

GENUS CERAMBYX L., 1758 (COLEOPTERA: CERAMBYCIDAE) IN THE NATURAL HISTORY MUSEUM COLLECTIONS OF SIBIU (ROMANIA)

Ioan TĂUȘAN

itausan@gmail.com
Natural History Museum
1st Cetății Street, 550160
Sibiu, Romania

Corneliu BUCȘA

cornelbucsa@yahoo.com
"Lucian Blaga" University of Sibiu, Faculty of Sciences
Department of Ecology and Environmental Protection
5 – 7th Dr. Ioan Rațiu Street, 550012
Sibiu, Romania

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ABSTRACT: *The paper consists of data on six Cerambyx species preserved in the collections of the Natural History Museum from Sibiu. The main interest is represented by the presence of Cerambyx cerdo Linnaeus, 1758, a protected species in Europe. Data on habitat requirements and distribution maps of the collecting sites are also given.*

INTRODUCTION

Longhorn beetles have been studied in Romania and particularly in Transylvania since early 1890's, when Seidlitz published in 1891 *Fauna transsylvanica*. In the same period Kuthy has published a study about coleopterans from Transylvania, *Fauna Regni Hungariae* (1897). Similar studies were undertaken by Deubel (1910), a zoogeographical catalogue with the longhorn beetles from the Carpathians and by Petri (1912), a comprehensive catalogue on Coleopterans collected especially from this area.

More recent, catalogs from museum collection were undertaken by Chimișliu (1990-1993) Serafim et al., (2004), Serafim (2005, 2006, 2007 and 2009), Tăușan & Bucșa (2010).

Cerambyx cerdo Linnaeus, 1758 is a species of particular interest being present in the 2nd Annex of the E.U. Habitats Directive.

The paper complements existing data on these species, and contributes in outlining the evolution of insect fauna of Romania.

MATERIAL AND METHODS

The preserved material is part of "Dr. Eugen Worell", "Dr. Karl Petri", "Rolf Weyranch", "Heinrich Hannenheim" and "Dr. Eckbert

Schneider" collections from the Natural History Museum of Sibiu heritage.

The "Dr. Karl Petri" collection consists of more than 46.300 insects. The material, a lifetime work, was collected from Transylvania. Karl Petri exchanges with foreign specialists are to be found in his collections. He donated the collection to the museum in 1930.

The "Dr. Eugen Worell" collection counts more than 93.000 copies. The material was collected from Romania, but also from different areas including Europe, Africa, Asia and North and South America. The collection was donated to the museum in 1958, by Eugen Worell (1884-1961).

The "Prof. Rolf Weyranch" collection consists of 16.436 insects. Rolf Weyranch collected the material in over 15 years (1950-1965), from Transylvania, mainly from the surroundings of Sibiu.

The material from "Heinrich Hannenheim" collections was collected mainly from different regions of Sibiu County. Hannenheim's collection contains almost 2000 Coleoptera specimens.

The "Dr. Eckbert Schneider" collection includes over 20.000 pieces of insects, collected from all over the country and mainly from southern Transylvania. (Pascu & Schneider, 1998).

The following abbreviations will be used in this paper: CRO – Croatia; HUN – Hungary; ITA – Italy; ROM – Romania; SVK – Slovakia; FRA – France; AB – Alba County, CJ – Cluj County; CS – Caran-Sebeş County; HG – Harghita County; HD – Hunedoara County; MS – Mureş County; SB – Sibiu County; TL – Tulcea County; Mts – Mountains; spec./specs; specimen/specimens; coll. Worell – collection of Dr. Eugen Worell; coll. Petri – collection of Dr. Karl Petri; coll. Hannenheimer – collection of Heinrich Hannenheimer; coll. Schneider – collection of Dr. Eckbert Schneider; coll. Weyranch – collection of Rolf Weyranch; C. Stănescu – Carmen Stănescu; E. Reitter – Edmund Reitter.

Nomenclature and systematical order are according to those used by Danilevsky (2007) in the systematic list of European Cerambycidae and also Zicha (2009) in “BioLib”. The identification of the species was based on currently available keys (Özdikmen & Turgut, 2009; Hoskovec & Rejzek, 2009 in “Longhorn beetles (Cerambycidae) of the West Palaearctic region”).

RESULTS

In the entomological collections from the Natural History Museum from Sibiu, six species are present: *Cerambyx scopoli*, *Cerambyx cerdo*, *Cerambyx nodulosus* Germar, 1817, *Cerambyx welensii* Küster, 1846 and *Cerambyx dux*.

