**Rambutanura carcharia**, a new species of Collembola (Neanuridae: Neanurinae) from Vietnam

Adrian Smolis

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

Abstract.— A new species of the genus *Rambutanura* Deharveng, 1988 from northern Vietnam is described and illustrated. *R. carcharia* sp. nov. is related to *Rambutanura malayana* (Yosii, 1976) described from Malaysia. The new species is characterised by tridentate mandible, moderate plurichaetosis on tubercles and absence of sensilla on head and thorax I.

Key words.— Entomology, taxonomy, Collembola, Neanuridae, Neanurinae, Rambutanura, new species, Vietnam.

INTRODUCTION

The genus *Rambutanura* was established by Deharveng (1988) for a new species *R. yoshiiana* from northern Thailand and two species described earlier: *Acanthanura dawydofii* Denis, 1934 from southern Vietnam and *Womersleya malayana* Yosii, 1976 from Malaysia. The most distinguishing and striking character of the genus are the strongly elongated tubercles (finger-like projections) on head and tergites. Because of the mentioned structures, colour of the body (red or purple in life) and size (from 2.5 to 5 mm), members of *Rambutanura* belong to the most spectacular, unusual and largest Collembolan species of the continental Southeast Asia. Morphologically the genus resembles to the monotypic genus *Digitanura* Deharveng, 1987 (Thailand) in several respects including the presence of tergal projections, similar size and plurichaetosis on antennal segment IV (Deharveng 1987, 1988). Nevertheless, *D. quadrilobata* Deharveng, 1987 has elongated tubercles on the two last abdominal segments only and separate tubercles Di and De on head and abdomen V (in *Rambutanura* fused).

Examination of a rich material of Neanurinae from North Vietnam revealed another new species, which is herein described, fully illustrated and discussed. *R. carcharia* sp. nov. was collected by Prof. R. J. Pomorski during faunistic investigations of the Tam Dao National Park, sponsored by Museum and Institute of Zoology PAS (Warszawa) and Wrocław University. All specimens were caught using an aspirator nearby a small waterfall in the tropical rain forest.

METHODS

The terminology and structure of the tables used in this paper follow Deharveng (1983), Deharveng and Weiner (1984) and Greenslade and Deharveng (1990), and the following abbreviations are used:

- abd. – abdomen,
- ant. – antenna,
- Cx – coxa,
- Fe – femur,
- Sex2 – subcox 2,
- th. – thorax,
INTRODUCTION

The millipede fauna of Israel is known to be dominated by members of the order Julida (Tabacaru, 1995), whereas the order Polydesmida appears to be represented by only one species each in the families Paradoxosomatidae (genus *Tetrarthrosoma* Verhoeff, 1898, see Spelda et al., in press) and Xystodesmidae (genus *Libanaphe* Hoffman, 1963, see Hoffman, 1990: 18; mistakenly referred to Oxydesmidae by Hoffman, 1980 and Tabacaru, 1995).

Formally, the family Polydesmidae has been recorded in Palestine/Israel as well. Thus, Verhoeff (1923: 135) referred to “the remains of a single specimen” of what he identified as a *Polydesmus* species from near Lake Kinneret. This record was later repeated by Bodenheimer (1937), but neglected by Tabacaru (1995).

The present paper provides the description of a new, rather variable species of the genus *Brachydesmus* Heller, 1858, found in several places in northern Israel. This represents the first named member of Polydesmidae to be listed in the fauna of Israel as well as the entire Levant, a historical region in the Near East that currently covers Cyprus, the Sinai, Jordan, Israel and Lebanon together with the adjacent parts of Syria and southern Turkey.

MATERIAL

Material has been collected by the first author or received for study from the Natural History Museum of Denmark, University of Copenhagen, Denmark (ZMUC) and Institute of Evolution, Haifa University, Israel. The holotype, some paratypes and non-types have been deposited in the collection of the Zoological Museum, University of Tel Aviv, Israel (ZMTA), while the remaining duplicates have been housed in Zoological Museum, University of Moscow, Russia (ZMUM), Museum & Institute of Zoology, Polish Academy of Sciences, Warsaw (MZW), and ZMUC.

TAXONOMY

*Brachydesmus nevoi* sp. nov.

(Figs 1–27)

**Type material. Holotype:** ♂ (ZMTA), Israel, Nahal Keziv, pitfall trapping, B4–5, 17–31.01.1999, leg. M. Finkel.
A SPLI-FOOTED LACEWING AND TWO EPIOISMYLINES FROM THE JURASSIC OF CHINA (NEUROPTERA)

DON REN1 and MICHAEL S. ENGEL2

1Department of Biology, Capital Normal University, 105 Xisanhuanbeilu, Beijing 100037, People's Republic of China; e-mail: rendong@cnu.edu.cn
2Division of Entomology (Paleoentomology), Natural History Museum, and Department of Ecology and Evolutionary Biology, 1501 Crestline Drive-Suite #140, University of Kansas, Lawrence, Kansas 66049-2811; and Division of Invertebrate Zoology, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024-5192, United States; e-mail: msengel@ku.edu

Abstract.—The first Chinese fossil of the family Nymphidae (Neuroptera: Myrmeleontiformia) is briefly described and figured along with two episomyline Osmylidae, a generally plesiomorphic group which can be easily confused with nymphids when only wings are known. Four new species and three new genera are characterized from Jurassic deposits of the Jiulongshan Formation (Daohugou Biota), Inner Mongolia, China. New genera are Liminympha (Nymphidae), Enodinympha (Osmylidae), and Nilionympha (Osmylidae), while the new species are Liminympha makarkini, Enodinympha translucida, Nilionympha pulchella, and N. imperfecta.

