

Fauna of Curculionoidea (Coleoptera) of the Republic of Mordovia

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Academic editor: R. Yakovlev | Received 15 June 2025 | Accepted 10 July 2025 | Published 21 September 2025

<http://zoobank.org/6D640696-99A1-4A1E-BD83-F2ED775318B8>

Citation: Egorov LV, Dedyukhin SV, Ruchin AB, Esin MN, Lukiyanov SV, Lobachev EA, Semishin GB, Esina IG (2025) Fauna of Curculionoidea (Coleoptera) of the Republic of Mordovia. Acta Biologica Sibirica 11: 969–998. <https://doi.org/10.5281/zenodo.17156970>

Abstract

The known fauna of the Republic of Mordovia comprises 506 species of Curculionoidea from six families: Anthribidae (8), Attelabidae (15), Brentidae (81), Cimberididae (1), Curculionidae (400), and Nemonychidae (1). The checklist includes 36 species newly recorded for the region. For each species, the number of plots and specimens is provided. The article also discusses the zoogeographical structure of the regional Curculionoidea fauna, demonstrating its complex nature. Against the background of the predominance of widespread species with Trans-Palaeartic and Western-Central Palaeartic ranges, a significant portion of the fauna is represented by the Western Palaeartic complex (96 species, 19%), along with smaller assemblages of species characterized by predominantly Central Palaeartic (14 species) and Central-Eastern Palaeartic distributions (16 species), as well as eight amphipalaeartic forms. In terms of zonal affiliation, nearly half of the fauna consists of polyzonal species. The Subboreal and Southern Boreal-Subboreal complexes are also strongly represented (together comprising 44%), with a smaller group of boreal forms (35 species; 7%).

Keywords

Biodiversity, Russia, Republic of Mordovia, fauna, beetles, Curculionoidea

Introduction

Entomofaunas in many countries are undergoing changes due to the influence of four main factors: the reduction of the range of species that require cool and moist habitats, the widespread distribution of insect species that thrive in warm and dry conditions, the migration of insect species northward, and the invasion of species as a result of unintentional introductions into other regions (Shuman 2010; Karuppai-ah and Sujayanad 2012; Rosa et al. 2024; Yatsuk et al. 2025; Haris et al. 2025). These changes are linked to global warming, which results in an increase in catastrophic events (such as mega-fires and floods) and climate aridization. Additionally, insect habitats are being altered due to urbanization, agricultural expansion, and environmental pollution (Hailay Gebremariam 2024; Korotyaev et al. 2024; Prosvirov et al. 2024; Štípková et al. 2024). Consequently, regional entomofaunas in many areas are experiencing significant degradation, with different insect groups reacting differently to these processes (Haris et al. 2025). In this regard, the study of regional faunas is becoming an increasingly relevant topic of scientific research (Yi et al. 2011; Dvořák et al. 2023; Esin et al. 2023; Sánchez Herrera et al. 2024; Saroj et al. 2024).

Curculionoidea is one of the largest superfamilies within the order Coleoptera, with over 62,000 species described (Oberprieler et al. 2014). It is also one of the largest groups of phytophagous beetles, found in many parts of the world. The Curculionoidea in Russia includes six families (Cimberididae, Nemonychidae, Anthribidae, Attelabidae, Brentidae, Curculionidae) (Alonso-Zarazaga et al. 2023), which are typically widely distributed across the European part of Russia. The central part of European Russia and the Volga region are highly promising areas for studying Curculionoidea. The combination of boreal and steppe biogeoregions (within the boundaries of the boreal ecotone) provides a foundation for the high species diversity of this group (Isaev 1994, 2007; Egorov and Isaev 2006; Dedyukhin 2023, 2024a, 2024b; Dedyukhin et al. 2024). This article describes a dataset based on long-term research on Curculionoidea in the Republic of Mordovia.

Geographic coverage

Coordinates:

Latitude ranged between 53.64377 and 55.1901.

Longitude ranged between 42.1640 and 46.7301.

The dataset contains information on Curculionoidea findings in the Republic of Mordovia. This region is located in the central part of the Russian Plain, within the Volga River basin. The main rivers are the Moksha and Sura. The majority of the territory is situated in the northwestern area of the Volga Upland, which transitions to the Oka-Don Lowland in the western part of the republic. The climate of the region is determined by its physical-geographical position in the temperate zone of the central Russian Plain, characterized by distinct seasonal changes. The average an-

nual air temperature ranges from 3.5 to 4.0°C. The average temperature in January ranges from –11.5 to –12.3°C. The average temperature in July ranges from +18.9 to +19.8°C. According to botanical-geographical zoning, the republic is divided into eight botanical-geographical regions (Astradamov et al. 2002).

1. Boreal region with two subregions:

1a. Moksha Boreal Subregion. The flora and vegetation of this subregion are determined by the distribution of sandy Quaternary deposits. Pine and pine-deciduous forests with varying amounts of spruce are widespread. There are small areas of pure spruce forests. On clearcuts and burnt areas, small-leaved forests such as birch and aspen groves predominate. This region is characterized by the presence of many boreal species.

1b. Alatyr Boreal Subregion. The flora and vegetation of this subregion closely resemble those of subregion 1a. However, it can be noted that in coniferous and mixed forests, spruce is less prevalent.

2. Primokshan Steppe Region covers an extensive area of black soils in the left-bank part of the Moksha River. The steppes of the region have almost entirely been plowed and are now occupied by agricultural lands. The species composition is typical for northern meadow steppes. The remaining patches with fragments of steppe vegetation are located on the slopes of ravines and valleys along rivers.

3. Rudnya Steppe Region borders the Pochinkovsky district of the Nizhny Novgorod region and is an extension of it. In the territory of the Republic of Mordovia, it is entirely plowed, and the steppe vegetation has almost been completely destroyed.

4. Insar Oak Forest Region covers a massif of gray forest soils, which was previously occupied by dense deciduous forests. Currently, the deciduous forests and aspen groves have survived in small patches. The southern edges and clearings of these forests are rich in steppe plants.

5. Saransk Steppe Region covers the territories adjacent to the Insar River. It is characterized by a high degree of anthropogenic impact, with a large portion of the area occupied by settlements, industrial, and agricultural enterprises. Steppe associations have been preserved along the slopes of ravines and gulleys.

6. Chamsinka Carbonate Region encompasses much of eastern Mordovia. Given the prevalence of chernozem soils in this area, it can be inferred that steppe vegetation was widespread here in the past, and the leached chernozems suggest that the region once hosted steppe oak forests.

7. Prisursky Pine Region occupies the ancient deposits of the Sura River. This region is characterized by a variety of pine forests, ranging from lichen pine forests on dry sandy soils to complex pine forests mixed with oak and linden on fertile soils, as well as long-moss pine forests and sphagnum pine forests in conditions of increased humidity. There are floodplain oak forests, small patches of alder forests, floodplain meadows, and shrub thickets. Many boreal plant species are present here. On the other hand, in the flora of the steppe pine forests and meadows along the dry ridges of the floodplain, steppe plants can also be found.

8. Bolshoe Ignatovo Steppe Region is located in the northeastern part. The plain vegetation has been destroyed and replaced by fields. Steppe plant communities have been preserved only along the slopes of uncultivated ravines and gullies.

A total of 433 sample plots or points were surveyed.

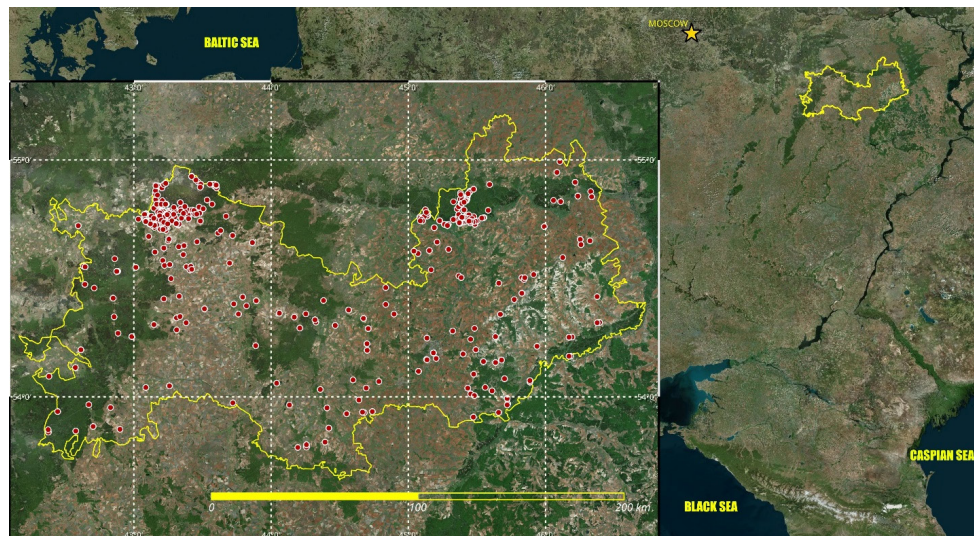


Figure 1. Cartographic map of the studied area.

