

REVIEW OF THE PALAEARCTIC *PROTAPHORURA* ABSOLON, 1901 SPECIES OF OCTOPUNCTATA GROUP (COLLEMBOLA: ONYCHIURIDAE)

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Abstract.— *Protaphorura macfadyeni* (Gisin, 1953) *Protaphorura mongolica* (Martynova, 1975) *Protaphorura nutak* (Yosii, 1972) and *Protaphorura tetragrammata* (Gisin, 1964) are redescribed based on the type specimens and new materials. *Protaphorura rectopunctata* Buşmakiu, 1996 and *Protaphorura serbica* (Loksa et Bagojevic, 1976) is a junior synonyms of *Protaphorura sakatoi* (Yosii, 1966). *Protaphorura elenae* **sp. nov.**, *Protaphorura licheniphila* **sp. nov.**, *Protaphorura merita* **sp. nov.**, *Protaphorura nazarovenssis* **sp. nov.** and *Protaphorura submersa* **sp. nov.** five new, closely related species from Siberia (Russia) are described. An key to all Palaearctic *Protaphorura* species with 4 and more pseudocelli at antennal base is provided.



Key words.— Collembola, Onychiuridae, *Protaphorura*, taxonomy, Palaearctic.

**A NEW SPECIES OF PRIONOCERIDAE
(COLEOPTERA: CLEROIDEA) FROM THE EOCENE
OF BRITISH COLUMBIA, CANADA**

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Abstract.— *Prionocerites tattriei* **gen. and sp. nov.** (Insecta: Coleoptera: Cleroidea: Prionoceridae) are described from Eocene amber associated with the Hat Creek Coal Formation, Kamloops Group, British Columbia, Canada. This is the first occurrence of the family Prionoceridae in the fossil record and from the Western Hemisphere.



Key words.— Cleroidea, Prionoceridae, new genus, new species, Eocene, Hat Creek Coal Formation, Canada.

PHYLOGENY AND CLASSIFICATION OF THE FAMILY LYCIDAE (INSECTA: COLEOPTERA)

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Abstract.— Lycidae, net winged beetles, have proved difficult to classify using morphological characters. Here, using a previously published molecular phylogeny, comparing the results with morphological data and re-analyzing previously published morphological data set, we propose a revised classification of Lycidae. All analyses support the monophyly of Lycidae, but phylogeny inferred from molecular data is in conflict with the current classification. The adult larviform females evolved in several lineages and never switched back to a winged form. Therefore, neotenic development of females is not a synapomorphy of Lycidae and the neotenic lineages do not form a basal paraphylum with respect to remaining Lycidae as previously proposed. As a consequence morphological similarities resulting from neoteny are homoplasies and cannot be used for definition of monophyletic lineages. The major result of this study is delineation of five basal clades, which are given subfamily rank: Libnetinae Bocak et Bocakova, 1990, **stat. nov.**, Dictyopterinae Kleine, 1928, **stat. nov.**, Lyropaeinae Bocak et Bocakova, 1989, Ateliinae Kleine, 1928 and Lycinae Laporte, 1836, **sensu nov.** Dexorinae Bocak et Bocakova, 1989, **stat. nov.** were not available for molecular analyses and their position is inferred from morphology alone. Further, Lycinae are redefined. Leptolycini are nested among Neotropical Lycini and render them paraphyletic. Slipinskiini are shown to group with Erotini. The distant position of Macrolycini and Dilophotini is demonstrated and Dilophotini are transferred from Calochrominae to Ateliinae. Four new tribes are proposed: Lycoprogenthini **trib. nov.** in Dictyopterinae, Alyculini **trib. nov.** and Antennolycini **trib. nov.** in Lyropaeinae, Dihammatini **trib. nov.** in Lycinae. Calochromini Lacordaire, 1857, **stat. nov.** and Leptolycini Leng et Mutchler, 1922, **stat. nov.** are lowered to the tribal status in Lycinae. The validity of Thonalmini Kleine, 1933 stat. rev. is re-established.



