INTRODUCTION

The genus Pronura Delamare Deboutteville, 1953 is one of the most species-rich and diversified genera within the subfamily Neanurinae. Most of 52 known members of the genus have been described from humid mountain regions of Asia, Africa and Madagascar (Cassagnau 1991, 1996, Deharveng and Bedos 1993). Until now only one species, Pronura bidoup Deharveng et Smolis, 2002, was known from Vietnam (Deharveng and Smolis 2002). Recent examination of Collembola from North Vietnam has revealed the presence of one male and female of a species belonging to the mentioned genus. Although the material is limited, an unique characters of these specimens have enabled us to ascertain that they undoubtedly represented a new species of Pronura, Pronura pomorskii sp. nov. was collected during an expedition to the Tam Dao National Park, sponsored by Museum and Institute of Zoology PAS (Warszawa) and Wroclaw University.

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:

General morphology:
  abd. – abdomen,
  ant. – antenna,
  Cx – coxa,
  Fe – femur,
  Dlx2 – subcoxa 2,
  th. – thorax,
  Tr – trochanter,
  T – tibiotarsus,
  VT – ventral tube.

Groups of chaetae:
  Ag – antegenital,
  Fu – furcal,
  Ve – ventroexternal,
  Vi – ventrointernal,
  Vl – ventrolateral,
  An – anal valve.

Tubercles:
  Af – antennofrontal,
  Cl – clypeal,
  De – dorsoexternal,
  Di – dorsointernal,
  Dl – dorsolateral,
A NEW SPECIES OF PROTAPHORURA ABSOLON, 1901 (COLLEMBOLA: ONYCHIURIDAE: ONYCHIURINAE) FROM ROMANIA AND A REDESCRIPTION OF PROTAPHORURA GLEBATA (GISIN, 1952)

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Abstract.— Protaphorura ionescui sp. nov. is described from Romania. This species is closest to Protaphorura glebata (Gisin, 1952) which is redescribed, and P. fimata (Gisin, 1952). A key for Protaphorura with dorsal pseudocellar formula like 33/022/33333 is given.

Key words.— Collembola, Onychiurinae, Protaphorura, new species, redescription, Romania.

INTRODUCTION

In this paper we present a description of Protaphorura ionescui sp. nov. Our study is based on material collected during an expedition to Rodna Mountains and the ecological research in some oak-hornbeam forests situated in S–E of Muntenia County, Romania. The new species is near P. glebata and P. fimata. The original description of P. glebata is very short. We therefore provide a more detailed redescription, based on paratypes determined by Gisin from the collection on the Museum of Natural History in Geneva. The characters of P. fimata were provided by Pomorski (1998). The complete diagnoses of the genus Protaphorura Absolon, 1901 has already been given by Pomorski (1998) and Weiner (1996).

TAXONOMY

Protaphorura ionescui sp. nov.
(Figs 1–7)

Diagnosis. Habitus typical of the genus Protaphorura Absolon, 1901. Abdomen VI with anal spines on distinct papillae, body with homogenous granulation. Pseudocellar formula on I–III thoracic terga /022/. AIIIO with 5 papillae and 5 guard setae Seta m on first thoracic tergum present. Seta p0 on abdominal tergum V present. Straight lines, going through the bases of setae a1 and m1 on abdominal tergum VI distinctly parallel.

Description. Holotype (female) length 1.98 mm, length of paratypes: 2.07 mm (female), 1.49–1.76 mm (males), 0.76–1.51 mm (juveniles). Habitus typical of
INTRODUCTION

Abundant cladistic and fossil evidences indicate that archostematans are the basal suborder of beetles which includes four extant families; Cupedidae, Ommatidae, Micromalthidae and Crowsoniellidae (Lawrence and Newton 1995) and 11 extinct families (Carpenter 1992). Fossil Archostemata often dominated early Mesozoic beetle faunas, but declined in importance through the Cretaceous, and have only few recent representatives (Sorinao and Delclòs 2006). The most common archostematan family in the Late Mesozoic deposits is the extant family Cupedidae.

