Ivan Franko National University of Lviv, Hrushevsky str.
4, Lviv 79005, Ukraine; e-mail: zoomus@franko.lviv.ua*

Abstract.— The phylogeny and classification of the superfamily Plectoidea Örley, 1880 is revised on the basis of published and updated morphological data for 35 ingroup and 2 outgroup species. The following features are here considered to support the monophyletic origin of the superfamily: 1) stegostom developed and differentiated into two sections; 2) dorsal gland orifice opening into the second stegostom section; 3) pharynx cylindrical, with distinct subdivision into corpus and postcorpus by the orifices of the subventral pharyngeal glands and a discontinuity in the muscular pharyngeal tissue; 4) corpus cylindrical, with subdivision into procorpus and metacorus homologues; 5) pharyngeal radii of the corpus with prominent pharyngeal tubes along the procorpus; 6) cuticular lumen of the basal part of postcorpus (within basal bulb if latter is present) is modified to form a valvular apparatus. In addition the inner labial sensilla open inside the cheilostom. New data on postembryonic development of *Anaplectus grandepapillatus* (Ditlevsen, 1928), *Plectus parietinus* Bastian, 1865, *P. decens* Andrassy, 1985 and *P. communis* Bütschli, 1873 are given and supplemented with a discussion of the phylogenetic significance of the ontogeny in Plectoidea. Following the proposal of a phylogeny, some key events in the evolution of Plectidae Örley, 1880 are discussed. It is suggested that the superfamily Plectoidea includes four families: Pakiridae Inglis, 1983, Chronogastridae Gagarin, 1975, Metateratocephalidae Eroshenko, 1973 and Plectidae. *Plectolaimus supplementatus* Keppner, 1988 is transferred to the genus *Caribplectus* Andrassy, 1973. The genus *Keralanema* Siddiqi, 2003 is considered a junior synonym of *Chronogaster* Cobb, 1913. The genus *Chiloplectus* Andrassy, 1984 is considered a junior synonym of *Plectus* Bastian, 1865. The family Anaplectidae Zell, 1993 is downgraded to the subfamily level.



Key words.— Cladistic analysis, morphology, postembryonic development, Nematoda, Plectoidea, systematics.

MINIBIOTUS EICHHORNI, A NEW SPECIES OF TARDIGRADA (EUTARDIGRADA: MACROBIOTIDAE) FROM PERU

ŁUKASZ MICHALCZYK¹ and ŁUKASZ KACZMAREK²

¹Centre for Ecology, Evolution and Conservation, School of Biological Sciences, University of East Anglia, Norwich NR4 7TJ, UK; e-mail: agnostic@poczta.fm

²Department of Animal Taxonomy and Ecology, Institute of Environmental Biology, A. Mickiewicz University, Szamarzewskiego 91A, 60-569 Poznań, Poland; e-mail: kaczmar@amu.edu.pl

Abstract.— A new eutardigrade, *Minibiotus eichhorni* sp. nov. is described from moss samples collected in Peru. This species differs from the most similar *Minibiotus vinciguerrae* Binda et Pilato, 1992 mainly by having shorter, more robust claws, more elongated macroplacoids, smaller body size and narrower buccal tube.



Key words.— *Minibiotus eichhorni* sp. nov., *Minibiotus vinciguerrae*, taxonomy, South America.

THE MILLIPEDE SUBGENUS *PERSEBRACHIULUS* GOLOVATCH, 1983, GENUS *MEGAPHYLLUM* VERHOEFF, 1894, WITH THE DESCRIPTION OF A NEW SPECIES FROM ISRAEL AND CYPRUS (DIPLOPODA: JULIDA: JULIDAE)

SERGEI GOLOVATCH¹, JÖRG SPELDA² and JOLANTA WYTWER³

¹*Institute for Problems of Ecology and Evolution, Russian Academy of Sciences, Leninsky pr. 33, Moscow 119071 (V-71), Russia; e-mail: sgol@orc.ru*

²*Zoologische Staatssammlung München, Münchhausenstr. 21, München 81247, Germany; email: spelda@zsm.mwn.de*

