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New species of caddisflies (Trichoptera, Ecnomidae, Polycentropodidae, Psychomyiidae) from Mekong tributaries, Laos

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Abstract

Four new species of caddisflies are added to the fauna of Mekong River, Laos. Described and illustrated are *Ecnomus petchanaae* **sp. nov.** and *E. boonsawaengae* **sp. nov.** (Ecnomidae), *Polyplectropus proukaewi* **sp. nov.** (Polycentropodidae), and *Psychomyia srichanai* **sp. nov.** (Psychomyiidae) from tributaries of the Mekong River, Laos. *Ecnomus petchanaae* **sp. nov.** can be distinguished by the characters of the superior appendages, which are slender and club-shaped in lateral view. In *E. boonsawaengae* **sp. nov.**, the inferior appendages are tubular with a concave incision subapically and truncated apex. *Polyplectropus proukaewi* **sp. nov.** has the distal process of the dorsal branch of the inferior appendage close to the base of the inferior appendages and the length of the process is half of inferior appendages. *Psychomyia srichanai* **sp. nov.** can be distinguished by the structure of the dorsal branches of the harpagones and apical sclerite. The outer branches of the harpago in the latter species are bifurcated and bent 90° degrees outward, and the inner dorsal branches of harpago are curved outward. The apical sclerite is indiscernible.

Keywords

aquatic insects, biodiversity, Oriental Region, taxonomy

Introduction

The Mekong River, with a length of 5,400 km is the 12th longest river in the world and passes through six countries, originating from China, through Myanmar, Laos, Thailand, Laos, Cambodia, and finally Vietnam (Mekong River Commission 2010a, 2010b). Its river basin is among the most diverse riverine systems of the world, where 367 new species were recently found, including 24 new species of fish and 21 new species of amphibians (World Wild Fund 2014). The Mekong River is in the Oriental Region where diversity of Trichoptera is generally high (de Moor and Ivanov 2008), however, so far this aquatic insect order has not been intensively studied along its course.

Trichoptera (or caddiflies), among the holometabolous aquatic insects, are one of the largest groups of aquatic insects contributing to many aspects in an aquatic ecosystem as secondary consumers, tertiary consumers, or predators (Dudgeon 1999). Adult Trichoptera occupy terrestrial or riparian zones along aquatic habitats. The larval stages are exclusively aquatic (Holzenthal et al. 2007). More than 5,854 species of Trichoptera have been described in the Oriental Region (Morse et al. 2019). Moreover, publications in the last 10 years on Trichoptera in the Oriental Region have recorded more than 3,000 species (Morse 2016). There are several important contributions to the knowledge on caddisfly diversity of the Mekong River in Laos, for instance, description of *Maesaipsyche mekongensis* found in Luang Prabang Province (Mey 2001). Laudee and Malicky (2017) and Malicky and Laudee (2017) described *Pseudoleptonema tansoongnerni* Malicky & Laudee, 2017, *Pseudoneureclipsis arael* Malicky & Laudee, 2017, *P. hamabiel* Malicky & Laudee, 2017, and *Setodes marianu* Malicky & Laudee, 2017 as new and listed Trichoptera from the Li Phi falls along Mekong River in the southern Laos. Recently, Malicky and Laudee (2019) described 15 new species of caddisflies from tributaries of the Mekong River in Laos.

In this study, we focus on three caddisfly genera in Laos – *Ecnomus* McLachlan, *Polycentropus* Curtis, and *Psychomyia* Latreille. There are eight species of *Ecnomus* reported from Laos, including *E. alkaios* Malicky & Chantaramongkol, 1997, *E. alkmene* Malicky & Chantaramongkol, 1997, *E. androgeos* Malicky, 1997, *E. amphitryon* Malicky, 1997, *E. volovicus* Malicky & Chantaramongkol, 1993, *E. caesar* Malicky & Chaibu in Malicky et al. 2000, *E. dikla* Malicky, 2009, and *E. thamar* Malicky & Laudee in Malicky, 2009 (Malicky 2010; Laudee and Malicky 2017). So far, only two species of *Polyplectropus*, *P. menna* Malicky & Chantaramongkol, 1993 and *P. ammonios* Malicky, 2009, have been recorded in Laos. In *Psychomyia*, seven species have been found from Laos, including *Ps. thienemanni* Ulmer, 1951, *Ps. chompu* Malicky & Chantaramongkol, 1993, *Ps. arthit* Malicky & Chantaramongkol, 1993, *Ps. anteia* Malicky, 1997, *Ps. andromache* Malicky, 1997, *Ps. andromeda* Malicky, 1997, and *Ps. muriel* Malicky & Laudee, 2019 (Malicky 2010; Malicky and Laudee 2019).

Considering the overall diversity of the Mekong River and its tributaries and the under-investigated caddisfly fauna of this region, many new species records and descriptions are expected. This article adds four new species from the Mekong River and its tributaries to the list of Trichoptera in Laos.

Materials and methods

Adult caddisfly specimens were collected with a UV pan light trap (12 V, 10 W) operated along streams and the river overnight at the locations indicated below. Collected specimens were preserved in 70% ethanol, and caddisflies were later manually sorted from other insects. For species-level identifications, the male genitalia were observed under a stereomicroscope. For this purpose, the male genitalia from a specimen from each new species were dissected out. Muscle tissue was macerated by heating in 10% KOH at 60 °C for 30–60 minutes and then soaking in a detergent solution. Drawings were initially made in pencil using a compound microscope equipped with a drawing tube and used to produce the final vector graphics in Adobe Illustrator software.

Holotypes and paratypes are stored in 70% ethanol and deposited in Princess Maha Chakri Sirindhorn Natural History Museum, Prince of Songkla University, Hat Yai Campus, Hat Yai District, Songkhla Province, Thailand (PSUNHM). Some paratypes are deposited in the collection of Hans Malicky (CHM), the Clemson University Arthropod Collection (CUAC), and the National Museum, Prague, Czech Republic (NMPC). Terminology for genitalic structures for different genera follows that of Cartwright (1994) for the genus *Ecnomus*, Schmid (1997) for the genus *Psychomyia* and Chamorro and Holzenthal (2011) for the genus *Polyplectropus*.

Systematics

***Ecnomus petchanaae* Laudee & Malicky, sp. nov.**
http://zoobank.org/61596C7B-1396-41B1-9DC1-60E344674F81
Figure 1

Diagnosis. The male genitalia of *E. petchanaae* sp. nov. are similar to *Ecnomus gapit* Cartwright, 1994, *E. yuleae* Cartwright, 1994, *E. dares* Malicky, 2000, and *E. perseis* Malicky, 2008 described from Borneo. The superior appendages of all these species, including the new species, are particularly large and the subapical part of the superior appendages is covered by numerous spiny setae. However, *E. petchanaae* sp. nov. can be distinguished by the shape of its superior appendages, which, in lateral view, are slender and club-shaped, but basally broad in *E. gapit*, *E. yuleae*, *E. dares*, and *E. perseis*. In addition, in ventral view of the outer surface of the inferior appendages of the new species is crescent-shaped, whereas they are curved and claw-shaped in *E. gapit*, *E. yuleae*, *E. dares*, and *E. perseis*.

Description. Adult, male, length of each male forewing 5.6–6.0 mm; color in alcohol of head, thorax, forewings, abdomen, and legs brown. Male genitalia as in Figure 1A–D. Tergum IX somewhat square, anterior margin truncated, posterior margin bilobed in dorsal view (Fig. 1A); trapezoid and rounded anterodorsally in lateral view (Fig. 1B). Sternum IX ovoid in lateral view (Fig. 1B); rectangular with ¼ concave incision posteriorly, bilobed and rounded anteriorly in ventral view (Fig. 1C). Superior appendages long,

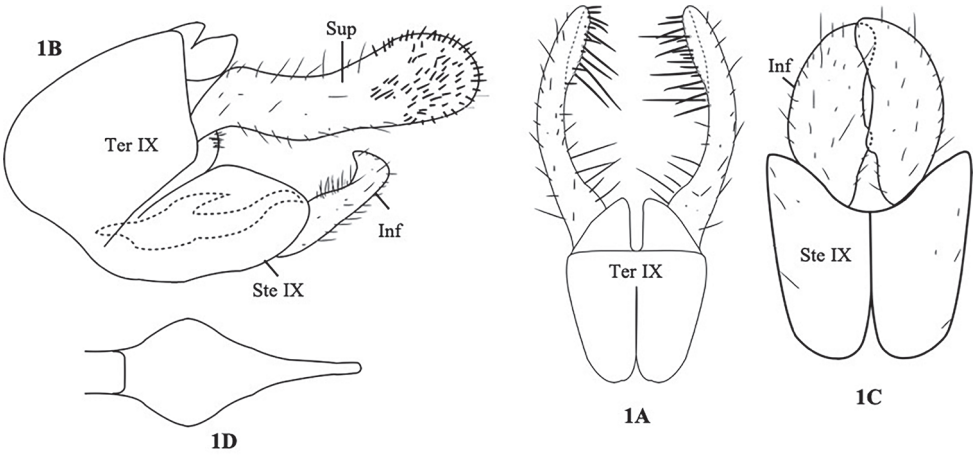

Figure 1. *Ecnomus petchanaae*, sp. nov. Male genitalia. **A** Segment IX and superior appendages, dorsal **B** segments IX and superior appendages, left lateral **C** segment IX and inferior appendages, ventral **D** phallus tip, ventral. Ter IX = tergum IX, Ste IX = sternum IX, Sup = superior appendage, Inf = inferior appendage.

slender, with expanded base, curved inward posteriorly with numerous long spiny setae subapically in dorsal view (Fig 1A); in lateral view, superior appendages, relatively large, long, slightly curved upward, bulb-like apically, with numerous spiny setae (Fig. 1B). Inferior appendages tubular, bent inward, beak-like apically in lateral view (Fig. 1B); in ventral view, crescent-shaped, with a submediate knot, overlapping each other subapically (Fig. 1C). Phallus long, tubular, curved upward, pointed apex with dorsal process in lateral view (Fig. 1B); in ventral view, bulb-like, with pointed apex (Fig. 1D).

Type material. ***Holotype.*** **Male. Laos: Pakse Province:** Paksong, Vang Ngao River, 15°11'37"N, 106°06'40"E, elev. 920 m, 7.iv.2019, Pongsak Laudee. (PSUNHM). ***Paratypes:*** same data as the holotype, 3 males: 1 male (PSUNHM), 1 male (CHM), 1 male (NMPC).

Etymology. The species epithet honors Mrs Kanchanaluk Petchana, Director of Administration and Strategic Development Division, Prince of Songkla University, Surat Thani Campus.

Ecnomus boonsawaengae Malicky & Vongsombath, sp. nov.

http://zoobank.org/A970D2D6-D505-4A72-B693-D2C6DC131325
Figure 2

Diagnosis. The male genitalia of *E. boonsawaengae* sp. nov. are similar to *E. aktaion* Malicky & Chantaramongkol, 1997 and *E. uttu* Malicky & Chantaramongkol, 1993. In these species, the superior appendages are particularly long and slender with a basoventral process on the superior appendage. However, *E. boonsawaengae* sp. nov. can be easily distinguished by the shape of the inferior appendages. In lateral view, the inferior appendages are tubular with a subapical concave incision and truncated apex

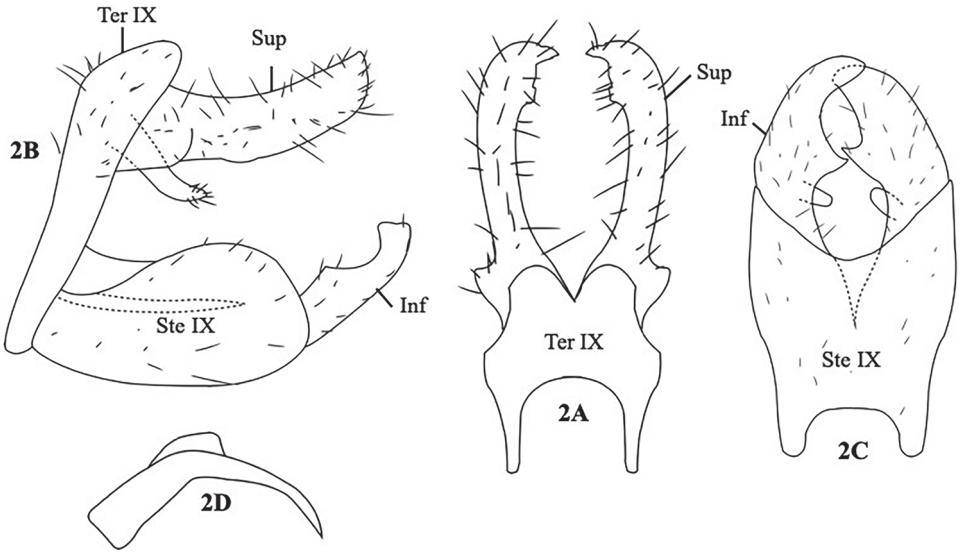

Figure 2. *Ecnomus boonsawaengae*, sp. nov. Male genitalia. **A** Segment IX and superior appendages, dorsal **B** segment IX and superior appendages, left lateral **C** segment IX and inferior appendages, ventral **D** phallus, lateral. Ter IX = tergum IX, Ste IX = sternum IX, Sup = superior appendage, Inf=inferior appendage.

in *E. boonsawaengae* sp. nov., but in *E. aktaion* and *E. uttu* the inferior appendages are somewhat triangular and trapezoidal, respectively, and with a pointed apex. In addition, each inferior appendage in *E. boonsawaengae* sp. nov. has a process, in ventral view, which is lacking in *E. aktaion* and *E. uttu*.

Description. Adult, male, length of each male forewing 4.0 mm; color in alcohol of head, thorax, forewings, abdomen, and legs grayish brown. Male genitalia as in Figure 2A–D. Tergum IX in dorsal view bilobed posteriorly, U-shaped ½ incision anteriorly (Fig 2A); in lateral view, tergum IX narrow, expanded dorsally (Fig. 2B). Superior appendages tubular, base with lateral lobe, slightly bent apically to form beak-like apex in dorsal view (Fig 2A); in lateral view, tubular, truncated apically (Fig. 2B). Basoventral projection of superior appendage tubular with setae apically in lateral view. Sternum IX in lateral view chicken-drumstick-like and rounded apically (Fig. 2B); in ventral view, trapezoid, slightly expanded apically, with shallow U-shaped incision anteriorly and shallow V-shaped incision posteriorly (Fig. 2C). In lateral view, the inferior appendages tubular, with concave incision subapically, truncated apex (Fig 2B); in ventral view, claw-like, with process basodorsally (Fig. 2C). Phallus sickle-like, with lobe mesodosally in lateral view (Fig. 2D).

Type material. *Holotype*. Male. Laos: Pakse Province: Paksong, E-Tu Waterfall, 15°11'25"N, 106°06'14"E, elev. 900 m, 7.iv.2019, Pongsak Laudee. (PSUNHM). ***Paratypes:*** same data as holotype, 2 males: 1 male (PSUNHM), 1 male (CHM).

Etymology. The species epithet honors Mrs Wasana Boonsawaeng, Vice Dean of Faculty of Science and Industrial Technology, Prince of Songkla University, Surat Thani Campus.

Polyplectropus proukaewi **Malicky & Seetapan, sp. nov.**
http://zoobank.org/180D25B8-A9AC-4B3D-BE3C-C2D884F460EF
Figure 3

Diagnosis. The male genitalia of *P. proukaewi* sp. nov. are similar to those of *P. daimong* Oláh & Johanson, 2010 from Vietnam. In both species, the dorsal branch of the inferior appendages forms a hooked-like process. However, *P. proukaewi* sp. nov. can be distinguished by the considerably shorter distance of the distal processes of the dorsal branch of the inferior appendages to their bases compared to *P. daimong*, in which this distance is considerably longer. Additionally, in the new species, the length of the distal processes in lateral view equals half of the length of inferior appendages, whereas the length of the distal processes equals the length of inferior appendages in *P. daimong*.

Description. Adult, male, length of each male forewing 6.5–7 mm; color in alcohol of head, thorax, forewings, abdomen, and legs brown. Male genitalia as in Figure 3. Tergum IX triangular, underneath Tergum X in lateral view (Fig. 3B). Sternum IX subtriangular and rounded anteriorly in lateral view (Fig. 3B); in ventral view, hexagonal, with V-shaped incision anteriorly (Fig. 3C). Tergum X hat-shaped in dorsal view (Fig. 3A), B-shaped in lateral view (Fig. 3B). Dorsolateral process of preanal appendages sclerotized, needle-like, straight and horizontal subbasally then recurving upward subapically, distal end pointed in lateral view (Fig. 3B). Mesolateral process of preanal appendages thumb-like, with setae in dorsal view (Fig. 3A); in lateral view leaf-like, with setae (Fig. 3B). Mesoventral processes of preanal appendages short, finger-like, with setae in dorsal view (Fig. 3A); in lateral view, subtriangular, with setae, underneath base of mesolateral processes (Fig. 3B). In lateral view, inferior appendages trapezoidal, with V-shaped incision anteriorly, each dorsal branch of inferior appendages with hook-like processes posterodorsally, half the length of inferior appendages (Fig. 3B). In ventral view, each ventral branch of inferior appendages subtriangular, each dorsal branch of inferior appendages with "bird head-like" dorsal branch of inferior appendages posteriorly (Fig. 3C). In caudal view, inferior appendages oval, with triangular processes dorsally and nose-like process mesally (Fig. 3D)

Type material. ***Holotype.*** **Male. Laos: Pakse Province:** Paksong, Vang Ngao River, 15°11'37"N, 106°06'40"E, elev. 920 m, 7.iv.2019, Pongsak Laudee. (PSUNHM). ***Paratypes:*** same data as holotype, 16 males: 6 males (PSUNHM), 5 males (CHM), 5 males (NMPC).

Etymology. The species epithet honors Dr Nitat Proukaew, Assistant Professor in the Faculty of Science and Industrial Technology, Prince of Songkla University, Surat Thani Campus.

Psychomyia srichanai **Laudee & Malicky, sp. nov.**
http://zoobank.org/F525EC47-7B79-4FFF-911A-97FD1EC90519
Figure 4

Diagnosis. The male genitalia of *Ps. srichanai* sp. nov. are similar to those of three other *Psychomyia* species described from Thailand, *Ps. amor* Malicky & Chantaramong-

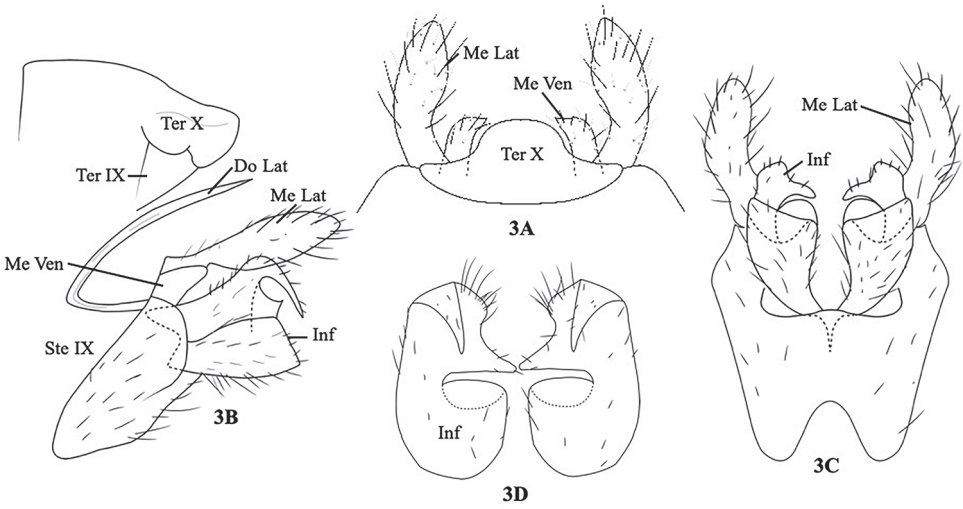

Figure 3. *Polyplectropus proukaewi*, sp. nov. Male genitalia. **A** Segment X, dorsal **B** segments IX–X, left lateral **C** inferior appendages, ventral **D** inferior appendages, caudal. Ter IX = tergum IX, Ste IX = sternum IX, Ter X = Tergum X, Do Lat = dorsolateral processes of preanal appendages, Me Lat = mesolateral processes of preanal appendages, Me Ven = mesoventral processes of preanal appendages.

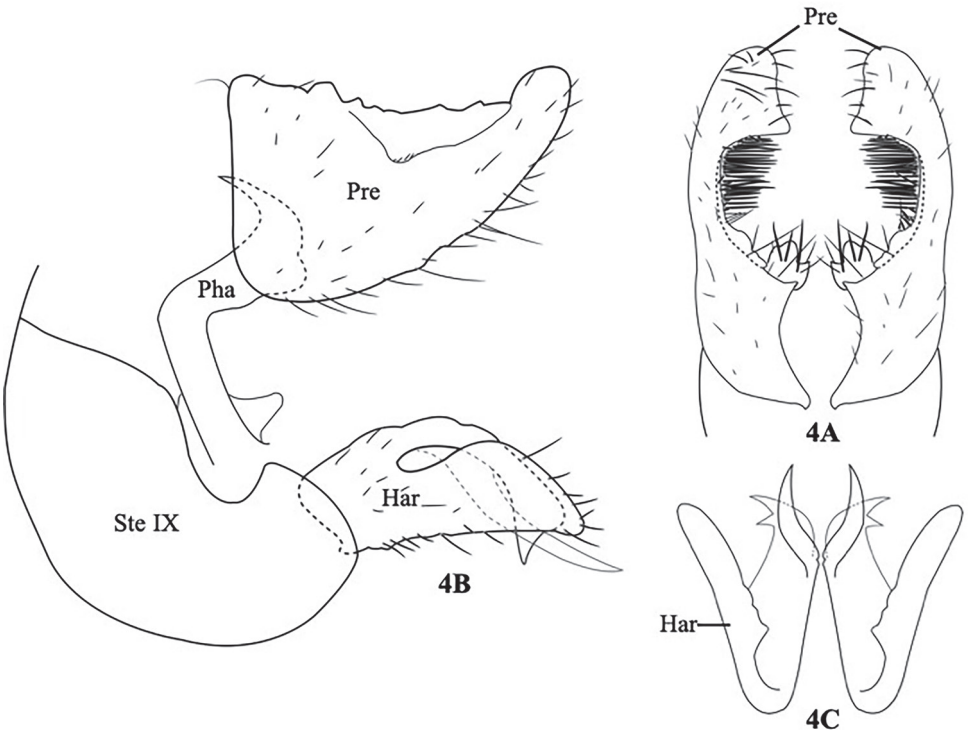

Figure 4. *Psychomyia srichanai*, sp. nov. Male genitalia. **A** Segment IX, preanal appendages and harpago, lateral **B** preanal appendages, dorsal **C** harpago, ventral. Har = harpago, Pre = preanal appendage, SIX = sternum of segment IX, Pha = phallus.

kol, 1997, *Ps. amphiaraos* Malicky & Chantaramongkol, 1997 and *Ps. monto* Malicky & Chantaramongkol, 1993, as well as of *Ps. sonlana* Oláh & Malicky, 2010 from Vietnam. Differences are mainly seen in the structure of the dorsal branches of the harpagones and apical sclerite. The dorsal branch of each harpago in *Ps. srichanai* sp. nov. is divided into two branches. The outer branch curves downward and bifurcates apically, whereas the inner branch is long, curved upward, and apically pointed. In *Ps. amphiaraos* and *Ps. monto*, the outer dorsal branch does not bifurcate. The outer dorsal branches of the harpagones are also bifurcated in *Ps. amor* and *Ps. sonlana*. However, only in *Ps. srichanai* sp. nov. are they are bent outward at 90°. The apical sclerite is apically pointed and discernable in *Ps. amphiaraos*, *Ps. monto*, *Ps. amor*, and *Ps. sonlana*, but indiscernible in *Ps. srichanai* sp. nov.

Description. Length of each male forewing 3.0–4.0 mm; color in alcohol of head, thorax, forewings, abdomen, and legs yellow brown. Male genitalia as in Figure 4. Preanal appendages crescent-shaped, with U-shaped incision inward mediately, with long setae inward medially, rounded apically in dorsal view (Fig. 4A); in lateral view, preanal appendages large, triangular, rounded apically (Fig. 4B). Sternum IX crookneck-squash-shaped, pointed dorsally, truncated apically in lateral view (Fig. 4B). Harpagones crab-claw-shaped; dorsal branch of each harpago divided into two branches, the outer branch curved downward and bifurcated apically, the inner branch long, curved upward, and pointed apically; ventral branch of each harpago triangular, curved dorsally, rounded apically in lateral view (Fig. 4B). In ventral view, outer dorsal branches of harpago tubular, bent outward subapically, bifurcated apically; ventral branches of harpago tubular, rounded apically (Fig. 4C). Phallus long, tubular, bent 90° medially, curved upward subapically, distal apex in lateral view (Fig. 4B).

Type material. ***Holotype.*** **Male. Laos: Luang Prabang Province:** Elephant Camp, Mekong River, 20°01'46"N, 102°13'13"E, elev. 280 m, 2.iii.2019, Pongsak Laudee. (PSUNHM). ***Paratypes:*** same data as holotype, 40 males: 10 males (PSUNHM), 10 males (CHM), 10 males (NMPC), 10 males (CUAC).

Etymology. The species epithet honors Prof. Dr Teerapol Srichana, Director of the Research and Development Office, Prince of Songkla University, Hat Yai Campus.

Discussion

Ecnomus petchanaae sp. nov., *E. boonsawaengae* sp. nov. and *P. proukaewi* sp. nov. were collected from a stream and waterfall on Bolaven Plateau, southern Laos. Here, forest type is montane evergreen rainforest. The three new species are rhithral species, which live in small streams where the substrate is dominated by boulders and cobblestones (Fig. 5A–C). Along with the eight previously recorded species of *Ecnomus*, there are now 10 species belonging to this genus are now known in Laos; of these, four species, including the new species, are apparently endemic to the country (Malicky 2010; Laudee and Malicky 2017). *Ecnomus* species not only occur in rhithron stream zones

Figure 5. Study sites from Mekong river and its tributaries. **A, B** E-Tu Waterfall, Paksong, Pakse Province **C** Vang Ngao River, Paksong, Pakse Province **D** the Mekong River, Luang Prabang Province.

but also are found in potamon stream zones (Laudee and Malicky 2017). Three species of *Polyplectropus*, including the new species, are now recorded from Laos. Among these, two species are reported only from Laos (Malicky 2010). *Psychomyia srichanai* sp. nov. was collected from main river channel of the Mekong River in Luang Prabang Province, northern Laos (Fig 5D). This is a potamon species that lives in main Mekong River. *Psychomyia srichanai* sp. nov. is in *P. capillata* species group according to

the charecters of the group as diagnosed by Malicky and Chantaramongkol (1993). In total, eight species of *Psychomyia* have been reported from Laos, of which four species, including the new species, are reported only from Laos (Malicky 2010).

Acknowledgements

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CHECKLIST

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Checklist of the Coleoptera of Mordovia State Nature Reserve, Russia

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Abstract

All 2,145 species of Coleoptera from 88 families known to occur in Mordovia State Nature Reserve, Russia, are listed, along with their author(s) and year of description using the most recent classification framework. Adventive species for European Russia are indicated. There are 31 adventive species in the reserve, comprising 1.44% of the total beetle fauna.

Keywords

Biodiversity, beetles, Coleoptera checklist, eastern Europe, Republic of Mordovia

Introduction

Rapid environmental changes due to urbanization and climate change have recently had a major impact on biodiversity (Czech et al. 2000, Kottawa-Arachchi and Wijeratne 2017, Rozhnov et al. 2019, Zamotajlov et al. 2019). In particular, the application of modern technologies in agriculture, ongoing deforestation, and changes in land use due to urbanization, cause the loss of biodiversity (Myers and Knoll 2001, Novacek and Cleland 2001,

† Deceased

Lambin et al. 2003, Kestemont 2019). That is why the value of protected area (nature reserves and national parks) is steadily increasing. Moreover, in order to preserve biodiversity, it is necessary to identify key factors determining the distribution of species in their habitats. Such studies can be carried out in territories that were little affected by human activity; these territories are called protected area (Basset et al. 2007, Grebennikov 2016). The term biodiversity hotspot is commonly used for regions or areas with high species richness, genetic richness, evolutionary important areas of origin, etc. (Reid 1998, Médail and Quézel 1999, Zagmajster et al. 2008, Silva and Ferreira 2016, Kumar et al. 2020). At the same time, in the most developed areas, such biodiversity hotspots are protected areas. Protected areas usually occupy certain areas in natural and climatic zones and include typical ecosystems of such climatic zones. In the forest natural zone, such areas are sparsely touched woodlands, these are different types of steppe areas in steppe. Currently global Protected Area Network covers approximately 14.9% of the world's terrestrial land surface (Belle et al. 2018). Inventorying all biota is the best way to study biodiversity in the area (Weibull et al. 2003, Grebennikov 2016, Negrobov et al. 2018). However, such studies may often not be carried out due to limitations in the field of human resources and, therefore, certain insect families or ecological insect groups that are bioindicators are more often used (Lindenmayer et al. 2006, Lachat et al. 2012, Pozsgai and Littlewood 2014, Polevoi et al. 2018, Prokin et al. 2019; Ruchin et al. 2019a). On the other hand, the faunal analysis of individual insect orders can be carried out for a certain time; the data generated can then be used to compile a checklist of species and further analyze the spread of species, their distribution in the territory, settlement routes, etc. This can only be done if the most diverse methods covering all ecological groups of insects are applied (Basset et al. 2007); hence this checklist of the Coleoptera (Insecta) of Mordovia State Nature Reserve, based on a variety of methods.

The Mordovia State Nature Reserve was established in 1936. It is located in the Temnikov district of the Republic of Mordovia (European Russia) on the forested right bank of the Moksha River and covers an area of 321.62 km^2 (Fig. 1). From the north, the border runs along the Satis River (the right tributary of the Moksha), further to the east along the Arga River, which flows into the Satis River. The western border runs along the Chernaya, Satis, and Moksha rivers. From the south, the forest-steppe approaches naturally delineating the boundary of the reserve massif. By natural zoning, the forest tract of the Mordovia State Nature Reserve belongs to the zone of coniferous-deciduous forests on the border with the forest-steppe. Forest communities occupy 89.3% of the total territory (Ruchin and Egorov 2017b). In general, the vegetation cover of the Mordovia State Nature Reserve has a taiga character with tendency towards a nemoral (broad-leaved) forest type during successions. The intermix of forest-steppe elements is typical for this territory. *Pinus sylvestris* L. is the dominant forest tree in the Mordovia State Nature Reserve. It forms pure or mixed communities in the southern, central, and western parts of the reserve. *Betula pendula* Roth stands are the second largest forest type in the reserve. These are predominantly secondary communities at the sites of cut and burnt pine forests. Especially, many young birch stands developed at places damaged by the wildfire in 2010. *Tilia cordata* Mill. stands are located mainly in the northern part of the Mordovia State Nature Reserve. These are also secondary plant communities that arose on the site of pine forests and lime-

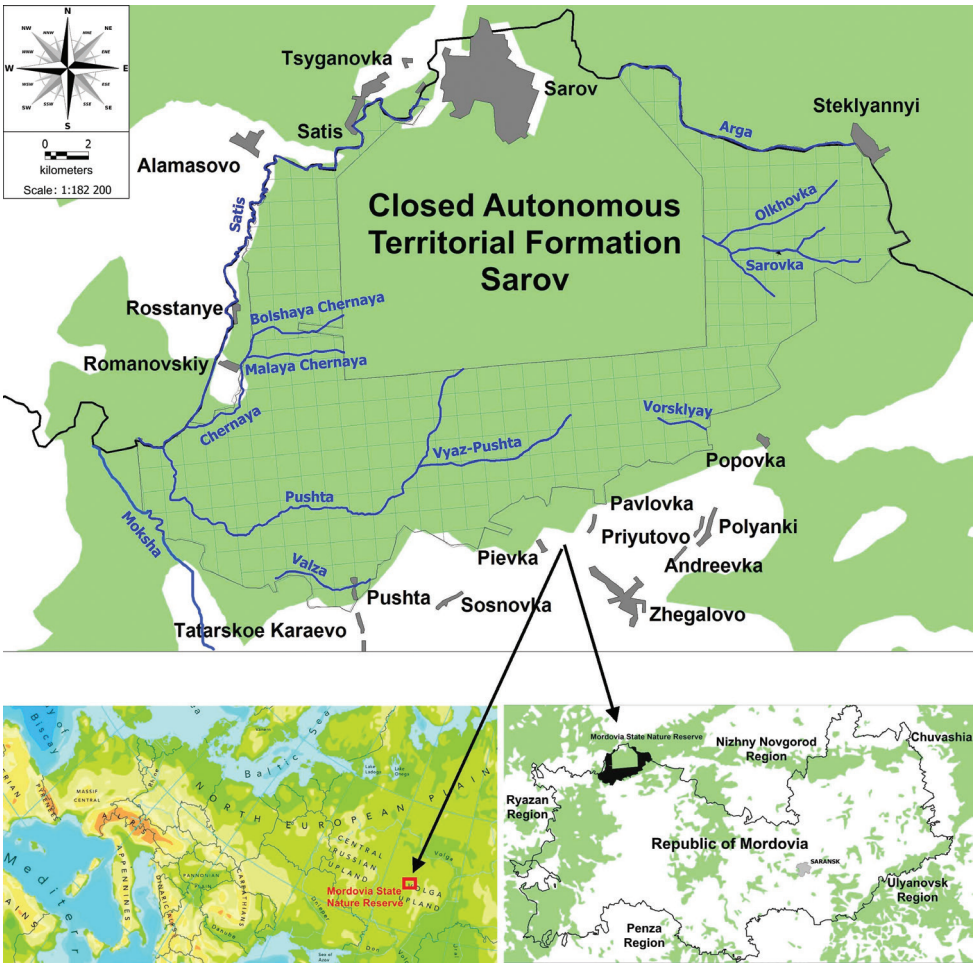

Figure 1. Location map of the Mordovia State Nature Reserve.

spruce forests. *Quercus robur* L. forests occupy a relatively small area of the Mordovia State Nature Reserve. They are common in the Moksha River floodplain in the western part of the reserve. *Picea abies* L. and *Alnus glutinosa* (L.) Gaertn. stands are located mainly in floodplains of rivers and streams (Pushta, Vyaz-Pushta, Vorsklyai, Arga, etc.) and occupy small areas (Stojko and Senkevich 2018). Plant communities of small-leaved tree species (birch, aspen, alder) are formed in burnt forest areas (Khapugin et al. 2016, Vargot 2016, Khapugin and Ruchin 2019). The main areas of floodplain meadows are located along the Moksha River in the south-west of the Mordovia State Nature Reserve.

Previously, studies were carried out for individual orders and families of the arthropod fauna of the Mordovia State Nature Reserve, in particular for the Neuroptera and Raphidioptera (Ruchin and Makarkin 2017, Makarkin and Ruchin 2019), Hymenoptera (Ruchin and Antropov 2019), Orthoptera (Ruchin and Mikhailenko 2018) and Diptera (Chursina and Ruchin 2018a, 2018b, Astakhov et al. 2019).

Materials and methods

The work is based on the study of authors' own collections and analysis of published data. Two publications (Redikortsev 1938, Plavilshchikov 1964) were the first to describe the beetle fauna of Mordovia State Nature Reserve. In the late 1960s, xylophagous insects were studied in this area (Mozolevskaya et al. 1971, Kirsta 1974), and in the 1970s Carabidae were investigated (Feoktistov 1978, Feoktistov and Dushenkov 1982). Besides these groups, the Coleoptera fauna was hardly studied until the 2000s. More intensive research has been carried out using a variety of methods in the reserve over the past 12 years (Kurmaeva et al. 2008, Egorov et al. 2010, Feoktistov 2011, Egorov and Ruchin 2012, 2013a, 2013b, 2014, Pavlov and Ruchin 2013, Legalov et al. 2014, Egorov et al. 2015, 2016, 2017, 2018, 2019, 2020, Egorov and Semishin 2016, Egorov 2017, Sazhnev 2017, Ruchin and Egorov 2018a, 2018b, 2018d, 2018e, 2019b, Tomaszewska et al. 2018, Kazantsev et al. 2019, Ruchin et al. 2019b, 2019c, Egorov and Ruchin 2020). There are published data on individual families: Carabidae (Feoktistov 2008, Ruchin et al. 2016), Staphylinidae (Semenov 2014, Kurbatov and Egorov 2014, Semenov 2015, 2016, 2017), Scydmaenidae (Kurbatov and Egorov 2014), Curculionidae (Scolytinae) (Mandelshtam and Egorov 2017, 2018, 2019). Data on some species from the reserve are contained in faunal articles on different taxa (Ruchin and Egorov 2007, Ruchin et al. 2009, Egorov and Shapovalov 2017, Ruchin and Egorov 2017a) and in reviews of some Coleoptera families (Ruchin et al. 2013, Kovalev and Egorov 2017, Ruchin and Egorov 2018c, Ruchin et al. 2018, Ruchin and Egorov 2019a, Ruchin et al. 2019d, Zemoglyadchuk et al. 2020) of the Republic of Mordovia.

The research material was collected by the authors and their colleagues from 2008 to 2019. More than 70,000 samples were studied. Most of the Coleoptera species is stored in the collection of the Mordovia State Nature Reserve (Pushta, Republic of Mordovia) (indicated in our publications), Staphylinidae is stored in the collection of O.I. Semionenkov (Smolensk), Pselaphinae and Scydmaenidae are stored in the collection of S.A. Kurbatov (Moscow), Mordellidae is in the collection of A.V. Zemoglyadchuk (Baranovichi). Several species were transferred to the Zoological Institute of the Russian Academy of Sciences, St. Petersburg (ZIN), and to the Zoological Museum of Lomonosov Moscow State University, Moscow (ZMMU). Some species are stored in the personal collection of S.K. Alekseev (Kaluga).

In order to collect a representative material, the entire range of entomological field research methods were used included various traps such as pitfall traps, light traps, simple crown traps, flight interception traps, cow manure-baited pitfall traps, rodent burrow pitfall traps (Golub et al. 2012, Egorov and Semishin 2016, Ruchin et al. 2020).

L.V. Egorov identified most of Coleoptera taxa while V.B. Semenov and O.I. Semionenkov identified most of Staphylinidae taxa. Other scientists consulted the authors on individual taxa: S.K. Alekseev (Carabidae), A.O. Bieńkowski (Chrysomelidae), M.L. Danilevsky (Cerambycidae), A.A. Gusakov (Scarabaeidae), B.M. Kataev (Carabidae), S.V. Kazantsev (Cantharidae), A.G. Kirejtshuk (Nitidulidae), A.V. Kovalev (Eucnemidae), B.A. Korotyaev (Brentidae, Curculionidae), S.A. Kurbatov

(Pselaphinae, Scydmaenidae), A.A. Legalov (Rhynchitidae), K.V. Makarov (Carabidae), M.Yu. Mandelshtam (Scolytinae), A.S. Prosvirov (Elateridae), A.S. Sazhnev (Heteroceridae), A.M. Shapovalov (Cerambycidae), W. Tomaszewska (Anamorphidae), S.E. Tshernyshev (Byrrhidae), M.G. Volkovitsh (Buprestidae) and A.V. Zemoglyadchuk (Mordellidae).

The classification of the family-group taxa used in this checklist predominantly follows Bouchard et al. (2011) and its latest revision (Bouchard and Bousquet 2020). Changes are taken into account from the Catalogue of Palaearctic Coleoptera (Löbl and Smetana 2011, 2013, Löbl I and Löbl D 2015, 2016, 2017), and from the papers of Robertson et al. (2015) on Cucujoidea, and Alonso-Zarazaga et al. (2017) on Curculionoidea. The Scydmaenidae is considered a separate family (Kurbatov and Egorov 2012). The classification and nomenclature of Cerambycidae are given according to Danilevsky (2019). To clarify the nomenclature, the cited studies were used, as well as the Catalogue of Palaearctic Coleoptera (Löbl and Smetana 2007, 2008, 2010) and a number of more recent publications (Kazantsev 2011, Huang and Colonelli 2014, Schimmel et al. 2015, Bieńkowski 2019, Nikitsky 2019, Nilsson and Hájek 2019). The years of description of some species are used as specified by Bousquet (2016). The order used in the checklist is phylogenetic for superfamilies, families, and subfamilies, starting with the accepted most basal-grade taxa, and is alphabetical for supertribes, tribes, and subtribes. Genera and species are listed alphabetically.

The authors of all scientific names are listed along with the date of publication of the taxa. To avoid confusion with authors with same last name, initials are included for some authors.

An asterisk [*] after a species name indicates that the taxon is recorded for the first time for the Mordovia State Nature Reserve and for the Republic of Mordovia, a dagger [†] denotes an adventive species in European Russia. The adventive species were specified according to Orlova-Bienkowskaja (2019). A question mark [?] in front of the species name indicates that confirmation of the record of the species in the reserve is necessary (links to publications are provided). The reference or location for some species is included in brackets {…}.

Results

Checklist of the Coleoptera (Insecta) of Mordovia State Nature Reserve (Republic of Mordovia, Russia).

