

**CONTRIBUTION TO THE KNOWLEDGE OF CERAMBYCID FAUNA  
(COLEOPTERA: CERAMBYCIDAE) OF BELASITSA MOUNTAIN  
IN BULGARIA**

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**Abstract**

Cerambycid fauna (Coleoptera: Cerambycidae) of Belasitsa Mt. was studied during the period 2010-2012. As a result, 48 species and subspecies were collected or established as unidentified records in the entomological collections of Institute of Biodiversity and Ecosystem Research and National Museum of Natural History in Sofia. They belong to the following 5 sub-families: Prioninae (2 species), Lepturinae (13), Spondylidinae (1), Cerambycidae (18) and Lamiinae (14). Twenty four species were found as new for Belasitsa Mt., and one of them, *Agapanthia schurmanni* Sama, was recorded for first time in Bulgaria. Five species, *Axinopalpis gracilis* (Krynicky), *Poecilium alni* (Linnaeus), *Nathrius brevipennis* (Mulsant), *Leiopus nebulosus* (Linnaeus) and *Pogonocherus hispidulus* (Piller et Mitterpacher) were reared from stems and branches of *Castanea sativa* Mill. One subspecies, *Morimus asper funereus* (Mulsant) was reared from a stem of *Pseudotsuga menziesii* (Mirb.) Franco which is a new host plant of the cerambycide.

**Key words:** Cerambycidae, Belasitsa Mt., new species

**INTRODUCTION**

The cerambycid fauna of Bulgaria (Coleoptera: Cerambycidae) is relatively well studied but there is insufficient knowledge about regional distribution of the species. Complex studies on longhorn beetles were conducted in some Bulgarian Mountains only: Eastern Rhodopes (Georgiev et al., 2002, 2004), Strandzha (Georgiev, Stojanova, 2003), Vitosha (Migliaccio et al., 2004; Doychev et al., 2009), Western Rhodopes (Georgiev et al., 2005a, 2006) and West Balkan Range (Georgiev, 2011).

Belasitsa is a part of Osogovo-Belasitsa mountain group, with a total area of 670 km<sup>2</sup>. The predominating part of the mountain is divided between Greece and FYR of Macedonia. In Bulgaria lies only 20% of its territory.

The species composition of cerambycid fauna depends on the geographical location, climate peculiarities, and the vegetation of the region. In Belasitsa there is a unique combination of situation between two climate zones and participation of large number host plants, clearly distributed in vegetation belts.

In the low parts the oak belt, typical for large parts of the rest of Bulgaria, is removed by the belt of *Castanea sativa* Mill., where are the largest localities of the species in the country. The sweet chestnut belt reaches up to 900-1000 m a.s.l. It is formed by pure or mixed stands with *Fagus sylvatica* L., *Quercus* spp. and other deciduous species: *Carpinus betulus* L., *Ostrya carpinifolia* Scop., etc. Along the rivers and torrents communities of *Platanus orientalis* L. and *Alnus glutinosa* (L.) Gaertn also occur.

Above the sweet chestnut belt is situated the beech belt reaching about 1700 m. In it there is insignificant participation of coniferous species: *Abies alba* Mill., *Pinus sylvestris* L., *Picea abies* (L.) Karst., *Taxus baccata* L. and *Pseudotsuga menziesii* (Mirb.) Franco – in plantations with natural and artificial origin.

The third height vegetation belt is the sub-alpine formed mainly by *Juniperus communis* L., *J. sibirica* Burgsd, solitary specimens of *Pinus mugo* Turra, and *Vaccinium* spp. In the past this belt was covered by dense plantations of *P. mugo* but due to many fires in the mountain now in it predominate mainly grass communities.

This paper provides data about studies on cerambycid fauna of Belasitsa Mountain in Bulgaria.