Key words.—Neuroptera, Myrmeleontiformia, Nymphidae, new genus, new species, Jurassic, Mesozoic, Osmylidae, Epiosmylinea, China.

INTRODUCTION

The neuropteran families Nymphidae and Osmylidae are quite distinctive although generally plesiomorphic for their respective clades and as a result, although not closely related, do share primitive similarities in some wing details making their separation challenging when presented only with fossil fragments (Lambkin 1988). This is all the more difficult when examining Mesozoic fossils as those from the Jurassic represent the earliest representatives of both families and these early, particularly primitive forms coalesce in many traits rendering the separation of Nymphidae, Osmylidae, and other plesiomorphic families from the middle Mesozoic a fascinating challenge (e.g., Lambkin 1988).

Today split-footed lacewings (Nymphidae) comprise 35 species distributed in New Guinea and Australia. Where known, nymphid larvae prey on termites or caterpillars, those of Nymphes occurring in leaf litter or under logs, while those of Osmylops and Myiodactylus are arboreal. Adults are frequently large, with wingspans reaching 80 mm. Unfortunately, despite the size and showiness of these animals, almost nothing further is known of their biology. In the past the split-footed lacewings enjoyed a much greater diversity and far more extensive distribution. Fossils confidently assigned to Nymphidae are known in middle Eocene Baltic amber (Krüger 1923, MacLeod 1970), the Early Cretaceous of Transbaikalia (Ponomarenko 1992), and the Late Jurassic of Bavaria (Carpenter 1929, 1992) and Kazakhstan (Panfilov 1980, Lambkin 1988).

The Osmylidae are relatively primitive lacewings with their greatest diversity in the Old World, although
A NEW FOSSIL GENUS OF SIPHLONURIDAE (INSECTA: EPHEMEROPTERA) FROM THE DAOHUGOU, INNER MONGOLIA, CHINA

JIANDONG HUANG¹, YUSHUANG LIU¹, NINA D. SINITSHENKOVA² and DONG REN¹*

¹College of Life Science, Capital Normal University, Beijing 100037, China
²Palaeontological Institute of the Russian Academy of Sciences, Profsoyuznaya 123, Moscow, Russia
*Corresponding author

Abstract.—A new genus and species Multiramificans ovalis gen. and sp. nov. of the family Siphlonuridae s.l. is described from the Middle Jurassic Jiulongshan Formation of the Daohugou, Inner Mongolia in China. Detailed description and illustration of the specimen along with a brief review of fossil Siphlonuridae s.l. are given. The problems of association between nymphs and adults, and palaeoenvironment are briefly discussed.

Key words.—Ephemeroptera, Siphlonuridae, Multiramificans, Multiramificans ovalis, new genus, new species, fossils, Daohugou, Middle Jurassic, China.

INTRODUCTION

The mayfly family Siphlonuridae s.l., Bank, 1900 is not only a fairly large extant group, but also numerous in fossil records. Until now, 24 genera and 35 species of fossil mayflies of this family have been reported (see below), ranging from early Middle Triassic to Upper Miocene. Among them, 3 genera and 4 species have been described from China. The most ancient representative of the family is Triassonurus doliiformis Sinitshenkova (Sinitshenkova et al. 2005) which was collected from the Vosges in France (early Middle Triassic). In addition, the species of this family were found in diverse localities all over the world. They are reported from Siberia (Mesobaetis Brauer, Redtenbacher et Ganglbauer, 1889, Mogzonurella Sinitshenkova, 1985, Mogzonurus Sinitshenkova, 1985, Cretoneta Tshernova, 1971), Transbaikalia (Stackelergicza Tshernova, 1967, Proameletus Sinitshenkova, 1976, Bolbonyx Sinitshenkova, 1990, Siphangurus Sinitshenkova, 2000), Mongolia (Mesobaetis, Mogzonurella, Mogzonurus, Albisca Sinitshenkova, 1989), China (Mesonetopsis Ping, 1935, Sinopheonera Ping, 1935, Mesobaetis), Baltic (Siphonurus Eaton, 1868, Baltameletus Demoulin, 1968, Balticophlebia Demoulin, 1968, Cronicus Eaton, 1871), Germany, Bavaria (Olgisca Demoulin, 1970), Brazil (Siphonwadwans McCafferty, 1990, Costatimella Martins-Neto, 1996), Australia, Victoria (Promirara Jell et Duncan, 1986, Austraulurus Jell et Duncan, 1986, Dulcinanna Jell et Duncan, 1986), and California, Colorado of America (Aphelophlebodes Pierce, 1945, Siphlurites Cockereill, 1923). But the family Siphlonuridae is accepted in a wider sense. Now this taxon is regarded to be paraphyletic assemblage and is rejected by most ephe-}


NEOMEDETERA, A NEW GENUS IN THE SUBFAMILY MEDETERINAЕ (DIPTERA: DOLICHOPODIDAE) FROM CHINA

YAJUN ZHU¹, DING YANG¹, * and PATRICK GROOTAERT²

¹Department of Entomology, China Agricultural University, Beijing 100094, China; e-mail: dyangeau@yahoo.com.cn
²Department of Entomology, Royal Belgian Institute of Natural Science, Vautierstreet 29, B-1000 Brussels, Belgium
*Corresponding author

Abstract.— A new genus, Neomedetera, from China is erected and type species Neomedetera membranacea sp. nov. is described. The new genus has reduced 8th sternum and basoventral foramen as its unusual characters. A key to separate the Palaearctic and Oriental genera of Medeterinae is presented.

