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Data Descriptor

Biodiversity of Coleoptera (Insecta) in Khvalynsky National Park (Saratov Region, Russia)

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Abstract: (1) Background: Coleoptera is one of the most diverse insect lineages. The beetle species live in many ecosystems around the globe and their roles in ecosystems are very diverse; thus, it is important to know the local and regional fauna varieties, especially for protected areas, such as nature reserves and national parks. (2) Methods: The materials were collected from the territory of the Khvalynsky National Park (European Russia, Saratov region), mainly over the last 30 years (1994–2022). The beetles were collected using different means (manual collection; the use soil traps, fermental crown traps, and Malaise traps; light fishing; sweeping with an entomological net on plants and under water, etc.). (3) Results: The dataset presents data on 914 species and subspecies of Coleoptera from 67 families found in the Khvalynsky National Park. The number of studied specimens was 7445. Four families (Cerylonidae, Byturidae, Phalacridae, and Sphindidae) and 95 species were recorded for the Khvalynsky National Park for the first time. Thirty-two species were recorded for the Saratov region for the first time. (4) Conclusions: The general biodiversity of Coleoptera in the Khvalynsky National Park includes 1203 species from 71 families.

Keywords: species diversity; beetles; comparison of fauna; dataset; Center of European Russia; Volga Upland

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1. Summary

The Coleoptera order of beetles is one of the most diverse insect orders in the world, which dominates many ecosystems in terms of individual abundance and occupied niches [1]. Despite the important ecosystem role, the beetle fauna in some regions have not been studied enough; therefore, to understand the changes taking place on a global scale, it is important to know the local and regional fauna varieties, especially for protected areas, such as nature reserves and national parks [2–6].

Ch. H. Theodor (1831–1894) initiated studies of the Coleoptera species of the Khvalynsky District, including the modern territory of Khvalynsky National Park. He visited this region repeatedly from 1870 and collected insects from there. The beetle specimens from his collection are deposited in the Zoological Institute in Saint-Petersburg, and also in museums in London and Berlin. The first work that contained data about beetles from Khvalynsky was G.G. Jacobson's paper [7], which was dedicated to leaf beetles from the Saratov Governorate. The most significant number of publications about the Coleoptera species of Khvalynsky District and the Khvalynsky National Park has appeared from the 2000s to the present, including studies by G. S. Medvedev [8], M. Ya. Orlova-Bienkowskaya

and A. O. Bieńkowski [9–12], I. A. Zabaluev [13–16], and A. S. Sazhnev et al. [17–34]. In 2022, the collaborative monograph *Artropods of Khvalynsky National Park* [35] summed up the general biodiversity of the Coleoptera fauna of the national park. At that time, the known biodiversity of the national park included 1034 species of beetles [35].

2. Data Description

2.1. Dataset Description

In the dataset, each observation includes basic information on the location (latitude/longitude), date of observation, name of the observer, and name of the identifier. The coordinates were determined on the spot using a GPS device or after research using Google Maps (Table 1).

Table 1. Description of the data in the dataset.

Column Label	Column Description
occurrenceID	An identifier for the occurrence (as opposed to a particular digital record of the occurrence)
basisOfRecord	The specific nature of the data record: HumanObservation
scientificNam	The full scientific name including the genus name and the lowest level of taxonomic rank with the authority
kingdom	The full scientific name of the kingdom in which the taxon is classified
decimalLatitude	The geographic latitude of location in decimal degrees
geodeticDatum	The ellipsoid, geodetic datum, or spatial reference system (SRS) upon which the geographic coordinates given in decimalLatitude and decimalLongitude is based
country	The name of the country in which the location occurs
countryCode	The standard code for the country in which the location occurs.
individualCount	The number of individuals represented present at the time of the occurrence
eventDate	The date when material from the trap was collected or the range of dates during which the trap collected material
year	The integer year in which the event occurred
month	The ordinal month in which the event occurred
day	The integer day of the month on which the event occurred
recordedBy	A person, group, or organization responsible for recording the original occurrence
identifiedBy	A list of names of people who assigned the taxon to the subject

2.2. Figures, Tables, and Schemes

The dataset presents data on 914 species and subspecies of Coleoptera from 67 families found in the Khvalynsky National Park (Table 2). The total number of occurrences was 2337 and the number of studied specimens was 7445. The largest families in terms of species diversity were Curculionidae (186), Chrysomelidae (151), and Carabidae (65). The most understudied group is the family Staphylinidae (including Silphinae), which in the territory of the national park can potentially present approximately 300–400 species.