LIST OF THE SPECIES

Family Cerambycidae Latreille, 1802

Subfamily Cerambycinae Latreille, 1802

Tribe Cerambycini, Latreille, 1804

Genus *Cerambyx* Linnaeus, 1758

Subgenus *Microcerambyx* Miksic & Georgijevic, 1973

Cerambyx scopoli Füssli, 1775

22 ♂: 1 spec., 14.06.1905 Baassen (Bazna, Sibiu County, ROM); 2 specs 1895, Fünfkirchen (Pécs, HUN), leg. K. Petri, coll. Petri; 1 spec. 24.06.1978 Grădiştea M., Orăştie (Hunedoara County, ROM), leg. C. Stănescu, coll. Schneider; 1 spec. without data, coll. Schneider; 3 specs, 3.06.1964, 6.05.1956, 10.06.1975, Herkulesbad (Băile Herculane, Caraş-Severin County, ROM) leg. R. Weyranch, coll. Weyranch; 3 specs, 6.07.1960, 6.07.1962, Domogled (Domogled Mts., Caraş-Severin County, ROM) leg. R. Weyranch, coll. Weyranch; 1 spec. 5.06. 1965, Götzenberg (Măgura Cisnădiei, Sibiu County, ROM), leg. R. Weyranch, coll. Weyranch; 1 spec. without data, coll. Weyranch; 8 specs, without data, coll. Worell; 1 spec., Wienerwald (Vienna Woods, AUS) leg. E. Worell, coll. Worell.

22 ♀: 5 specs, without other data, coll. Worell; 1 spec., Împrejurmile Sibiului (Sibiu County, ROM) leg. E. Worell, coll. Worell; 1 spec., Borszék (Borsec, Harghita County, ROM) leg. Weber, coll. Worell; 2.06.1955; 1 spec., Götzenberg, 17.05.1948, leg. E. Worell, coll. Worell; 1 spec., Hermannstadt (Sibiu, Sibiu County, ROM) leg. E. Worell, coll. Worell; 2 specs, Baassen (Bazna, Sibiu County, ROM), 14.06.1905 leg. K. Petri, coll. Petri; 1 spec., Schässburg (Sighişoara, Mureş County, ROM), 1.05.1906 leg. K. Petri, coll. Petri; 1 spec., Torockó (Rimetea, Alba County, ROM), 2.08.1903 leg., K. Petri, coll. Petri; 1 spec., Grădiştea M. (Orăştie, Hunedoara County, ROM), 24.06.1978 leg. C. Stănescu, coll. Schneider; 1 spec., Şura Mare (Sibiu County, ROM), 30.04.1972 leg. E. Schneider, coll. Schneider; 2 spec., Hermannstadt (Sibiu, Sibiu County, ROM), 7.06.1953, leg. E. Schneider, coll. Schneider; 1 spec., without other data, coll. Schneider; 1 spec., Herkulesbad (Băile Herculane, Caraş-Severin County, ROM), 10.06.1975, leg. R. Weyranch, coll. Weyranch; 1 spec., Tuşnad (Harghita County, ROM), 13.07.1951, leg. R. Weyranch, coll. Weyranch; 1 spec., Domogled (Domogled Mts., Caraş-Severin County, ROM), 06.07.1962, leg. R. Weyranch, coll. Weyranch; 1 spec., without other data, coll. Weyranch.

Subgenus *Cerambyx* Linnaeus, 1758

Cerambyx cerdo Linnaeus, 1758

32 ♂: 2 specs, Schässburg (Sighişoara, Mureş County, ROM), 1902, leg. K. Petri, coll. Petri; 1 spec., Klausenburg (Cluj-Napoca, Cluj County, ROM), leg. K. Petri, coll. Petri; 1 spec., Tuşnad (Harghita County, ROM), 19.07.1951, leg. R. Weyranch, coll. Weyranch; 2 specs, Herkulesbad (Băile Herculane, Caraş-Severin County, ROM) 5.06.1970 and 4.07.1967, leg. R. Weyranch, coll. Weyranch; 1 spec., Domogled (Domogled Mts., Caraş-Severin County, ROM), 12.07.1967, leg. R. Weyranch, coll. Weyranch; 2 specs, Hermannstadt (Sibiu, Sibiu County, ROM), 6.07.1960 and 18.08. 1954, leg. R. Weyranch, coll. Weyranch; 1 spec., 23.06.1965, leg. W.R.; 2 specs without other data, coll. Weyranch.; 2 specs without other data, coll. Schneider; 1 spec., Valea Fratelui (Fratelui Valley, Olt river basin, ROM), 19.07.1956, leg. E. Schneider, coll.

