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# SOME RARE LONGHORN BEETLES (COLEOPTERA: CERAMBYCIDAE) WITHOUT PROTECTION ON THE NATIONAL LEVEL FOUND ON MT. FRUŠKA GORA, SERBIA

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*Abstract* - Entomological research and literature data on longhorn beetles (Coleoptera: Cerambycidae) indicate the presence of 78 species on the mountain Fruška Gora, Serbia. Nineteen species are listed as rare on the territory of Serbia and Montenegro. Based on information about their bionomy and general distribution, these species are divided into five groups: a group of species with narrow ranges; a group of species whose range border passes through the territory of Serbia and Montenegro; a group of species which develop on only a few botanical species; a group of species for which the territory of Serbia and Montenegro is not their range border, but which are found rarely; and species introduced to Europe.

Key words: Coleoptera, Cerambycidae, protection, ecology, distribution, rare species, Mt. Fruška Gora, Serbia

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## INTRODUCTION

Up to now, few scientists have investigated the fauna of longhorn beetles (Coleoptera: Cerambycidae) of Serbia and Montenegro, particularly that of the mountain Fruška Gora. Adamović (1950) gives a list of these insects in the Natural History Museum of Serbia. The same author published a list of longhorn beetles known from the territory of Serbia (Adamović, 1965). This list contains 47 species from the mountain Fruška Gora. Also, Mikšić (1963) published a list of 25 species of longhorn beetles found on that mountain.

Since the year 1960, *Morimus funereus* (Mulsant, 1863) and *Cerambyx cerdo* (Linnaeus, 1758) (now on the National Red List) have been biochemically and physiologically examined by scientists of Siniša Stanković Institute of Biological Research in Belgrade.

In view of its specific geological and geomorphological characteristics, position, climate, and the fact that most of the mountain is protected as a national park, it seemed important to continue research on this group of insects. The mountain's cerambycid beetles are mostly xylophagous (almost 93% of the Fruška Gora National Park is forested), and their diversity agrees with data published on similar habitats. Because of all the unique characteristics of the mountain Fruška Gora, we expected to find some rare species there.

## MATERIALS AND METHODS

A unified list was compiled using all available literature data (Adamović, 1950, 1965; Mikšić, 1963) on the cerambycid beetle fauna (Coleoptera, Cerambycidae) from the mountain Fruška Gora. Notes on ranges of species were taken from Mikšić (1971), Mikšić and Georgijević (1971, 1973), Drovenik and Hladil (1984), Mikšić and Korpič (1985), Kovács *et al.* (1999, 2000, 2003), and Horčičko (2001-2002). Nutrition and development data were taken from Bense (1995) and Kovács (1997).

Synthesis has shown the presence of 18 rare species of longhorn beetles.

## RESULTS AND DISCUSSION

According to the published data, there are 78 species

belonging to five subfamilies and 24 tribes.

Euro-Mediterranean species are dominant (38 species). There are 18 Euro-Siberian species and 11 Pontic species. Only five widespread species are found, which emphasizes the important specificity of Fruška Gora. Also, there are four typically mountain species, such as *Tetropium fuscum* (Fabricius, 1787) and *Pachyta quadrimaculata* (Linnaeus, 1758), which are typical of parts of the Boreal region with conifer forests.

Some species are protected both internationally (World and European IUCN Red Lists of Globally Threatened Animals and Plants) and nationally [Uredba o zaštiti prirodnih retkosti (Službeni glasnik R Srbije, 50/1993)]. These are: *Rosalia alpina* (Linnaeus, 1758); *Cerambyx cerdo* (Linnaeus, 1758); and *Morimus funereus* (Mulsant, 1863).

In the present paper, the main objects of interest were Cerambycidae with no national or international protection status, but which according to literature data are rare in our country. They were divided in two main groups containing species which have specific bionomic similarities or similar ranges.