Table 2. Species diversity of beetles of the Khvalynsky National Park.

Families	References *	References 2 **	New Records	Dataset	Total
Sphaeriusidae	1	0	0	1	1
Gyrinidae	5	0	1	6	6
Haliplidae	5	0	1	6	6
Noteridae	2	0	0	2	2
Dytiscidae	47	0	3	22	50
Carabidae	119	3	2	65	124

Table 2. *Cont.*

Families	References *	References 2 **	New Records	Dataset	Total
Scirtidae	4	0	1	5	5
Eucinetidae	1	0	0	1	1
Byrrhidae	2	0	0	1	2
Buprestidae	18	4	0	19	22
Dryopidae	1	0	1	2	2
Heteroceridae	4	0	0	3	4
Throscidae	2	0	0	2	2
Eucnemidae	1	1	0	2	2
Lycidae	1	0	0	1	1
Cantharidae	7	0	0	3	7
Elateridae	26	3	2	28	30
Lampyridae	1	0	0	1	1
Sphaeritidae	1	0	0	1	1
Histeridae	4	1	0	2	5
Georissidae	1	0	0	1	1
Helophoridae	4	0	2	6	6
Hydrochidae	3	0	0	3	3
Spercheidae	1	0	0	0	1
Hydrophilidae	27	0	1	19	28
Hydraenidae	3	0	1	4	4
Leiodidae	1	1	1	3	3
Staphylinidae	47	8	2	47	57
Trogidae	2	0	0	0	2
Lucanidae	5	0	0	3	5
Geotrupidae	2	0	0	1	2
Glaphyridae	1	0	0	0	1
Scarabaeidae	40	0	0	26	40
Dermestidae	3	5	1	9	9
Ptinidae	4	1	2	7	7
Byturidae	0	0	2	2	2
Biphyllidae	0	1	0	1	1
Cleridae	2	1	0	2	3
Trogossitidae	0	1	0	1	1
Melyridae	9	1	2	12	12
Mordellidae	11	5	2	18	18
Scraptiidae	5	0	0	5	5
Aderidae	1	0	0	1	1
Oedemeridae	6	0	2	7	8
Mycteridae	1	0	1	2	2
Meloidae	10	0	1	9	11
Anthicidae	3	1	0	4	4
Melandryidae	0	1	0	1	1
Zopheridae	2	0	0	1	2
Ciidae	1	0	0	0	1
Mycetophagidae	2	1	1	4	4
Tenebrionidae	26	2	2	25	30
Cerylonidae	0	0	1	1	1
Latridiidae	3	1	2	6	6
Corylophidae	1	0	1	2	2
Coccinellidae	37	1	3	31	41
Erotylidae	6	0	0	6	6
Sphindidae	0	0	1	1	1
Monotomidae	3	2	0	4	5
Kateretidae	1	0	1	3	2
Nitidulidae	7	9	2	17	18
Cryptophagidae	2	1	0	2	3
Silvanidae	0	1	0	1	1
Phalacridae	0	0	3	3	3

Table 2. *Cont.*

Families	References *	References 2 **	New Records	Dataset	Total
Laemophloeidae	0	1	0	1	1
Cerambycidae	51	5	4	46	61
Chrysomelidae	241	1	9	151	251
Anthribidae	6	0	2	8	8
Attelabidae	6	0	2	8	8
Brentidae	35	0	6	41	41
Curculionidae	160	10	24	186	194
Total	**1034**	**74**	**95**	**914**	**1203**

Note: *—literary data [35]; **—literary data [36–41].

The total number of Coleoptera species for the Khvalynsky National Park (taking into account literature data) is 1203 species from 71 families.