Schneider; 1 spec., Dobrogea (Mts. Măcin, Greci, ROM), 29.06.1972, leg. E. Schneider, coll. Schneiderr; 1 spec., Sibiu (Sibiu County, ROM), 07.1977, leg. E. Schneider, coll. Schneider; 1 spec., without data, coll. Schneider; 5 specs, without other data, coll. Worell; 2 specs, Hermannstadt (Sibiu, Sibiu County, ROM), 07.1923, leg. E. Worell, coll. Worell; 1 spec., Rotenturm (Turnu Roșu, Sibiu County, ROM), 07.1925, leg. E. Worell, coll. Worell; 1 spec., Kaschau (Kosice, SVK) leg. E. Worell, coll. Worell; 1 spec., 07.1947, leg. E. Worell, coll. Worell; 1 spec., Junger Wald (Pădurea Dumbrava Sibiului, Sibiu County, ROM), leg. E. Worell, coll. Worell; 1 spec., Împrejurimile Sibiului (Sibiu surroundings Sibiu County, ROM), leg. E. Worell, coll. Worell; 1 spec., Mehadia (Caraș-Severin County, ROM), leg. E. Worell, coll. Worell; 1 spec. Hermannstadt (Sibiu, Sibiu County, ROM), 30.06.1957, leg. H. Hannenheim, coll. Hannenheim.

22 ♀: 2 specs, Schässburg (Sighișoara, Mureș County, ROM), 1902, leg. K. Petri, coll. Petri; 1 spec., Hermannstadt (Sibiu, Sibiu County, ROM), 7.04.1955, leg. R. Weyranch, coll. Weyranch; 1 spec., Hermannstadt (Sibiu, Sibiu County, ROM), 6.06.1963, leg. R. Weyranch, coll. Weyranch; 1 spec., Hermannstadt (Sibiu, Sibiu County, ROM), 1.04.1961, leg. R. Weyranch, coll. Weyranch; 1 spec., Podu Olt, Conglom, (Sibiu County, ROM), 4.07.1967, leg. E. Schneider, coll. Schneider; 2 spec., Alterberg (Viile Sibiului, Sibiu County, ROM), 08.1953, leg. E. Schneider, coll. Schneider; 6 specs, without other data, coll. Worell; 1 spec., Împrejurimile Sibiului (Sibiu surroundings, Sibiu County, ROM), leg. E. Worell, coll. Worell; 1 spec., Kaschau (Kosice, SVK) leg. E. Worell, coll. Worell; 1 spec., Junger Wald (Pădurea Dumbrava Sibiului, Sibiu County, ROM), 07. 1922, leg. E. Worell, coll. Worell; 1 spec., Herkulesbad (Băile Herculane, Caraș-Severin County, ROM) leg. E. Worell; 1 spec., Hermannstadt (Sibiu, Sibiu County, ROM) leg. E. Worell, coll. Worell; 1 spec., Dumbrava Sibiului (Sibiu County, ROM), 20.08.1955, leg. E. Worell, coll. Worell; 1 spec., 07.1917, without other data, coll. Worell; 1 spec. Hermannstadt (Sibiu, Sibiu County, ROM), 20.06.1954, leg. H. Hannenheim, coll. Hannenheim.

Cerambyx miles Bonelli, 1823

3 ♂: 2 specs, Fünfkirchen (Pécs, HUN), 1895, leg. K. Petri, coll. Petri; 1 spec., Pola Istrien (Pula, CRO), leg. E. Worell, coll. Worell;

6 ♀: 4 specs, Fünfkirchen (Pécs, HUN), 1895, leg. K. Petri, coll. Petri; 1 spec., Siria, 19.06.1960, leg. E. Schneider, coll. Schneider; 1 spec., without other data, coll. Worell;

Cerambyx dux (Faldermann, 1837)

1 ♀: 1 spec, Asia Min. leg. Reitter, coll. Worell;

Cerambyx nodulosus Germar, 1817 syn. *Cerambyx nodicornis* Küster, 1846

3 ♀: 1 spec., Herkulesbad (Băile Herculane, Caraș-Severin County, ROM), 16.07.1930, leg. E. Worell, coll. Worell; 1 spec., Pola Istrien (Pula, CRO), leg. E. Worell, coll. Worell; 1 spec., without other data, coll. Worell;

Cerambyx welensii Küster, 1846 syn. *Cerambyx velutinus* Brullé, 1832

1 ♂: 1 spec., without other data, coll. Worell;

4 ♀: 2 specs, Herkulesbad (Băile Herculane, Caraș-Severin County, ROM), 8.07.1936 and 9.06.1942, leg. E. Worell, coll. Worell; 1 spec., Triest, Mont Siega (Trieste, ITA) 2.07.1912, leg. E. Worell, coll. Worell; Drôme (a tributary of Rhone's river, FRA), coll. Petri.

