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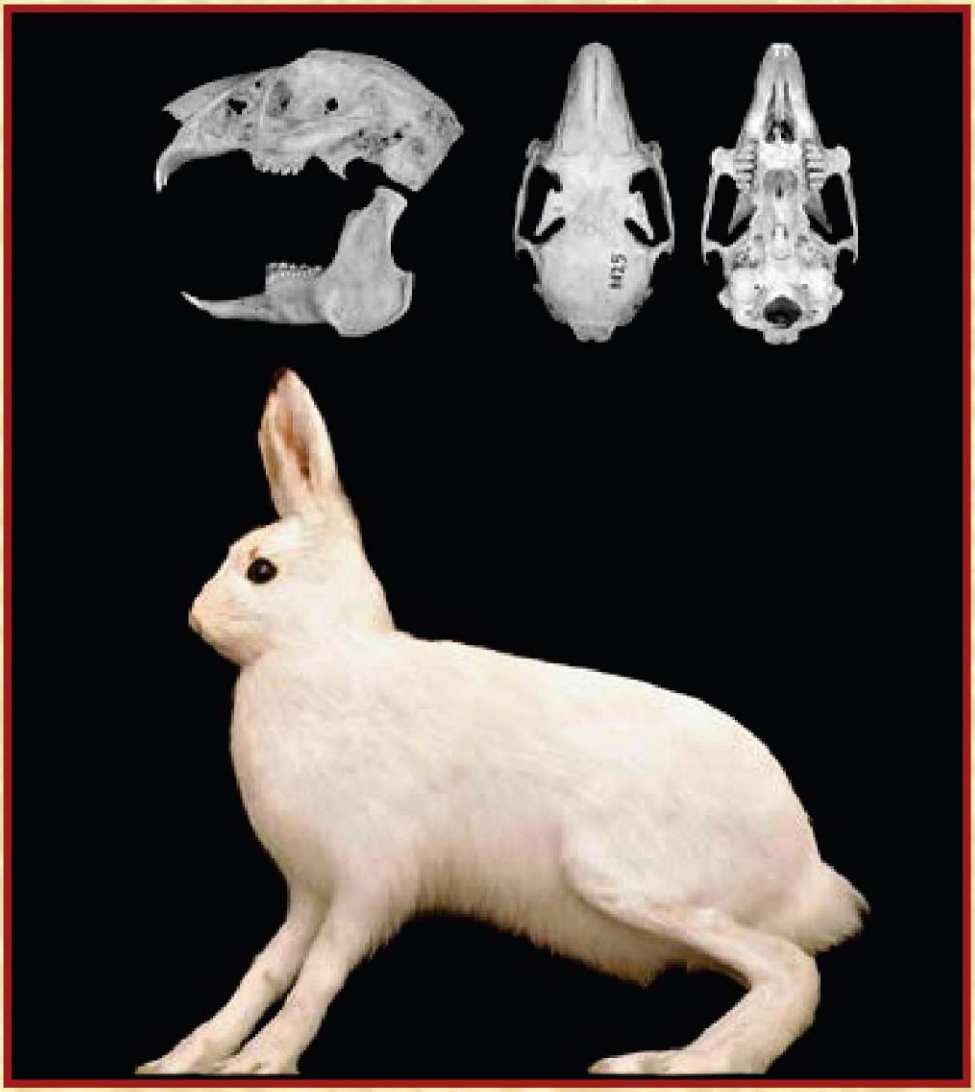

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Lobanja in dermoplastični preparat planinskega zajca *(Lepus timidus)* iz zbirke sesalcev Prirodoslovnega muzeja Slovenije / *Skull and taxidermic mount of a Mountain Hare* (Lepus timidus) *from the Mammal Collection of the Slovenian Museum of Natural History*

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Catalogue of the mammals in the collection of the Slovenian Museum of Natural History I Orders: Lagomorpha, Erinaceomorpha, Macroscelidea, Afrosoricida, Scandentia, Hyracoidea, Didelphimorphia, Diprotodontia, Monotremata

Katalog sesalcev v zbirki Prirodoslovnega muzeja Slovenije I Redovi: Lagomorpha, Erinaceomorpha, Macroscelidea, Afrosoricida, Scandentia, Hyracoidea, Didelphimorphia, Diprotodontia, Monotremata

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Abstract

Mammals were among the first objects on display in the Provincial Museum for Carniola (established in 1821 and a direct predecessor of the Slovenian Museum of Natural History), but the collection remained small throughout the 19th and for the majority of the 20th centuries. During the last three decades, the Mammal Collection expanded from about 700 specimens in the early 1980s to the current *ca* 23,000 vouchers, of which 20,195 are catalogued. The Collection is regional in its geographical scope and 17,216 museum specimens (= 85.1% of all catalogued specimens) are from the South-Eastern Europe; 11,214 specimens (=55.4% of all catalogued) are from a relatively small surface area (about 2×10^4 km^2) of Slovenia. The Collection is in a possession of what are most probably the largest samples of the rare Balkan endemic Martino's Vole *Dinaromys bogdanovi* (216 museum specimens), and of the Edible Dormouse *Glis glis* (2,244 vouchers, mainly skulls). In this paper we list and comment on museum vouchers from nine mammalian orders: Lagomorpha, Erinaceomorpha, Macroscelidea, Afrosoricida, Scandentia, Hyracoidea, Didelphimorphia, Diprotodontia, and Monotremata. The Museum holds 279 specimens of 23 species in 15 genera and 10 families. The great majority of specimens are lagomorphs (36.4%) and hedgehogs (57.8%). The material originates from 23 countries in five biogeographical regions: the Palaearctic (89.2% of vouchers), the Nearctic (1.1%), Ethiopian (2.9%), Oriental (1.1%), and Australian (1.1%). The majority of individuals are from Slovenia (44.4%) and South-Eastern Europe (78.0%). They were collected in 90 localities in Slovenia and 110 localities abroad, with a total sum of 200 localities.

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The majority of vouchers are preserved as skulls (84.8%) or skins and skulls. About one third (35.7%) of the museum specimens are skins, while 1.4% of them are saved as skeletons. Further 9.4% of individuals are taxidermic mounts; these include historic specimens which, however, frequently lack appropriate labels. Only 4.0% of individuals are preserved in ethanol.