A special list was compiled of the species (32 species and subspecies) that were recorded from the Saratov region for the first time. For these species, full label data and short notes are given here. If no specific collection method is listed then the specimens were hand-collected.

Family Gyrinidae

Gyrinus distinctus Aubé, 1836

Material examined. Saratov region, Khvalynsky Distr., Khvalynsky National Park (here and below—**NPK**), 52.317797 N 47.989985 E, flooded sand career, 30 June 2022, 2 exs., A. Sazhnev leg. (IBIW).

Notes. The species was cited as possible for the Saratov region [42].

Family Haliplidae

Haliplus fulvicollis Erichson, 1837

Material examined. NPK, mixed forest, 52.496361 N 48.007689 E, lowland herb–grass–sedge mire, 3 July 2022, 1 ex., A.S. Sazhnev leg. (IBIW).

Notes. The species was cited as possible for the Saratov region [36]. In the Saratov region, the species is located on the southeastern border of its range. According to Holmen [43], more usually the habitats for *Haliplus fulvicollis* are marshes and peat bogs with temporary water. It is also very sensitive to habitat disturbances, especially to any changes to the shore zone, and indicates the continuity and natural conditions of the habitat [44].

Family Helophoridae

Helophorus flavipes Fabricius, 1792

Material examined. NPK (Volsky Distr.), 1.5 km SW of Akatnaya Maza vill., 52.431901 N 47.614611 E, stream (left tributary of Tereshka), sandy–silty soil, 27 June 2022, 1 ex., A.S. Sazhnev leg. (IBIW).

Helophorus minutus Fabricius, 1775

Material examined. NPK, 2.5 km W of Alekseevka vill., 52.299234 N 47.952829 E, pools, 30 June 2022, 1 ex., A.S. Sazhnev leg. (IBIW).

Family Hydrophilidae

Hydrobius rottenbergii Gerhardt, 1872

Material examined. NPK (Volsky Distr.), Ulyanovo vill., 52.4309 N 47.9261 E, headwaters of the Tersa River, carbonate soil, 3–4 July 2022, 1 ex., A.S. Sazhnev leg. (IBIW).

Notes. The Holarctic morphospecies *Hydrobius fuscipes* (Linnaeus, 1758) is represented by a complex of cryptic species, which was recently partly revised [45], and the authors' taxon *Hydrobius rottenbergii* was validated.

Family Hydraenidae

Limnebius papposus Mulsant, 1844

Material examined. NPK (Volsky Distr.), 1.5 km SW of Akatnaya Maza vill., 52.431901 N 47.614611 E, stream (left tributary of Tereshka), sandy–silty soil, 27 June 2022, 1 ex., A.S. Sazhnev leg. (IBIW).

Family Staphylinidae

Pella cognata (Märkel, 1842)

Material examined. NPK, 52.4869 N 48.0429 E, maple pine forest, soil traps, 24 June–3 July 2022, 1 ex., A.S. Sazhnev leg. (IBIW).

Family Scirtidae

Contacyphon kongsbergensis (Munster, 1923)

Material examined. NPK, mixed forest, 52.496361 N 48.007689 E, lowland herb–grass–sedge mire in entomological net, 3 July 2022, 1 ex., A.S. Sazhnev leg. (IBIW).

Notes. The species occurs almost exclusively in peat bogs [44]. This marsh species was recorded for the Saratov region without locality information [46]. Our record (in lowland mire) confirms the presence of the species in the Saratov region.

Family Dryopidae

Dryops anglicanus Edwards, 1909

Material examined. NPK, mixed forest, 52.496361 N 48.007689 E, lowland herb–grass–sedge mire, 3 July 2022, 1 ex., A.S. Sazhnev leg. (IBIW).

Notes. A rare European species, confined to relic populations in southern Europe [47]. Hendrich and Balke [48] characterized it as tyrphophilous. The record of *D. anglicanus* from Saratov region is the one of south-easternmost points (along with Orenburg record [49]) in the known range of this species.