## SPECIES WITH SPECIFIC RANGE CHARACTERISTICS

### *1. Group of species with narrow ranges - Balkan endemics*

*Agapanthia osmanlis* Reiche, 1858
(subfam. Lamiinae, tribe Agapanthini)

Until the beginning of 20th century, it was known from Turkey and Asia Minor. Later it was registered from Mt. Strandža in Bulgaria (Kantardjiewa-Minkowa, 1934). Also recorded in Romania (Althoff and Danilevski, 1997). Development is unknown. It has a narrow range and is hard to find. Recorded for the first time in our country from the Paragovo locality (Fruška Gora) on 22 June 2004.

*Cortodera discolor* Fairmaire, 1866
(subfam. Lepturinae, tribe Lepturini)

Known for the faunae of Bulgaria and Greece, this species is a Balkan endemic. Development is unknown, as in all *Cortodera* registered in Europe. In our country, it has been registered only from Fruška Gora.

*Stenopterus similatus* Holzschuh, 1979
(subfam. Cerambycinae, tribe Stenopterini)

Development of this species is unknown. It was originally described from Greece. Until now, it had been reported only from Crete, where it is masively found. Registered in our country only from Fruška Gora.

*Aegomorphus krueperi* Kraatz, 1859
(subfam. Laminae, tribe Acanthoderini)

This is a Greek endemic species. Development is unknown. It was discovered on *Quercus* sp. and is a monophagous species. Reported earlier from Montenegro (Drovenik and Hladil, 1984), it is also registered from the Iriški Venac locality (Fruška Gora). The oak forest is very damaged on Fruška Gora, so this species is endangered. Preservation of the oak forest is necessary for survival of this species.

*Chlorophorus aegyptiacus* (Fabricius, 1775)
(subfam. Cerambycinae, tribe Clytini)

Endemic to the Balkan Peninsula, this species can be found in deciduous forests (*Quercus*, *Pistacia*, etc.) of Bulgaria, Macedonia, and Greece. Althoff and Danilevski (1997) do not record it for Serbia or Montenegro. The record from Fruška Gora is the first for our country.

*Leioderes kollari* L. Redtenbacher, 1849
(subfam. Cerambycinae, tribe Callidiini)

This species is probably a Balkan endemic that occurs regularly in Central and Southern Europe. It has been recorded to date only from Fruška Gora in Serbia and Montenegro.

### *2. Group of species whose range border passes through the territory of Serbia and Montenegro*

*Chlorophorus trifasciatus* (Fabricius, 1781)
(subfam. Cerambycinae, tribe Clytini)

This species is distributed from countries of the Western Mediterranean to the North African coast. It is very rare on the Balkan Peninsula, which constitutes the eastern border of its range. In our country, it is recorded from Radan Mountain (Jakšić *et al*. in press) and Fruška Gora (Adamović, 1965).

*Phymatodes rufipes* (Fabricius, 1776)
(subfam. Cerambycinae, tribe Callidiini)

This species is recorded from Central and Southern Europe, Ukraine, Asia Minor, and Syria. It is typical of deciduous forests.

Recorded in our country only from Fruška Gora (M i k š i ć , 1963). Distribution data show that this is the eastern border of its range.

*Stenhomalus (Obrium) bicolor* Kraatz, 1862
(subfam. Cerambycinae, tribe Obriini)

Resides in deciduous forests of Europe, Asia Minor, and Syria. Distribution data show that our country represents the northwestern border of its range. It is very rare on the territory of Serbia and Montenegro. Develops on *Euonymus, Rhamnus,* and *Ficus carica.* Recorded only from Srem (M i k š i ć , 1963), Serbia.

*Tetropium fuscum* (Fabricius, 1787)
(subfam. Aseminae, tribe Asemini)

This is a Euro-Siberian species, rare in the Mediterranean part of Europe. Distribution data show that the Balkan Peninsula constitutes the southern border of its range. It has been registered from two localities in Serbia: the mountains Kopaonik and Fruška Gora (A d a m o v i ć , 1965).