Key words: Landesmuseum für Krain, zoological collections, history of collections, Erinaceus, Lepus, Oryctolagus, mammalian species, taxidermy

Izvleček

Sesalci so bili med prvimi predmeti, ki jih je razstavil Kranjski deželni muzej (ustanovljen leta 1821, neposredni predhodnik Prirodoslovnega muzeja Slovenije). Kljub temu je ostala Zbirka sesalcev majhna skozi vse 19. stoletje in večino 20. stoletja. V zadnjih treh desetletjih se je Zbirka povečala s približno 700 primerkov v zgodnjih 80-ih letih prejšnjega stoletja na današnjih *ca* 23.000 eksponatov, od katerih jih je 20,195 katalogiziranih. Zbirka je v geografskem pogledu regionalna, tako da 17.216 muzejskih primerkov (= 85,1 % vseh katalogiziranih enot) izvira iz južne Evrope; 11.214 primerkov (=55,4 % katalogiziranih) je z razmeroma majhne površine (približno 2×10^4 km^2) Slovenije. Zbirka vključuje verjetno največje vzorce redkega balkanskega endemita dinarske voluharice *Dinaromys bogdanovi* (216 muzejskih primerkov) in navadnega polha *Glis glis* (2244 primerkov, večinoma lobanj). V tej objavi je podan pregled muzejskih primerkov devetih sesalčjih redov: Lagomorpha, Erinaceomorpha, Macroscelidea, Afrosoricida, Scandentia, Hyracoidea, Didelphimorphia, Diprotodontia in Monotremata. V Muzeju je 279 primerkov, ki pripadajo 23 vrstam v 15 rodovih in 10 družinah. Velika večina primerkov so zajci (36,4 %) in ježi (57,8 %). Material izvira iz 23 držav v petih biogeografskih območjih: palaearktičnem (89,2 % primerkov), nearktičnem (1,1 %), etiopskem (2,9 %), orientalnem (1,1%) in avstralskem (1,1%). Večina primerkov je iz Slovenije (44,4%) in iz jugovzhodne Evrope (78,0%). Zbrani so bili na 90 nahajališčih v Sloveniji in 110 nahajališčih v tujini; seštevek je 200 nahajališč. Primerki so večinoma ohranjeni kot lobanje (84,8 %) ali kot kože z lobanjo. Približno tretjino (35,7 %) muzejskih primerkov sestavljajo kože, od 1,4 % primerkov pa je ohranjeno tudi okostje. Nadaljnjih 9,4 % primerkov so dermoplastični preparati; ti vključujejo zgodovinske primerke, ki so pogosto pomanjkljivo dokumentirani. Samo 4,0 % primerkov je konzerviranih v etanolu.

Ključne besede: Kranjski deželni muzej, zoološke zbirke, zgodovina zbirk, ježi, zajci, kunci, vrste sesalcev, dermoplastika

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Introduction

The natural history collections serve our need to better understand the natural world. The mammal collection in the Slovenian Museum of Natural History is no exception in this respect. Mammals were among the first objects on display in the Museum (established in 1821 as the Provincial Museum for Carniola), but the collection remained small throughout the 19th and for the greater part of the 20th centuries. During the last three decades, the Mammal Collection (hereafter referred to as Collection) expanded from about 700 specimens in the early 1980s (Genoways & Schlitter 1981) to the current *ca* 23,000 vouchers, of which 20,195 are catalogued (September 5, 2013). The Museum holds only a tiny proportion (probably <0.5%) of all voucher specimens of mammals deposited in collections worldwide, which is about five millions at its low estimate (cf. Genoways & Schlitter 1981, Hafner et al. 1997). On the other hand, the survey by Genoways & Schlitter (1981) from the early 1980s identified only 87 collections of mammals holding more than 10,000 specimens.

The Mammal Collection of the Slovenian Museum of Natural History is regional in its geographical scope, as the majority of vouchers originate from South-Eastern Europe (SEE), i.e. 17,216 museum vouchers constituting 85.1% of all catalogued specimens. Strong geographical bias is evident even within the region. Particularly well represented is the western part of the Balkans, specifically the former Socialist Federative Republic of Yugoslavia (surface area of about 2×10^5 km^2) with 16,876 vouchers (= 98.0% of all from the SEE). Furthermore, 11,214 museum specimens (i.e. 65.1% of those from the SEE, and 55.4% of all catalogued) are from a relatively small surface area (about 2×10^4 km^2) of Slovenia. This bias is understandable considering the predominantly national character of collections in the Slovenian Museum of Natural History.

Uvod

Naravoslovne zbirke zadovoljujejo našo potrebo po boljšem razumevanju narave. Zbirka sesalcev Prirodoslovnega muzeja Slovenije ni v tem pogledu nobena izjema. Sesalci so bili med prvimi razstavnimi objekti muzeja, ki je bil ustanovljen leta 1821 kot Kranjski deželni muzej. Zbirka sesalcev je ostala majhna skozi celotno 19. stoletje in večino 20. stoletja. V zadnjih treh desetletjih se je zbirka sesalcev (v nadaljevanju Zbirka) povečala s približno 700 primerkov na začetku 80-ih let prejšnjega stoletja (Genoways & Schlitter 1981) na današnjih *ca* 23.000 primerkov, od katerih jih je bilo na dan 5. septembra 2013 katalogiziranih 20.195. Prirodoslovni muzej hrani le majhen delež (verjetno <0.5 %) vseh primerkov sesalcev, ki so shranjeni v muzejih po vsem svetu, njihovo skupno število pa verjetno presega pet milijonov (cf. Genoways & Schlitter 1981, Hafner et al. 1997). Po drugi strani pa je v pregledu, ki sta ga v začetku 80-ih let objavila Genoways & Schlitter (1981), zabeleženih samo 87 zbirk sesalcev z več kot 10.000 primerki.