The Cupedidae contains beetles elongate and somewhat flattened in form and with a characteristic tuberculate sculpture of the cuticle. Nowadays, this family is only a small group, conversely, it was abundant in the Permian and the Mesozoic (Lubkin 2003) and formed a more important element in the entomofauna than they do today (Ponomarenko 2002). Hence, the study of Mesozoic cupedids is significant in order to understand their relationships.

Recently, we have collected two fossil cupedids 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. Based on these two well-preserved specimens, a new genus and two new species are described here. The complete preservation of the new fossils enabled us to determine the characteristics of the body of these ancient cupedids which suggest the affinities of these species with extant and extinct groups.

CHARACTERISTICS OF THE LOCALITY

The strata of Yixian Formation are mainly of lacustrine sediments intercalated with volcanioclastics (Ren et al. 1995). It contains a large number of the Jehol Biota fossils, including the dinosaur Sinosauropteryx prima, primitive bird Confuciusornis saucius and angiosperms Archaeofructus liaoningensis (Sun et al. 1998, Hou et al. 1999, Ding et al. 2001). Paleobotanical data from fossil spores, pollen and plants indicate a climate that was both warm and moist in the Yixian Age (Ding et al. 2001).

A large fossil archostematan assemblage has been previously reported from the Yixian Formation (Tan et
**INTRODUCTION**

The subfamily Lycoperdininae (=Eumorphinae) (Strohecker 1953, Lawrence and Newton 1995, Tomaszewska 2000, 2005) is the largest, distinct and uniform group of Endomychidae.

In the classification of Endomychidae, proposed after a phylogenetic analysis based on adult characters (Tomaszewska 2000), Lycoperdininae have been confirmed to be a monophyletic taxon, possessing the stridulatory membrane on the anterior margin of the pronotum, stridulatory area (occipital file) on the head and ovipositor with fused coxites, the characters postulated as synapomorphies for this subfamily. In spite of clear monophyly of Lycoperdininae, the relationships of its genera needed much more detailed studies of all currently recognized genera, and were a subject of a recent paper on phylogeny of Lycoperdininae (Tomaszewska 2005). The recent analysis based on adult and larval data, confirmed the monophyly of the Lycoperdininae. The stridulatory organs on head and pronotum, the maxillary lacinia with mesal edge and dorsal surface covered with regular rows of setae and/or spinulae and the sternite of the male genital segment well developed with apical margin at least weakly emarginate or sinuate seem to serve as synapomorphies for the subfamily. Contrary to my former analysis (Tomaszewska 2000), the fused coxites of the female genitalia do not seem to be a unique character for Lycoperdininae. The separated coxites occur in Daulis, Daulotypus, Archipines and Achuarmychus that represent most plesiomorphic types of the subfamily, but this character is present also in most species of the more derived genera Mycetina and Ancylopus.

Although generic relationships within Lycoperdininae seem to be far from being resolved, the recent analysis indicated five evolutionary lineages, and five generic groups of Lycoperdininae have been recognized (Tomaszewska 2005).

During an examination of the Oriental Endomychidae borrowed from the Naturhistorisches Museum, Basel, Switzerland (NHMB), a new genus of Lycoperdininae from Vietnam, was recognized and is described here as *Stroheckeria* gen. nov. along with *S. quadrrimaculata* sp. nov. and is regarded as a member of the Amphisternus-group. The subfamily currently includes 39 genera distributed worldwide, but with its maximum diversity in the Orient (22 genera – 17 of them endemic).
THE SPECIES OF THE AFRICAN GENUS *STOMYLUS* FÅHRAEUS (COLEOPTERA: TENEBRIONIDAE: DIAPERINAE)

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Abstract.—The species of the tenebrionid genus *Stomylus* Fåhraeus, 1870 (type species *Stomylus bicolor* Fåhraeus, 1870) within the tribe Diaperini are revised. Seven species are recognized as valid, distributed exclusively in Africa south of the Sahara and lacking in Madagascar. The diagnostic characters are figured (also by Scanning Electron Microscope), new distributional data are given and an identification key is compiled. New synonyms: *Stomylus apicatus* (Gebien, 1910) = *Stomylus trituberculatus* (Pic, 1926) syn. nov.; *Stomylus nigronitens* Gebien, 1920 = *Stomylus loebli* Ardoin, 1980 syn. nov.; *Stomylus Schroederi* (Gebien, 1904) = *Stomylus Schroederi* ssp. *bimaculatus* Ardoin, 1969 syn. nov. New combination: *Diaclina gracilis* (Fåhraeus, 1870) comb. nov. from *Stomylus*.

