

Contribution to the knowledge of myrmecophilous beetles (Coleoptera) of Bulgaria

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Received xxxxx, 2007; accepted xxxxx, 2007
Published October 30, 2007

Abstract. We herewith present new records on myrmecophilous beetles of the families Histeridae, Leiodidae, Scydmaenidae and Staphylinidae (Aleocharinae, Pselaphinae) in Bulgaria. In total 20 species are listed, seven of them are new to Bulgaria.

Distribution, myrmecophily, Coleoptera, Histeridae, Leiodidae, Scydmaenidae, Staphylinidae, Bulgaria, Palaearctic region

INTRODUCTION

Fauna of myrmecophilous beetles of Bulgaria has received substantial attention in the recent years. Rove beetles of the subfamily Aleocharinae, living together with *Formica exsecta* Nylander, 1846 were studied by Zerche (1988). Subfamilies Staphylininae, Paederinae and Aleocharinae from the colonies of *Formica pratensis* Retzius, 1783 were published by Illief & Lapeva (1997); Histeridae by Lapeva-Gjonova & Chehlarov (2003) and Staphylinidae, subfamily Pselaphinae by Lapeva-Gjonova (2004). Despite all of these studies, we conclude that myrmecophilous fauna of Bulgaria is poorly known and many new discoveries are to be expected.

Presented below are new and interesting records of symphilic myrmecophiles from the Western Rhodopes which were collected by first, second and fourth authors during their trip into that area in spring of 2005. Some additional data were added by R. Bekchiev from his private collection, the collections of the Muséum d'histoire naturelle, Genève and the National Museum of Natural History, Sofia. The material of Histeridae was identified by Tomáš Lackner, Leiodidae: Cholevinae by Jan Růžička, the rest of species were identified by Peter Hlaváč and Rostislav Bekchiev.

ABBREVIATIONS USED

MHNG – Muséum d'histoire naturelle, Genève, Switzerland;
NMNHS – National Museum of Natural History, Sofia, Bulgaria;
CPH – collection Peter Hlaváč, Košice, Slovakia;
CRB – collection Rostislav Bekchiev, Sofia, Bulgaria;
CJR – collection Jan Růžička, Praha, Czech republic;
CTL – collection Tomáš Lackner, Amsterdam, the Netherlands;
CVB – collection Volker Brachat, Geretsried, Germany;
BG – Bulgaria.

RESULTS

Histeridae

Haeterius ferrugineus (Olivier, 1789)

Haeterius ferrugineus: Lapeva-Gjonova & Chehlarov 2003: 12 (Zemen gorge, Southwest Bulgaria, host species *Formica fusca* L.)

MATERIAL EXAMINED. 2 spec.: BG, Rhodopes Mts., near Bachkovo village, "Chervenata stena" reserve, 500 m, 41° 55.953' N, 24° 51.969' E, on an open meadow, under rock in the colony of *Formica cinerea* Mayr, 1853, 2.vi.2005, leg. P. Hlaváč (CTL).

DISTRIBUTION. Common and widespread species almost in the entire Europe as far as Caucasus (Mazur 1997).

Leiodidae: Cholevinae

Attaephilus arenarius (Hampe, 1852)

Attaephilus arenarius: Szymczakowski 1965: 690 (only "Bulgaria", in a list of Balkan states); Růžička 1995: 123 (S of Avsenograd, Bachkovski Manastir).

MATERIAL EXAMINED. 1 male, 1 female: BG, Rhodopes Mts., Smolyan district, near Smilyan village, 41° 31.086' N, 24° 46.152' E, on an open sunny and xerothermic slope, under a rock in the colony of *Messor structor* (Latreille, 1798), 30.v.2005, leg. P. Hlaváč & T. Lackner (CJR).

DISTRIBUTION. Myrmecophilous and xerophilous species with European distribution (Perreau 2004).