Zbirka sesalcev v Prirodoslovnem muzeju Slovenije je v geografskem pogledu regionalna, večina primerkov pa izvira iz jugovzhodne Evrope (SEE); ta delež znaša 17.216 primerkov, kar pomeni 85.1 % vseh katalogiziranih sesalcev. Neenakomerna geografska zastopanost je očitna tudi v sami regiji. Zelo dobro je zastopan zahodni Balkan, ki se pokriva z mejami nekdanje Socialistične federativne republike Jugoslavije (površina približno 2×10^5 km^2); od tod je 16.876 primerkov (= 98,0 % vseh iz SEE). Nadalje, 11.214 muzejskih primerkov (t. j. 65,1 % primerkov iz SEE in 55,4 % vseh katalogiziranih) je z razmeroma majhnega ozemlja Slovenije (površina približno 2×10^4 km^2). Takšno nesorazmerje v zastopanosti je razumljivo, ker je Prirodoslovni muzej Slovenije pretežno nacionalna ustanova.

Table 1. Specimen holdings according to separate countries in the Mammal collection of the Slovenian Museum of Natural History. Only the material from South-eastern Europe is taken into consideration.

Tabela 1. Število primerkov glede na državo v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. Upoštevan je samo material iz jugovzhodne Evrope.

Country **Država**	**# vouchers** **Št. osebkov**	**Percent (%)** **Odstotek (%)**
Bosnia and Herzegovina	919	5.3
Croatia	934	5.4
Greece	150	0.9
Kosovo	72	0.4
Macedonia	1854	10.8
Montenegro	704	4.1
Slovenia	11,214	65.1
Serbia	1,178	6.9
Turkey (in Europe)	191	1.1
Total / Skupaj	**17,216**	**100.0**

As seen above, the Museum holds mainly vouchers from the Western Balkans, a region that is considered a biodiversity hotspot on the European scale for species in general (Gaston & David 1994) and for mammals in particular (Kryštufek & Griffiths 2002, Kryštufek 2004). Unsurprisingly for a biodiversity hot spot, a high proportion of species has small ranges, i.e. showing at least one attribute of rarity. This holds also for mammals in the north-eastern corner of the Mediterranean, where 19.3% of species occupying the Balkans and Anatolia have ranges $<10^5$ km^2 (Kryštufek et al. 2009). Species that occupy a small-range or are rare for some other reason are frequently underrepresented in museum collections. Again, it is not surprising that many Balkan endemics (e.g. *Talpa stakovici, Dinaromys bogdanovi, Mesocricetus newtoni,* and *Microtus felteni*) are missing from many distinguished international zoological collections, while regional and local collections may hold their representative samples. The Collection is in a possession, for example, of probably the largest collections of the rare Balkan endemic Martino's Vole *Dinaromys bogdanovi* (216 museum specimens) and of the Edible Dormouse *Glis glis* (2,243 vouchers, mainly skulls).

Kot smo videli, je večina materiala v Prirodoslovnem muzeju z zahodnega Balkana, torej območja, ki je v evropskih razmerah vroča točka biodiverzitete, tako nasploh (Gaston & David 1994) kot tudi glede sesalcev (Kryštufek & Griffiths 2002, Kryštufek 2004). Kot je značilno za biodiverzitetne vroče točke, ima visok odstotek vrst na Balkanu majhne areale, s čimer izkazujejo najmanj en vidik redkosti. Povedano velja tudi za sesalce v severovzhodnem kotu Sredozemlja. Od vrst, ki naseljujejo Balkan in Malo Azijo, jih ima kar 19.3 % areale, ki so manjši od 10^5 km^2 (Kryštufek et al. 2009a). Vrste z majhnimi areali ali pa vrste, ki so redke zaradi kakšnega drugega razloga, so v muzejskih zbirkah pogosto slabo zastopane. Zato ne preseneča, da mnogi balkanski endemiti (npr. *Talpa stakovici, Dinaromys bogdanovi, Mesocricetus newtoni* in *Microtus felteni*) manjkajo v mnogih uglednih mednarodnih zooloških zbirkah, medtem ko so v regionalnih in lokalnih muzejih zastopane z reprezentativnimi vzorci. Zbirka PMS ima tako verjetno največjo zbirko redkega balkanskega endemita, dinarske voluharice *Dinaromys bogdanovi* (216 muzejskih primerkov) in navadnega polha *Glis glis* (2244 primerkov, večinoma lobanj).

Our aim in preparing this catalogue was multifold: (i) to provide the interested public with information on the resources deposited in the Mammal Collection of the Slovenian Museum of Natural History; (ii) to facilitate future curatorial work in the Collection; and (iii) to compile and verify the information associated with museum vouchers.

Historical development of the Collection

The main source of information on vertebrate collections from the 2nd half of the 19th century and until late 1970s is "The Accession Book of Mammals, Fishes, Reptiles of the Natural History Museum"; this title was undoubtedly given in the post-WWII period. When digitalized (in December 2008), a new title was given for no obvious reason: "The Accession Book of Mammals, Birds, Reptiles, Amphibians, Fishes, Lampreys, and Freshwater Crabs". Hereafter we shall refer to this source as to CATALOGUE. Information in the CATALOGUE was typed to file cards prior to WWII (Fig. 1); we refer subsequently to this source of information as FILES. In some cases, file cards contain information, which is not available in the CATALOGUE.

S pripravo tega kataloga sva sledila več ciljem: (i) zainteresirani javnosti omogočiti dostop do informacije, ki je shranjena v Zbirki sesalcev Prirodoslovnega muzeja Slovenije; (ii) pospešiti in olajšati nadaljnje kuratorsko delo v Zbirki in (iii) zbrati in preveriti informacije, ki spremljajo muzejske primerke.

Zgodovinski razvoj Zbirke

Glavni vir podatkov o zbirkah vretenčarjev od druge polovice 19. stoletja do 70-ih let prejšnjega stoletja je "Inventarna knjiga sesalcev, rib, ptic, plazilcev Prirodoslovnega muzeja"; naslov nedvomno izvira iz obdobja po 2. svetovni vojni. Ko je bila Inventarna knjiga decembra 2008 digitalizirana, ji je bil iz neznanega razloga dan nov naslov, in sicer "Inventarna knjiga razstavne zbirke sesalcev, ptičev, plazilcev, dvoživk, rib, piškurjev, tudi potočnih rakov". V nadaljevanju se bova sklicevala na ta vir kot na KATALOG. Pred 2. svetovno vojno so informacijo v KATALOGU pretipkali na kartotečne liste (sl. 1); ta vir informacije navajava kot KARTOTEKO. V nekaterih primerih je na kartotečnih listkih informacija, ki ni navedena v KATALOGU.