Key words.— Dolichopodidae, Medeterinae, Neomedetera, new genus, China.

INTRODUCTION

When we studied dolichopodids from Guangdong province in South China, an area belonging to the Oriental Region, we found a species that seems closely related to Medetera. However, this species has a reduced 8th sternum which is always a well developed sclerite bearing bristles in other dolichopodids. The foramen, being the opening in the epandrium leading to the postabdomen is basoventral instead of basolateral. Also the 7th sternum is reduced, while 7th tergum is a large bristled sclerite. All these features suggest that this species has a different mating mechanism from typical Medetera. Finally, the genital appendages are also quite different from those in Medetera. It is clear that when this species would be included in Medetera, the genus concept of Medetera would be corrupted. Therefore we prefer to erect a new genus to host this peculiar species.

At present, the subfamily Medeterinae contains fifteen genera (Grootaert and Meuffels 1997, Grichanov 1999, Bickel 2004), five of which occur within the Palaearctic Region: Cyrturella, Dolichophorus, Medetera, Systemus and Thrypticus. Five genera of Medeterinae occur in the Oriental Region: Medetera, Paramedetera, Thrypticus, Systemus and Neomedetera gen. nov. A key to the genera of the subfamily Medeterinae from the Palaearctic and Oriental Regions is presented in the end of this paper.

The specimens were collected with nets on the shrubs of moist mountain in Guangdong Province in South China in 2005. The types are preserved in 75 percent alcohol and deposited in the Entomological Museum of China Agricultural University, Beijing (CAU) and in the Royal Belgian Institute of Natural Sciences (RBINS).

The following abbreviations are used:
acr – acrostichal,
ad – anterodorsal,
Cl – fore coxa,
CII – mid coxa,
CIII – hind coxa,
dc – dorsocentral,
FI – fore femur,
FII – mid femur,
FIII – hind femur,
It – fore tarsus,
IIt – hind tarsus,
NEW BEETLES (INSECTA: COLEOPTERA: ARCHOSTEMATA) FROM THE LATE MESOZOIC OF NORTH CHINA

JINGJING TAN, DONG REN*, CHUNGKUN SHIH

Abstract.— Two new genera including four new species of fossil beetles assigned to the family Schizophoridae – *Menopraesagus explanatus* gen. and sp. nov., *M. oxeceurus* gen. and sp. nov., *M. grammicus* gen. and sp. nov. and *Homocatabrycus liui* gen. and sp. nov., and a new genus including one new species assigned to the family Ademosynidae – *Lasiosyne euglyphea* gen. and sp. nov. are described. All of them are collected from the Middle Jurassic Jiulongshan Formation of eastern Inner Mongolia, China. Another two new fossil species referable to the genus *Tetraphalerus* of family Ommatidae, *Tetraphalerus latus* sp. nov. and *Tetraphalerus curtinervis* sp. nov., are reported from the Jehol Biota of western Liaoning, China.

Key words.— Schizophoridae, Ademosynidae, Ommatidae, Jiulongshan Formation, Yixian Formation, China, new genera, new species, fossil beetles.

INTRODUCTION

Extensive fossil beetle faunas have been found in the Late Mesozoic deposits of various ages in many parts of the world (Crowson 1981, Ponomarenko 1969, 2002, Tan and Ren 2006). In China, the finds of archostematan beetles are rather rarer than the contemporaneous finds from Siberia, Kazakhstan and Mongolia. Up to now, only 12 families including 42 extinct genera and 56 extinct species have been erected in North China especially in the localities of the Jiulongshan Formation (Late Aalenian or Early Bajocian), which includes the well-known Yanliao biota, and the Yixian Formation (Tithonian-Berriasian), with the well preserved Jehol biota (Tan et al. 2004, Tan and Ren 2006).

Recently we recovered several fossil schizophoroids and ademosynids from the Jiulongshan Formation near Daohugou Village in Shantou Township of Ningcheng County (Chifeng City, Inner Mongolia, China). Based on these fossils, two new genera and four new species of Schizophoridae and one new genus with one species of Ademosynidae are described in this paper.

We have also collected several complete fossil ommatids from the ‘Jianshangou Bed’ in the lower part of the Yixian Formation at Huangbanjigou Village near the town of Shangyuan, 28 km southeast of Beipiao, western Liaoning Province, China, which is considered as part of the Jehol Biota. Based on these well-preserved specimens, two new species assigned to the extant genus *Tetraphalerus* of Ommatidae are described, which add considerably to our knowledge of this group in the Yixian Formation. Now, the age of the Yixian Formation remains contentious. Here, we tentatively followed Wang et al. (2004, 2005) in
INTRODUCTION

The genus *Acinaces* was described by Gerstaecker (1858) and was placed in the division Dapsini, next to *Dapsa, Lycoperdina, Mycetina, Epopterus, Anidrytus* and *Stenotarsus*. Gorham (1889) moved it to subfamily “Corynomalides” along with *Amphix* Laporte, 1840 (=*Corynomalus* Erichson, 1847). In both cases authors based their decisions on overall similarities only. Strohecker (1953) in his classification of Endomychidae put *Acinaces* in the subfamily Eumorphinae (along with some other members of Gerstaecker’s Dapsini), based on the presence of stridulatory organs on the head and pronotum.

This genus has been revised by me (Tomaszewksa 2003) and has been classified in the subfamily Lycoperdininae (=Eumorphinae). This placement was duly confirmed by phylogenetic studies of the family Endomychidae and the subfamily Lycoperdininae (Tomaszewksa 2000, 2005). Stridulatory organs on the head and the pronotum along with maxillary lacinia with mesal edge and dorsal surface covered with regular rows of setae or spinulae, and sternite of male genital segment well developed with apical margin at least weakly modified have been postulated as synapomorphies of this subfamily and are shared by all *Acinaces* species.