## MATERIALS AND METHODS

The studies were conducted during the period 2010-2012 by traditional entomological methods: hand collection of cerambycids on flowers and host plants; collection in soil traps and flight interception traps in tree crowns; rearing of adults in laboratory conditions from infested stems and branches of host plants; investigation of unidentified cerambycid specimens in entomological collections of Institute of Biodiversity and Ecosystem Research and National Museum of Natural History.

The new species for Belasitsa Mt. are marked with an asterisk in the text, and the one new for Bulgaria – with two asterisks.

The biological material is deposited in entomological collections mentioned in the text below with the following abbreviations: [FRI] – coll. of Forest Research Institute, Sofia; [IBER] – coll. of Institute of Biodiversity and Ecosystem Research, Sofia; [NMNH] – coll. of National Museum of Natural History, Sofia.

## RESULTS

A total of 48 species and subspecies of longhorn beetles were collected in Belasitsa Mt. or were established as unidentified and unpublished records in studied

entomological collections. Among them, 24 species were found as new for Belasitsa Mt. The cerambycids belong to 5 subfamilies as follows: Prioninae (2 species), Lepturinae (13), Spondylidinae (1), Cerambycidae (18) and Lamiinae (14):

#### PRIONINAE

##### **\**Prionus coriarius* (Linnaeus, 1758)**

Kamena vill., 400-450 m, July-August 2008, 5 ex. in soil traps, leg. B. Guéorguiev, [FRI]; Samuilovo vill., 400-450 m, 06.07-14.08.2008, 3 ex., leg. B. Guéorguiev, [FRI]; Belasitsa hut, 600 m, 14.07.2010, 2 ex., leg. G. Georgiev, [FRI]; 03.07.-23.08.2010, 1 ex. in soil trap, leg. B. Guéorguiev, [FRI].

##### **\**Prionus besicanus* Fairmaire, 1855**

Luda Mara River above Petrich, 25. 05-11. 07. 2010, 1 ex., leg. N. Simov, [FRI].

#### LEPTURINAE

##### ***Alosterna tabacicolor* (De Geer, 1775)**

Above Petrich, 850 m, 30.05.-12.07.2010, 1 ex., leg. N. Simov, [FRI]; Belasitsa Mt., 18.05.-04.07.2010, 1 ex., leg. B. Guéorguiev and H. Delchev, [FRI]].

##### ***Anoplodera sexguttata* (Fabricius, 1775)**

Above Petrich, 850 m, 30.05.-12.07.2010, 1 ex., leg. N. Simov, [FRI].

##### **\**Pachytodes cerambyciformis* (Schrank, 1781)**

Belasitsa Mt., 21-22.06.1979, 1 ex., leg. A. Slivov, [IBER].

##### ***Pachytodes erraticus* (Dalman, 1817)**

Above Petrich, 750 m, 14.07.2010, 1 ex., leg. G. Georgiev, [FRI]; 700-850 m, 29.05.-12.07.2010, 2 ex., leg. N. Simov, [FRI].

##### ***Rutpela maculata* (Poda, 1761)**

Belasitsa hut, 750 m, 26-29.06.1981, 3 ex., leg. A. Slivov, [IBER]; Lopovo loc. above Samuilovo vill., 1400 m, 07.07.2008, 1 ex., leg. R. Bekchiev, [FRI]; Belasitsa hut, 700-950, 14.07.2010, 6 ex., leg. G. Georgiev, [FRI]; Above Petrich, 700-750, 29.05.-12.07.2010, 3 ex., leg. N. Simov, [FRI].

##### **\**Stenurella melanura* (Linnaeus, 1758)**

Belasitsa Mt., 21-22.06.1979, 1 ex., leg. A. Slivov, [IBER]; above Kongura Reserve, 1500 m, 09.07.2008, 3 ex., leg. R. Bekchiev, [FRI]; Belasitsa hut, 750-950 m, 14.07.2010, 3 ex., leg. G. Georgiev, [FRI]; above Petrich, 500-850 m, 30.05.-08.08.2010, 17 ex., leg. N. Simov, [FRI].