Key words.— Elateroidea, taxonomy, new tribes, subfamilies, mtDNA, rDNA, morphology.

REVIEW OF THE GENUS *PSEUDOPROBATICUS*
NABOZHENKO, 2001 (COLEOPTERA: TENEBRIONIDAE)

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Abstract.— A new species *Pseudoprobaticus roznerorum* sp. nov. from Southern Western Turkey is described. The redescription of *Pseudoprobaticus granipennis* (Allard, 1876) and key to species of the genus *Pseudoprobaticus* Nabozhenko, 2001 are given.



Key words.— Coleoptera, Tenebrionidae, Helopini, *Pseudoprobaticus*, new species, key.

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

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Abstract.— *Schelodontes jani* and *S. tichyi*, new species of *nigerrimus*-group from South Africa are described, illustrated and compared with their relatives. Key for species-group determination is provided.



Key words.— Coleoptera, Tenebrionidae, Pedinini, Platynotina, *Schelodontes*, South Africa, entomology, taxonomy, new species.

REVISION OF THE GENUS *REICHARDTIELLINA* KASZAB, 1982 (COLEOPTERA: OPATRINI)

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Abstract.— The genus *Reichardtiellina* Kaszab, 1982 (type species: *Reichardtiella armata* Kaszab, 1942) is revised and illustrated. New species is described: *Reichardtiellina schawalleri* **sp. nov.** Key for species determination is provided. Lectotype is designated for *Reichardtiella armata* Kaszab, 1942. The genus represents of the Himalayas' endemic fauna.



Key words.— Coleoptera, Tenebrionidae, Opatrini, *Reichardtiellina*, Himalayas, entomology, taxonomy, revision, new species, lectotype.

THE GENUS *ALLOPEZUS* GEBIEN, 1921 IN THE
ORIENTAL REGION (COLEOPTERA: TENEBRIONIDAE),
WITH DESCRIPTIONS OF SEVEN NEW SPECIES
FROM BORNEO AND SULAWESI

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Abstract.— Six new species of the genus *Allopezus* Gebien, 1921 (synonym *Asbolodomimus* Pic, 1921) (Tenebrionidae, Cnodalonini) (type species *Allopezus miritarsis* Gebien, 1921) from the Oriental region are described: *Allopezus crockerensis* **sp. nov.** (Borneo/Sabah), *Allopezus keningauensis* **sp. nov.** (Borneo/Sabah), *Allopezus kinabaluensis* **sp. nov.** (Borneo/Sabah), *Allopezus matangensis* **sp. nov.** (Borneo/Sarawak), *Allopezus murudensis* **sp. nov.** (Borneo/Sarawak), *Allopezus sarawakicus* **sp. nov.** (Borneo/Sarawak) and *Allopezus sulawesicus* **sp. nov.** (Sulawesi). New synonym: *Allopezus watanabei* Masumoto, 2002 **syn. nov.** of *Allopezus satoi* Masumoto, 1986. The dorsal view and the aedeagus of all valid congeners (15) are figured (except *Allopezus tsuge* Masumoto et Makihara, 1997, male of which is unknown).



Key words.— Coleoptera, Tenebrionidae, Cnodalonini, *Allopezus*, new species, Borneo, Sulawesi.

**REVISION OF THE EURYBRACHIDAE (XIV).
THE NEW AUSTRALIAN GENUS *LOISOBRACHYS*
(HEMIPTERA: FULGOROMORPHA)**

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Abstract.— The new genus *Loisobrachys* is described for a new species from Eastern Australia, *Loisobrachys convexa* **sp. nov.** The female genitalia are illustrated and photos of habitus and a distribution map are provided with the description of the species. The suprageneric position is discussed and the new genus is provisionally placed in the tribe Patybrachyini Schmidt, 1908.



Key words.— Patybrachyini, *Acacia*, *Hackerobrachys*, Rockhampton, Queensland.