It is spread to North America from Europe and is now a great problem for forestry (an invasive species) there.

*Oplosia fennica* (Paykull, 1800)
(subfam. Lamiinae, tribe Acanthoderini)

Prefers old deciduous forests (*Tilia, Fagus, Corylus,* etc.), as well as younger forests with rich herbaceous vegetation and rotten wood. Removal of decaying trunks and alteration of forest regions are the major factors endangering survival of this species.

Recorded from Northern and Central Europe (endangered in Finland and Germany). Sparesly found in France, Slovenia, and northern parts of Italy. In Serbia and Montenegro, recorded only from Fruška Gora (the southern border of its range).

*Phytoecia scutellata* (Fabricius, 1792)
(subfam. Lamiinae, tribe Phytoecini)

Our country represents the southern border of the range of this Pontic species, which has been recorded from Southern Germany to Ukraine, Transcaucasia, Asia Minor, and Armenia.

Rarely found in our country, registered only from Fruška Gora.

*3. Group of species for which the territory of Serbia and Montenegro is not their range border, but which are found rarely*

*Phytoecia uncinata* (Reidtenbacher, 1843)
(subfam. Lamiinae, tribe Phytoecini)

This species is distributed in Northern Italy, Austria, Southern Germany, Bohemia, Slovakia, Poland, and the Balkans (dispersed data). M i k š i ć (1963) recorded it in Srem, Serbia.

*Leptura aurulenta* (Fabricius, 1792)
(subfam. Lepturinae, tribe Lepturini)

This Euro-Mediterranean species is found in Central and Southern Europe and North Africa. It has been recorded from Great Britain and from Germany, where it is an endangered species.

A typical forest species, it develops on deciduous trees (*Quercus*, *Castanea, Alnus, Betula,* etc.), and rarely on conifers (*Pinus*). Rarely found on our territory.

*Agapanthia maculicornis* (Gyllenhal, 1817)
(subfam. Lamiinae, tribe Agapanthini)

Reports of finding this Pontic species are less frequent. Like all *Agapanthia,* it is hard to find, so development is unknown. K o v á c s (1997) found its larvae in *Campanula glomerata*. It has been recorded from Sutomore (Montenegro) and Fruška Gora, Serbia.

*Stenopterus ater* (Linnaeus, 1767)
(subfam. Cerambycinae, tribe Stenopterini)

This typical Mediterranean species has been recorded from Bulgaria and Bohemia, so our recording of it from the continental part of Serbia is not odd. It is also

found in Montenegro.

*4. Species introduced to Europe*

*Neoclytus acuminatus* (Fabricius, 1775)
(subfam. Cerambycinae, tribe Clytini)

This species is native to North America and was introduced to the Mediterranean region, probably the northern part of the Adriatic coast and is spreading from there. It has been registered from Montenegro and is also present on the mountain Fruška Gora.

## SPECIES WITH SPECIFIC BIONOMIC CHARACTERISTICS

*1. Group of species which develop on only a few botanical species*

*Xylotrechus antilope* (Schönherr, 1817)
(subfam. Cerambycinae, tribe Clytini)

Recorded from Europe, the Caucasus, Armenia, Northern Iran, and North Africa, this species has a wide range, but it is monophagous and develops only on oaks. Kovács (1997) found it on *Quercus robur* and *Q. petraea.*

The given species was registered in Serbia and Montenegro by Adamović (1950). Its existence at the present time on Fruška Gora is questionable, and should be checked in the future.

*Vadonia unipunctata unipunctata* (Fabricius, 1787)
(subfam. Lepturinae, tribe Lepturini)

Distributed from Central Europe to North Africa, it develops on a small number of herbaceous species: *Knautia arvensis, Scabiosa* sp. (more rarely), and *Prunus spinosa.* This may be the reason for its infrequent finding. Registered only on Fruška Gora in our country.