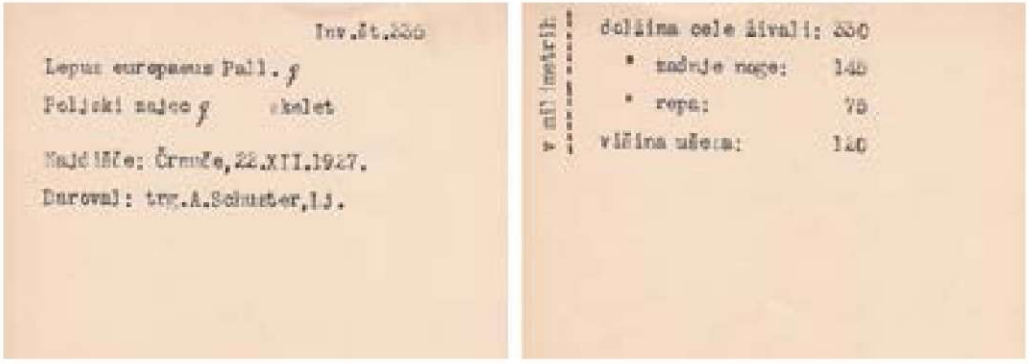


Figure 1. File card for a museum voucher #335; front (left) and back sides (right). Information from the CATALOGUE was typed on file cards before WWII. Original size of the card is 115 × 98 mm.

Slika 1. Kartotečni listek za muzejski primerek #335; prednja (levo) in zadnja stran (desno). Informacijo iz KATALOGA so pred 2. svetovno vojno pretipkali na kartotečne liste. Originalna velikost listka je 115 × 98 mm.

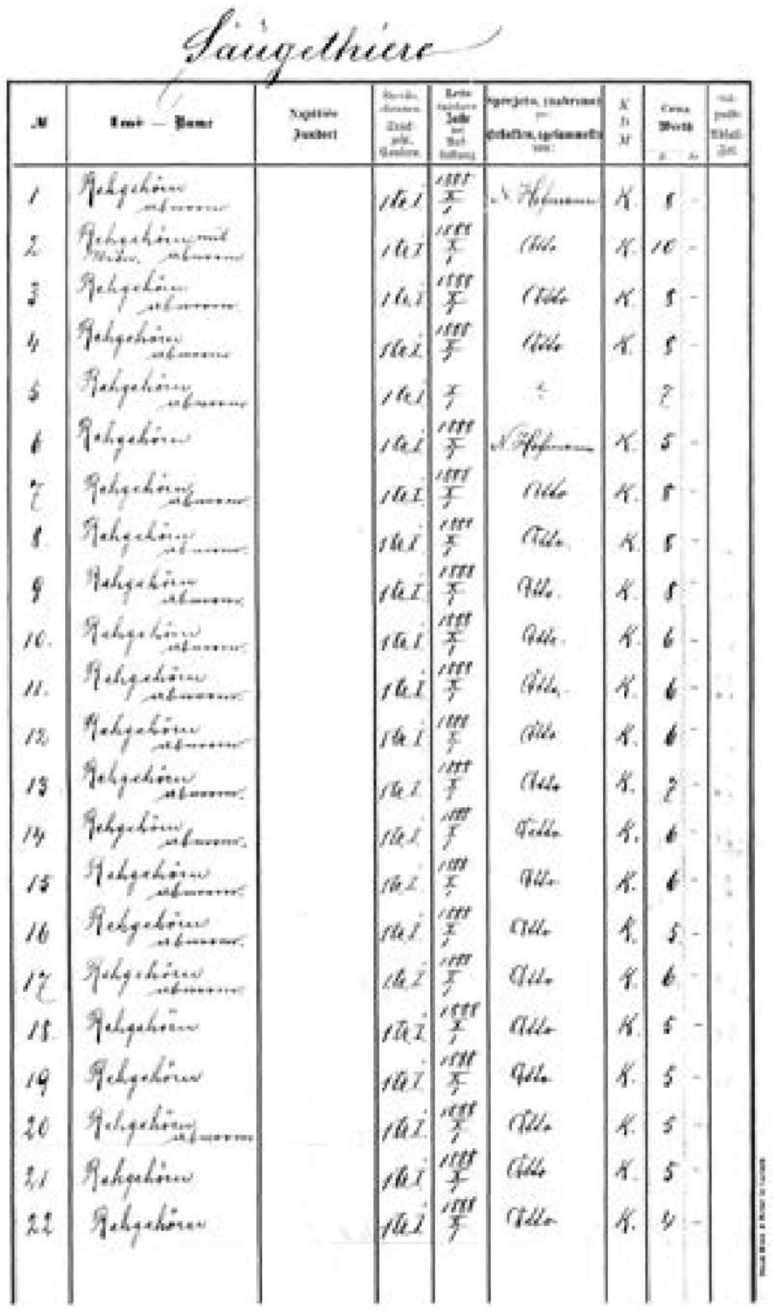


Figure 2. Page 1 of the Catalogue from 1888. Dimensions of the Catalogue are 414 by 270 mm. None of specimens listed on this page is still present in the Museum.

Slika 2. Prva stran Kataloga iz leta 1888. Dimenzije Kataloga so 414 × 270 mm. V Muzeju se ni ohranil nobeden od primerkov, zabeleženih na tej strani.

Acquisitions were entered into the CATALOGUE separately according to classes, and the pages are numbered (266 pages). Mammals (titled only as Säugethiere; Fig. 2) are listed in pages 1-36 under 652 acquisition numbers. The numbering of acquisitions was not always consistent, with insertions (incl. duplications) breaking the continuity in pages 12 (years 1909-1911), 13 (years 1915 and 1918), and 26 (year 1946). Between 1888 and 1978, at least 812 individual mammals were catalogued under 666 acquisition numbers.

The CATALOGUE was initiated in 1888, i.e. in the year when Karl Deschmann published his Guide Through the Carniolan Provincial Museum Rudolfinum (DESCHMANN 1888). Considering that Deschmann was employed by the Museum as curator and conservator ("Museumcustos und k. k. Conservator"), this is certainly no coincidence. Deschmann, who had keen interest in natural history, evidently saw a need to revise the vertebrate collection of the Museum.