Key words.—Coleoptera, Tenebrionidae, Diaperinae, *Stomylus*, taxonomy, distribution, identification key.

INTRODUCTION

The species of the African tenebrionid genus *Stomylus* Fåhraeus, 1870 (type species *Stomylus bicolor* Fåhraeus, 1870) (syn. *Pselaphidion* Gebien, 1920) within the tribe Diaperini are described in scattered papers (Gebien 1910, 1920; Ardoin 1969, 1980) and have never been comparatively revised. The species of *Stomylus* can be separated from those of the closely related *Platydema* (revision of the African species see Schawaller 2004) by modified (enlarged) anterior tarsi in males and by a modified (enlarged) external part of the maxillae in males (Gebien: “Außenlade der Maxillen blattartig vergrößert”), by a modified elytral tip in females, and by a different general shape of the aedagus.

The distributional data in this paper are not just cited from the labels but are partly completed by actual political names, by additional data for a better localization, and translated in several cases from other languages into English.

All species of *Stomylus* are restricted to fungal-habitats on old trees and live often syntopically with other fungus-adapted but often not related tenebrionids from the genera *Platydema* Laporte & Brullé, 1831; *Rhapidandrus* Leconte, 1862; *Cryphaeus* Klug, 1833; *Pentaphyllus* Latreille, 1829 and *Bolitolaemus* Gebien, 1920 (Schawaller In press). The congeners inhabit exclusively Africa south of the Sahara (distributional pattern of the genus *Stomylus* see Fig. 1), most of the species live in Western and Central Africa. The occurrence of a single species also in eastern South Africa gives an additional hint that the arboreal fauna of that area has a closer relationship to the tropical East and even West African fauna. The genus is absent on Madagascar.

MATERIAL AND METHODS

CRGT – Collection Dr. Roland Grimm, Tübingen; CVTT – Collection Vladimir Tichý, Trebon;
PSEUDOSELINUS ZAMBIAIENSIS, A NEW SPECIES FROM AFRICA (COLEOPTERA: TENEBRIONIDAE: PLATYNOTINA)

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Abstract.— Pseudoselinus zambiaiensis sp. nov., a new species from Africa is described, illustrated and compared with its relatives. Key to the species of Pseudoselinus and distribution are provided.

Key words.— Entomology, taxonomy, new species, Coleoptera, Tenebrionidae, Platynotina, Pseudoselinus zambiaiensis, Africa, Zambia.

INTRODUCTION

Pseudoselinus Iwan, 2002 was recently revised by Iwan and Banaszkiewicz (2005). The genus is distinguished by the following characters: 7–11 antenomeres transverse; mid part of mentum narrow; anterior pronotal angles moderately protruding anteriad; male abdominal ventrites smooth; last abdominal ventrite bordered; bursa copulatrix with longitudinal ridge (lack in P. elevatus).

At present, Pseudoselinus consists of 5 species (including Pseudoselinus zambiaiensis sp. nov. described here) distributed in Africa (Fig. 25).

MATERIAL AND METHODS

The measurements, taken using a filar micrometer, were as follows: width of anterior elytral margin – from humeral angle to scutellum; body length – from anterior margin of labrum to elytral apex; body width – maximum elytral width; pronotal length – in the middle of pronotum, from tip of anterior pronotal angle to tip of posterior pronotal angle.

For examination of internal structures, females and males were dissected and whole abdomens were cleared in 10% cold potassium hydroxide overnight.

Drawings were made using a dissecting microscope (Olympus SZX12) with camera lucida.

Scanning photographs were acquired at Hitachi S-3400N of the Museum and Institute of Zoology Polish Academy of Sciences in Warsaw, Poland.