Family Nitidulidae

Meligethes ruficornis (Marsham, 1802)

Material examined. NPK, 5 km W of Khvalynsk, 52.486173 N 48.043945 E, 22 June 2022, 5 exs., A.S. Sazhnev leg. (IBIW).

Family Sphindidae

Aspidiphorus orbiculatus (Gyllenhal, 1808)

Material examined. NPK, 5 km W of Khvalynsk, 52.486173 N 48.043945 E, Malaise trap, 21–31 June 2022, 1 ex., V.V. Anikin leg. (IBIW).

Notes. This species was recorded for the Saratov region without locality information [50]. Our record confirms the presence of the species in the Saratov region. The Sphindidae family was recorded for the Khvalynsky National Park for the first time.

Family Coccinellidae

Scymnus femoralis (Gyllenhal, 1827)

Material examined. NPK, 5 km W of Khvalynsk, 52.486173 N 48.043945 E, Malaise trap, 21–31 June 2022, 1 ex., V.V. Anikin leg. (IBIW).

Family Tenebrionidae

Lagria atripes Mulsant and Guillebeau, 1855

Material examined. NPK, near Kalancha mountain., 52.4952 N 48.0455 E, 2 July 2022, 1 ex., A.S. Sazhnev leg. (IBIW).

Family Oedemeridae

Oedemera croceicollis (Gyllenhal, 1827)

Material examined. NPK, Elshanka vill., 52.605171 N 47.977719 E, shore of pond, entomological net, 27 June 2022, 1 ex., A.S. Sazhnev leg. (IBIW).

Family Chrysomelidae

Bruchidius unicolor (Olivier, 1795)

Material examined. NPK, chalk steppe, 52.3387 N 48.0048 E, 3 June 2022, 2 ex., S.V. Dedyukhin leg. (UDSU).

Bruchus occidentalis Lukjanovitch and Ter-Minassian, 1957

Material examined. NPK, edge of the forest, 52.7560 N 48.3314 E, 8 August 2022, 1 ex., S.V. Dedyukhin leg. (UDSU).

Aphthona gracilis Faldermann, 1837

Material examined. NPK, edge of the forest, 52.3387 N 48.0048 E, 3 June 2022, 2 ex., S.V. Dedyukhin leg. (UDSU); NPK, 52.6837 N 48.2438 E, chalk steppe, 9 August 2022, 1 ex., S.V. Dedyukhin leg. (UDSU).

A. pygmaea Kutschera, 1861

Material examined. NPK, chalk steppe, 52.6837 N 48.2438 E, 9 August 2022, 1 ex., S.V. Dedyukhin leg. (UDSU).

Argopus nigritarsis (Gebler, 1823)

Material examined. NPK, 52.5151 N 47.9509 E, steppe, 1 June 2022, on *Pulsatilla patens* (L.) Mill., 1 ex., S.V. Dedyukhin leg. (UDSU).

Notes. Rare species, oligophage on plants of the genus *Pulsatilla* Mill.

Chaetocnema obesa (Boieldieu, 1859)

Material examined. NPK, 52.3188 N 47.9890 E, 3 June 2022, 1 ex., S.V. Dedyukhin leg. (UDSU).

Chrysolina geminata (Paykull, 1799)

Material examined. NPK, edge of the forest, 52.5117 N 47.9221 E, 10 August 2022, on *Hypericum perforatum* L., 3 ex., S.V. Dedyukhin leg. (UDSU).

Dibolia carpathica Weise, 1893

Material examined. NPK, chalk steppe, 52.5072 N 47.9119 E, 10 August 2022, on *Nepeta nuda* L., 1 ex., S.V. Dedyukhin leg. (UDSU); NPK, 52.7031 N 48.2959 E, steppe, 9 August 2022, 1 ex., S.V. Dedyukhin leg. (UDSU).

Family Anthribidae

Bruchela schusteri (Schilsky, 1912)

Material examined. NPK, chalk steppe, 52.3968 N 48.0498 E, 2 June 2022, 1 ex., S.V. Dedyukhin leg. (UDSU).