Order COLEOPTERA Linnaeus, 1758
Suborder MYXOPHAGA Crowson, 1955
Superfamily SPHAERIUSOIDEA Erichson, 1845
Family SPHAERIUSIDAE Erichson, 1845

Sphaerius acaroides Waltl, 1838

Suborder ADEPHAGA Schellenberg, 1806
Family GYRINIDAE Latreille, 1810
Subfamily GYRININAE Latreille, 1810
Tribe Gyrinini Latreille, 1810
Subtribe Gyrinina Latreille, 1810

Gyrinus (*Gyrinulus*) *minutus* Fabricius, 1798
Gyrinus (*Gyrinus*) *aeratus* Stephens, 1835
Gyrinus (*Gyrinus*) *marinus* Gyllenhal, 1808
Gyrinus (*Gyrinus*) *natator* (Linnaeus, 1758)
Gyrinus (*Gyrinus*) *substriatus* Stephens, 1828

Family CARABIDAE Latreille, 1802
Subfamily NEBRIINAE Laporte, 1834
Tribe Nebriini Laporte, 1834

Leistus (*Leistus*) *ferrugineus* (Linnaeus, 1758)
Leistus (*Leistus*) *terminatus* (Panzer, 1793)

Tribe Notiophilini Motschulsky, 1850

Notiophilus aquaticus (Linnaeus, 1758)
Notiophilus biguttatus (Fabricius, 1779)
Notiophilus germinyi Fauvel, 1863
Notiophilus palustris (Duftschmid, 1812)

Subfamily CARABINAE Latreille, 1802
Tribe Carabini Latreille, 1802
Subtribe Calosomatina Bonelli, 1810

Calosoma (*Calosoma*) *inquisitor inquisitor* (Linnaeus, 1758)
Calosoma (*Calosoma*) *investigator* (Illiger, 1798)
Calosoma (*Calosoma*) *maderae maderae* (Fabricius, 1775)

Subtribe Carabina Latreille, 1802

Carabus (*Archicarabus*) *nemoralis nemoralis* O.F. Müller, 1764
Carabus (*Carabus*) *arvensis baschkiricus* Breuning, 1932
Carabus (*Carabus*) *granulatus granulatus* Linnaeus, 1758
Carabus (*Carabus*) *stscheglowi* Mannerheim, 1827
Carabus (*Hemicarabus*) *nitens* Linnaeus, 1758
Carabus (*Limnocarabus*) *clathratus clathratus* Linnaeus, 1760
Carabus (*Megodontus*) *schoenherri schoenherri* Fischer von Waldheim, 1820
Carabus (*Megodontus*) *violaceus aurolimbatus* Dejean, 1830

Carabus (*Pachystus*) *glabratus glabratus* Paykull, 1790
Carabus (*Pachystus*) *hortensis hortensis* Linnaeus, 1758
Carabus (*Procrustes*) *coriaceus coriaceus* Linnaeus, 1758
Carabus (*Tachypus*) *cancellatus cancellatus* Illiger, 1798
Carabus (*Tomocarabus*) *convexus convexus* Fabricius, 1775
Carabus (*Trachycarabus*) *estreicheri* Fischer von Waldheim, 1820

Tribe Cychrini Perty, 1830
Subtribe Cychrina Perty, 1830

Cychrus (*Cychrus*) *caraboides caraboides* (Linnaeus, 1758)

Subfamily CICINDELINAE Latreille, 1802
Tribe Cicindelini Latreille, 1802
Subtribe Cicindelina Latreille, 1802

Cicindela (*Cicindela*) *campestris campestris* Linnaeus, 1758
Cicindela (*Cicindela*) *hybrida hybrida* Linnaeus, 1758
Cicindela (*Cicindela*) *sylvatica sylvatica* Linnaeus, 1758
Cylindera (*Cylindera*) *germanica germanica* (Linnaeus, 1758)

Subfamily LORICERINAE Bonelli, 1810
Tribe Loricerini Bonelli, 1810

Loricera (*Loricera*) *pilicornis* (Fabricius, 1775)

Subfamily ELAPHRINAE Latreille, 1802
Tribe Elaphrini Latreille, 1802

Blethisa multipunctata multipunctata (Linnaeus, 1758)
Elaphrus (*Elaphrus*) *riparius* (Linnaeus, 1758)
Elaphrus (*Neoelaphrus*) *cupreus* Duftschmid, 1812

Subfamily OMOPHRONINAE Bonelli, 1810
Tribe Omophronini Bonelli, 1810

Omophron (*Omophron*) *limbatum* (Fabricius, 1777)

Subfamily SCARITINAE Bonelli, 1810
Tribe Clivinini Rafinesque, 1815
Subtribe Clivinina Rafinesque, 1815

? *Clivina* (*Clivina*) *collaris* (Herbst, 1784) {Feoktistov 2008}
Clivina (*Clivina*) *fossor fossor* (Linnaeus, 1758)

Tribe Dyschiriini H.J. Kolbe, 1880

Dyschirius (*Dyschiriodes*) *aeneus aeneus* (Dejean, 1825)
Dyschirius (*Dyschiriodes*) *nitidus nitidus* (Dejean, 1825)
Dyschirius (*Dyschiriodes*) *politus politus* (Dejean, 1825)
Dyschirius (*Dyschiriodes*) *tristis* Stephens, 1827
Dyschirius (*Dyschirius*) *thoracicus* (P. Rossi, 1790)
Dyschirius (*Eudyschirius*) *globosus* (Herbst, 1784)

Subfamily BROSCINAE Hope, 1838
Tribe Broscini Hope, 1838
Subtribe Broscina Hope, 1838

Broscus (*Broscus*) *cephalotes* (Linnaeus, 1758)
Miscodera arctica (Paykull, 1798)

Subfamily TRECHINAE Bonelli, 1810
Tribe Bembidiini Stephens, 1827
Subtribe Bembidiina Stephens, 1827

Asaphidion flavipes (Linnaeus, 1760)
Bembidion (*Bembidion*) *quadrimaculatum* (Linnaeus, 1760)
Bembidion (*Bracteon*) *litorale* (G.-A. Olivier, 1790)
Bembidion (*Eupetedromus*) *dentellum* (Thunberg, 1787)
Bembidion (*Metallina*) *lampros* (Herbst, 1784)
Bembidion (*Metallina*) *properans* (Stephens, 1828)
Bembidion (*Notaphus*) *obliquum* Sturm, 1825
Bembidion (*Notaphus*) *varium* (G.-A. Olivier, 1795)
Bembidion (*Paraprincidium*) *ruficolle* (Panzer, 1796)
Bembidion (*Peryphus*) *bruxellense* Wesmael, 1835
Bembidion (*Peryphus*) *bualei polonicum* J. Müller, 1930
[indicated by us as *B. andreae* (Fabricius, 1787) (Ruchin et al. 2016)]
Bembidion (*Peryphus*) *tetracolum tetracolum* Say, 1823
Bembidion (*Philochthus*) *biguttatum* (Fabricius, 1779)
Bembidion (*Philochthus*) *guttula* (Fabricius, 1792)
Bembidion (*Philochthus*) *mannerheimii* C.R. Sahlberg, 1827
Bembidion (*Philochthus*) *gilvipes* Sturm, 1825
Bembidion (*Semicampa*) *schueppelii* Dejean, 1831
Bembidion (*Trepanedoris*) *doris* (Panzer, 1796)
Bembidion (*Trepanes*) *articulatum* (Panzer, 1796)
Bembidion (*Trepanes*) *octomaculatum* (Goeze, 1777)

Subtribe Tachyina Motschulsky, 1862

Porotachys bisulcatus (Nicolai, 1822)
Tachys (*Paratachys*) *micros* (Fischer von Waldheim, 1828)
Tachyta nana nana (Gyllenhal, 1810)

Tribe Trechini Bonelli, 1810
Subtribe Trechina Bonelli, 1810

Blemus discus discus (Fabricius, 1792)
Trechus (*Epaphius*) *secalis* (Paykull, 1790)
Trechus (*Trechus*) *quadristriatus* (Schrank, 1781)
Trechus (*Trechus*) *rubens* (Fabricius, 1792)

Subfamily PATROBINAE Kirby, 1837
Tribe Patrobini Kirby, 1837
Subtribe Patrobina Kirby, 1837

Patrobus assimilis Chaudoir, 1844
Patrobus atrorufus (Strøm, 1768)
Patrobus septentrionis volgensis Zamotajlov & Isaev, 2006

Subfamily BRACHININAE Bonelli, 1810
Tribe Brachinini Bonelli, 1810
Subtribe Brachinina Bonelli, 1810

Brachinus nigricornis Gebler, 1830

Subfamily HARPALINAE Bonelli, 1810
Tribe Chlaeniini Brullé, 1834
Subtribe Callistina Laporte, 1834

Callistus lunatus lunatus (Fabricius, 1775)

Subtribe Chlaeniina Brullé, 1834

Chlaenius (*Chlaeniellus*) *nigricornis* (Fabricius, 1787)
Chlaenius (*Chlaeniellus*) *nitidulus* (Schrank, 1781)
Chlaenius (*Chlaeniellus*) *tristis tristis* (Schaller, 1783)

Tribe Harpalini Bonelli, 1810
Subtribe Anisodactylina Lacordaire, 1854

Anisodactylus (*Anisodactylus*) *binotatus* (Fabricius, 1787)
Anisodactylus (*Anisodactylus*) *nemorivagus* (Duftschmid, 1812)

Anisodactylus (*Paeudanisodactylus*) *signatus* (Panzer, 1796)

Subtribe Harpalina Bonelli, 1810

Harpalus (*Harpalus*) *affinis* (Schrank, 1781)
? *Harpalus* (*Harpalus*) *amplicollis* Ménétriés, 1848 {Feoktistov 2008}
Harpalus (*Harpalus*) *anxius* (Duftschmid, 1812)
Harpalus (*Harpalus*) *autumnalis* (Duftschmid, 1812)
Harpalus (*Harpalus*) *distinguendus distinguendus* (Duftschmid, 1812)
Harpalus (*Harpalus*) *flavescens* (Piller & Mitterpacher, 1783)
Harpalus (*Harpalus*) *froelichii* Sturm, 1818
Harpalus (*Harpalus*) *laevipes* Zetterstedt, 1828
Harpalus (*Harpalus*) *latus* (Linnaeus, 1758)
Harpalus (*Harpalus*) *luteicornis* (Duftschmid, 1812)
Harpalus (*Harpalus*) *modestus* Dejean, 1829
Harpalus (*Harpalus*) *picipennis* (Duftschmid, 1812)
Harpalus (*Harpalus*) *progrediens* Schauberger, 1922
Harpalus (*Harpalus*) *pumilus* Sturm, 1818
Harpalus (*Harpalus*) *rubripes* (Duftschmid, 1812)
Harpalus (*Harpalus*) *smaragdinus* (Duftschmid, 1812)
Harpalus (*Harpalus*) *solitaris* Dejean, 1829
Harpalus (*Harpalus*) *tardus* (Panzer, 1796)
Harpalus (*Harpalus*) *xanthopus winkleri* Schauberger, 1923
Harpalus (*Harpalus*) *zabroides* Dejean, 1829
Harpalus (*Pseudoophonus*) *calceatus* (Duftschmid, 1812)
Harpalus (*Pseudoophonus*) *griseus* (Panzer, 1796)
Harpalus (*Pseudoophonus*) *rufipes* (De Geer, 1774)
Harpalus (*Semiophonus*) *signaticornis* (Duftschmid, 1812) {ZIN}
Ophonus (*Hesperophonus*) *azureus* (Fabricius, 1775)
Ophonus (*Metophonus*) *puncticollis* (Paykull, 1798)
Ophonus (*Metophonus*) *rufibarbis* (Fabricius, 1792)
Ophonus (*Ophonus*) *stictus* Stephens, 1828

Subtribe Stenolophina Kirby, 1837

Acupalpus (*Acupalpus*) *exiguus* Dejean, 1829
Acupalpus (*Acupalpus*) *flavicollis* (Sturm, 1825)
Acupalpus (*Acupalpus*) *meridianus* (Linnaeus, 1760)
Acupalpus (*Acupalpus*) *parvulus* (Sturm, 1825)
Anthracus consputus (Duftschmid, 1812)
Stenolophus (*Stenolophus*) *mixtus* (Herbst, 1784)
Stenolophus (*Stenolophus*) *teutonus* (Schrank, 1781)

Tribe Lebiini Bonelli, 1810
Subtribe Cymindidina Laporte, 1834

Cymindis (*Tarsostinus*) *macularis* Fischer von Waldheim, 1824
Cymindis (*Tarulus*) *vaporariorum* (Linnaeus, 1758)

Subtribe Demetriadina Bates, 1886

Demetrias (*Demetrias*) *monostigma* Samouelle, 1819

Subtribe Dromiusina Bonelli, 1810

Dromius (*Dromius*) *agilis* (Fabricius, 1787)
Dromius (*Dromius*) *fenestratus* (Fabricius, 1794)
Dromius (*Dromius*) *quadraticollis* A. Morawitz, 1862
Dromius (*Dromius*) *schneideri* Crotch, 1871*
Microlestes maurus maurus (Sturm, 1827)
Microlestes minutulus (Goeze, 1777)
Paradromius (*Manodromius*) *linearis* (G.-A. Olivier, 1795)
? *Philorhizus notatus* (Stephens, 1827) {Feoktistov 2008}
Philorhizus sigma (P. Rossi, 1790)
Syntomus foveatus (Geoffroy, 1785)

Subtribe Lebiina Bonelli, 1810

Lebia (*Lamprias*) *chlorocephala* (J.J. Hoffmann, 1803)
Lebia (*Lebia*) *cruxminor cruxminor* (Linnaeus, 1758)
Lebia (*Lebia*) *marginata* (Geoffroy, 1785)

Tribe Licinini Bonelli, 1810
Subtribe Licinina Bonelli, 1810

Badister (*Badister*) *bullatus* (Schrank, 1798)
Badister (*Badister*) *lacertosus lacertosus* Sturm, 1815
Badister (*Badister*) *meridionalis* Puel, 1925
Badister (*Badister*) *unipustulatus* Bonelli, 1813
Badister (*Baudia*) *collaris* Motschulsky, 1844
Badister (*Baudia*) *dilatatus* Chaudoir, 1837
Badister (*Baudia*) *peltatus peltatus* (Panzer, 1796)
Badister (*Trimorphus*) *sodalis* (Duftschmid, 1812)
Licinus (*Licinus*) *depressus* (Paykull, 1790)

Tribe Odacanthini Laporte, 1834

Odacantha (*Odacantha*) *melanura* (Linnaeus, 1767)

Tribe Oodini La Ferté-Sénectère, 1851

Oodes gracilis A.Villa & G.B. Villa, 1833
Oodes helopioides (Fabricius, 1792)

Tribe Panagaeini Bonelli, 1810

Panagaeus (*Panagaeus*) *bipustulatus* (Fabricius, 1775)
Panagaeus (*Panagaeus*) *cruxmajor* (Linnaeus, 1758)

Tribe Patynini Bonelli, 1810

Agonum (*Agonum*) *gracilipes* (Duftschmid, 1812)
Agonum (*Agonum*) *marginatum* (Linnaeus, 1758)
Agonum (*Agonum*) *muelleri* (Herbst, 1784)
Agonum (*Europhilus*) *fuliginosum* (Panzer, 1809)
Agonum (*Europhilus*) *gracile* Sturm, 1824
Agonum (*Europhilus*) *micans* (Nicolai, 1822)
Agonum (*Europhilus*) *piceum* (Linnaeus, 1758)
Agonum (*Europhilus*) *thoreyi* Dejean, 1828
Agonum (*Olisares*) *dolens* (C.R. Sahlberg, 1827)
? *Agonum* (*Olisares*) *duftschmidi* J. Schmidt, 1994 [identification of species of this group is difficult; this may be *A.* (*O.*) *emarginatum* (Gyllenhal, 1827)]
Agonum (*Olisares*) *ericeti* (Panzer, 1809)
Agonum (*Olisares*) *impressum* (Panzer, 1796)
Agonum (*Olisares*) *hypocrita* (Apfelbeck, 1904)
Agonum (*Olisares*) *lugens* (Duftschmid, 1812)
Agonum (*Olisares*) *sexpunctatum* (Linnaeus, 1758)
Agonum (*Olisares*) *versutum* Sturm, 1824
Agonum (*Olisares*) *viduum* (Panzer, 1796)
Anchomenus dorsalis dorsalis (Pontoppidan, 1763)
Limodromus assimilis (Paykull, 1790)
Limodromus krynickii (Sperk, 1835)
Limodromus longiventris Mannerheim, 1825
Oxypselaphus obscurus (Herbst, 1784)
Platynus livens (Gyllenhal, 1810)
Platynus mannerheimii (Dejean, 1828)
Sericoda quadripunctata (De Geer, 1774)

Tribe Pterostichini Bonelli, 1810

Poecilus (*Ancholeus*) *crenuliger crenuliger* Chaudoir, 1876
Poecilus (*Poecilus*) *cupreus cupreus* (Linnaeus, 1758)
Poecilus (*Poecilus*) *lepidus lepidus* (Leske, 1785)
Poecilus (*Poecilus*) *punctulatus* (Schaller, 1783)
Poecilus (*Poecilus*) *versicolor* (Sturm, 1824)
Pterostichus (*Adelosia*) *macer macer* (Marsham, 1802)
Pterostichus (*Argutor*) *vernalis* (Panzer, 1796)
Pterostichus (*Bothriopterus*) *oblongopunctatus oblongopunctatus* (Fabricius, 1787)
Pterostichus (*Bothriopterus*) *quadrifoveolatus* Letzner, 1852
Pterostichus (*Eosteropus*) *mannerheimii* (Dejean, 1831)
Pterostichus (*Melanius*) *aterrimus aterrimus* (Herbst, 1784)
Pterostichus (*Morphnosoma*) *melanarius melanarius* (Illiger, 1798)
Pterostichus (*Petrophilus*) *uralensis uralensis* (Motschulsky, 1850)
Pterostichus (*Phaenoraphis*) *diligens* (Sturm, 1824)
Pterostichus (*Phaenoraphis*) *strenuus* (Panzer, 1796)
Pterostichus (*Platysma*) *niger* (Schaller, 1783)
Pterostichus (*Pseudomaseus*) *anthracinus anthracinus* (Illiger, 1798)
Pterostichus (*Pseudomaseus*) *gracilis gracilis* (Dejean, 1828)
Pterostichus (*Pseudomaseus*) *minor minor* (Gyllenhal, 1827)
Pterostichus (*Pseudomaseus*) *nigrita nigrita* (Paykull, 1790)
Pterostichus (*Pseudomaseus*) *rhaeticus* Heer, 1837
Stomis (*Stomis*) *pumicatus pumicatus* (Panzer, 1796)

Tribe Sphodrini Laporte, 1834
Subtribe Calathina Laporte, 1834

Calathus (*Calathus*) *fuscipes fuscipes* (Goeze, 1777)
Calathus (*Lindrothius*) *ambiguus ambiguus* (Paykull, 1790)
Calathus (*Lindrothius*) *erratus erratus* (C.R. Sahlberg, 1827)
Calathus (*Lindrothius*) *melanocephalus melanocephalus* (Linnaeus, 1758)
Calathus (*Lindrothius*) *micropterus* (Duftschmid, 1812)

Subtribe Synuchina Lindroth, 1956

Synuchus (*Synuchus*) *vivalis vivalis* (Illiger, 1798)

Tribe Zabrini Bonelli, 1810
Subtribe Amarina C.C.A. Zimmermann, 1832

Amara (*Amara*) *aenea* (De Geer, 1774)
Amara (*Amara*) *communis* (Panzer, 1797)

Amara (*Amara*) *convexior* Stephens, 1828
Amara (*Amara*) *curta* Dejean, 1828
Amara (*Amara*) *eurynota* (Panzer, 1796)
Amara (*Amara*) *famelica* C.C.A. Zimmermann, 1832
Amara (*Amara*) *familiaris* (Duftschmid, 1812)
Amara (*Amara*) *littorea* C.G. Thomson, 1857
Amara (*Amara*) *lunicollis* Schiødte, 1837
Amara (*Amara*) *montivaga* Sturm, 1825
Amara (*Amara*) *ovata* (Fabricius, 1792)
Amara (*Amara*) *similata* (Gyllenhal, 1810)
Amara (*Amara*) *spreta* Dejean, 1831
Amara (*Amara*) *tibialis* (Paykull, 1798)
Amara (*Amarocelia*) *erratica* (Duftschmid, 1812)
Amara (*Bradytus*) *apricaria* (Paykull, 1790)
Amara (*Bradytus*) *consularis* (Duftschmid, 1812)
Amara (*Bradytus*) *crenata* Dejean, 1828
Amara (*Bradytus*) *fulva* (O.F. Müller, 1776)
Amara (*Bradytus*) *majuscula* (Chaudoir, 1850)
Amara (*Celia*) *bifrons* (Gyllenhal, 1810)
Amara (*Celia*) *brunnea* (Gyllenhal, 1810)
Amara (*Celia*) *infima* (Duftschmid, 1812)
Amara (*Celia*) *praetermissa* (C.R. Sahlberg, 1827)
Amara (*Curtonotus*) *aulica* (Panzer, 1796)
? *Amara* (*Curtonotus*) *convexiuscula* (Marsham, 1802) {Feoktistov 2008}
Amara (*Curtonotus*) *gebleri* Dejean, 1831
Amara (*Paracelia*) *quenseli silvicola* C.C.A. Zimmermann, 1832
Amara (*Percosia*) *equestris equestris* (Duftschmid, 1812)
Amara (*Xenocelia*) *ingenua* (Duftschmid, 1812)
Amara (*Xenocelia*) *municipalis* (Duftschmid, 1812)
Amara (*Zezea*) *plebeja* (Gyllenhal, 1810)

Family HALIPLIDAE Aubé, 1836

Haliplus (*Haliplus*) *fluviatilis* Aubé, 1836
Haliplus (*Haliplus*) *fulvicollis* Erichson, 1837
Haliplus (*Haliplus*) *lineolatus* Mannerheim, 1844
Haliplus (*Haliplus*) *ruficollis* (De Geer, 1774)

Family NOTERIDAE C.G. Thomson, 1860
Subfamily NOTERINAE C.G. Thomson, 1860
Tribe Noterini C.G. Thomson, 1860

Noterus clavicornis (De Geer, 1774)
Noterus crassicornis (O.F. Müller, 1776)

Family DYTISCIDAE Leach, 1815
Subfamily AGABINAE C.G. Thomson, 1867
Tribe Agabini C.G. Thomson, 1867

Agabus (*Acatodes*) *congener* (Thunberg, 1794)
Agabus (*Acatodes*) *fuscipennis* (Paykull, 1798)
Agabus (*Acatodes*) *sturmii* (Gyllenhal, 1808)
Agabus (*Agabus*) *uliginosus* (Linnaeus, 1760)
Agabus (*Gaurodytes*) *affinis* (Paykull, 1798)
Agabus (*Gaurodytes*) *biguttatus* (G.-A. Olivier, 1795)
Agabus (*Gaurodytes*) *guttatus guttatus* (Paykull, 1798)
Agabus (*Gaurodytes*) *melanarius* Aubé, 1837
Ilybius aenescens C.G. Thomson, 1870
Ilybius ater (De Geer, 1774)
Ilybius erichsoni (Gemminger & Harold, 1868)
Ilybius fenestratus (Fabricius, 1781)
Ilybius fuliginosus fuliginosus (Fabricius, 1792)
Ilybius guttiger (Gyllenhal, 1808)
Ilybius neglectus (Erichson, 1837)
Ilybius quadriguttatus (Lacordaire, 1835)
Ilybius similis C.G. Thomson, 1856
Ilybius subaeneus Erichson, 1837
Ilybius subtilis (Erichson, 1837)
Ilybius wasastjernae (C.R. Sahlberg, 1824) {ZIN}
Platambus maculatus (Linnaeus, 1758)

Subfamily COLYMBETINAE Erichson, 1837
Tribe Colymbetini Erichson, 1837

Colymbetes paykulli Erichson, 1837
Colymbetes striatus (Linnaeus, 1758)
Rhantus (*Nartus*) *grapii* (Gyllenhal, 1808)
Rhantus (*Rhantus*) *exsoletus* (Forster, 1771)
Rhantus (*Rhantus*) *frontalis* (Marsham, 1802)
Rhantus (*Rhantus*) *latitans* Sharp, 1882
Rhantus (*Rhantus*) *notaticollis* (Aubé, 1837)
Rhantus (*Rhantus*) *suturellus* (Harris, 1828)
Liopterus haemorrhoidalis (Fabricius, 1787)

Subfamily CYBISTRINAE Sharp, 1880
Tribe Cybistrini Sharp, 1880

Cybister (*Cybister*) *lateralimarginalis lateralimarginalis* (De Geer, 1774)

Subfamily DYTISCINAE Leach, 1815
Tribe Aciliini C.G. Thomson, 1867

Acilius (*Acilius*) *canaliculatus* (Nicolai, 1822)
Acilius (*Acilius*) *sulcatus* (Linnaeus, 1758)
Graphoderus bilineatus (De Geer, 1774)
Graphoderus cinereus (Linnaeus, 1758)
Graphoderus zonatus zonatus (Hoppe, 1795)

Tribe Dytiscini Leach, 1815

Dytiscus circumcinctus Ahrens, 1811
Dytiscus latissimus Linnaeus, 1758
Dytiscus marginalis marginalis Linnaeus, 1758
Dytiscus thianschanicus (Gschwendtner, 1923)

Tribe Hydaticini Sharp, 1880

Hydaticus (*Hydaticus*) *aruspex* H. Clark, 1864
Hydaticus (*Hydaticus*) *continentalis* J. Balfour-Browne, 1944
Hydaticus (*Hydaticus*) *seminiger* (De Geer, 1774)
Hydaticus (*Hydaticus*) *transversalis transversalis* (Pontoppidan, 1763)

Subfamily HYDROPORINAE Aubé, 1836
Tribe Bidessini Sharp, 1880

Bidessus grossepunctatus Vorbringer, 1907
Bidessus unistriatus (Goeze, 1777)
Hydroglyphus geminus (Fabricius, 1792)

Tribe Hydroporini Aubé, 1836
Subtribe Hydroporina Aubé, 1836

Hydroporus angustatus Sturm, 1835
Hydroporus dorsalis (Fabricius, 1787)
Hydroporus erythrocephalus (Linnaeus, 1758)
Hydroporus fuscipennis Schaum, 1867
Hydroporus incognitus Sharp, 1869
Hydroporus memnonius Nicolai, 1822
Hydroporus neglectus Schaum, 1845
Hydroporus palustris (Linnaeus, 1760)
Hydroporus planus (Fabricius, 1782)
Hydroporus scalesianus Stephens, 1828

Hydroporus striola (Gyllenhal, 1826)
Hydroporus tristis (Paykull, 1798)

Subtribe Siettitiina Smrž, 1982

Graptodytes bilineatus (Sturm, 1835)
Graptodytes granularis (Linnaeus, 1767)
Graptodytes pictus (Fabricius, 1787)
Porhydrus lineatus (Fabricius, 1775)

Tribe Hygrotini Portevin, 1929

Hygrotus (*Coelambus*) *impressopunctatus* (Schaller, 1783)
Hygrotus (*Hygrotus*) *decoratus* (Gyllenhal, 1810)
Hygrotus (*Hygrotus*) *inaequalis* (Fabricius, 1777)
Hygrotus (*Hygrotus*) *versicolor* (Schaller, 1783)

Tribe Hyphydrini Gistel, 1848

Hyphydrus ovatus (Linnaeus, 1760)

Tribe Laccornini Wolfe & Roughley, 1990

Laccornis oblongus (Stephens, 1835)

Subfamily LACCOPHILINAE Gistel, 1848
Tribe Laccophilini Gistel, 1848

Laccophilus hyalinus (De Geer, 1774)
Laccophilus minutus (Linnaeus, 1758)

Suborder POLYPHAGA Emery, 1886
Superfamily HYDROPHILOIDEA Latreille, 1802
Family HELOPHORIDAE Leach, 1815

Helophorus (*Kyphohelophorus*) *tuberculatus* Gyllenhal, 1808

Family GEORISSIDAE Laporte, 1840

Georissus (*Georissus*) *crenulatus* (P. Rossi, 1794)

Family HYDROCHIDAE C.G. Thomson, 1859

Hydrochus brevis (Herbst, 1793)

Hydrochus crenatus (Fabricius, 1792)
Hydrochus elongatus (Schaller, 1783)
Hydrochus kirgisicus Motschulsky, 1860

Family HYDROPHILIDAE Latreille, 1802
Subfamily HYDROPHILINAE Latreille, 1802
Tribe Berosini Mulsant, 1844

Berosus (*Berosus*) *luridus* (Linnaeus, 1760)
Berosus (*Berosus*) *signaticollis* (Charpentier, 1825)

Tribe Laccobiini Houlbert, 1922

Laccobius (*Laccobius*) *albipes* Kuwert, 1890
Laccobius (*Laccobius*) *minutus* (Linnaeus, 1758)

Tribe Hydrobiusini Mulsant, 1844

Hydrobius fuscipes (Linnaeus, 1758)

Tribe Hydrophilini Latreille, 1802

Hydrochara caraboides (Linnaeus, 1758)
Hydrophilus aterrimus Eschscholtz, 1822

Subfamily CHAETARTHRIINAE Bedel, 1881
Tribe Anacaenini M. Hansen, 1991

Anacaena lutescens (Stephens, 1829)

Tribe Chaetarthriini Bedel, 1881

Chaetarthria seminulum (Herbst, 1797)

Subfamily ENOCHRINAE Short & Fikáček, 2013

Cymbiodyta marginella (Fabricius, 1792)
Enochrus (*Lumetus*) *bicolor* (Fabricius, 1792)
Enochrus (*Lumetus*) *fuscipennis* (C.G. Thomson, 1884)
Enochrus (*Lumetus*) *quadripunctatus* (Herbst, 1797)
Enochrus (*Methydrus*) *affinis* (Thunberg, 1794)
Enochrus (*Methydrus*) *coarctatus* (Gredler, 1863)

Subfamily ACIDOCERINAE Zaitzev, 1908

Helochares (*Helochares*) *obscurus* (O.F. Müller, 1776)

Subfamily SPHAERIDIINAE Latreille, 1802
Tribe Coelostomatini L. Heyden, 1891

Coelostoma (*Coelostoma*) *orbiculare* (Fabricius, 1775)

Tribe Megasternini Mulsant, 1844

Cercyon (*Cercyon*) *bifenestratus* Küster, 1851
Cercyon (*Cercyon*) *convexiusculus* Stephens, 1829
Cercyon (*Cercyon*) *granarius* Erichson, 1837
Cercyon (*Cercyon*) *haemorrhoidalis* (Fabricius, 1775)
Cercyon (*Cercyon*) *impressus* (Sturm, 1807)
Cercyon (*Cercyon*) *lateralis* (Marsham, 1802)
Cercyon (*Cercyon*) *marinus* C.G. Thomson, 1853
Cercyon (*Cercyon*) *melanocephalus* (Linnaeus, 1758)
Cercyon (*Cercyon*) *pygmaeus* (Illiger, 1801)
Cercyon (*Cercyon*) *quisquilius* (Linnaeus, 1760)
Cercyon (*Cercyon*) *sternalis* Sharp, 1918
Cercyon (*Cercyon*) *tristis* (Illiger, 1801)
Cercyon (*Cercyon*) *unipunctatus* (Linnaeus, 1758)
Cercyon (*Conocercyon*) *ustulatus* (Preyssler, 1790)
Cercyon (*Paracercyon*) *analis* (Paykull, 1798)
Cercyon (*Paracycreon*) *laminatus* Sharp, 1873†
Cryptopleurum crenatum (Kugelann, 1794)
Cryptopleurum minutum (Fabricius, 1775)

Tribe Sphaeridiini Latreille, 1802

Sphaeridium bipustulatum Fabricius, 1781
Sphaeridium lunatum Fabricius, 1792
Sphaeridium scarabaeoides (Linnaeus, 1758)

Family SPHAERITIDAE Shuckard, 1839

Sphaerites glabratus (Fabricius, 1792)

Family HISTERIDAE Gyllenhal, 1808
Subfamily ABRAEINAE W.S. MacLeay, 1819

Tribe Acritini Wenzel, 1944

Acritus (*Acritus*) *minutus* (Herbst, 1791)
Acritus (*Pycnacritus*) *homoeopathicus* Wollaston, 1857

Tribe Plegaderini Portevin, 1929

Plegaderus (*Plegaderus*) *caesus* (Herbst, 1791)
Plegaderus (*Plegaderus*) *saucius* Erichson, 1834
Plegaderus (*Plegaderus*) *vulneratus* (Panzer, 1797)

Subfamily DENDROPHILINAE Reitter, 1909
Tribe Dendrophilini Reitter, 1909

Dendrophilus (*Dendrophilus*) *punctatus punctatus* (Herbst, 1791)
Dendrophilus (*Dendrophilus*) *pygmaeus* (Linnaeus, 1758)*

Tribe Paromalini Reitter, 1909

Paromalus (*Paromalus*) *flavicornis* (Herbst, 1791)
Paromalus (*Paromalus*) *parallelepipedus* (Herbst, 1791)
Platylomalus complanatus (Panzer, 1797)

Subfamily HISTERINAE Gyllenhal, 1808
Tribe Histerini Gyllenhal, 1808

Atholus duodecimstriatus duodecimstriatus (Schrank, 1781)
Hister bissexstriatus Fabricius, 1801
Hister funestus Erichson, 1834
Hister unicolor unicolor Linnaeus, 1758
Margarinotus (*Eucalohister*) *bipustulatus* (Schrank, 1781)
Margarinotus (*Paralister*) *neglectus* (Germar, 1813)
Margarinotus (*Paralister*) *purpurascens* (Herbst, 1791)
Margarinotus (*Paralister*) *ventralis* (Marseul, 1854)
Margarinotus (*Ptomister*) *brunneus* (Fabricius, 1775)
Margarinotus (*Ptomister*) *merdarius* (J.J. Hoffmann, 1803)
Margarinotus (*Ptomister*) *striola striola* (C.R. Sahlberg, 1819)
Margarinotus (*Ptomister*) *terricola* (Germar, 1823)

Tribe Hololeptini Hope, 1840

Hololepta (*Hololepta*) *plana* (Sulzer, 1776)

Tribe Platysomatini Bickhardt, 1914

Eurosomides minor (P. Rossi, 1790)
Platysoma (*Cylister*) *angustatum* (J.J. Hoffmann, 1803)
Platysoma (*Cylister*) *elongatum elongatum* (Thunberg, 1787)
Platysoma (*Cylister*) *lineare* Erichson, 1834
Platysoma (*Platysoma*) *deplanatum* (Gyllenhal, 1808)

Subfamily SAPRININAE C.É. Blanchard, 1845

Chalcionellus decemstriatus decemstriatus (P. Rossi, 1792)
Gnathoncus buyssoni Auzat, 1917*
Gnathoncus nannetensis (Marseul, 1862)
Hypocaccus (*Hypocaccus*) *rugifrons* (Paykull, 1798)
Myrmetes paykulli Kanaar, 1979
Saprinus (*Saprinus*) *aeneus* (Fabricius, 1775)
Saprinus (*Saprinus*) *caerulescens caerulescens* (J.J. Hoffmann, 1803)
Saprinus (*Saprinus*) *planiusculus* Motschulsky, 1849
Saprinus (*Saprinus*) *rugifer* (Paykull, 1809)*
Saprinus (*Saprinus*) *semistriatus* (L.G. Scriba, 1790)

Superfamily STAPHYLINOIDEA Latreille, 1802
Family HYDRAENIDAE Mulsant, 1844
Subfamily HYDRAENINAE Mulsant, 1844
Tribe Limnebiini Mulsant, 1844

Limnebius truncatellus (Thunberg, 1794)

Family LEIODIDAE Fleming, 1821
Subfamily CHOLEVINAE Kirby, 1837
Tribe Cholevini Kirby, 1837
Subtribe Catopina Chaudoir, 1845

Apocatops nigrita (Erichson, 1837)
Fissocatops westi (Krogerus, 1931)
Sciodrepoides fumatus (Spence, 1813)
Sciodrepoides watsoni watsoni (Spence, 1813)

Subtribe Cholevina Kirby, 1837

Choleva (*Choleva*) *oblonga oblonga* Latreille, 1806*

Subfamily COLONINAE Horn, 1880

Colon serripes (C.R. Sahlberg, 1822)

Subfamily LEIODINAE Fleming, 1821
Tribe Anisotomini Horaninow, 1834

Agathidium (*Cyphoceble*) *discoideum* Erichson, 1845
Agathidium (*Neoceble*) *nigripenne* (Fabricius, 1792)
Agathidium (*Neoceble*) *rotundatum rotundatum* (Gyllenhal, 1827)
Amphicyllis globus (Fabricius, 1792)
Anisotoma axillaris Gyllenhal, 1810
Anisotoma castanea castanea (Herbst, 1791)
Anisotoma glabra (Fabricius, 1787)
Anisotoma humeralis (Herbst, 1791)
Anisotoma orbicularis (Herbst, 1791)
Liodopria serricornis (Gyllenhal, 1813)

Tribe Leiodini Fleming, 1821

Cyrtusa subtestacea (Gyllenhal, 1813)

Tribe Pseudoliodini Portevin, 1926

Colenis (*Colenis*) *immunda* (Sturm, 1807)

Family SILPHIDAE Latreille, 1806
Subfamily SILPHINAE Latreille, 1806

Dendroxena quadrimaculata (Scopoli, 1771)
Necrodes littoralis (Linnaeus, 1758)
Oiceoptoma thoracicum (Linnaeus, 1758)
Phosphuga atrata atrata (Linnaeus, 1758)
Silpha carinata Herbst, 1783
Silpha obscura obscura Linnaeus, 1758
Silpha tristis Illiger, 1798
Thanatophilus dispar (Herbst, 1793)
Thanatophilus rugosus (Linnaeus, 1758)
Thanatophilus sinuatus (Fabricius, 1775)

Subfamily NICROPHORINAE Kirby, 1837

icrophorus humator (Gleditsch, 1767)

Nicrophorus interruptus Stephens, 1830
Nicrophorus investigator Zetterstedt, 1824
Nicrophorus sepultor Charpentier, 1825
Nicrophorus vespillo (Linnaeus, 1758)
Nicrophorus vespilloides Herbst, 1783

Family STAPHYLINIDAE Latreille, 1802
Subfamily OMALIINAE W.S. MacLeay, 1825
Tribe Anthophagini C.G. Thomson, 1859

Acidota crenata crenata (Fabricius, 1792)
Acidota cruentata Mannerheim, 1830
Anthobium (*Anthobium*) *atrocephalum* (Gyllenhal, 1827)
Anthophagus (*Dimorphoschelus*) *angusticollis angusticollis* (Mannerheim, 1830)
Anthophagus (*Phaganthus*) *caraboides caraboides* (Linnaeus, 1758)
Arpedium brachypterum (Gravenhorst, 1802)
Arpedium quadrum (Gravenhorst, 1806)
Deliphrum (*Deliphrum*) *tectum* (Paykull, 1789)

Tribe Eusphalerini Hatch, 1957

Eusphalerum luteum luteum (Marsham, 1802)
Eusphalerum minutum (Fabricius, 1792)

Tribe Omaliini W.S. MacLeay, 1825

Acrulia inflata (Gyllenhal, 1813)
Omalium caesum Gravenhorst, 1806
Omalium rivulare (Paykull, 1789)
Phloeonomus (*Phloeonomus*) *pusillus* (Gravenhorst, 1806)
Phloeostiba lapponica (Zetterstedt, 1838)
Phloeostiba plana (Paykull, 1792)
Phyllodrepa melanocephala melanocephala (Fabricius, 1787)
Phyllodrepa nigra (Gravenhorst, 1806)

Subfamily PROTEININAE Erichson, 1839
Tribe Proteinini Erichson, 1839

Megarthrus denticollis (Beck, 1817)
Megarthrus depressus (Paykull, 1789)
Megarthrus hemipterus (Illiger, 1794)
Proteinus atomarius Erichson, 1840
Proteinus brachypterus (Fabricius, 1792)
Proteinus laevigatus Hochhuth, 1872

Subfamily MICROPEPLINAE Leach, 1815

Arrhenopeplus (*Arrhenopeplus*) *tesserula* (Curtis, 1828)

Subfamily PSELAPHINAE Latreille, 1802
Supertribe Euplectitae Streubel, 1839
Tribe Euplectini Streubel, 1839

Euplectus karstenii (Reichenbach, 1816)
Euplectus kirbii kirbii Denny, 1825
Euplectus punctatus Mulsant & Rey, 1861

Tribe Trichonychini Reitter, 1882
Subtribe Bibloporina O. Park, 1951

Bibloporus (*Bibloporus*) *minutus* Raffray, 1914

Subtribe Panaphantina Jeannel, 1950

Bibloplectus (*Bibloplectus*) *ambiguus* (Reichenbach, 1816)

Subtribe Trichonychina Reitter, 1882

Trichonyx sulcicollis (Reichenbach, 1816)*

Subtribe Trimiina Brendel & Wickham, 1890

Trimium brevicorne (Reichenbach, 1816)

Tribe Brachyglutini Raffray, 1904
Subtribe Brachyglutina Raffray, 1904

Brachygluta (*Brachygluta*) *fossulata* (Reichenbach, 1816)
Brachygluta haematica (Reichenbach, 1816)
Fagniezia impressa (Panzer, 1803)
Rybaxis longicornis (Leach, 1817)

Tribe Bythinini Raffray, 1890
Subtribe Bythinini Raffray, 1890

Bryaxis bulbifer (Reichenbach, 1816)

Tribe Tychini Raffray, 1904

Tychus niger (Paykull, 1800)

Supertribe Pselaphitae Latreille, 1802
Tribe Pselaphini Latreille, 1802

Pselaphaulax dresdensis (Herbst, 1791)

Tribe Tyrini Reitter, 1882
Subtribe Tyrina Reitter, 1882

Tyrus mucronatus mucronatus (Panzer, 1803)