Materials and methods

The dataset was compiled from the results of our own research conducted since 2007, as well as all available publications by other authors. Standard and various research methods were employed (Golub et al. 2012). The sweepnet was used according to the standard protocol, applied to herbaceous vegetation and lower tree branches. For pan traps, we used yellow plastic plates with a diameter of 21 cm and a volume of 1.25 liters. Between 6 and 10 traps were placed in a line on the ground, 3 meters apart from each other. As Malaise traps, we used a homemade trap. The frame for the front screen was made from wooden posts, with the main material being polyester. The collection containers were filled with 70% ethanol. For pitfall traps, we used plastic cups arranged in a line, 2 meters apart. The number of traps varied between 8 and 10. Some specimens of Curculionioidea were found in beer traps. Each of these traps consisted of a 5-liter plastic container with a window cut into one side. They were placed on tree branches or on special tripods at heights ranging from 1.5 to 12 meters above the ground. Beer with added sugar was used as bait (Ruchin and Egorov 2024). Window traps consisted of crossed blades made of transparent polyethylene film mounted on a wire frame, with a 0.5-liter transparent plastic cup as the collecting vessel and a 4% vinegar solution as a preservative.

The identification of Curculionoidea was made by L.V. Egorov and S.V. Dedyukhin. Species identification was carried out using a number of identification keys (Identification... 1965; Smreczyński 1972, 1974, 1976; Dieckmann 1974, 1977, 1983, 1988; Freude et al. 1981, 1983; Lohse and Lucht 1994; Isaev 2007). The identification of some species was verified with the collection of the Zoological Institute of the Russian Academy of Sciences (St. Petersburg). The species nomenclature follows the latest version of the Curculionoidea catalog for the Palaearctic region (Alonso-Zarazaga et al. 2023). A total of 14,100 specimens of Curculionoidea were accounted for. New species for the region are marked with an asterisk "*".

Description of the data in the dataset

Data set name: Fauna of Curculionoidea in Republic of Mordovia (European Russia): long-term observations.

Resource link: <https://www.gbif.org/dataset/18eed1d-b40d-46a4-b476-10101b03144d>

Data format: Darwin Core Archive format.

Usage licence: CC BY 4.0.

Description: This occurrence dataset includes 5,494 occurrences and 14,100 specimens (Egorov et al. 2025). The table consists of 19 fields (Table 1).

Table 1. Description of the data in the dataset

Column label	Column description
occurrenceID	An identifier for the occurrence. https://dwc.tdwg.org/terms/#dwc:occurrenceID . Numerical, integer counter with values between 1 and 7095
basisOfRecord	The specific nature of the record. https://dwc.tdwg.org/terms/#dwc:basisOfRecord . Categorical according to vocabulary, constant: "HumanObservation"
eventDate	Trap period (YYYY-MM-DD/YYYY-MM-DD). https://dwc.tdwg.org/terms/#dwc:eventDate , 1237 unique values
scientificName	Scientific name according to GBIF Backbone. https://dwc.tdwg.org/terms/#dwc:scientificName Categorical based on checklist, example:
kingdom	The full scientific name of the kingdom in which the taxon is classified. https://dwc.tdwg.org/terms/#dwc:kingdom Categorical according to GBIF Backbone checklist, constant: "Animalia"
decimalLatitude	The geographic latitude of location in decimal degrees. https://dwc.tdwg.org/terms/#dwc:decimalLatitude Numerical variable of decimal type with a precision of 6 and scale of 4 ranged between 49.6131 and 56.2339
decimalLongitude	The geographic longitude of location in decimal degrees. https://dwc.tdwg.org/terms/#dwc:decimalLongitude Numerical variable of decimal type with a precision of 6 and scale of 4 ranged between 33.7351 and 56.6668

Column label	Column description
country	The name of the country in which the location occurs. https://dwc.tdwg.org/terms/#dwc:countryCode . Categorical, constant: "Russian Federation"
countryCode	The standard code for the Russian Federation according to ISO 3166-1-alpha-2. https://dwc.tdwg.org/terms/#dwc:countryCode . Categorical, constant: "RU"
individualCount	The number of individuals represented present at the time of the occurrence. https://dwc.tdwg.org/terms/#dwc:individualCount
year	The four-digit year in which the dwc: Event occurred, according to the Common Era Calendar. http://rs.tdwg.org/dwc/terms/year
month	The integer month in which the dwc: Event occurred. http://rs.tdwg.org/dwc/terms/month
day	The integer day of the month on which the dwc: Event occurred. http://rs.tdwg.org/dwc/terms/day
recordedBy	A person, group, or organization responsible for recording the original occurrence. https://dwc.tdwg.org/terms/#dwciri:recordedBy
identifiedBy	A list of names of people who assigned the taxon to the subject. https://dwc.tdwg.org/terms/#dwciri:identifiedBy
georeferenceSources	A list of maps, gazetteers, or other resources used to georeference the Location. https://dwc.tdwg.org/terms/#dwc:georeferenceSources . Categorical, "Geolocate" or "Google Earth"
coordinateUncertaintyInMeters	The maximum uncertainty distance in metres. https://dwc.tdwg.org/terms/#dwc:coordinateUncertaintyInMetersNumerical , 50 or 1000
locality_original	The specific description of the place. This term may contain information modified from the original to correct perceived errors or standardize the description
associatedReferences	A list (concatenated and separated) of identifiers (publication, bibliographic reference, global unique identifier, URI) of literature associated with the dwc: Occurrence

Results

The list of species, indicating the number of plots and the number of individuals of each species, is provided in Table 2. In total, according to the dataset from the Republic of Mordovia, 506 species from 6 families are recorded: Anthribidae (8), Atteblabidae (15), Brentidae (81), Cimberididae (1), Curculionidae (400), Nemonychidae (1). The list includes 36 species new to the region.

Table 2. Species list of Curculionoidea in the dataset with quantitative features

Species	Numbers of	
	Plots	Specimens
Cimberididae Gozis, 1882		
Cimberidinae Gozis, 1882		
Cimberidini Gozis, 1882		
<i>Cimberis attelaboides</i> (Fabricius, 1787)	7	68
Nemonychidae Bedel, 1882		
<i>Nemonyx lepturoides</i> (Fabricius, 1801)	1	2
Anthribidae Billberg, 1820		
Anthribinae Billberg, 1820		
Anthribini Billberg, 1820		
<i>Anthribus nebulosus</i> Forster, 1770	5	19
Platyrhinini Imhoff, 1856		
<i>Platyrhinus resinosus</i> (Scopoli, 1763)	17	49
Platystomini Pierce, 1916		
<i>Platystomos albinus</i> (Linnaeus, 1758)	30	50
Tropiderini Lacordaire, 1865		
<i>Gonotropis dorsalis</i> (Gyllenhal, 1813)	1	1
<i>Tropideres albirostris</i> (Schaller, 1783)	8	10
Zygaenodini Lacordaire, 1865		
<i>Dissoleucas niveirostris</i> (Fabricius, 1798)	3	8
<i>Rhaphitropis marchica</i> (Herbst, 1797)	1	1
Choraginae Kirby, 1819		
Choragini Kirby, 1819		
<i>Choragus sheppardi</i> Kirby, 1819	3	3
Attelabidae Billberg, 1820		
Attelabinae Billberg, 1820		
Apoderini Jekel, 1860		
<i>Apoderus coryli</i> (Linnaeus, 1758)	26	34
<i>Compsapoderus erythropterus</i> (Gmelin, 1790)	12	22
Attelabini Billberg, 1820		
<i>Attelabus nitens</i> (Scopoli, 1763)	1	1
Rhynchitinae Gistel, 1848		
Tribe Auletini Desbrochers des Loges, 1908		
<i>Mesauletobius pubescens</i> (Kiesenwetter, 1852)	1	1
Byctiscini Voss, 1923		
<i>Byctiscus betulae</i> (Linnaeus, 1758)	19	35