Each page in the CATALOGUE is divided into nine columns (Fig. 2) for (i) the acquisition number (in our text always accompanied by a number sign #), (ii) the taxonomic name, (iii) the locality, (iv) the number of specimens (individuals), (v) the year of exhibition, (vi) the collector, (vii) the price (twin column), and (viii) the dismissal of the voucher. Evidently, there is no column for the collecting date, therefore it is frequently not clear whether the date (year) is to be interpreted as the date of collection, of acquisition, or of putting the specimen on display. Post-1888 inscriptions are better labelled in this respect and the year of collection can be deduced from the column (iii), where it is inscribed together with the locality. Numbers in the column (v) for older specimens are largely the year of exhibition or of cataloguing the specimen. The 66 vouchers with 1888 as the year of exhibition are, for example, by far too high number of acquisitions for a single year (cf. Fig. 3). Note that the reports for the museum documented acquisitions of

V preteklosti so muzejske pridobitve vpisali v KATALOG ločeno po razredih; strani so oštevilčene (266 strani). Sesalci (naslovljeni le kot Säugethiere; sl. 2) so vpisani na straneh 1-36 pod 652 katalоškimi številkami. Oštevilčenje muzealij ni bilo vselej dosledno, sklenjenost pa prekinjajo vrinjene številke in dvojniki, ki so vidni na straneh 12 (vpisi za leti 1909-1911), 13 (leti 1915 in 1918) in 26 (leto 1946). Med letoma 1888 in 1978 je bilo pod 666 številkami katalogiziranih najmanj 812 osebkov sesalcev.

Začetek KATALOGA sega v leto 1888. V tem letu je Karl Deschmann objavil Vodnik po zbirkah Kranjskega deželnega muzeja Rudolfinum (DESCHMANN 1888). Glede na to, da je bil Deschmann v Muzeju zaposlen kot kustos in konservator ("Museumcustos und k. k. Conservator"), sočasnosta teh dogodkov zagotovo ni naključna. Nedvomno je Deschmann, ki je kazal veliko zanimanje za naravoslovje, videl potrebo po reviziji zbirke vretenčarjev v Muzeju.

Vsaka stran v KATALOGU ima devet stolpcev (sl. 2) za (i) katalоško številko (v najinem tekstu vselej označena z znakom za številke #), (ii) taksonomsko ime, (iii) nahajališče, (iv) število primerkov, (v) leto razstave, (vi) zbiratelja (najditelja), (vii) ceno (v dveh kolonah) in (viii) podatke o odtujitvi. V oči bode dejstvo, da manjka stolpec za datum, ko je bil primerek zbran na terenu. Tako ni vselej jasno, ali se datum (leto) nanaša na čas nabiranja, pridobitve za muzej, ali pa na vključitev muzealije v razstavno zbirko. Vpisi po letu 1888 vsebujejo natančnejše podatke tudi o datumu nabiranja, ki pa je vpisan v stolpec (iii), torej skupaj z nahajališčem. Številke v stolpcu (v) pri starejših primerkih skoraj vselej pomenijo leto razstave ali pa katalogiziranja. Npr. 66 primerkov s 1888 kot letom razstave je veliko preobsežna pridobitev za eno samo leto (cf. sl. 3). V tem primeru je šlo nedvomno za ponovno katalogizacijo muzealij "iz stare zaloge". Tudi poročilo za muzej navaja za obdobje od 16. novembra 1887 do 31. avgusta

only four mammals for the period from 16 November 1887 to 31 August 1889 (PROCEEDINGS 1888, 1889). Therefore, the majority of the 66 specimens were most certainly re-catalogued mounts from "the old supply".

The re-cataloguing, which was initiated in 1888, continued well into 1889. The results of the two years of work were 199 acquisition numbers for 230 museum specimens. Of these, the year of exhibition is known for 101 specimens (43.9%): 66 specimens are from 1888, four specimens from 1889, while 31 specimens predate 1888. In the last category, the following years are documented: 1856 (for 2 specimens), 1858 (1 specimen), 1859 (1 specimen), 1860 (3 specimens), 1861 (3 specimens), 1868 (1 specimen), 1875 (1 specimen), 1876 (2 specimens), 1877 (1 specimen), 1878 (1 specimen), 1879 (4 specimens), 1881 (3 specimens), 1883 (1 specimen), 1885 (2 specimens), 1886 (2 specimens), and 1887 (3 specimens). Cataloguing of the old collection, however, was not completed even in 1889, which means that specimens "from the old supply" were given new acquisition numbers still in the late 1920s. E.g. a mandible of a cave lion, excavated in Postojna cave by Freyer in 1819 (RAKOVEC 1951), acquired number #349 as late as in 1929.

During the 89 years, which elapsed between 1890 and the last acquisition recorded in 1978, 529 mammalian specimens were acquired by the museum. There were no acquisitions in 27 years (30.3%), a single acquisition per year in 11 years (12.4%), 2-10 acquisitions in 37 years (41.2%), 13-22 acquisitions in 9 years (10.0%), and 30 acquisitions and more (up to 48 acquisitions per year) in five years (6.0%). The average gain of new acquisitions was therefore low (the median = 2; the central quartiles = 0–7), and many of them were "from the old supply".

Originally, the Collection consisted of taxidermic mounts. It is generally claimed that the first collection was built up by Henrik Freyer (1802-1866), who was employed by the Museum as curator from 1832 to 1854. Between

1889 pridobitve vsega skupaj štirih sesalcev (OBRAVNAVE 1888, 1889).

Rekatalogizacija, ki je bila začeta leta 1888, se je nadaljevala še v leto 1889. Rezultat dela dveh let je bil 199 kataloških številk za 230 muzejskih primerkov. Od teh je leto razstave navedeno za 101 primerek (43.9 %): 66 primerkov je iz leta 1888, štirje so iz leta 1889, 31 pa jih je izpred leta 1888. Med zadnjimi so zapisana naslednja leta: 1856 (za 2 primerka), 1858 (1 primerek), 1859 (1 primerek), 1860 (3 primerki), 1861 (3 primerki), 1868 (1 primerek), 1875 (1 primerek), 1876 (2 primerka), 1877 (1 primerek), 1878 (1 primerek), 1879 (4 primerki), 1881 (3 primerki), 1883 (1 primerek), 1885 (2 primerka), 1886 (2 primerka) in 1887 (3 primerki). Katalogiziranje stare zbirke pa ni bilo končano niti v letu 1889, tako da so bili primerki "iz stare zaloge" katalogizirani še v poznih 20-ih letih prejšnjega stoletja. Npr. spodnja čeljustnica jamskega leva, ki ga je Freyer izkopal v Postojnski jami leta 1819 (RAKOVEC 1951), je dobil številko #349 šele leta 1929.