Subfamily PHLOEOCHARINAE Erichson, 1839

Phloeocharis (*Phloeocharis*) *subtilissima* Mannerheim, 1830

Subfamily TACHYPORINAE W.S. MacLeay, 1825
Tribe Mycetoporini C.G. Thomson, 1859

Bolitobius (*Bolitobius*) *castaneus boreomontanicus* Schülke, 2010
Carphacis striatus (G.-A. Olivier, 1795)
Ischnosoma longicorne (Mäklin, 1847)
Ischnosoma splendidum (Gravenhorst, 1806)
Lordithon exoletus (Erichson, 1839)
Lordithon lunulatus (Linnaeus, 1760)
Lordithon pulchellus (Mannerheim, 1830)
Lordithon speciosus (Erichson, 1839)
Lordithon thoracicus thoracicus (Fabricius, 1777)
Lordithon trimaculatus (Fabricius, 1792)
Mycetoporus bimaculatus Lacordaire, 1835*
Mycetoporus lepidus (Gravenhorst, 1806)
Mycetoporus maerkelii Kraatz, 1857
Mycetoporus monticola Fowler, 1888
Mycetoporus punctus (Gravenhorst, 1806)
Parabolitobius formosus (Gravenhorst, 1806)

Tribe Tachyporini W.S. MacLeay, 1825

Lamprinodes saginatus (Gravenhorst, 1806)
Sepedophilus binotatus (Gravenhorst, 1802)
Sepedophilus bipunctatus (Gravenhorst, 1802)

Sepedophilus bipustulatus (Gravenhorst, 1802)
Sepedophilus constans (Fowler, 1888)
Sepedophilus immaculatus (Stephens, 1832)
Sepedophilus littoreus (Linnaeus, 1758)
Sepedophilus marshami (Stephens, 1832)
Sepedophilus pedicularius (Gravenhorst, 1802)
Sepedophilus testaceus (Fabricius, 1792)
Tachinus (*Tachinus*) *bipustulatus* (Fabricius, 1792)
Tachinus (*Tachinus*) *laticollis* Gravenhorst, 1802
Tachinus (*Tachinus*) *marginellus marginellus* (Fabricius, 1781)*
Tachinus (*Tachinus*) *proximus* Kraatz, 1855
Tachinus (*Tachinus*) *rufipes* (Linnaeus, 1758)
Tachinus (*Tachinus*) *subterraneus* (Linnaeus, 1758)
Tachyporus (*Palporus*) *nitidulus* (Fabricius, 1781)
Tachyporus (*Tachyporus*) *abdominalis* (Fabricius, 1781)
Tachyporus (*Tachyporus*) *chrysomelinus* (Linnaeus, 1758)
Tachyporus (*Tachyporus*) *dispar* (Paykull, 1789)
Tachyporus (*Tachyporus*) *formosus* A. [H]. Matthews, 1838
Tachyporus (*Tachyporus*) *hypnorum* (Fabricius, 1775)
Tachyporus (*Tachyporus*) *obtusus* (Linnaeus, 1767)
Tachyporus (*Tachyporus*) *pallidus* Sharp, 1871
Tachyporus (*Tachyporus*) *pulchellus* Mannerheim, 1843
Tachyporus (*Tachyporus*) *quadriscopulatus quadriscopulatus* Pandellé, 1869
Tachyporus (*Tachyporus*) *scitulus* Erichson, 1839
Tachyporus (*Tachyporus*) *solutus* Erichson, 1839
Tachyporus (*Tachyporus*) *transversalis* Gravenhorst, 1806

Subfamily HABROCERINAE Mulsant & Rey, 1876

Habrocerus capillaricornis (Gravenhorst, 1806)

Subfamily ALEOCHARINAE Fleming, 1821
Tribe Aleocharini Fleming, 1821
Subtribe Aleocharina Fleming, 1821

Aleochara (*Aleochara*) *curtula* (Goeze, 1777)
Aleochara (*Ceranota*) *erythroptera* Gravenhorst, 1806
Aleochara (*Coprochara*) *bipustulata* (Linnaeus, 1760)
Aleochara (*Xenochara*) *brevipennis* Gravenhorst, 1806
Aleochara (*Xenochara*) *falcata* Assing, 2009*
Aleochara (*Xenochara*) *fumata* Gravenhorst, 1802
Aleochara (*Xenochara*) *grandeguttata* Assing, 2009
Aleochara (*Xenochara*) *haematoptera* Kraatz, 1858
Aleochara (*Xenochara*) *stichai* Likovský, 1965

Tribe Athetini Casey, 1910
Subtribe Athetina Casey, 1910

Acrotona (*Acrotona*) *aterrima* (Gravenhorst, 1802)
Acrotona (*Acrotona*) *convergens* (A. Strand, 1958)
Acrotona (*Acrotona*) *exigua* (Erichson, 1837)
Acrotona (*Acrotona*) *muscorum* (Brisout de Barneville, 1860)
Acrotona (*Acrotona*) *obfuscata* (Gravenhorst, 1802)
Acrotona (*Acrotona*) *parvula* (Mannerheim, 1830)
Acrotona (*Acrotona*) *pseudotenera* (Cameron, 1933)†
Acrotona (*Acrotona*) *pygmaea* (Gravenhorst, 1802)
Acrotona (*Acrotona*) *sylvicola* (Kraatz, 1856)
Alianta incana (Erichson, 1837)
Amischa analis (Gravenhorst, 1802)
Amischa bifoveolata (Mannerheim, 1830)
Amischa decipiens (Sharp, 1869)
Atheta (*Alaobia*) *gagatina* (Baudi di Selve, 1848)
Atheta (*Alaobia*) *pallidicornis* (C.G. Thomson, 1856)
Atheta (*Alaobia*) *scapularis* (C.R. Sahlberg, 1831)
Atheta (*Alaobia*) *sodalis* (Erichson, 1837)
Atheta (*Atheta*) *basicornis* (Mulsant & Rey, 1852)
Atheta (*Atheta*) *crassicornis* (Fabricius, 1792)
Atheta (*Atheta*) *ebenina* (Mulsant & Rey, 1873)
Atheta (*Atheta*) *euryptera* (Stephens, 1832)
Atheta (*Atheta*) *harwoodi* B.S. Williams, 1930
Atheta (*Atheta*) *paracrassicornis* Brundin, 1954
Atheta (*Atheta*) *pilicornis* (C.G. Thomson, 1852)
Atheta (*Atheta*) *vaga* (Heer, 1839)
Atheta (*Badura*) *cauta* (Erichson, 1837)*
Atheta (*Bessobia*) *occulta* (Erichson, 1837)
Atheta (*Ceritaxa*) *subterranea* (Mulsant & Rey, 1853)
Atheta (*Chaetida*) *longicornis* (Gravenhorst, 1802)
Atheta (*Datomicra*) *canescens* (Sharp, 1869)
Atheta (*Datomicra*) *dadopora* C.G. Thomson, 1867
Atheta (*Datomicra*) *nigra* (Kraatz, 1856)
Atheta (*Dimetrota*) *intermedia* (Thomson, 1852)
Atheta (*Microdota*) *atomaria* (Kraatz, 1856)*
Atheta (*Microdota*) *minuscula* (Brisout de Barneville, 1860)
Atheta (*Mocyta*) *clientula* (Erichson, 1839)
Atheta (*Mocyta*) *fungi fungi* (Gravenhorst, 1806)
Atheta (*Mocyta*) *fussi* Bernhauer, 1908
Atheta (*Mocyta*) *orbata* (Erichson, 1837)
Atheta (*Mycetota*) *laticollis* (Stephens, 1832)
Atheta (*Parameotica*) *laticeps* (C.G. Thomson, 1856)

Atheta (*Philhygra*) *britteni* Joy, 1913
Atheta (*Philhygra*) *debilis* (Erichson, 1837)
Atheta (*Philhygra*) *deformis* (Kraatz, 1856)
Atheta (*Philhygra*) *elongatula* (Gravenhorst, 1802)
Atheta (*Philhygra*) *gyllenhalii* (C.G. Thomson, 1856)
Atheta (*Philhygra*) *hygrobia* (C.G. Thomson, 1856)
Atheta (*Philhygra*) *luridipennis* (Mannerheim, 1830)
Atheta (*Philhygra*) *malleus* Joy, 1913
Atheta (*Philhygra*) *palustris* (Kiesenwetter, 1844)
Atheta (*Philhygra*) *pseudoelongatula* Bernhauer, 1907
Atheta (*Philhygra*) *sequanica* (Brisout de Barneville, 1860)
Atheta (*Philhygra*) *tmolosensis* Bernhauer, 1940
Atheta (*Tetropla*) *liturata* (Stephens, 1832)
Atheta (*Tetropla*) *nigritula* (Gravenhorst, 1802)
Atheta (*Xenota*) *lativentris* J.R. Sahlberg, 1876
Dadobia immersa (Erichson, 1837)
Dinaraea aequata (Erichson, 1837)
Dochmonota clancula (Erichson, 1837)
Eurodotina inquinula (Gravenhorst, 1802)
Liogluta microptera C.G. Thomson, 1867
Lyprocorrhe anceps (Erichson, 1837)
Nehemitropia lividipennis (Mannerheim, 1830)
Notothecta (*Notothecta*) *flavipes* (Gravenhorst, 1806)
Pachnida nigella (Erichson, 1837)
Plataraea (*Plataraea*) *dubiosa* (G. Benick, 1935)
Schistoglossa aubei (Brisout de Barneville, 1860)
Schistoglossa gemina (Erichson, 1837)
Schistoglossa viduata (Erichson, 1837)

Tribe Autaliini C.G. Thomson, 1859

Autalia longicornis Scheerpeltz, 1947

Tribe Deinopsini Sharp, 1883

Deinopsis erosa (Stephens, 1832)

Tribe Falagriini Mulsant & Rey, 1873

Cordalia obscura (Gravenhorst, 1802)
Falagria caesa Erichson, 1837

Tribe Geostibini Seevers, 1978

Alevonota egregia (Rye, 1876)
Alevonota gracilenta (Erichson, 1839)*
Alevonota rufotestacea (Kraatz, 1856)
Geostiba (*Geostiba*) *circellaris* (Gravenhorst, 1806)

Tribe Homalotini Heer, 1839
Subtribe Bolitocharina C.G. Thomson, 1859

Bolitochara obliqua Erichson, 1837
Bolitochara pulchra (Gravenhorst, 1806)
Bolitochara tecta Assing, 2014
Euryusa (*Euryusa*) *castanoptera* Kraatz, 1856
Leptusa (*Leptusa*) *pulchella* (Mannerheim, 1830)
Phymatura brevicollis (Kraatz, 1856)
Tachyusida gracilis (Erichson, 1837)

Subtribe Gyrophaenina Kraatz, 1856

Encephalus (*Encephalus*) *complicans* Stephens, 1832
Gyrophaena (*Agaricophaena*) *boleti* (Linnaeus, 1758)
Gyrophaena (*Gyrophaena*) *bihamata* C.G. Thomson, 1867
Gyrophaena (*Gyrophaena*) *fasciata* (Marsham, 1802)
Gyrophaena (*Gyrophaena*) *gentilis* Erichson, 1839
Gyrophaena (*Gyrophaena*) *joyi* Wendler, 1924
Gyrophaena (*Gyrophaena*) *joyioides* Wüsthoff, 1937
Gyrophaena (*Gyrophaena*) *lucidula* Erichson, 1837
Gyrophaena (*Gyrophaena*) *manca* Erichson, 1839
Gyrophaena (*Gyrophaena*) *nitidula* (Gyllenhal, 1810)
Gyrophaena (*Gyrophaena*) *orientalis* A. Strand, 1938
Gyrophaena (*Gyrophaena*) *poweri* Crotch, 1867
Gyrophaena (*Leptarthrophaena*) *affinis* Mannerheim, 1830
Gyrophaena (*Phaenogyra*) *strictula* Erichson, 1839

Subtribe Homalotina Heer, 1839

Anomognathus cuspidatus (Erichson, 1839)
Cyphea curtula (Erichson, 1837)
Homalota plana (Gyllenhal, 1810)

Tribe Hygronomini C.G. Thomson, 1859

Subtribe Hygronomina C.G. Thomson, 1859

Hygronoma dimidiata (Gravenhorst, 1806)

Tribe Hypocyphtini Laporte, 1835

Cypha discoidea (Erichson, 1839)
Cypha seminulum (Erichson, 1839)
Cypha tarsalis (Luze, 1902)
Holobus apicatus (Erichson, 1837)
Holobus flavicornis (Lacordaire, 1835)
Oligota granaria Erichson, 1837
Oligota inflata (Mannerheim, 1830)
Oligota parva Kraatz, 1862
Oligota pusillima (Gravenhorst, 1806)

Tribe Lomechusini Fleming, 1821
Subtribe Lomechusina Fleming, 1821

Lomechusa pubicollis Brisout de Barneville, 1860

Subtribe Myrmedoniina C.G. Thomson, 1867

Drusilla (*Drusilla*) *canaliculata* (Fabricius, 1787)
Pella cognata (Märkel, 1842)
Pella funesta (Gravenhorst, 1806)
Pella laticollis (Märkel, 1844)
Pella lugens (Gravenhorst, 1802)
Zyras (*Zyras*) *collaris* (Paykull, 1800)

Tribe Myllaenini Ganglbauer, 1895

Myllaena dubia (Gravenhorst, 1806)
Myllaena intermedia Erichson, 1837
Myllaena minuta (Gravenhorst, 1806)

Tribe Oxypodini C.G. Thomson, 1859
Subtribe Dinardina Mulsant & Rey, 1873

Dinarda hagensii Wasmann, 1889*
Thiasophila lohsei Zerche, 1987

Subtribe Meoticina Seevers, 1978

Meotica exilis (Gravenhorst, 1806)
Meotica filiformis (Motschulsky, 1860)

Subtribe Microglottina Fenyes, 1918

Crataraea suturalis (Mannerheim, 1830)
Haploglossa villosula (Stephens, 1832)

Subtribe Oxypodina C.G. Thomson, 1859

Calodera aethiops (Gravenhorst, 1802)
Calodera riparia Erichson, 1837
Calodera uliginosa Erichson, 1837
Dexiogyia corticina (Erichson, 1837)
Ilyobates nigricollis (Paykull, 1800)
Ocalea (*Ocalea*) *badia* Erichson, 1837
Ocyusa maura (Erichson, 1837)
Oxypoda (*Baeoglena*) *praecox* Erichson, 1839
Oxypoda (*Bessopora*) *haemorrhoa* (Mannerheim, 1830)
Oxypoda (*Disochara*) *elongatula* Aubé, 1850
Oxypoda (*Disochara*) *procerula* Mannerheim, 1830
Oxypoda (*Mycetodrepa*) *alternans* (Gravenhorst, 1802)
Oxypoda (*Oxypoda*) *acuminata* (Stephens, 1832)
Oxypoda (*Oxypoda*) *longipes* Mulsant & Rey, 1861
Oxypoda (*Oxypoda*) *opaca* (Gravenhorst, 1802)
Oxypoda (*Podoxya*) *brevicornis* (Stephens, 1832)
Oxypoda (*Podoxya*) *hansseni* A. Strand, 1946
Oxypoda (*Podoxya*) *skalitzkyi* Bernhauer, 1902*
Oxypoda (*Thliboptera*) *togata* Erichson, 1837

Subtribe Phloeoporina C.G. Thomson, 1859

Phloeopora corticalis corticalis (Gravenhorst, 1802)
Phloeopora nitidiventris Fauvel, 1900
Phloeopora testacea (Mannerheim, 1830)

Tribe Placusini Mulsant & Rey, 1871

Placusa (*Placusa*) *atrata* (Mannerheim, 1830)
Placusa (*Placusa*) *complanata* Erichson, 1839

Placusa (*Placusa*) *depressa* Mäklin, 1845
Placusa (*Placusa*) *tachyporoides* (Waltl, 1838)

Tribe Tachyusini C.G. Thomson, 1859

Brachyusa concolor (Erichson, 1839)
Dasygnypeta velata (Erichson, 1837)
Dilacra vilis (Erichson, 1837)
Ischnopoda leucopus (Marsham, 1802)
Ischnopoda umbratica (Erichson, 1837)
Tachyusa coarctata Erichson, 1837
Tachyusa constricta Erichson, 1837
Tachyusa objecta Mulsant & Rey, 1870
Thinonoma atra (Gravenhorst, 1806)

Subfamily SCAPHIDIINAE Latreille, 1806
Tribe Scaphidiini Latreille, 1806

Scaphidium quadrimaculatum G.-A. Olivier, 1790

Tribe Scaphisomatini Casey, 1893

Scaphisoma agaricinum (Linnaeus, 1758)
Scaphisoma assimile assimile Erichson, 1845*
Scaphisoma balcanicum Tamanini, 1954
Scaphisoma boreale Lundblad, 1952
Scaphisoma limbatum Erichson, 1845
Scaphisoma subalpinum subalpinum Reitter, 1880

Subfamily OXYTELINAE Fleming, 1821
Tribe Blediini Ádám, 2001

Bledius (*Astycops*) *subterraneus* Erichson, 1839
Bledius (*Astycops*) *talpa* (Gyllenhal, 1810)
Bledius (*Bargus*) *opacus* (Block, 1799)
Bledius (*Bargus*) *pallipes* (Gravenhorst, 1806)
Bledius (*Bledius*) *tricornis* (Herbst, 1784)
Bledius (*Dicarenus*) *fergussoni fergussoni* Joy, 1912
Bledius (*Hesperophilus*) *dissimilis* Erichson, 1840
Bledius (*Hesperophilus*) *gallicus* (Gravenhorst, 1806)

Tribe Coprophilini Heer, 1839

Coprophilus (*Coprophilus*) *striatulus* (Fabricius, 1792)

Tribe Oxytelini Fleming, 1821

Anotylus hamatus (Fairmaire & Laboulbène, 1856)
Anotylus insecatus (Gravenhorst, 1806)
Anotylus nitidulus (Gravenhorst, 1802)
Anotylus pumilus (Erichson, 1839)
Anotylus rugosus (Fabricius, 1775)
Anotylus tetracarinatus (Block, 1799)
Oxytelus (*Epomotylus*) *sculptus* Gravenhorst, 1806
Oxytelus (*Oxytelus*) *fulvipes* Erichson, 1839
Oxytelus (*Oxytelus*) *migrator* Fauvel, 1904†
Oxytelus (*Oxytelus*) *piceus* (Linnaeus, 1767)
Oxytelus (*Tanycraerus*) *laqueatus* (Marsham, 1802)*
Platystethus (*Craetopycrus*) *cornutus cornutus* (Gravenhorst, 1802)
Platystethus (*Craetopycrus*) *nitens* (C.R. Sahlberg, 1832)

Tribe Planeustomini Jacquelin du Val, 1857

Manda mandibularis (Gyllenhal, 1827)

Tribe Syntomiini Böving & Craighead, 1931

Syntomium aeneum (P. Müller, 1821)

Tribe Thinobiini J.R. Sahlberg, 1876

Carpelimus (*Carpelimus*) *fuliginosus* (Gravenhorst, 1802)
Carpelimus (*Carpelimus*) *lindrothi lindrothi* (Palm, 1943)
Carpelimus (*Carpelimus*) *obesus* (Kiesenwetter, 1844)
Carpelimus (*Carpelimus*) *pusillus* (Gravenhorst, 1802)
Carpelimus (*Paratrogophloeus*) *bilineatus* Stephens, 1834
Carpelimus (*Paratrogophloeus*) *rivularis* (Motschulsky, 1860)
Carpelimus (*Troginus*) *exiguus* (Erichson, 1839)
Carpelimus (*Trogophloeus*) *corticinus* (Gravenhorst, 1806)
Carpelimus (*Trogophloeus*) *elongatulus elongatulus* (Erichson, 1839)
Carpelimus (*Trogophloeus*) *gracilis* (Mannerheim, 1830)
Carpelimus (*Trogophloeus*) *manchuricus subtilicornis* (Roubal, 1946)
Carpelimus (*Trogophloeus*) *modestus* Casey, 1889
Thinobius (*Thinobius*) *flagellatus* Lohse, 1984

Subfamily OXYPORINAE Fleming, 1821

Oxyporus mannerheimii Gyllenhal, 1827
Oxyporus maxillosus Fabricius, 1792

Oxyporus rufus (Linnaeus, 1758)*

Subfamily STENINAE W.S. MacLeay, 1825

Stenus argus Gravenhorst, 1806 *
Stenus ater Mannerheim, 1830
Stenus bifoveolatus Gyllenhal, 1827
Stenus bimaculatus Gyllenhal, 1810
Stenus boops boops Ljungh, 1810
Stenus carbonarius Gyllenhal, 1827
Stenus cicindeloides (Schaller, 1783)
Stenus clavicornis (Scopoli, 1763)
Stenus comma comma LeConte, 1863
Stenus excubitor Erichson, 1839
Stenus flavipes flavipes Stephens, 1833*
Stenus formicetorum Mannerheim, 1843
Stenus fossulatus Erichson, 1840*
Stenus gallicus Fauvel, 1873
Stenus humilis Erichson, 1839
Stenus incrassatus Erichson, 1839
Stenus juno (Paykull, 1789)
Stenus lustrator Erichson, 1839
Stenus morio Gravenhorst, 1806
Stenus nanus Stephens, 1833
Stenus pubescens pubescens Stephens, 1833
Stenus similis (Herbst, 1784)
Stenus solutus Erichson, 1840
Stenus sylvester Erichson, 1839

Subfamily EUAESTHETINAE C.G. Thomson, 1859
Tribe Euaesthetini C.G. Thomson, 1859

Euaesthetus ruficapillus (Lacordaire, 1835)

Subfamily PAEDERINAE Fleming, 1821
Tribe Paederini Fleming, 1821
Subtribe Astenina Hatch, 1957

Astenus (*Astenus*) *gracilis* (Paykull, 1789)
Astenus (*Astenus*) *pulchellus* (Heer, 1839)

Subtribe Cryptobiina Casey, 1905

Ochthephilum fracticorne (Paykull, 1800)

Subtribe Lathrobiina Laporte, 1835

Achenium humile humile (Nicolai, 1822)
Lathrobium (*Lathrobium*) *brunnipes* (Fabricius, 1792)
Lathrobium (*Lathrobium*) *flavipes* Hochhuth, 1851
Lathrobium (*Lathrobium*) *fovulum* Stephens, 1833
Lathrobium (*Lathrobium*) *fulvipenne* (Gravenhorst, 1806)
Lathrobium (*Lathrobium*) *geminum* Kraatz, 1857
Lathrobium (*Lathrobium*) *longulum* Gravenhorst, 1802
Lathrobium (*Lathrobium*) *rufipenne* Gyllenhal, 1813
Tetartopeus quadratus (Paykull, 1789)
Tetartopeus rufonitidus (Reitter, 1909)
Tetartopeus terminatus (Gravenhorst, 1802)

Subtribe Medonina Casey, 1905

Lithocharis nigriceps Kraatz, 1859
Pseudomedon obscurellus (Erichson, 1840)

Subtribe Paederina Fleming, 1821

Paederus (*Heteropaederus*) *fuscipes fuscipes* Curtis, 1826
Paederus (*Paederus*) *riparius* (Linnaeus, 1758)
Paederus (*Poederomorphus*) *littoralis littoralis* Gravenhorst, 1802

Subtribe Scopaeina Mulsant & Rey, 1878

Scopaeus (*Scopaeus*) *laevigatus* (Gyllenhal, 1827)

Subtribe Stilicina Casey, 1905

Rugilus (*Rugilus*) *angustatus* (Geoffroy, 1785)
Rugilus(*Rugilus*) *erichsonii* (Fauvel, 1867)
Rugilus (*Rugilus*) *rufipes* Germar, 1836

Subfamily STAPHYLININAE Latreille, 1802
Tribe Othiini C.G. Thomson, 1859

Atrecus affinis (Paykull, 1789)
Othius punctulatus (Goeze, 1777)

Tribe Staphylinini Latreille, 1802
Subtribe Amblyopinina Seevers, 1944

Heterothops quadripunctulus (Gravenhorst, 1806)
Heterothops stiglundbergi Israelson, 1979

Subtribe Philonthina Kirby, 1837

Bisnius cephalotes (Gravenhorst, 1802)*
Bisnius fimetarius (Gravenhorst, 1802)
Bisnius nitidulus (Gravenhorst, 1802)
Bisnius puella (Nordmann, 1837)
Bisnius sordidus (Gravenhorst, 1802)
Bisnius subuliformis (Gravenhorst, 1802)
Erichsonius (*Erichsonius*) *cinerascens* (Gravenhorst, 1802)
Gabrius appendiculatus Sharp, 1910
Gabrius austriacus Scheerpeltz, 1947
Gabrius bescidicus Smetana, 1954
Gabrius breviventer (Sperk, 1835)
Gabrius exspectatus Smetana, 1952
Gabrius osseticus (Kolenati, 1846)
Gabrius trossulus (Nordmann, 1837)
Neobisnius procerulus procerulus (Gravenhorst, 1806)
Neobisnius villosulus (Stephens, 1833)
Philonthus (*Onychophilonthus*) *marginatus* (O.F. Müller, 1764)
Philonthus (*Philonthus*) *addendus* Sharp, 1867
Philonthus (*Philonthus*) *albipes* (Gravenhorst, 1802)
Philonthus (*Philonthus*) *atratus* (Gravenhorst, 1802)
Philonthus (*Philonthus*) *carbonarius* (Gravenhorst, 1802)
Philonthus (*Philonthus*) *cognatus* Stephens, 1832
Philonthus (*Philonthus*) *concinnus* (Gravenhorst, 1802)
Philonthus (*Philonthus*) *corvinus* Erichson, 1839
Philonthus (*Philonthus*) *cruentatus* (Gmelin, 1790)
Philonthus (*Philonthus*) *cyanipennis* (Fabricius, 1792)
Philonthus (*Philonthus*) *debilis* (Gravenhorst, 1802)
Philonthus (*Philonthus*) *decorus* (Gravenhorst, 1802)
Philonthus (*Philonthus*) *fumarius* (Gravenhorst, 1806)
Philonthus (*Philonthus*) *furcifer* Renkonen, 1937
Philonthus (*Philonthus*) *lepidus* (Gravenhorst, 1802)
Philonthus (*Philonthus*) *micans* (Gravenhorst, 1802)
Philonthus (*Philonthus*) *micantoides* G. Benick & Lohse, 1956
Philonthus (*Philonthus*) *nigrita* (Gravenhorst, 1806)
Philonthus (*Philonthus*) *politus* (Linnaeus, 1758)

Philonthus (*Philonthus*) *quisquiliarius quisquiliarius* (Gyllenhal, 1810)
Philonthus (*Philonthus*) *rectangulus* Sharp, 1874†
Philonthus (*Philonthus*) *rubripennis* Stephens, 1832
Philonthus (*Philonthus*) *sanguinolentus* (Gravenhorst, 1802)
Philonthus (*Philonthus*) *splendens splendens* (Fabricius, 1792)
Philonthus (*Philonthus*) *succicola* C.G. Thomson, 1860
Philonthus (*Philonthus*) *tenuicornis* Mulsant & Rey, 1853
Philonthus (*Philonthus*) *umbratilis* (Gravenhorst, 1802)
Philonthus (*Philonthus*) *varians* (Paykull, 1789)
Rabigus pullus (Nordmann, 1837)
Rabigus tenuis (Fabricius, 1792)

Subtribe Quediina Kraatz, 1857

Acylophorus wagenschieberi Kiesenwetter, 1850
Quedius (*Microsaurus*) *cruentus* (G.-A. Olivier, 1795)
Quedius (*Microsaurus*) *longicornis* Kraatz, 1857*
Quedius (*Microsaurus*) *maurus* (C.R. Sahlberg, 1830)
Quedius (*Microsaurus*) *mesomelinus mesomelinus* (Marsham, 1802)
Quedius (*Microsaurus*) *scitus* (Gravenhorst, 1806)
Quedius (*Microsaurus*) *xanthopus* Erichson, 1839
Quedius (*Quedius*) *fuliginosus* (Gravenhorst, 1802)
Quedius (*Quedius*) *molochinus* (Gravenhorst, 1806)
Quedius (*Velleius*) *dilatatus* (Fabricius, 1787)

Subtribe Staphylinina Latreille, 1802

Creophilus maxillosus maxillosus (Linnaeus, 1758)
Dinothenarus (*Dinothenarus*) *pubescens pubescens* (De Geer, 1774)
Emus hirtus (Linnaeus, 1758)
Ocypus (*Matidus*) *nitens nitens* (Schrank, 1781)
Ocypus (*Ocypus*) *ophthalmicus ophthalmicus* (Scopoli, 1763)
Ontholestes murinus (Linnaeus, 1758)
Ontholestes tessellatus (Geoffroy, 1785)
Ontholestes tessellatus (Geoffroy, 1785)
Platydracus (*Platydracus*) *fulvipes* (Scopoli, 1763)
Platydracus (*Platydracus*) *latebricola* (Gravenhorst, 1806)*
Platydracus (*Platydracus*) *stercorarius stercorarius* (G.-A. Olivier, 1795)
Staphylinus erythropterus erythropterus Linnaeus, 1758

Subtribe Tanygnathinina Reitter, 1909

Quedionuchus plagiatus (Mannerheim, 1843)

Tribe Xantholinini Erichson, 1839

Gyrohypnus (*Gyrohypnus*) *angustatus* Stephens, 1833
Gyrohypnus (*Gyrohypnus*) *fracticornis* (O.F. Müller, 1776)
Hypnogyra angularis (Ganglbauer, 1895)
Leptacinus intermedius Donisthorpe, 1936
Leptacinus sulcifrons (Stephens, 1833)
Nudobius lentus (Gravenhorst, 1806)
Xantholinus (*Purrolinus*) *tricolor* (Fabricius, 1787)
Xantholinus (*Xantholinus*) *dvoraki* Coiffait, 1956
Xantholinus (*Xantholinus*) *linearis linearis* (G.-A. Olivier, 1795)
Xantholinus (*Xantholinus*) *longiventris* Heer, 1839

Family SCYDMAENIDAE Leach, 1815
Supertribe SCYDMAENITAE Leach, 1815
Tribe Eutheiini Casey, 1897

Eutheia scydmaenoides scydmaenoides Stephens, 1830

Tribe Stenichnini Fauvel, 1885

Euconnus (*Euconnus*) *hirticollis* (Illiger, 1798)
Euconnus (*Napochus*) *claviger claviger* (P.W.J. Müller & Kunze, 1822)
Euconnus (*Neonapochus*) *maklinii* (Mannerheim, 1844)
Euconnus (*Psomophus*) *wetterhallii* (Gyllenhal, 1813)
Neuraphes (*Neuraphes*) *angulatus* (P.W.J. Müller & Kunze, 1822)
Neuraphes (*Neuraphes*) *elongatulus* (P.W.J. Müller & Kunze, 1822)
Stenichnus (*Stenichnus*) *bicolor* (Denny, 1825)
Stenichnus (*Stenichnus*) *collaris collaris* (P.W.J. Müller & Kunze, 1822)
Stenichnus (*Stenichnus*) *scutellaris* (P.W.J. Müller & Kunze, 1822)

Tribe Scydmaenini Leach, 1815

Scydmaenus (*Cholerus*) *hellwigii* (Herbst, 1791)
Scydmaenus (*Scydmaenus*) *tarsatus* P.W.J. Müller & Kunze, 1822

Series SCARABAEIFORMIA Crowson, 1960
Superfamily SCARABAEOIDEA Latreille, 1802
Family GEOTRUPIDAE Latreille, 1802
Subfamily GEOTRUPINAE Latreille, 1802
Tribe Geotrupini Latreille, 1802

Anoplotrupes stercorosus (L.G. Scriba, 1791)

Geotrupes baicalicus Reitter, 1892
Trypocopris (*Trypocopris*) *vernalis vernalis* (Linnaeus, 1758)

Family TROGIDAE W.S. MacLeay, 1819
Subfamily TROGINAE W.S. MacLeay, 1819

Trox cadaverinus cadaverinus Illiger, 1802
Trox sabulosus sabulosus (Linnaeus, 1758)
Trox scaber (Linnaeus, 1767)

Family LUCANIDAE Latreille, 1804
Subfamily SYNDESINAE W.S. MacLeay, 1819
Tribe Ceruchini LeConte, 1861

Ceruchus chrysomelinus (Hochenwarth, 1785)

Tribe Sinodendrini LeConte, 1861

Sinodendron cylindricum (Linnaeus, 1758)

Subfamily LUCANINAE Latreille, 1804
Tribe Platycerini Mulsant, 1842

Platycerus caprea (De Geer, 1774)
Platycerus caraboides (Linnaeus, 1758)

Family SCARABAEIDAE Latreille, 1802
Subfamily APHODIINAE Leach, 1815
Tribe Aphodiini Leach, 1815
Subtribe Aphodiina Leach, 1815

Acanthobodilus immundus (Creutzer, 1799)
Acrossus depressus (Kugelann, 1792)
Acrossus luridus (Fabricius, 1775)
Acrossus rufipes (Linnaeus, 1758)
Agoliinus nemoralis (Erichson, 1848)
Agrilinus ater (De Geer, 1774)
Ammoecius brevis (Erichson, 1848)*
Aphodius fimetarius (Linnaeus, 1758)
Bodilopsis rufa (Moll, 1782)
Bodilopsis sordida sordida (Fabricius, 1775)
Bodilus lugens (Creutzer, 1799)
Calamosternus granarius (Linnaeus, 1767)

Chilothorax distinctus distinctus (O.F. Müller, 1776)
Chilothorax melanosticus (W.L.E. Schmidt, 1840)
Colobopterus erraticus (Linnaeus, 1758)
Esymus pusillus pusillus (Herbst, 1789)
Euheptaulacus sus (Herbst, 1783)
Eupleurus subterraneus subterraneus (Linnaeus, 1758)
Liothorax plagiatus (Linnaeus, 1767)
Melinopterus prodromus (Brahm, 1790)
Melinopterus punctatosulcatus hirtipes (Fischer von Waldheim, 1844)
Mendidaphodius linearis (Reiche & Saulcy, 1856)
Nialus varians (Duftschmid, 1805)
Otophorus haemorrhoidalis (Linnaeus, 1758)
Oxyomus sylvestris (Scopoli, 1763)
Teuchestes fossor (Linnaeus, 1758)
Volinus sticticus (Panzer, 1798)

Tribe Psammodiini Mulsant, 1842
Subtribe Rhyssemina Pittino & Mariani, 1986

Pleurophorus caesus (Creutzer, 1796)

Subfamily SCARABAEINAE Latreille, 1802
Tribe Coprini Leach, 1815

Copris (*Copris*) *lunaris* (Linnaeus, 1758)

Tribe Oniticellini H.J. Kolbe, 1905
Subtribe Oniticellina H.J. Kolbe, 1905

Euoniticellus fulvus (Goeze, 1777)

Tribe Onthophagini Streubel, 1846

Caccobius (*Caccobius*) *schreberi* (Linnaeus, 1767)
Onthophagus (*Furconthophagus*) *furcatus* (Fabricius, 1781)
Onthophagus (*Palaeonthophagus*) *coenobita* (Herbst, 1783)
Onthophagus (*Palaeonthophagus*) *fracticornis* (Preyssler, 1790)
Onthophagus (*Palaeonthophagus*) *gibbulus gibbulus* (Pallas, 1781)
Onthophagus (*Palaeonthophagus*) *nuchicornis* (Linnaeus, 1758)
Onthophagus (*Palaeonthophagus*) *ovatus* (Linnaeus, 1767)
Onthophagus (*Palaeonthophagus*) *vacca* (Linnaeus, 1767)

Subfamily MELOLONTHINAE Leach, 1819
Tribe Hopliini Latreille, 1829

Hoplia (*Hoplia*) *parvula* Krynicki, 1832
Hoplia (*Hoplia*) *zaitzevi* Jakobson, 1914* {ZIN}

Tribe Melolonthini Leach, 1819

Melolontha hippocastani hippocastani Fabricius, 1801

Tribe Rhizotrogini Burmeister, 1855

Amphimallon altaicum (Mannerheim, 1825)
Amphimallon solstitiale solstitiale (Linnaeus, 1758)

Tribe Sericini Kirby, 1837

Maladera (*Maladera*) *holosericea* (Scopoli, 1772)
Serica (*Serica*) *brunnea* (Linnaeus, 1758)

Subfamily RUTELINAE W.S. MacLeay, 1819
Tribe Anomalini Streubel, 1839
Subtribe Anisopliina Burmeister, 1844

Chaetopteroplia segetum segetum (Herbst, 1783)

Subtribe Anomalina Streubel, 1839

Anomala dubia dubia (Scopoli, 1763)
Mimela holosericea (Fabricius, 1787)
Phyllopertha horticola (Linnaeus, 1758)

Subfamily DYNASTINAE W.S. MacLeay, 1819
Tribe Oryctini Mulsant, 1842

Oryctes (*Oryctes*) *nasicornis polonicus* Minck, 1918

Subfamily CETONIINAE Leach, 1815
Tribe Cetoniini Leach, 1815
Subtribe Cetoniina Leach, 1815

Cetonia (*Cetonia*) *aurata aurata* (Linnaeus, 1758)
Protaetia (*Cetonischema*) *speciosissima* (Scopoli, 1786)
Protaetia (*Liocola*) *marmorata marmorata* (Fabricus, 1792)

Protaetia (*Potosia*) *cuprea volhyniensis* (Gory & Percheron, 1833)
[indicated as *Protaetia metallica* (Herbst, 1782) in our publications Egorov and Ruchin 2013b, 2014]
Protaetia (*Potosia*) *fieberi boldyrevi* Jakobson, 1909

Subtribe Leucocelina Kraatz, 1882

Oxythyrea funesta (Poda von Neuhaus, 1761)

Tribe Osmodermatini Schenkling, 1922

Osmoderma barnabita Motschulsky, 1845

Tribe Trichiini Fleming, 1821
Subtribe Trichiina Fleming, 1821

Gnorimus variabilis (Linnaeus, 1758)
Trichius fasciatus (Linnaeus, 1758)

Tribe Valgini Mulsant, 1842

Valgus hemipterus hemipterus (Linnaeus, 1758)

Series SCIRTIFORMIA Fleming, 1821
Superfamily SCIRTOIDEA Fleming, 1821
Family SCIRTIDAE Fleming, 1821
Subfamily SCIRTINAE Fleming, 1821

Contacyphon padi (Linnaeus, 1758)
Contacyphon pubescens (Fabricius, 1792)
Contacyphon variabilis (Thunberg, 1787)
Elodes minutus (Linnaeus, 1767)
Microcara testacea (Linnaeus, 1767)
Scirtes hemisphaericus (Linnaeus, 1758)

Family EUCINETIDAE Lacordaire, 1857

Eucinetus haemorrhoidalis (Germar, 1818)

Series ELATERIFORMIA Crowson, 1960
Superfamily DASCILLOIDEA Guérin-Méneville, 1843 (1834)
Family DASCILLIDAE Guérin-Méneville, 1843 (1834)
Subfamily DASCILLINAE Guérin-Méneville, 1843 (1834)

Tribe Dascillini Guérin-Méneville, 1843 (1834)

Dascillus cervinus (Linnaeus, 1758)

Superfamily BUPRESTOIDEA Leach, 1815
Family BUPRESTIDAE Leach, 1815
Subfamily CHRYSOCHROINAE Laporte, 1835
Tribe Chalcophorini Lacordaire, 1857

Chalcophora mariana (Linnaeus, 1758)

Tribe Dicercini Gistel, 1848

Dicerca aenea aenea (Linnaeus, 1760)
Dicerca alni (Fischer von Waldheim, 1824)
Dicerca furcata (Thunberg, 1787)

Tribe Poecilonotini Jakobson, 1913

Poecilonota variolosa variolosa (Paykull, 1799)

Subfamily BUPRESTINAE Leach, 1815
Tribe Anthaxiini Gory & Laporte, 1839

Anthaxia (*Melanthaxia*) *quadripunctata quadripunctata* (Linnaeus, 1758)

Tribe Buprestini Leach, 1815

Buprestis (*Ancylocheira*) *haemorrhoidalis haemorrhoidalis* Herbst, 1780
Buprestis (*Ancylocheira*) *rustica rustica* Linnaeus, 1758
Buprestis (*Buprestis*) *octoguttata octoguttata* Linnaeus, 1758

Tribe Chrysobothrini Gory & Laporte, 1837

Chrysobothris (*Chrysobothris*) *affinis affinis* (Fabricius, 1784)
Chrysobothris (*Chrysobothris*) *chrysostigma chrysostigma* (Linnaeus, 1758)

Tribe Melanophilini Bedel, 1921

Melanophila acuminata (De Geer, 1774)
Phaenops cyanea (Fabricius, 1775)

Subfamily AGRILINAE Laporte, 1835

Tribe Agrilini Laporte, 1835
Subtribe Agrilina Laporte, 1835

Agrilus angustulus angustulus (Illiger, 1803)*
Agrilus ater (Linnaeus, 1767)*
Agrilus betuleti (Ratzeburg, 1837**)**
Agrilus biguttatus (Fabricius, 1777)
Agrilus cuprescens cuprescens (Ménétriés, 1832)
Agrilus cyanescens cyanescens (Ratzeburg, 1837)
Agrilus kaluganus Obenberger, 1940 {ZIN}
Agrilus pratensis (Ratzeburg, 1837)
Agrilus salicis J. Frivaldszky, 1877
Agrilus sulcicollis Lacordaire, 1835
Agrilus viridis (Linnaeus, 1758)
Agrilus zigzag Marseul, 1866

Tribe Coraebini Bedel, 1921
Subtribe Coraebina Bedel, 1921

Coraebus elatus (Fabricius, 1787)

Tribe Tracheini Laporte, 1835
Subtribe Tracheina Laporte, 1835

Trachys minutus minutus (Linnaeus, 1758)

Superfamily BYRRHOIDEA Latreille, 1804
Family BYRRHIDAE Latreille, 1804
Subfamily BYRRHINAE Latreille, 1804
Tribe Morychini El Moursy, 1961

Morychus aeneus (Fabricius, 1775)
Lamprobyrrhulus nitidus (Schaller, 1783)