The following abbreviations are used in the descriptions:
pl/pb – pronotum length/breadth ratio;
el/eb – elytra length/breadth ratio;
el/pl – length ratio elytra/pronotum;
eb/pb – breadth ratio elytra/pronotum.

Types are preserved in the following collections:
GR – Collection Gérard Robiche;
MIZ – Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw, Poland;

TAXONOMY

Pseudoselinus zambiaiensis sp. nov.
(Figs 1–5, 7, 10, 13, 14, 16–25)

Locus typicus. Lukullu (Zambia).

Etymology. From terra typica.

Diagnosis. Structure of elytron (not tucked in; epipleuron reaching elytral apex; elytral rows 3 and 6, 4 and 5 connected) and the presence of the sclerite in
INTRODUCTION

The genus *Nyctelia* Latreille, 1825 belongs to the Nycteliini, a Neotropical tribe of Pimeliinae with 298 species arranged in 12 genera endemic to arid and semi-arid lands of southern South America (Flores 1997, 1999, Flores and Vidal, 2000, Flores and Triplehorn, 2002). *Nyctelia* comprises 65 species (Kulzer 1963) distributed from northwestern Argentina and central Chile to the southern part of Patagonia in Argentina and central Chile, with one species reaching Uruguay (Flores 1997). Species of *Nyctelia* inhabit the biogeographic provinces Patagonia Central, Monte, Prepuna, Santiago, Maule and Pampa (Morrone 2001) being dominant among the tenebrionid fauna in the Patagonian steppes (Kuschel 1969), with more than two species frequently being found in sympatry (Peña 1963).

Within the research project “Diversity of arthropods in high mountains in central-western Argentina” we conducted several sampling explorations using pitfall traps.

In two different environments in Mendoza province, we found specimens that belong to two new species of *Nyctelia* that we describe in this paper, with distributional and habitat records and habitus photographs for these two new species are included, with comparisons to other known species of the genus. A discussion on the biogeography and the non sympatry with other species of *Nyctelia* of these two new species is presented. Lectotype is designated for *Nyctelia alutacea* Fairmaire, 1876.

TWO NEW SPECIES OF *NYCTELIA* LATREILLE FROM WESTERN ARGENTINA, WITH ZOOGEOGRAPHICAL AND ECOLOGICAL REMARKS ON THE HIGH MOUNTAIN HABITAT (COLEOPTERA: TENEBRIONIDAE)

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Abstract.—Two new species of the genus *Nyctelia* Latreille (Pimeliinae: Nycteliini) from high mountains in central-western Argentina are described, *N. nevadoensis* sp. nov. and *N. setipennis* sp. nov. Distributional and habitat records and habitus photographs for these two new species are included, with comparisons to other known species of the genus. A discussion on the biogeography and the non sympatry with other species of *Nyctelia* of these two new species is presented. Lectotype is designated for *Nyctelia alutacea* Fairmaire, 1876.

Key words.—Coleoptera, Tenebrionidae, Nycteliini, *Nyctelia*, new species, distribution, biogeography.
**INTRODUCTION**

During my researches in Tunisia (5–19 May 2006) I collected a series (17 specimens) of an unknown *Stylosomus* (Chrysomelidae, Cryptocephalinae). Its description is given below.

**TAXONOMY**

*Stylosomus* (s. str.) *arnoldi* sp. nov.

*Cryptocephalinarum*

**Etymology.** This species is dedicated to Mr. Ulf Arnold (Fredersdorf, Germany), a known German coleopterist and connoisseur of Chrysomelidae.

**Diagnosis.** Upper side of body generally black, clypeus and sometimes anterior part of frons pale, hind part of pronotum and apex of elytra often lightened, legs yellow with black or blackish tarsi. Length of body 1.7–2.2 mm. Aedeagus as in Figs 1, 2.