Species	Numbers of	
	Plots	Specimens
<i>Byctiscus populi</i> (Linnaeus, 1758)	9	10
Deporaini Voss, 1929		
<i>Deporaus betulae</i> (Linnaeus, 1758)	30	80
Rhynchitini Gistel, 1848		
<i>Involvulus cupreus</i> (Linnaeus, 1758)	6	6
<i>Mechoris aethiops</i> (Bach, 1854)	7	9
<i>Neocoenorrhinus pauxillus</i> (Germar, 1823)	2	3
<i>Neocoenorrhinus germanicus</i> (Herbst, 1797)	12	26
<i>Rhynchites auratus</i> (Scopoli, 1763)	7	26
<i>Tatianaerhynchites aequatus</i> (Linnaeus, 1767)	10	14
<i>Temnocerus coeruleus</i> (Fabricius, 1798)	3	3
<i>Temnocerus nanus</i> (Paykull, 1792)	2	3
Brentidae Billberg, 1820		
Apioninae Schoenherr, 1823		
Apionini Schoenherr, 1823		
<i>Apion cruentatum</i> Walton, 1844	5	5
<i>Apion frumentarium</i> (Linnaeus, 1758)	3	4
<i>Apion haematodes</i> Kirby, 1808	5	5
<i>Apion rubens</i> Walton, 1837	4	4
<i>Apion rubiginosum</i> Grill, 1893	2	2
<i>Aizobius sedi</i> (Germar, 1818)	1	1
<i>Perapion connexum</i> (Schilsky, 1902)	8	15
<i>Perapion curtirostre</i> (Germar, 1817)	4	4
<i>Perapion marchicum</i> (Herbst, 1797)	10	18
<i>Perapion oblongum</i> (Gyllenhal, 1839)	15	50
<i>Perapion violaceum</i> (Kirby, 1808)	26	76
<i>Pseudoperapion brevirostre</i> (Herbst, 1797)	25	108
<i>Pseudostenapion simum</i> (Germar, 1817)	7	13
<i>Alocentron curvirostre</i> (Gyllenhal, 1833)	1	1
<i>Aspidapion radiolus</i> (Marsham, 1802)	2	4
<i>Aspidapion validum</i> (Germar, 1817)	2	90
<i>Aspidapion aeneum</i> (Fabricius, 1775)	3	4
<i>Catapion seniculus</i> (Kirby, 1808)	23	74
<i>Ceratapion onopordi</i> (Kirby, 1808)	7	7
<i>Ceratapion gibbirostre</i> (Gyllenhal, 1813)	3	3
<i>Ceratapion penetrans</i> (Germar, 1817)	8	11

Species	Numbers of	
	Plots	Specimens
<i>Diplapion detritum</i> (Mulsant & Rey, 1859)	12	15
<i>Diplapion stolidum</i> (Germar, 1817)	1	1
<i>Omphalapion hookerorum</i> (Kirby, 1808)	4	6
<i>Taphrotopium sulcifrons</i> (Herbst, 1797)	4	5
<i>Exapion corniculatum</i> (Germar, 1817)	7	7
<i>Exapion difficile</i> (Herbst, 1797)	1	1
<i>Kalcapion pallipes</i> (Kirby, 1808)	4	4
<i>Melanapion minimum</i> (Herbst, 1797)	9	11
<i>Squamapion elongatum</i> (Germar, 1817)*	1	1
<i>Squamapion flavimanum</i> (Gyllenhal, 1833)	1	1
<i>Squamapion vicinum</i> (Kirby, 1808)	1	1
<i>Taeniapion urticarium</i> (Herbst, 1784)	11	20
<i>Malvapion malvae</i> (Fabricius, 1775)	2	2
<i>Pseudapion rufirostre</i> (Fabricius, 1775)	3	3
<i>Cyanapion afer</i> (Gyllenhal, 1833)	1	1
<i>Cyanapion gnarum</i> (Faust, 1890)	1	1
<i>Cyanapion gyllenhalii</i> (Kirby, 1808)	2	2
<i>Cyanapion alcyoneum</i> (Germar, 1817)	2	2
<i>Cyanapion columbinum</i> (Germar, 1817)	1	1
<i>Cyanapion spencii</i> (Kirby, 1808)	2	2
<i>Eutrichapion vorax</i> (Herbst, 1797)	4	4
<i>Eutrichapion ervi</i> (Kirby, 1808)	6	12
<i>Eutrichapion viciae</i> (Paykull, 1800)	12	22
<i>Eutrichapion melancholicum</i> (Wencker, 1864)	1	1
<i>Eutrichapion facetum</i> (Gyllenhal, 1839)	12	15
<i>Eutrichapion punctiger</i> (Paykull, 1792)	10	11
<i>Hemitrichapion pavidum</i> (Germar, 1817)	1	1
<i>Hemitrichapion reflexum</i> (Gyllenhal, 1833)*	1	1
<i>Ischnopterapion virens</i> (Herbst, 1797)	4	4
<i>Ischnopterapion loti</i> (Kirby, 1808)	3	3
<i>Loborhynchapion amethystinum</i> (Miller, 1857)	1	1
<i>Oxystoma cerdo</i> (Gerstaecker, 1854)	12	13
<i>Oxystoma craccae</i> (Linnaeus, 1767)	7	7
<i>Oxystoma ochropus</i> (Germar, 1818)	1	1
<i>Oxystoma opeticum</i> (Bach, 1854)	10	11
<i>Oxystoma pomonae</i> (Fabricius, 1798)	6	7

Species	Numbers of	
	Plots	Specimens
<i>Oxystoma subulatum</i> (Kirby, 1808)	8	12
<i>Stenopterapion meliloti</i> (Kirby, 1808)	10	11
<i>Stenopterapion tenue</i> (Kirby, 1808)	1	1
<i>Synapion ebeninum</i> (Kirby, 1808)	3	3
<i>Tatyanapion laticeps</i> (Desbrochers des Loges, 1870)	1	1
<i>Protapion apricans</i> (Herbst, 1797)	39	97
<i>Protapion assimile</i> (Kirby, 1808)	9	9
<i>Protapion dissimile</i> (Germar, 1817)	8	8
<i>Protapion filirostre</i> (Kirby, 1808)	8	8
<i>Protapion fulvipes</i> (Geoffroy, 1785)	46	341
<i>Protapion gracilipes</i> (Dietrich, 1857)*	2	4
<i>Protapion interjectum</i> (Desbrochers des Loges, 1895)	13	28
<i>Protapion nigrিতarse</i> (Kirby, 1808)	8	8
<i>Protapion ononidis</i> (Gyllenhal, 1827)	2	2
<i>Protapion trifolii</i> (Linnaeus, 1768)	14	21
<i>Protapion varipes</i> (Germar, 1817)	22	34
<i>Pseudoprotapion elegantulum</i> (Germar, 1818)	3	3
<i>Betulapion simile</i> (Kirby, 1811)	23	100
Nanophyinae Gistel, 1848		
Nanophyini Gistel, 1848		
<i>Nanomimus circumscriptus</i> (Aubé, 1864)	1	3
<i>Nanomimus hemisphaericus</i> (Olivier, 1807)	1	1
<i>Nanophyes brevis</i> Boheman, 1845	3	3
<i>Nanophyes globiformis</i> Kiesenwetter, 1864	2	2
<i>Nanophyes globulus</i> (Germar, 1821)	2	2
<i>Nanophyes marmoratus</i> (Goeze, 1777)	27	59
Curculionidae Latreille, 1802		
Bagoinae Thomson, 1859		
<i>Bagous binodulus</i> (Herbst, 1795)	5	28
<i>Bagous glabrirostris</i> (Herbst, 1795)	9	44
<i>Bagous lutulentus</i> (Gyllenhal, 1813)	3	22
<i>Bagous puncticollis</i> Boheman, 1845	5	11
<i>Bagous subcarinatus</i> Gyllenhal, 1836	1	1
<i>Bagous limosus</i> Gyllenhal, 1827*	1	1
<i>Bagous nodulosus</i> Gyllenhal, 1836	2	2
<i>Bagous tempestivus</i> (Herbst, 1795)	2	4

Species	Numbers of	
	Plots	Specimens
<i>Bagous tubulus</i> Caldara & O'Brien, 1994	2	2
<i>Hydronomus alismatis</i> (Marsham, 1802)	3	3
Brachycerinae Billberg, 1820		
Eirrhiniini Schoenherr, 1825		
<i>Grypus equiseti</i> (Fabricius, 1775)	16	32
<i>Lepidonotaris petax</i> (C.R. Sahlberg, 1823)*	1	1
<i>Notaris aethiops</i> (Paykull, 1792)	2	3
<i>Notaris acridulus</i> (Linnaeus, 1758)	11	26
<i>Notaris scirpi</i> (Fabricius, 1792)	9	32
<i>Thryogenes festucae</i> (Herbst, 1795)	2	6
<i>Thryogenes nereis</i> (Paykull, 1800)	5	11
<i>Tournotaris bimaculata</i> (Fabricius, 1787)	4	6
Tanysphyrini Gistel, 1848		
<i>Tanysphyrus lemnae</i> (Paykull, 1792)	17	35
Conoderinae Schoenherr, 1833		
Apostasimerini Schoenherr, 1844		
<i>Limnobaris dolorosa</i> (Goeze, 1777)	19	41
<i>Limnobaris t-album</i> (Linnaeus, 1758)	11	14
Baridini Schoenherr, 1836		
<i>Aulacobaris janthina</i> (Boheman, 1836)	1	1
<i>Aulacobaris lepidii</i> (Germar, 1823)	1	1
<i>Baris artemisiae</i> (Panzer, 1794)	9	11
<i>Melanobaris carbonaria</i> (Boheman, 1836)	1	1
Amalini Wagner, 1936		
<i>Amalus scortillum</i> (Herbst, 1795)	6	6
<i>Amalorrhynchus melanarius</i> (Stephens, 1831)	1	1
<i>Calosirus apicalis</i> (Gyllenhal, 1827)	3	3
<i>Ceutorhynchus assimilis</i> (Paykull, 1792)	3	3
<i>Ceutorhynchus barbareae</i> Suffrian, 1847	2	2
<i>Ceutorhynchus canaliculatus</i> C.N.F. Brisout de Barneville, 1869	2	2
<i>Ceutorhynchus chalybaeus</i> Germar, 1823	1	1
<i>Ceutorhynchus contractus</i> (Marsham, 1802)	3	5
<i>Ceutorhynchus dubius</i> C.N.F. Brisout de Barneville, 1883	2	2
<i>Ceutorhynchus erysimi</i> (Fabricius, 1787)	10	14
<i>Ceutorhynchus gallorhenanus</i> A. Hoffman, 1955	5	8
<i>Ceutorhynchus griseus</i> C.N.F. Brisout de Barneville, 1869	1	1