³*Museum and Institute of Zoology, Polish Academy of Sciences, Wilcza 64, 00-679 Warszawa, Poland; e-mail: jolawyt@robal.miiz.waw.pl*

Abstract.— *Megaphyllum uncinatum* **sp. nov.** is described from both Israel and Cyprus. It is assigned, together with *M. iranicum* Golovatch, 1983, from Iran, to the previously monotypic subgenus *Persebrachyiulus* Golovatch, 1983 of the large Eastern Euro-Mediterranean genus *Megaphyllum* Verhoeff, 1894. A refined diagnosis of *Persebrachyiulus* is provided. Some zoogeographical comments are also presented, likely implying several cases of anthropochoric introduction to Cyprus from the mainland Middle East and possibly even vice versa.



Key words.— Diplopoda, *Megaphyllum*, *Persebrachyiulus*, new species, Israel, Cyprus.

THE DISTINCTIVE *MEGASELIA DELTOMERA* SCHMITZ, 1924 (DIPTERA: PHORIDAE) BELONGS TO A COMPLEX OF SIBLING SPECIES

R. HENRY L. DISNEY

*Museum of Zoology, University of Cambridge, Downing Street, Cambridge CB2 3EJ, England;
e-mail: rhld2@hermes.cam.ac.uk*

Abstract.— *Megaselia anticheira* **sp. nov.** from Oman and Yemen, *M. epandquadrata* **sp. nov.** from Yemen, *M. gouteuxi* **sp. nov.** from Ivory Coast, Oman and Yemen and *M. nussbaumi* **sp. nov.** from Israel and Yemen are described. A neotype from Israel is designated to replace the lost holotype of *M. deltomera* (Schmitz, 1924) from Croatia. The first Old World females of this complex are described and keys to the six Old World species are provided.



Key words.— Diptera, Phoridae, *Megaselia*, Afrotropical, Palaeartic, new species, key.

REVISION OF THE ASIAN SPECIES OF THE GENUS *HYPODORYCTES* KOKUJEV, 1900 (HYMENOPTERA: BRACONIDAE: DORYCTINAE)

SERGEY A. BELOKOBYSKIJ¹ and XUEXIN CHEN²

¹ Museum and Institute of Zoology PAS, Wilcza 64, 00-679 Warsaw, Poland and Zoological Institute Russian Academy of Sciences, St. Petersburg 199034, Russia; e-mail: hymenopt@zin.ru ; sb@zin.ru

² Institute of Applied Entomology and Department of Plant Protection, College of Agriculture and Biotechnology, Zhejiang University, Huajiachi Campus, Hangzhou 310029, China; e-mail: xxchen@zju.edu.cn

Abstract.— A revision of the Asian species of the genus *Hypodoryctes* Kokujev, 1900 is provided. Seven new species are described and figured: *H. cantata* Belokobylskij et Chen **sp. nov.** (Russian Far East, Korea, Japan), *H. fuga* Belokobylskij et Chen **sp. nov.** (Russian Far East, Korea, Japan, China, Vietnam), *H. rapsodia* Belokobylskij **sp. nov.** (Azerbaijan), *H. rondo* Belokobylskij et Chen **sp. nov.** (Vietnam, China), *H. serenada* Belokobylskij et Chen **sp. nov.** (China), *H. symphonia* Belokobylskij **sp. nov.** (Vietnam), *H. tango* Belokobylskij et Chen **sp. nov.** (China). Redescriptions of *H. sibiricus* Kokujev, 1900 (Palaeartic, Myanmar, Mexico, Costa Rica), *H. bilobus* (Shestakov, 1940) (Russian Far East, Korea, Japan, China) and *H. torridus* Papp, 1987 (Russian Far East, Korea, Japan, China) are given. A key to all species of the genus *Hypodoryctes* is provided.



Key words.— Taxonomy, Hymenoptera, Braconidae, Doryctinae, *Hypodoryctes*, new species, redescription, distribution, Russian Far East, China, Korea, Japan, Vietnam.