V 89 letih, kolikor jih je preteklo med 1890 in zadnjo katalogizirano pridobitvijo leta 1978, je prišlo v muzej 529 primerkov sesalcev. V 27 letih (30,3 %) ni bilo nobenih pridobitev, v 11 letih (12,4 %) je muzej letno pridobil po en sam primerek, v 37 letih (41,2 %) je bilo po 2-10 pridobitev na leto, v 9 letih (10,0 %) po 13-22 pridobitev in v petih letih (6,0 %) po 30 pridobitev in več (največja letna pridobitev je znašala 48 primerkov). Povprečna letna pridobitev je bila torej razmeroma majhna (mediana = 2; centralna kvartila = 0–7), mnoge od teh pridobitev pa so bile "iz starih zalog".

Prvotno je Zbirka vključevala le dermoplastične preparate. Po splošnem prepričanju je zbirko začel graditi Henrik Freyer (1802-1866), ki je med letoma 1832 in 1854 deloval v Muzeju kot kustos. V letih 1832-1835 je Freyer sam

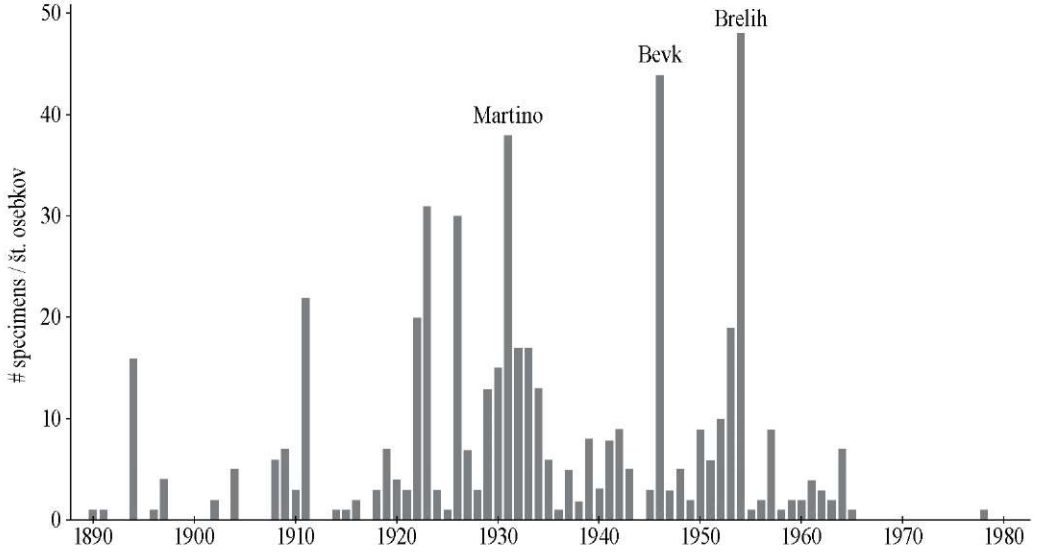


Figure 3. Annual acquisitions of mammals between 1890 and 1978. The high number of acquisition numbers in the 1920s results from specimens being catalogised "from the old supply". Major contributions of specimens for research purposes were by Vladimir E. Martino, Stanko Bevk and Savo Brelih.

Slika 3. Letne pridobitve sesalcev med letoma 1890 in 1978. Razmeroma veliko število vpisanih primerkov v 20-ih letih prejšnjega stoletja je posledica katalogiziranja preparatov "iz stare zaloge". Večino študijskih primerkov so prispevali Vladimir E. Martino, Stanko Bevk in Savo Brelih.

1832 and 1835, Freyer himself prepared 53 mammals, "from the largest to the smallest species" (Bufon 1966). In subsequent years, these taxidermic mounts were either discarded or are now anonymous due to loss of appropriate labels. The labels, if at all attached to specimens, were removed in the past for various reasons, like the exhibition purposes or simply due to carelessness. The oldest vouchers documented in the Catalogue are from 1856 and postdate Freyer's death. Freyer undoubtedly used museum specimens for his checklist of vertebrates occupying the Province of Carniola (Freyer 1842), in which he listed 43 species of free-living mammals, five domestic species and two species of fossil mammals.

Osteological specimens made up a smaller part of the old collection. Before WWII, the Museum mounted a fine exhibition of skeletons, which were displayed in metal cabinets

prepariral 53 sesalcev "od največjih do najmanjših vrst" (Bufon 1966). V naslednjih letih so bili ti preparati bodisi zavrženi, ali pa so danes anonimni zaradi izgube etiket. Etikete, če so bili preparati z njimi sploh opremljeni, so v preteklosti odstranjevali iz različnih razlogov, npr. razstavnih namenov, ali pa preprosto iz malomarnosti. Najstarejši muzejski primerki, dokumentirani v Katalogu, so iz leta 1856, torej iz obdobja po Freyerjevi smrti. Nobenega dvoma ni, da je Freyerjev katalog vretenčarjev Kranjske temeljil prav na muzejskem materialu (Freyer 1842). V njem je navedenih 43 vrst prosto živečih sesalcev, pet udomačenih in dve fosilni vrsti.

Okostja so v stari zbirki sestavljala manjšino. Pred 2. svetovno vojno je Muzej pripravil izvrstno osteološko zbirko, ki je bila razstavljena v kovinskih omarah (sl. 4). Ta zbirka

Figure 4. Metal cabinet containing osteological exhibition. The display was only slightly altered after WWII. Photo: Ciril Mlinar

Slika 4. Kovinska omara z osteološkimi primerki sesalcev. Ta postavitev se je po 2. svetovni vojni le malo spremenila. Foto: Ciril Mlinar

(Fig. 4). This collection remained virtually intact given that it was kept hidden behind an artificial wall since 1956 and was not affected by the contemporary major reconstruction of displays.