Attaephilus cf. *funnebris* (Reitter, 1888)

MATERIAL EXAMINED. 1 male: BG, Rhodopes Mts., Smolyan district, Koshnitsa village, above "Ukhlovitsa" cave, 900 m, 41° 30.750' N, 24° 39.608' E, on an open sunny and xerothermic slope, under a rock in the colony of *Messor* sp., 28.v.2005, leg. T. Lackner (CJR).

DISTRIBUTION. Species of the genus *Attaephilus* Motschulsky, 1869 can be divided into several informal species groups (Jeannel 1936); *A. funnebris* species group consists of six species, characterized by oval body shape and subquadrate aedeagus with short apical tip (Jeannel 1936). All species of this group are myrmecophilous, associated with *Messor* sp. ants. There are four species known from the Balkan Peninsula: *A. funnebris* from Greece, Albania and Bosnia and Hercegovina (Perreau 2004); *A. illyricus* Jeannel, 1936 from Slovenia and Bulgaria (Jeannel 1936, Růžička 1995); *A. niger* Karaman, 1953 was described from Macedonia (Karaman 1953) and *A. rambouseki* Jeannel, 1936 was described from Bulgaria (Jeannel 1936). The examined specimen is clearly not identical with *A. illyricus* (judging from the shape of male mesotibia), and it belongs into one of the three remaining closely related species. Genus *Attaephilus* is in an urgent need of revision.

Scydmaenidae

Euconnus (*Napochus*) *chrysocomus* (Saulcy, 1864)

MATERIAL EXAMINED. 2 spec.: BG, Rhodopes Mts., Smolyan district, near Smilyan village, 41° 31.086' N, 24° 46.152' E, on the open, sunny xerothermic slope under rock in the colony of *Tetramorium* cf. *ferox* Ruzsky, 1903, 30.v.2005, leg. P. Hlaváč & T. Lackner (CPH).

DISTRIBUTION. The species is known (Löbl & Besuchet 2004) from Austria, Czech Republic, Slovakia, Germany, France, Hungary, Italy, Spain, Macedonia, Georgia and Turkey. New to Bulgaria.

Staphylinidae: Aleocharinae

***Dinarda* sp.**

MATERIAL EXAMINED. 1 spec.: BG, Rhodopes Mts., near Buynovo village, in nest of *Formica sanguinea* Latreille, 1798, 31.v.2005, leg. P. Hlaváč & T. Lackner (CPH).

***Lomechusa emarginata* (Paykull, 1789)**

MATERIAL EXAMINED. 5 spec.: BG, Rhodopes Mts., Pechtera town, above “Snezhanka” cave, on the bank of a small river, under stone, together with *Formica* sp., 600 m, 42° 0.702' N, 24° 16.862' E, 4.v.2006, leg. R. Bekchiev (CPH).

DISTRIBUTION. Common and wide-spread species in the whole Europe (Löbl & Besuchet 2004).

Staphylinidae: Pselaphinae

***Batrisodes buqueti* (Aubé, 1833)**

MATERIAL EXAMINED. 1 female: BG, Rila Mts., “Rilski” monastery, 11.vii.1957, leg. N. Karnoschitzky (NMNHS). 1 female: BG, Varna city, 17.ii.1957, 20.04.1958; 1 female: the same locality but 27.iv.1958, leg. N. Karnoschitzky (NMNHS). 1 female: BG, Pernik district, Zemen town, riverside Struma river, under bark, 590 m, 13.vi.2005, leg. D. Gradinarov (CRB). 2 females: BG, Belasitsa Mts., near hut “Belasitsa”, in rotten wood of *Castanea sativa* Mill., 710 m, 23.viii.2003, leg. E. Chehlarov. 2 females: BG, Belasitsa Mts., between Yavornitsa village and Kluch village, in rotten wood of an old trunk, 400 m, 41° 21.802' N, 23° 01.500' E, 4.ix.2006, leg. R. Bekchiev (CRB). 1 female: BG, Petrich district, place “Rupite”, riverside of Struma river, in hollow of *Populus* sp., rotten wood, 100 m, 41° 27' 46" N, 23° 15' 56" E, 2.vi.2006, leg. R. Bekchiev (CRB).