During a recent study of Endomychidae material at the National Museum of Natural History, Smithsonian Institution in Washington, DC, two new species of *Acinaces* from Peru were found and are described here as *A. nataliae* and *A. humeralis*. Moreover a new colour variation of *A. laceratus*, the most variable species of the genus are provided. The key to the known species of the genus is updated.

### Key words.

Entomology, taxonomy, new species, key, Coleoptera, Cucujoidea, Lycoperdininae, *Acinaces*.

### Material and methods

This paper is based on the examination of types and other material from the following institutions:
TAXONOMICAL CHANGES IN PALAEARCTIC LUPERINIs (COLEOPTERA: CHRYSOMELIDAE: GALERUCINAE)

JAN BEZDĚK

Mendel University of Agriculture and Forestry, Department of Zoology, Zemědělská 1, 613 00 Brno, Czech Republic; e-mail: bezdek@mendelu.cz

Abstract.— Based on the examination of type material and study of literature sources, the following nomenclatural changes are proposed: Nymphius stylifer ssp. ogloblini (Bogatech, 1947) (stat. nov.); Scelolyperus Crotch, 1874 = Tuomeria Chen et Jiang, 1985 (syn. nov.) = Tuomeria Chen et Jiang, 1986 (syn. nov.); Scelolyperus tibialis (Chen et Jiang, 1985) (comb. nov.) = Tuomeria tibialis Chen et Jiang, 1986 (syn. nov.) = Scelolyperus krolik Borowiec, 2005 (syn. nov.); Calomicrus apicalis Demaison, 1891 = C. peyroni (Pic, 1899) (syn. nov.); C. albanicus (Csiki, 1940) (comb. nov.) = C. macedonicus (Tomov, 1975) (syn. nov.); C. syriacus (Weise, 1924) = Monolepta anatolica Bezděk, 1998 (syn. nov.); Calomicrus heydeni (Weise, 1900) is confirmed as synonym of C. lividus (Joannis, 1865). Luperus sibiricus Csiki, 1916 proved to be Luperomorpha Weise, 1887, thus it is transferred from Galerucinae to Alticinae. Lectotypes are designated for Luperus albanicus Csiki, 1940, L. brevicollis Weise, 1898, L. cous Weise, 1889 and L. rhilensis Weise, 1900. The drawings of male genitalia are provided for most of the species studied.

Key words.— Taxonomy, new synonymy, new combination, status novum, lectotype designation, Coleoptera, Chrysomelidae, Galerucinae, Alticinae, Luperini, Calomicrus, Luperus, Luperomorpha, Nymphius, Monolepta, Scelolyperus, Tuomeria, Tuomeria, Palaearctic Region.

INTRODUCTION

While identifying Old World Galerucinae from various collections I found some taxonomic problems in Palaearctic Luperini. Based on the comparison of literature sources and recently collected material I present the taxonomical changes and comments given below.

MATERIAL AND METHODS

The following abbreviations are used in the text:
FKCC – coll. F. Kantner, České Budějovice, Czech Republic;
FMNH – Field Museum of Natural History, Chicago, Illinois, USA (J. Boone);
HIM – Hayik Mirzayans Insect Museum, Teheran, Iran (H. Naserzadeh);
HNHM – Hungarian Natural History Museum, Budapest, Hungary (O. Merkl);
IZCAS – Chinese Academy of Sciences, Institute of Zoology, Beijing, China (L.-j. Zhang);
JBCL – coll. J. Brokeš, Litomyšl, Czech Republic;
JSCP – coll. J. Strejček, Praha, Czech Republic;
KSAU – Kuban State Agrarian University, Krasnodar, Russia (A. S. Zamotaylov);
MNHN – Muséum National d’Histoirue naturelle, Paris, France (N. Bertil);
NHMB – Naturhistorisches Museum, Basel, Switzerland (E. Sprecher-Uebersax, M. Brancucci);
THREE NEW ORIENTAL SPECIES OF THE GENUS
FALSOTITHASSA PIC, 1934 (COLEOPTERA: TENEBRIONIDAE: LUPROPINI)

WOLFGANG SCHAWALLER*

Staatliches Museum für Naturkunde, Rosenstein 1, D-70191 Stuttgart, Germany; e-mail: schawaller.smns@naturkundemuseum-bw.de

Abstract.— Three new species of the genus Falsotithassa Pic, 1934 (Tenebrionidae: Lupropini) are described: Falsotithassa gigantea sp. nov. from Thailand and Laos, Falsotithassa sulawesica sp. nov. from Sulawesi and Falsotithassa thailandica sp. nov. from Thailand. Some new faunistical data of and taxonomic remarks to known species are added. At present, 10 species are recognized as valid within the genus, occurring exclusively in the Oriental region.

Key words.— Coleoptera, Tenebrionidae, Lupropini, Falsotithassa, new species, taxonomy, distribution.

INTRODUCTION

The genus Falsotithassa Pic, 1934 was recently revised with a discussion of its tribal assignment, treatment of the species characters, and with compilation of an identification key for the species (Schawaller 2000). However, in contrary to that paper (where Leiochrini and Diaperini are considered erroneously as probable tribes), the genus is now classified within the Lupropini according to the already discussed morphological characters (procoxal cavities, female tract). As yet, 7 species are recognized as valid, occurring exclusively in the Oriental Region. In this paper, two further species are newly described from Thailand/Laos and one species from Sulawesi. Some new faunistical data of and taxonomic remarks to known species are added. A few additional specimens remain unidentified because of the lack of males or because of unknown infraspecific variability.