Tribe Byrrhini Latreille, 1804

Byrrhus (*Byrrhus*) *fasciatus* (Forster, 1771)
Byrrhus (*Byrrhus*) *pilula pilula* (Linnaeus, 1758)
Byrrhus (*Byrrhus*) *pustulatus pustulatus* (Forster, 1771)
Cytilus sericeus (Forster, 1771)

Subfamily SYNCALYPTINAE Mulsant & Rey, 1869
Tribe Syncalyptini Mulsant & Rey, 1869

Curimopsis (*Curimopsis*) *paleata* (Erichson, 1846)

Family ELMIDAE Curtis, 1830
Subfamily ELMINAE Curtis, 1830
Tribe Macronychini Gistel, 1848

Macronychus quadrituberculatus P.W.J. Müller, 1806

Family DRYOPIDAE Billberg, 1820 (1817)

Dryops auriculatus (Geoffroy, 1785)
Dryops ernesti Gozis, 1886

Family LIMNICHIDAE Erichson, 1846
Subfamily LIMNICHINAE Erichson, 1846

Limnichus sericeus (Duftschmid, 1825)

Family HETEROCERIDAE W.S. MacLeay, 1825
Subfamily HETEROCERINAE W.S. MacLeay, 1825
Tribe Augylini Pacheco, 1964

Augyles (*Augyles*) *hispidulus* (Kiesenwetter, 1843)

Tribe Heterocerini W.S. MacLeay, 1825

Heterocerus fenestratus (Thunberg, 1784)
Heterocerus fossor Kiesenwetter, 1843
Heterocerus fusculus fusculus Kiesenwetter, 1843
Heterocerus marginatus (Fabricius, 1787)

Superfamily ELATEROIDEA Leach, 1815
Family EUCNEMIDAE Eschscholtz, 1829
Subfamily MELASINAE Fleming, 1821
Tribe Calyptocerini Muona, 1993

Otho sphondyloides (Germar, 1818) {ZIN}

Tribe Dirhagini Reitter, 1911

Microrhagus emyi (Rouget, 1856) {ZIN}
Microrhagus lepidus (Rosenhauer, 1847) {ZIN}
Microrhagus pygmaeus (Fabricius, 1792) {ZIN}

Dirrhagofarsus attenuatus (Mäklin, 1845) {ZIN}
Rhacopus sahlbergi (Mannerheim, 1823) {ZIN}

Tribe Epiphanini Muona, 1993

Hylis olexai (Palm, 1955) {ZIN}
Hylis procerulus (Mannerheim, 1823) {ZIN}

Tribe Melasini Fleming, 1821

Isorhipis marmottani (Bonvouloir, 1871) {ZIN}
Isorhipis melasoides (Laporte, 1835)* {ZIN}
Melasis buprestoides (Linnaeus, 1760) {ZIN}

Subfamily EUCNEMINAE Eschscholtz, 1829
Tribe Eucnemini Eschscholtz, 1829

Eucnemis zaitzevi Mamaev, 1976* {ZIN}
[mistakenly indicated as *Eucnemis capucina* Ahrens, 1812 (Egorov et al. 2016, Kovalev and Egorov 2017)]

Tribe Euryptychini Mamaev, 1976

Dromaeolus barnabita (A. Villa & G.B. Villa, 1838) {ZIN}

Family THROSCIDAE Laporte, 1840
Subfamily THROSCINAE Laporte, 1840
Tribe Throscini Laporte, 1840

Trixagus dermestoides (Linnaeus, 1767) {ZIN}

Family ELATERIDAE Leach, 1815
Subfamily AGRYPNINAE Candèze, 1857
Tribe Agrypnini Candèze, 1857

Agrypnus murinus (Linnaeus, 1758)
Danosoma conspersum (Gyllenhal, 1808)
Danosoma fasciatum (Linnaeus, 1758)
Lacon lepidopterus (Panzer, 1800) {ZMMU}

Subfamily CARDIOPHORINAE Candèze, 1859
Tribe Cardiophorini Candèze, 1859

Cardiophorus (*Cardiophorus*) *ebeninus* (Germar, 1823)

Cardiophorus (*Cardiophorus*) *ruficollis* (Linnaeus, 1758)
Dicronychus equiseti (Herbst, 1784)

Subfamily DENDROMETRINAE Gistel, 1848
Tribe Dendrometrini Gistel, 1848
Subtribe Dendrometrina Gistel, 1848

Athous (*Athous*) *haemorrhoidalis* (Fabricius, 1801)
Athous (*Athous*) *vittatus* (Fabricius, 1792)
Athous (*Haplathous*) *subfuscus* (O.F. Müller, 1764)
Limonius minutus (Linnaeus, 1758)
Pheletes aeneoniger (De Geer, 1774)

Subtribe Denticollina Stein & J. Weise, 1877 (1848)

Denticollis borealis (Paykull, 1800) {ZIN}
Denticollis linearis (Linnaeus, 1758)
Denticollis rubens Piller et Mitterpacher, 1783* {ZIN}

Subtribe Hemicrepidiina Champion, 1894

Diacanthous undulatus (De Geer, 1774)
Hemicrepidius (*Hemicrepidius*) *hirtus* (Herbst, 1784)
Hemicrepidius (*Hemicrepidius*) *niger* (Linnaeus, 1758)

Tribe Hypnoidini Schwarz, 1906 (1860)

Hypnoidus riparius (Fabricius, 1792)

Tribe Prosternini Gistel, 1856

Actenicerus (*Actenicerus*) *sjaelandicus* (O.F. Müller, 1764)
Anostirus castaneus castaneus (Linnaeus, 1758)
Aplotarsus incanus (Gyllenhal, 1827)
Ctenicera pectinicornis (Linnaeus, 1758)
Orithales serraticornis serraticornis (Paykull, 1800)
Prosternon tessellatum (Linnaeus, 1758)
? *Pseudanostirus globicollis* (Germar, 1843) {Kurmaeva et al. 2008}

Tribe Selatosomini Schimmel, Tarnawski, Han et Platia, 2015
Subtribe Mosotalesina Schimmel, Tarnawski, Han et Platia, 2015

Mosotalesus (*Mosotalesus*) *impressus impressus* (Fabricius, 1792)
Mosotalesus (*Mosotalesus*) *nigricornis* (Panzer, 1799)

Subtribe Selatosomina Schimmel, Tarnawski, Han et Platia, 2015

Pristilophus cruciatus (Linnaeus, 1758)
Selatosomus (*Selatosomus*) *aeneus* (Linnaeus, 1758)
Selatosomus (*Selatosomus*) *latus* (Fabricius, 1801)

Subfamily ELATERINAE Leach, 1815
Tribe Agriotini Laporte, 1840
Subtribe Agriotina Laporte, 1840

Agriotes (*Agriotes*) *lineatus* (Linnaeus, 1767)
Agriotes (*Agriotes*) *obscurus* (Linnaeus, 1758)
Agriotes (*Agriotes*) *sputator* (Linnaeus, 1758)
Dalopius marginatus (Linnaeus, 1758)
Ectinus aterrimus (Linnaeus, 1760) {ZMMU}

Tribe Ampedini Gistel, 1848

Ampedus (*Ampedus*) *balteatus* (Linnaeus, 1758)
Ampedus (*Ampedus*) *cinnabarinus* (Eschscholtz, 1829)
Ampedus (*Ampedus*) *elegantulus* (Schönherr, 1817)
Ampedus (*Ampedus*) *elongatulus* (Fabricius, 1787) {ZMMU}
Ampedus (*Ampedus*) *erythrogonus* (P.W. Müller, 1821)
Ampedus (*Ampedus*) *karpathicus* (Buysson, 1886) {ZMMU}
Ampedus (*Ampedus*) *nigerrimus* (Lacordaire in Boisduval & Lacordaire, 1835) {ZMMU}
Ampedus (*Ampedus*) *nigrinus* (Herbst, 1784)
Ampedus (*Ampedus*) *nigroflavus* (Goeze, 1777)
Ampedus (*Ampedus*) *pomonae* (Stephens, 1830)
Ampedus (*Ampedus*) *pomorum* (Herbst, 1784)
Ampedus (*Ampedus*) *praeustus* (Fabricius, 1792)
Ampedus (*Ampedus*) *sanguineus* (Linnaeus, 1758)
Ampedus (*Ampedus*) *sanguinolentus sanguinolentus* (Schrank, 1776)
Ampedus (*Ampedus*) *tristis* (Linnaeus, 1758)

Tribe Elaterini Leach, 1815

Elater ferrugineus ferrugineus Linnaeus, 1758
Sericus (*Sericus*) *brunneus brunneus* (Linnaeus, 1758)
Sericus (*Sericus*) *sulcipennis* Buysson, 1893

Tribe Melanotini Candèze, 1859 (1848)

Melanotus (*Melanotus*) *castanipes* (Paykull, 1800)
Melanotus (*Melanotus*) *villosus* (Geoffroy, 1785)

Tribe Synaptini Gistel, 1856

Synaptus filiformis (Fabricius, 1781)

Subfamily NEGASTRIINAE Nakane & Kishii, 1956
Tribe Negastriini Nakane & Kishii, 1956

Negastrius pulchellus (Linnaeus, 1760)
Oedostethus quadripustulatus (Fabricius, 1792)

Family LYCIDAE Laporte, 1838
Subfamily EROTINAE LeConte, 1881
Tribe Erotini LeConte, 1881

Aplatopterus rubens (Gyllenhal, 1817)
Erotides (Glabroplatycis) nasutus (Kiesenwetter, 1874)
Lopheros lineatus (Gorham, 1883) {ZIN, ZMMU},
Platycis minutus (Fabricius, 1787)

Tribe Dictyopterini Houlbert, 1922
Subtribe Dictyopterina Houlbert, 1922

Dictyoptera aurora (Herbst, 1784)
Pyropterus nigroruber (De Geer, 1774)

Tribe Conderini Bocák et Bocáková, 1990

Xylobanellus erythropterus (Baudi di Selve, 1872)

Subfamily LYCINAE Laporte, 1838
Tribe Calochromini Lacordaire, 1857

Lygistopterus sanguineus (Linnaeus, 1758)

Family LAMPYRIDAE Rafinesque, 1815
Subfamily LAMPYRINAE Rafinesque, 1815
Tribe Lampyrini Rafinesque, 1815

Lampyris noctiluca (Linnaeus, 1758)

Family CANTHARIDAE Imhoff, 1856 (1815)
Subfamily CANTHARINAE Imhoff, 1856 (1815)

Tribe Podabrini Gistel, 1856

Podabrus alpinus (Paykull, 1798)

Tribe Cantharini Imhoff, 1856 (1815)

Cantharis (*Cantharis*) *figurata* Mannerheim, 1843
Cantharis (*Cantharis*) *flavilabris* Fallén, 1807
Cantharis (*Cantharis*) *fusca* Linnaeus, 1758
Cantharis (*Cantharis*) *livida* Linnaeus, 1758
Cantharis (*Cantharis*) *nigricans* O.F. Müller, 1776
Cantharis (*Cantharis*) *obscura* Linnaeus, 1758
Cantharis (*Cantharis*) *pallida* Goeze, 1777
Cantharis (*Cantharis*) *paludosa* Fallén, 1807
Cantharis (*Cantharis*) *pellucida* Fabricius, 1792
Cantharis (*Cantharis*) *rufa* Linnaeus, 1758
Cantharis (*Cantharis*) *rustica* Fallén, 1807
Cantharis (*Cyrtomoptila*) *lateralis* Linnaeus, 1758
Rhagonycha (*Rhagonycha*) *atra* (Linnaeus, 1767)
Rhagonycha (*Rhagonycha*) *elongata* (Fallén, 1807)
Rhagonycha (*Rhagonycha*) *fugax fugax* Mannerheim, 1843
Rhagonycha (*Rhagonycha*) *fulva* (Scopoli, 1763)
Rhagonycha(*Rhagonycha*) *lignosa* (O.F. Müller, 1764)
Rhagonycha (*Rhagonycha*) *nigripes* (W. Redtenbacher, 1842)
Rhagonycha (*Rhagonycha*) *nigriventris* Motschulsky, 1860
Rhagonycha (*Rhagonycha*) *testacea* (Linnaeus, 1758)

Subfamily SILINAE Mulsant, 1862
Tribe Silini Mulsant, 1862

Silis ruficollis (Fabricius, 1775)

Subfamily MALTHININAE Kiesenwetter, 1852
Tribe Malthinini Kiesenwetter, 1852

Malthinus (*Malthinus*) *fasciatus* (G.-A. Olivier, 1790)
Malthinus (*Malthinus*) *flaveolus* (Herbst, 1786)
Malthinus (*Malthinus*) *frontalis* (Marsham, 1802)

Tribe Malthodini Böving & Craighead, 1931

Malthodes (*Malthodes*) *guttifer* Kiesenwetter, 1852*

Series BOSTRICHIFORMIA Forbes, 1926
Superfamily BOSTRICHOIDEA Latreille, 1802
Family DERMESTIDAE Latreille, 1804
Subfamily DERMESTINAE Latreille, 1804
Tribe Dermestini Latreille, 1804

Dermestes (*Dermestes*) *lardarius* Linnaeus, 1758†
Dermestes (*Dermestinus*) *frischii* Kugelann, 1792†
Dermestes (*Dermestinus*) *laniarius* Illiger, 1801
Dermestes (*Dermestinus*) *murinus murinus* Linnaeus, 1758
Dermestes (*Dermestinus*) *undulatus* Brahm, 1790*

Subfamily ORPHILINAE LeConte, 1861

Orphilus niger (P. Rossi, 1790)

Subfamily ATTAGENINAE Laporte, 1840
Tribe Attagenini Laporte, 1840

Attagenus (*Attagenus*) *schaefferi schaefferi* (Herbst, 1792)
Attagenus (*Attagenus*) *unicolor unicolor* (Brahm, 1790)†

Subfamily MEGATOMINAE Leach, 1815
Tribe Anthrenini Gistel, 1848

Anthrenus (*Anthrenus*) *scrophulariae scrophulariae* (Linnaeus, 1758)
Anthrenus (*Florilinus*) *museorum* (Linnaeus, 1760)

Tribe Megatomini Leach, 1815

Ctesias (*Ctesias*) *serra* (Fabricius, 1792)
? Globicornis (*Hadrotoma*) *corticalis* (Eichhoff, 1863) {Egorov and Ruchin 2014}
Globicornis (*Hadrotoma*) *emarginata* (Gyllenhal, 1808)
Megatoma (*Megatoma*) *undata undata* (Linnaeus, 1758)
Trogoderma glabrum (Herbst, 1783)†

Family BOSTRICHIDAE Latreille, 1802
Subfamily BOSTRICHINAE Latreille, 1802
Tribe Bostrichini Latreille, 1802

Bostrichus capucinus (Linnaeus, 1758)

Subfamily DINODERINAE C.G. Thomson, 1863

Stephanopachys linearis (Kugelann, 1792)

Family PTINIDAE Latreille, 1802
Subfamily PTININAE Latreille, 1802
Tribe Ptinini Latreille, 1802

Ptinus (*Bruchoptinus*) *rufipes* G.-A. Olivier, 1790
Ptinus (*Cyphoderes*) *raptor* Sturm, 1837
Ptinus (*Ptinus*) *fur* (Linnaeus, 1758)†
Ptinus (*Ptinus*) *villiger* (Reitter, 1884)

Subfamily ANOBIINAE Fleming, 1821
Tribe Anobiini Fleming, 1821

Anobium punctatum (De Geer, 1774) {personal collection of S.K. Alekseev, Kaluga}
Cacotemnus rufipes (Fabricius, 1792)
Hadrobregmus pertinax (Linnaeus, 1758)
Priobium carpini (Herbst, 1793)
Stegobium paniceum (Linnaeus, 1758)†

Subfamily DORCATOMINAE C.G. Thomson, 1859
Tribe Dorcatomini C.G. Thomson, 1859

Caenocara affine (Sturm, 1837)
Dorcatoma (*Dorcatoma*) *dresdensis* Herbst, 1792
Dorcatoma (*Dorcatoma*) *robusta* A. Strand, 1938
Dorcatoma (*Pilosodorcatoma*) *chrysomelina* Sturm, 1837
Dorcatoma (*Sternitodorcatoma*) *flavicornis* (Fabricius, 1792)

Subfamily ERNOBIINAE Pic, 1912
Tribe Ernobiini Pic, 1912

Ernobius explanatus explanatus (Mannerheim, 1843)
Ernobius longicornis (Sturm, 1837)

Subfamily PTILININAE Shuckard, 1839
Tribe Ptilinini Shuckard, 1839

Ptilinus fuscus (Geoffroy, 1785)

Subfamily XYLETININAE Gistel, 1848
Tribe Xyletinini Gistel, 1848

Xyletinus (*Xyletinus*) *longitarsis longitarsis* Jansson, 1942
Xyletinus (*Xyletinus*) *pectinatus pectinatus* (Fabricius, 1792)

Series CUCUJIFORMIA Lameere, 1938
Superfamily LYMEXYLOIDEA Fleming, 1821
Family LYMEXYLIDAE Fleming, 1821
Subfamily HYLECOETINAE Germar, 1818

Elateroides dermestoides (Linnaeus, 1760)

Subfamily LYMEXYLINAE Fleming, 1821

Lymexylon navale (Linnaeius, 1758)

Superfamily CLEROIDEA Latreille, 1802
Family BIPHYLLIDAE LeConte, 1861

Biphyllus lunatus (Fabricius, 1787)
Diplocoelus fagi (Chevrolat, 1837)

Family BYTURIDAE Gistel, 1848
Subfamily BYTURINAE Gistel, 1848

Byturus ochraceus (L.G. Scriba, 1790)
Byturus tomentosus (De Geer, 1774)

Family TROGOSSITIDAE Latreille, 1802
Subfamily PELTINAE Kirby, 1837
Tribe Lophocaterini Crowson, 1964

Grynocharis oblonga (Linnaeus, 1758)

Tribe Peltini Kirby, 1837

Peltis ferruginea (Linnaeus, 1758)
Peltis grossa (Linnaeus, 1758)

Tribe Thymalini Léveillé, 1888

Thymalus oblongus Reitter, 1889

Family CLERIDAE Latreille, 1802
Subfamily TILLINAE Fischer von Waldheim, 1813

Tillus elongatus (Linnaeus, 1758)

Subfamily CLERINAE Latreille, 1802

Allonyx quadrimaculatus (Schaller, 1783) {ZIN}
Thanasimus femoralis (Zetterstedt, 1828)
Thanasimus formicarius formicarius (Linnaeus, 1758)
Trichodes apiarius (Linnaeus, 1758)

Subfamily KORYNETINAE Laporte, 1838

Necrobia violacea (Linnaeus, 1758)†

Family MELYRIDAE Leach, 1815
Subfamily RHADALINAE LeConte, 1861

Aplocnemus (*Aplocnemus*) *nigricornis nigricornis* (Fabricius, 1792)

Subfamily DASYTINAE Laporte, 1840
Tribe Dasytini Laporte, 1840

Dasytes (*Dasytes*) *niger* (Linnaeus, 1760)
Dasytes (*Metadasytes*) *fusculus* (Illiger, 1801)
Dolichosoma lineare (P. Rossi, 1794)

Subfamily MALACHIINAE Fleming, 1821
Tribe Malachiini Fleming, 1821

Anthocomus (*Anthocomus*) *fasciatus* (Linnaeus, 1758)
Anthocomus (*Anthocomus*) *rufus rufus* (Herbst, 1784)
Anthocomus (*Celidus*) *equestris* (Fabricius, 1781)
Apalochrus femoralis Erichson, 1840
Charopus flavipes (Paykull, 1798)
Clanoptilus (*Clanoptilus*) *geniculatus* (Germar, 1823)
Cordylepherus viridis (Fabricius, 1787)
Ebaeus (*Ebaeus*) *pedicularius pedicularius* (Linnaeus, 1758)
Malachius (*Malachius*) *aeneus* (Linnaeus, 1758)
Malachius (*Malachius*) *bipustulatus* (Linnaeus, 1758)
Nepachys cardiacae (Linnaeus, 1760)

Superfamily CUCUJOIDEA Latreille, 1802
Family SPHINDIDAE Jacquelin du Val, 1860
Subfamily SPHINDINAE Jacquelin du Val, 1860

Sphindus dubius (Gyllenhal, 1808)

Subfamily ASPIDIPHORINAE Kiesenwetter, 1877

Aspidiphorus orbiculatus (Gyllenhal, 1808)

Family EROTYLIDAE Latreille, 1802
Subfamily EROTYLINAE Latreille, 1802
Tribe Dacnini Gistel, 1848

Combocerus glaber (Schaller, 1783)*
Dacne (*Dacne*) *bipustulata* (Thunberg, 1781)

Tribe Tritomini Curtis, 1834

Triplax aenea (Schaller, 1783)
Triplax collaris (Schaller, 1783)
Triplax lepida (Faldermann, 1837)*
Triplax rufipes (Fabricius, 1787)
Triplax russica (Linnaeus, 1758)
Triplax scutellaris Charpentier, 1825
Tritoma (*Tritoma*) *bipustulata* Fabricius, 1775
Tritoma (*Tritoma*) *subbasalis* (Reitter, 1896)

Family MONOTOMIDAE Laporte, 1840
Subfamily RHIZOPHAGINAE L. Redtenbacher, 1845

Rhizophagus (*Anomophagus*) *cribratus* (Gyllenhal, 1827)
Rhizophagus (*Eurhizophagus*) *depressus* (Fabricius, 1792)
Rhizophagus (*Rhizophagus*) *bipustulatus* (Fabricius, 1792)
Rhizophagus (*Rhizophagus*) *dispar* (Paykull, 1800)
Rhizophagus (*Rhizophagus*) *fenestralis* (Linnaeus, 1758)
Rhizophagus (*Rhizophagus*) *ferrugineus* (Paykull, 1800)
Rhizophagus (*Rhizophagus*) *nitidulus* (Fabricius, 1798)
Rhizophagus (*Rhizophagus*) *parallelocollis* (Gyllenhal, 1827)
Rhizophagus (*Rhizophagus*) *perforatus* Erichson, 1845
Rhizophagus (*Rhizophagus*) *picipes* (G.-A. Olivier, 1790)

Subfamily MONOTOMINAE Laporte, 1840

Monotoma picipes Herbst, 1793

Family KATERETIDAE Kirby, 1837

Brachypterolus linariae (Stephens, 1830)
Brachypterolus pulicarius (Linnaeus, 1758)
Brachypterus fulvipes Erichson, 1843
Brachypterus urticae (Fabricius, 1792)
Heterhelus scutellaris (Heer, 1841)
Kateretes pedicularius (Linnaeus, 1758)
Kateretes pusillus (Thunberg, 1794)

Family NITIDULIDAE Latreille, 1802
Subfamily EPURAEINAE Kirejtshuk, 1986
Tribe Epuraeini Kirejtshuk, 1986

Epuraea (*Epuraea*) *aestiva* (Linnaeus, 1758)
Epuraea (*Epuraea*) *longula* Erichson, 1845 {personal collection of S.K. Alekseev, Kaluga}
Epuraea (*Epuraea*) *marseuli* Reitter, 1873
Epuraea (*Epuraea*) *pallescens* (Stephens, 1835) {personal collection of S.K. Alekseev, Kaluga}
Epuraea (*Epuraea*) *variegata* (Herbst, 1793)
Epuraea (*Epuraeanella*) *neglecta* (Heer, 1841) {personal collection of S.K. Alekseev, Kaluga}

Subfamily CARPOPHILINAE Erichson, 1842

Carpophilus (*Carpophilus*) *hemipterus* (Linnaeus, 1758)*†

Subfamily CRYPTARCHINAE C.G. Thomson, 1859
Tribe Cryptarchini C.G. Thomson, 1859

Cryptarcha strigata (Fabricius, 1787)
Cryptarcha undata (G.-A. Olivier, 1790)
Glischrochilus (*Glischrochilus*) *quadripunctatus* (Linnaeus, 1758)
Glischrochilus (*Librodor*) *grandis* (Tournier, 1872)
Glischrochilus (*Librodor*) *hortensis* (Geoffroy, 1785)
Glischrochilus (*Librodor*) *quadriguttatus* (Fabricius, 1777)*
Glischrochilus (*Librodor*) *quadrisignatus* (Say, 1835)*† {ZIN}
Pityophagus ferrugineus (Linnaeus, 1760)

Subfamily NITIDULINAE Latreille, 1802
Tribe Cychramini Gistel, 1848

Cychramus luteus (Fabricius, 1787)
Cychramus variegatus (Herbst, 1792)

Tribe Cyllodini Everts, 1898

Cyllodes ater (Herbst, 1792)

Tribe Nitidulini Latreille, 1802

Amphotis marginata (Fabricius, 1781)
Ipidia (*Hemipidia*) *sexguttata* (R.F. Sahlberg, 1834) {ZIN}
Ipidia (*Ipidia*) *binotata* Reitter, 1875
Nitidula bipunctata (Linnaeus, 1758)
Nitidula carnaria (Schaller, 1783)
Nitidula rufipes (Linnaeus, 1767)
Omosita colon (Linnaeus, 1758)
Omosita depressa (Linnaeus, 1758)
Omosita discoidea (Fabricius, 1775)†
Omosita japonica Reitter, 1874† {ZIN}
Pocadius ferrugineus (Fabricius, 1775)
Soronia grisea (Linnaeus, 1758)
Soronia punctatissima (Illiger, 1794)*

Subfamily MELIGETHINAE C.G. Thomson, 1859

Meligethes (*Clypeogethes*) *aeneus* (Fabricius, 1775)
Meligethes (*Meligethes*) *flavimanus* Stephens, 1830

Family CRYPTOPHAGIDAE Kirby, 1826
Subfamily CRYPTOPHAGINAE Kirby, 1826
Tribe Caenoscelini Casey, 1900

Caenoscelis subdeplanata C.N.F. Brisout de Barneville, 1882†

Tribe Cryptophagini Kirby, 1826

Antherophagus pallens (Linnaeus, 1758)
Antherophagus silaceus (Herbst, 1792)
Antherophagus similis Curtis, 1835

Cryptophagus fallax J. Balfour-Browne, 1953†
Cryptophagus pilosus Gyllenhal, 1827
Cryptophagus hexagonalis Tournier, 1872
Henoticus serratus (Gyllenhal, 1808)
Pteryngium crenatum (Fabricius, 1798)*
Telmatophilus caricis (G.-A. Olivier, 1790)
Telmatophilus typhae (Fallén, 1802)

Subfamily ATOMARIINAE LeConte, 1861
Tribe Atomariini LeConte, 1861

Atomaria (*Anchicera*) *fuscata* (Schönherr, 1808)
Curelius exiguus (Erichson, 1846)
Ephistemus globulus (Paykull, 1798)

Family SILVANIDAE Kirby, 1837
Subfamily BRONTINAE Blanchard, 1845
Tribe Brontini Blanchard, 1845

Dendrophagus crenatus (Paykull, 1799)
Uleiota planatus (Linnaeus, 1760)

Tribe Telephanini LeConte, 1861

Psammoecus bipunctatus (Fabricius, 1792)

Family SILVANINAE Kirby, 1837

Silvanoprus fagi (Guérin-Méneville, 1844)
Silvanus bidentatus (Fabricius, 1792)
Silvanus unidentatus (G.-A. Olivier, 1790)

Family CUCUJIDAE Latreille, 1802

Cucujus cinnaberinus (Scopoli, 1763)
Cucujus haematodes (Erichson, 1845)
Pediacus depressus (Herbst, 1797)
? *Pediacus fuscus* Erichson, 1845 {Plavilshchikov 1964}

Family PHALACRIDAE Leach, 1815
Subfamily PHALACRINAE Leach, 1815

Olibrus bimaculatus Küster, 1848

Phalacrus caricis Sturm, 1807
Phalacrus corruscus (Panzer, 1797)
Phalacrus substriatus Gyllenhal, 1813

Family LAEMOPHLOEIDAE Ganglbauer, 1899
Subfamily LAEMOPHLOEINAE Ganglbauer, 1899

Cryptolestes corticinus (Erichson, 1846) {personal collection of S.K. Alekseev, Kaluga}
Laemophloeus monilis (Fabricius, 1787)*
Laemophloeus muticus (Fabricius, 1781)
Lathropus sepicola (P.W.J. Müller, 1821)
Leptophloeus alternans (Erichson, 1846)
Placonotus testaceus (Fabricius, 1787)

Superfamily COCCINELLOIDEA Latreille, 1807
Family BOTHRIDERIDAE Erichson, 1845

Bothrideres bipunctatus (Gmelin, 1790)

Family CERYLONIDAE Billberg, 1820
Subamily CERYLONINAE Billberg, 1820

Cerylon deplanatum Gyllenhal, 1827
Cerylon fagi C.N.F. Brisout de Barneville, 1867
Cerylon ferrugineum Stephens, 1830
Cerylon histeroides (Fabricius, 1792)
Cerylon impressum Erichson, 1845

Family LATRIDIIDAE Erichson, 1842
Subfamily LATRIDIINAE Erichson, 1842
Tribe Latridiini Erichson, 1842

Cartodere (*Cartodere*) *constricta* (Gyllenhal, 1827)
Enicmus brevicornis (Mannerheim, 1844)
Enicmus histrio Joy & Tomlin, 1910
Enicmus rugosus (Herbst, 1793)
Enicmus testaceus (Stephens, 1830)
Enicmus transversus (G.-A. Olivier, 1790)
Latridius brevicollis (C.G. Thomson, 1868)
Latridius consimilis (Mannerheim, 1844)
Latridius hirtus Gyllenhal, 1827
Latridius minutus (Linnaeus, 1767)†
Latridius porcatus Herbst, 1793

Stephostethus angusticollis (Gyllenhal, 1827)
Stephostethus lardarius (De Geer, 1775)
Stephostethus pandellei (C.N.F. Brisout de Barneville, 1863)
Thes bergrothi (Reitter, 1881)

Subfamily CORTICARIINAE Curtis, 1829

Corticaria ferruginea Marsham, 1802†
Corticarina minuta (Fabricius, 1792)
Corticarina truncatella (Mannerheim, 1844)
Cortinicara gibbosa (Herbst, 1793)
Melanophthalma (*Melanophthalma*) *transversalis* (Gyllenhal, 1827)

Family CORYLOPHIDAE LeConte, 1852
Subfamily CORYLOPHINAE LeConte, 1852
Tribe Corylophini LeConte, 1852

Corylophus cassidoides (Marsham, 1802)

Tribe Parmulini Poey, 1854

Arthrolips convexiuscula (Motschulsky, 1849)
Clypastraea pusilla (Gyllenhal, 1810)

Tribe Sericoderini Matthews, 1886

Sericoderus lateralis (Gyllenhal, 1827)

Family ANAMORPHIDAE Strohecker, 1953

Clemmus troglodytes Hampe, 1850 {collection of Museum & Institute of Zoology, Polish Academy of Sciences, Warszawa, Poland}

Family ENDOMYCHIDAE Leach, 1815
Subfamily ENDOMYCHINAE Leach, 1815

Endomychus coccineus (Linnaeus, 1758)

Subfamily LEIESTINAE C.G. Thomson, 1863

Leiestes seminiger (Gyllenhal, 1808)

Subfamily LYCOPERDININAE Bromhead, 1838

Dapsa horvathi (Csiki, 1901)
Lycoperdina succincta (Linnaeus, 1767) {personal collection of S.K. Alekseev, Kaluga}
Mycetina cruciata (Schaller, 1783)

Family COCCINELLIDAE Latreille, 1807
Subfamily COCCIDULINAE Mulsant, 1846
Tribe Coccidulini Mulsant, 1846

Coccidula rufa (Herbst, 1783)

Subfamily SCYMNINAE Mulsant, 1846
Tribe Hyperaspidini Mulsant, 1846

Hyperaspis (*Hyperaspis*) *concolor* (Suffrian, 1843)
Hyperaspis (*Hyperaspis*) *reppensis* (Herbst, 1783)

Tribe Scymnini Mulsant, 1846

Nephus (*Bipunctatus*) *bipunctatus* (Kugelann, 1794)
Nephus (*Nephus*) *redtenbacheri* (Mulsant, 1846)
Scymnus (*Neopullus*) *haemorrhoidalis* Herbst, 1797
Scymnus (*Pullus*) *ferrugatus* (Moll, 1785)
Scymnus (*Pullus*) *suturalis* Thunberg, 1795
Scymnus (*Scymnus*) *frontalis* (Fabricius, 1787)
Scymnus (*Scymnus*) *nigrinus* Kugelann, 1794

Tribe Stethorini Dobzhansky, 1924

Stethorus (*Stethorus*) *pusillus* (Herbst, 1797)*

Subfamily CHILOCORINAE Mulsant, 1846
Tribe Chilocorini Mulsant, 1846

Chilocorus bipustulatus (Linnaeus, 1758)
Chilocorus renipustulatus (L.G. Scriba, 1791)
Exochomus quadripustulatus (Linnaeus, 1758)

Tribe Platynaspini Mulsant, 1846

Platynaspis luteorubra (Goeze, 1777)

Subfamily COCCINELLINAE Latreille, 1807
Tribe Halyziini Mulsant, 1846

Halyzia sedecimguttata (Linnaeus, 1758)
Psyllobora (*Thea*) *vigintiduopunctata* (Linnaeus, 1758)
Vibidia duodecimguttata (Poda von Neuhaus, 1761)

Tribe Tytthaspidini Crotch, 1874

Anisosticta novemdecimpunctata (Linnaeus, 1758)
Coccinula quatuordecimpustulata (Linnaeus, 1758)
Tytthaspis gebleri (Mulsant, 1850)
Tytthaspis sedecimpunctata (Linnaeus, 1760)

Tribe Coccinellini Latreille, 1807

Adalia (*Adalia*) *bipunctata* (Linnaeus, 1758)
Adalia (*Adalia*) *decempunctata* (Linnaeus, 1758)
Anatis ocellata (Linnaeus, 1758)
Calvia decemguttata (Linnaeus, 1767) {ZIN}
Calvia quatuordecimguttata (Linnaeus, 1758)
Calvia quindecimguttata (Fabricius, 1777)
Ceratomegilla (*Ceratomegilla*) *notata* (Laicharting, 1781)
Coccinella (*Coccinella*) *hieroglyphica hieroglyphica* Linnaeus, 1758
Coccinella (*Coccinella*) *magnifica* L. Redtenbacher, 1843
Coccinella (*Coccinella*) *quinquepunctata* Linnaeus, 1758
Coccinella (*Coccinella*) *septempunctata* Linnaeus, 1758
Harmonia axyridis (Pallas, 1773)†
Harmonia quadripunctata (Pontoppidan, 1763)
Hippodamia (*Hemisphaerica*) *tredecimpunctata* (Linnaeus, 1758)
Hippodamia (*Hippodamia*) *variegata* (Goeze, 1777)
Myrrha (*Myrrha*) *octodecimguttata* (Linnaeus, 1758)
Mysia oblongoguttata oblongoguttata (Linnaeus, 1758)
Oenopia conglobata conglobata (Linnaeus, 1758)
Propylea quatuordecimpunctata (Linnaeus, 1758)
Sospita vigintiguttata (Linnaeus, 1758)

Subfamily EPILACHNINAE Mulsant, 1846
Tribe Epilachnini Mulsant, 1846

Subcoccinella vigintiquatuorpunctata (Linnaeus, 1758)

Superfamily TENEBRIONOIDEA Latreille, 1802
Family MYCETOPHAGIDAE Leach, 1815

Subfamily MYCETOPHAGINAE Leach, 1815
Tribe Mycetophagini Leach, 1815

Litargus (*Litargus*) *connexus* (Geoffroy, 1785)
Mycetophagus (*Arnoldiellus*) *tschitscherini* (Reitter, 1897)
Mycetophagus (*Ilendus*) *multipunctatus* Fabricius, 1792
Mycetophagus (*Mycetophagus*) *ater* (Reitter, 1879)
Mycetophagus (*Mycetophagus*) *quadripustulatus* (Linnaeus, 1760)
Mycetophagus (*Mycetoxides*) *fulvicollis* Fabricius, 1792
Mycetophagus (*Philomyces*) *populi* Fabricius, 1798
Mycetophagus (*Ulolendus*) *atomarius* (Fabricius, 1787)
Mycetophagus (*Ulolendus*) *piceus* (Fabricius, 1777)
Triphyllus bicolor (Fabricius, 1777)

Tribe Typhaeini C.G. Thomson, 1863

Typhaea stercorea (Linnaeus, 1758)†

Family CIIDAE Leach, 1819
Subfamily CIINAE Leach, 1819

Cis bidentatus (G.-A. Olivier, 1790)
Cis boleti (Scopoli, 1763)
Cis castaneus (Herbst, 1793)
Cis jacquemartii Mellié, 1848
Cis micans (Fabricius, 1792)
Ennearthron cornutum (Gyllenhal, 1827)
Hadraule elongatula (Gyllenhal, 1827)
Octotemnus glabriculus (Gyllenhal, 1827)
Orthocis alni (Gyllenhal, 1813)
Orthocis lucasi (Abeille de Perrin, 1874)
Sulcacis nitidus (Fabricius, 1792)

Family TETRATOMIDAE Billberg, 1820
Subfamily TETRATOMINAE Billberg, 1820

Tetratoma (*Abstrulia*) *ancora* Fabricius, 1790* {ZIN}
Subfamily HALLOMENINAE Gistel, 1848

Hallomenus (*Hallomenus*) *axillaris* (Illiger, 1807)
Hallomenus (*Hallomenus*) *binotatus* (Quensel, 1790)

Family MELANDRYIDAE Leach, 1815
Subfamily MELANDRYINAE Leach, 1815

Tribe Dircaeini Kirby, 1837

Abdera (*Caridua*) *affinis* (Paykull, 1799)
Abdera (*Caridua*) *flexuosa* (Paykull, 1799)
Dircaea quadriguttata (Paykull, 1798)
Phloiotrya (*Phloiotrya*) *subtilis* (Reitter, 1897)
Wanachia triguttata (Gyllenhal, 1810)

Tribe Hypulini Gistel, 1848

Hypulus quercinus (Quensel, 1790)

Tribe Melandryini Leach, 1815

Melandrya (*Melandrya*) *barbata* (Fabricius, 1787) {ZIN}
Melandrya (*Paramelandrya*) *dubia* (Schaller, 1783)
Phryganophilus (*Phryganophilus*) *pseudauritus* Nikitsky, 1988* {ZIN}
Phryganophilus (*Phryganophilus*) *ruficollis* (Fabricius, 1798)

Tribe Orchesiini Mulsant, 1856

Orchesia (*Clinocara*) *fasciata* (Illiger, 1798)
Orchesia (*Orchesia*) *micans* (Panzer, 1793)

Tribe Serropalpini Latreille, 1829

Serropalpus barbatus (Schaller, 1783)

Tribe Xylitini C.G. Thomson, 1864

Xylita laevigata (Hellenius, 1786)

Tribe Zilorini Desbrochers des Loges, 1900

Zilora elongata J.R. Sahlberg, 1881

Subfamily OSPHYINAE Mulsant, 1856 (1839)

Osphya bipunctata (Fabricius, 1775)

Family RIPIPHORIDAE Laporte, 1840
Subfamily PELECOTOMINAE Guérin-Méneville, 1857

Pelecotoma fennica (Paykull, 1799)

Subfamily RIPIPHORINAE Laporte, 1840
Tribe Ripihorini Laporte, 1840

Metoecus paradoxus (Linnaeus, 1760)

Family ZOPHERIDAE Solier, 1834
Subfamily COLYDIINAE Billberg, 1820
Tribe Colydiini Billberg, 1820

Aulonium trisulcum (Geoffroy, 1785)
Colydium filiforme Fabricius, 1792

Tribe Synchitini L. Redtenbacher, 1845

Bitoma crenata (Fabricius, 1775)
Synchita humeralis (Fabricius, 1792)

Family MORDELLIDAE Latreille, 1802
Subfamily MORDELLINAE Latreille, 1802
Tribe Curtimordini Odnosum, 2010

Curtimorda maculosa (Næzén, 1794)

Tribe Mordellini Latreille, 1802

Hoshihananomia perlata (Sulzer, 1776)
Mordella aculeata Linnaeus, 1758
Mordella brachyura brachyura Mulsant, 1856
Mordella holomelaena holomelaena Apfelbeck, 1914
Mordella viridescens A. Costa, 1854
Mordellaria aurofasciata (Comolli, 1837)
Tomoxia bucephala bucephala A. Costa, 1854
Variimorda (*Variimorda*) *briantea* (Comolli, 1837)
Variimorda (*Variimorda*) *mendax* Méquignon, 1946
Variimorda (*Variimorda*) *villosa* (Schrank von Paula, 1781)

Tribe Mordellistenini Ermisch, 1941

Mordellistena (*Mordellistena*) *hirtipes* Schilsky, 1895
Mordellistena (*Mordellistena*) *humeralis* (Linnaeus, 1758)
Mordellistena (*Mordellistena*) *micans* (Germar, 1817)
Mordellistena (*Mordellistena*) *parvicauda* Ermisch, 1967
Mordellistena (*Mordellistena*) *pentas* Mulsant, 1856
Mordellistena (*Mordellistena*) *pumila* (Gyllenhal, 1810)

Mordellistena (*Mordellistena*) *rugipennis* Schilsky, 1895
Mordellistena (*Mordellistena*) *secreta* Horák, 1983
Mordellistena (*Mordellistena*) *stenidea* Mulsant, 1856
Mordellistena (*Mordellistena*) *thuringiaca* Ermisch, 1963
Mordellistena (*Mordellistena*) *variegata* (Fabricius, 1798)

Tribe Mordellochroini Odnosum, 2010

Mordellochroa abdominalis (Fabricius, 1775)