CAENOCRYPTICOIDES TRIPLEHORNII NEW SPECIES, THE FIRST RECORD OF CAENOCRYPTICINI (COLEOPTERA: TENEBRIONIDAE) IN ARGENTINA, WITH CLADISTIC ANALYSIS OF THE GENUS

GUSTAVO E. FLORES¹ and JAIME PIZARRO-ARAYA²

¹Laboratorio de Entomología, Instituto Argentino de Investigaciones de las Zonas Áridas (IADIZA, CRICYT), Casilla de correo 507, 5500 Mendoza, Argentina; e-mail: gflores@lab.cricyt.edu.ar

²Laboratorio de Entomología Ecológica, Departamento de Biología, Facultad de Ciencias, Universidad de La Serena, Casilla 599, La Serena, Chile; e-mail: jaimepizarro@udec.cl

Abstract.— The South American genus *Caenocrypticoides* (Pimeliinae: Caenocrypticini) comprises five species distributed in western South America. A new species from western Argentina, the first record of the tribe east of the high Andes mountains, *Caenocrypticoides triplehornii* **sp. nov.**, is described and included in the most recent key for the genus. Distributional and habitat records, SEM, and habitus photographs for this new species are included. A phylogeny of the five species of the genus is proposed, based on 19 morphological characters. The cladistic analysis provides one most parsimonious cladogram showing that four unambiguous synapomorphic characters of external morphology support the monophyly of *Caenocrypticoides*. Sexual dimorphism is for the first time reported for the genus and is present in all five species of the genus. A discussion on the biogeographic implications of the discovery of this new species east of the Andean mountains is presented, which also includes adding accurate data records and habitat associations for the Chilean species of the genus.



Key words.— Coleoptera, Tenebrionidae, Caenocrypticini, *Caenocrypticoides*, South America, new species, cladistic analysis, biogeography.

DESCRIPTION OF THE LAST LARVAL STAGE
OF *HELIOTAURUS RUFICOLLIS* FABRICIUS, 1781
(COLEOPTERA: TENEBRIONIDAE: ALLECULINAE)

JOSÉ MANUEL HERRERA VEGA and FRANCISCO SÁNCHEZ PIÑERO

*Departamento de Biología Animal y Ecología, Facultad de Ciencias, Universidad de Granada,
18071 Granada, Spain; e-mail: fspinero@ugr.es*

Abstract. — The last larval stage of *Heliotaurus ruficollis* Fabricius, 1781 (Tenebrionidae: Alleculinae, Omophlini), a subterranean detritivore, is described in detail. The larva of *H. ruficollis* has the distinguishing characters of the subfamily Alleculinae and the tribe Omophlini, and it may be distinguished from the larvae of *Omophlus* species by the more rounded apex of tergum 9 and the fact that the ventral portion of tergum 9 is at the same level than sternum 9.



Key words. — Alleculinae, *Heliotaurus ruficollis*, Mediterranean desert, larval description, Omophlini, Tenebrionidae, Spain.

A COMPARATIVE STUDY OF MALE GENITALIA IN OPATRINAE SENSU MEDVEDEV (1968) (COLEOPTERA: TENEBRIONIDAE), WITH NOTES ON THE REINTERPRETED TRIBAL CLASSIFICATION. PART II.

DARIUSZ IWAN

*Museum and Institute of Zoology, Polish Academy of Sciences, Wilcza 64, 00-679 Warszawa, Poland;
e-mail: darek@robal.miiz.waw.pl*

Abstract.— A division of the group of genera of the former subfamily Opatrinae (sensu Koch 1956 and Medvedev 1968) into 2 tribes: Opatrini and Pedinini is proposed, based on the structure of male genitalia and trochanter/femur. The two tribes are members of Tenebrioninae, according to the current classification of Tenebrionidae proposed by Lawrence and Newton (1995). Structural characters of the genera of Dissonomini (*Aphaleria* Reitter, *Dissonomus* Jacquelin du Val) and Melanimini (*Cheirodes* Gén , *Melanimon* Steven, *Dolamara* Reichardt), and genera *Edylius* Champion, *Stenolamus* Gebien and *Anophthalmolamus* Ferrer make it impossible to include them in either Opatrini or Pedinini; however it is proposed to include the subtribe Eleodiina in the tribe Pedinini.



Key words.— Coleoptera, Tenebrionidae, Opatrinae, Pedinini, Opatrini, entomology, taxonomy, classification, morphology, male genitalia, aedeagus.