*Contributions to Tenebrionidae no. 64. – For no. 63 see: Carolinea 65, 2007.

MATERIAL

BMNH – The Natural History Museum, London (Jon Cooter, Oxford);
CRGT – Collection Dr. Roland Grimm, Tübingen;
NHMB – Naturhistorisches Museum, Basel (Dr. Michel Brancucci);
NSMT – National Science Museum, Tokyo (Dr. Shûhei Nomura);
SMNS – Staatliches Museum für Naturkunde, Stuttgart.

TAXONOMY

Falsotithassa gigantea sp. nov.
(Figs 1–3)

Etymology. Named because of the extraordinary large body size of this species.

Diagnosis. Falsotithassa gigantea sp. nov. can be recognized by the large body size (6.0–7.0 mm), by a pronotum widest at the base with smooth and naked lateral margin and protruding anterior corners, by
A NEW SPECIES OF THE GENUS **ASIDA** LATREILLE, 1802 FROM FRENCH SOUTHERN ALPS (INSECTA: COLEOPTERA: TENEBRIONIDAE)

**Fabien Soldati**

*Muséum d'Histoire Naturelle, 1, rue Chrestien de Troyes, F-10000 Troyes, France*

e-mail: asida.soldati@wanadoo.fr

**Abstract.**— *Asida christianperezi*, new species from French Southern Alps is described and illustrated. To complete the description, ecological and biogeographical comments are given.

**Keywords.**— Insecta, Coleoptera, Tenebrionidae, Asidini, *Asida christianperezi*, new species, France, Southern Alps.

**INTRODUCTION**

The genus *Asida* Latreille, 1802 comprises 151 species distributed in Europe and North Africa. Most of these species occur in the south-western part of Europe. The high number of species of this genus is due to the high level of endemism, especially in the inland mountains and in numerous islands and islets of the Mediterranean Sea. The genus needs a taxonomical and phylogenetic revision. Only some partial and local studies have been published until today. The French species have been recently revised by Soldati and Leo (2005) and Soldati (2006). In the latter publication, one species is temporary named “*A. consanguinea* Allard, 1869, species dubia”, after comparison of six specimens with the male holotype. These six specimens, three males and three females, coming from a mountain locality of French Southern Alps, have the punctation on the pronotum similar to that of the unique known specimen (holotype) of *Asida consanguinea* Allard, 1869, but their cuticle is not as bright and the elytral costae are absent, substituted by distinctive small oblique undulations. The examination of about 30 newly recorded specimens, morphologically identical to the six previous ones, clearly indicate that these two species are different. So, I describe below the new species, a relative of *A. sabulosa* (Fuessly, 1775) belonging to the same phylogeographical group.

The unique known specimen of *A. consanguinea* is labelled as follows: “<consanguinea, Fr. merid.>, <Ex-Musaeo E. Allard, 1899>, <Type (red label)>, <Muséum Paris, 1952, coll. R. Oberthür>, <consanguinea All., Fr. merid.>, <Asida consanguinea Allard, Soldati det. 2001>”, Muséum National d’Histoire Naturelle, Paris. *Asida consanguinea* is reconsidered as a very aberrant specimen of *Asida sabulosa* (Fuessly, 1775), according to a recent paper (Soldati and Soldati, 2002).

**TAXONOMY**

*Asida christianperezi* sp. nov.

(Figs 1–2)

**Diagnosis.** This species is closely related to *Asida sabulosa* and can be separated, at least, with the following morphological characters:

1. Disc of pronotum slightly convex, lateral margins not elevated; punctuation of disc dense, interspaces of punctures flat, as in tyrrenhein species (Fig. 3); pilosity of pronotum, elytra, legs and antennae yellowish-brown, well visible; costae of elytra substituted by undulations
Révision des genres *Goniadera* Perty, 1830 et *Microgoniadera* Pic, 1913 (Coleoptera: Tenebrionidae: Lagriinae: Goniaderini)

JULIO FERRER¹ and THIERRY DELATOUR²

¹Swedish Museum of Natural History, Department of Entomology, 10405 Stockholm, Sweden
²10 Chemin Planet, CH-1188 Gimel VD. Suisse

Abstract.— The types of all species belonging to the genus *Goniadera* Perty, 1830 are studied. The lectotype of *Melandrya repanda* Fabricius, 1801, is designated. Eight new species of *Goniadera* are described: *Goniadera ardoini* sp. nov., Brasil, *G. barclayi* sp. nov., Brasil and Peru, *G. jaegeri* sp. nov., *G. merkli* sp. nov., Brasil, *G. onorei* sp. nov. from Ecuador, *G. pseudorepanda* sp. nov. from Costa Rica and Mexico and *G. floresi* sp. nov. from Argentina. *Goniadera simplex* Fairmaire, 1889 is transferred to *Aemyone* Bates, 1868, but this genus is degraded to sub-genus of *Goniadera*. The name *Goniadera (Aemyone) simplex* (Fairmaire, 1889) comb. nov., is proposed. The genus *Opatresthes* Gebien, 1928 is studied and considered as another sub-genus of *Goniadera*. *Goniadera tuberculifera* Fairmaire, 1889 is transferred to this genus, the new name *Goniadera (Opatresthes) tuberculifera* (Fairmaire, 1889) comb. nov., is proposed. A new species from Nicaragua: *Goniadera (Opatresthes) maesi* sp. nov. is described. A key to separate all sub-genera and species is provided.