Family TENEBRIONIDAE Latreille, 1802
Subfamily LAGRIINAE Latreille, 1825 (1820)
Tribe Lagriini Latreille, 1825 (1820)
Subtribe Lagriina Latreille, 1825 (1820)

Lagria (*Lagria*) *hirta* (Linnaeus, 1758)
Lagria (*Lagria*) *laticollis* Motschulsky, 1860

Subfamily TENEBRIONINAE Latreille, 1802
Tribe Alphitobiini Reitter, 1917

Diaclina fagi (Panzer, 1799) {ZIN}

Tribe Bolitophagini Kirby, 1837
Subtribe Bolitophagina Kirby, 1837

Bolitophagus reticulatus (Linnaeus, 1767)
Eledona agricola (Herbst, 1783)

Tribe Melanimonini Seidlitz, 1894 (1854)

Melanimon tibialis tibialis (Fabricius, 1781)

Tribe Opatrini Brullé, 1832
Subtribe Opatrina Brullé, 1832

Opatrum (*Opatrum*) *riparium* W. Scriba, 1865
Opatrum (*Opatrum*) *sabulosum sabulosum* (Linnaeus, 1760)

Tribe Palorini Matthews, 2003

Palorus depressus (Fabricius, 1790)

Tribe Pedinini Eschscholtz, 1829
Subtribe Pedinina Eschscholtz, 1829

Pedinus (*Pedinus*) *femoralis femoralis* (Linnaeus, 1767)

Tribe Tenebrionini Latreille, 1802

Bius thoracicus (Fabricius, 1792)
Neatus picipes (Herbst, 1797)
Tenebrio molitor Linnaeus, 1758†

Tribe Triboliini Gistel, 1848

Tribolium confusum Jacquelin du Val, 1861†
Tribolium destructor Uyttenboogaart, 1933†

Tribe Ulomini Blanchard, 1845

Uloma (*Uloma*) *culinaris* (Linnaeus, 1758)
Uloma (*Uloma*) *rufa* (Piller & Mitterpacher, 1783)

Subfamily DIAPERINAE Latreille, 1802
Tribe Crypticini Brullé, 1832

Crypticus (*Crypticus*) *quisquilius quisquilius* (Linnaeus, 1760)

Tribe Diaperini Latreille, 1802

Diaperis boleti boleti (Linnaeus, 1758)
Neomida haemorrhoidalis (Fabricius, 1787)
Platydema dejeanii Laporte & Brullé, 1831

Tribe Hypophlaeini Billberg, 1820

Corticeus (*Corticeus*) *bicolor* (G.-A. Olivier, 1790)
Corticeus (*Corticeus*) *fasciatus* (Fabricius, 1790)
Corticeus (*Corticeus*) *fraxini* (Kugelann, 1794)
Corticeus (*Corticeus*) *linearis* (Fabricius, 1790)
Corticeus (*Corticeus*) *longulus* (Gyllenhal, 1827)
Corticeus (*Corticeus*) *pini* (Panzer, 1799)
Corticeus (*Corticeus*) *suturalis* (Paykull, 1800)
Corticeus (*Corticeus*) *unicolor* Piller & Mitterpacher, 1783

Tribe Scaphidemini Reitter, 1922

Scaphidema metallica metallica (Fabricius, 1792)

Subfamily ALLECULINAE Laporte, 1840
Tribe Alleculini Laporte, 1840
Subtribe Alleculina Laporte, 1840

Hymenorus doublieri Mulsant, 1852

Subtribe Gonoderina Seidlitz, 1896

Isomira (*Isomira*) *murina murina* (Linnaeus, 1758)
Pseudocistela ceramboides (Linnaeus, 1758)

Subtribe Mycetocharina Gistel, 1848

Mycetochara (*Mycetochara*) *axillaris* (Paykull, 1799)
Mycetochara (*Mycetochara*) *flavipes* (Fabricius, 1792)

Tribe Cteniopodini Solier, 1835

? *Cteniopus* (*Cteniopus*) *sulphureus* (Linnaeus, 1758)
(indicated as *C. flavus* (Scopoli, 1763) {Plavilshchikov 1964})

Subfamily STENOCHIINAE Kirby, 1837
Tribe Cnodalonini Oken, 1843

Upis ceramboides (Linnaeus, 1758)

Family OEDEMERIDAE Latreille, 1810
Subfamily CALOPODINAE Costa, 1852

Calopus serraticornis (Linnaeus, 1758)

Subfamily OEDEMERINAE Latreille, 1810
Tribe Ditylini Mulsant, 1858

Chrysanthia geniculata geniculata W.L.E. Schmidt, 1846
Chrysanthia viridissima (Linnaeus, 1758)
Ditylus laevis laevis (Fabricius, 1787)

Tribe Oedemerini Latreille, 1810

Oedemera (*Oedemera*) *femorata* (Scopoli, 1763)
Oedemera (*Oedemera*) *lurida lurida* (Marsham, 1802)
Oedemera (*Oedemera*) *virescens virescens* (Linnaeus, 1767)

Family MELOIDAE Gyllenhal, 1810
Subfamily MELOINAE Gyllenhal, 1810
Tribe Cerocomini Leach, 1815

Cerocoma (*Cerocoma*) *schaefferi* (Linnaeus, 1758)

Tribe Lyttini Streubel, 1846

Alosimus syriacus austriacus (Schrank von Paula, 1781)
Lytta (*Lytta*) *vesicatoria vesicatoria* (Linnaeus, 1758)

Tribe Mylabrini Rafinesque, 1815

? *Hycleus polymorphus polymorphus* (Pallas, 1771) {Plavilshchikov 1964}
? *Mylabris* (*Eumylabris*) *fabricii* Sumakov, 1924 {Plavilshchikov 1964}
Mylabris (*Micrabris*) *sibirica* Fischer von Waldheim, 1823

Tribe Meloini Gyllenhal, 1810

Meloe (*Eurymeloe*) *brevicollis brevicollis* Panzer, 1793
Meloe (*Lampromeloe*) *variegatus variegatus* Donovan, 1793
Meloe (*Meloe*) *proscarabaeus proscarabaeus* Linnaeus, 1758
Meloe (*Meloe*) *violaceus* Marsham, 1802

Family BORIDAE C.G. Thomson, 1859
Subfamily BORINAE C.G. Thomson, 1859

Boros schneideri (Panzer, 1796)

Family PYTHIDAE Solier, 1834

Pytho depressus (Linnaeus, 1767)

Family PYROCHROIDAE Latreille, 1806
Subfamily PYROCHROINAE Latreille, 1806

Pyrochroa coccinea (Linnaeus, 1760)
Schizotus pectinicornis (Linnaeus, 1758)

Family SALPINGIDAE Leach, 1815
Subfamily SALPINGINAE Leach, 1815

Lissodema cursor (Gyllenhal, 1813)
Rabocerus foveolatus (Ljungh, 1823)
Salpingus planirostris (Fabricius, 1787)
Salpingus ruficollis (Linnaeus, 1760)
Sphaeriestes bimaculatus (Gyllenhal, 1810)

Family ANTHICIDAE Latreille, 1819
Subfamily ANTHICINAE Latreille, 1819
Tribe Anthicini Latreille, 1819

Anthicus antherinus antherinus (Linnaeus, 1760)
Anthicus ater (Thunberg, 1787)
Hirticomus hispidus (Rossi, 1792)
Omonadus floralis (Linnaeus, 1758)†

Subfamily NOTOXINAE Stephens, 1829

Notoxus monoceros (Linnaeus, 1760)

Family ADERIDAE Csiki, 1909
Tribe Aderini Csiki, 1909

Aderus populneus (Creutzer, 1796)
Anidorus nigrinus (Germar, 1842)

Tribe Euglenesini Seidlitz, 1875

Euglenes pygmaeus (De Geer, 1775)

Tribe Phytobaenini Báguena Corella, 1948

Phytobaenus amabilis amabilis R.F. Sahlberg, 1834

Family SCRAPTIIDAE Gistel, 1848
Subfamily SCRAPTIINAE Gistel, 1848
Tribe Scraptiini Gistel, 1848

Scraptia fuscula P.W.J. Müller, 1821

Subfamily ANASPIDINAE Mulsant, 1856
Tribe Anaspidini Mulsant, 1856

Anaspis (*Anaspis*) *frontalis* (Linnaeus, 1758)
Anaspis (*Anaspis*) *thoracica* (Linnaeus, 1758)
Anaspis (*Nassipa*) *rufilabris* (Gyllenhal, 1827)
Cyrtanaspis phalerata (Germar, 1847)

Superfamily CHRYSOMELOIDEA Latreille, 1802
Family CERAMBYCIDAE Latreille, 1802
Subfamily PRIONINAE Latreille, 1802
Tribe Prionini Latreille, 1802

Prionus coriarius (Linnaeus, 1758)

Subfamily LEPTURINAE Latreille, 1802
Tribe Lepturini Latreille, 1802

Alosterna ingrica (Baeckmann, 1902)
Alosterna tabacicolor tabacicolor (De Geer, 1775)
Anastrangalia reyi (L. Heyden, 1889)
Anastrangalia sanguinolenta (Linnaeus, 1760)
Anoplodera (*Anoplodera*) *sexguttata* (Fabricius, 1775)
Etorofus (*Etorofus*) *pubescens* (Fabricius, 1787)
Judolia sexmaculata (Linnaeus, 1758)
Leptura (*Leptura*) *annularis annularis* Fabricius, 1801
Leptura (*Leptura*) *aurulenta* Fabricius, 1793 {ZIN}
Leptura (*Leptura*) *quadrifasciata quadrifasciata* Linnaeus, 1758
Leptura (*Macroleptura*) *thoracica* Creutzer, 1799
Lepturalia nigripes nigripes (De Geer, 1775)
Lepturobosca virens (Linnaeus, 1758)
Nivellia sanguinosa (Gyllenhal, 1827)
Oedecnema gebleri (Ganglbauer, 1889)
Pseudovadonia livida bicarinata (N. Arnold, 1869)
Rutpela maculata maculata (Poda von Neuhaus, 1761)
Stenurella (*Priscostenurella*) *bifasciata bifasciata* (O.F. Müller, 1776)
Stenurella (*Stenurella*) *melanura melanura* (Linnaeus, 1758)
Stictoleptura (*Aredolpona*) *rubra rubra* (Linnaeus, 1758)
Stictoleptura (*Maculileptura*) *maculicornis* (De Geer, 1775)
Stictoleptura (*Variileptura*) *variicornis* (Dalman, 1817)
Strangalia attenuata (Linnaeus, 1758)

Tribe Oxymirini Danilevsky, 1997

Oxymirus cursor (Linnaeus, 1758)

Tribe Rhagiini Kirby, 1837

Brachyta (*Brachyta*) *interrogationis russica* (Herbst, 1784)
Carilia virginea virginea (Linnaeus, 1758)
Cortodera femorata (Fabricius, 1787)
Dinoptera collaris (Linnaeus, 1758)
Euracmaeops angusticollis (Gebler, 1833)
Euracmaeops marginatus (Fabricius, 1781)
Euracmaeops septentrionis (C.G. Thomson, 1866)
Evodinellus (*Evodinellus*) *borealis* (Gyllenhal, 1827)
Gnathacmaeops pratensis (Laicharting, 1784)
Pachyta quadrimaculata (Linnaeus, 1758)
Rhagium (*Megarhagium*) *mordax* (De Geer, 1775)
Rhagium (*Megarhagium*) *sycophanta* (Schrank, 1781)
Rhagium (*Rhagium*) *inquisitor inquisitor* (Linnaeus, 1758)
Stenocorus (*Stenocorus*) *meridianus* (Linnaeus, 1758)

Tribe Rhamnusiini Sama, 2009

Rhamnusium bicolor constans Danilevsky, 2012

Subfamily NECYDALINAE Latreille, 1825

Necydalis (*Necydalis*) *major* Linnaeus, 1758

Subfamily SPONDYLIDINAE Audinet-Serville, 1832
Tribe Asemini J. Thomson, 1861

Arhopalus rusticus rusticus (Linnaeus, 1758)
Asemum striatum (Linnaeus, 1758)

Tribe Spondylidini Audinet-Serville, 1832

Spondylis buprestoides (Linnaeus, 1758)

Tribe Tetropiini Seidlitz, 1891

Tetropium castaneum (Linnaeus, 1758)
Tetropium fuscum fuscum (Fabricius, 1787) {personal collection of S.K. Alekseev, Kaluga}

Subfamily CERAMBYCINAE Latreille, 1802
Tribe Callichromatini Swainson & Shuckard, 1840

Aromia moschata moschata (Linnaeus, 1758)

Tribe Callidiini Kirby, 1837

Callidium (*Callidium*) *violaceum* (Linnaeus, 1758)
Callidium (*Callidostola*) *aeneum aeneum* (De Geer, 1775)
Callidium (*Palaeocallidium*) *coriaceum* (Paykull, 1800)
Phymatodes (*Phymatoderus*) *abietinus* Plavilstshikov & Lurie, 1960 {ZIN}
Semanotus undatus (Linnaeus, 1758)

Tribe Clytini Mulsant, 1839

Chlorophorus (*Immaculatus*) *herbstii* (Brahm, 1790)
Clytus (*Clytus*) *arietis arietis* (Linnaeus, 1758)
Cyrtoclytus capra (Germar, 1823)
Plagionotus arcuatus arcuatus (Linnaeus, 1758)
Plagionotus detritus detritus (Linnaeus, 1758)
Rhaphuma gracilipes (Faldermann, 1835)
Xylotrechus (*Rusticoclytus*) *rusticus* (Linnaeus, 1758)
Xylotrechus (*Xylotrechus*) *antilope antilope* (Schoenherr, 1817)
Xylotrechus (*Xylotrechus*) *capricornus* (Gebler, 1830)

Tribe Deilini Fairmaire, 1864

Deilus fugax (G.-A. Olivier, 1790)

Tribe Hesperophanini Mulsant, 1839
Subtribe Hesperophanina Mulsant, 1839

Trichoferus campestris (Faldermann, 1835)†

Tribe Molorchini Gistel, 1848

Molorchus (*Caenoptera*) *minor minor* (Linnaeus, 1758)
Molorchus (*Molorchus*) *marmottani marmottani* Brisout de Barneville, 1863

Tribe Obriini Mulsant, 1839

Obrium cantharinum cantharinum (Linnaeus, 1767)

Tribe Purpuricenini J. Thomson, 1861

Purpuricenus globulicollis globulicollis Dejean, 1839 {ZIN}
Purpuricenus kaehleri kaehleri (Linnaeus, 1758)

Subfamily LAMIINAE Latreille, 1825
Tribe Acanthocinini Blanchard, 1845

Acanthocinus (*Acanthocinus*) *aedilis* (Linnaeus, 1758)
Acanthocinus (*Acanthocinus*) *griseus* (Fabricius, 1793)
Leiopus (*Leiopus*) *linnei* Wallin, Nylander & Kvamme, 2009

Tribe Acanthoderini J. Thomson, 1860

Aegomorphus clavipes (Schrank, 1781)
Aegomorphus obscurior (Pic, 1904)
Oplosia cinerea (Mulsant, 1839)*

Tribe Agapanthiini Mulsant, 1839

Agapanthia (*Agapanthia*) *cardui* (Linnaeus, 1767)
Agapanthia (*Epoptes*) *villosoviridescens* (De Geer, 1775)
Agapanthia (*Smaragdula*) *intermedia* Ganglbauer, 1884

Tribe Exocentrini Pascoe, 1864

Exocentrus lusitanus (Linnaeus, 1767)

Tribe Lamiini Latreille, 1825

Lamia textor (Linnaeus, 1758)

Tribe Mesosini Mulsant, 1839

Mesosa (*Mesosa*) *myops* (Dalman, 1817)

Tribe Monochamini Gistel, 1848

Monochamus (*Monochamus*) *galloprovincialis pistor* (Germar, 1818)
Monochamus (*Monochamus*) *saltuarius occidentalis* Sláma, 2017
Monochamus (*Monochamus*) *sutor sutor* (Linnaeus, 1758)
Monochamus (*Monochamus*) *urussovii* (Fischer von Waldheim, 1805)

Tribe Phytoeciini Mulsant, 1839

Oberea (*Oberea*) *oculata* (Linnaeus, 1758)
Phytoecia (*Opsilia*) *coerulescens coerulescens* (Scopoli, 1763)
Phytoecia (*Phytoecia*) *cylindrica* (Linnaeus, 1758)
Phytoecia (*Phytoecia*) *nigricornis* (Fabricius, 1782)
Phytoecia (*Phytoecia*) *pustulata pustulata* (Schrank, 1776)

Tribe Pogonocherini Mulsant, 1839

Pogonocherus (*Pogonocherus*) *hispidulus* (Piller & Mitterpacher, 1783)
Pogonocherus (*Pityphilus*) *decoratus* Fairmaire, 1855
Pogonocherus (*Pityphilus*) *fasciculatus fasciculatus* (De Geer, 1775)

Tribe Saperdini Mulsant, 1839

Saperda (*Lopezcolonia*) *perforata* (Pallas, 1773)
Saperda (*Lopezcolonia*) *scalaris scalaris* (Linnaeus, 1758)
Saperda (*Saperda*) *carcharias* (Linnaeus, 1758)
Stenostola dubia (Laicharting, 1784) {ZIN}
Stenostola ferrea ferrea (Schrank, 1776)

Tribe Tetropini Portevin, 1927

Tetrops (*Tetrops*) *praeustus praeustus* (Linnaeus, 1758)

Family MEGALOPODIDAE Latreille, 1802
Subfamily ZEUGOPHORINAE Böving & Craighead, 1931

Zeugophora (*Zeugophora*) *scutellaris* Suffrian, 1840
Zeugophora (*Zeugophora*) *subspinosa* (Fabricius, 1781) {ZIN}

Family ORSODACNIDAE C.G. Thomson, 1859
Subfamily ORSODACNINAE C.G. Thomson, 1859

Orsodacne cerasi (Linnaeus, 1758)

Family CHRYSOMELIDAE Latreille, 1802
Subfamily BRUCHINAE Latreille, 1802
Tribe Amblycerini Bridwell, 1932
Subtribe Spermophagina Borowiec, 1987

Spermophagus sericeus (Geoffroy, 1785)

Tribe Bruchini Latreille, 1802
Subtribe Bruchina Latreille, 1802

Bruchus atomarius (Linnaeus, 1760)
Bruchus loti Paykull 1800

Subfamily DONACIINAE Kirby, 1837
Tribe Donaciini Kirby, 1837

Donacia antiqua Kunze, 1818
Donacia aquatica (Linnaeus, 1758)
Donacia bicolora bicolora Zschach, 1788
Donacia cinerea Herbst, 1784
Donacia clavipes clavipes Fabricius, 1792
Donacia crassipes Fabricius, 1775
Donacia dentata Hoppe, 1795
Donacia impressa Paykull, 1799
Donacia marginata Hoppe, 1795
Donacia obscura Gyllenhal, 1813
Donacia semicuprea Panzer, 1796
Donacia tomentosa Ahrens, 1810
Donacia vulgaris vulgaris Zschach, 1788

Tribe Plateumarini Boving, 1922

Plateumaris (*Euplateumaris*) *discolor discolor* (Panzer, 1795)
Plateumaris (*Euplateumaris*) *sericea sericea* (Linnaeus, 1758)

Subfamily CRIOCERINAE Latreille, 1804

? *Crioceris asparagi* (Linnaeus, 1758) {Plavilshchikov 1964}
Lema (*Lema*) *cyanella* (Linnaeus, 1758)
Lilioceris merdigera (Linnaeus, 1758)
Oulema erichsonii (Suffrian, 1841)
Oulema gallaeciana (L. Heyden, 1870)
Oulema melanopus (Linnaeus, 1758)

Subfamily CASSIDINAE Gyllenhal, 1813
Tribe Cassidini Gyllenhal, 1813

Cassida denticollis Suffrian, 1844
Cassida flaveola Thunberg, 1794
Cassida lineola Creutzer, 1799

Cassida margaritacea Schaller, 1783
Cassida nebulosa Linnaeus, 1758
Cassida nobilis Linnaeus, 1758
Cassida pannonica Suffrian, 1844
Cassida panzeri J. Weise, 1907
Cassida prasina Illiger, 1798
Cassida rubiginosa rubiginosa O.F. Müller, 1776
Cassida sanguinolenta O.F. Müller, 1776
Cassida sanguinosa Suffrian, 1844
Cassida stigmatica Suffrian, 1844
Cassida subreticulata Suffrian, 1844
Cassida vibex Linnaeus, 1767
Cassida viridis Linnaeus, 1758
Hypocassida subferruginea (Schrank, 1776)

Tribe Hispini Gyllenhal, 1813

Hispa atra Linnaeus, 1767

Subfamily CHRYSOMELINAE Latreille, 1802
Tribe Chrysomelini Latreille, 1802
Subtribe Chrysomelina Latreille, 1802

Chrysomela collaris Linnaeus, 1758
Chrysomela populi Linnaeus, 1758
Chrysomela tremula Fabricius, 1787
Chrysomela vigintipunctata (Scopoli, 1763)
Plagiodera versicolora (Laicharting, 1781)
Plagiosterna aenea (Linnaeus, 1758)

Subtribe Gastrophysina Kippenberg, 2010

Gastrophysa (*Gastrophysa*) *polygoni polygoni* (Linnaeus, 1758)
Gastrophysa (*Gastrophysa*) *viridula viridula* (De Geer, 1775)

Subtribe Phratorina Motschulsky, 1860

Phratora (*Phratora*) *vulgatissima* (Linnaeus, 1758)
Phratora (*Phyllodecta*) *atrovirens* (Cornelius, 1857)
Phratora (*Phyllodecta*) *laticollis* (Suffrian, 1851)
Phratora (*Phyllodecta*) *tibialis tibialis* (Suffrian, 1851)
Phratora (*Phyllodecta*) *vitellinae* (Linnaeus, 1758)

Subtribe Prasocurina Gistel, 1848

Phaedon (*Phaedon*) *armoraciae* (Linnaeus, 1758)
Phaedon (*Phaedon*) *cochleariae cochleariae* (Fabricius, 1792)
Phaedon (*Phaedon*) *laevigatus laevigatus* (Duftschmid, 1825)
Prasocuris (*Hydrothassa*) *glabra* (Herbst, 1783)
Prasocuris (*Hydrothassa*) *hannoveriana* (Fabricius, 1775)
Prasocuris (*Hydrothassa*) *marginella marginella* (Linnaeus, 1758)
Prasocuris (*Prasocuris*) *junci* (Brahm, 1790)
Prasocuris (*Prasocuris*) *phellandrii* (Linnaeus, 1758)

Tribe Doryphorini Motschulsky, 1860
Subtribe Chrysolinina S.-H. Chen, 1936

Chrysolina (*Anopachys*) *eurina* (Frivaldszky, 1883)† {ZIN}
Chrysolina (*Chalcoidea*) *analis* (Linnaeus, 1767)
Chrysolina (*Chalcoidea*) *besseri* (Krynicki, 1832)
Chrysolina (*Chalcoidea*) *marginata marginata* (Linnaeus, 1758)
Chrysolina (*Chrysolina*) *staphylaea staphylaea* (Linnaeus, 1758)
Chrysolina (*Colaphodes*) *haemoptera* (Linnaeus, 1758)
Chrysolina (*Colaphosoma*) *sturmi sturmi* (Westhoff, 1882)
Chrysolina (*Erythrochrysa*) *polita polita* (Linnaeus, 1758)
Chrysolina (*Euchrysolina*) *graminis graminis* (Linnaeus, 1758)
Chrysolina (*Fastuolina*) *fastuosa fastuosa* (Scopoli, 1763)
Chrysolina (*Hypericia*) *geminata* (Paykull, 1799)
Chrysolina (*Hypericia*) *hyperici* (Forster, 1771)
Chrysolina (*Sphaeromela*) *varians* (Schaller, 1783)
Chrysolina (*Stichoptera*) *gypsophilae* (Küster, 1845)
Chrysolina (*Stichoptera*) *sanguinolenta* (Linnaeus, 1758)
Chrysolina (*Synerga*) *herbacea* (Duftschmid, 1825)
Chrysolina (*Zeugotaenia*) *limbata russiella* Bieńkowski & Orlova-Bienkowskaja, 2011
? *Oreina* (*Allorina*) *caerulea* (G.-A. Olivier, 1790) {Plavilshchikov 1964}

Subtribe Doryphorina Motschulsky, 1860

Leptinotarsa decemlineata (Say, 1824)†
Entomoscelis suturalis J. Weise, 1882

Tribe Gonioctenini Motschulsky, 1860

Gonioctena (*Gonioctena*) *decemnotata* (Marsham, 1802)
Gonioctena (*Gonioctena*) *linnaeana linnaeana* (Schrank, 1781)
Gonioctena (*Gonioctena*) *viminalis viminalis* (Linnaeus, 1758)

Gonioctena (*Goniomena*) *pallida* (Linnaeus, 1758)
Gonioctena (*Goniomena*) *quinquepunctata quinquepunctata* (Fabricius, 1787)

Subfamily GALERUCINAE Latreille, 1802
Tribe Galerucini Latreille, 1802

Galeruca (*Galeruca*) *jucunda* (Faldermann, 1837)
Galeruca (*Galeruca*) *tanaceti tanaceti* (Linnaeus, 1758)
Galerucella (*Galerucella*) *grisescens* (Joannis, 1866)
Galerucella (*Galerucella*) *nymphaeae* (Linnaeus, 1758)
Galerucella (*Neogalerucella*) *calmariensis* (Linnaeus, 1767)
Galerucella (*Neogalerucella*) *lineola lineola* (Fabricius, 1781)
Galerucella (*Neogalerucella*) *pusilla* (Duftschmid, 1825)
Galerucella (*Neogalerucella*) *tenella* (Linnaeus, 1760)
Lochmaea caprea (Linnaeus, 1758)
Lochmaea suturalis (C.G. Thomson, 1866)
Pyrrhalta viburni (Paykull, 1799)

Tribe Hylaspini Chapuis, 1875

Agelastica alni (Linnaeus, 1758)

Tribe Luperini Gistel, 1848
Subtribe Luperina Gistel, 1848

Calomicrus pinicola (Duftschmid, 1825)
Luperus luperus (Sulzer, 1776) {ZIN}
Phyllobrotica quadrimaculata (Linnaeus, 1758)

Subfamily ALTICINAE Newman, 1834
Tribe Alticini Newman, 1834

Altica palustris (J. Weise, 1888)
Altica quercetorum saliceti J. Weise, 1888
Altica tamaricis tamaricis Schrank, 1785
? *Aphthona czwalinae* J. Weise, 1888 {Plavilshchikov 1964}
Aphthona lutescens (Gyllenhal, 1813)
Aphthona nonstriata (Goeze, 1777)
Aphthona pallida (Bach, 1856)
Argopus nigritarsis (Gebler, 1823)
Batophila rubi (Paykull, 1799)
Chaetocnema (*Chaetocnema*) *aerosa* (Letzner, 1847)
Chaetocnema (*Chaetocnema*) *arida* Foudras, 1860

Chaetocnema (*Chaetocnema*) *aridula* (Gyllenhal, 1827)
Chaetocnema (*Chaetocnema*) *compressa* (Letzner, 1847)
Chaetocnema (*Chaetocnema*) *hortensis* (Geoffroy, 1785)
Chaetocnema (*Chaetocnema*) *mannerheimii* (Gyllenhal, 1827)
Chaetocnema (*Tlanoma*) *concinna* (Marsham, 1802)
Chaetocnema (*Tlanoma*) *semicoerulea semicoerulea* (Koch, 1803)
Crepidodera aurata (Marsham, 1802)
Crepidodera fulvicornis (Fabricius, 1792)
Crepidodera nitidula (Linnaeus, 1758)
Crepidodera plutus (Latreille, 1804)
Derocrepis rufipes (Linnaeus, 1758)
Epitrix pubescens (Koch, 1803)
Hippuriphila modeeri (Linnaeus, 1760)
Longitarsus (*Longitarsus*) *atricillus* (Linnaeus, 1760)
Longitarsus (*Longitarsus*) *brunneus* (Duftschmid, 1825)
Longitarsus (*Longitarsus*) *ganglbaueri ganglbaueri* Heikertinger, 1912
Longitarsus (*Longitarsus*) *holsaticus* (Linnaeus, 1758)
Longitarsus (*Longitarsus*) *jacobaeae* (C.R. Waterhouse, 1858)
Longitarsus (*Longitarsus*) *longiseta* J. Weise, 1889
Longitarsus (*Longitarsus*) *nigrofasciatus nigrofasciatus* (Goeze, 1777)
Longitarsus (*Longitarsus*) *succineus* (Foudras, 1860)
Longitarsus (*Longitarsus*) *suturellus* (Duftschmid, 1825)
Longitarsus (*Longitarsus*) *tabidus tabidus* (Fabricius, 1775)
Longitarsus (*Testergus*) *anchusae* (Paykull, 1799)
Lythraria salicariae (Paykull, 1800)
Mantura (*Mantura*) *chrysanthemi chrysanthemi* (Koch, 1803)
Neocrepidodera ferruginea (Scopoli, 1763)
Neocrepidodera transversa (Marsham, 1802)
Phyllotreta atra (Fabricius, 1775)
Phyllotreta flexuosa (Illiger, 1794)
Phyllotreta nemorum (Linnaeus, 1758)
Phyllotreta nigripes nigripes (Fabricius, 1775)
Phyllotreta ochripes (Curtis, 1837)
Phyllotreta striolata (Fabricius, 1803)
Phyllotreta tetrastigma (Comolli, 1837)
Phyllotreta undulata Kutschera, 1860
Phyllotreta vittula (L. Redtenbacher, 1849)
Psylliodes (*Psylliodes*) *affinis* (Paykull, 1799)
Psylliodes (*Psylliodes*) *chalcomera* (Illiger, 1807)
Psylliodes (*Psylliodes*) *dulcamarae* (Koch, 1803)
Psylliodes (*Psylliodes*) *napi* (Fabricius, 1792)
Psylliodes (*Psylliodes*) *picina* (Marsham, 1802)

Subfamily CRYPTOCEPHALINAE Gyllenhal, 1813
Tribe Clytrini Kirby, 1837
Subtribe Clytrina Kirby, 1837

Clytra (*Clytra*) *quadripunctata quadripunctata* (Linnaeus, 1758)
Coptocephala unifasciata unifasciata (Scopoli, 1763)
Labidostomis (*Labidostomis*) *lepida* Lefevre, 1872
Labidostomis (*Labidostomis*) *longimana* (Linnaeus, 1760)
Labidostomis (*Labidostomis*) *tridentata* (Linnaeus, 1758)
Smaragdina affinis affinis (Illiger, 1794)
Smaragdina flavicollis (Charpentier, 1825)

Tribe Cryptocephalini Gyllenhal, 1813
Subtribe Cryptocephalina Gyllenhal, 1813

Cryptocephalus (*Burlinius*) *exiguus exiguus* D.N. Schneider, 1792
Cryptocephalus (*Burlinius*) *fulvus fulvus* (Goeze, 1777)
Cryptocephalus (*Burlinius*) *labiatus* (Linnaeus, 1760)
Cryptocephalus (*Burlinius*) *pusillus* Fabricius, 1777
Cryptocephalus (*Cryptocephalus*) *anticus* Suffrian, 1848
Cryptocephalus (*Cryptocephalus*) *aureolus* Suffrian, 1847
Cryptocephalus (*Cryptocephalus*) *bipunctatus bipunctatus* (Linnaeus, 1758)
Cryptocephalus (*Cryptocephalus*) *biguttatus* (Scopoli, 1763)
Cryptocephalus (*Cryptocephalus*) *cordiger* (Linnaeus, 1758)
Cryptocephalus (*Cryptocephalus*) *decemmaculatus* (Linnaeus, 1758)
Cryptocephalus (*Cryptocephalus*) *flavipes* Fabricius, 1781
Cryptocephalus (*Cryptocephalus*) *solivagus* Leonardi & Sassi, 2001
Cryptocephalus (*Cryptocephalus*) *laetus* Fabricius, 1792
Cryptocephalus (*Cryptocephalus*) *moraei* (Linnaeus, 1758)
Cryptocephalus (*Cryptocephalus*) *nitidus* (Linnaeus, 1758)
Cryptocephalus (*Cryptocephalus*) *octopunctatus octopunctatus* (Scopoli, 1763)
Cryptocephalus (*Cryptocephalus*) *parvulus* O.F. Müller, 1776
Cryptocephalus (*Cryptocephalus*) *sericeus* (Linnaeus, 1758)
Cryptocephalus (*Cryptocephalus*) *sexpunctatus sexpunctatus* (Linnaeus, 1758)
Cryptocephalus (*Disopus*) *pini* (Linnaeus, 1758)
Cryptocephalus (*Heterichnus*) *coryli* (Linnaeus, 1758)

Subtribe Pachybrachina Chapius, 1784

Pachybrachis (*Pachybrachis*) *hieroglyphicus* (Laicharting, 1781)

Subfamily EUMOLPINAE Hope, 1840
Tribe Bromiini Baly, 1865 (1863)

Bromius obscurus (Linnaeus, 1758)
Pachnephorus (*Pachnephorus*) *tessellatus* (Duftschmid, 1825)

Subfamily SYNETINAE LeConte & Horn, 1883

Syneta betulae betulae (Fabricius, 1792)* {ZIN}

Superfamily CURCULIONOIDEA Latreille, 1802
Family NEMONYCHIDAE Bedel, 1882
Subfamily CIMBERIDINAE Gozis, 1882
Tribe Cimberidini Gozis, 1882

Cimberis attelaboides (Fabricius, 1787)

Family ANTHRIBIDAE Billberg, 1820
Subfamily ANTHRIBINAE Billberg, 1820
Tribe Anthribini Billberg, 1820

Anthribus nebulosus Forster, 1770

Tribe Platyrhinini Imhoff, 1856

Platyrhinus resinosus (Scopoli, 1763)

Tribe Platystomini Pierce, 1916

Platystomos albinus (Linnaeus, 1758)

Tribe Tropiderini Lacordaire, 1865

Gonotropis dorsalis (Gyllenhal, 1813)
Tropideres albirostris (Schaller, 1783)

Tribe Zygaenodini Lacordaire, 1865

Dissoleucas niveirostris (Fabricius, 1798)
Rhaphitropis marchica (Herbst, 1797)

Subfamily CHORAGINAE Kirby, 1819
Tribe Choragini Kirby, 1819

Choragus sheppardi Kirby, 1819

Family ATTELABIDAE Billberg, 1820
Subfamily ATTELABINAE Billberg, 1820
Tribe Apoderini Jekel, 1860
Subtribe Apoderina Jekel, 1860

Apoderus coryli (Linnaeus, 1758)
Compsapoderus (*Compsapoderus*) *erythropterus* (Gmelin, 1790)

Tribe Attelabini Billberg, 1820

Attelabus nitens (Scopoli, 1763)

Subfamily RHYNCHITINAE Gistel, 1848
Tribe Auletini Desbrochers des Loges, 1908
Subtribe Pseudomesauletina Legalov, 2003

Mesauletobius pubescens (Kiesenwetter, 1852)† {ZIN}

Tribe Byctiscini Voss, 1923
Subtribe Byctiscina Voss, 1923

Byctiscus betulae (Linnaeus, 1758)
Byctiscus populi (Linnaeus, 1758)

Tribe Deporaini Voss, 1929
Subtribe Deporaina Voss, 1929

Deporaus (*Deporaus*) *betulae* (Linnaeus, 1758)

Tribe Rhynchitini Gistel, 1848

Involvulus (*Involvulus*) *cupreus* (Linnaeus, 1760)
Mecorhis (*Pseudomechoris*) *aethiops* (Bach, 1854)
Neocoenorrhinus (*Neocoenorrhinus*) *germanicus* (Herbst, 1797)
Rhynchites (*Epirhynchites*) *auratus* (Scopoli, 1763)
Tatianaerhynchites aequatus (Linnaeus, 1767)
Temnocerus coeruleus (Fabricius, 1798)
Temnocerus nanus (Paykull, 1792)

Family BRENTIDAE Billberg, 1820
Subfamily APIONINAE Schoenherr, 1823
Tribe Apionini Schoenherr, 1823
Subribe Apionina Schoenherr, 1823

Apion cruentatum Walton, 1844
Apion frumentarium (Linnaeus, 1758)
Apion haematodes haematodes Kirby, 1808
Apion rubiginosum Grill, 1893

Subtribe Aplemonina Kissinger, 1968

Perapion (*Perapion*) *connexum* (Schilsky, 1902)
Perapion (*Perapion*) *curtirostre* (Germar, 1817)
Perapion (*Perapion*) *marchicum* (Herbst, 1797)
Perapion (*Perapion*) *oblongum* (Gyllenhal, 1839)
Perapion (*Perapion*) *violaceum violaceum* (Kirby, 1808)
Pseudoperapion brevirostre (Herbst, 1797)
Pseudostenapion simum (Germar, 1817)

Subtribe Aspidapiina Alonso-Zarazaga, 1990

Aspidapion (*Aspidapion*) *radiolus* (Marsham, 1802)
Aspidapion (*Aspidapion*) *validum* (Germar, 1817)†
Aspidapion (*Koestlinia*) *aeneum* (Fabricius, 1775)

Subtribe Catapiina Alonso-Zarazaga,1990

Catapion seniculus (Kirby, 1808)

Subtribe Ceratapiina Alonso-Zarazaga, 1990

Ceratapion (*Acanephodus*) *onopordi onopordi* (Kirby, 1808)
Ceratapion (*Ceratapion*) *gibbirostre* (Gyllenhal, 1813)
Ceratapion (*Echinostroma*) *penetrans penetrans* (Germar, 1817) {ZIN}
Diplapion detritum (Mulsant & Rey, 1859)
Omphalapion hookerorum (Kirby, 1808)
Taphrotopium (*Taphrotopium*) *sulcifrons* (Herbst, 1797)

Subtribe Exapiina Alonso-Zarazaga, 1990

Exapion corniculatum (Germar, 1817)

Subtribe Kalcapiina Alonso-Zarazaga, 1990

Kalcapion pallipes (Kirby, 1808)
Melanapion (*Melanapion*) *minimum* (Herbst, 1797)
Squamapion flavimanum (Gyllenhal, 1833) {ZIN}
Squamapion vicinum (Kirby, 1808)
Taeniapion urticarium urticarium (Herbst, 1784)

Subtribe Oxystomatina Alonso-Zarazaga,1990

Cyanapion (*Bothryorrhynchapion*) *gyllenhalii* (Kirby, 1808)
Eutrichapion (*Eutrichapion*) *ervi* (Kirby, 1808)
Eutrichapion (*Eutrichapion*) *viciae* (Paykull, 1800)
Eutrichapion (*Psilocalymma*) *facetum* (Gyllenhal, 1839)
Eutrichapion (*Psilocalymma*) *punctiger* (Paykull, 1792)
Ischnopterapion (*Chlorapion*) *virens* (Herbst, 1797)
Ischnopterapion (*Ischnopterapion*) *loti* (Kirby, 1808) {ZIN}
Oxystoma cerdo (Gerstaecker, 1854)
Oxystoma craccae (Linnaeus, 1767)
Oxystoma subulatum (Kirby, 1808)
Synapion (*Synapion*) *ebeninum* (Kirby, 1808)

Subtribe Piezotrachelina Voss, 1959

Protapion apricans (Herbst, 1797)
Protapion assimile assimile (Kirby, 1808)
Protapion filirostre (Kirby, 1808)
Protapion fulvipes fulvipes (Geoffroy, 1785)
Protapion interjectum interjectum (Desbrochers des Loges, 1895)
Protapion trifolii (Linnaeus, 1768)
Protapion varipes (Germar, 1817)

Subtribe Trichapiina Alonso-Zarazaga,1990

Betulapion simile simile (Kirby, 1811)

Subfamily NANOPHYINAE Gistel, 1848
Tribe Nanophyini Gistel, 1856

Nanomimus circumscriptus (Aubé, 1864) {ZIN}
Nanomimus hemisphaericus (G.-A. Olivier, 1807)
Nanophyes brevis brevis Boheman, 1845
Nanophyes globiformis Kiesenwetter, 1864

Nanophyes globulus (Germar, 1821)
Nanophyes marmoratus marmoratus (Goeze, 1777)

Family CURCULIONIDAE Latreille, 1802
Subfamily BAGOINAE C.G. Thomson, 1859

Bagous (*Bagous*) *binodulus* (Herbst, 1795)
Bagous (*Bagous*) *glabrirostris* (Herbst, 1795)
Bagous (*Bagous*) *puncticollis* Boheman, 1845
Bagous (*Bagous*) *subcarinatus* Gyllenhal, 1836
Bagous (*Macropelmus*) *nodulosus* Gyllenhal, 1836
Bagous (*Macropelmus*) *tempestivus* (Herbst, 1795)*

Subfamily BRACHYCERINAE Billberg, 1820
Tribe Erirhinini Schoenherr, 1825
Subtribe Erirhinina Schoenherr, 1825

Grypus equiseti (Fabricius, 1775)
Notaris acridulus (Linnaeus, 1758)
Notaris aethiops (Paykull, 1792)
Notaris scirpi (Fabricius, 1792)
Thryogenes festucae (Herbst, 1795)
Thryogenes nereis (Paykull, 1800)

Tribe Tanysphyrini Gistel, 1848

Tanysphyrus lemnae (Paykull, 1792)

Subfamily CONODERINAE Schoenherr, 1833
Supertribe Bariditae Schoenherr, 1836
Tribe Apostasimerini Schoenherr, 1844
Subtribe Zygobaridina Pierce, 1907

Limnobaris dolorosa (Goeze, 1777)
Limnobaris t-album (Linnaeus, 1758)

Tribe Baridini Schoenherr, 1836
Subtribe Baridini Schoenherr, 1836

Baris artemisiae (Panzer, 1794)

Supertribe Ceutorhynchitae Gistel, 1848
Tribe Amalini Wagner, 1936

Amalus scortillum (Herbst, 1795)