**Description.** Body cylindrical, head broad, together with eyes as broad as pronotum, pronotum 1.6–1.8 × broader than long, legs relatively long and robust. Fore part of head (clypeus, frons between eyes) pale, remaining part of upper side usually almost entirely black, hind part of pronotum and apical part of elytra often lightened, yellowish or pale reddish. Underside black except reddish prosternum. Femora and tibiae yellow, tarsi black or blackish, claws dark reddish. Antennomere 1 reddish yellow, 2 coloured similarly but darkened in apical part, both thickened; antennomeres 3–5 partly darkened, 6–11 black. Frons and vertex deep, not very densely, moderately strongly punctured, interstices smooth, not or indistinctly reticulate. Punctuation on pronotum similar as on head, somewhat finer than on elytra. Primary punctures of elytra strong, deep and dense, arranged in regular longitudinal rows, along each interval runs a row of relatively long, thin, whitish, adpressed hairs. Similar hairs cover pronotum, more distinctly on its lateral parts. No sexual dimorphism in the structure of fore legs, in female fossa ovigera round, deep, bowl-like. Length of body 1.7–1.9 mm (male) to 1.9–2.2 mm (female). Aedeagus (Figs 1, 2) in holotype 0.49 mm long.
TAXONOMIC REVISION OF THE SCHENCKI-GROUP OF THE ANT GENUS MYRMICA LATREILLE (HYMENOPTERA: FORMICIDAE) FROM THE PALAEARCTIC REGION

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Abstract.—A taxonomic revision is made of the Palaearctic species of Myrmica belonging to the schencki-group. Three new species are described: M. siciliana (all castes) from Sicily, M. onoyamai (all castes) from Japan and M. inucta (workers only) from northwest Kazakhstan; also first descriptions are made of the sexual castes for two species: M. caucasicola (queen) and M. koreana (queens and males). Keys to the identification of both workers and males of all species, and maps of their distributions are provided. The distribution of the various species is discussed and it is suggested that the origins of extant Palaearctic schencki-group species is linked to the development of the Steppe Zone during the last 10 million years.

Key words.—Ants, Formicidae, taxonomy, Myrmica, schencki-group, new species, key.

INTRODUCTION

When Radchenko (1994a) formalised the concept of species-group of the genus Myrmica he placed 4 species within the schencki-group: excluding synonyms (see below) these were M. schencki Vierreck, M. lacinistris Ruzsky, M. ravasinii Finzi and M. caucasicola Arnoldi. During the next decade another two species attributed to this group were described, one from Korea – M. koreana Elmes et al., 2001 and another from southern Greece – M. pelops Seifert, 2003; Seifert took the opportunity to make a taxonomic review of the schencki-group. Although this review contained much important information, it concentrated mainly on the workers and provides no Keys to the identification of the reviewed species. Very recently a presumed socially parasitic and closely related species of M. schencki has been described – M. schenckioides Boer et Nordijk, 2005.

During the last few years we have obtained additional schencki-group material from various parts of the Palaearctic that was collected mostly by the authors (GWE and AA). This contained specimens from three undescribed species and the previously unknown males and queens of M. koreana and queens of M. caucasicola; we describe them here. This makes a further revision of the schencki-group necessary in which we include tables of morphometrics, Keys for the identification of workers and males, and distribution maps for all species. We have been fortunate that museums have allowed us to investigate the extant type specimens of all previously described species and infraspecific forms of the schencki-group (except M. schenckioides, which has a very full recent
UNCOMFORTABLE PROTECTION: FORMICA POLYCTENA FÖRST. SHELTERS FORMICA FUSCA L. FROM FORMICA SANGUINEA LATR. (HYMENOPTERA: FORMICIDAE)

WOJCIECH CZECHOWSKI and BÁLINT MARKÓ

Abstract.—The wood ant Formica polyctena Först. is a territorial species, a regular top dominant of ant communities in forests. Its colonies defend their whole foraging areas (territories) against other territorial ants, including F. sanguinea Latr., a common facultative slave-maker. The most frequent ‘victim’ of F. sanguinea is F. fusca L., a ubiquitous submissive ant species. On the basis of some earlier observations, the presumption was made that F. polyctena, when defending its own territories, would indirectly protect F. fusca colonies, which nest within these territories, from F. sanguinea raids. It was expected that F. fusca should be more abundant in F. polyctena territories, than in F. sanguinea territories, while other subordinate ants, which are not potential slaves of F. sanguinea, should not show such difference. This hypothesis was supported by the results of the baiting experiments carried out in the Białowieża Forest, NE Poland. The findings are discussed in the context of interspecific competition hierarchy in ants.