Mots clé.— révision, nouvelles espèces, région néotropicale, Coleoptera, Tenebrionidae, Lagriinae, Goniaderini, Goniadera, Microgoniadera.
THE HINDWING VENATION AND ITS TAXONOMIC VALUE IN AFROTROPICAL SCUTELLERIDAE (HEMIPTERA: HETEROPTERA)

JOANNA CZAJA

Department of Biosystematics, University of Opole, Oleska 22, 45-052 Opole, Poland; e-mail: heyna@uni.opole.pl

Abstract.— The metathoracic wing venation in 41 species of 18 genera of Afrotropical Scutelleridae was studied and the results are presented and illustrated. Four main types of venational pattern can be recognized. The hindwing venation in Scutelleridae has also been compared with that of some other Pentatomoidea (Cydnidae, Dinidoridae, Pentatomidae and Tessaratomidae). Furthermore, the taxonomic value of metathoracic wing venation in the Afrotropical Scutelleridae has been discussed.

Key words.— Hemiptera, Heteroptera, Scutelleridae, hindwing venation, taxonomy, morphology, Afrotropical Region.

INTRODUCTION

Hindwing venation in the Pentatomoidea was studied in Cydnidae (Froeschner 1960, J. A. Lis and Heyna 2001) and Dinidoridae (J. A. Lis and Kocorek 1997) and selected Pentatomidae (Leston 1952, 1953, Betts 1986), Tessaratomidae (Leston 1954a) and Thyreocoridae (Leston 1954b). In the past, the venational patterns of Scutelleridae were examined by Tanaka (1926) and Lattin (1977). Characters of hindwing venation were used by Lattin (1964) for constructing a key to North American tribes of Scutelleridae. Descriptions of venational patterns of Australian Scutelleridae were provided by McDonald and Cassis (1984).

Such a comparative study has never been carried out in Afrotropical Scutelleridae. The aim of this study is to present the types of hindwing venational patterns found in different genera of Afrotropical Scutelleridae and establish whether, the characters of metathoracic wing venation have a taxonomic value in constructing the most reliable classification system within the family Scutelleridae. Such a system is still under construction.

MATERIAL AND METHODS

Representatives of 18 genera of Afrotropical Scutelleridae (out of the total of 23 genera so far discovered in the Afrotropical Region) have been studied to present the hindwing venation patterns. Altogether 41 species were used. Identification of the Afrotropical species of Scutelleridae is based on Schouteden’s study (1903). Internal classification within the family follows Carayon (1984). The nomenclature of the genera of Scutelleridae follows Göllner-Scheiding (2006).

A list of the examined species is presented below.

Scutellerinae Leach, 1815
Scutellerini Leach, 1815

Anoplagonius nigricollis (Signoret, 1858) [Nigeria, Old Calabar, MRAC];
Calidea signata (Fabricius, 1794) [Senegal, Kaolack, NMPC];
Calidea distinguenda Reiche et Fairmaire 1848, [Rhodesia, MRAC];
Calidea madagascariensis (Signoret, 1861) [Madagascar, Tanarive, MRAC];
Cantao ocellatus (Thunberg, 1884) [Democratic Republic of Congo, Kamama, ISNB];
Cryptacrus comes (Fabricius, 1803) [Cameroon, NHRS];
DO DEPENDENT FOUNDRASSES OF *FORMICA PRATENSIS* RETZ. (HYMENOPTERA: FORMICIDAE) NEED A ‘PASS’ TO BE ADOPTED BY A HOST COLONY?

**WOJCIECH CZECHOWSKI** and **ALEXANDER RADCHENKO**

*Laboratory of Social and Myrmecophilous Insects, Museum and Institute of Zoology, Polish Academy of Sciences, Wilcza 64, 00-679 Warszawa, Poland*  
*e-mails: wez@miiz.waw.pl, agradchenko@hotmail.com*

**Abstract.**— Dealate gynes of *Formica pratensis* Retz., after their nuptial flight, were observed heading for colonies of their potential temporary host species in a sand dune habitat in southern Finland. Two *F. pratensis* gynes, one within a nest area of *Formica cinerea* Mayr, and one close to a nest of *Formica lusatica* Seifert, were noticed walking with a *F. cinerea* and *F. lusatica* worker respectively in their mandibles. So far such peculiar behaviour preceding dependent colony founding has only been known in gynes of the subgenus *Chthonolasius* Ruzs., obligate temporary social parasites. Observations were carried on in June 2006.

**Key words.**— Ants, *Formica pratensis*, *F. cinerea*, *F. lusatica*, *F. sanguinea*, temporary social parasitism, dependent colony founding, chemical camouflage.

**INTRODUCTION**

Only several dozen of the ca. 11,500 known extant ant species are temporary social parasites, forming new colonies in established colonies of foreign species (see e.g. Kutter 1969, Buschinger 1986, 1990). For most of these species, it still remains a mystery how their gynes get into possession of a host nest and how the legitimate queen (if present) is eliminated. It appears that, paradoxically, the least is known about the rules of dependent colony founding in wood ants (*Formica* s. str.), one of the commonest and best investigated groups of Palaearctic ants, in which, or at least in the majority of its members, temporary social parasitism is regarded as optional, secondary, casual (Sudd 1967, Kutter 1969, Sudd and Franks 1987, Hölldobler and Wilson 1990) and, hypothetically, a relic mode of reproduction (Buschinger 1990).