RHYUKYUSPATHIUS, A NEW PECULIAR GENUS OF THE TRIBE SPATHIINI (HYMENOPTERA: BRACONIDAE: DORYCTINAE) FROM JAPAN

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Abstract.— A new genus from the Ryukyu Islands of Japan belonging to the braconid wasp subfamily Doryctinae, *Ryukyuspathius* **gen. nov.**, with its type species, *R. spinifer* **sp. nov.**, is described and illustrated. The position of this genus in the tribe Spathiini sensu stricto and its morphological similarities with other genera are discussed.



Key words.— Hymenoptera, Braconidae, Doryctinae, new genus and species, parasitoids, Ryukyu Islands.

SEVEN NEW *MYRMICA* SPECIES (HYMENOPTERA: FORMICIDAE) FROM CHINA

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Abstract.— Seven new *Myrmica* species (*M. curiosa*, *M. mixta*, *M. pararitae*, *M. poldii*, *M. sinoschencki*, *M. weii* and *M. polyglypta*) are described from Shaanxi, Sichuan, Hunan and Yunnan provinces of China. Their taxonomic positions are discussed. *M. sinoschencki* is placed in the *schrencki*-group, *M. pararitae* and *M. poldii* – in the *ritae*-group and *M. mixta* – in the *inezae*-group, while the position of the other three species is still uncertain. *M. sinica* Wu et Wang, 1995 is formally synonymised with *M. excelsa* Kupyanskaya, 1990.



Key words.— Ants, *Myrmica*, Formicidae, new species, China, taxonomy.

A REVIEW OF THE SIMILIPEPSINI OF THE AFROTROPICAL REGION (LEPIDOPTERA: SESIIDAE: TINTHIINAE)

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Abstract.— The African species of the genus *Similipepsis* Le Cerf, 1914 with the exception of *Similipepsis ekisi* Wang, 1984 are reviewed here. *Similipepsis aurea* Gaede 1929 and *S. typica* (Strand, 1913) are redescribed. *Similipepsis osuni* Bąkowski et Kallies **sp. nov.** from Nigeria as well as *Similipepsis eumenidiformis* Bartsch **sp. nov.** and *Similipepsis maromizaensis* Bartsch **sp. nov.**, both from Madagascar, are described as new to science. The taxon *Milisipepsis* Gorbunov et Arita, 1995, originally erected to accommodate the Asian *Similipepsini* species, was found to be a junior synonym of *Similipepsis*. A key to the males of *Similipepsis* species is provided.



Key words.— Entomology, taxonomy, new species, key, *Similipepsis*, *Milisipepsis*, Africa, Madagascar.

ECDYONURUS NIGRESCENS (KLAPÁLEK, 1908) (EPHEMEROPTERA: HEPTAGENIIDAE) – NEOTYPE DESIGNATION, TAXONOMICAL AND NOMENCLATURE NOTES

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Abstract.— The neotype of *Ecdyonurus nigrescens* (Klapálek, 1908) has been designated, basing on male imago reared from larva, collected in the Chornohora Range (the Ukrainian Carpathians). The male imago of this species is redescribed; male subimago, female imago and subimago, larvae and the structure of egg chorion are described and illustrated for the first time. Critical diagnostic characters distinguishing this species from other representatives of the *Ecdyonurus helveticus* species-group are discussed. The type locality is defined in accordance with the Article 76.3 and Recommendation 76A of ICZN as follows Ukraine: Zakarpattia Region, Carpathian Biosphere Reserve, the Chornohora Range, Polonyna Brebeneska district, mountain valley between SW slope of Gutyn Tomnatek Mt. and NW slope of Brebeneskul Mt., upper section of the Brebeneskul stream (left-bank tributary of the Hoverla stream, Tysa river-basin), 1450 m. a.s.l. The data on the original syntype series and type locality are discussed in detail. All known specimens of *E. nigrescens* collected by J. Dziędzielewicz between 1908 and 1910 are observed and reidentified. The data on distribution, ecology and life cycle of *E. nigrescens* are presented.



Key words.— Ephemeroptera, Heptageniidae, *Ecdyonurus*, *E. nigrescens*, neotype, type locality, synonymy, description, distribution, ecology, Ukrainian Carpathians.