Family Brentidae

Aspidapion chalceus (Marsham, 1802)

Material examined. NPK, forb steppe, 52.5117 N 47.9207 E, 7 June 2022, on *Lavatera thuringiaca* L., 1 ex., S.V. Dedyukhin leg. (UDSU).

A. chalceus is considered a junior synonym of *Aspidapion aeneum* (Fabricius, 1775) [51]. According to our data, these species differ in their morphology (coloration, shape of the eyes and structure of the rostrum, fore tibia of the male, average size), shape of the male genitalia, and ecological features. Host plants *Aspidapion aeneum*—species of the genus *Malva* L., *A. chalceus*—monophage on *Lavatera thuringiaca* (L.).

Ceratapion gibbirostre (Gyllenhal, 1813)

Material examined. NPK, 52.5081 N 47.9221 E, 10 August 2022, 1 ex., S.V. Dedyukhin leg. (UDSU).

Eutrichapion viciae (Paykull, 1800)

Material examined. NPK, 52.7450 N 48.2447 E, 8 August 2022, 1 ex., S.V. Dedyukhin leg. (UDSU); NPK, 52.7560 N 48.3314 E, 8 August 2022, 1 ex., S.V. Dedyukhin leg. (UDSU).

Family Curculionidae

Ceutorhynchus ignitus Germar, 1823

Material examined. NPK, 52.4810 N 48.0661 E, 1 June 2022, 1 ex., S.V. Dedyukhin leg. (UDSU).

Cosmobaris scolopacea (Germar, 1819)

Material examined. NPK, saline, 52.7031 N 48.2959 E, 9 August 2022, 1 ex., S.V. Dedyukhin leg. (UDSU); NPK, 52.6850 N 48.2516 E, xerothermic slope, 9 August 2022, 1 ex., S.V. Dedyukhin leg. (UDSU).

Larinus iaceae volgensis Becker, 1864

Material examined. NPK, chalk steppe, 52.4810 N 48.0661 E, 1 June 2022, 1 ex., S.V. Dedyukhin leg. (UDSU); 52.3968 N 48.0498 E, NPK, chalk steppe, 2 June 2022, 1 ex., S.V. Dedyukhin leg. (UDSU).

Notes. This subspecies lives in xerothermic steppe biotopes of the forest–steppe and steppe natural zones of the Volga region, in contrast to the nominative subspecies, which is common in meadows of the forest zone [51].

Lixus incanescens Boheman, 1835

Material examined. NPK, xerothermic slope, 52.7560 N 48.3314 E, 8 August 2022, 2 ex., S.V. Dedyukhin leg. (UDSU).

Notes. Xerophilous species, in NPK it is located near the northern border of the range.

Tychius aureolus Kiesenwetter, 1852

Material examined. NPK, chalk steppe, 52.3387 N 48.0048 E, 3 June 2022, 1 ex., S.V. Dedyukhin leg. (UDSU); NPK, 52.3188 N 47.9890 E, 3 June 2022, 1 ex., S.V. Dedyukhin leg. (UDSU).