The hosts for temporary parasitism of wood ants’ gynes are colonies of the subgenus *Serviformica* For. (e.g. Dlussky 1967, Kutter 1969) and, most probably queenless, colonies of other species of *Formica* s. str. (Czechowski 1996), as well as such colonies of *Formica* (Raptiformica) *sanguinea* Latr. (Czechowski 2001, 2003). Nothing is known about possible special pheromonal, morphological or behavioural adaptations of wood ant gynes to the hazardous practice of penetrating alien nests. They seem to recklessly head for the entrances, sometimes in large numbers, suffering heavy losses (see Czechowski 1996).

On the other hand, the gynes of the species of the subgenus *Chthonolasius* Ruzs., e.g. *Lasius umbratus* (Nyl.) and *L. distinguendus* (Em.), the explicitly obligate temporary social parasites, display peculiar habitual behaviour that precedes their attempts to be adopted by colonies of their host species, i.e. *Lasius niger* (L.), *L. platythorax* Seifert and (or) other *Lasius* s. str. species. Before entering a nest of the host species, a mated *Chthonolasius* gyne seizes and kills a host worker, and then, carrying it in her mandibles, runs around the nest for some time (Hölldobler 1953, Kutter 1969, Dumpert 1981, Ściaky and...
INTRODUCTION

Parasitic nematodes of the family Mermithidae complete their larval development in the haemocoel of ants of several genera and species, and they parasitise both sexuals and workers (for review, see Passera 1975). The morphology, anatomy and physiology of mermithised adult ants, as well as those infested with other internal parasites, display varying degrees of modification (for review, see Passera 1975 and e.g. Kloft 1949, Passera 1974, Espadaler and Riasol 1983); modification of behaviour is encountered less frequently (Maeyama et al. 1994). Modifications of body structure are particularly conspicuous in ants infested as larvae (Kutter 1958) and include not only mechanical deformations related to the presence of the parasite (especially swollen abdomen), but also various developmental malformations. This can lead to the appearance of intercaste females, called mermithogyynes by Wheeler (1937), that represent intermediate forms between gynes and workers (e.g. in the genus Lasius F.; e.g. Wheeler 1928, Gösswald 1929; see also Passera 1975), or brachypterous forms of sexuals, both gynes and males (see Passera 1975). In species with dimorphic worker caste, such as Pheidole pallidula (Nyl.) or some Camponotus Mayr species, intermediate forms between the ordinary worker and the soldier (Vandel 1930, Passera 1976), or between the ‘minor’ and ‘major’ worker types (Wheeler 1929, 1933) may develop respectively.

In European ants, mermithid parasitism has been recorded in three subfamilies: Dolichoderinae [Tapinoma erraticum (Latr.); Kloft 1950], Myrmicinae and Formicinae (several genera and species; see Passera 1975). Members of the genus Myrmica Latr. seem to be relatively frequently infested; to date, the
ONE NEW GENUS AND FOUR NEW SPECIES OF OONOPID SPIDERS FROM SOUTHWEST CHINA (ARANEAE: OONOPIDAE)

YANFENG TONG1, 2 and SHUQIANG LI1*

1Institute of Zoology, Chinese Academy of Sciences, Beijing 100080, China
2Graduate School of Chinese Academy of Sciences, Beijing 100039, China
*Corresponding author; e-mail: lisq@ioz.ac.cn

Abstract.—Four new species of oonopid spiders are described from southwest China. Two of these are placed in the new genus Trilacuna gen. nov.: T. angularis sp. nov. and T. rastrum sp. nov. (type species). Trilacuna gen. nov. is characterized by the enlarged male palpal femur, the complicated embolus-conductor complex, the branched male endites and the notched labium. A further two species are Camptosephiella tuberans sp. nov. and Gamasomorpha barbifera sp. nov. A key to 10 genera and 23 species of the currently known Chinese oonopid spiders is given.

Key words.—Oonopidae, Camptosephiella, Gamasomorpha, Trilacuna, new genus, new species, China.

INTRODUCTION

Oonopids are small (1–4 mm) haplogyne spiders and can be distinguished from other haplogynes by having six eyes which are usually closely grouped and touching, chelicerae free and lacking teeth, sternum usually has 3 pairs of radial furrows, abdomen often covered by scuta, tracheal spiracles which are paired and anteriorly positioned, and tarsus with an onychium bearing two claws. Oonopids mostly yellowish, orange or reddish brown, sometimes whitish or even pink colored (Saaristo and van Harten 2002, 2006). They can be found in shaded but dry conditions, in leaf litter, under rocks, and under bark (Xu 1996). At present, a total of 68 genera and 472 species are recorded worldwide, of which 8 genera and 19 species occur in China (Platnick 2007). However, the taxonomy of the family is still poorly done even on the generic level; only a small fraction of the species of this family has been discovered and described (Saaristo 2001).

In the present study, four new oonopid species of the genera Camptosephiella Caporiacco, 1934, Gamasomorpha Karsch, 1881, and Trilacuna gen. nov. are reported. The genus Camptosephiella has the enlarged palpal patellae, the well-separated cymbium and bulb and the complicated embolus-conductor complex. At present, only four valid species are recorded worldwide, two of them from Nepal, C. silens and C. strepens, are only known from females (Brignoli 1976); a third species, C. hilaris from Bhutan, is known from males only (Brignoli 1978); and the fourth species, C. sinensis from a cave in Yunnan Province, China, is the only species with both sexes described (Deeleman-Reinhold 1995). Based on similarity of the male palp, another new species from Yunnan Province, C. tuberans sp. nov., is assigned to the genus in this study.