##### ***Stenurella septempunctata* (Fabricius, 1792)**

Above Petrich, 850 m, 30.05.-12.07.2010, 2 ex., leg. N. Simov, [FRI].

##### **\**Stictoleptura scutellata* (Fabricius, 1781)**

Belasitsa Mt., 21-22.06.1979, 8 ex., leg. A. Slivov, [IBER]; above Petrich, 750 m, 31.05.-12.07.2010, 1 ex., leg. N. Simov, [FRI].

##### **\**Necydalis ulmi* Chevrolat, 1838**

Belasitsa Mt., July 2010, 1 ex., leg. N. Simov, [FRI].

**\*Grammoptera abdominalis (Stephens, 1831)**

Belasitsa Mt. above Petrich, 700 m, 31.05.-12.07.2010, 2 ex., leg. N. Simov, [FRI].

**Grammoptera ustulata (Schaller, 1783)**

Above Petrich, 700-850 m, 31.05.-12.07.2010, 4 ex., leg. N. Simov, [FRI].

**\*Rhagium bifasciatum Fabricius, 1775**

Between Belasitsa hut and Kongura Reserve, 1100 m, 17.05.2008, 2 ex., leg. R. Bekchiev, [FRI].

**\*Xylosteus spinolae Frivaldszky, 1838**

Kongura Reserve, 1500 m, 19.06-09.07.2008, 5 ex. in soil traps, leg. B. Guéorguiev, [FRI]; 27.03.-04.07.2010, 2 ex., leg. B. Guéorguiev, H. Delchev, [FRI].

SPONDYLIDINAE

**Saphanus piceus ganglbaueri Brancsik, 1886**

Samuilovo vill., 06.07-14.08.2008, 1 ex., leg. B. Guéorguiev, [FRI]; above Belasitsa hut, 1500 m, 09.07-03.09.2008, 2 ex. in soil traps, leg. B. Guéorguiev, [FRI]; Kongura Reserve, 1670 m, 14.08-03.09.2008, 1 ex. in soil trap, leg. B. Guéorguiev, [FRI].

CERAMBYCINAE

**\*Axinopalpis gracilis (Krynicky, 1832)**

Above Petrich, 850 m, 17.06.2010, 1 ex. reared from branches of *C. sativa*, leg. G. Georgiev, [FRI]; above Petrich, 650-750 m, 11.07.-08.08.2010, 2 ex., leg. N. Simov, [FRI].

**\*Phymatodes testaceus (Linnaeus, 1758)**

Above Petrich, 500-800 m, 08.05.-12.07.2010, 4 ex., leg. N. Simov, [FRI].

**\*Poecilium alni (Linnaeus, 1767)**

Above Petrich, 550 m, 18.06.2010, 1 ex. reared from branches of *C. sativa*, leg. G. Georgiev, [FRI].

**\*Poecilium lividum (Rossi, 1794)**

Above Petrich, 750 m, 31.05.-12.07.2010, 3 ex., leg. N. Simov, [FRI].

**Cerambyx cerdo Linnaeus, 1758**

Above Petrich, 500-600 m, 30.05.-12.07.2010, 2 ex., leg. N. Simov, [FRI].

**Cerambyx scopoli Füsslin, 1775**

Lopovo loc. above Samuilovo vill., 1400 m, 07.07.2008, 1 ex., leg. R. Bekchiev, [FRI].

**Clytus rhamni Germar, 1817**

Kamena vill., 500 m, 13-16.06.2008, 2 ex., leg. R. Bekchiev, [FRI].

**\*Nathrius brevipennis (Mulsant, 1839)**

Above Petrich, 650 m, 29.06-05.07.2010, 6 ex. reared from branches of *C. sativa*, leg. G. Georgiev, [FRI].

***Plagionotus floralis* (Pallas, 1733)**

Belasitsa hut, 750 m, 26-29.06.1981, 1 ex., leg. A. Slivov, [IBER].