Species	Numbers of	
	Plots	Specimens
<i>Ceutorhynchus hampei</i> C.N.F. Brisout de Barneville, 1869	10	32
<i>Ceutorhynchus ignitus</i> Germar, 1823	10	11
<i>Ceutorhynchus obstrictus</i> (Marsham, 1802)	1	1
<i>Ceutorhynchus pervicax</i> Weise, 1883	1	1
<i>Ceutorhynchus plumbeus</i> C.N.F. Brisout de Barneville, 1869*	1	1
<i>Ceutorhynchus pseudoarator</i> Korotyaev, 1989	1	1
<i>Ceutorhynchus pulvinatus</i> Gyllenhal, 1837	2	2
<i>Ceutorhynchus puncticollis</i> Boheman, 1845	4	4
<i>Ceutorhynchus querceti</i> (Gyllenhal, 1813)	1	1
<i>Ceutorhynchus rapae</i> Gyllenhal, 1837	6	7
<i>Ceutorhynchus rhenanus</i> (Schultze, 1895)	3	3
<i>Ceutorhynchus roberti</i> Gyllenhal, 1837	4	34
<i>Ceutorhynchus scapularis</i> Gyllenhal, 1837	1	1
<i>Ceutorhynchus sisymbrii</i> (Dieckmann, 1966)	1	1
<i>Ceutorhynchus sulcatus</i> C.N.F. Brisout de Barneville, 1869	1	1
<i>Ceutorhynchus sulcicollis</i> (Paykull, 1800)	2	2
<i>Ceutorhynchus syrites</i> Germar, 1823	8	21
<i>Ceutorhynchus typhae</i> (Herbst, 1795)	11	34
<i>Coeliastes lamii</i> (Fabricius, 1792)	8	25
<i>Coeliodes rana</i> (Fabricius, 1787)	1	1
<i>Coeliodinus phrymos</i> Alonso Zarazaga & Colonnelli, 2017	7	13
<i>Datonychus arquata</i> (Herbst, 1795)	5	7
<i>Datonychus melanostictus</i> (Marsham, 1802)	1	1
<i>Datonychus urticae</i> (Boheman, 1845)	1	1
<i>Glocianus distinctus</i> (C.N.F. Brisout de Barneville, 1870)	11	20
<i>Glocianus moelleri</i> (C.G. Thomson, 1868)	2	3
<i>Glocianus punctiger</i> (C. R. Sahlberg, 1835)	12	17
<i>Hadrolontus litura</i> (Fabricius, 1775)	2	2
<i>Micrelus ericae</i> (Gyllenhal, 1813)	5	37
<i>Microplontus campestris</i> (Gyllenhal, 1837)	4	4
<i>Microplontus edentulus</i> (Schultze, 1897)	1	1
<i>Microplontus millefolii</i> (Schultze, 1897)	6	8
<i>Microplontus rugulosus</i> (Herbst, 1795)	2	2
<i>Microplontus triangulum</i> (Boheman, 1845)	5	6
<i>Mogulones abbreviatulus</i> (Fabricius, 1792)	1	1
<i>Mogulones asperifoliarum</i> (Gyllenhal, 1813)	2	2

Species	Numbers of	
	Plots	Specimens
<i>Mogulones austriacus</i> (C. N. F. Brisout de Barneville, 1869)	1	1
<i>Mogulones crucifer</i> (Pallas, 1771)	3	3
<i>Mogulones cynoglossi</i> (Frauenfeld, 1866)	1	3
<i>Mogulones dimidiatus</i> (J. Frivaldszky, 1865)	1	2
<i>Mogulones geographicus</i> (Goeze, 1777)	1	1
<i>Mogulones pallidicornis</i> (Gugelet & H. Brisout de Barneville, 1860)*	1	11
<i>Mogulones raphani</i> (Fabricius 1792)	1	1
<i>Mogulones t-album</i> (Gyllenhal, 1837)	1	1
<i>Nedyus quadrimaculatus</i> (Linnaeus, 1758)	28	172
<i>Parethelcus pollinarius</i> (Forster, 1771)*	1	2
<i>Phrydiuchus topiarius</i> (Germar, 1823)	1	1
<i>Poophagus hopffgarteni</i> Tournier, 1873*	1	1
<i>Sirocalodes quercicola</i> (Paykull, 1792)	1	1
<i>Stenocarus ruficornis</i> (Stephens, 1831)	1	1
<i>Thamiocolus nubeculosus</i> (Gyllenhal, 1837)*	1	1
<i>Thamiocolus viduatus</i> (Gyllenhal, 1813)	5	5
<i>Trichosirocalus barnevillei</i> (Grenier, 1866)	1	1
<i>Trichosirocalus horridus</i> (Panzer, 1801)*	1	1
<i>Trichosirocalus troglodytes</i> (Fabricius, 1787)	3	4
<i>Zacladus geranii</i> (Paykull, 1800)	8	11
Cnemogonini Colonnelli, 1979		
<i>Auleutes epilobii</i> (Paykull, 1800)	17	34
<i>Mononychus punctumalbum</i> (Herbst, 1784)	16	42
<i>Marmaropus besseri</i> Gyllenhal, 1837	15	37
<i>Neophytobius granatus</i> (Gyllenhal, 1835)	1	2
<i>Neophytobius muricatus</i> (C. N. F. Brisout de Barneville, 1867)	1	1
<i>Neophytobius quadrinodosus</i> (Gyllenhal, 1813)	4	7
<i>Pelenomus canaliculatus</i> (Fähræus, 1843)	1	1
<i>Pelenomus commari</i> (Panzer, 1795)	2	3
<i>Pelenomus quadricorniger</i> (Colonnelli, 1986)	1	1
<i>Pelenomus quadrituberculatus</i> (Fabricius, 1787)	1	1
<i>Pelenomus waltoni</i> (Boheman, 1843)	4	9
<i>Rhinoncus bruchoides</i> (Herbst, 1784)	3	5
<i>Rhinoncus inconspetus</i> (Herbst, 1795)	2	2
<i>Rhinoncus leucostigma</i> (Marsham, 1802)	3	7
<i>Rhinoncus pericarpus</i> (Linnaeus, 1758)	35	117

Species	Numbers of	
	Plots	Specimens
<i>Rhinoncus perpendicularis</i> (Reich, 1797)	8	11
Scleropterini Schultze, 1902		
<i>Rutidosoma graminosum</i> (Gistel, 1857)*	2	2
<i>Tapinotus sellatus</i> (Fabricius, 1794)	9	12
Coryssomerini C. G. Thomson, 1859		
<i>Coryssomerus capucinus</i> (Beck, 1817)	4	5
<i>Euryommatus mariae</i> Roger, 1857	1	12
Orobitidini C. G. Thomson, 1859		
<i>Orobitis cyanea</i> (Linnaeus, 1758)	3	3
Cossoninae Schoenherr, 1825		
Cossonini Schoenherr, 1825		
<i>Cossonus parallelepipedus</i> (Herbst, 1795)	3	3
Rhyncolini Gistel, 1848		
<i>Rhyncolus ater</i> (Linnaeus, 1758)	6	7
<i>Rhyncolus elongatus</i> (Gyllenhal, 1827)	5	12
Curculioninae Latreille, 1802		
Acalyptini C.G. Thomson, 1859		
<i>Acalyptus carpini</i> (Fabricius, 1792)	11	26
<i>Acalyptus sericeus</i> Gyllenhal, 1835	6	15
Anoplini Bedel, 1884		
<i>Anoplus plantaris</i> (Næzén, 1794)	1	1
Anthonomini C. G. Thomson, 1859		
<i>Anthonomus phyllocola</i> (Herbst, 1795)	8	11
<i>Anthonomus pinivorax</i> Silfverberg, 1977	1	2
<i>Anthonomus conspersus</i> Desbrochers des Loges, 1868	4	17
<i>Anthonomus incurvus</i> (Panzer, 1795)	9	76
<i>Anthonomus pomorum</i> (Linnaeus, 1758)	11	30
<i>Anthonomus rubi</i> (Herbst, 1795)	29	81
<i>Anthonomus sorbi</i> Germar, 1821	1	1
<i>Anthonomus ulmi</i> (DeGeer, 1775)	1	1
<i>Anthonomus rectirostris</i> (Linnaeus, 1758)	14	28
<i>Brachonyx pineti</i> (Paykull, 1792)	6	8
<i>Bradybatus kellneri</i> Bach, 1854	3	5
Cionini Schoenherr, 1825		
<i>Cionus hortulanus</i> (Geoffroy, 1785)	17	41
<i>Cionus montanus</i> Wingelmüller, 1914	1	1