DISTRIBUTION. The species is so far known from almost the entire Europe (Löbl & Besuchet 2004). New to Bulgaria.

***Batrisodes delaportei* (Aubé, 1833)**

Batrisodes delaportei: Karaman 1969: 16 Longosa (Varna city, riverside Kamchiya river); Lapeva-Gjonova 2004: 71 (Sofia City, host species *Lasius brunneus*).

MATERIAL EXAMINED. 1 female: BG, Petrich district, “Rupite” place, riverside of Struma river, in hollow of *Populus* sp., rotten wood, 100 m, 41° 27' 46" N, 23° 15' 56" E, 10.iv.2005; 1 female: the same locality but on 02.vi.2006, leg. R. Bekchiev (CRB). 1 male: BG, Vitosha Mts., near place “Byala voda”, under bark of *Fagus sylvatica* L., with *Lasius alienus* (Förster, 1850), 1100 m, 42° 38.437' N, 23° 13.453' E, 14.vii.2006, leg. R. Bekchiev (CRB).

DISTRIBUTION. Common species widely spread out in the whole Europe (Löbl & Besuchet 2004).

***Batrisodes hubenthalii* Reitter, 1913**

Batrisodes hubenthalii: Besuchet 1981: 284 (Stara Planina Mts., Varshets town).

MATERIAL EXAMINED. 1 female: BG, Belasitsa Mts., Kluch village, in rotten wood of *Platanus orientalis* L., 500 m, 41° 21.545' N, 23° 0.996' E, 6.vii.2006. 1 female: BG, Belasitsa Mts., between Yavornitsa village and Kluch village, in rotten wood of an old trunk, 400 m, 41° 21.802' N, 23° 1.50' E, 4.ix.2006, leg. R. Bekchiev (CRB).

DISTRIBUTION. Relatively rarely collected species but spread out in the whole Europe, also in the Caucasus (Löbl & Besuchet 2004).

***Batrisodes sulcaticeps* Besuchet, 1981**

Batrisodes sulcaticeps: Löbl & Besuchet 2004: 278 (only Bulgaria)

MATERIAL EXAMINED. 1 female: BG, Sandanski town, 28.V.1974, leg. J. Strejček (CVB). 1 male: BG, Petrich district, “Rupite” place, under a stone, 100 m, 41° 28.005' N, 23° 15.780' E, 15.iv.2006, leg. R. Bekchiev (CRB). 1 female: BG, Pirin Mts., Ilindentsi village, in rotten wood of an old trunk, 300 m, 41° 38.747' N, 23° 13.558' E, 04.iv.2006, leg. R. Bekchiev (CRB).

DISTRIBUTION. This species has been reported from Hungary, Bosnia & Hercegovina, Romania, Bulgaria and Greece (Löbl & Besuchet 2004).

***Batrisodes venustus* (Reichenbach, 1816)**

Batrisodes venustus: Karaman 1969: 16 (Longosa (Varna city, riverside Kamchiya river); Besuchet 1981: 282 (Stara Planina Mts., Varshets town).

MATERIAL EXAMINED. 1 male: Longosa (Varna city, riverside Kamchiya river), 21.vi.1957, leg. N. Karnoschitzky (NMNHS).

DISTRIBUTION. Common species spread out in the whole Europe (Löbl & Besuchet 2004).

***Batrisus formicarius* Aubé, 1833**

Batrisus formicarius: Lapeva-Gjonova 2004: 70 (Zemen gorge, Southwest Bulgaria, host species *Lasius brunneus*).