***Purpuricenus budensis* (Götz, 1783)**

Belasitsa hut, 750 m, 26-29.06.1981, 2 ex., leg. A. Slivov, [IBER].

**\**Purpuricenus kaehleri* (Linnaeus, 1758)**

Lopovo loc. above Samuilovo vill., 1400 m, 07.07.2008, 1 ex., leg. R. Bekchiev, [FRI]; above Petrich, 650 m, 12.07.-08.08.2010, 1 ex., leg. N. Simov, [FRI].

**\**Rosalia alpina* (Linnaeus, 1758)**

Belasitsa Mt., 750 m, 07.07.1995, 1 ex., leg. B. Guéorguiev, [NMNH]; Belasitsa hut, 750 m, 14.07.2010, 5 ex. on *Fagus sylvatica* L., leg. G. Georgiev, [FRI].

***Stenhomalus bicolor* (Kraatz, 1862)**

Kamena vill., 480-600 m, 18-19.05.2008, 1 ex., leg. B. Guéorguiev, [FRI].

***Stenopterus rufus* (Linnaeus, 1767)**

Kamena vill., 500 m, 13-16.06.2008, 1 ex., leg. R. Bekchiev, [FRI].

**\**Stromatium unicolor* (Olivier, 1795)**

Belasitsa hut, 750 m, 26-29.06.1981, 2 ex., leg. A. Slivov, [IBER].

***Trichoferus pallidus* (Olivier, 1790)**

Above Petrich, 750 m, 08.08-07.10.2010, 1 ex., leg. N. Simov, [FRI].

**\**Xylotrechus antilope* (Schönherr, 1817)**

Above Petrich, 500-800 m, 12.07.-08.08.2010, 2 ex., leg. N. Simov, [FRI].

**\**Xylotrechus arvicola* (Olivier, 1795)**

Above Petrich, 500 m, 12.07.-08.08.2010, 1 ex., leg. N. Simov, [FRI].

LAMIINAE

**\**Aegomorphus clavipes* (Schrank, 1781)**

Belasitsa Mt., 500 m, 07.05-31.05.2010, 1 ex., leg. N. Simov, [FRI].

***Agapanthia kirbyi* (Gyllenhal, 1817)**

Kongyra Reserve, 1300-1600 m, 16.06.2008, 2 ex., leg. R. Bekchiev, [FRI].

**\*\**Agapanthia schurmanni* Sama, 1978**

Klych vill., 450-550 m, 06.07.2008, 1 ex., leg. B. Guéorguiev, [FRI].

***Agapanthia villosoviridescens* (De Geer, 1775)**

Belasitsa Mt., 21-22.06.1979, 1 ex., leg. A. Slivov, [IBER]; Belasitsa, 01-05.07.1980, 1 ex., leg. A. Slivov, [IBER].

***Agapanthia violacea* (Fabricius, 1775)**

Belasitsa Mt., 21-22.06.1979, 4 ex., leg. A. Slivov, [IBER].

***Exocentrus adpersus* Mulsant, 1846**

Above Petrich, 500-750 m, 30.05.-12.07.2010, 4 ex., leg. N. Simov, [FRI].

**\**Exocentrus lusitanus* (Linnaeus, 1767)**

Above Petrich, 700 m, 08.08.-07.10.2010, 1 ex., leg. N. Simov, [FRI].

***Leiopus nebulosus* (Linnaeus, 1758)**

Above Petrich, 550-760 m, 05.05-19.07.2010, 3 ex. reared from stems of C.

sativa, leg. G. Georgiev, [FRI]; 500-800 m, 500-800 m, 07.05.-08.08.2010, 8 ex., leg. N. Simov, [FRI].

***Mesosa curculionoides* (Linnaeus, 1761)**

Kamena vill., 400-450 m, July-August 2008, 1 ex. in a soil trap, leg. B. Guéorguiev, [FRI].