A REVIEW OF MALAGASY GENUS *PHYLACINUS* FAIRMAIRE, 1896 (COLEOPTERA: TENEBRIONIDAE: PEDININI)

DARIUSZ IWAN

*Museum and Institute of Zoology, Polish Academy of Sciences, Wilcza 64, 00-679 Warszawa,
Poland; e-mail: darek@robal.miiz.waw.pl*

Abstract.— The genus *Phylacinus* Fairmaire, 1896 (type species: *Phylacinus asperipennis* Fairmaire, 1896) is revised and illustrated. New species is described: *Phylacinus ferreri* **sp. nov.** Key for species determination is provided. Lectotype and paralectotype are designated for *Phylacinus asperipennis* Fairmaire, 1896. The genus represents of the Malagasy endemic fauna.



Key words.— Coleoptera, Tenebrionidae, Pedinini, Litoborina, *Phylacinus*, Madagascar, entomology, taxonomy, revision, new species.

DISCOVERY OF LOST J. C. FABRICIUS (1775) AND A. G. OLIVIER (1795) TYPES OF COLEOPTERA IN THE HUNTERIAN MUSEUM, UNIVERSITY OF GLASGOW, SCOTLAND

JULIO FERRER¹, MAXWELL V. L. BARCLAY² and E. GEOFFREY HANCOCK³

¹ *Stora hundensgata 631, S-136 64 Haninge, Sweden*

² *The Natural History Museum, London, SW7 5BD, UK*

³ *Hunterian Museum (Zoology), University of Glasgow, G12 8QQ, Scotland*

Abstract.— Type material, reputed to be lost, of *Tenebrio cornutus* Fabricius, 1775 and *Tenebrio atratus* Fabricius, 1775 (Coleoptera, Tenebrionidae), together with two possible syntypes of *Tenebrio brunneus* Fabricius, 1798 (Coleoptera, Cerambycidae, Parandrinae) and the type of *Tenebrio laevis* Olivier, 1795 were discovered in the collection of William Hunter (1718–1783) in the Hunterian Museum (Zoology), University of Glasgow. Lectotype and paralectotype are designated for *Tauroceras cornutus* (Fabricius, 1775); lectotype for *Zophobas atratus* (Fabricius, 1775); lectotype for *Merinus laevis* (Olivier, 1795).



Key words.— Coleoptera, Tenebrionidae, Cerambycidae, Parandrinae, William Hunter, Dru Drury, Glasgow, North America, Lectotype designation, Fabricius, Olivier.

DETAILED DESCRIPTION OF FIRST AND LAST INSTAR LARVA AND PUPA OF *LACCOPTERA FOVEOLATA* (BOHEMAN, 1856) FROM INDIA WITH NOTES ON ITS BIONOMY (COLEOPTERA: CHRYSOMELIDAE: CASSIDINAE)

SACHIN P. RANADE¹, HEMANT V. GHATE¹ and JOLANTA ŚWIĘTOJAŃSKA²

¹Department of Zoology, Modern College, Shivajinagar, Pune 411 005, India

²Zoological Institute, University of Wrocław, Przybyszewskiego 63/77, 51-148 Wrocław, Poland;
e-mail: sindiola@biol.uni.wroc.pl

Abstract. — First and last instar larva and pupa of *Lacoptera foveolata* (Boheman, 1856) are described in detail along with notes on the life history. The beetles were observed to breed from June to August. The host plant of the insect is *Ipomoea nil* (Convolvulaceae), as the entire life cycle is completed on this plant. A small, oval ootheca containing a single egg is partially covered by fecal matter. There are five larval instars; the larvae and pupa are typical for the specialized cassidines. Imagines develop in about 35–40 days from the fertilized egg deposited in the ootheca.



Key words. — Coleoptera, Chrysomelidae, Cassidinae, *Lacoptera foveolata*, *Ipomoea nil*, Convolvulaceae, India.