Key words.—Ants, Formicidae, Formica polyctena, Formica fusca, Formica sanguinea, Polyergus rufescens, territoriality, interspecific competition, competition hierarchy, foraging, slavery.

INTRODUCTION

Formica (Serviformica) fusca L. is biotically related both to F. (Formica) polyctena Först. and F. (Raptiformica) sanguinea Latr. in a special way. It is, at least in Central Europe, the most frequent host species for temporary social parasitism of F. polyctena at nest foundation (and in the case of other wood ants of the subgenus Formica s. str.; see e.g., Czechowski and Pisarski 1994, Pisarski and Czechowski 1994) and the most frequent slave species of F. sanguinea [and Polyergus rufescens (Latr.); see e.g., Kutter 1968, Buschinger et al. 1980]; for definitions of social parasitism and its particular forms in ants see e.g. Buschinger (1986, 1990) and Hölldobler and Wilson (1990). Both territorial species thus affect negatively F. fusca, though not in the same way. Consequently these three species are closely interrelated ecologically, besides being common co-members of ant assemblages in boreal and temperate forest habitats. The multi-species ant assemblages are organized hierarchically, and are dominated by territorial species, i.e. species whose colonies defend their foraging areas (Pisarski 1973, 1982, Gallé 1975, 1978, Vepsäläinen and Pisarski 1982, Reznikova 1983, Savolainen and Vepsäläinen 1988). Nests of such colonies play the role of spatial organizing centres of local ant communities (Savolainen and Vepsäläinen 1988, 1989, Savolainen et
A NEW MIDDLE JURASSIC STONEFLY FROM DAOHUGOU, INNER MONGOLIA, CHINA (INSECTA: PLECOPTERA)

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Abstract.— A new genus and species of Baleyopterygidae, Aristoleuctra yehae gen. and sp. nov. collected from the Middle Jurassic of Daohugou Village, Shantou Township, Ningcheng County, Inner Mongolia, China, is described and illustrated. This is the first report of Baleyopterygidae from China. With the establishment of Aristoleuctra, Baissoleuctra conspecta Sinitshenkova, 1992 from Late Jurassic – Early Cretaceous of East Siberia is transferred to this genus.

Key words.— Plecoptera, Baleyopterygidae, fossil insects, Middle Jurassic, Daohugou, Inner Mongolia, China.

INTRODUCTION

Baleyopterygidae was established by Sinitshenkova (Sinitshenkova 1985a). This family is evidently close to the ancestors of the recent Capniidae and Leuctridae. The species of this family were small stoneflies with reduced wing venation. Up to now, 4 genera and 15 species of this family have been described. Baleyopterys Sinitshenkova, 1985 with 6 species was known from Early Jurassic to Early Cretaceous of Siberia and Mongolia (Sinitshenkova 1985a, 1987, 1990). Udopteryx Sinitshenkova, 1985 with 3 species was described from Middle-Late Jurassic of South Kazakhstan, Transbaikalia and Siberia. Plutopteryx Sinitshenkova, 1985 with 2 species was found in Middle and Late Jurassic of Siberia and Mongolia (Sinitshenkova 1985a, b). Four species from Late Jurassic and Early Cretaceous of Transbaikalia and Siberia were assigned to Baissoleuctra Sinitshenkova, 1987 (Sinitshenkova 1987, 1992).

Most species (including imago and nymph) of this family were well-preserved, so we can clearly compare the new materials with the published species by the characters of wing venation, body, and legs. On the basis of unique and well preserved impressions we establish a new genus Aristoleuctra, with a new species A. yehae sp. nov. in Baleyopterygidae, and now we consider Baissoleuctra conspecta Sinitshenkova 1992 to be a member of Aristoleuctra.

