THE STUDY OF ECOLOGY AND DISTRIBUTION OF *XYLOTRECHUS RUSTICUS, (LINNAEUS 1758)* IN THE BASIN OF GOVORA RIVER

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ABSTRACT

The territory under research is located in the Govora river basin (Valcea County) part of the Subcarpathian area of Oltenia and Capatanii Mountains. According to the research in this forest habitats, we identified the species Xylotrechus rusticus (Linnaeus, 1758), saproxylic Coleoptera showing a particular interest. The gray tiger longicorn beetle, Xylotrechus rusticus (Coleoptera: Cerambycidae) is a stem-boring pest that can inhibit not only the transportation of nutrients in the trunk but also the tree growth, increasing the risk of tree breakage and causing economic decreases. Xylotrechus rusticus is also a protected species according to - The IUCN Red List of Threatened Species and it fits in the LC category. This species prefers wood of the Populus sp. But we encounter this species also on the wood of the Fagus sp., Pinus sp. Salix sp., Betula sp., Acer sp., Tilia sp., Alnus sp., Castanea sp., Fraxinus sp., Sorbus sp. It is a saproxylic species, as we found it on the cut trunks of Populus alba, P. tremula, Fagus sylvatica and Salix alba in the Jgheaburi Forest and Buleta Forest located in the basin of the Govora river. In this area a high number of beetles can be found on the lowlands near the bank of Govora river. We have concluded that the population size of this particular species and trend are stable.

INTRODUCTION

The forests from this area is represented by: *Quercus patreae, Fagus sylvatica, Carpinus betulus, Tilia* sp., *Picea abies*, *Salix* sp., *Populus* sp. *Alnus glutinosa*, *A. incana*, *Fraxinus excelsior*, *Pinus sylvestris*. This species edified the next forest habitats: 91E0* - Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*), 9110 - *Luzulo-Fagetum* beech forests, 9170 - *Galio-Carpinetum* oak hornbeam forests, 9410 - Acidophilous *Picea* forests of the montane to alpine levels (*Vaccinio-Piceetea*). According to the research in this forest habitats, we identified the species *Xylotrechus rusticus* (Linnaeus, 1758), saproxylic Coleoptera showing a particular interest. The genus Xylotrechus Chevrolat (Coleoptera: Cerambycidae: Cerambycinae) can be distinguished by other genera in Clytini by frons with longitudinal carinae, broad sutures laterally or parallel sides; sides of vertex with minute punctuations, but sometimes sharply punctuate sclerites or without them, and with uniformly deep punctuations; antennae short, apice extend at most up to anterior third of elytra; sides of pronotum rounded, disk convex, densely punctuate; legs moderately long, femora nonclavate; first segment of hind tarsi much longer than two successive segments together' (Cherepanov, 1990). The gray tiger longicorn beetle, *Xylotrechus rusticus* (Coleoptera: Cerambycidae) is a stem-boring pest that can inhibit not only the

transportation of nutrients in the trunk but also the tree growth, increasing the risk of tree breakage and causing economic decreases. *Xylotrechus rusticus* is also a protected species according to - The IUCN Red List of Threatened Species and it fits in the LC category. This species is distributed in the Palaearctic region: Korea, Austria, Bulgaria, China, Croatia, Denmark, France, Germany, Greece, Hungary, Iran, Italy, Japan, Kazakhstan, Mongolia, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Switzerland, Turkey, Ukraine, Albania, Belarus, Belgium, Bosnia and Herzegovina, Czech Republic, Estonia, Finland, Latvia, Lithuania, Moldova, Montenegro, North Macedonia, Norway, Serbia, Sweden; Switzerland. In Romania we found this species occurs in the south, central and north part of the country where there exist large deciduous forests. This species prefers wood of the *Populus* sp. But we encounter this species also on the wood of the *Pinus* sp. *Fagus* sp., *Salix* sp., *Betula* sp., *Acer* sp., *Tilia* sp., *Alnus* sp., *Castanea* sp., *Fraxinus* sp., *Sorbus* sp. It is a saproxylic species, as we found it on the cut trunks of *Populus alba*, *P. tremula*, *Fagus sylvatica* and *Salix alba* in the Jgheaburi Forest, located in the basin of the Govora river.

In Romania we found this species occurs in the south, central and north part of the country where there exist large deciduous forests.

In Romania we found tis species in the low mountainous areas, where there exist large deciduous forests. It is mentioned in the following areas: Banat – Dumbrava, Făget, Geaca, Băile Herculane, Gherla; Transilvamnia – Cluj, Hațeg, Hunedoara, Brașov, Reghin, Mureș, Munții Retezat – Gura Zlata, Munții Buzăului, Cîrța, Măgura și la Turnu Roșu (S. Panin and N. Savulescu, 1961),

Taxonomy

Phylum: Arthropoda Latreille, 1829
Sous-Phylum: Pancrustacea Zrzavý & Štys, 1997
Infra-Phylum: Altocrustacea Regier, Schultz, Zwick, Hussey, Ball, Wetzer, Martin & Cunningham, 2010
Classe: Hexapoda Blainville, 1816
Sous-Classe: Insecta Linnaeus, 1758
Infra-classe: Pterygota Brauer, 1885
Cladus: Neoptera Martynov, 1923
Ordre: Coleoptera Linnaeus, 1758
Sous-Ordre: Polyphaga
Infra-Ordr: Cucujiformia
Super-Famille: Chrysomeloidea Latreille, 1802
Famille: Cerambycidae Latreille, 1802
Sous-Famille: Cerambycinae Latreille, 1802
Tribe: Clytini Mulsant, 1839
Genre: Xylotrechus Chevrolat, 1860

MATERIAL AND METHODS

The material for this study was collected in the period 2016-2019 (April-September) from different habitats forest in the basin of Govora river (Vâlcea County). As a result of landslides was collected entomological material, were made brush sampling by age, consistency, cardinal position, the edge area and isolated secular trees. The collected material was determined using the following works: Forest Entomology (I. Mircea Ene, 1971) and Fauna R. P. R. (S. Panin and N. Savulescu, 1961).