The genus Gamasomorpha, with 56 species recorded worldwide, is one of the largest genera in this family. They are completely chitiznized species with spineless legs. The male palp has laminar embolus and a conductor that arising directly from the anterior face of the bulb. The cymbium and bulb are fused together but the border between them is clearly defined.
DRACONARIUS SPIDERS IN CHINA, WITH DESCRIPTION
OF SEVEN NEW SPECIES COLLECTED FROM CAVES
(ARANEAE: AMAUROBIIDAE)

XIANG XU and SHUQIANG LI*

Institute of Zoology, Chinese Academy of Sciences, Beijing 100080101, P.R. China
* corresponding author; e-mail: lisq@ioz.ac.cn

Abstract.— Cave Draconarius spiders in China were rarely reported. In the present paper, seven new Draconarius species collected from caves in China are described and illustrated. They are D. auriformis sp. nov., D. brachialis sp. nov., D. tongi sp. nov., D. ovillus sp. nov., D. specialis sp. nov., D. spirallus sp. nov., and D. tubercularis sp. nov. Distribution maps of Draconarius spiders are provided.

Key words.— Taxonomy, Draconarius, Amaurobiidae, new species, cave.

INTRODUCTION

The spider genus Draconarius was erected by Ovtchinnikov (1999) to accommodate Draconarius venustus Ovtchinnikov, 1999. With 102 known species mainly distributed in Asian (Bhutan, China, Korea, Nepal, Pakistan, Tadzhikistan and Thailand, Fig. 9), Draconarius spiders are a most diverse spider genus (Wang, 2006). Among those, 79 known species are founded in China and only two are reported from caves. i.e. Draconarius yosiianus (Nishikawa, 1999) from a limestone cave in Guangxi, South China, and D. triatus (Zhu et Wang, 1994) from several caves in Beijing and Hebei, North China (Xu and Li 2006).

More than 200 caves were investigated by the authors during the last few years. In addition to the previously discovered Draconarius, seven new species are discovered in caves. In the current paper, descriptions on these new species are provided.

MATERIALS AND METHODS

Specimens used in the current study are deposited in the Institute of Zoology, Chinese Academy of Sciences in Beijing, China (IZCAS). Observation, collection and breeding of cave Draconarius spiders were after Lin et al. (2005). Measurements are given in millimeters. Eye diameters are taken at the widest point. Leg measurements are shown as: total length (femur, patella, tibia, metatarsus, tarsus). Left structures (e.g. male palp, legs) are described, measured and illustrated. The terms used in the text and figure legends follow Wang (2002). Abbreviations used in the text and figures:

- A – atrium,
- ALE – anterior lateral eye,
- AME – anterior median eye,
- AME-AME – distance between AME and AME,
- AME-AME – distance between AME and AME,
- ALE-PLE – distance between ALE and PLE,
- C – conductor,
- CD – copulatory duct,
- CDA – conductor dorsal apophysis,
- CF – cymbial furrow,
- E – embolus,
- ET – epigynal tooth,
- FD – fertilization duct,
- LTA – lateral tibial apophysis,
- MA – median apophysis,
- PA – patellar apophysis,
- PLE – posterior lateral eye,
**COCCEUPODES LONGISOLENIIDIATUS, A NEW MITE SPECIES OF THE FAMILY EUPODIDAE (ACTINOTRICHIDA: ACTINEDIDA: EUPODOIDEA) FROM POLAND**

**KATARZYNA JESIONOWSKA**

*Department of Invertebrate Zoology and Limnology, University of Szczecin, ul. Wąska 13, PL-71-415 Szczecin, Poland*  
e-mail: Katarzyna.Jesionowska@univ.szczecin.pl

**Abstract.**— In this paper, *Cocceupodes longisolenidiatus*, a new mite from the family Eupodidae is described and illustrated on the basis of material collected from Poland. A comprehensive account of the morphology of the body, i.e. idiosoma, gnathosoma, legs with setae and solenidia, is given.

**Key words.**— Acari, Actinedida, Eupodoidea, Eupodidae, *Cocceupodes longisolenidiatus*, description, new mite species, morphology, Poland.

**INTRODUCTION**

Mites from the superfamily Eupodoidea have been the subject of the author’s study for many years, especially from the Polish area (Jesionowska 1992). The assemblage of these mites in Poland is practically unknown, although its representatives are rather numerous in various soil habitats (Jesionowska 1992, 1997, 2005). Other descriptions of the representatives of the genus *Cocceupodes* are presented in Strandtmann’s, Shiba’s, Abou-Awad’s and Olivier’s papers (e.g. Shiba 1969, Strandtmann 1971, Strandtmann et Prasse 1977, Abou-Awad and El-Bagoury 1984, Olivier and Theron 2003). The investigation of Polish material belonging to the genus *Cocceupodes* revealed several new species which will be presented in successive papers. In the present paper, the morphology of the new species *C. longisolenidiatus* is described.

**MATERIAL AND METHODS**

Specimens were collected after extraction with a Berlese funnel. The material was kept in 76% ethyl alcohol and slide-mounted in Faure’s medium. Observations, measurements and illustrations were made using a standard light microscope equipped with a phase-contrast optical system and immersion objective when necessary. All illustrations are original. All measurements are in micrometers (µm). Division of the body into aspidosoma, gnathosoma, podosoma and opisthosoma is according to Grandjean (1969), with some modifications proposed by the author in earlier papers (Jesionowska 1991, 1996, 2000, 2003b).

Notation of prodorsal setae:  
*ro* (=v₁) – rostral,  
*bo* (=sc₁) – bothridial,  
*le* (=v₂) – lamellar,  
*xa* (=sc₂) – anterior exobothridial.

*ft* – fastigial,  
*te* – tectal,  
*p* – proral,  
*u* – unguinal,  
*pv* – primiventral,  
*pl* – primilaterial,