The new species described below was collected in Daohugou Village, Shantou Township, Ningcheng County, Inner Mongolia, China. This is the first report of Baleyopterygidae from China. In the large collection of insect fossils housed in the Capital Normal University, Beijing, there are imagoes and nymphs of other stoneflies belonging to Sibiroperlidae, Perlariopsidae and Nemouridae collected in Daohugou.

The age of the Daohugou area is still controversial, ranging from early Middle Jurassic to Early Cretaceous
INTRODUCTION

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The age of the Daohugou area is still controversial, ranging from early Middle Jurassic to Early Cretaceous.
NEW PLANTHOPPERS (INSECTA: HEMIPTERA: FULGOROMORPHA) FROM THE MIDDLE EOCENE MESSEL MAAR

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Abstract.—Three new genera of extinct Dictyopharidae, Lophopidae and Eurybrachyidae respectively are described. *Wedelphus* gen. nov. with *Wedelphus dichopteroides* sp. nov. placed in Dictyopharidae, *Baninus* gen. nov. with *Baninus thuringiorum* sp. nov. of the family Lophopidae and *Amalaberga* gen. nov. with *Amalaberga ostrogothiorum* sp. nov. placed in Eurybrachidae (first fossil record of the family) are described, all from deposits of the Grube Messel Lagerstätte in Germany. A representative of an unrecognised family, possibly related to *Henriksenopterix* Petruševičius, 2005 is reported. The oil shales of the Messel maar in Hessen are well known for their extremely rich fossil flora and fauna. They are of Lower Middle Eocene age (about 48 million years) and contain a highly diverse insect fauna.

Key words.—Hemiptera, Fulgoromorpha, Dictyopharidae, Lophopidae, Eurybrachidae, Nogodinidae, Ricaniidae, *Wedelphus, Wedelphus dichopteroides, Baninus, Baninus thuringiorum, Amalaberga, Amalaberga ostrogothiorum*, new genera, new species, Palaeogene, Lower Middle Eocene, Messel maar, insect fossils.

INTRODUCTION

The Messel maar is located close to the small village of Messel, about 9 km NE of Darmstadt (Hessian State, South Germany). It is an ancient open-cast mine in which oil shales were quarried until the end of 1971. These oil shales originated from sludge deposits at the bottom of a freshwater lake that existed circa 45 million years ago. The locality was inscribed into the World Heritage List of UNESCO in 1995, mainly because of its mammalian fossils, which became world famous because they are frequently completely articulated and exhibit excellent soft-tissue preservation. There is also an important record of fossil insects which comprises a highly diverse fauna of primarily terrestrial insects (e.g., Lutz 1990, 1991, Hörenschemeyer 1994, Hörenschemeyer and Wedmann 1994, Richter and Wedmann 2005, Wedmann and Hörenschemeyer 1994, Tröster 1991, 1992a, 1993a, b, c, 1994a, b, 1999, Wedmann 1994, Wappler and Engel 2003).

A small number of hemipteran insects have so far been reported from the Messel maar: Fulgoromorpha: Dictyopharidae (Wappler 2004), Gerromorpha (Wappler and Andersen 2004), Cimicomorpha (Wappler 2003, 2006) and Pentatomorpha (Kinzelbach 1970).

The present paper reports on four specimens of Fulgoromorpha: Dictyopharidae, Lophopidae, Eurybrachiidae and an unrecognised family from the lower Middle Eocene oil shales from Messel.
SALTICIDAE (ARACHNIDA: ARANEAE) FROM ORIENTAL, AUSTRALIAN AND PACIFIC REGIONS. XIX. GENUS PELLENES SIMON, 1876 IN AUSTRALIA

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Abstract.— The genus Pellenes is newly recorded from Australia. Its relationships are discussed and diagnostic drawings, redescription and distributional data for Pellenes bitaeniata (Keyserling, 1882), the only known Australian representative of the genus, are given.

Key words.— Salticidae, Australia, genus Pellenes.

INTRODUCTION

Although over 60 salticid genera have been recorded in Australia (Richardson and Żabka 2003), the list is far from being complete. Some widely distributed and Oriental genera are still being discovered (Żabka, unpubl.), others are to be described as new for science.