A NEW SPECIES OF THE GENUS *FANNIA* ROBINEAU-DESVOIDY (DIPTERA: FANNIIDAE) COLLECTED ON PIG CARRION IN MENDOZA, ARGENTINA

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Abstract.— The aim of this study is to describe *Fannia sanihue* **sp. nov.**, a new species of Fanniidae that was captured in the proximity of a pig carcass in the province of Mendoza, Argentina. This contribution is a part of the first study to be undertaken into forensic entomology in the biogeographical province of the Monte, which is a warm shrub desert extending between Puna and Patagonia at the east of the Andes Mountains.



Key words.— Fanniidae, *Fannia*, new species, forensic entomology, pig carcass.

A NEW ERIOPHYID MITE (ACARI: ERIOPHYIDAE) AND A NEW RECORD FROM *OLEA EUROPAEA* L. (OLEACEAE) IN MONTENEGRO

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Abstract.— A new species of plant-feeding eriophyid mite collected from olive seedlings in Southern Montenegro is described. *Shevtchenkella barensis* **sp. nov.** inhabiting olive, *Olea europea* L. (Oleaceae) was found in an olive nursery attacking seedlings and causing serious damage. *Aceria oleae* (Nalepa), is herein recorded as new for the fauna of Montenegro.



Key words.— *Shevtchenkella barensis*, new species, Montenegro, Eriophyoidea, *Olea europea*, taxonomy.

THE ONTOGENETIC DESCRIPTION OF THREE CROTONIID MITES (ACARI: ORIBATIDA: CROTONIIDAE) FROM THE AUSTRALIAN REGION

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Abstract.—The development of a new Tasmanian crotoniid species: *Crotonia tasmanica* sp. nov. is described and illustrated. The morphology of juvenile stages of two Australian moss mites: *Crotonia ardala* Luxton, 1987 and *C. capistrata* Luxton, 1987 is also presented. Immature and adult stages of the new species are compared with the most morphologically similar Brazilian species *Crotonia camilae* Łochyńska, 2008. Although both species possess two pairs of setae *c* and similar structure of posterior apophyses, there are a number of differences in length and structure of setae.



Key words.—*Crotonia tasmanica* sp. nov., *C. ardala*, *C. capistrata*, moss mites, juvenile stages, morphology, Tasmania, New Zealand, Australia.

LIFE CYCLES OF CLAUSILIIDS OF POLAND – KNOWN AND UNKNOWN

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Abstract.— Among the 24 native clausiliids, 15 were subject to laboratory observations. Eleven of them were found to be oviparous, three – egg retainers and one – ovoviviparous. Batches, containing most often one to about a dozen of partly calcified, ellipsoidal or spherical eggs, appeared usually in the spring and autumn (in non-hibernating individuals throughout the year). Probably the main factors determining the onset of reproduction are humidity and temperature while the photoperiod has no significant effect. The incubation period is ca. two weeks (room temperature), the hatching is synchronous or asynchronous. Cases of intra-batch and inter-batch cannibalism were observed. The minimum time from hatching/birth till adult size is ca. 3–9 months and after further 5–8 months the snails start producing eggs/babies. Clausiliids are iteroparous. Anatomical studies on the development of the reproductive system show that just before lip completion the reproductive system is still incompletely developed. Penis, epiphallus and spermatheca develop within the first month after growth completion (which would indicate attainment of ability to copulate), and the reproductive system becomes wholly mature only after a few months. The clausiliid development strategy is probably the following: the quickest possible growth and attainment of adult size, then development of the reproductive system and attainment of sexual maturity.



Key words.— Terrestrial snails, Clausiliidae, life cycle, reproduction strategy, reproductive season, development, growth, maturity.