Four families (Cerylonidae, Byturidae, Phalacridae and Sphindidae) and 63 species were recorded for the Khvalynsky National Park for the first time: *Anisodactylus binotatus* (Fabricius, 1787); *Bembidion fumigatum* (Duftschmid, 1812) (Carabidae); *Ilybius chalconatus* (Panzer, 1796); *Hydroporus discretus* Fairmaire and Brisout, 1859; *Liopterus haemorrhoidalis* (Fabricius, 1787) (Dytiscidae); *Anisotoma humeralis* (Herbst, 1791) (Leiodidae); *Philonthus viridipennis* Fauvel, 1875 (Staphylinidae); *Agriotes gurgistanus* (Faldermann, 1835); *Ampedus praeustus* (Fabricius, 1792) (Elateridae); *Anthrenus scrophulariae* (Linnaeus, 1758) (Dermestidae); *Lasioderma redtenbacheri* (Bach, 1852); *Ptilinus fuscus* (Geoffroy, 1785) (Ptinidae); *Sericoderus lateralis* (Gyllenhal, 1827) (Corylophidae); *Byturus ochraceus* (Scriba, 1790); *B. tomentosus* (De Geer, 1774) (Byturidae); *Axinotarsus marginalis* (Laporte, 1840); *Dolichosoma lineare* (P. Rossi, 1792) (Melyridae); *Brachypterus urticae* (Fabricius, 1792) (Kateretidae); *Meligethes umbrosus* (Sturm, 1845) (Nitidulidae); *Cerylon ferrugineum* Stephens, 1830 (Cerylonidae); *Olibrus bicolor* (Fabricius, 1792); *O. millefolii* (Paykull, 1800); *Stilbus pannonicus* Franz, 1968 (Phalacridae); *Scymnus haemorrhoidalis* Herbst, 1797; *Sospita vigintiguttata* (Linnaeus, 1758) (Coccinellidae); *Corticaria longicollis* (Zetterstedt, 1838); *Cortinicara gibbosa* (Herbst, 1793) (Latridiidae); *Mycetophagus multipunctatus* Fabricius, 1792 (Mycetophagidae); *Mordella holomelaena* Apfelbeck, 1914; *Mordellochroa abdominalis* (Fabricius, 1775) (Mordellidae); *Gonodera luperus* (Herbst, 1783) (Tenebrionidae); *Mylabris fabricii* Soumakov, 1924 (Meloidae); *Mycterus tibialis* Küster, 1850 (Mycteridae); *Oedemera flavipes* (Fabricius, 1792) (Oedemeridae); *Stictoleptura maculicornis* (De Geer, 1775); *Etorofus pubescens* (Linnaeus, 1787); *Saperda octopunctata* (Scopoli, 1772); *Agapanthia intermedia* Ganglbauer, 1884 (Cerambycidae); *Galerucella tenella* (Linnaeus, 1761) (Chrysomelidae); *Exechesops foliatus* Frieser, 1995 (Anthribidae); *Bycticus populi* (Linnaeus, 1758) (Attelabidae); *Cyanapion columbinum* (Germar, 1817); *Eutrichapion facetum* (Gyllenhal, 1839); *Omphalapion hookerorum* (Kirby, 1808) (Brentidae); *Brachysomus echinatus* (Bonsdorff, 1785); *Ceutorhynchus granulicollis* C.G. Thomson, 1865; *C. turbatus* Schultze, 1903; *Dorytomus longimanus* (Forster, 1771); *Gymnetron hoferi* Desbrochers des Loges, 1869; *Hylobius transversovittatus* (Goeze, 1777); *Lachnaeus crinitus* Schoenherr, 1826; *Leucomigus candidatus* (Pallas, 1771); *Limnobaris dolorosa* (Goeze, 1777); *Lixus brevipes* C.N.F. Brisout de Barneville, 1866; *L. filiformis* (Fabricius, 1781); *L. rubicundus* Zoubkoff, 1833; *Mogulones dimidiatus* (Frivaldszky, 1865); *Otiorhynchus tristis* (Scopoli, 1763); *Phyllobius contemptus* Schoenherr, 1832; *Sibinia beckeri* Desbrochers des Loges, 1873; *S. femoralis* Germar, 1823; *Tapinotus sellatus* (Fabricius, 1794) and *Tychius longulus* Desbrochers des Loges, 1873 (Curculionidae).

Records for one species *Attalus analis* (Panzer, 1798) (Melyridae) have been corrected. Previously, this species was erroneously listed as *A. amictus* (Erichson, 1840) [35].

In the territory of the Khvalynsky National Park, there are nine species that are listed in the Red Book of Russia [52]: *Carabus bessarabicus concretus* Fischer von Waldheim, 1823; *C. hungaricus scythus* Motschulsky, 1847; *Calosoma sycophanta* (Linnaeus, 1758); *Elater ferrugineus* Linnaeus, 1758; *Eurythyrea quercus* (Herbst, 1780); *Lucanus cervus* (Linnaeus, 1758); *Protaetia speciosissima* (Scopoli, 1786); *Protaetia fieberi* (Kraatz, 1880); *Cyphocleonus achates* (Fåhraeus, 1842).