Species	Numbers of	
	Plots	Specimens
<i>Cionus olivieri</i> Rosenschoeld, 1838	4	4
<i>Cionus scrophulariae</i> (Linnaeus, 1758)	15	50
<i>Cionus thapsus</i> (Fabricius, 1792)	1	1
<i>Cionus tuberculosus</i> (Scopoli, 1763)	15	27
Curculionini Latreille, 1802		
<i>Archarius crux</i> (Fabricius, 1777)	3	3
<i>Archarius pyrrhoceras</i> (Marsham, 1802)	1	1
<i>Archarius salicivorus</i> (Paykull, 1792)	12	19
<i>Curculio glandium</i> Marsham, 1802	12	18
<i>Curculio nucum</i> Linnaeus, 1758	5	5
<i>Curculio pellitus</i> (Boheman, 1843)*	1	1
<i>Curculio rubidus</i> (Gyllenhal, 1835)	4	4
<i>Curculio venosus</i> (Gravenhorst, 1807)	6	6
<i>Curculio villosus</i> Fabricius, 1781	4	4
Ellescini C. G. Thomson, 1859		
<i>Dorytomus dejeani</i> Faust, 1883	1	1
<i>Dorytomus ictor</i> (Herbst, 1795)*	1	1
<i>Dorytomus melanophthalmus</i> (Paykull, 1792)	1	1
<i>Dorytomus nebulosus</i> (Gyllenhal, 1835)*	2	2
<i>Dorytomus rubrirostris</i> (Gravenhorst, 1807)	1	1
<i>Dorytomus salicinus</i> (Gyllenhal, 1827)	4	4
<i>Dorytomus taeniatus</i> (Fabricius, 1781)	5	7
<i>Dorytomus tortrix</i> (Linnaeus, 1761)	6	10
<i>Dorytomus tremulae</i> (Fabricius, 1787)	2	2
<i>Ellescus bipunctatus</i> (Linnaeus, 1758)	10	48
<i>Ellescus infirmus</i> (Herbst, 1795)	3	3
<i>Ellescus scanicus</i> (Paykull, 1792)	12	23
Mecinini Gistel, 1848		
<i>Cleopomiarus distinctus</i> (Boheman, 1845)	7	35
<i>Cleopomiarus graminis</i> (Gyllenhal, 1813)	11	16
<i>Gymnetron melanarium</i> (Germar, 1821)	19	142
<i>Gymnetron terminassianae</i> Smreczyński, 1975	11	114
<i>Gymnetron veronicae</i> (Germar, 1821)	3	6
<i>Gymnetron villosulum</i> Gyllenhal, 1838	1	3
<i>Mecinus heydenii</i> Wencker, 1866	2	2
<i>Mecinus janthinus</i> Germar, 1821	3	3

Species	Numbers of	
	Plots	Specimens
<i>Mecinus labilis</i> (Herbst, 1795)	3	3
<i>Mecinus pascuorum</i> (Gyllenhal, 1813)	16	59
<i>Mecinus plantaginis</i> (Eppelsheim, 1875)	2	2
<i>Mecinus pyrastrer</i> (Herbst, 1795)	2	2
<i>Miarus ajugae</i> (Herbst, 1795)	33	196
<i>Rhinusa antirrhini</i> (Paykull, 1800)	12	23
<i>Rhinusa asellus</i> (Gravenhorst, 1807)	1	1
<i>Rhinusa collina</i> (Gyllenhal, 1813)	6	7
<i>Rhinusa linariae</i> (Panzer, 1795)	3	3
<i>Rhinusa neta</i> (Germar, 1821)	12	17
<i>Rhinusa tetra</i> (Fabricius, 1792)	3	3
Rhamphini Rafinesque, 1815		
<i>Isochnus flagellum</i> Ericson, 1902	1	1
<i>Isochnus foliorum</i> (O.F. Müller, 1764)	1	1
<i>Isochnus sequensi</i> (Stierlin, 1894)	1	1
<i>Orchestes calceatus</i> (Germar, 1821)	7	27
<i>Orchestes rusci</i> (Herbst, 1795)	13	36
<i>Orchestes testaceus</i> (O. F. Müller, 1776)	3	3
<i>Orchestes hortorum</i> (Fabricius, 1792)	2	2
<i>Orchestes jota</i> (Fabricius, 1787)	1	1
<i>Orchestes pilosus</i> (Fabricius, 1781)	1	1
<i>Orchestes quercus</i> (Linnaeus, 1758)	1	1
<i>Pseudorchestes circumvistulanus</i> (Białooki, 1997)	4	4
<i>Pseudorchestes ermischii</i> (Dieckmann, 1958)	1	1
<i>Pseudorchestes pratensis</i> (Germar, 1821)	3	6
<i>Pseudorchestes smreczynskii</i> (Dieckmann, 1958)*	1	1
<i>Rhamphus oxyacanthae</i> (Marsham, 1802)	1	1
<i>Rhamphus pulicarius</i> (Herbst, 1795)	3	4
<i>Rhynchaenus xylostei</i> Clairville, 1798	11	14
<i>Tachyerges decoratus</i> (Germar, 1821)	4	4
<i>Tachyerges rufitarsis</i> (Germar, 1821)	2	3
<i>Tachyerges salicis</i> (Linnaeus, 1758)	8	17
<i>Tachyerges stigma</i> (Germar, 1821)	12	22
Smicronychini Seidlitz, 1891		
<i>Smicronyx coecus</i> (Reich, 1797)	8	17
<i>Smicronyx smreczynskii</i> F. Solari, 1952	1	1

Species	Numbers of	
	Plots	Specimens
<i>Pseudostyphlus pillumus</i> (Gyllenhal, 1835)	1	2
Tychiini C. G. Thomson, 1859		
<i>Sibinia pellucens</i> (Scopoli, 1772)	14	44
<i>Sibinia pyrrhodactyla</i> (Marsham, 1802)	2	4
<i>Sibinia subelliptica</i> Desbrochers des Loges, 1873	3	4
<i>Sibinia tibialis</i> Gyllenhal, 1835	2	2
<i>Sibinia viscariae</i> (Linnaeus, 1761)	27	66
<i>Tychius albolineatus</i> Motschulsky, 1860*	1	1
<i>Tychius brevisculus</i> Desbrochers des Loges, 1873*	1	1
<i>Tychius medicaginis</i> C.N.F. Brisout de Barneville, 1863	3	4
<i>Tychius meliloti</i> Stephens, 1831*	1	1
<i>Tychius picirostris</i> (Fabricius, 1787)	14	37
<i>Tychius quinquepunctatus</i> (Linnaeus, 1758)*	3	4
<i>Tychius sharpi</i> Tournier, 1874*	1	1
<i>Tychius stephensi</i> Schoenherr, 1835	9	22
<i>Tychius trivialis</i> Boheman, 1843	1	1
Dryophthorinae Schoenherr, 1825		
Rhynchophorini Schoenherr, 1833		
<i>Sitophilus granarius</i> (Linnaeus, 1758)	1	3
<i>Sitophilus oryzae</i> (Linnaeus, 1763)*	1	1
<i>Sphenophorus striatopunctatus</i> (Goeze, 1777)	8	15
Entiminae Schoenherr, 1823		
Brachyderini Schoenherr, 1826		
<i>Brachyderes incanus</i> (Linnaeus, 1758)	11	37
<i>Strophosoma capitatum</i> (DeGeer, 1775)	107	1401
Byrsopagini Lacordaire, 1863		
<i>Graptus triguttatus</i> (Fabricius, 1775)	5	5
<i>Tropiphorus elevatus</i> (Herbst, 1795)	1	1
Cneorhinini Lacordaire, 1863		
<i>Attactagenus albinus</i> (Boheman, 1833)	5	6
<i>Philopodon plagiatum</i> (Schaller, 1783)	1	2
Omiini Shuckard, 1840		
<i>Omiamima mollina</i> (Boheman, 1834)	1	1
<i>Omius globulus</i> (Boheman, 1842)*	1	1
<i>Omius murinus</i> (Boheman, 1842)	2	2
<i>Omius puberulus</i> Boheman, 1834*	1	2