The genus Pellenes consists of about 80 nominal species (Prószyński 2003) recorded in the Holarctic, Afrotropical and Oriental regions, with a few centres of speciation (distribution) located mostly in the Mediterranean and Central Asia (Andreeva 1976, Logunov et al. 1999, Metzner 1999, Alicata and Cantarella 2000, Cantarella and Alicata 2002). Despite the presence of suitable climatic and habitat conditions, the finding of Pellenes in Australia has been a surprise due to the distant location of the continent, separate evolution of its fauna and biota and barriers of tropical rainforests covering potential SE Asian-New Guinean migration/dispersal routes.

The research on Pellenes relationships has been long-lasting. Simon (1903) included the genus in an Aelurilleae subfamily/group comprising nine genera, with only Neaetha being related. Also Pelleninae sensu Petrunkevitch (1928) consisted of a number of only distantly related genera. In Pelleninae sensu Prószyński (1976) Pellenes was placed together with Bianor, Maevia, Neaetha and Habronatus and this grouping has largely been supported by Griswold (1987) and Maddison and Hedin (2003), the latter on the basis of molecular data. The most recent and complete definition of the genus and remarks on its relationships and distribution were given by Logunov et al. (1999).

Morphological characters suggest that Pellenes brevis Simon, 1868 from France, Spain, Greece and Bulgaria and P. epularis (O. Pickard-Cambridge, 1872) from Israel and Middle Asia are the closest relatives of P. bitaeniata (Keys.). This is rather surprising given the distant geographical ranges of the three species. However, due to uniformity of genitalic and other somatic features, molecular data is required to make the judgment on Pellenes relationships possible and reliable.

MATERIAL AND METHODS

The material was collected during biodiversity surveys conducted by the Queensland Museum (Brisbane), the Australian Museum (Sydney) and the Western Australian Museum (Perth). The type material was provided by the Zoologisches Institut und Zoologisches Museum der Universität Hamburg. Methods of specimen examination are as described earlier (Żabka 1991a).
NOTES ON TAXONOMY AND BIOLOGY OF TWO
*STENAEELURILLUS* SPECIES FROM SOUTHERN AFRICA
(ARANEAE: SALTICIDAE)

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Abstract.—A redescription of *Stenaelurillus guttiger* (Simon, 1901) with new distribution data is given, a lectotype for this species is designated. A new species, *S. natalensis*, preying on *Odontotermes badius* termites, is described, along with data on its natural history.

Key words.—Arachnology, Araneae, Salticidae, *Stenaelurillus*, new species, redescription, termitophagy, Afrotropical Region.

INTRODUCTION

The genus *Stenaelurillus* Simon, 1885 comprises some 20 described species, mostly distributed in Africa. A new *Stenaelurillus* species closely related to *Stenaelurillus guttiger* (Simon, 1901) was found during a biodiversity study of the Ndumo Game Reserve in KwaZulu-Natal (South Africa). Below we provide a redescription of *S. guttiger*, originally described from Transvaal in South Africa, and include several new distribution records, showing that the species is widely distributed in southern Africa. We also describe the new *Stenaelurillus* species, *S. natalensis*, which has a more restricted distribution and is currently known only from two localities in northern KwaZulu-Natal. Data on the habitat preferences and behaviour of the latter species are also provided. The species appears to specialise on *Odontotermes badius* (Haviland, 1898) termite prey.

The two very similar, closely related *Stenaelurillus* species are allopatric, their ranges are separated by a geographical barrier of the Lebombo mountains.

MATERIAL AND METHODS

This work is based on both museum collections and new material. Specimens for this study are kept in the following collections:

HNHM – Hungarian Natural History Museum, Budapest;
MCZ – Museum of Comparative Zoology, Harvard University, Cambridge, Mass;
MHN – Muséum d’Histoire Naturelle, Genève;
MNHN – Muséum National d’Histoire Naturelle, Paris;
MRAC – Musée Royal de l’Afrique Centrale, Tervuren;
NCA – National Collection of Arachnida, Pretoria, South Africa;
NHM – Natural History Museum, Wrocław University;
NMZ – National Museum (Natural History) of Zimbabwe, Bulawayo.