Two similar species mentioned earlier also take part in this group: *Aegomorphus krueperi* Kraatz, 1859, and *Stenhomalus (Obrium) bicolor* Kraatz, 1862.

## CONCLUSIONS

Like most of the territory of Serbia and Montenegro, the Fruška Gora National Park is home to many rare species of flora and fauna.

Data analysis indicated the presence of 18 rare species of longhorn beetles which are not protected species in our country.

Two main groups of species are formed based on their bionomy or ranges.

The group based on range data contains several subgroups. The group of species with narrow ranges numbers six species endemic to some Balkan countries or the whole of the Balkans (*Agapanthia osmanlis* Reiche, 1858; *Cortodera discolor* Fairmaire, 1866; *Stenopterus similatus* Holzschuh, 1979; *Aegomorphus krueperi* Kraatz, 1859; *Chlorophorus aegyptiacus* (Fabricius, 1775); and *Leioderes kollari* L. Redtenbacher, 1849). *Stenopterus similatus* Holzschuh, 1979 and *Aegomorphus krueperi* Kraatz, 1859 are Greek endemics. In the case of species endemic to the Balkans, this region is their only habitat, and published data indicate their random registering. It can therefore be concluded that the given species are extremely rare.

Six species belong to the group whose range border passes through the territory of Serbia and Montenegro [*Chlorophorus trifasciatus* (Fabricius, 1781); *Phymatodes rufipes* (Fabricius, 1776); *Stenhomalus (Obrium) bicolor* Kraatz, 1862; *Tetropium fuscum* (Fabricius, 1787); *Oplosia fennica* (Paykull, 1800); *Phytoecia scutellata* (Fabricius, 1792)]. Special conditions in this part of Europe are not optimal for these species of longhorn beetles, and they are therefore rarely found here. These six species deserve special attention for the same reason why *Morimus funereus* (Mulsant, 1863) was proclaimed a nationally protected species.

The species *Phytoecia uncinata* (Reidtenbacher, 1843), *Leptura aurulenta* (Fabricius, 1792), *Agapanthia maculicornis* (Gyllenhal, 1817), and *Stenopterus ater* (Linnaeus, 1767) form the next group of longhorn beetles, ones which are in the center of their ranges but are found rarely here.

*Neoclytus acuminatus* (Fabricius, 1775) was introduced from North America to the region of the northern Adriatic and has spread into other parts of Europe. It has been registered twice in Serbia and Montenegro. This allochthonous species does not need to be protected in our country, but it is hard to find.

The second main group is composed of species with special bionomy. Some species, mostly their larvae, develop on only a few botanical species. These are: *Xylotrechus antilope* (Schönherr, 1817), *Vadonia unipunctata unipunctata* (Fabricius, 1787), *Aegomorphus krueperi* Kraatz, 1859, and *Stenhomalus (Obrium) bicolor* Kraatz, 1862. Some of them develop only on *Quercus* sp., associations of which are very devastated on Fruška Gora. Protection of each is linked with the survival of other species. All members of this group are fragile, which is probably why they are herein registered in our country for the first time.

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# РЕТКЕ ВРСТЕ СТРИЖИБУБА (COLEOPTERA, CERAMBYCIDAE) БЕЗ СТАТУСА ЗАШТИТЕ НА НАЦИОНАЛНОМ НИВОУ, САКУПЉЕНЕ НА ФРУШКОЈ ГОРИ, СРБИЈА

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На основу досадашњих литературних података о истраживањима стрижибуба (Coleoptera: Cerambycidae) на Фрушкој Гори од 78 потврђених врста издвојено је 19 ретких врста.

Анализом њиховог распрострањења и биономије подељене су у пет група: врсте са веома уским ареалима - ендемити балканских земаља, врсте за које простор ДСрбије и Црне Горе представља границу ареала, врсте чији је развој везан за мали број биљних врста, врсте за које Србија и Црна Гора не представљају границу ареала, али се ипак ретко налазе, и интродуковане врсте на европски континент.