Species	Numbers of	
	Plots	Specimens
Otiiorhynchini Schoenherr, 1826		
<i>Otiiorhynchus raucus</i> (Fabricius, 1777)	16	144
<i>Otiiorhynchus velutinus</i> Germar, 1823	4	4
<i>Otiiorhynchus ligustici</i> (Linnaeus, 1758)	25	60
<i>Otiiorhynchus carinatopunctatus</i> (Retzius, 1783)	1	1
<i>Otiiorhynchus tristis</i> (Scopoli, 1763)	30	73
<i>Otiiorhynchus pseudonothus</i> Apfelbeck, 1897*	1	1
<i>Otiiorhynchus ovatus</i> (Linnaeus, 1758)	52	411
<i>Otiiorhynchus fullo</i> (Schränk, 1781)	1	2
<i>Otiiorhynchus chrysostictus</i> Gyllenhal, 1834	1	2
Peritelini Lacordaire, 1863		
<i>Centricnemus leucogrammus</i> (Germar, 1823)	1	1
Phyllobiini Schoenherr, 1826		
<i>Phyllobius brevis</i> Gyllenhal, 1834	5	5
<i>Phyllobius argentatus</i> (Linnaeus, 1758)	32	89
<i>Phyllobius glaucus</i> (Scopoli, 1763)	3	3
<i>Phyllobius jacobsoni</i> Smirnov, 1913	5	10
<i>Phyllobius pomaceus</i> Gyllenhal, 1834	47	108
<i>Phyllobius oblongus</i> (Linnaeus, 1758)	12	13
<i>Phyllobius viridicollis</i> (Fabricius, 1792)	2	12
<i>Phyllobius arborator</i> (Herbst, 1797)	3	5
<i>Phyllobius pyri</i> (Linnaeus, 1758)	58	228
<i>Phyllobius thalassinus</i> Gyllenhal, 1834	13	33
<i>Phyllobius contemptus</i> Schoenherr, 1832	10	33
<i>Phyllobius maculicornis</i> Germar, 1823	24	64
Polydrusini Schoenherr, 1823		
<i>Liophloeus tessulatus</i> (O. F. Müller, 1776)	26	49
<i>Polydrusus mollis</i> (Ström, 1768)	19	36
<i>Polydrusus cervinus</i> (Linnaeus, 1758)	23	37
<i>Polydrusus confluens</i> Stephens, 1831	7	16
<i>Polydrusus pilosus</i> Gredler, 1866	6	33
<i>Polydrusus corruscus</i> Germar, 1823	5	5
<i>Polydrusus flavipes</i> (DeGeer, 1775)	7	8
<i>Polydrusus impressifrons</i> Gyllenhal, 1834	1	1
<i>Polydrusus pterygomalis</i> Boheman, 1840	8	12
<i>Polydrusus fulvicornis</i> (Fabricius, 1792)	2	2

Species	Numbers of	
	Plots	Specimens
<i>Polydrusus tereticollis</i> (DeGeer, 1775)	21	38
<i>Polydrusus inustus</i> Germar, 1823	12	19
Sciaphilini Sharp, 1891		
<i>Brachysomus echinatus</i> (Bonsdorff, 1785)	32	175
<i>Eusomus ovulum</i> Germar, 1823	34	55
<i>Exomias lebedevi</i> (Roubal, 1926)	6	69
<i>Foucattia squamulata</i> (Herbst, 1795)	8	17
<i>Sciaphilus asperatus</i> (Bonsdorff, 1785)	33	105
<i>Sciaphobus ningnidus</i> (Germar, 1823)	1	1
Sitonini Gistel, 1848		
<i>Charagmus griseus</i> (Fabricius, 1775)	2	4
<i>Sitona ambiguus</i> Gyllenhal, 1834	18	54
<i>Sitona callosus</i> Gyllenhal, 1834	3	3
<i>Sitona cylindricollis</i> Fåhræus, 1840	17	21
<i>Sitona hispidulus</i> (Fabricius, 1777)	16	97
<i>Sitona humeralis</i> Stephens, 1831	3	3
<i>Sitona inops</i> Schoenherr, 1832	25	40
<i>Sitona languidus</i> Gyllenhal, 1834	1	1
<i>Sitona lineatus</i> (Linnaeus, 1758)	38	118
<i>Sitona longulus</i> Gyllenhal, 1834	8	12
<i>Sitona macularius</i> (Marshall, 1802)	20	45
<i>Sitona obsoletus</i> (Gmelin, 1790)	1	2
<i>Sitona puncticollis</i> Stephens, 1831	5	6
<i>Sitona striatellus</i> Gyllenhal, 1834	17	41
<i>Sitona sulcifrons</i> (Thunberg, 1798)	13	14
<i>Sitona suturalis</i> Stephens, 1831	24	85
<i>Sitona waterhousei</i> Walton, 1846*	1	1
Tanymecini Lacordaire, 1863		
<i>Chlorophanus flavescens</i> (Fabricius, 1787)	1	1
<i>Chlorophanus viridis</i> (Linnaeus, 1785)	4	5
<i>Tanymecus palliatus</i> (Fabricius, 1787)	29	52
Trachyphloeini Gistel, 1848		
<i>Cathormiocerus aristatus</i> (Gyllenhal, 1827)	6	10
<i>Romualdius scaber</i> (Linnaeus, 1758)	10	20
Hyperinae Lacordaire, 1863 (1848)		
Hyperini Lacordaire, 1863 (1848)		

Species	Numbers of	
	Plots	Specimens
<i>Hypera diversipunctata</i> (Schränk, 1798)	6	8
<i>Hypera fornicata</i> (Penecke, 1928)*	4	12
<i>Hypera meles</i> (Fabricius, 1792)	13	23
<i>Hypera conmaculata</i> (Herbst, 1795)	23	29
<i>Hypera interruptovittata</i> (Desbrochers des Loges, 1875)*	1	1
<i>Hypera rumicis</i> (Linnaeus, 1758)	3	4
<i>Hypera melancholica</i> (Fabricius, 1792)*	2	2
<i>Hypera miles</i> (Paykull, 1792)	28	46
<i>Hypera nigrirostris</i> (Fabricius, 1775)	3	3
<i>Hypera plantaginis</i> (DeGeer, 1755)	1	1
<i>Hypera transsilvanica</i> (Petri, 1901)	15	20
<i>Hypera viciae</i> (Gyllenhal, 1813)	3	5
<i>Hypera arator</i> (Linnaeus, 1758)	17	27
<i>Limobius borealis</i> (Paykull, 1792)	7	13
Lixinae Schoenherr, 1823		
Cleonini Schoenherr, 1826		
<i>Bothynoderes affinis</i> (Schränk, 1781)	4	8
<i>Cleonis pigra</i> (Scopoli, 1763)	16	21
<i>Coniocleonus turbatus</i> (Fähræus, 1842)	13	306
<i>Cyphocleonus altaicus</i> (Gebler, 1829)*	1	1
<i>Cyphocleonus dealbatus</i> (Gmelin, 1790)	13	16
<i>Cyphocleonus trisulcatus</i> (Herbst, 1795)	8	8
<i>Mecaspis alternans</i> (Hellwig, 1795)*	1	1
<i>Stephanocleonus microgrammus</i> (Gyllenhal, 1834)	1	4
Lixini Schoenherr, 1823		
<i>Larinus obtusus</i> Gyllenhal, 1835	54	152
<i>Larinus pollinis</i> (Laicharting, 1781)*	2	2
<i>Larinus vulpes</i> (Olivier, 1807)*	3	7
<i>Larinus carlinae</i> (Olivier, 1807)	21	26
<i>Larinus iaceae</i> (Fabricius, 1775)	7	7
<i>Larinus sturnus</i> (Schaller, 1783)	22	42
<i>Larinus turbinatus</i> Gyllenhal, 1835	28	55
<i>Lixus rubicundus</i> Zoubkoff, 1833	1	1
<i>Lixus cylindrus</i> (Fabricius, 1781)*	2	2
<i>Lixus albomarginatus</i> Boheman, 1842	1	1
<i>Lixus bardanae</i> (Fabricius, 1787)	20	26