Species *Eusomostrophus acuminatus* (Boheman, 1839) and *Omias verruca* (Steven, 1829) (their bisexual populations include in Red Book of Russia [52]) were also found in the Khvalynsky National Park, but these common species, represented in the NPK by parthenogenetic populations, do not require protection here (protection is recommended only for local bisexual populations from the Black Sea region).

In addition to the species listed above, in the territory of the Khvalynsky National Park, eight rare species were recorded that are listed in the Red Book of the Saratov Region [53]: *Calosoma inquisitor* (Linnaeus, 1758); *Carabus marginalis* Fabricius, 1794 (Carabidae); *Polyphylla fullo* (Linnaeus, 1758); *Oryctes nasicornis* (Linnaeus, 1758); *Agoliinus isajevi* (Kabakov,

1994); *Gnorimus variabilis* (Linnaeus, 1758) (Scarabaeidae); *Necydalis major* (Linnaeus, 1758); and *Ropalopus insubricus fischeri* (Krynicki, 1829) (Cerambycidae).

3. Methods (Required)

3.1. Study Area

The Khvalynsky National Park (the only national park in the region) is located in the Khvalynsk District of the Saratov region (Russia), within the forest–steppe zone of the East European Plain in the southeastern part of the Volga Upland (Figure 1). The park was officially formed in 19 August 1994. The territory of the park (1149.24 km^2) is divided into three functional zones: reserved (with an area of 13.59 km^2), recreational (35.51 km^2), and economic (206.04 km^2) [54].