It is not known when the Museum developed interest in a collection as a source of scientific accuracy in faunal and taxonomic research. This probably occurred in the late 1920s. The acquisitions for 1929, for example, list five fox skulls (#339-343), which are meticulously equipped with the locality and the year of collection. Although sex and the external measurements are missing, this small series may

je bila ob veliki preureditvi muzejskih razstav leta 1956 zakrita, zato je ostala v veliki meri nedotaknjena.

Ni znano, kdaj se je Muzej začel zanimati za zbirke kot vir znanstvene zanesljivosti taksonomskih in favnističnih raziskav. Do tega je morda prišlo v poznih 20-ih letih prejšnjega stoletja. Med pridobitvami za leto 1929 je zabeleženih pet lisičjih lobanj (#339-343), ki so pedantno opremljene z nahajališčem in letom zbiranja. Čeprav spol in zunanje dimenzije niso zabeležene, ta mala zbirka verjetno

witness interest in geographic variation and subspecific differentiation of mammals. Series of skulls of game species were acquired also in 1930, but "systematic collection" ("sistematska zbirka") is mentioned for the first time in 1948 for the acquisitions #528 and #529. In 1931, the Museum purchased 18 small mammals from Vladimir E. Martino (1888-1961), then a leading authority on the taxonomy of mammals in Yugoslavia. This acquisition is catalogued under #365-382 (Fig. 5), and further two museum specimens (skins and skulls) from Martino's collection were catalogued (#478 and #479) in 1945. Martino was a resident of Belgrade and was supplying with mammals even the Mammal Collection of the British Museum (Natural History) in London (now the Natural History Museum London). Martino's specimens were prepared as standard museum skins and skulls, with locality, date, sex and external dimensions carefully recorded in specimen tags. Not a single specimen obtained from Martino originated from Slovenia, all being collected in Bosnia and Herzegovina, Serbia, and Macedonia.

In 1933, the Museum purchased (probably from J. Lenasi, or Lenassi, a merchant from Žirovski vrh) a sample of 12 water voles (identified as *Arvicola sherman* sic!), collected on 10 July 1932 at Žirovski vrh (#404-415; Fig. 6). Further five water voles from the same sample were catalogued in 1934 (#419-423). Specimens were sexed, measured and preserved as round skins and skulls. This sample further confirms the interest of the Museum to study mammals in lines with new trends. The circumstances under which this collection was made are entirely unknown. The acquisition for 1939 enlists eight small mammals of five species (#445-452), which were collected at (Ljubljansko) Barje and Ljubljanski grad in January-February 1939, and determined by Josip Jošt. It is known that Jošt collaborated with V. E. Martino: the patronym *Neomys milleri josti* Martino & Martino, 1940 (Martino & Martino 1940) proves Jošt' skills in collecting and skinning small mammals for

Leta 1931 je Muzej kupil 18 primerkov malih sesalcev od Vladimirja E. Martino (1888-1961), ki je bil v tem obdobju vodilna avtoriteta na področju taksonomije sesalcev, živečih v Jugoslaviji. Ta pridobitev je bila katalogizirana pod številkami #365-382 (Fig. 5); nadaljnja dva muzejska primerka iz Martinojeve zbirke (kože z lobanjama) sta bila katalogizirana (#478 in #479) leta 1945. Martino je živel v Beogradu, z materialom pa je oskrboval tudi zbirko sesalcev Britanskega (naravoslovnega) muzeja v Londonu (danes Naravoslovni muzej London). Martinojevi primerki so preparirani kot standardne muzejske kože z lobanjami: na etiketah so skrbno zabeleženi nahajališče, datum, spol in zunanje dimenzije. Niti eden od kupljenih primerkov ni bil zbran v Sloveniji; vsi so iz Bosne in Hercegovine, Srbije in Makedonije.

Leta 1933 je Muzej kupil (verjetno od J. Lenasija, črkovanega tudi Lenassi, trgovca z Žirovskega vrha) zbirko dvanajstih velikih voluharjev (determiniranih kot *Arvicola sherman* sic!), zbranih 10. julija 1932 na Žirovskem vrhu (#404-415; sl. 6). Nadaljnjih pet živali iz istega vzorca je bilo katalogiziranih leta 1934 (#419-423). Primerki so preparirani kot "okrogle" kože (meh ali balg), zabeležen pa je spol in zunanje meritve. Ta vzorec prav tako kaže na interes Muzeja, da preučuje sesalce v skladu z novimi trendi. Žal ne poznamo okoliščin, v katerih je nastala ta zbirka. V pridobitvi za leto 1939 je navedenih osem malih sesalcev, ki pripadajo petim vrstam (#445-452). Zbrani so bili na (Ljubljanskem) Barju in ljubljanskem gradu januarja in februarja 1939, determiniral pa jih je Josip Jošt. Znano je, da je Jošt sodeloval z V. E. Martinojem; patronim *Neomys anomalus josti* Martino & Martino, 1940 (Martino & Martino 1940) dokazuje Joštovo veščino pri zbiranju in prepariranju malih sesalcev za