Species	Numbers of	
	Plots	Specimens
<i>Lixus fasciculatus</i> Boheman, 1835	10	16
<i>Lixus pulverulentus</i> (Scopoli, 1763)	1	1
<i>Lixus filiformis</i> (Fabricius, 1781)	1	3
<i>Lixus iridis</i> Olivier, 1807	40	64
<i>Lixus myagri</i> Olivier, 1807	3	4
<i>Lixus paraplecticus</i> (Linnaeus, 1758)	4	16
<i>Lixus angustus</i> (Herbst, 1795)	2	2
<i>Lixus brevipes</i> C. N. F. Brisout de Barneville, 1866	2	2
<i>Lixus subtilis</i> Boheman, 1835	2	2
Mesoptiliinae Lacordaire, 1863		
Magdalidini Pascoe, 1870		
<i>Magdalis ruficornis</i> (Linnaeus, 1758)	18	38
<i>Magdalis duplicata</i> Germar, 1819	5	10
<i>Magdalis frontalis</i> (Gyllenhal, 1827)	6	9
<i>Magdalis linearis</i> (Gyllenhal, 1827)	2	2
<i>Magdalis nitida</i> (Gyllenhal, 1827)*	1	1
<i>Magdalis phlegmatica</i> (Herbst, 1797)	4	34
<i>Magdalis violacea</i> (Linnaeus, 1758)	6	6
<i>Magdalis armigera</i> (Geoffroy, 1785)	5	5
Molytinae Schoenherr, 1823		
Cryptorhynchini Schoenherr, 1825		
<i>Cryptorhynchus lapathi</i> (Linnaeus, 1758)	6	6
<i>Acalles echinatus</i> (Germar, 1823)	4	10
Lepyriini W. Kirby, 1837		
<i>Lepyrus palustris</i> (Scopoli, 1763)	5	9
Molytini Schoenherr, 1823		
<i>Hylobius abietis</i> (Linnaeus, 1758)	87	1956
<i>Hylobius pinastri</i> (Gyllenhal, 1813)	32	290
<i>Hylobius transversovittatus</i> (Goeze, 1777)	2	2
<i>Hylobius excavatus</i> (Laicharting, 1781)	1	1
Pissodini Gistel, 1848		
<i>Pissodes castaneus</i> (DeGeer, 1775)	14	44
<i>Pissodes harcyniae</i> (Herbst, 1795)	2	2
<i>Pissodes pini</i> (Linnaeus, 1758)	17	61
<i>Pissodes piniphilus</i> (Herbst, 1797)	8	8
<i>Pissodes validirostris</i> (C. R. Sahlberg, 1834)	3	3

Species	Numbers of	
	Plots	Specimens
Trachodini Gistel, 1848		
<i>Trachodes hispidus</i> (Linnaeus, 1758)	8	15
Scolytinae Latreille, 1804		
Corthylini LeConte, 1876		
<i>Pityophthorus glabratus</i> Eichhoff, 1878	3	12
<i>Pityophthorus lichtensteinii</i> (Ratzeburg, 1837)	2	2
Crypturgini LeConte, 1876		
<i>Crypturgus cinereus</i> (Herbst, 1793)	2	3
<i>Crypturgus hispidulus</i> C.G. Thomson, 1870	3	7
<i>Crypturgus pusillus</i> (Gyllenhal, 1813)	2	11
<i>Crypturgus subcribrosus</i> Eggers, 1933	3	41
Dryocoetini Lindemann, 1877		
<i>Dryocoetes autographus</i> (Ratzeburg, 1837)	6	16
<i>Dryocoetes hectographus</i> Reitter, 1913	2	14
<i>Lymantor aceris</i> (Lindemann, 1875)	1	2
<i>Lymantor coryli</i> (Perris, 1855)*	1	2
Ernoporini Nüsslin, 1911		
<i>Ernoporus tiliae</i> (Panzer, 1793)	5	11
Hylastini LeConte, 1876		
<i>Hylastes angustatus</i> (Herbst, 1793)	1	18
<i>Hylastes brunneus</i> (Erichson, 1836)	13	147
<i>Hylastes cunicularius</i> Erichson, 1836	9	37
<i>Hylastes opacus</i> Erichson, 1836	6	20
<i>Hylurgops palliatus</i> (Gyllenhal, 1813)	8	69
Hylesinini Erichson, 1836		
<i>Hylesinus varius</i> (Fabricius, 1775)	1	1
Hylurgini Gistel, 1848		
<i>Dendroctonus micans</i> (Kugelann, 1794)	1	1
<i>Hylurgus ligniperda</i> (Fabricius, 1787)	4	64
<i>Tomicus minor</i> (Hartig, 1834)	6	15
<i>Tomicus piniperda</i> (Linnaeus, 1758)	5	58
Ipini Bedel, 1888		
<i>Ips acuminatus</i> (Gyllenhal, 1827)	5	32
<i>Ips duplicatus</i> (C.R. Sahlberg, 1836)	2	3
<i>Ips sexdentatus</i> (Boerner, 1776)	4	35
<i>Ips typographus</i> (Linnaeus, 1758)	13	60

Species	Numbers of	
	Plots	Specimens
<i>Orthotomicus laricus</i> (Fabricius, 1792)	5	206
<i>Orthotomicus longicollis</i> (Gyllenhal, 1827)	1	1
<i>Orthotomicus proximus</i> (Eichhoff, 1868)	9	15
<i>Orthotomicus suturalis</i> (Gyllenhal, 1827)	4	45
<i>Pityogenes bidentatus</i> (Herbst, 1783)	3	5
<i>Pityogenes chalcographus</i> (Linnaeus, 1761)	11	180
<i>Pityogenes irkutensis</i> Eggers, 1910	1	2
<i>Pityogenes quadridens</i> (Hartig, 1834)	1	3
Polygraphini Chapuis, 1869		
<i>Polygraphus poligraphus</i> (Linnaeus, 1758)	4	4
<i>Polygraphus subopacus</i> C.G. Thomson, 1871	2	2
Scolytini Latreille, 1804		
<i>Scolytus intricatus</i> (Ratzeburg, 1837)	3	15
<i>Scolytus multistriatus</i> (Marsham, 1802)	3	17
<i>Scolytus ratzeburgi</i> E.W. Janson, 1856	16	35
<i>Scolytus rugulosus</i> (P.W.J. Müller, 1818)	1	1
<i>Scolytus scolytus</i> (Fabricius, 1775)	1	1
Trypophloeini Nüsslin, 1911		
<i>Trypophloeus binodulus</i> (Ratzeburg, 1837)	2	4
<i>Trypophloeus discedens</i> Palm, 1950	1	2
Xyleborini LeConte, 1876		
<i>Anisandrus dispar</i> (Fabricius, 1792)	39	264
<i>Heteroborips cryptographus</i> (Ratzeburg, 1837)	1	30
<i>Xyleborinus saxesenii</i> (Ratzeburg, 1837)	5	48
Xyloterini LeConte, 1876		
<i>Trypodendron lineatum</i> (Olivier, 1800)	8	130
<i>Trypodendron signatum</i> (Fabricius, 1792)	8	25
Total		14100

Discussion

The most frequently encountered species by the number of plots in the studied area are *Strophosoma capitatum*, *Hylobius abietis*, *Phyllobius pyri*, *Larinus obtusus*, *Oti-orhynchus ovatus*, *Phyllobius pomaceus*, *Protapion fulvipes*, *Lixus iridis*, *Protapion apricans*, and *Anisandrus dispar* (Fig. 2). In terms of the number of specimens, the leading species are *Hylobius abietis*, *Strophosoma capitatum*, *Oti-orhynchus ovatus*,

Protapion fulvipes, *Coniocleonus turbatus*, *Hylobius pinastri*, *Anisandrus dispar*, *Phyllobius pyri*, *Orthotomicus laricis*, and *Miarus ajugae*. Thus, the dominant species in the dataset based on the number of plots and specimens are essentially the same.

The zoogeographical structure of the regional fauna is heterogeneous, reflecting the long history of biota formation in this area. Against the backdrop of a predominance of widely distributed species from the Western-Central Palaearctic (201 species; 39.8%) and Transpalaearctic (143 species; 28.3%) complexes, notable features of the fauna of the Republic of Mordovia include a significant share of Western Palaearctic species (European and Mediterranean), including a group of the Eastern European species, alongside the presence of elements of the Northern Asian origin from the Central Palaearctic and the Central-Eastern Palaearctic complexes. A considerable portion of species also belong to the Holarctic complex, distributed in both Eurasia and North America (26 species; 5.1%). A noticeable share of species from this complex is characteristic of the boreal-type faunas.

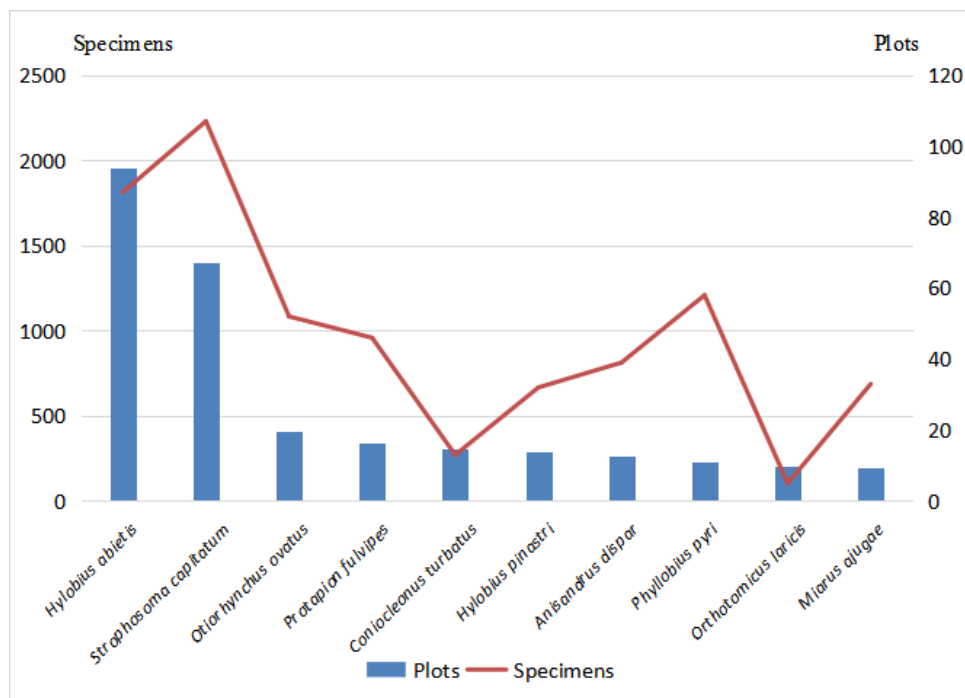


Figure 2. The most abundant and frequently encountered species of Curculionoidea in the Republic of Mordovia.