Tribe Ceutorhynchini Gistel, 1856

Calosirus apicalis (Gyllenhal, 1827) {ZIN}
Ceutorhynchus contractus (Marsham, 1802)
Ceutorhynchus erysimi (Fabricius, 1787)
Ceutorhynchus gallorhenanus F. Solari, 1949
Ceutorhynchus griseus C.N.F. Brisout de Barneville, 1869
Ceutorhynchus hampei C.N.F. Brisout de Barneville, 1869
Ceutorhynchus ignitus Germar, 1823
Ceutorhynchus pseudoarator Korotyaev, 1989 {ZIN}
Ceutorhynchus pulvinatus Gyllenhal, 1837
Ceutorhynchus rapae Gyllenhal, 1837
Ceutorhynchus roberti Gyllenhal, 1837
Ceutorhynchus syrites Germar, 1823
Ceutorhynchus typhae (Herbst, 1795)
Coeliastes lamii (Fabricius, 1792) {ZIN}
Coeliodes rana (Fabricius, 1787)
Coeliodinus rubicundus (Herbst, 1795)
Datonychus arquata (Herbst, 1795)
Datonychus urticae (Boheman, 1845)
Glocianus distinctus (C.N.F. Brisout de Barneville, 1870)
Glocianus punctiger (C.R. Sahlberg, 1835)
Micrelus ericae (Gyllenhal, 1813) {ZIN}
Microplontus campestris (Gyllenhal, 1837) {ZIN}
Microplontus millefolii (Schultze, 1897) {ZIN}
Microplontus triangulum (Boheman, 1845)
Mogulones crucifer (Pallas, 1771)
Mogulones cynoglossi (Frauenfeld, 1866)
Mogulones geographicus (Goeze, 1777)
Mogulones pallidicornis (Gougelet & H. Brisout de Barneville, 1860)
Nedyus quadrimaculatus (Linnaeus, 1758)
Thamiocolus viduatus (Gyllenhal, 1813)
Trichosirocalus troglodytes (Fabricius, 1787)
Zacladus geranii (Paykull, 1800)

Tribe Cnemogonini Colonnelli, 1979

Auleutes epilobii (Paykull, 1800) {ZIN}

Tribe Mononychini LeConte, 1876

Mononychus punctumalbum (Herbst, 1784)

Tribe Phytobiini Gistel, 1856

Marmaropus besseri Gyllenhal, 1837 {ZIN}
Neophytobius granatus (Gyllenhal, 1835)
Neophytobius muricatus (C.N.F. Brisout de Barneville, 1867)
Pelenomus commari (Panzer, 1795)
Pelenomus waltoni (Boheman, 1843)
Rhinoncus bruchoides (Herbst, 1784)
Rhinoncus leucostigma (Marsham, 1802)
Rhinoncus pericarpius (Linnaeus, 1758)
Rhinoncus perpendicularis (Reich, 1797)

Tribe Scleropterini Schultze, 1902

Rutidosoma graminosum (Gistel, 1857)
Tapinotus sellatus (Fabricius, 1794)

Supertribe Conoderitae Schoenherr, 1833
Tribe Coryssomerini C.G. Thomson, 1859

Coryssomerus capucinus (Beck, 1817)
Euryommatus mariae Roger, 1857 {ZIN}

Supertribe Orobitiditae C.G. Thomson, 1859
Tribe Orobitidini C.G. Thomson, 1859

Orobitis cyanea (Linnaeus, 1758)

Subfamily COSSONINAE Schoenherr, 1825
Tribe Cossonini Schoenherr, 1825

Cossonus (*Caenocossonus*) *parallelepipedus* (Herbst, 1795)

Tribe Rhyncolini Gistel, 1856
Subtribe Rhyncolina Gistel, 1856

Rhyncolus (*Rhyncolus*) *ater ater* (Linnaeus, 1758)
Rhyncolus (*Rhyncolus*) *elongatus* (Gyllenhal, 1827)

Subfamily CURCULIONINAE Latreille, 1802
Tribe Acalyptini C.G. Thomson, 1859

Acalyptus carpini (Fabricius, 1792)
Acalyptus sericeus Gyllenhal, 1835

Tribe Anoplini Bedel, 1884

Anoplus plantaris (Næzén, 1794)

Tribe Anthonomini C.G. Thomson, 1859

Anthonomus (*Anthomorphus*) *phyllocola* (Herbst, 1795)
Anthonomus (*Anthomorphus*) *pinivorax* Silfverberg, 1977*
Anthonomus (*Anthonomus*) *conspersus* Desbrochers des Loges, 1868
Anthonomus (*Anthonomus*) *incurvus* (Panzer, 1795)
Anthonomus (*Anthonomus*) *pomorum* (Linnaeus, 1758)
Anthonomus (*Anthonomus*) *rubi* (Herbst, 1795)
Anthonomus (*Anthonomus*) *sorbi* Germar, 1821
Anthonomus (*Anthonomus*) *ulmi* (De Geer, 1775) {ZIN}
Anthonomus (*Furcipus*) *rectirostris* (Linnaeus, 1758)
Bradybatus (*Bradybatus*) *kellneri* Bach, 1854

Tribe Cionini Schoenherr, 1825

Cionus hortulanus (Geoffroy, 1785)
? *Cionus olivieri* Rosenschoeld, 1838 {Feoktistov 2011}
Cionus scrophulariae (Linnaeus, 1758)
Cionus tuberculosus (Scopoli, 1763)

Tribe Curculionini Latreille, 1802
Subtribe Archariina Pelsue & O'Brien, 2011

Archarius (*Archarius*) *pyrrhoceras* (Marsham, 1802)
Archarius (*Archarius*) *salicivorus* (Paykull, 1792)

Subtribe Curculionina Latreille, 1802

Curculio (*Curculio*) *glandium* Marsham, 1802
Curculio (*Curculio*) *nucum* Linnaeus, 1758
Curculio (*Curculio*) *rubidus* (Gyllenhal, 1835)

Tribe Ellescini C.G. Thomson, 1859
Subtribe Dorytomina Bedel, 1886

Dorytomus (*Dorytomus*) *salicinus* (Gyllenhal, 1827)
Dorytomus (*Dorytomus*) *taeniatus* (Fabricius, 1781)
Dorytomus (*Dorytomus*) *tortrix* (Linnaeus, 1760)
Dorytomus (*Dorytomus*) *tremulae* (Fabricius, 1787)

Subtribe Ellescina C.G. Thomson, 1859

Ellescus bipunctatus (Linnaeus, 1758)
Ellescus infirmus (Herbst, 1795)
Ellescus scanicus (Paykull, 1792)

Tribe Mecinini Gistel, 1848

Cleopomiarus distinctus (Boheman, 1845)
Cleopomiarus graminis (Gyllenhal, 1813)
Gymnetron melanarium (Germar, 1821)
Gymnetron terminassianae Smreczyński, 1975 {ZIN}
Gymnetron veronicae (Germar, 1821)
Mecinus heydenii Wencker, 1866
Mecinus janthinus Germar, 1821
Mecinus labilis (Herbst, 1795)
Mecinus pascuorum (Gyllenhal, 1813)
Mecinus plantaginis (Eppelsheim, 1875)
Mecinus pyraster (Herbst, 1795)
Miarus ajugae (Herbst, 1795)
Rhinusa antirrhini (Paykull, 1800)
Rhinusa asellus (Gravenhorst, 1807)
Rhinusa collina (Gyllenhal, 1813)
Rhinusa linariae (Panzer, 1795)
Rhinusa neta (Germar, 1821)

Tribe Rhamphini Rafinesque, 1815
Subtribe Rhamphina Rafinesque, 1815

Isochnus foliorum (O.F. Müller, 1764)
Isochnus sequensi (Stierlin, 1894)
Orchestes (*Alyctus*) *calceatus* (Germar, 1821)
Orchestes (*Alyctus*) *rusci* (Herbst, 1795)
Orchestes (*Orchestes*) *hortorum* (Fabricius, 1792)

Pseudorchestes circumvistulanus (Białooki, 1997) {ZIN}
Pseudorchestes pratensis (Germar, 1821)
Rhamphus pulicarius (Herbst, 1795)
Rhynchaenus (*Rhynchaenus*) *xylostei* Clairville, 1798
?*Tachyerges rufitarsis* (Germar, 1821) {Feoktistov 2011}
Tachyerges salicis (Linnaeus, 1758)
Tachyerges stigma (Germar, 1821)

Tribe Smicronychini Seidlitz, 1891

Smicronyx (*Smicronyx*) *coecus* (Reich, 1797)
Smicronyx (*Smicronyx*) *smreczynskii* F. Solari, 1952

Tribe Tychiini C.G. Thomson, 1859
Subtribe Tychiina C.G. Thomson, 1859

Sibinia (*Sibinia*) *pellucens* (Scopoli, 1772)
Sibinia (*Sibinia*) *subelliptica* (Desbrochers des Loges, 1873)
Sibinia (*Sibinia*) *tibialis* Gyllenhal, 1835
Sibinia (*Sibinia*) *viscariae* (Linnaeus, 1760)
Tychius (*Tychius*) *medicaginis* C.N.F. Brisout de Barneville, 1863
Tychius (*Tychius*) *picirostris* (Fabricius, 1787)
Tychius (*Tychius*) *quinquepunctatus* (Linnaeus, 1758)
Tychius (*Tychius*) *stephensi* Schoenherr, 1835

Subfamily DRYOPHTHORINAE Schoenherr, 1825
Tribe Rhynchophorini Schoenherr, 1833
Subtribe Litosomina Lacordaire, 1865

Sitophilus granarius (Linnaeus, 1758)†

Subtribe Sphenophorina Lacordaire, 1865

Sphenophorus striatopunctatus (Goeze, 1777)

Subfamily ENTIMINAE Schoenherr, 1823
Tribe Brachyderini Schoenherr, 1826

Brachyderes (*Brachyderes*) *incanus* (Linnaeus, 1758)
Strophosoma (*Strophosoma*) *capitatum* (De Geer, 1775)

Tribe Cneorhinini Lacordaire, 1863

Attactagenus albinus (Boheman, 1833)

Tribe Otiorhynchini Schoenherr, 1826

Otiorhynchus (*Choilisanus*) *raucus* (Fabricius, 1777)
Otiorhynchus (*Cryphiphorus) ligustici* (Linnaeus, 1758)
Otiorhynchus (*Otiolehus*) *tristis* (Scopoli, 1763)
Otiorhynchus (*Pendragon*) *ovatus ovatus* (Linnaeus, 1758)

Tribe Phyllobiini Schoenherr, 1826

Phyllobius (*Alsus*) *brevis* Gyllenhal, 1834
Phyllobius (*Dieletus*) *argentatus argentatus* (Linnaeus, 1758)
Phyllobius (Metaphyllobius) jacobsoni Smirnov, 1913
Phyllobius (Metaphyllobius) pomaceus Gyllenhal, 1834
Phyllobius (*Nemoicus*) *oblongus* (Linnaeus, 1758)
Phyllobius (*Phyllobius*) *arborator* (Herbst, 1797)
Phyllobius (*Phyllobius*) *pyri* (Linnaeus, 1758)
Phyllobius (*Phyllobius*) *thalassinus* Gyllenhal, 1834
Phyllobius (*Pterygorrhynchus*) *maculicornis* Germar, 1823

Tribe Polydrusini Schoenherr, 1823

Liophloeus (*Liophloeus*) *tessulatus* (O.F. Müller, 1776)
Polydrusus (*Eudipnus*) *mollis* (Strøm, 1768)
Polydrusus (*Eurodrusus*) *cervinus* (Linnaeus, 1758)
Polydrusus (*Eurodrusus*) *confluens* Stephens, 1831
Polydrusus (*Eustolus*) *flavipes flavipes* (De Geer, 1775)
Polydrusus (*Eustolus*) *pterygomalis* Boheman, 1840
Polydrusus (*Polydrusus*) *fulvicornis fulvicornis* (Fabricius, 1792)
Polydrusus (*Polydrusus*) *tereticollis* (De Geer, 1775)

Tribe Sciaphilini Sharp, 1891

Brachysomus (*Brachysomus*) *echinatus* (Bonsdorff, 1785)
Eusomus ovulum Germar, 1823
Exomias lebedevi (Roubal, 1926)
Sciaphilus asperatus (Bonsdorff, 1785)

Tribe Sitonini Gistel, 1848

Charagmus griseus (Fabricius, 1775)
Sitona ambiguus Gyllenhal, 1834
Sitona cylindricollis cylindricollis Fåhraeus, 1840
Sitona hispidulus (Fabricius, 1777)
Sitona inops Schoenherr, 1832

Sitona lineatus (Linnaeus, 1758)
Sitona longulus Gyllenhal, 1834
Sitona macularius macularius (Marsham, 1802)
Sitona obsoletus obsoletus (Gmelin, 1790)
Sitona puncticollis Stephens, 1831
Sitona striatellus Gyllenhal, 1834
Sitona sulcifrons sulcifrons (Thunberg, 1798)
Sitona suturalis Stephens, 1831

Tribe Tanymecini Lacordaire, 1863
Subtribe Tanymecina Lacordaire, 1863

Chlorophanus viridis viridis (Linnaeus, 1758)
Tanymecus (*Tanymecus*) *palliatus* (Fabricius, 1787)

Tribe Trachyphloeini Gistel, 1848

Romualdius scaber (Linnaeus, 1758)

Subfamily HYPERINAE Lacordaire, 1863 (1848)
Tribe Hyperini Lacordaire, 1863 (1848)

Hypera (*Boreohypera*) *diversipunctata* (Schrank, 1798)
Hypera (*Boreohypera*) *fornicata* (Penecke, 1928)
Hypera (*Dapalinus*) *meles* (Fabricius, 1792)
Hypera (*Eririnomorphus*) *conmaculata* (Herbst, 1795)
Hypera (*Eririnomorphus*) *rumicis* (Linnaeus, 1758)
Hypera (*Hypera*) *miles* (Paykull, 1792)
Hypera (*Hypera*) *postica* (Gyllenhal, 1813)
Hypera (*Hypera*) *transsilvanica* (Petri, 1901)
Hypera (*Hypera*) *viciae* (Gyllenhal, 1813)
Hypera (*Kippenbergia*) *arator* (Linnaeus, 1758)
Limobius borealis (Paykull, 1792)

Subfamily LIXINAE Schoenherr, 1823
Tribe Cleonini Schoenherr, 1826

Asproparthenis foveocollis (Gebler, 1834)
Bothynoderes affinis (Schrank, 1781)
Cleonis pigra (Scopoli, 1763)
Coniocleonus (*Augustecleonus*) *hollbergii* (Fåhraeus, 1842)
Cyphocleonus dealbatus (Gmelin, 1790)
Cyphocleonus trisulcatus (Herbst, 1795)

Tribe Lixini Schoenherr, 1823

Larinus (*Larinomesius*) *obtusus* Gyllenhal, 1835
Larinus (*Phyllonomeus*) *planus* (Fabricius, 1792)
Larinus (*Phyllonomeus*) *sturnus* (Schaller, 1783)
Larinus (*Phyllonomeus*) *turbinatus* Gyllenhal, 1835
Lixus (*Dilixellus*) *bardanae* (Fabricius, 1787)
Lixus (*Dilixellus*) *fasciculatus* Boheman, 1835
Lixus (*Dilixellus*) *pulverulentus* (Scopoli, 1763)
Lixus (*Epimeces*) *filiformis* (Fabricius, 1781)
Lixus (*Eulixus*) *iridis* G.-A. Olivier, 1807
Lixus (*Eulixus*) *myagri* G.-A. Olivier, 1807
Lixus (*Lixus*) *paraplecticus* (Linnaeus, 1758)
Lixus (*Phillixus*) *brevipes* C.N.F. Brisout de Barneville, 1866 {ZIN}

Subfamily MESOPTILIINAE Lacordaire, 1863
Tribe Magdalidini Pascoe, 1870

Magdalis (*Edo*) *ruficornis* (Linnaeus, 1758)
Magdalis (*Magdalis*) *duplicata* Germar, 1819
Magdalis (*Magdalis*) *frontalis* (Gyllenhal, 1827)
Magdalis (*Magdalis*) *linearis* (Gyllenhal, 1827)
Magdalis (*Magdalis*) *phlegmatica* (Herbst, 1797)
Magdalis (*Magdalis*) *violacea* (Linnaeus, 1758)
Magdalis (*Odontomagdalis*) *armigera* (Geoffroy, 1785)

Subfamily MOLYTINAE Schoenherr, 1823
Tribe Cryptorhynchini Schoenherr, 1825
Subtribe Cryptorhynchina Schoenherr, 1825

Cryptorhynchus lapathi (Linnaeus, 1758)

Subtribe Tylodina Lacordaire, 1865

Acalles echinatus (Germar, 1823)

Tribe Molytini Schoenherr, 1823
Subtribe Hylobiina Kirby, 1837

? *Hylobius* (*Hylobius*) *excavatus* (Laicharting, 1781) {Feoktistov 2011}
Hylobius (*Callirus*) *abietis* (Linnaeus, 1758)
Hylobius (*Callirus*) *pinastri* (Gyllenhal, 1813)

Tribe Pissodini Gistel, 1848
Subtribe Pissodina Gistel, 1848

Pissodes (*Pissodes*) *castaneus* (De Geer, 1775)
Pissodes (*Pissodes*) *harcyniae* (Herbst, 1795) {ZIN}
Pissodes (*Pissodes*) *pini pini* (Linnaeus, 1758)
Pissodes (*Pissodes*) *piniphilus* (Herbst, 1797)
Pissodes (*Pissodes*) *validirostris* (C.R. Sahlberg, 1834)

Tribe Trachodini Gistel, 1848

Trachodes hispidus (Linnaeus, 1758)

Subfamily SCOLYTINAE Latreille, 1804
Tribe Corthylini LeConte, 1876
Subtribe Pityophthorina Eichhoff, 1878

Pityophthorus glabratus Eichhoff, 1878 {ZIN}
Pityophthorus lichtensteinii (Ratzeburg, 1837)
Pityophthorus micrographus micrographus (Linnaeus, 1758) {ZIN}
Pityophthorus traegardhi Spessivtsev, 1921 {ZIN}

Tribe Cryphalini Lindemann, 1877

Ernoporus tiliae (Panzer, 1793) {ZIN}
Trypophloeus binodulus (Ratzeburg, 1837) {ZIN}
Trypophloeus discedens Palm, 1950 {ZIN}

Tribe Crypturgini LeConte, 1876

Crypturgus cinereus (Herbst, 1793) {ZIN}
Crypturgus hispidulus C.G. Thomson, 1870 {ZIN}
Crypturgus pusillus (Gyllenhal, 1813) {ZIN}
Crypturgus subcribrosus Eggers, 1933 {ZIN}

Tribe Dryocoetini Lindemann, 1877

Dryocoetes autographus (Ratzeburg, 1837) {ZIN}
Dryocoetes hectographus Reitter, 1913 {ZIN}
Lymantor aceris aceris (Lindemann, 1875) {ZIN}
Lymantor coryli (Perris, 1855) {ZIN}

Tribe Hylastini LeConte, 1876

Hylastes angustatus (Herbst, 1793)
Hylastes ater (Paykull, 1800) {ZIN}
Hylastes brunneus (Erichson, 1836) {ZIN}
Hylastes cunicularius Erichson, 1836 {ZIN}
Hylastes opacus Erichson, 1836
Hylurgops palliatus (Gyllenhal, 1813) {ZIN}

Tribe Hylurgini Gistel, 1848

Dendroctonus micans (Kugelann, 1794)
Hylurgus ligniperda (Fabricius, 1787) {ZIN}
Tomicus minor (Hartig, 1834)
Tomicus piniperda (Linnaeus, 1758) {ZIN}

Tribe Ipini Bedel, 1888

Ips acuminatus (Gyllenhal, 1827) {ZIN}
Ips duplicatus (C.R. Sahlberg, 1836)
Ips sexdentatus (Boerner, 1776) {ZIN}
Ips typographus (Linnaeus, 1758) {ZIN}
Orthotomicus laricis (Fabricius, 1792) {ZIN}
Orthotomicus longicollis (Gyllenhal, 1827)
Orthotomicus proximus (Eichhoff, 1868)
Orthotomicus starki Spessivtsev, 1926 {ZIN}
Orthotomicus suturalis (Gyllenhal, 1827)
Pityogenes bidentatus (Herbst, 1783)
Pityogenes chalcographus (Linnaeus, 1760) {ZIN}
Pityogenes irkutensis irkutensis Eggers, 1910
Pityogenes quadridens (Hartig, 1834)

Tribe Polygraphini Chapuis, 1869

Carphoborus rossicus Semenov, 1902 {ZIN}
Polygraphus poligraphus (Linnaeus, 1758) {ZIN}
Polygraphus subopacus C.G. Thomson, 1871 {ZIN}

Tribe Scolytini Latreille, 1804

Scolytus intricatus (Ratzeburg, 1837) {ZIN}
Scolytus laevis Chapuis, 1869 {ZIN}

Scolytus multistriatus (Marsham, 1802) {ZIN}
Scolytus ratzeburgii E.W. Janson, 1856 {ZIN}
Scolytus rugulosus (P.W.J. Müller, 1818) {ZIN}
Scolytus scolytus (Fabricius, 1775)

Tribe Xyleborini LeConte, 1876

Anisandrus dispar (Fabricius, 1792) {ZIN}
Xyleborinus saxesenii (Ratzeburg, 1837) {ZIN}
Xyleborus cryptographus (Ratzeburg, 1837) {ZIN}

Tribe Xyloterini LeConte, 1876

Trypodendron laeve Eggers, 1939 {ZIN}
Trypodendron lineatum (G.-A. Olivier, 1800) {ZIN}
Trypodendron signatum (Fabricius, 1792) {ZIN}

Notes

This checklist includes data on 2145 species from 88 families (Table 1); the Ptiliidae and Clambidae collected in the Mordovia Nature Reserve remain to be identified. The occurrences of Spercheidae, Psephenidae, Drilidae, and Stenotrachelidae in the reserve is possible but not yet confirmed.

The most diverse families (Carabidae, Staphylinidae, Cerambycidae, Chrysomelidae and Curculionidae) make up a total of 57.6% of the Coleoptera diversity of the Reserve. Forty-seven species from 20 families are listed for the first time for the Mordovia State Nature Reserve and the Republic of Mordovia. Detailed information about them will be published separately.

Discussion

The Mordovia State Nature Reserve is a unique refugium of forest that has been little affected by human activity for many centuries (Ruchin and Khapugin 2019). This has preserved very rare species that are known from single records in the center of the European part of Russia: *Ilybius wasastjernae* (Dytiscidae), *Aleochara falcata*, *Alevonota egregia*, *Atheta sequanica*, *Bledius fergussoni*, *Gyrophaena nitidula* and *Sepedophilus binotatus* (Staphylinidae), *Agrilus kaluganus* (Buprestidae), *Isorhipis melasoides* (Eucnemidae), *Denticollis rubens* and *Ampedus nigerrimus* (Elateridae), *Erotides nasutus* and *Lopheros lineatus* (Lycidae), *Allonyx quadrimaculatus* (Cleridae), *Ipidia sexguttata* (Nitidulidae), *Cucujus cinnaberinus* (Cucujidae), *Clemmus troglodytes* (Anamorphidae),

Table 1. Coleoptera species richness by family and number of adventive species in Mordovia State Nature Reserve, Russia.

Taxon names	No. of species	Adventive species
Myxophaga		
Sphaeriusidae	1	
Adephaga		
Gyrinidae	5	
Carabidae	231	
Haliplidae	4	
Noteridae	2	
Dytiscidae	71	
Polyphaga		
Hydrophiloidea		
Helophoridae	1	
Georissidae	1	
Hydrochidae	4	
Hydrophilidae	38	1
Sphaeritidae	1	
Histeridae	38	
Staphylinoidea		
Hydraenidae	1	
Leiodidae	18	
Silphidae	16	
Staphylinidae	436	3
Scydmaenidae	12	
Scarabaeoidea		
Geotrupidae	3	
Trogidae	3	
Lucanidae	4	
Scarabaeidae	60	
Scirtoidea		
Scirtidae	6	
Eucinetidae	1	
Dascilloidea		
Dascillidae	1	
Buprestoidea		
Buprestidae	27	
Byrrhoidea		
Byrrhidae	7	
Elmidae	1	
Dryopidae	2	
Limnichidae	1	
Heteroceridae	5	
Elateroidea		
Eucnemidae	13	
Throscidae	1	
Elateridae	59	
Lycidae	8	
Lampyridae	1	
Cantharidae	26	
Bostrichoidea		
Dermestidae	15	4
Bostrichidae	2	
Ptinidae	19	2
Lymexyloidea		
Lymexylidae	2	

Taxon names	No. of species	Adventive species
Cleroidea		
Biphyllidae	2	
Byturidae	2	
Trogossitidae	4	
Cleridae	6	1
Melyridae	15	
Cucujoidea		
Sphindidae	2	
Erotylidae	10	
Monotomidae	11	
Kateretidae	7	
Nitidulidae	33	4
Cryptophagidae	14	2
Silvanidae	6	
Cucujidae	4	
Phalacridae	4	
Laemophloeidae	6	
Coccinelloidea		
Bothrideridae	1	
Cerylonidae	5	
Latridiidae	20	2
Corylophidae	4	
Anamorphidae	1	
Endomychidae	5	
Coccinellidae	43	1
Tenebrionoidea		
Mycetophagidae	11	1
Ciidae	11	
Tetratomidae	3	
Melandryidae	16	
Ripiphoridae	2	
Zopheridae	4	
Mordellidae	23	
Tenebrionidae	37	3
Oedemeridae	7	
Meloidae	10	
Boridae	1	
Pythidae	1	
Pyrochroidae	2	
Salpingidae	5	
Anthicidae	5	1
Aderidae	4	
Scraptiidae	5	
Chrysomeloidea		
Cerambycidae	98	1
Megalopodidae	2	
Orsodacnidae	1	
Chrysomelidae	188	2
Curculionoidea		
Nemonychidae	1	
Anthribidae	8	
Attelabidae	14	1
Brentidae	52	1
Curculionidae	282	1
Total	**2145**	**31**

Phryganophilus pseudauritus (Melandryidae), *Diaclina fagi* (Tenebrionidae), *Leptura aurulenta*, *Phymatodes abietinus* and *Purpuricenus globulicollis* (Cerambycidae), *Syneta betulae* (Chrysomelidae), *Mesauletobius pubescens* (Rhynchitidae), *Ceutorhynchus pseudoarator*, *Euryommatus mariae* and *Anthonomus ulmi* (Curculionidae).

The Mordovia State Nature Reserve is important for the conservation of rare Coleoptera species. It is home to eight species listed in the Red book of the Russian Federation (Ruchin and Kurmaeva 2010, Ruchin and Egorov 2017b, Ruchin and Khapugin 2019, Egorov and Ruchin 2020): *Dytiscus latissimus*, *Trypocopris vernalis*, *Ceruchus chrysomelinus*, *Osmoderma barnabita*, *Protaetia speciosissima*, *Protaetia fieberi*, *Elater ferrugineus* and *Melandrya barbata*. *Trypocopris vernalis*, *Elater ferrugineus* and *Melandrya barbata* are only found only in the territory of the Mordovia State Nature Reserve within the Republic of Mordovia.

The Coleoptera fauna contains 31 adventive species as currently known (1.44% of beetle species diversity) from 17 families (Table 1). The largest number of adventive species has been recorded in the families Staphylinidae (4 species), Dermestidae, Nitidulidae and Tenebrionidae (3 species each). The small proportion of adventive species in the fauna possibly indicates the stability of the ecosystems of the Mordovia State Nature Reserve and the weak anthropogenic impact on them.

The obtained results on the diversity of beetles in the Mordovia State Nature Reserve can be compared with similar data from other protected areas with well-studied Coleoptera both in Russia and in other countries (see Table 2).

Analysis of the data on the degree of study of the beetle fauna in natural protected areas of the European part of Russia allows us to conclude that the beetle fauna of the Mordovian State Nature Reserve is the most studied.

The study of the beetle fauna of the Mordovia State Nature Reserve needs to be continued. The families Helophoridae, Hydraenidae, Leiodidae, Elmidae, Throscidae, Cryptophagidae, Phalacridae, and Scraptiidae have not been sufficiently studied and require particular attention.

Table 2. Comparative Coleoptera species richness in some protected areas of Russia and other countries.

Name of the protected area	Country	Number of species	Area, km²	Source of information
Mordovia State Nature Reserve	Russia	2145	321	Our data
Lasovsky Nature Reserve	Russia	2183	1210	Storozhenko et al. 2009
Oka State Nature Biosphere Reserve	Russia	1377	558	Priklonsky et al. 2001, Nikolaeva et al. 2015
Meshchera National Park	Russia	1390	1189	Semenov 2009
National Park "Smolensk Lakeland"	Russia	1526	1462	Semenov et al. 2011
National Park "Belovezhskaya pushcha"	Belarus	2101	870	Tsinkevich 2017
Białowieża National Park	Poland	2973	630	Plewa et al. 2020
Gauja National Park	Latvia	1583	917	Kalniņš et al. 2007
New Forest National Park	England	2600	571	https://www.newforestnpa.gov.uk/discover/wildlife/beetles/
Great Smoky Mountains National Park	USA	2522	2108	Carlton 2013

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A new species of *Nephus* (*Nephus*) (Coleoptera, Coccinellidae) described from Reunion Island

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Abstract

We report here a new species belonging to *Nephus* (*Nephus*) Mulsant. *Nephus* (*Nephus*) *apolonia* **sp. nov.** was collected in the Reunion Island (Mascarene Archipelago, Indian Ocean). We describe this new species and redescribe and illustrate three other *Nephus* species already known from Reunion: *Nephus* (*Nephus*) *oblongosignatus* Mulsant, 1850, *Nephus* (*Geminosipho*) *reunioni* (Fürsch, 1974) and *Nephus* (*Nephus*) *voeltzkowi* Weise, 1910. Furthermore, we present a phylogenetic tree for these four species and calculate the genetic distances between them, using high-throughput DNA sequencing of the mitochondrial genome. The similar external morphology of *N. apolonia* **sp. nov.** and *N. voeltzkowi* very probably explains why individuals from the first species have been mistakenly identified as the latter and were not recognized as different until now. Other than external and genitalia traits, the present study provides molecular evidence confirming these are indeed two different species.

Keywords

Coccinelloidea, ladybird beetle, molecular data, predator, *Scymnus*, systematics

Introduction

The Coccinellidae is a diversified family composed of some 6000 species, and the largest of the superfamily Coccinelloidea (Robertson et al. 2015). Seago et al. (2011) formally recognised two subfamilies within the Coccinellidae, Microweisinae and Coccinellinae *sensu* Ślipiński (2007). This last subfamily includes most of the Coccinellidae tribes, among them the Coccidulini *sensu* Seago et al. (2011), to which *Nephus* belongs. *Nephus* was first considered by Mulsant (1846) as a subgenus of *Scymnus* but Mader (1924) and then eventually Pope (1957) treated it as a valid genus.

The following characters distinguish *Nephus*: antennae with nine or pseudo-11 antenomeres; prosternal process sub-quadrangular, as wide as long, with a shallow lateral depression, without carina; legs with tarsi trimerous; abdomen with six ventrites, with incomplete postcoxal line, recurved and not reaching posterior margin of first ventrite.

According to Gordon (1976, 1985), *Nephus* has five subgenera: *Depressoscymnus* Gordon, *Nephus* Mulsant, *Scymnobius* Casey, *Sidis* Mulsant, and *Turboscymnus* Gordon; some of them have been considered as valid genera (Gordon and González 2002, Giorgi and González 2014). Fürsch (1987) described the subgenus *Geminosipho* and indicated the following species, *Nephus* (*Geminosipho*) *bielawskii* Fürsch, *N.* (*Geminosipho*) *fenestratus* (Sahlberg), *N.* (*Geminosipho*) *koltzei* (Weise). The same author (1987, 2007) considered eight *Nephus* subgenera: *Bipunctatus* Fürsch, 1987, *Depressoscymnus* Gordon, 1976, *Geminosipho* Fürsch, 1987, *Nephus* Mulsant, 1846, *Parascymnus* Chapin, 1965, *Scymnobius* Casey, 1899, *Sidis* Mulsant, 1850 and *Turboscymnus* Gordon, 1976.

Fürsch (2007), in his Catalogue of the African species of *Nephus*, reports 80 species belonging to four *Nephus* subgenera: *Nephus*, *Sidis*, *Geminosipho*, and *Bipunctatus*. Concerning specifically Reunion Island, Chazeau et al. (1974) mentioned three species, at that time considering *Nephus* as a subgenus of *Scymnus*: *Scymnus* (*Nephus*) *voeltzkowi* Weise, 1910, *Scymnus* (*Nephus*) *oblongosignatus* Mulsant, 1850 and *Scymnus* (*Nephus*) *reunioni* Fürsch, 1974. Poussereau et al. (2018) also mention these three species.

In this contribution, we describe a fourth *Nephus* (*Nephus*) species for Reunion Island, and redescribe the three already known species based on the study of a number of specimens of each species and using molecular data.

Material and methods

The specimens examined here were provided by the first author from a laboratory rearing (Laboratoire Evolution & Diversité Biologique, Université Toulouse III) initiated from field collected material: *Nephus oblongosignatus* and *N. voeltzkowi* were collected in Reunion Island in 2011, *N. apolonia* sp. nov. was collected in Reunion Island in 2013, and *N. reunioni* was collected in 2007 in Portugal, where the species had been introduced for biological control in the 1980's (Magro et al. 1999). The first author also observed specimens collected from 2006 to 2012 by the Insectarium of Reunion to investigate possible misidentifications of *N. apolonia* sp. nov. with *N. voeltzkowi* and

to gather additional information on the geographical distribution of the new species on Reunion Island.

Photographs of the external morphology as well as male and female genitalia were taken using a Leica DMC 2900 Digital Camera attached to Leica M205C stereomicroscope using Leica Application Suite. Furthermore, specimens were examined with a JEOL JSM-6360LV scanning electron microscope in the Electronic Microscopy Center of Universidade Federal do Paraná. The length and width measurements of the species represent the average of the examined specimens.

The terminology used in the descriptions follows Ślipiński (2007). Labels of the type specimens are arranged in sequence from top to bottom, where the data for each label are within double quotes (“”), a slash (/) separates the rows, and information between brackets ([]) provides additional details written on the labels.

Examined material is deposited in the following collections: Coleção Entomológica Pe. J.S. Moure, Universidade Federal do Paraná, Curitiba, Paraná, Brazil (**DZUP**) and in Muséum National d’Histoire Naturelle, Paris, France (**MNHN**).

We used the mitochondrial genome of *Nephus* species previously sequenced by Magro et al. (2020): *N. reunioni*, *N. includens*, *N. voeltzkowi* and *N. apolonia* sp. nov. (voucher number: NeSpa1), together with the mitogenome of *N. oblongosignatus* sequenced in the present study (accession numbers: see Table 1) following the same protocol (see details in Magro et al. 2020).

Molecular characterization and distance analyses were conducted on the cytochrome c oxidase I (COI) gene using MEGA v.7 (Kumar et al. 2016). Pairwise distances were estimated between specimens using the Kimura-2-parameters model (Kimura 1980). We reconstructed the phylogenetic relationships between the *Nephus* species based on the mitogenome sequences (all protein coding and tRNA genes, but we deleted the control region because of the high divergence between species and the presence of repeated sequences, leading to low quality alignments in this region), using as outgroup the available sequence of *Cryptolaemus montrouzieri* which belongs to the same tribe as *Nephus* (i.e., Coccidulini *sensu* Seago et al. 2011) together with other Coccinellidae species (accession numbers: see Table 1). Sequences were aligned using MAFFT default parameters (Katoh and Standley 2013). We inferred maximum likelihood trees and bootstrapping with RAxML 8.2.10 (Stamatakis 2014) under the best-fitting model of sequence evolution for the dataset (GTR+G model), selected using the Akaike information criterion (AIC) using jModelTest 2 (Darriba et al. 2012).

Results and discussion

The species of *Nephus* present the following characteristics: antennae with nine or pseudo-11 antenomeres (Fig. 1A–D); prosternal process sub-quadrangular, as wide as long, with a shallow lateral depression, without carina (Fig. 1E–H); legs with tarsi trimerous (Fig. I–L); abdomen with six ventrites in males and females, with incomplete postcoxal line, recurved and not reaching posterior margin of the first ventrite (Fig. 1M–P).

Table 1. Genbank accession numbers for the mitogenome sequences used in the analysis.

Species	Genbank accession
Nephus apolonia sp. nov.	MN164644
Nephus reunioni	MN164643
Nephus includens	MN164642
Nephus voeltzkowi	MN164645
Nephus oblongosignatus	MT445723
Propylea japonica	KM244660
Harmonia axyridis	KR108208
Cryptolaemus montrouzieri	KT874575
Henosepilachna pusillanima	KJ131489

Key to species of *Nephus* from Reunion Island

1 Each elytron black with one spot **2**

1' Each elytron black with two spots (Fig. 3) ..... ***Nephus* (*Geminosipho*) *reunioni* (Fürsch, 1974)**

2 Body rounded, oblong; each elytron with one yellowish oblong spot (Fig. 2) ..... ***Nephus* (*Nephus*) *oblongosignatus* Mulsant, 1850**

2' Body elongated, each elytron with one yellowish elongated spot **3**

3 Each elytron black with one big oval yellowish elongated spot, reaching middle of elytron; spermatheca with sharp base and truncated apex (Fig. 4)..... ***Nephus* (*Nephus*) *voeltzkowi* Weise, 1910**

3' Each elytron black with one small irregular yellowish spot, not reaching middle of elytron; spermatheca with sharp base and truncated apex (Fig. 5)..... ..... ***Nephus* (*Nephus*) *apolonia* Magro & Almeida, sp. nov.**

Descriptions of species

Nephus (*Nephus*) *oblongosignatus* Mulsant, 1850

Figs 1, 2

Scymnus oblongosignatus Mulsant, 1850: 960 (original description).
Nephus oblongosignatus: Sicard 1909: 145–146; Weise 1910: 513.
Nephus grinerae Sicard, 1909: 145 (original description); Korschefsky 1931: 152 (synonymy).
Scymnus (*Nephus*) *oblongosignatus*: Korschefsky 1931: 152; Chazeau et al. 1974: 273 (systematics).
Nephus (*Nephus*) *oblongosignatus*: Poussereau et al. 2018: 130 (systematics).

Diagnosis. *Nephus oblongosignatus* is similar to *N. voeltzkowi* and *N. apolonia* sp. nov. but differs in the body shape, size and shape of the spots and the pattern of genitalia.

Description. Male. Length 1.77 mm, width 1.28 mm. Body oval, oblong, with short fine whitish pubescence. Integument of pronotum, scutellar shield and elytra black (Fig. 2A). Elytra with one yellowish oblong spot on each elytron. Pronotum black, antero-lateral border dark brown (Fig. 2A, D). Head dark brown, antennae and

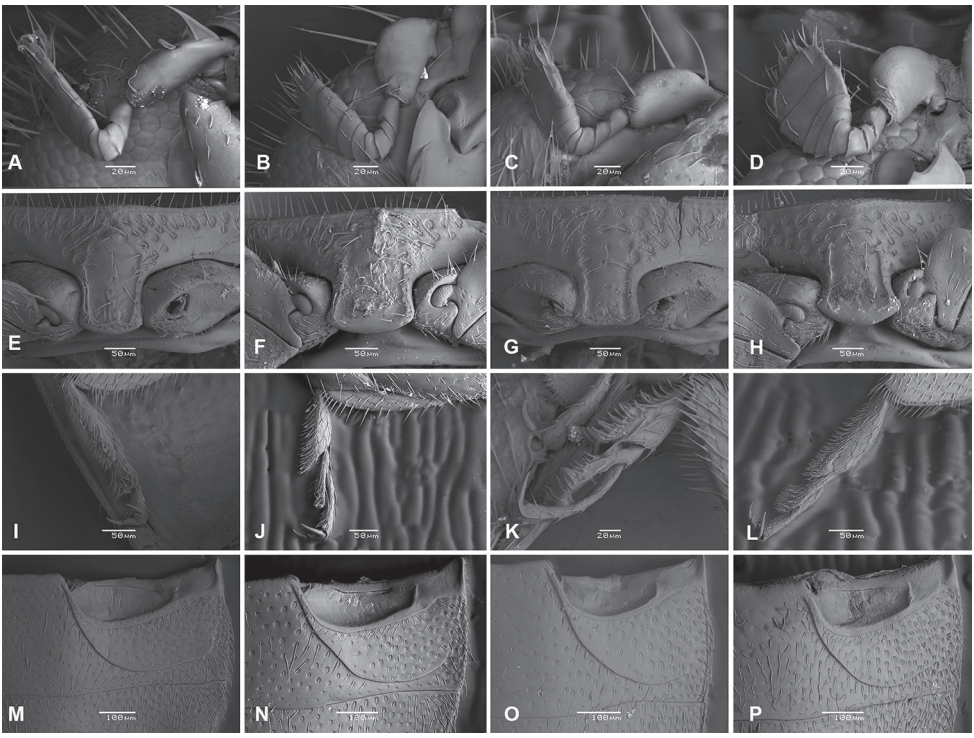

Figure 1. Scanning electron microscopy **A–D** antennae **E–H** prosternal process **I–L** tarsi **M–P** abdominal postcoxal line **A, E, I, M** *Nephus* (*Nephus*) *oblongosignatus* Mulsant, 1850 **B, F, J, N** *Nephus* (*Geminosipho*) *reunioni* (Fürsch, 1974) **C, G, K, O** *Nephus* (*Nephus*) *voeltzkowi* Weise, 1910 **D, H, L, P** *Nephus apolonia* Magro & Almeida, sp. nov.

mouthparts yellowish (Fig. 2B, D). Meso- and metaventrite light brown. Epipleuron light brown, without excavations to receive femora. Legs with coxae and femora dark brown, tibiae and tarsi light brown (Fig. 2B, C). Abdomen light brown; postcoxal line incomplete (Figs 1M, 2E) and last ventrite emarginated (Fig. 2F).