We followed the nomenclature and systematic proposed by Althoff & Danilevsky (1997) and Brustel et al. (2002).

Material examined: 15 specimens, Buleta Forest, 03.VI.2017, 415 m.s.m., leg. L. Niculescu; 47 specimens, Jgheaburi Forest, 20.VI.2018, 560 m.s.m. leg. L. Niculescu.

RESULTS AND DISCUSSIONS

During our study in the basin of Govora River, we identified in the forest habitats the species *Xylotrechus rusticus* (fig. 1, 2) saproxylic Coleoptera showing a particular interest. Material examined: Buleta Forest (9♀, 6♂; 03.VI.2017, leg. Niculescu Laurențiu), Schitul Jheaburi

(26♀, 21♂; 20.06.2018, leg. Niculescu Laurenţiu).

From Govora River basin area and also from Oltenia was not cited before. We identified for the first time this species in this area, in the Buleta Forest and Jgheaburi Forest, Vâlcea County.

Habitat and Ecology. In our country this species prefers the climatic complex of Fagus. In the basin of Govora river we found on the fresh cut trunks of *Pinus* sp. in the Jgheaburi Forest. In Buleta Forest this species is very rare and we found on the trunks and branches of *Quercus petraea, Fagus sylvatica* and *Populus* sp.

In the forest stands of this area the population of this species is relatively small, just 47 individuals have been identified.

The larval habits and host plants preferences of *Xylotrechus* are various and the major hosts include the genera *Fagus, Betula, Tilia, Ulmus, Quercus, Pinus*, and *Salix* (Linsley, 1964). This species is also a protected species according to -The IUCN Red List of Threatened Species and it fits in the LC category (http://www.iucnredlist.org/ initiatives/europe).

Remarks: The species is new for this area province and probably more or less widely distributed in Romania.

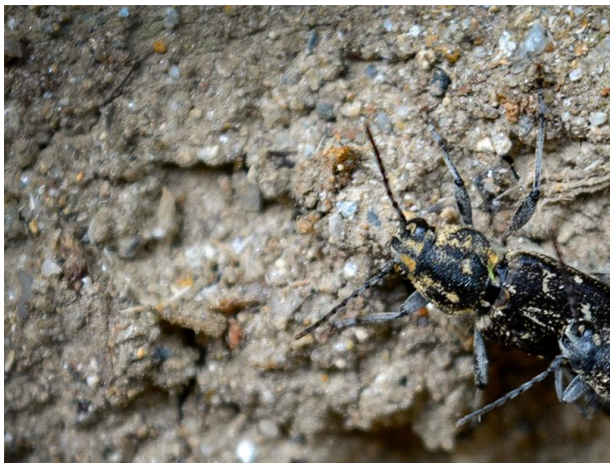

Fig.1. *Xylotrechus rusticus* Buleta Forest

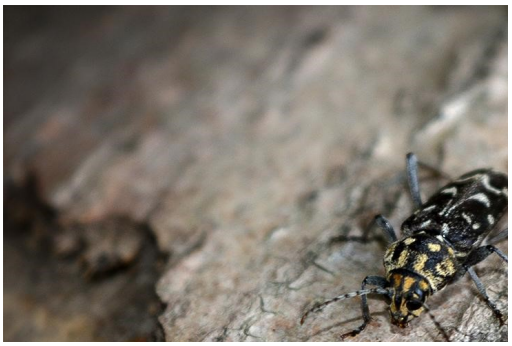

Fig.2. *Xylotrechus rusticus* on the *Quercus petarea* trunks in the Govora river basin

CONCLUSIONS

Following research in this forest habitats, we identified the species *Xylotrechus rusticus* (Linnaeus, 1758), saproxylic Coleoptera, saproxylic Coleoptera showing a particular interest.

In conclusion, it could be noted that the results of this study contribute to an increase of the biodiversity of the Romania fauna and discovery of new ecological relationships between insects in forest habitats. In the thematic area this species prefers the wood of *Pinus* sp., *Fagus* sp., *Quercus* sp. and *Populus* sp. This species is for first time cited from Vâlcea County, Govora river basin, from Jgheaburi Forest and Buleta Forest. *Xylotrechus rusticus* it is a nocturnal species and in the basin of Govora river we found a important population on the fresh cut trunks of *Pinus* sp. In the forest stands of this area the population of this species is relatively small, just 47 individuals have been identified. In this part of Oltenia very rare this species is found on the trunks and branches of *Quercus petraea*, *Fagus sylvatica* and *Populus* sp. In Europe *Xylotrechus rusticus* is considered a protected and rare species according to - The IUCN Red List of Threatened Species and it fits in the LC category.

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