GENETIC VARIABILITY OF *SCHISTOSOMA JAPONICUM*
(KATSORADA, 1904) INTERMEDIATE HOSTS
ONCOMELANIA HUPENSIS (GREDLER, 1881)
(GASTROPODA: RISSOOIDEA)

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Abstract.— *Schistosoma japonicum* in China has been one of the most serious public problems. Subspecies of the pomatiopsid snail species *Oncomelania hupensis* is well known as the intermediate *S. japonicum* host. We used the simple sequence repeat anchored PCR (SSR-PCR) to assess the systematic position of the snail populations from the northwestern part of Guangxi Province, and to assess the degree to which SSR-PCR derived relationships are congruent with the allozymes, COI, and AFLPs results. For 19 populations studied, the genetic distance D ranged from 0.00 to 0.73, with an average value 0.22 ± 0.013 . The cophenetic correlation coefficient for the Complete-link cluster, Single-link cluster, UPGMA cluster and NJ cluster was 0.932, 0.906, 0.939 and 0.733, respectively. The goodness of fit for these clusters except NJ cluster was very good. These results were very similar to the results of the AFLPs analysis data. The patterns of genetic differentiation are basically consistent with geographic distribution and shell sculptural and shape characters. These patterns thus serve as the basis for subdivision of *O. hupensis* into four discrete subspecies, *O. h. hupensis* (Gredler, 1881), *O. h. robertsoni* (Bartsch, 1946), *O. h. tangi* (Bartsch, 1936), and *O. h. guangxiensis* (Liu, 1981).



Key words.— *Schistosoma japonicum*, *Oncomelania hupensis*, genetic variability, SSR anchored PCR amplification, China.

MORPHOLOGICAL RELATIONSHIPS BETWEEN POLYPLOID HYBRID SPINED LOACHES OF THE GENUS *COBITIS* (TELEOSTEI: COBITIDAE) AND THEIR PARENTAL SPECIES

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Abstract.— A special feature of spined loaches of the genus *Cobitis* in Central Europe is the frequent occurrence of diploid-polyploid complexes in which polyploid gynogenetic forms act as sperm parasites to the diploid form. This tight binding of the co-occurring forms results in a high level of phenotypic and ecological similarities. The present study searches for morphological differences between them applying the characters traditionally used in loach taxonomy (body proportions, fin formula, scale shape, lamina circularis, suborbital spine, coloration) in 662 specimens from the Baltic (14 populations) and North Sea (1 population) catchment areas. Ploidy level of each specimen was inferred from blood cell measurements. Discriminant function analysis for biometrical characters and description of qualitative features indicate the morphological distinctness of the two diploid species *C. taenia* and *C. elongatoides*. The polyploid unisexual biotypes are very similar to each other and to individuals of sympatric sexual species. The genome dosage effect could be observed in morphological characters, however, in some of them the polyploid biotypes display a mosaic mode of variability: they can be more similar to sympatric parents or to the absent species in the complex, transitional and of a wider variability range. In colouration pattern, the biotypes do not express the whole spectrum of the parental species variability. Meristic traits had no power to identify the different forms.



Key words.— Unisexual fishes, diploid-polyploid complexes, taxonomy, phenotypic variability, gene-dose effect.

MITOCHONDRIAL MARKER FOR STUDYING EUROPEAN PICIDAE AT VARIOUS TAXONOMIC LEVELS

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Abstract.— Genetic data has tremendously deepen our knowledge of evolutionary history of populations and species as well as ecology and biology of the species. Appropriate molecular markers allow researchers to gain an insight into distribution of genetic diversity, starting from characterization of single individual, through description of processes having an influence on natural populations, to phylogenetic relationships among higher taxonomic units. Woodpeckers (Aves: Picidae) are especially sensitive to anthropogenic habitat changes, such as forest transformation resulting from silvicultural practices. As such they have been regarded as good biological indicators of forest biodiversity and therefore may play an important role as a model species in conservation biology. To broaden our understanding of woodpeckers' evolution, biology and ecology molecular techniques needs to be applied. Here, we developed pair of degenerate primers for amplification of hypervariable domain of mtDNA control region in wide range of European Picidae. High level of polymorphism of obtained sequences in majority of species indicate that amplified region will be very useful to study phylogeny, population genetics and phylogeography of the family.



Key words.— mtDNA, control region, woodpeckers, degenerate primers, molecular markers.