MATERIAL EXAMINED. 1 male: BG, Pernik district, Kovachevtsi village, bank of dam “Pchelina”, in hollow of *Salix* sp., rotten wood, with *Lasius* sp., 550 m, 42° 33.104' N, 22° 49.184' E, 17.iv.2005, leg. R. Bekchiev (CRB). 5 males, 5 females: BG, Vitosha Mts., near place “Byala voda”, under bark of *Fagus sylvatica* L., with *Lasius alienus*, 1100 m, 42° 38.437' N, 23° 13.453' E, 14.vii.2006, leg. R. Bekchiev (CRB). 3 spec.: BG, Arkutino, vi.1969, leg. A. Olexa (CPH).

DISTRIBUTION. Common species spread out in the whole Europe (Löbl & Besuchet 2004).

***Claviger (Claviger) testaceus* Preyssl, 1790**

Claviger (Claviger) testaceus: Löbl & Besuchet 2004: 282 (only Bulgaria); Bekchiev & Shishiniova 2007: 35 (Vitosha Mts.).

MATERIAL EXAMINED. 1 male: BG, Stara planina Mts., Vrachanska planina, under bark of *Fagus sylvatica* L., 1000 m, 8.vi.1989, leg. C. Besuchet (MHNG).

DISTRIBUTION. For Bulgaria already reported from Vitosha Mts. (Bekchiev & Shishiniova 2007). Common and wide-spread species, almost in the whole Europe, also Turkey. (Löbl & Besuchet 2004).

***Claviger (Clavifer) handmanni* Wasmann, 1898**

Claviger (Clavifer) handmanni: Lapeva-Gjonova 2004: 72 (Sofia city, host species *Lasius flavus*).

MATERIAL EXAMINED. 3 males, 3 females: BG, Blagoevgrad district, Paril village, place “Hambar dere”, 900 m, 8.v.1981, leg. P. Beron (MHNG). 1 male, 1 female: BG, Sofia city, “Borisova gradina” park, under a stone in the nest of *Lasius alienus*, 550 m, 42° 41.003' N, 23° 20.198' E, 18.iii.2003, leg. R. Bekchiev (CRB). 4 males, 2 females: BG, Rhodopes Mts., Smolyan district, near Chepintsi village, under a stone in the nest of *Lasius alienus*, 900 m, 41° 25.285' N, 24° 54.223' E, 1.vi.2005, leg. P. Hlaváč (CPH). 7 males, 2 females: BG, Rhodopes Mts., Smolyan district, near Adra village, under a stone in the nest of *Lasius alienus*, 30.v.2005, leg. P. Hlaváč (CPH). 1 male, 1 female: BG, Rhodopes Mts., Smolyan district, Koshnitsa village, above “Ukhlovitsa” cave, under a stone, together with *Lasius alienus*, 900 m, 41° 30.750' N, 24° 39.608' E, 29.v.2005, leg. R. Bekchiev (CRB).

DISTRIBUTION. The species has been known so far only from Bosnia and Hercegovina, Bulgaria, Greece and Romania (Löbl & Besuchet 2004).

***Claviger (Clavifer) merkli* Reitter, 1885**

Claviger (Clavifer) merkli: Mařan 1936: 27 (Asenovgrad, Burgas).

MATERIAL EXAMINED. 1 male: BG, Asenovgrad town (= Stanimaka), 11.v.1909, leg. Rambousek (MHNG). 1 male, 1 female: BG, Varna district, "Zlatni Piasatzi" resort, 4.viii.1970, leg. Palm (MHNG). 1 female: BG, Sofia city, "Borisova gradina" park, 550 m, 42° 41.003' N, 23° 20.198' E, under a stone, together with *Lasinus niger* (L., 1758), 16.v.2005, leg. R. Bekchiev (CRB). 1 male, 1 female: BG, Lozen Mts., near Pasarel village, 600 m, under a stone, together with *Lasinus alienus*, 02.iv.2005, leg. R. Bekchiev (CRB). 1 male: BG, Vitosha Mts., Zheleznitsa village, 1200 m, under stone with *Lasinus alienus*, 15.v.2005, leg. R. Bekchiev (CRB). 2 females: BG, Vitosha Mts., near Knyazhevo village, 660 m, 42° 39.062' N, 23° 14.347' E, sifting rotten wood, with *Lasinus niger*, 28.iv.2005, leg. R. Bekchiev (CRB, CPH).