**\**Mesosa nebulosa* (Fabricius, 1781)**

Belasitsa hut, 750 m, 26-29.06.1981, 1 ex., leg. A. Slivov, [IBER]; above Petrich, 600 m, 30.05.-08.08.2010, 2 ex., leg. N. Simov, [FRI].

***Morimus asper funereus* Mulsant, 1862**

Kongura Reserve, 1 ex., reared from a larva collected in a stem of Douglas fir, *Pseudotsuga menziesii* (Mirb.) Franco. Sample collection: 2008; emergence – June 2009, leg. D. Doychev, [FRI].

**\**Phytoecia cylindrica* (Linnaeus, 1758)**

Klych vill., 450-550 m, 06.07.2008, 1 ex., leg. B. Guéorguiev, [NMNH].

***Pogonocherus hispidulus* (Piller et Mitterpacher, 1783)**

Above Petrich, 550-760 m, 02.07-18.08.2010, 6 ex. reared from *C. sativa*, leg. G. Georgiev, [FRI].

***Saperda octopunctata* (Scopoli, 1772)**

Belasitsa hut, 750 m, 26-29.06.1981, 2 ex., leg. A. Slivov, [IBER].

## DISCUSSION

The new cerambycid for the fauna of Bulgaria, *A. schurmanni*, is a Balkan endemic, known from FYR of Macedonia and Northern Greece (Hoskovec, Rejzek, 2012). It is herbaceous species connected with *Asphodellus* spp.

Five species (*A. gracilis*, *P. alni*, *N. brevipennis*, *L. nebulosus*, *P. hispidulus*) were reared from stems and branches of sweet chestnut (*Castanea sativa*), and one subspecies (*M. asper funereus*) – from a stem of Douglas fir (*Pseudotsuga menziesii*). Two of the species were reared previously from stems of *C. sativa* in Bulgaria: *L. nebulosus* (Georgiev et al., 2005b) and *P. hispidulus* (Georgiev et al., 2005b; Ovcharov et al., 2007). Entomological literature provides data about trophical connection between *Castanea* genus and the remaining three cerambycid species: *A. gracilis*, *P. alni* (Bense, 1995; Sama, 2002) and *N. brevipennis* (Bense, 1995; Di Iorio, 2004). However, *M. asper funereus* was reared for first time from *P. menziesii*. According to Sama (2002), another subspecies, *Morimus asper asper* (Sulzer, 1776) is polyphagous on deciduous and coniferous trees, while the development of *M. asper funereus* is restricted to deciduous genera (*Fagus*, *Quercus*, *Castanea*, *Tilia*, *Populus*). Thus, the Douglas fir is a new host plant of the cerambycide.

Three forest cerambycid species with high conservation value included in Habitats Directive 92/43/EEC (*C. cerdo*, *M. asper funereus* and *R. alpina*) were established in this study. Two of them, *C. cerdo* and *M. asper funereus*, were recorded previously in Belasitsa Mt. (Ovcharov, Doychev, 2004; Ovcharov et al., 2007). *R.*

*alpina* was not found until the present despite the presence of massive beech belt with many old trees and excellent condition for its development.

Until the present study, 76 species of Cerambycidae family were reported for Belasitsa Mt. (Heyrovský, 1931; Kantardjiewa-Minkova, 1932, 1934, 1936; Minkova, 1957, 1961; Angelov, 1967, 1995; Ganev, 1984; Doychev, Georgiev, 2004; Ovcharov, Doychev, 2004; Georgiev et al., 2005b; Rapuzzi, Georgiev, 2007; Ovcharov et al., 2007). The new records increase the number of cerambycid fauna of Belasitsa up to 100 species and subspecies. Because of absence of coniferous belt in the mountain, no more than 40-60 species could be found in the future, which indicate that the knowledge of cerambycids in Belasitsa is about 60-70%.

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