HABITAT PREFERNCES AND DISTRIBUTION DATA OF THE SPECIES

Cerambyx cerdo is polyphagous in deciduous trees, in Central Europe only in oak (*Quercus sp.*) (Hoskovec & Rejzek, 2009). The great capricorn beetle, is found throughout Europe and also occurs in northern Africa, the Near East and Caucasia (Bily & Mehl, 1989; Bense, 1995). In spite of fossil records (Harding & Plant, 1978), it is no longer found in the UK (IUCN, 2008).

This species develops in fresh wood of broadleaf trees. The *Cerambyx longicorn* inhabits large trees with sun-exposed stems, such as large,

solitary oaks situated in fairly open landscape, or old pasture-woodlands (Buse et al., 2007). Despite the *Cerambyx longicorn* existing in many national parks, suitable habitats may still be lost as dead and dying wood is often removed due to health and safety measures to prevent accidents. This is to the detriment of many species that exist only on dead or dying matter (Vratislav, 2001).

Development in modern agriculture followed by changes in landscape structure in Central Europe has lead to a substantial decrease in suitable habitats for species dependent on large, sun-exposed oaks. Fragmentation of remaining

populations may be a threat for this species as small populations are much more vulnerable to the detrimental impacts of chance events. Small and fragmented populations may also be affected by the low dispersal ability of this beetle, as it hinders its ability to colonize new, suitable habitats (Buse et al., 2007).

The removal of deadwood has been recognized recently as an important and unnecessary habitat damaging process that occurs even within protected areas. Since this kind of habitat loss is not economically beneficial, it should not be hard to prevent. WWF issued a report in October 2004 to encourage landowners and managers to leave veteran trees and deadwood in place, as they provide a habitat for many species of insect, fungus and lichen, as well as playing a role in forest productivity and environmental stabilization, such as carbon storage (Dudley & Vallauri, 2004).

Cerambyx scopolii is polyphagous in deciduous trees (*Quercus*, *Fagus*, *Prunus*, *Juglans*, *Carpinus*, *Castanea*, *Salix* etc.) (Hoskovec & Rejzek, 2009).

Cerambyx dux develops in living or moribund trees and can therefore be regarded as a physiological pest. Larvae expel large quantities of well visible sawdust which can serve as a hallmark to locate attacked trees. The adults are active during the day, but are very difficult to find. *C. dux* is polyphagous in fruit and ornamental trees or bushes (*Prunus*, *Elaeagnus*, *Crataegus* etc.) (Hoskovec & Rejzek, 2009).

Cerambyx welensii develops in *Quercus* spp. (Lieutier, 2004).

Cerambyx nodulosus develops in living or moribund trees and can therefore be regarded as a physiological pest. Larvae expel large quantities of well visible sawdust which can serve as a hallmark to locate attacked trees. The adults are active during the day but are very difficult to find. In South-Eastern Bulgaria even very small, stunted *Crataegus* shrubs growing on sandy soils of the Black Sea coastal region serve as hosts of

this remarkable insect. *C. nodulosus* is polyphagous in fruit and ornamental trees or bushes (*Prunus*, *Pyrus*, *Malus*, *Crataegus* etc.) (Hoskovec & Rejzek, 2009).

Cerambyx miles occur in South, Central and East Europe, Near East, the Caucasus Transcaucasus (Serafim, 2009).

DISCUSSIONS

In Romania, six species belonging to the *Cerambyx* genera are present. *Cerambyx cerdo* is the single species of the genus *Cerambyx* with protection status in Romania and Europe. In Romania, *Cerambyx cerdo* coexists with *C. scopolii*, *C. miles*, *C. nodulosus* and *C. welensii* (Serafim, 2009). All these species are found in the museum collections. It is worth mentioning the presence of *C. dux* (Faldermann, 1837), which is not present in the longhorn beetles fauna from Romania, being collected from Siria. *C. dux* was recorded in southern Europe, in countries like Bulgaria, Macedonia, Turkey, Greece, but also in North-Western of Iran and in the Near East (Hoskovec & Rejzek, 2009).