Genitalia with tegmen, penis guide, phallobase and parameres symmetrical. Spicule long (Fig. 2G). Penis guide shorter than parameres, sharp at apex (Fig. 2H, J). Parameres articulated with phallobase, distant from each other, strongly widened at apex, with long bristles along parameres (Fig. 2H, I). Penis sclerotized, J-shaped, with sharp apex, penis capsule T-shaped and elongated (Fig. 2J, K).

Female. Length 1.79 mm, width 1.34 mm. Similar to male. Genitalia with coxites longer than wide, subtriangular, 3.0× longer than wide; stylus mamiliform with long bristles (Fig. 2M). Spermatheca with thick walls, slightly arched, not very striated, and marked by one strong constriction in the middle; with sharp base and truncated apex (Fig. 2L).

Material examined. Reunion Island: First generation from a laboratory rearing (Laboratoire Evolution & Diversité Biologique, Université Toulouse III) initiated from field material collected in November 2011 in Manapany-les-Bains, 19 specimens [DZUP].

Figure 2. *Nephus* (*Nephus*) *oblongosignatus* Mulsant, 1850 **A** dorsal view **B** ventral view **C** lateral view **D** frontal view **E, F** abdomen **G–K** male genitalia: **G** spicula **H, I** tegmen (dorsal and lateral view) **J, K** penis **L, M** female genitalia: **L** spermatheca **M** coxites.

Nephus (*Geminosipho*) *reunioni* (Fürsch, 1974)

Figs 1, 3

Scymnus (*Nephus*) *reunioni* Fürsch, 1974: 275 (original description).
Nephus (*Sidis*) *reunioni* Fürsch 2007: 5 (systematics).
Nephus (*Geminosipho*) *reunioni*: Poussereau et al. 2018: 132 (systematics).

Diagnosis. *Nephus reunioni* differs from the other species in the number, shape and size of the spots and the pattern of genitalia.

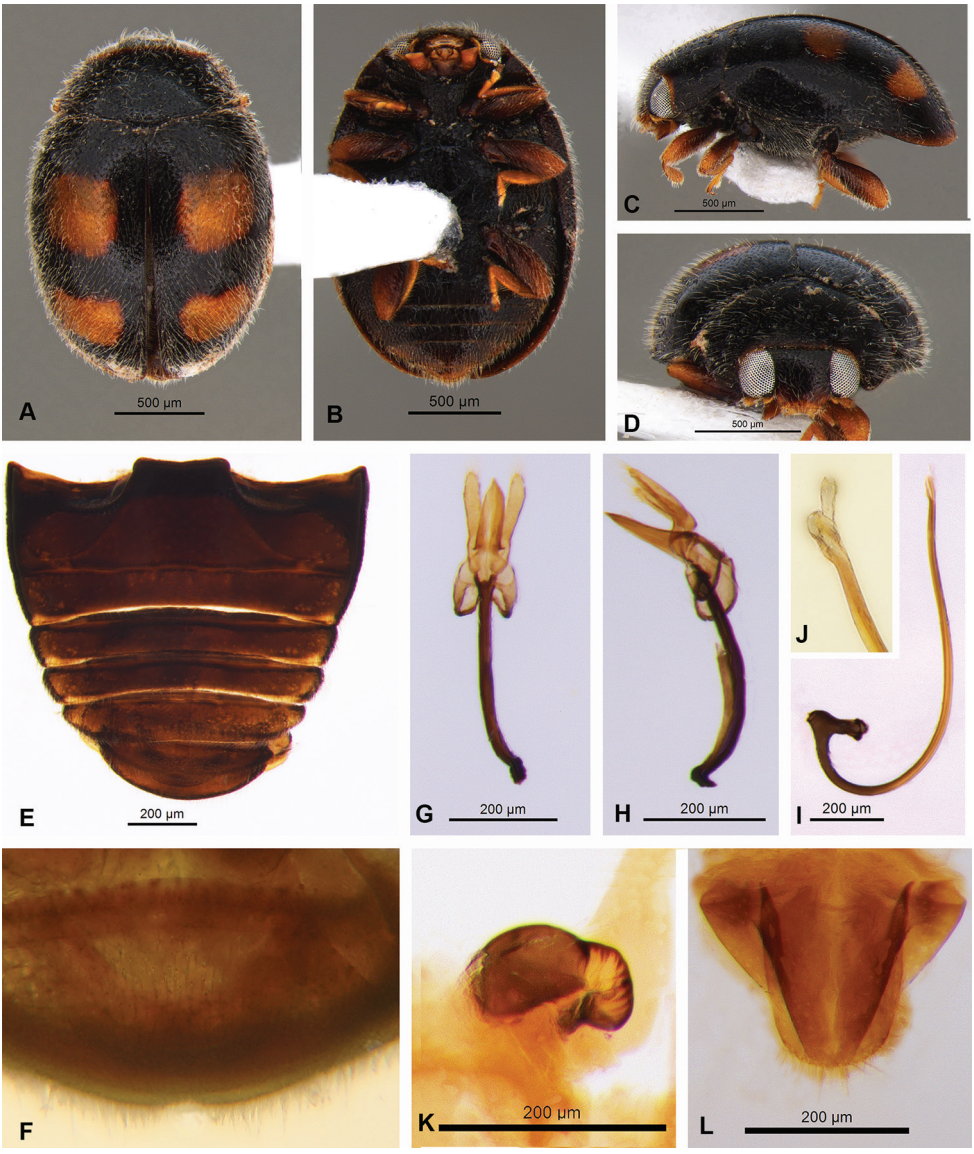

Figure 3. *Nephus* (*Geminosipho*) *reunioni* (Fürsch, 1974) **A** dorsal view **B** ventral view **C** lateral view **D** frontal view **E, F** abdomen **G–J** male genitalia: tegmen (dorsal and lateral view): **I, J** penis **K, L** female genitalia: **K** spermatheca **L** coxites.

Description. Male. Length 1.7 mm, width 1.28 mm. Body oval, with short fine whitish pubescence. Integument of pronotum, scutellar shield and elytra black (Fig. 3A). Elytra with two yellowish transverse spots on each elytron, arranged in a row; elytra apex yellowish (Fig. 3A). Pronotum black, anterior border dark brown (Fig. 3A, D). Head dark brown, antennae and mouthparts yellowish (Fig. 3B). Meso- and metaventrite dark brown. Epipleuron black, without excavations to receive femora. Legs with coxae

dark brown and femora, tibiae and tarsi yellowish (Fig. 1J). Abdomen dark brown; postcoxal line incomplete (Fig. 1N) and last ventrite emarginated (Fig. 3F).

Genitalia with tegmen, penis guide, phallobase and parameres symmetrical. Penis guide narrow, longer than parameres, sharp at apex. Parameres articulated with phallobase, distant from each other, strongly widened at apex, with long bristles along parameres (Fig. 3G, H). Penis sclerotized, J-shaped, with projection at apex, penis capsule T-shaped and elongated (Fig. 3J, I).

Female. Length 1.75 mm, width 1.30 mm. Similar to male. Genitalia with coxites longer than wide, subtriangular, 3.0× longer than wide; stylus mamiliform with short bristles (Fig. 3L). Spermatheca short, C- shaped, without ramus and nodulus, with sharp base and truncated apex (Fig. 3K).

Material examined. Portugal: Specimens from a laboratory rearing (Laboratoire Evolution & Diversité Biologique, Université Toulouse III) initiated from field material collected in 2007 in Cascais, 10 specimens [DZUP].

Remarks. It should be noted that Fürsch (2007), in his remarks about *N. reunioni*, mentions "The species is referred from various authors from South Africa (det. Fürsch), and even from Israel and Portugal. These specimens are breeded for pest control, but they seem to be misidentifications and in fact *N. derroni*." In what concerns the Portugal population, we do not agree with Fürsch's statement. Indeed, the specimens collected in Portugal and analyzed in the present study correspond to the original *N. reunioni* description by Fürsch presented in Chazeau et al. (1974). Raimundo (1992), who first described *N. reunioni* for Portugal, also illustrated the external morphology and genitalia corresponding to the original description by Fürsch in Chazeau et al. (1974). In both cases, the observations show that the specimens from the Portuguese population are distinct from *N. derroni*, first described from S. Tomé and presented in Fürsch (1974).

Nephus (*Nephus*) *voeltzkowi* Weise, 1910

Figs 1, 4

Nephus (*Nephus*) *voeltzkowi* Weise, 1910: 512 (original description); Fürsch 2007: 6 (systematics).
Nephus seychellensis Sicard, 1912: 362 (original description); Chazeau et al. 1974: 272 (synonymy).
Scymnus (*Nephus*) *voeltzkowi*: Korschefsky 1931: 153 (catalog); Fürsch 1966: 181 (systematics).
Nephus (*Nephus*) *voeltzkowi*: Poussereau et al. 2018: 128 (systematics)

Diagnosis. *Nephus voeltzkowi* resembles *N. oblongosignatus* and *N. apolonia* in the color of the integument and spots but differs in the shape and size of the spots and the female genitalia.

Description. Female. Length 1.65 mm, width 1.10 mm. Body oval, with short fine whitish pubescence. Integument of pronotum, scutellar shield and elytra

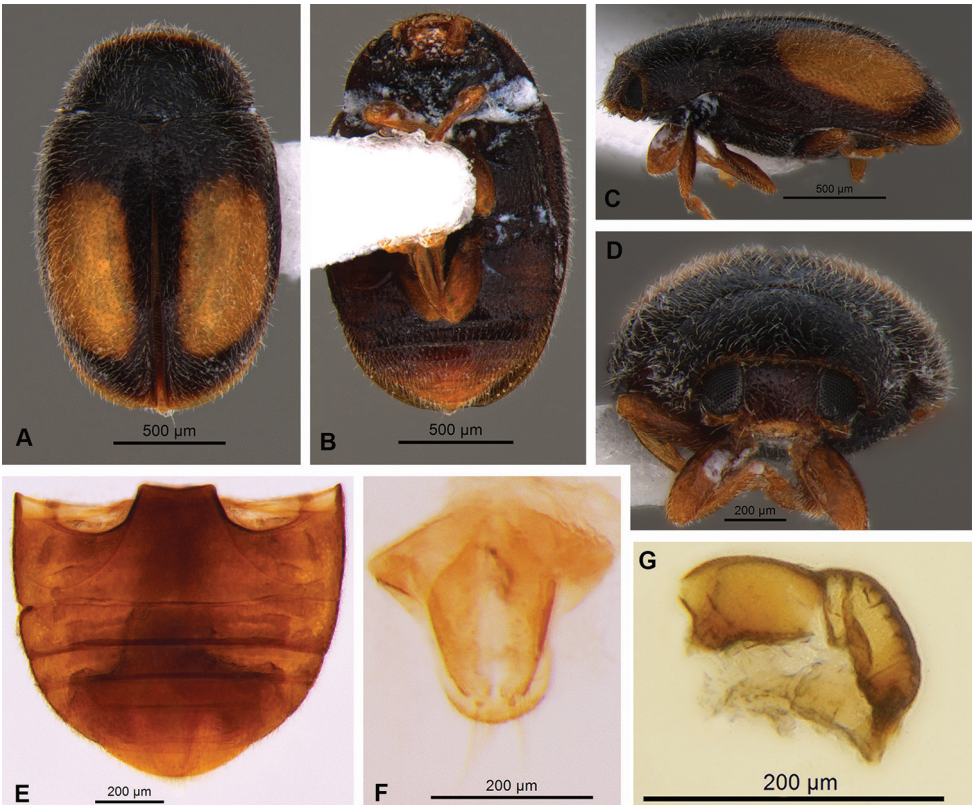

Figure 4. *Nephus* (*Nephus*) *voeltzkowi* Weise, 1910 **A** dorsal view **B** ventral view **C** lateral view **D** frontal view **E** abdomen **F, G** female genitalia: **F** coxites **G** spermatheca.

black. Elytra with one yellowish big oval spot on each elytron; elytra apex yellowish (Fig. 4A, C). Pronotum black, anterior border dark brown (Fig. 4A, D). Head, antennae and mouthparts light brown (Fig. 4B). Meso- and metaventrite dark brown. Epipleuron dark brown, without excavations to receive femora. Legs with coxae dark brown and femora, tibiae and tarsi light brown (Fig. 4B, D). Abdomen dark brown with two last ventrites yellowish; postcoxal line incomplete (Fig. 1O).

Genitalia. Coxites longer than wide, subtriangular, 3.0 x longer than wide; stylus mamiliform with long bristles (Fig. 4F). Spermatheca heavily sclerotized, slightly arched, striated, and marked by two strong constrictions in the middle; with sharp base and truncated apex (Fig. 4G).

Male genitalia according to Chazeau et al. (1974, plate II, figs 6, 7, 9, 10): tegmen, penis guide, phallobase and parameres symmetrical. Penis guide slightly longer than parameres. Parameres slender, articulated with phallobase, distant from each other, with bristles at apex. Penis sclerotized, J-shaped, with membranous apex, penis capsule T-shaped.

Material examined. Reunion Island: Specimens from a laboratory rearing (Laboratoire Evolution & Diversité Biologique, Université Toulouse III) initiated from field material collected in November 2011 in Manapany-les-Bains, 14 specimens [DZUP].

Remarks. It should be noted that only female specimens of *N. voeltzkowi* were observed here. Furthermore, although Magro et al. (2020) performed a large sampling campaign on Reunion, they never found *N. voeltzkowi* males, and eventually demonstrated that Reunion females are parthenogenetic. As indicated by Magro et al. (2020), the presence of *N. voeltzkowi* was reported before by Chazeau et al. (1974) in their fauna of ladybirds from Reunion, but the sex of the specimens was not mentioned: although Chazeau et al. (1974) presented an illustration of the genitalia of a *N. voeltzkowi* male, the possibility that the drawing was based on a Madagascar specimen was not discounted (Chazeau pers. com.). In the absence of the original material, we cannot confirm this information.

Nephus (*Nephus*) *apolonia* Magro & Almeida, sp. nov.

http://zoobank.org/9CCCB544-1EE3-4F28-AD13-4359F999AE33
Figs 1, 5

Diagnosis. *Nephus apolonia* sp. nov. is similar to *N. voeltzkowi* and *N. oblongosignatus* but differs by the size and shape of the spots and the pattern of genitalia.

Description. Male. Length 1.69 mm, width 1.2 mm. Body oval, oblong, with short fine whitish pubescence. Integument of pronotum, scutellar shield and elytra black. Elytra with one yellowish longitudinal spot on each elytron (Fig. 5A, C). Pronotum black, antero-lateral border dark brown (Fig. 5A, D). Head dark brown, antennae and mouthparts yellowish (Fig. 5B, D). Meso- and metaventrite light brown. Epipleuron light brown, without excavations to receive femora. Legs with coxae and femora dark brown, tibiae and tarsi light brown (Figs 1L, 5B, D). Abdomen light brown (Fig. 5E); postcoxal line incomplete (Fig. 1P), and last ventrite emarginate (Fig. 5F).

Genitalia with tegmen, penis guide, phallobase and parameres symmetrical. Penis guide shorter than parameres, sharp at apex (Fig. 5I, J). Parameres articulated with phallobase, distant from each other, strongly widened at apex, with short bristles along parameres (Fig. 5I, J). Penis sclerotized, J-shaped, with sharp apex, penis capsule T-shaped and elongated (Fig. 5G, H).

Female. Length 1.88 mm, width 1.30 mm. Similar to male. Genitalia with coxites longer than wide, subtriangular, 3.0× longer than wide; stylus mamiliform with long bristles (Fig. 5L). Spermatheca heavily sclerotized, slightly arched, not very striated, and marked by one strong constriction in the middle, with sharp base and rounded apex (Fig. 5K).

Etymology. This species is named after an early name of Reunion Island, mentioned as "Santa Apolonia" on the Portolan charts (nautical charts) from the XVIth century (GENUNG, 2017).

Type locality. Reunion Island: from a laboratory rearing (Laboratoire Evolution & Diversité Biologique, Université Toulouse III) initiated from field material collected in December 2013 in Manapany-les-Bains and Étang-Salé.

Type material. ***Holotype*** male, pinned, with genitalia in a separate microvial. Original label: "Reunion Island, 1 specimen [MNHN]"; "HOLOTYPE/

Figure 5. *Nephus* (*Nephus*) *apolonia* Magro & Almeida, sp. nov. **A** dorsal view **B** ventral view **C** lateral view **D** frontal view **E, F** abdomen **G–J** male genitalia: **G, H** penis **I, J** tegmen (dorsal and lateral view) **K, L** female genitalia: **K** spermatheca **L** coxites.

Nephus apolonia Magro and Almeida" [red label]. ***Paratypes.*** The following specimens are designated as paratypes with labels: "same data as for holotype". "PARATYPE/ *Nephus apolonia* Magro and Almeida" [yellow label]: "Reunion Island, 2 specimens [MNHN, DZUP]; "Reunion Island, 1 specimen [MNHN]; "Reunion Island, 1 specimen [DZUP]; "Reunion Island, 1 specimen [MNHN]; "Reunion Island, 1 specimen [DZUP]; "Reunion Island, 2 specimens [DZUP, MNHN]; "Reunion Island, 1 specimen [DZUP].

Geographical distribution. Reunion Island: L'Étang-Salé, Le Trou d'eau (21°16'54.2"S, 55°21'39.7"E); Saint-Denis, Saint-Bernard (20°52'58.36"S,

55°23'50.19"E); Saint-Louis, Etang du Gol (21°17'20.9"S, 55°23'16.1"E); La Possession, Ravine à Malheur (20°54'03.5"S, 55°22'32.1"E); Saint-Pierre, CIRAD (21°19'13.8"S, 55°29'6"E); L'Étang-Salé, ARDA (21°17'05.6"S, 55°22'38.1"E) and Saint-Joseph, Langevin (21°22'53.4"S, 55°38'48.4"E).

Remarks. *Nephus apolonia* sp. nov. has apparently been misidentified as *N. voeltzkowi* until now. We verified that this was the case for specimens captured by the Insectarium de La Réunion. Poussereau et al. (2018) included three species for Reunion Island. In that work, *N. voeltzkowi* is reported with large variation and distribution. It could be possible that the specimens identified by Poussereau et al. (2018) as *N. voeltzkowi* included the *Nephus apolonia* sp. nov. described here.

Molecular analysis. The mitochondrial genome of one specimen of *Nephus apolonia* is deposited in Genbank under accession number MN164644. Genetic distances based on the COI sequences between *N. apolonia* and other *Nephus* species confirm that *N. apolonia* is different from the other species, as all distances are within the same range (i.e., 0.13–0.17) (Table 2). In the phylogenetic tree reconstructed from 14,867 pb of aligned mitochondrial genomes (Fig. 6), most nodes, including *N. apolonia*, were supported by high bootstrap values.

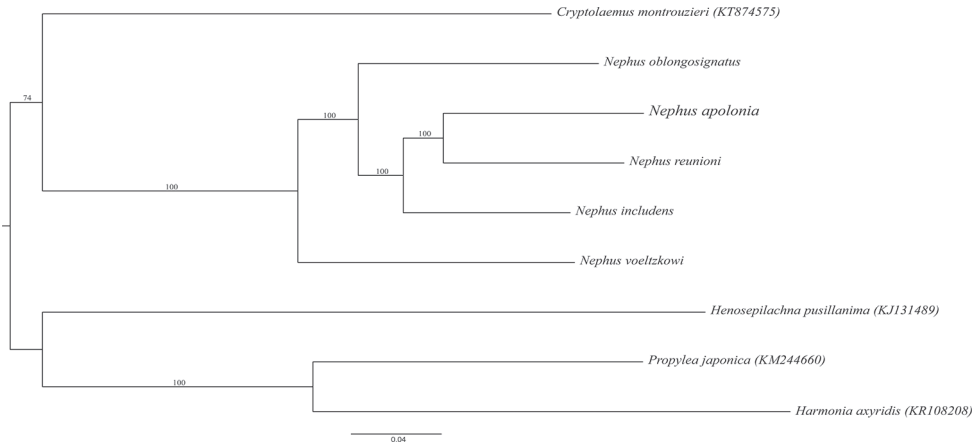

Figure 6. Maximum likelihood phylogeny of *Nephus* (*Nephus*) *apolonia* Magro & Almeida, sp. nov. and four related species based on the mitochondrial genome (without the control region) reconstructed through 1000 non-parametric bootstrap replicates. The scale bar indicates 0.04 substitutions per site. Numbers on major nodes represent Maximum Likelihood bootstrap support.

Table 2. Pairwise Kimura-2-parameter distances for the mitochondrial COI gene for the *Nephus* species.

		1	2	3	4
1	*Nephus apolonia*				
2	*N. reunioni*	0.131			
3	*N. includens*	0.133	0.126		
4	*N. voeltzkowi*	0.174	0.170	0.160	
5	*N. oblongosignatus*	0.155	0.150	0.142	0.172

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RESEARCH ARTICLE

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On the taxonomy of the genus *Sacada* Walker, 1862 from India, with descriptions of a new genus and two new species (Pyralinae, Pyralidae, Lepidoptera)

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Abstract

Two new species, *Sacada dzonguensis* N. Singh, Kirti & Ranjan, **sp. nov.** and *S. umtasorensis* N. Singh, Kirti & Ranjan, **sp. nov.**, are described from India. Additionally, seven species of the genus *Sacada* Walker, 1862 are redescribed. A new genus, *Pseudosacada* N. Singh, Kirti & Ranjan, **gen. nov.**, is described to accommodate *Paravetta flexuosa* Snellen, 1890 (presently in *Sacada*). A new combination is established: *Pseudosacada flexuosa* (Snellen, 1890), **comb. nov.** Morphologically, the new genus resembles the genus *Sacada* and can only be diagnosed by the male genitalia. The diagnostic differences are discussed and illustrated along with adults and external male genitalia of related taxa. A world checklist and a key to the Oriental and Australasian species are provided.

Keywords

distribution, *Pseudosacada* gen. nov., *Sacada dzonguensis* sp. nov., *S. umtasorensis* sp. nov., taxonomic key, world checklist

Introduction

The genus *Sacada* Walker, 1862 is a member of the family Pyralidae Latreille, 1809 and subfamily Pyralinae Latreille, 1809. It was established by monotypy for *S. decora* Walker, 1862 from Sarawak, Borneo. Hampson (1896) broadly discussed the nomenclature of this genus, synonymised several genera (i.e. *Sybrida* Walker, 1865, *Paravetta* Moore, 1865, *Danaka* Moore, 1879, and *Xestula* Snellen, 1885) with *Sacada* and studied nine species, which he divided into two distinct sections on the basis of male antennal characters: one group with bipectinate antennae with long branches along three-quarters of their length, and the other group with antennae serrate and fasciculate. Recently, Leraut (2013) revised the generic diagnosis of *Sacada* by including external genital attributes. The genus is known by 41 species, including 22 from the Oriental region and 10 from India (Nuss et al. 2003–2020).

Herein, two new species are described from India: *Sacada dzonguensis* N. Singh, Kirti & Ranjan, sp. nov. (Sikkim) and *S. umtasorensis* N. Singh, Kirti & Ranjan, sp. nov. (Meghalaya). In addition, the morphotaxonomy of seven Indian species of *Sacada* Walker, 1862 is studied. A new genus, *Pseudosacada* N. Singh, Kirti & Ranjan, gen. nov., is erected to accommodate *Paravetta flexuosa* Snellen, 1890 (presently in *Sacada*), and a new combination is established: *Pseudosacada flexuosa* (Snellen, 1890), comb. nov. Morphologically, the new genus resembles species of *Sacada* and can only be diagnosed by the male genitalia. The diagnostic differences are discussed and illustrated along with adults and external male genitalia of related taxa. A world checklist and identification key to the Oriental (23 species) and Australasian (four species) species are also provided. The distribution of species is updated from the publications by Hampson (1896), Yamanaka (1995, 1998), Nuss et al. (2003–2020), Bae et al. (2008), and Sutton et al. (2015) .

Material and methods

Adult moths were collected using vertical sheet light traps fitted at various localities of India. Collected specimens were euthanized with ethyl acetate vapours in killing jars. The specimens were pinned, stretched, and processed as per standard techniques in lepidopterology. Adult moths were photographed using a Canon EOS 1300D digital SLR camera. The detailed microphotography of external male genitalia was performed under a Leica M165C stereomicroscope attached with a Leica MC190HD camera enabled with a Leica Application Suite. The examined specimens are deposited in the National Zoological Collections, Lepidoptera Section, Zoological Survey of India (ZSI), Kolkata, India.

Abbreviations:

BMNH	Natural History Museum, London, UK (formerly the British Museum of Natural History)
CMNH	Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA
HT	Holotype
MGAB	Museum of Natural History "Grigore Antipa", Bucharest, Romania

MNHN	Muséum National d'Histoire Naturelle, Paris, France
MWNH	Museum Wiesbaden, Wiesbaden, Germany
NHMUK	Natural History Museum, London, UK
NZCZSI	National Zoological Collections, Zoological Survey of India, Kolkata, India
OUMNH	Oxford University Museum of Natural History, Oxford, UK
PT	Paratype
RBINS	Royal Belgian Institute of Natural Sciences, Brussels, Belgium
RMCA	Musée Royal de l'Afrique Centrale, Tervuren, Belgium
RMNH	Naturalis Biodiversity Centre [formerly Rijksmuseum van Natuurlijke Historie], Leiden, the Netherlands
TD	Type deposited
TL	Type locality
ZMHB	Museum für Naturkunde der Humboldt-Universität, Berlin, Germany

The collection abbreviations are according to Evenhuis (2020).

Taxonomy

Genus *Sacada* Walker, 1862

Sacada Walker 1862: 136.

Type species. *Sacada decora* Walker, 1862.

Diagnostic characters. Mostly dark-coloured moths with a slightly variable wing pattern; male antennae typically pectinate (ciliate and toothed in some species). In addition to the narrow forewing with angular edge and the sexual dimorphism with the female being much larger than the male, the genus *Sacada* is well defined by a number of characters: long legs with tufts of scales, some of which are filiform; thorax with patagia having prominent scales, ending with two brushes; male genitalia with uncus hooded; free valves without process; transtilla modified into elaborate sclerotized structure; juxta well developed; female genitalia with wide anal papillae; very short eighth segment; very short ductus bursae prolonged by a long, ovoid corpus bursae with sclerotisations (Leraut 2013).

Distribution. Cameroon, China, Democratic Republic of the Congo, India, Indonesia, Ivory Coast, Japan, Madagascar, Malawi, Malaysia, Nigeria, Papua New Guinea, Russia, Uganda, Vietnam, Zimbabwe (Nuss et al. 2003–2020); Bhutan, Myanmar, Sri Lanka (Hampson 1896); Nepal (Yamanaka 1995).

Checklist of the genus *Sacada*

Genus *Sacada* Walker, 1862

=*Danaka* Moore, 1879
=*Datanoides* Butler, 1878

=*Kawiella* Roepke, 1943
=*Marionana* Viette, 1953
=*Paravetta* Moore, 1865
=*Sybrida* Walker, 1865
=*Xestula* Snellen, 1885

1 *Sacada acutipennis* (Strand, 1915) (*Aiteta*)
TL. Cameroon, Bang Manenguba Mountains
TD. ZMHB
Distribution. Cameroon (Bang Manenguba Mountains)

2 *Sacada albioculalis* Hampson, 1917
TL. Indonesia, New Guinea, West Papua [Dutch New Guinea], Fak-fak
TD. NHMUK
Distribution. Indonesia (New Guinea, West Papua, Fak-fak)

3 *Sacada amoyalis* Caradja, 1932
TL. China, Fujian, Xiamen [Amoy]
TD. MGAB
Distribution. China (Fujian, Xiamen [Amoy])

4 *Sacada approximans* (Leech, 1888) (*Datanoides*)
TL. Japan, Yokohama
TD. NHMUK
Distribution. Japan (Yokohama), Vietnam (Tam Đảo, Vinh Phuc), Korea

5 *Sacada confutsealis* Caradja, 1925
TL. China, Fujian, Xiamen [Amoy]
TD. MGAB
Distribution. China (Fujian, Xiamen [Amoy])

6 *Sacada constrictalis* (Ragonot, 1891) (*Sybrida*)
TL. India, Upper Assam [Haut-Assam]
TD. ZMHB
Distribution. India (Upper Assam), Borneo

7 *Sacada contigua* South in Leech & South, 1901
TL. China, Pu-tsu-fong; Sichuan, Baoxing [Moupin]
TD. NHMUK
Distribution. China (Pu–tsu–fong, Sichuan)

8 *Sacada decora* Walker, 1862
TL. Malaysia, Borneo, Sarawak
TD. OUMNH

Distribution. India. Uttarakhand (Kumaon, Dehradun), Sikkim, Nagaland (Chizami), China (Yunnan), Myanmar, Nepal, Thailand, Vietnam, Malaysia (Borneo, Sarawak).

9 *Sacada dipenthes* Meyrick, 1934
TL. DR Congo [Belgian Congo], Lubumbashi [Elisabethville]
TD. RMCA
Distribution. DR Congo (Lubumbashi [Elisabethville])

10 *Sacada discinota* (Moore, 1865 [66]) (*Paravetta*)
TL. India, West Bengal, Darjeeling
TD. NHMUK
Distribution. India (West Bengal, Darjeeling), Nepal

11 *Sacada dzonguensis* N. Singh, Kirti & Ranjan, sp. nov.
TL. India, Sikkim, Dzongu
TD. NZCZSI
Distribution. India (Sikkim)

12 *Sacada erythropis* Hampson, 1917
TL. S. [West] Nigeria, Kwara, Ilorin
TD. NHMUK
Distribution. S. [West] Nigeria (Kwara, Ilorin)

13 *Sacada fasciata* (Butler, 1878) (*Datanoides*)
=*Xestula miraculosa* Snellen, 1885; **TL.** Russia, Amur river area [pays de la rivière Amour] **TD.** NHMUK; Distribution**.** Russia (Amur)
TL. Japan, Yokohama
TD. NHMUK
Distribution. Japan (Yokohama), Russia (Amur), Korea

14 *Sacada giovanettae* (Marion, 1957) (*Danaka*)
TL. Ivory Coast
TD. MNHN
Distribution. W. Africa (Ivory Coast)

15 *Sacada hoenei* Caradja & Meyrick, 1937
TL. China, Yülingshan
TD. MGAB
Distribution. China (Yunnan)

16 *Sacada inordinata* (Walker, 1865) (*Sybrida*)
TL. India, West Bengal, Darjeeling
TD. NHMUK

Distribution. India (West Bengal, Darjeeling)

17 *Sacada madegassalis* Viette, 1960
TL. Madagascar
TD. MNHN
Distribution. Madagascar

18 *Sacada metaxantha* Hampson, 1906
TL. Indonesia, New Guinea, West Papua, Kapaur
TD. NHMUK
Distribution. Indonesia (New Guinea, West Papua, Kapaur)

19 *Sacada misakiensis* (Shibuya, 1928) (*Sybrida*)
TL. Japan, Osaka, Misaki
TD. Not known
Distribution. Japan (Osaka, Misaki)

20 *Sacada nicopaea* Tams, 1941
TL. Uganda
TD. NHMUK
Distribution. Uganda (Kampala)

21 *Sacada nigripuncta* Hampson, 1906
TL. Indonesia, New Guinea, West Papua, Kapaur
TD. NHMUK
Distribution. Indonesia (New Guinea, West Papua, Kapaur)

22 *Sacada nyasana* Hampson, 1917
TL. Malawi [British Central Africa], Mt Mulanje
TD. NHMUK
Distribution. Malawi (Mt Mulanje)

23 *Sacada olivina* Joannis, 1930 [29]
TL. Tonkin [Vietnam], Hoang su phi
TD. MNHN
Distribution. Vietnam (Tonkin, Hoang su phi)

24 *Sacada pallescens* Hampson, 1896
TL. India, Sikhim, [Sikkim]
TD. NHMUK
Distribution. India (Sikkim), Bhutan, Vietnam, Nepal

25 *Sacada papuana* Hampson, 1917
TL. Papua New Guinea [British New Guinea], Dinawa

TD. NHMUK
Distribution. Papua New Guinea (Dinawa)

26 *Sacada paraxantha* Meyrick, 1936
TL. Democratic Republic of the Congo [Belgian Congo], Lubumbashi [Elisabethville]
TD. RMCA
Distribution. Democratic Republic of the Congo (Lubumbashi)

27 *Sacada paulianalis* (Viette, 1953) (*Marionana*)
=*Marionana vinolentalis* Viette, 1960; **TL.** Madagascar, Route d'Anosibé; **TD.** MNHN;
Distribution. Madagascar
TL. Madagascar, Périnet, forêt du domaine de l'Est
TD. MNHN
Distribution. Madagascar

28 *Sacada peltobathra* Meyrick, 1938
TL. Indonesia, Java, Mt Guntur
TD. NHMUK
Distribution. Indonesia (Sumatra, Java. Mt Guntur)

29 *Sacada pusilla* Hering, 1901
TL. Indonesia, Sumatra
TD. Not known
Distribution. Indonesia (Sumatra)

30 *Sacada pyraliformis* (Moore, 1879) (*Danaka*)
TL. India, West Bengal, Darjiling
TD. ZMHB
Distribution. India (West Bengal, Darjeeling), Nepal, Myanmar, Thailand

31 *Sacada ragonotalis* (Snellen, 1892) (*Sybrida*)
= *Kawiella testacea* Roepke, 1943; **TL.** Indonesia, W Java, Perbawattee **TD.** RMNH;
Distribution. Indonesia (Java)
TL. Indonesia, Java
TD. Syntypes in MWNH
Distribution. Indonesia (Sumatra, Java, Bali), Borneo

32 *Sacada rhodinalis* Hampson, 1906
TL. Zimbabwe, Mashonaland
TD. NHMUK
Distribution. Zimbabwe (Mashonaland)

33 *Sacada rhyacophila* (Ghesquière, 1942) (*Danaka*)
TL. DR of the Congo [Congo belge], Equateur, Bolombo

TD. RMCA
Distribution. Democratic Republic of the Congo

34 *Sacada rosealis* Hampson, 1906
TL. Zimbabwe [Mashonaland], Harare [Salisbury]
TD. NHMUK
Distribution. Zimbabwe (Mashonaland, Harare)

35 *Sacada rubralis* Holland, 1900
TL. Indonesia, Maluku, Buru
TD. CMNH
Distribution. Indonesia (Maluku, Buru)

36 *Sacada rufina* Hampson, 1896
TL. India, Maharashtra, Mumbai [Bombay]
TD. NHMUK
Distribution. India (Maharashtra, Mumbai [Bombay])

37 *Sacada sikkima* (Moore, 1879) (*Paravetta*)
TL. India, West Bengal, Darjeeling
TD. Syntype in NHMUK
Distribution. India (West Bengal, Darjeeling), Nepal

38 *Sacada szetschwanalis* Caradja, 1927
TL. China, Sichuan (Kwanhsien Talbo)
TD. MGAB
Distribution. China (Sichuan)

39 *Sacada tonsealis* Roepke, 1938
TL. Indonesia, northern Sulawesi
TD. RBINS
Distribution. Indonesia (North Celebes [Sulawesi]), Borneo

40 *Sacada umtasorensis* N. Singh, Kirti & Ranjan, sp. nov.
TL. India, Meghalaya, Umtasor
TD. NZCZSI
Distribution. India (Meghalaya)

41 *Sacada unilinealis* Hampson, 1896
TL. India, Sikhim [Sikkim]
TD. NHMUK
Distribution. India (Sikkim)

42 *Sacada viridalis* Hampson, 1917
TL. Cameroon, Ja R[iver], Bitje
TD. NHMUK
Distribution. Cameroon

***Sacada sikkima* (Moore, 1879)**
Figs 1, 2, 19, 20

Paravetta sikkima Moore 1879: 70.

Description. Male, wingspan 28 mm (Figs 1, 2). Adult dark purplish fuscous. Forewing with a dark rufous rectangular patch near base, touching antemedial line which is highly angled in interno-median interspace; postmedial line pale, sinuous, outwardly oblique from costa to vein M_2, then very oblique to inner margin; area between antemedial and postmedial line paler and beyond postmedial line darker. Hindwing pale brown; a pale, slightly waved submarginal line crossed by a dark streak at vein Cu_1. *Male genitalia* (Figs 19, 20). Uncus broad with flaps on lateral side, gnathos reaching up to tip of uncus, tip hooked; valva simple, without any process; tegumen simple; transtilla broad with sclerotised, bifid process originating medially; juxta in form of two long arms, broad medially, spined apically; saccus deeply U-shaped; vesica membranous with fine scobination, without any cornuti.

Diagnosis. *Sacada sikkima* is externally similar to *S. constrictalis* from India, but differs by its larger size, and in having the postmedial line outwardly oblique from the costa to vein M_2, whereas, in *S. constrictalis* the postmedial lines is almost straight. In the male genitalia (Figs 19, 20), the transtillar processes are longer; the juxta is larger.

Type material examined. Lectotype (Fig. 2): BMNH (E) 1626971, male, Darjeeling, Moore coll. 94–106, *Paravetta sikkima* Moore, det. M. Shaffer, 1976.

Other material examined. India, Sikkim: 1 ♂, Dodak, 24.ix.2014, leg. R. Ranjan (Coll. NZCZSI). India, Uttarakhand: 1 ♂, Dehradun, 22.v.2014, leg. R. Ranjan (Coll. NZCZSI). India, Meghalaya: 1 ♂, Umtasor, 15.ix.2014, leg. R. Ranjan (Coll. NZCZSI). India, Mizoram: 1 ♂, Mamit, 08.ix.2016, leg. R. Ranjan (Coll. NZCZSI); India, Arunachal Pradesh: 1 ♂, Dibang valley, Italin, 26.x.2017, leg. R. Ranjan (Coll. NZCZSI).

***Sacada constrictalis* (Ragonot, 1891)**
Figs 3, 21, 22

Sybrida constrictalis Ragonot 1891: 75–76, pl. 8 fig. 10.

Description. Male, wingspan 24 mm (Fig. 3). Adult dark purplish fuscous. Forewing with a dark rufous rectangular patch near base, touching antemedial line, which is highly angled in interno-median interspace; postmedial line pale, sinuous, nearly

orthogonal from costa to vein M_2, then very oblique to inner margin; area between antemedial and postmedial line paler; discocellular with two specks, outer one darker. Hindwing pale fuscous, submarginal line pale, slightly waved, crossed by a dark streak at vein Cu_1. Cilia of both wings ochreous, with two black lines passing through them. ***Male genitalia*** (Figs 21, 22). Uncus broad with flaps on lateral side; gnathos with tip hooked; valva simple, without any process; tegumen simple; transtilla broad and sclerotised, bifid process originating medially; juxta broad with a vertical incision from tip to base, forming two arms, spined apically; saccus U-shaped; vesica membranous with fine scobination, without any cornuti.

Diagnosis. Provided with the diagnosis of *S. sikkima*.

Material examined. India, Meghalaya: 3 ♂, Cherrapunji, 04.ix.2014, leg. R. Ranjan (Coll. NZCZSI); 1 ♂, Umtasor, 15.ix.2014, leg. R. Ranjan (Coll. NZCZSI).

Sacada discinota (Moore, 1865)

Figs 4–6, 23, 24

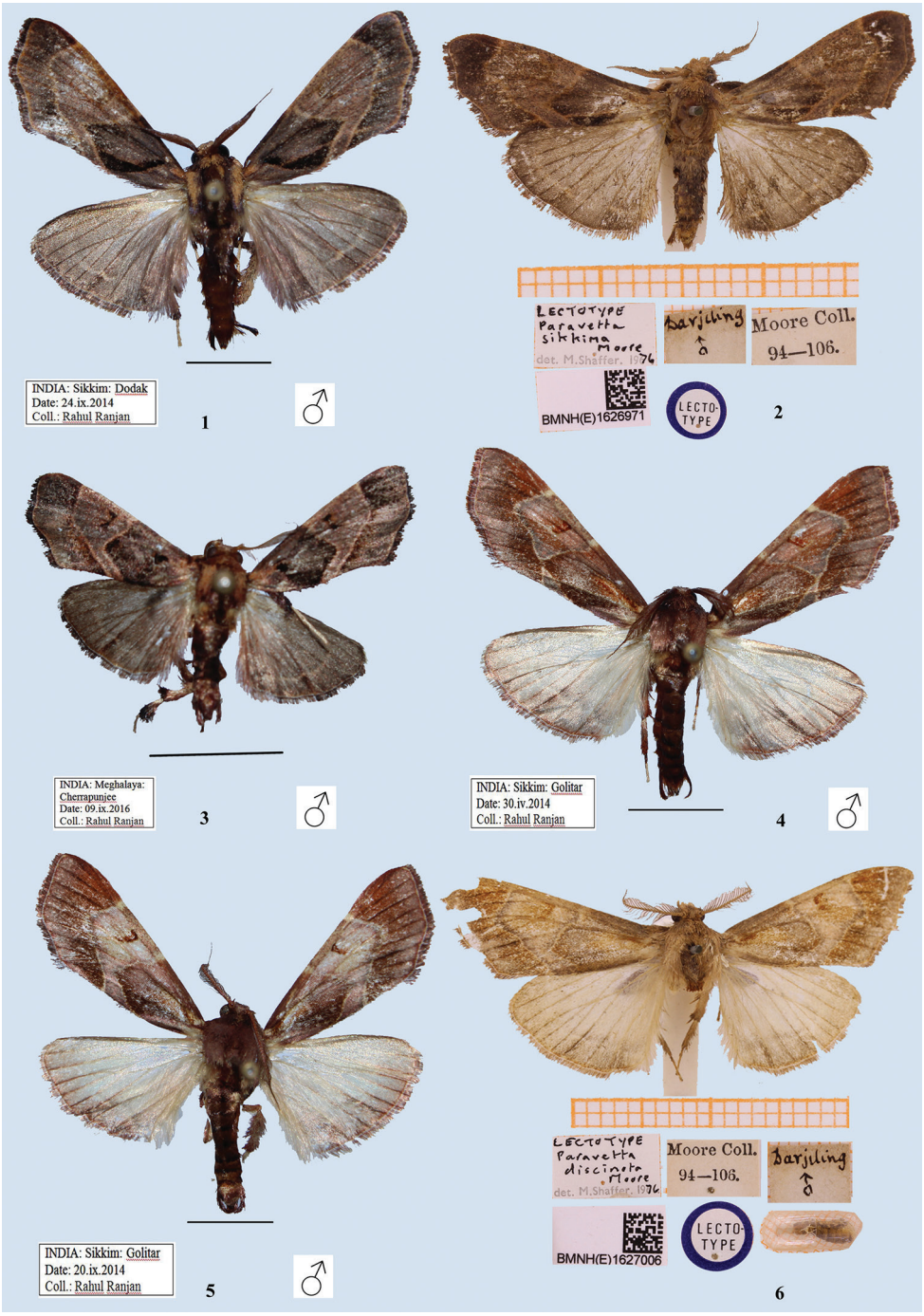
Paravetta discinota Moore 1865: 814, pl. 43 fig. 3.