The rather extensive the Western Palaearctic complex (95 species; 19.0%) includes species distributed to the east as far as the Ural Mountains (with some exceptions reaching the Trans-Ural region). Some species from this complex are found in the Republic of Mordovia near the eastern and northeastern limits of their range.

Among the most interesting finds are *Mesauletobius pubescens*, *Oxystoma ochropus*, *Anthonomus ulmi*, *Otiorhynchus carinatopunctatus*, *Philopodon plagiatum*, *Polydrusus impressifrons*, *Tropiphorus elevatus*, and *Trypophloeus discedens*. Several species from this complex have the Eastern European ranges, such as *Pseudorchestes circumvistulanus*, *Attactagenus albinus*, *Exomias lebedevi*, and *Phyllobius jacobsoni*.

Populations of some Western Palaearctic forms in the Republic of Mordovia are likely associated with unintentional introduction and should therefore be considered adventive to the regional fauna. A typical example of such species is the unexpected finding of *Otiorhynchus pseudonothus* Apfelbeck, 1897, in the city of Saransk. This polyphagous species, found on trees and shrubs, is likely of Alpine origin and is considered adventive to many countries in Central and Southeastern Europe (Delbol 2010; Alonso-Zarazaga et al. 2017). It was recently discovered in cities of the European part of Russia (Moscow, Petrozavodsk), where it was introduced with planting material from Central Europe (Zabaluev et al. 2019; Zabaluev 2023). Thus, the finding of this species in Saransk is the easternmost known record within its secondary range. Two Mediterranean adventive species from the family Brentidae (*Alocentron curvirostre* and *Aspidapion validum*), are closely associated with *Alcea rosea*. Adventive species also include two cosmopolitan species (*Sitophilus granarius* and *S. oryzae*), which are pests of grain storage.

A distinct complex consists of the Amphipalaearctic species (distributed in the Western and Eastern Palaearctic but absent in the inland areas of North Asia). This group includes 8 species, such as *Nanophyes brevis*, *Magdalis armigera*, *Dorytomus tremulae*, *Ernoporos tiliae*, and *Lymanator aceris*.

On the other hand, species with an Eastern European–North Asian distribution include *Tatyanapion laticeps*, *Gymnetron terminassianae*, *Tychius albolineatus*, and *Pityogenes irkutensis*. Several other species are likely native to the intrazonal semi-arid regions of Eurasia, such as the Pontic–Kazakhstan–West Siberian *Hypera interruptovittata* and *Cyphocleonus altaicus*, and the Pannonian–Pontic–Central Asian *Stephanocleonus microgrammus*.

Table 3. Species richness and share of zoogeographical complexes in the Curculionoidea Fauna of the Republic of Mordovia

Complexes	Number of species	Share in the fauna (%)
Longitudinal Complexes		
Cosmopolitan	2	0.4
Holarctic	26	5.1
Transpalaearctic	143	28.3
Western-Central Palaearctic	201	39.7
Western Palaearctic	96	19.0
Central Palaearctic	14	2.8

Complexes	Number of species	Share in the fauna (%)
Central-Eastern Palaearctic and Subtrans-Eurasian	16	3.2
Amphipalaearctic	8	1.5
Latitudinal Complexes		
Boreal and Arctic-Boreal	35	6.9
Polyzonal (including temperate)	247	48.8
South-Boreal-Subboreal	108	21.3
Subboreal	116	22.9
Total number of species	506	100

Note: The percentage in parentheses represents the share (%) of each group in the local fauna.

According to the latitudinal structure, nearly half of the species in the studied Curculionoidea fauna belong to polyzonal forms (48.8%), which is characteristic of the faunas of the plain regions of Eastern Europe. The share of species with southern-type ranges (subboreal and south-boreal-subboreal) is much lower (44.2%) (Table 3).

The subboreal complex (116 species; 22.9%) is divided into two groups: the nemoral group of species associated with humid landscapes (areas dominated by broad-leaved forests) and a group of species, by origin and distribution, associated with subarid and semi-arid landscapes (steppes). In the fauna of the Republic of Mordovia, there are 47 nemoral species and 69 steppe species.

Species of steppe fauna include *Ceratapion penetrans*, *Hemitrichapion reflexum*, *Loborhynchapion amethystinum*, *Pseudoprotapion elegantulum*, *Melanobaris carbonaria*, *Mogulones austriacus*, *M. dimidiatus*, *M. geographicus*, *Phrydiuchus topiarius*, *Thamiocolus nubeculosus*, *Cionus olivieri*, *Mecinus plantaginis*, *Rhinusa asellus*, *Sibinia subelliptica*, *S. tibialis*, *Centricnemus leucogrammus*, *Otiorhynchus velutinus*, *Sitona callosus*, *Hypera interruptovittata*, *Larinus vulpes*, *Lixus brevipes*, *L. cylindrus*, *L. subtilis*, *Stephanocleonus microgrammus*, and others.

However, the total number of species and the share of the steppe complex of weevils in the region's fauna are significantly poorer compared to more southern and eastern regions of European Russia. For example, in the forest-steppe zone of the High Volga, 202 subboreal steppe species have been recorded (Dedyukhin 2024b), and in the Zhiguli Reserve in the southern part of the forest-steppe zone of the Volga Uplands, 91 species have been observed (Dedyukhin 2022). This reflects the location of the Republic of Mordovia in the northern part of the forest-steppe zone.

On the contrary, the nemoral complex is quite rich. It includes both phytophagous and xylophagous species directly associated with oak or other broad-leaved trees (*Choragus sheppardi*, *Attelabus nitens*, *Coeliodes rana*, *Anthonomus ulmi*, *Archarius pyrrhoceras*, *Bradybatus kellneri*, 5 species of the genus *Curculio* L., *Orchestes*

hortorum, *O. pilosus*, *O. quercus*, *Polydrusus impressifrons*, *Magdalis armigera*, *Acalles echinatus*, *Trachodes hispidus*, *Ernoporos tiliae*, *Lymantr aceris*, *Scolytus intricatus*), as well as inhabitants of the mesophytic herbaceous layer of broad-leaved forests and their edges (*Kalcapion pallipes*, *Oxystoma ochropus*, *Datonychus urticae*, *Exomias lebedevi*, *Omiomima mollina*, *Otiorhynchus carinatopunctatus*, *Tropiphorus elevatus*).

A significant portion of species with nemoral range types is associated with riparian vegetation of well-warmed shallow waters: *Protapion ononidis*, *Nanomimus circumscriptus*, *Nanomimus hemisphaericus*, *Nanophyes globulus*, *Graptus triguttatus*, *Datonychus melanostictus*, *Mogulones abbreviatulus*, *M. raphani*, and others.

It is noteworthy that a small but significant portion of the fauna (35 species; 6.9%) consists of species with boreal and arctoboreal ranges, which are not typical for nemoral or, especially, steppe faunas. This is due to the widespread presence of forested areas (including coniferous forests) in the northern part of Mordovia. Typical species of this complex include *Gonotropis dorsalis*, *Cimberis attelaboides*, *Notaris aethiops*, *Ceutorhynchus querceti*, *Euryommatus mariae*, *Rutidosoma graminosum*, *Orchestes jota*, *Phyllobius thalassinus*, *Polydrusus pilosus*, *Hypera diversipunctata*, *Magdalis phlegmatica*, *Hylobius excavatus*, *Pissodes harcyniae*, *P. piniphilus*, *Crypturgus subcibrosus*, *Dendroctonus micans*, *Pityogenes irkutensis*, *Pityophthorus lichtensteinii*, and others. Some of these species are found at the southern limits of their range in the region.

Thus, the fauna of the Republic of Mordovia is of a complex nature, consisting of components of different origins (steppe, nemoral, boreal), which is characteristic of the faunas of boreal ecotones in general.

Acknowledgements

The authors are grateful to all colleagues who provided their materials or assisted in the collection of data: D. Kurmaeva, M. Ryzhov, K. Tomkovich. We would also like to thank S.K. Alekseev, A.Yu. Isaev[†], A.A. Legalov, M.Yu. Mandelshtam, and B.A. Korotyayev for the identification of several specimens. The field research was conducted with the support of the Russian Science Foundation, grant number 22-14-00026-II.

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