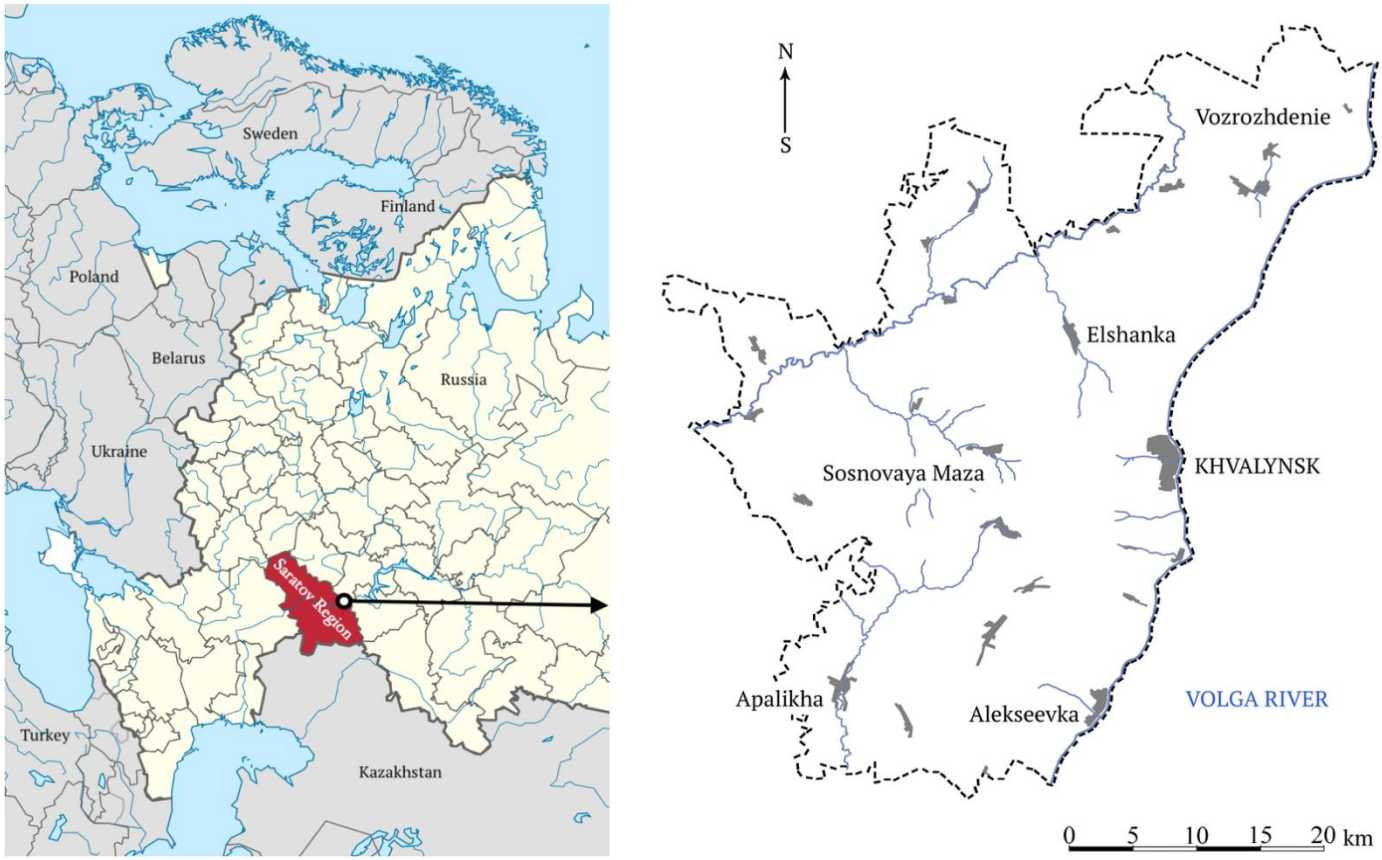

Figure 1. Map scheme of the Khvalynsky National Park. The basis for the map on the left was https://www.wikipedia.org/ (accessed on 13 September 2022), while the map on the right was drawn by L.V. Lavrentiev.

The park centers on the Khvalynsk Mountains, a raised plateau that stretches along the west bank of the Volga River (referred to as the "Right Bank"). The highest mountain (Belenkaya, almost entirely composed of chalk) is 369 m in altitude. The national park "Khvalysky" is in the Pontic–Caspian steppe ecoregion, but over 90% of the park is forest land. The forest-forming trees are predominantly oak (40%), linden (30%), and pine (21%), with many lesser species, including remnants of orchards on some of the edge slopes. The habitats include pine and watershed forests, small rivers and hollows, and various types of forest edges and steppe [54].

3.2. Study Material

The material for the study included Coleoptera collections from the territory of the Khvalynsky National Park, mainly those collected over the last 30 years (1994–2022). All

samples were collected mainly by V. V. Anikin (since 1994), A. S. Sazhnev (since 2011), A. O. Bieńkowski and M. Ya. Orlova-Bienkowskaya (2009–2013), S. V. Dedyukhin (since 2019), and others researchers and collectors. All reliable published information from the territory of the Khvalynsky National Park is also summarized. The main checklist of beetle species for the Khvalynsky National Park was published in 2021 [35], but since then new literature data have appeared, along with data that were not taken into account earlier [29,33,36–41]. Almost all species (excluding 5 species of Curculionidae from the article by I. A. Zabaluev [40]) and the new data were included in this dataset.

In the course of the research, traditional and diverse methods were used, including manual collection; the use soil traps, fermental crown traps [55], and Malaise traps [27,29,30]; light fishing [20]; sweeping with an entomological net on plants and under water; splashing and trampling on the shores of water bodies; and collecting samples in rotting substrates and in places of shelter and wintering [56].

The main group of samples are kept in the personal collections of A. S. Sazhnev, A. O. Bieńkowski, I. A. Zabaluev, and S. V. Dedyukhin et al., as well as in the collections of the Papanin Institute for Biology of the Inland Waters Russian Academy of Sciences (IBIW), Saratov State University, and Udmurt State University (UDSU).

The classification of the family–group taxa used here predominantly followed Cai et al. [57] and McKenna et al. [58]. The lists of species were verified according to the Catalogue of Palearctic Coleoptera [59–67] according to Robertson et al. [68] and Alonso-Zarazaga et al. [45]. The exceptions were cases when the views of the authors on the rank of a taxon diverged from the opinion of the authors of the catalogs. Thus, we accepted *Aspidapion chalceus* and *Larinus iaceae volgensis* as separate taxa, the independence of which was based on extensive regional material [69–71].

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