Description. Male, wingspan 32 mm (Figs 4–6). Forewing pale brown, a pale antemedial line, acutely angled in interno-median interspace with fuscous brown rectangular patch on its inner area and a similar postmedial line acutely angled at vein M_1 (in one Golitar (Sikkim) specimen, angled antemedial line touches postmedial line at vein Cu_2; Fig. 4); area between two lines pale brown with oblique ferruginous reniform spot. Hindwing pale; traces of a waved submarginal line; underside paler with similar markings. Thorax with long, brown patagia. ***Male genitalia*** (Figs 23, 24). Uncus broad, laterally folded, apically rounded; gnathos short and well developed, reaching up to midst of uncus, tip hooked; valva simple, without any process; tegumen broad; transtilla broad, a sclerotised flap-like process originating medially; juxta long, broad, slightly constricted at apex; vinculum U-shaped; aedeagus long, sclerotized carinal plate with numerous spikes; vesica membranous with fine scobination, cornuti absent.

Diagnosis. Among the *Sacada* species reported from India, *S. discinota* is externally similar to *S. sikkima* and *S. constrictalis* due to the highly angled antemedial and postmedial lines, but it is distinct from both of these congeners by its paler hindwings.

Type material examined. Lectotype (Fig. 6): BMNH (E) 1627006, male, Darjeeling, Moore Coll. 94–106, *Paravetta discinota* Moore, det. M. Shaffer, 1976.

Other material examined. India, Sikkim: 4 ♂, Golitar, 20.ix.2014, leg. R. Ranjan (Coll. NZCZSI); 1 ♂, Dodak, 24.ix.2014; 6 ♂, Golitar, 30.iv.2014, leg. R. Ranjan (Coll. NZCZSI); 3 ♂, Golitar, 19.ix.2014, leg. R. Ranjan (Coll. NZCZSI); 1 ♂, Chungthang, 26.iv.2014, leg. R. Ranjan (Coll. NZCZSI).



Figures 1–6. Adults of *Sacada* spp. **1** *S. sikkima* (Moore) (male), India **2** *S. sikkima* (Moore) (male), lectotype, Darjeeling, India **3** *S. constrictalis* (Ragonot) (male), India **4, 5** *S. discinota* (Moore) (male), India **6** *S. discinota* (Moore) (male), lectotype, Darjeeling, India. Scale bars: 5 mm (**1**); 12.7 mm (**3–5**).

Remark. The lectotype is hereby formally designated.

***Sacada unilinealis* Hampson, 1896**
Figs 7, 8, 25, 26

Sacada unilinealis Hampson 1896: 170.

Description. Male, wingspan 32–34 mm (Figs 7, 8). Adult pale rufous, speckled with fuscous; forewing pale brownish pink; basal and apical area of costa rufous; forewing with two black specks (lower one large, giving appearance of a spot) conjoined by a narrow bar; traces of evenly curved postmedial line, with area beyond it darker. Hindwing pale, with faint traces of a curved submarginal line. Cilia of both wings dark rufous. Blackish fringe of hair on fore and mid tibiae. ***Male genitalia*** (Figs 25, 26) with uncus short, broad with flaps on lateral side; gnathos well developed reaching to uncus, tip hooked; valva broad, simple, without any process; tegumen simple; transtilla with a sclerotised process arising medially; juxta double, each broad at base, apically pointed and sclerotised, concave on inner edge, convex on outer edge; saccus long, broadly U-shaped; vesica membranous with fine scobination, without any cornuti.

Diagnosis. *Sacada unilinealis* is an unmistakable species due to the weak markings and almost uniform colour of the fore and hindwings.

Type material examined. Holotype (Fig. 8): BMNH (E) 1627040, male, Sikkim, O. Möller, 89, collection H. J. Elwes, *Sacada unilinealis* Hampson.

Other material examined. India, Sikkim: 1 ♂, Dodak**,** 09.ix.2016, leg. R. Ranjan (Coll. NZCZSI)

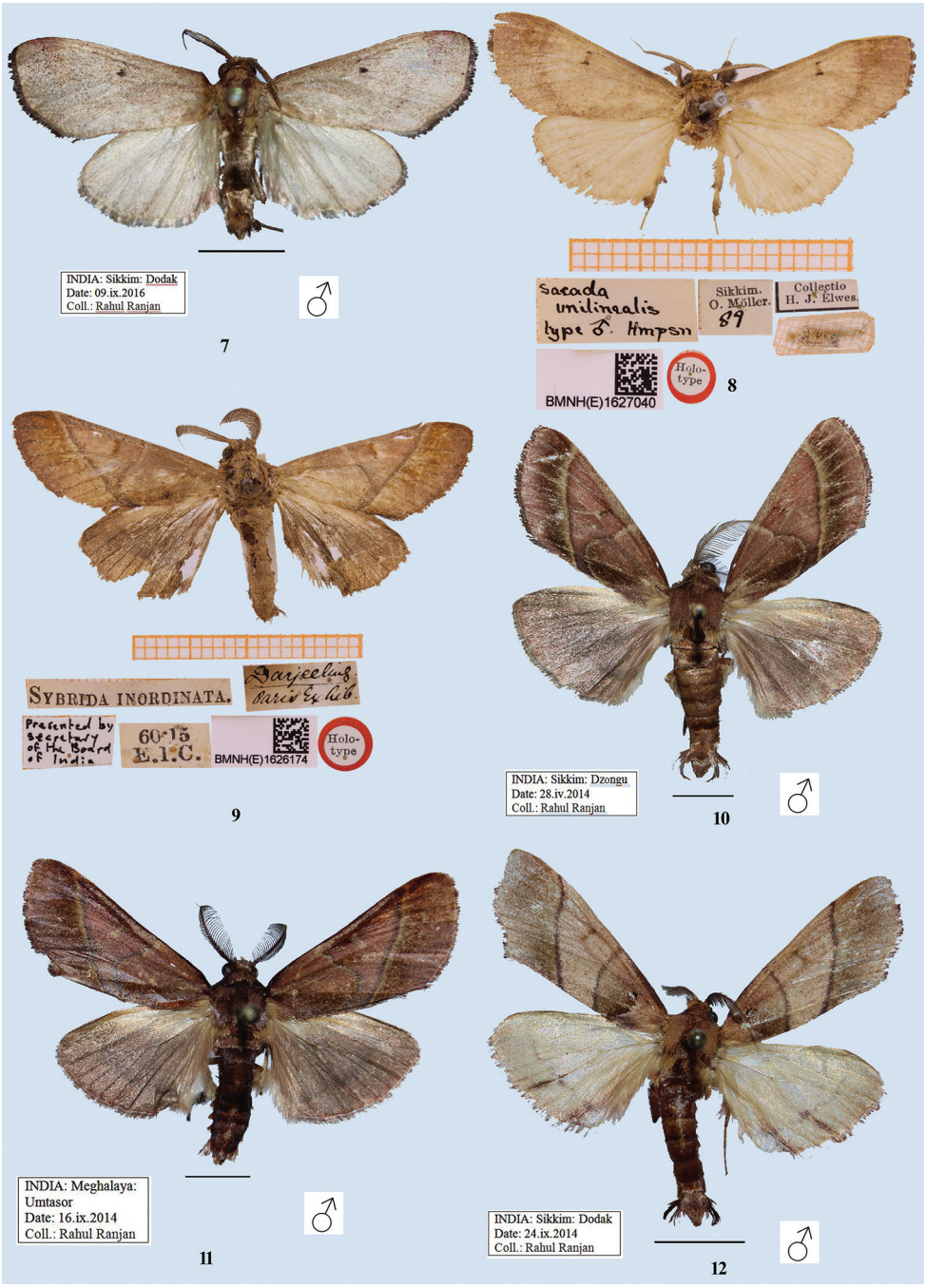
***Sacada inordinata* (Walker, 1865)**
Fig. 9

Sybrida inordinata Walker 1865: 466.

Description. Adults are rufous. Forewing with diffused a ferruginous patch in interno-median interspace; a medial line approximately right angled, reaching at vein Cu_2; postmedial line obliquely straight with some ferruginous beyond it, merged the medial line at Cu_2 and touching the inner margin; a ferruginous line on discocellular; termen smoothly curved. Hindwing browner, with traces of dark postmedial line.

Diagnosis. Provided with the following species.

Type material examined. Holotype, male, BMNH (E) 1626174, *Sybrida inordinata*, Darjeeling, 60-15 E. I. C. [East India Company].



Figures 7–12. Adults of *Sacada* spp. **7** *S. unilinealis* Hampson (male), India **8** *S. unilinealis* Hampson (male), holotype, Sikkim, India **9** *S. inordinata* (Walker) (male), holotype, Darjeeling, India **10** *S. dzonguensis*, sp. nov. (male), India. **11** *S. umtasorensis*, sp. nov. (male), India **12** *S. pallescens* Hampson (male), India. Scale bars: 5 mm (**7, 10, 11**); 12.7 mm (**12**).

Sacada dzonguensis **N. Singh, Kirti & Ranjan, sp. nov.**
http://zoobank.org/E2147930-463E-4DF6-ABD3-A500CC3FFA88
Figs 10, 27, 28

Description. Male, wingspan 36 mm (Fig. 10). Rufous brown. Forewing with a medial fuscous line outwardly oblique from costa to vein Cu_2, slightly indented in cell, at Cu_2 rounded inwardly to meet inner margin; a dark streak on discocellular; a postmedial fuscous line, inwardly oblique from radial veins; inner area of antemedial and outer area of postmedial lines bordered with ochreous scales; a broad fuscous band beyond postmedial line, veins on it paler; inner area dark brownish; a fine marginal line, cilia brownish; underside rufous with inner area ochreous. Hindwing pale fuscous with rufous tinge; traces of diffuse, postmedial fuscous line; a fine marginal line present; underside rufous. ***Male genitalia*** (Figs 27, 28): uncus hooded with baso-lateral flaps; gnathos curved distally, tip pointed and hooked, broadened below tip; valva simple; transtilla broad and curved distally; juxta broad at base, mediolateral area constricted, bifid apically: both arms (spikes) bearing small spines; vinculum U-shaped; aedeagus apex with multiple rows of small spines; base of vesica densely scobinated and the scobination gradually becomes sparse towards distal end.

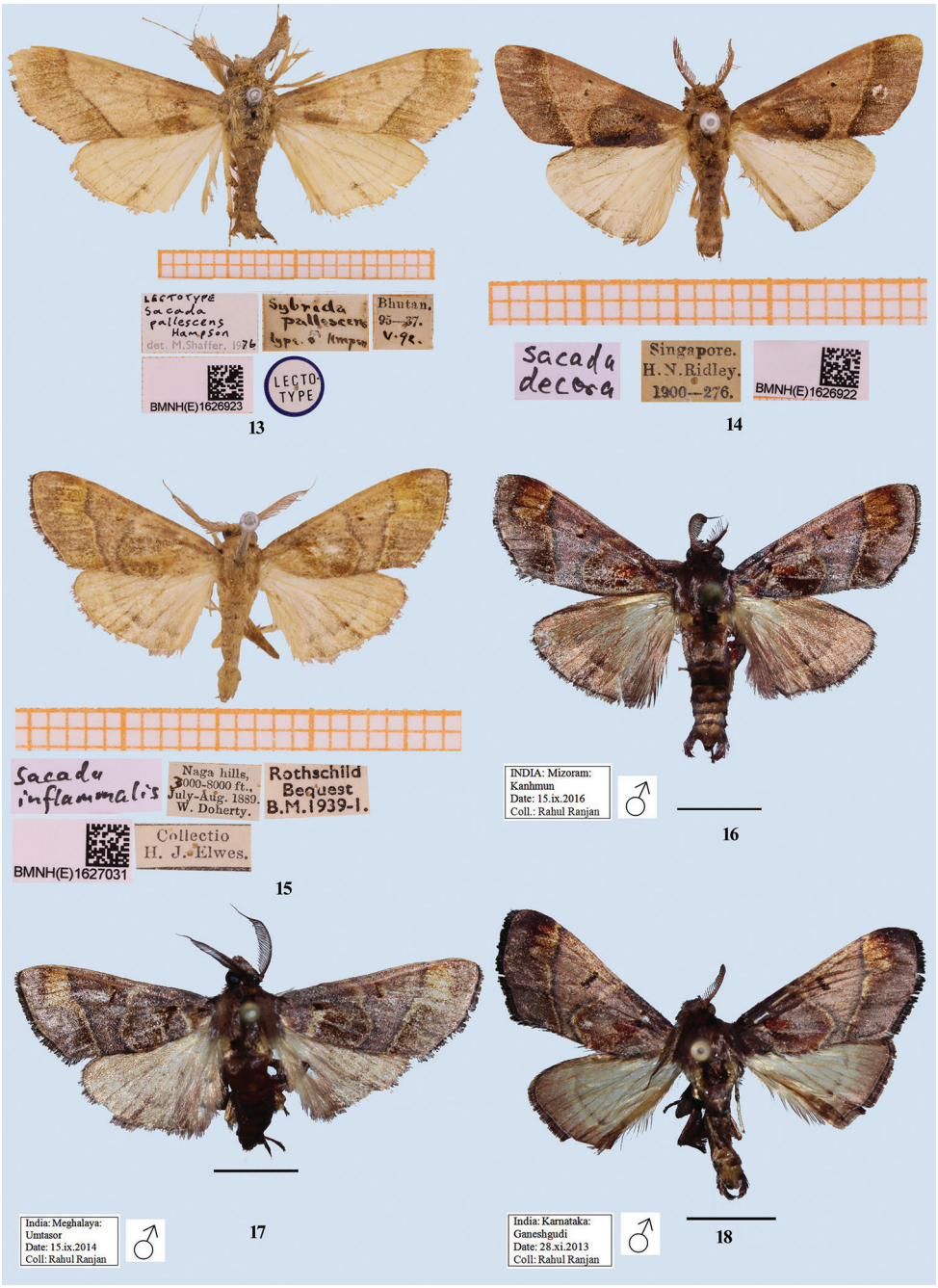
Diagnosis. *Sacada dzonguensis* sp. nov. is most similar to *S. inordinata* (Fig. 9), but the forewing has the antemedial and postmedial lines clearly separated, and there is a broad fuscous band beyond the postmedial line, whereas in *S. inordinata* both lines are fused from vein Cu_2 to the inner margin, and the postmedial fuscous band is absent (but with traces of ferruginous).

Type material. Holotype, male. India, Sikkim: Dzongu, 28.iv.2014, leg. R. Ranjan (Coll. NZCZSI).

Etymology. The species is named after its type locality, Dzongu, Sikkim, India.

Sacada umtasorensis **N. Singh, Kirti & Ranjan, sp. nov.**
http://zoobank.org/AE3EC692-2759-4260-829C-C01F12F03392
Figs 11, 29, 30

Description. Male, wingspan 30 mm (Fig. 11). Rufous brown. Forewing with a sinuous medial fuscous line outwardly oblique from costa to vein Cu_2, then broadly and inwardly rounded to meet inner margin; a band of paler scales on discocellular; postmedial fuscous line, slightly curved, inwardly oblique from costa to inner margin; inner area of medial line and outer area of postmedial line bordered with ochreous scales; a broad ferruginous band beyond postmedial line; a fine marginal line, cilia brownish; underside rufous with inner area ochreous. Hindwing pale fuscous with rufous tinge; traces of diffused, postmedial fuscous line; a fine marginal line present; underside rufous. ***Male genitalia*** (Figs 29, 30): uncus hooded with baso-lateral flaps; gnathos curved distally, hooked, tip pointed, broadened before tip; valva simple; transtilla broad with two apical, small thumb-like processes; juxta narrow, mediolateral



Figures 13–18. Adults of *Sacada* and *Pseudosacada* spp. **13** *S. pallescens* Hampson (male), lectotype, Bhutan **14** *S. decora* Walker, Singapore **15** *Pseudosacada flexuosa* (Snellen) (= *Sybrida inflammealis* Ragonot), India **16** *P. flexuosa* (Snellen) (male), Kanhmun, Mizoram, India **17** *P. flexuosa* (Snellen) (male), Umtasor, Meghalaya, India **18** *P. flexuosa* (Snellen) (male), Ganeshgudi, Karnataka, India. Scale bars: 5 mm (**16–18**).

area constricted, bifid apically with both the arms bearing spikes; vinculum U-shaped; aedeagus apex with single row of small spines; base of vesica densely scobinated and the scobination gradually becomes sparse towards apex.

Diagnosis. *Sacada umtasorensis* sp. nov., distributed in Meghalaya is most closely similar to its allopatric relative *S. dzonguensis* sp. nov., (distributed in Sikkim) (Fig. 10), but it is distinct by the oblique postmedial line from costa to inner margin, whereas in *S. dzonguensis*, the postmedial line is straight from the costa to the radial vein and then oblique to the inner margin. In the male genitalia of *S. umtasorensis* (Figs 29, 30), the juxta is narrow with the two apical lobes exhibiting more spines, and the aedeagus apex has a single row of small spines, whereas in *S. dzonguensis* (Figs 27, 28), the juxta is broad, the apical lobes have fewer spines, and the aedeagus apex exhibits multiple rows of small spines.

Type material. ***Holotype,*** male. India, Meghalaya: Umtasor, 16.ix.2014, leg. R. Ranjan (Coll. NZCZSI).

Paratypes (9 ♂), India, Meghalaya: 1 ♂, Umtasor, 15.ix.2014; 8 ♂, 16.ix.2014, leg. R. Ranjan (Coll. NZCZSI).

Etymology. The species is named after its type locality Umtasor, Meghalaya, India.

Sacada pallescens Hampson, 1896

Figs 12, 13, 31, 32

Sacada pallescens Hampson 1896: 171.

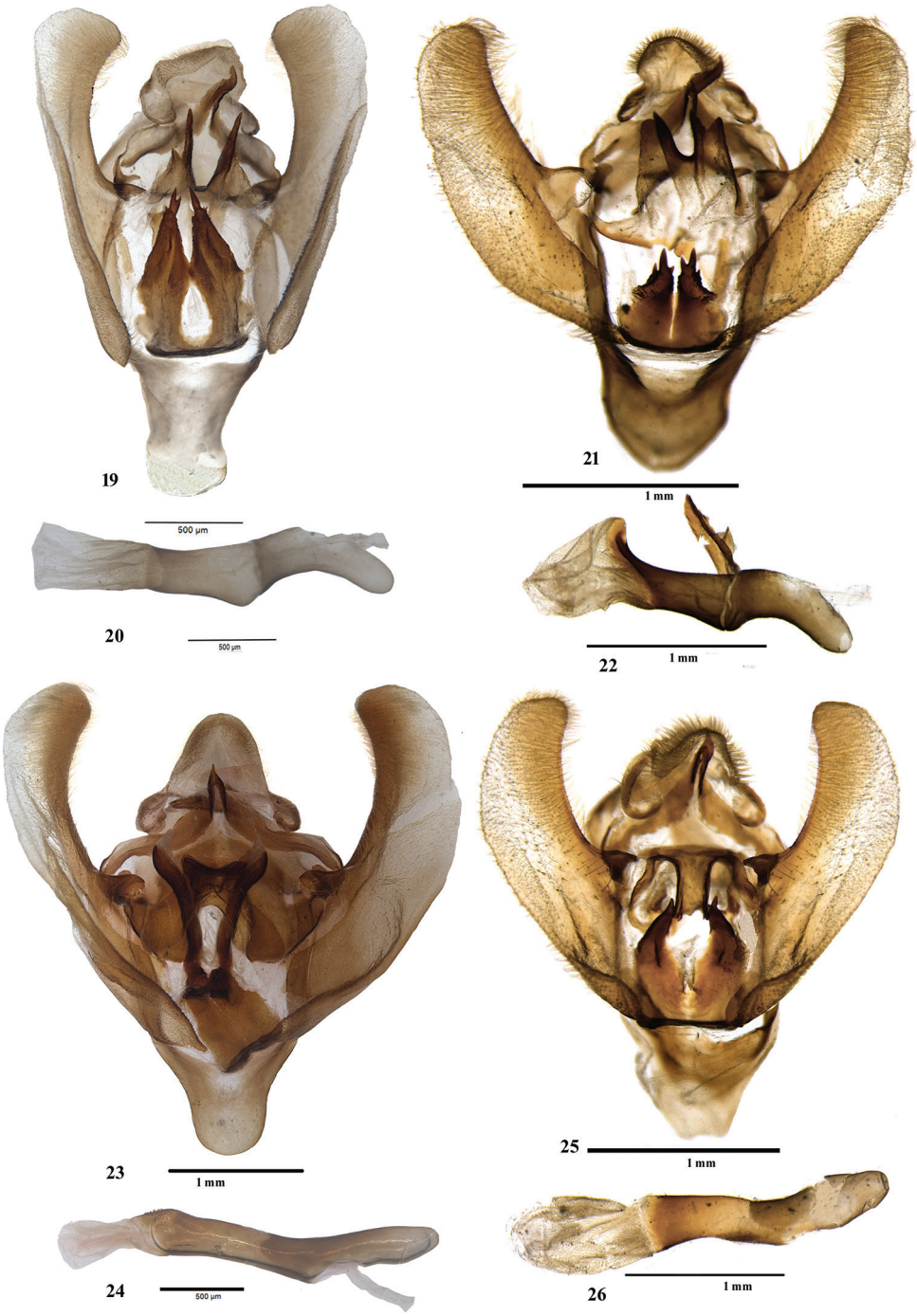
Description. Male, wingspan 32 mm (Figs 12, 13). Pale rufous. Forewing speckled fuscous; a dark brownish basal spot; antemedial line smoothly curved; a speck on discocellular; postmedial line slightly curved below costa, then oblique to inner margin, some fuscous suffusion beyond it; cilia dark at tips; underside ochreous with rufous suffusion on basal half of costa, curved postmedial line present. Hindwing pale with indistinct, evenly curved postmedial line, crossed by a rufous streak on vein Cu_2. Underside with curved postmedial line. ***Male genitalia*** (Figs 31, 32). Uncus broad with a fold on lateral side; gnathos well developed, tip hooked; valva simple, without any process; tegumen broad; transtilla broad, forming inverted omega (ω) shape; juxta short and broad, slightly constricted at apex; saccus long; vinculum U-shaped; aedeagus long, vesica membranous with fine scobination, cornuti absent.

Diagnosis. *Sacada pallescens* is unmistakable among the species studied due to the smoothly curved antemedial line (highly angled in other Indian species, except in *S. unilinealis* where it is absent) and hindwing which has a prominent rufous streak on vein Cu_2.

Type material examined. Lectotype (Fig. 13): BMNH (E) 1626923, male, Bhutan. 95–37.v.96, *Sybrida pallescens* Hampson/*Sacada pallescens* Hampson det. M. Shaffer, 1976.

Other material examined. India, Sikkim: 1 ♂, Dodak, 24.ix.2014, leg. R. Ranjan (Coll. NZCZSI); India, Arunachal Pradesh: 1 ♂, Dibang valley, Italin, 26.x.2017, leg. N. Singh (Coll. NZCZSI).

Remark. The lectotype is hereby formally designated.



Figures 19–26. Male genitalia of *Sacada* spp. **19, 20** Male genitalia of *S. sikkima* (Moore) **21, 22** male genitalia of *S. constrictalis* (Ragonot) **23, 24** male genitalia of *S. discinota* (Moore) **25, 26** male genitalia of *S. unilinealis* Hampson.

***Sacada decora* Walker, 1862**
Fig. 14

Sacada decora Walker 1862: 136.

Description. Male, wingspan 25.4 mm (Fig. 14). Rosy red; forewing with antemedial line outwardly oblique, broadly and inwardly rounded at vein Cu_2 to meet inner margin, where a black patch is present towards its inner edge; two black discal spots; an inwardly oblique, paler postmedial line followed by a broad band of fuscous scales, which is diffusing towards termen. Hindwing paler, a diffused postmedial line present.

Diagnosis. Because of the smoothly curved postmedial line (not strongly angled), *S. decora* is externally similar to *S. inordinata*, *S. dzonguensis*, *S. umtasorensis*, and *S. pallescens*, but it differs from three of these four species having its hindwing paler, and from *S. pallescens* in having the antemedial line outwardly oblique and broadly and inwardly rounded at vein Cu_2.

Material examined. Singapore: hand written slip *Sacada decora*/BMNH (E) 1626922/1900-276/ H. N. Ridley

Genus *Pseudosacada* N. Singh, Kirti & Ranjan, gen. nov.
http://zoobank.org/42924214-79C7-4293-8591-1E2781DA1D44

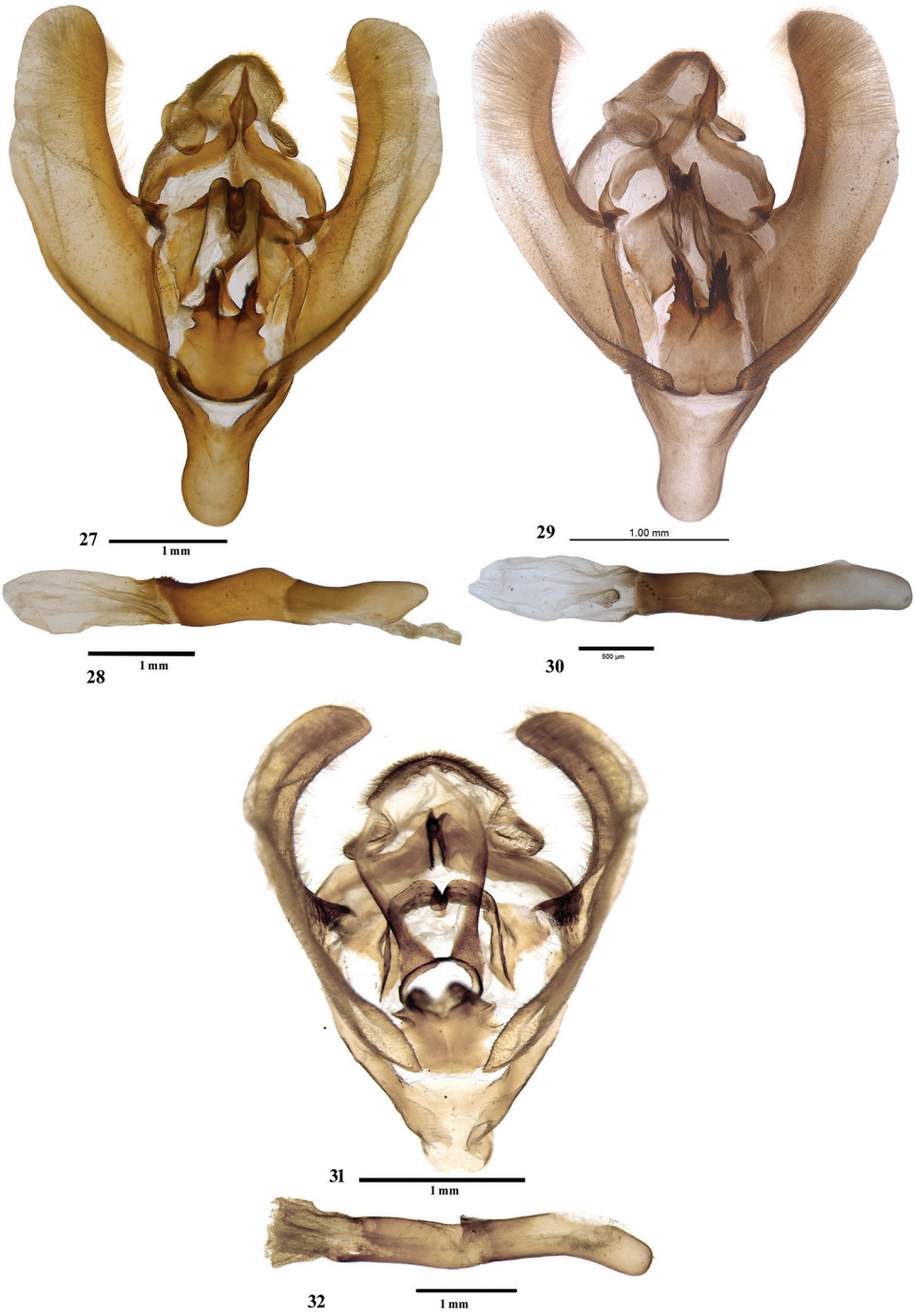
Type species. *Paravetta flexuosa* Snellen, 1890.

Diagnosis. The new genus is morphologically most similar to the genus *Sacada* and can only be diagnosed on the basis of external male genitalia. In male genitalia, the uncus is broader at base, apically bifid with a shallow constriction. There are two strongly sclerotised processes arising from the latero-medial region of the uncus. The gnathos is long, reaching beyond the uncus, and with its apex having a small hook. The valva is simple and membranous, without any process. The transtilla is broad and with both the edges bearing scorpion's "pedipalp chela"-like sclerotised process. In *Sacada*, the uncus is hooded, lateral structures are simple, flap-like, and without any horn-like process; the gnathos is short and hardly reaches the hood of the uncus; the valva is thicker; and the transtilla is simple.

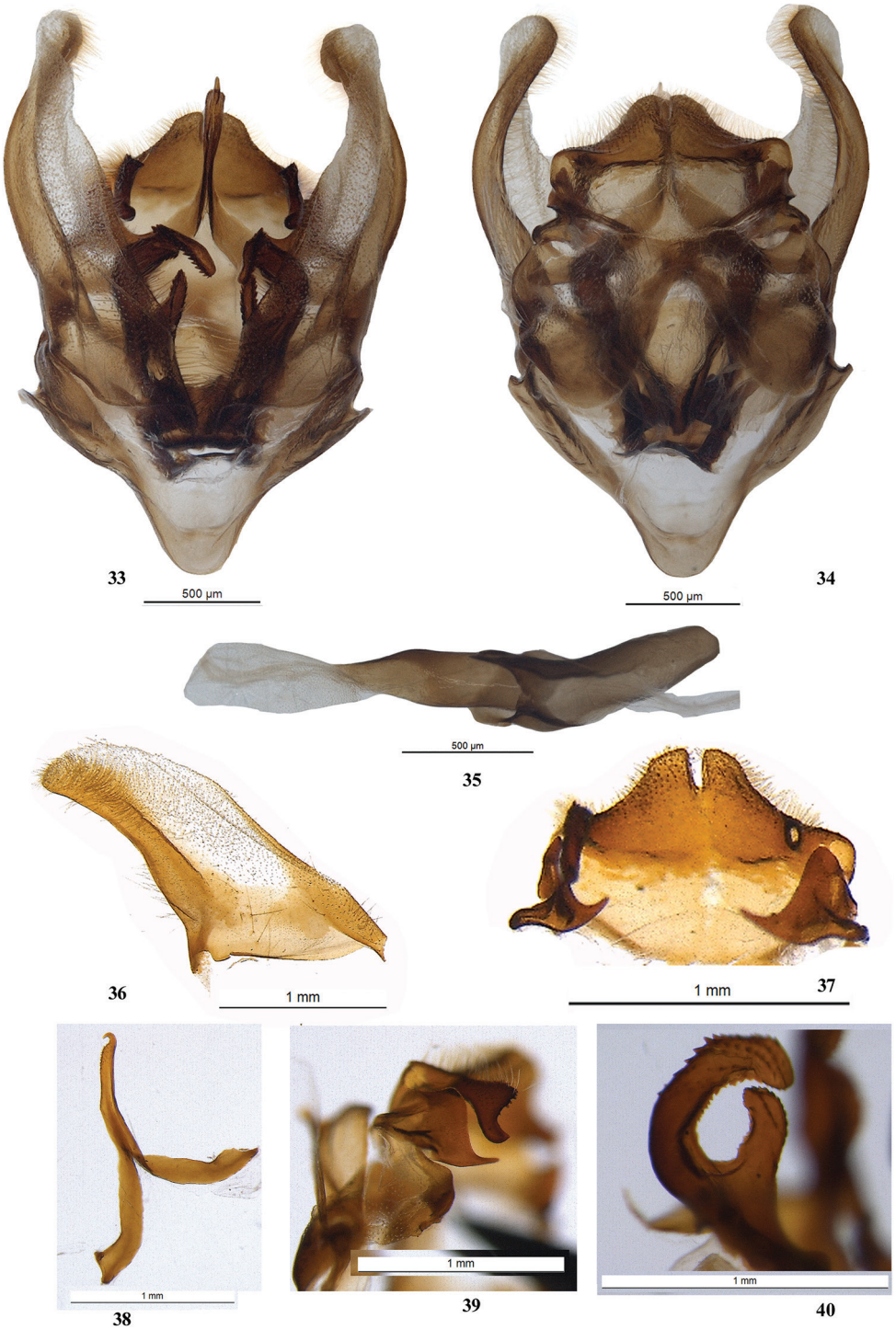
Remarks. The type species of the new genus was originally placed in *Paravetta* (type species *Paravetta discinota* Moore, 1865). *Paravetta* is now a synonym of *Sacada*. However, *P. flexuosa* is generically distinct from *Sacada decora*, the type species of *Sacada*, and therefore a new genus is erected here.

Etymology. The genus is named for its morphological resemblance to some species of *Sacada*. The gender is feminine.

Distribution. North-eastern India (Meghalaya, Mizoram, Sikkim), southern India (Karnataka); Myanmar; Vietnam; Nepal.



Figures 27–32. Male genitalia of *Sacada* spp. **27, 28** Male genitalia of *S. dzonguensis*, sp. nov. **29, 30** male genitalia of *S. umtasorensis*, sp. nov. **31, 32** male genitalia of *S. pallescens* Hampson.



Figures 33–40. Male genitalia of *Pseudosacada flexuosa* (Snellen). **33** Ventral view **34** dorsal view **35** aedeagus **36** valva **37** uncus **38** gnathos **39** lateral process of uncus **40** enlarged view of transtilla processes.

***Pseudosacada flexuosa* (Snellen, 1890), comb. nov.**
Figs 15–18, 33–40

Paravetta flexuosa Snellen 1890: 558.
= *Sybrida inflammealis* Ragonot 1891: 75.

TD. Lectotype in NHMUK.

Description. Male, wingspan 30 mm (Figs 15–18). Adult dark chocolate brown with fuscous and purple tinge; antennae bipectinate up to one-third of the length, apically simple; abdomen pale brownish; anal tufts rather strong; forewing with sub-basal, oblique purple patch below cell; antemedial line outwardly oblique from costa to vein Cu_2, then rounded inward to meet inner margin, a small indention present in cell; postmedial line inwardly oblique, former inwardly and later outwardly bordered with ochreous scales; area between both lines distinctly differently coloured then rest of wing, an elongate spot on discocellular; on outer side of postmedial line, a roughly rectangular ochreous golden patch present from sub-costa to vein R_5, veins on it dark. Hindwing ochreous brown with a curved postmedial line; outer area darker; underside paler; cilia as ground colour with fuscous basally. Hind tibia with two pairs of unequal tibial spurs covered with dark rufous scales, tip of each spur covered with whitish scales, one separate bunch of long rufous scales present. *Male genitalia* (Figs 33–40) discussed under the diagnosis of genus.

Material examined. India, Meghalaya: 6 ♂, Umtasor, 16.ix.2014, leg. Rahul Ranjan (Coll. NZCZSI); 1 ♂, Umtasor, 15.ix.2014, leg. Rahul Ranjan (Coll. NZCZSI); 1 ♂, Mawsynram, 28.viii.2014, leg. Rahul Ranjan (Coll. NZCZSI). India, Mizoram: 2 ♂, Kanhmun, 15.ix.2016, leg. Rahul Ranjan (Coll. NZCZSI). India, Karnataka: 3 ♂, Ganeshgudi, 28.xi.2013, leg. Rahul Ranjan (Coll. NZCZSI). Fig. 15, *Sacada inflamm*[*e*]*alis*/ Naga Hills, 3000–8000 ft., July–Aug. 1889, W. Doherty/Rothschild Bequest B.M. 1939-1/ BMNH (E) 1627031/ Collectio[n] H. J. Elwes.

Distribution. North-eastern India (Sikkim, Meghalaya, Mizoram, Nagaland), southern India (Karnataka); Vietnam (Yên Bái); Nepal. Records of Mizoram and southern India are newly reported here.

Identification key to the Oriental and Australasian species of *Sacada*

1	Hindwing with smoky brown marginal band	**2**
–	Hindwing without any marginal band	**3**
2	Forewing with antemedial and medial lines well separated	***S. amoyalis***
–	Forewing with antemedial and medial lines merged with each other at inner area	***S. confutsealis***
3	Hindwing with postmedial/submarginal line	**10**
–	Hindwing without any postmedial/submarginal line	**4**
4	Forewing with dark spot or white line present	**5**
–	Forewing without any dark spot or white line	***S. metaxantha***
5	Forewing with antemedial and post medial line outlined	***S. ragonotalis***
–	Forewing with antemedial and postmedial line without any outline	**6**

6 Forewing with thin white line closing end of cell ..... ***S. rubralis***
– Forewing without fine white line at end of cell..... **7**
7 Forewing with postmedial line strongly excurved at medial veins, then oblique to meet inner margin ..... ***S. szetschwanalis***
– Forewing with postmedial line not as above **8**
8 Forewing with postmedial line approximately oblique **9**
– Forewing with postmedial line slightly wavy ..... ***S. approximans***
9 Hindwing darker ..... ***S. tonsealis***
– Hindwing paler..... ***S. peltobathra***
10 Hindwing with postmedial/submarginal line incomplete **11**
– Hindwing with postmedial/submarginal line complete **14**
11 Forewing expenses about 20 mm (± 2–3 mm)..... **12**
– Forewing expenses greater than 30 mm..... **13**
12 Hindwing with three dark spots..... ***S. pusilla***
– Hindwing without dark spots ..... ***S. constrictalis***
13 Forewing with purplish rufous ground colour..... ***S. discinota***
– Forewing with purplish fuscous ground colour ..... ***S. sikkima***
14 Near the base of forewing a large transversely oblong whitish ringlet which encloses a black patch ..... ***S. decora***
– Forewing lacks the above attribute **15**
15 Hindwing yellowish, redder towards outer margin..... ***S. rufina***
– Hindwing not as above **16**
16 Forewing with antemedial and postmedial line fused **17**
– Forewing with antemedial and postmedial line not fused..... **18**
17 Forewing with antemedial and postmedial line fused from Cu_2 to inner margin..... ***S. inordinata***
– Forewing with antemedial and postmedial line fused at inner margin, forming V-shaped figure ..... ***S. olivina***
18 Forewing with single speck **19**
– Forewing with two specks (separate or joined by a bar) **21**
19 Hindwing with postmedial line crossed by a rufous streak on vein Cu_2 ..... ***S. pallescens***
– Hindwing without any streak on postmedial line..... **20**
20 Forewing with an olive-green cell spot ..... ***S. pyraliformis***
– Forewing with a reddish brown discoidal spot defined by grey .... ***S. papuana***
21 Forewing without antemedial line, postmedial line present..... ***S. unilinealis***
– Forewing with both the lines (antemedial and postmedial) present **22**
22 Forewing with a large, fiery red or yellowish rufous patch below the cell before the antemedial line..... **23**
– Forewing without such patch below the cell before the antemedial line..... **25**
23 Forewing with a large yellowish rufous patch below the cell before the antemedial line..... ***S. nigripuncta***
– Forewing with a large fiery red patch below the cell before the antemedial line **24**

24 Hindwing whitish, suffused with pale reddish..... ***S. albioculalis***
– Hindwing fuscous; postmedial curved line whitish, area beyond it reddish brown ..... ***S. hoenei***
25 Forewing with postmedial line highly angled ..... ***S. contigua***
– Forewing with postmedial line nearly oblique (not angled) **26**
26 Forewing with postmedial line oblique from costa to inner margin..... ..... ***S. umtasorensis* sp. nov.**
– Forewing with postmedial line straight from costa to radial vein and then oblique to inner margin ..... ***S. dzonguensis* sp. nov.**

Discussion

After the description of two new *Sacada* species and the transfer of one species to *Pseudosacada* gen. nov., the genus *Sacada* now comprises 42 species worldwide, including 23 from the Oriental region and 11 from India. With 13 *Sacada* species, the Afrotropical region is the next most diverse region for this genus, and a future systematic revision should focus on these species. Apart from this, the Australasian region, with four species (included in the identification key) and the East Palaearctic region with two species (*S. fasciata*, *S. misakiensis*) need study to investigate the correct placement of *Sacada* from these regions based on features of genitalia morphology.

Acknowledgements

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