REVISION OF THE GENUS *CERATOGONIA* KOLBE, 1899 (SCARABAEIDAE: MELOLONTHINAE: DILOTAXINI)

ALEŠ BEZDĚK

*Institute of Entomology, Academy of Sciences of the Czech Republic and Faculty of the Biological Sciences, University of South Bohemia, Branišovská 31, CZ-370 05 České Budějovice, Czech Republic;
e-mail: Bezdek@entu.cas.cz*

Abstract.— The diplotaxine genus *Ceratogonia* Kolbe, 1899 is revised. Currently, it includes only the species *C. bicornuta* (Kolbe, 1899), which is redescribed and has its male genitalia figured for the first time. *Ceratogonia marshalli* (Arrow, 1902) and *C. bilaminiceps* (Benderitter, 1920) are considered junior subjective synonyms of *C. bicornuta*. The synonymy of *C. kraatzii* (Dalla Torre, 1912) with *Dichecephala ovata* (Fåhraeus in Boheman, 1857) is confirmed. Lectotype and paralectotype designations are provided for following species: *Apogonia (Ceratogonia) bicornuta*, A. (C.) *marshalli* and A. *ovata*. Neotype is designated for A. (C.) *kolbei* Kraatz, 1899.



Key words.— Taxonomy, revision, type designations, Scarabaeidae, Melolonthinae, Diplotaxini, *Ceratogonia*, Ethiopian Region.

**TRHYPOCHTHONIUS SEMOVITUSI SP. NOV.
(ACARI: ORIBATIDA: MALACONOTHROIDEA)
FROM CENTRAL EUROPE**

ANETTA SZYWILEWSKA

*Department of Animal Taxonomy and Ecology, A. Mickiewicz University, Szamarzewskiego 91A,
60-569 Poznań, Poland; e-mail: anettas@amu.edu.pl*

Abstract.— *Trhypochthonius semovitusi* **sp. nov.** is described from Poland. The main character of the species is different shape of the prodorsal and notogastral setae. Notogastral setae are short, smooth, with characteristic blunt; all prodorsal setae are barbed, thick, distinctly longer and more solid than notogastral setae.



Key words.— Acarology, taxonomy, morphology, Oribatida, *Trhypochthonius*, new species, Europe.

PROTOPLOPHORIDAE (ACARI: ORIBATIDA) OF THE WORLD

WOJCIECH NIEDBAŁA

*Department of Animal Taxonomy and Ecology, ul Szamarzewskiego 91A, 60–569 Poznań, Poland;
e-mail: niedbala@main.amu.edu.pl*

Abstract. — The paper presents the current state of knowledge of the family Protoplophoridae and results of its critical taxonomic and nomenclature analysis. One subfamily, two genera, one subgenus and three species are synonymised. Arthroplophorinae Mahunka, 1994 with Protoplophoridae Ewing, 1917, the genus *Tauroplophora* Gordeeva, Niemi et Petrova-Nikitina, 1998 with *Grandjeanoplophora* Balogh et Mahunka, 1979, the genus *Archaeoplophora* Subias et Arillo, 2002 with genus *Protoplophora* Berlese, 1910, the subgenus – *Siciliophora* Bernini, 1983 with *Prototritia* (Berlese, 1916) and the species: *Arthroplophora berlesei* Mahunka, 1977 with *Arthroplophora vulpes* Berlese, 1916, *Aedoplophora africana* Mahunka, 1977 with *Prototritia armadillo* (Berlese, 1916) and *Cryptoplophora asiatica* Gordeeva, Niemi et Petrova-Nikitina, 1998 with *Cryptoplophora abscondita* Grandjean, 1932. At present the family is represented by 28 species from the 10 following genera: *Cryptoplophora* Grandjean, 1932, *Bursoplophora* Subias et Perez-Inigo, 1978, *Aedoplophora* Grandjean, 1932, *Arthroplophora* Berlese, 1910, *Hauseroplophora* Mahunka, 1977, *Prototritia* (Berlese, 1916), *Protoplophora* Berlese, 1910, *Csibiplophora* Mahunka, 1984, *Grandjeanoplophora* Balogh et Mahunka, 1979, *Neoprototritia* Shereef, 1978. Diagnoses of all taxa are given. A key for identification of the genera and species is proposed.



Key words. — Acari, Protoplophoridae, zoogeographical distribution.