Regarding the distribution of the collecting sites of *Cerambyx cerdo* (Fig. 1) most of the specimens were collected from Transylvania, mainly from Sibiu County. *Cerambyx scopolii*, was collected also from Transylvania (Fig. 2).

In the museum collections, several specimens from outside Romania are present also. In Petri's collection longhorn beetle from Pécs (Hungary) and in Worell's collection specimens from Trieste (Italy), Kosice (Slovakia), Siria and Pula (Croatia) can be found.

Based on specimen number, Worell's collection is the biggest (47); all the six species are present in the famous entomologist collection.

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GENUL CERAMBYX L., 1758 (COLEOPTERA: CERAMBYCIDAE) ÎN COLECȚIILE MUZEULUI DE ISTORIE NATURALĂ DIN SIBIU (ROMÂNIA)

Lucrarea cuprinde date referitoare la șase specii de coleoptere Cerambycidae aparținând genului *Cerambyx*. În colecțiile entomologice din Muzeul de Istorie Naturală din Sibiu sunt prezente speciile: *Cerambyx scopolii*, *Cerambyx cerdo*, *Cerambyx nodulosus* Germar, 1817, *Cerambyx welensii* Küster, 1846 și *Cerambyx dux*. Cea din urmă, nu este prezentă în fauna de croitori din România, fiind obținută prin schimburi din Asia. Pentru speciile prezente în colecții, autorii oferă date despre de habitatele preferate și distribuție. Pentru croitorul mare al stejarului, *Cerambyx cerdo*, specie aflată în Directiva Habitata (U.E), Anexa 2, ca specie amenințată cu dispariția, sunt oferite date și despre starea de conservare.

ILLUSTRATIONS / ILUSTRĂȚII

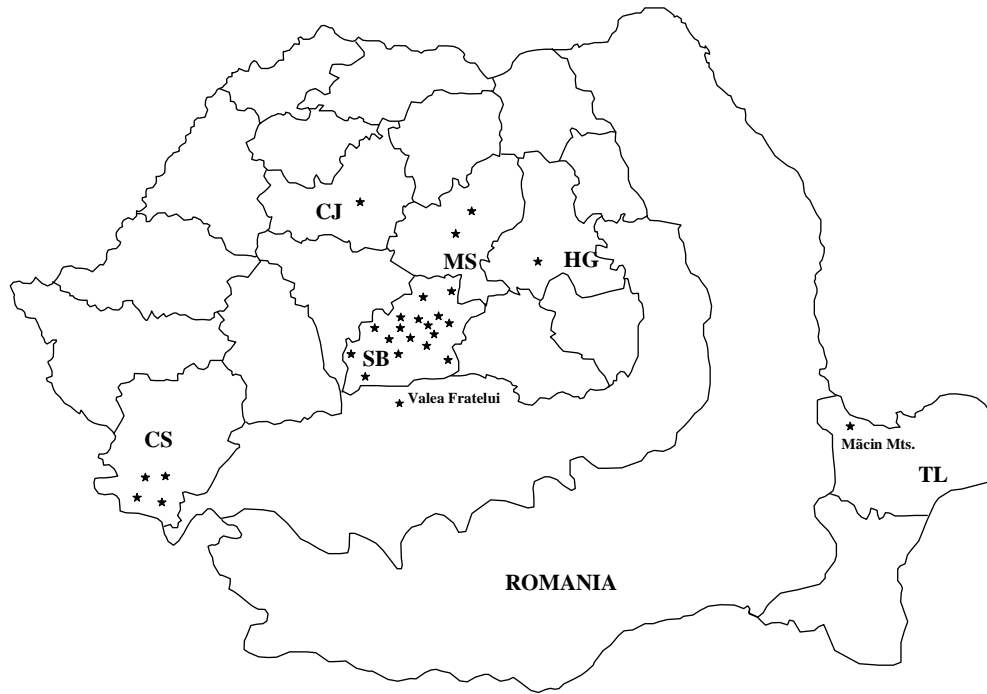


Fig. 1 Distribution of the collecting sites for *Cerambyx cerdo* /
Distribuția colectărilor pentru *Cerambyx cerdo*.



Fig. 2 Distribution of the collection sites for *Cerambyx scopoli* /
Distribuția colectărilor pentru *Cerambyx scopoli*.