DISTRIBUTION. The species has been known so far only from Bulgaria, Greece and Turkey (Löbl & Besuchet 2004).

***Claviger (Clavifer) emgei* Reitter, 1885**

MATERIAL EXAMINED. 2 males, 1 female: BG, Rhodopes Mts., Smolyan district, near Chepintsi village, 900 m, 41° 25.285' N, 24° 54.223' E, under stone with *Lasinus alienus*, 01.vi.2005, leg. R. Bekchiev (CRB, CPH).

DISTRIBUTION. The species has been known so far only from Greece (Löbl & Besuchet 2004). New to Bulgaria.

***Claviger (Clavifer) elysius* Reitter, 1884**

MATERIAL EXAMINED. 1 female: BG, Pirin Mts., Musomishte village, 600 m, sifting, 13.vi.1989, leg. C. Besuchet (MHNG).

DISTRIBUTION. This species has been known so far only from Greece (Löbl & Besuchet 2004). New to Bulgaria.

***Trichonyx sulcicollis* (Reichenbach, 1816)**

Trichonyx sulcicollis: Karaman 1969: 16 (Rila Mts., Varna City).

MATERIAL EXAMINED. 4 males, 2 females: BG, Vitosha Mts., above Knyazhevo village, old trunk of *Pinus* sp. in rotten wood, with *Lasinus alienus*, 660 m, 42° 39.062' N, 23° 14.347' E, 28.iv.2005 and 13.v.2005, leg. R. Bekchiev (CRB).

DISTRIBUTION. Common species spread out in the whole Europe (Löbl & Besuchet 2004).

***Chennium steigerwaldi* Reitter, 1882**

MATERIAL EXAMINED. 1 male, 3 females: BG, Petrich district, "Rupite" place, "Kozhuha" hill, under a stone in the colony of *Tetramorium caespitum* L., 1758, 210 m, 041° 27' 48" N, 23° 15' 22" E, 16.iii.2003, leg. Y. Petrova, R. Bekchiev (CRB). 1 male: BG, Rhodopes Mts., Smolyan district, near Smilyan village, 840 m, 41° 31.086' N, 24° 46.152' E, on an open sunny and xerothermic slope, under a rock in the colony of *Tetramorium* cf. *ferox*, [det. P. Hlaváč], 30.v.2005, leg. T. Lackner (CPH).

DISTRIBUTION. This species has been so far known only from Austria, Croatia and Italy (Löbl & Besuchet 2004). New to Bulgaria.

***Centrotoma brucki* Saulcy, 1874**

MATERIAL EXAMINED. 1 ex: BG, Burgas district, near Nesebar town, 30.v.1996, leg. Majzlan (CPH).

DISTRIBUTION. This species has been known so far only from Greece (Löbl & Besuchet 2004). New to Bulgaria.

CONCLUSIONS

As a result of this study, new records of 20 species of myrmecophilous beetles are listed. Six of them [*Euconnus (Napochus) chrysocomus*, *Batrisodes buqueti*, *Claviger (Clavifer) emgei*, *Claviger (Clavifer) elysius*, *Chennium steigerwaldi* and *Centrotoma brucki*] are reported from Bulgaria for the first time. New localities are given for the following Pselaphinae: *Batrisodes delaportei*, *B. hubenthali*, *B. sulcaticeps*, *B. venustus*, *Batrisus formicarius*, *Claviger (Clavifer) testaceus*, *Claviger (Clavifer) handmanni*, *Claviger (Clavifer) merkli* and *Trichonyx sulcicollis*.

Acknowledgements

We are indebted to Claude Besuchet, Genève for the verification of the identification of species of the genus *Claviger* and to Ms. A. Lapeva-Gjonova for the identification of host ants.

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