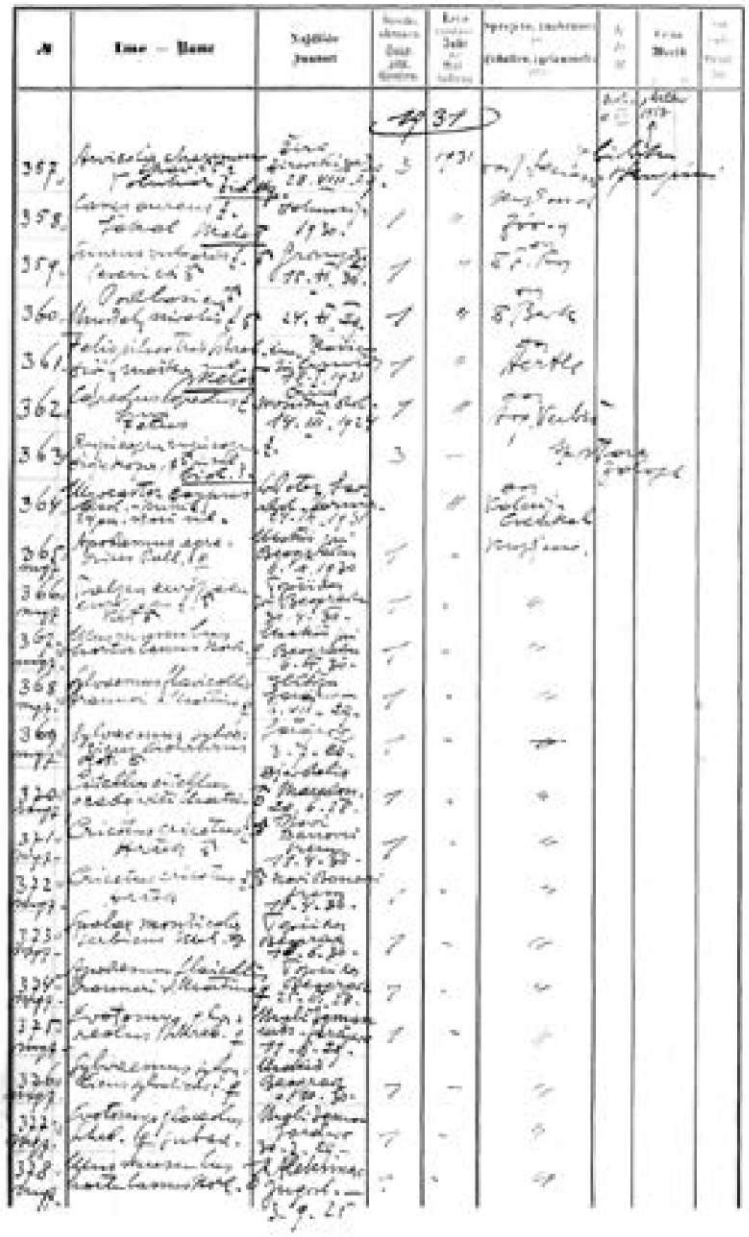


Figure 5. Page 20 in the Catalogue with part of acquisitions for 1931. Specimens from Martino's collection, which were probably first vouchers prepared as skins and skulls in the Museum Collection, are also catalogued.

Slika 5. Stran 20 v Katalogu z delom pridobitev za leto 1931. Katalogizirani so tudi Martinojevi primerki, ki so bili verjetno prvi sesalci v zbirki Prirodoslovnega muzeja, preparirani kot kože in lobanje.

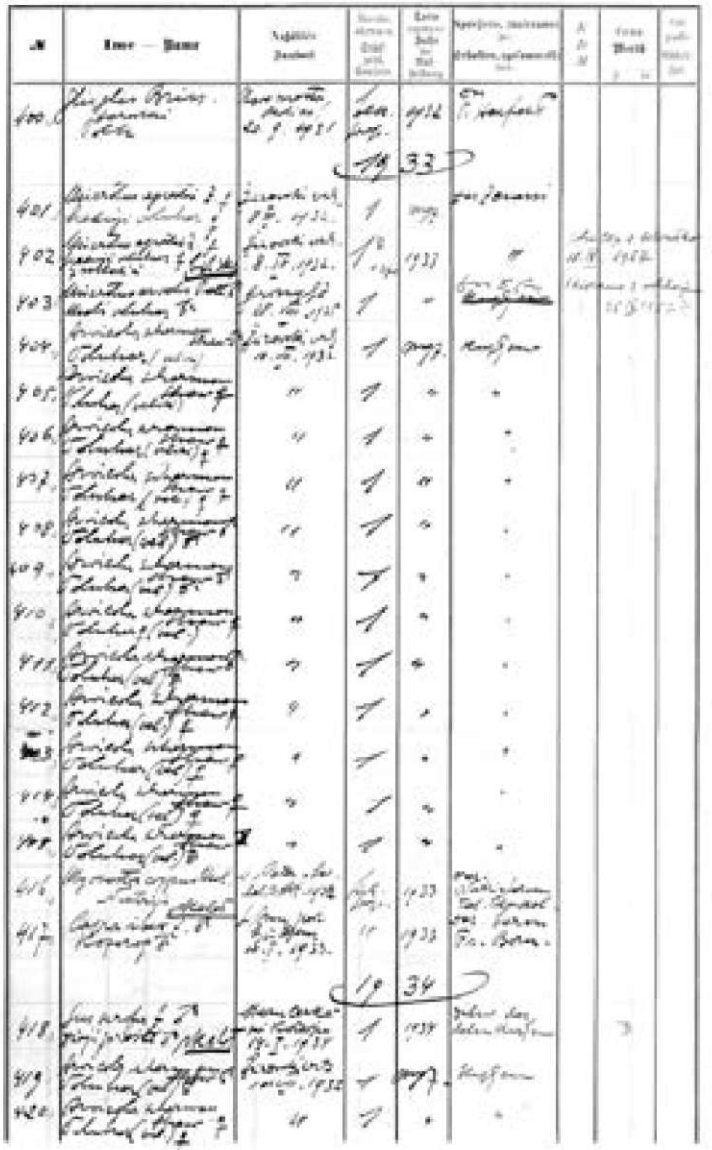


Figure 6. Page 22 in the CATALOGUE, with acquisition of Water Voles (*Arvicola terrestris*) collected on 10 July 1932 at Žirovski vrh. These were probably the first vouchers of mammals from Slovenia and prepared for the Museum as skins and skulls. They were catalogued in 1933.

Slika 6. Stran 22 v KATALOGU s katalogiziranimi velikimi voluharji (*Arvicola terrestris*), ki so bili zbrani 10. julija 1932 na Žirovskem vrhu. Po vsej verjetnosti so bili to prvi sesalci iz Slovenije, ki so bili preparirani za muzejsko zbirko kot študijske kožice z lobanjami. Katalogizirani so bili leta 1933.

Figure 7. Page 26 in the Catalogue, with part of skull collection donated to the Museum by Stanko Bevk and catalogued in 1946.

Slika 7. Stran 26 v Katalogu s katalogiziranim delom zbirke lobanj, ki jo je Muzeju podaril Stanko Bevk. Material je bil katalogiziran leta 1946.

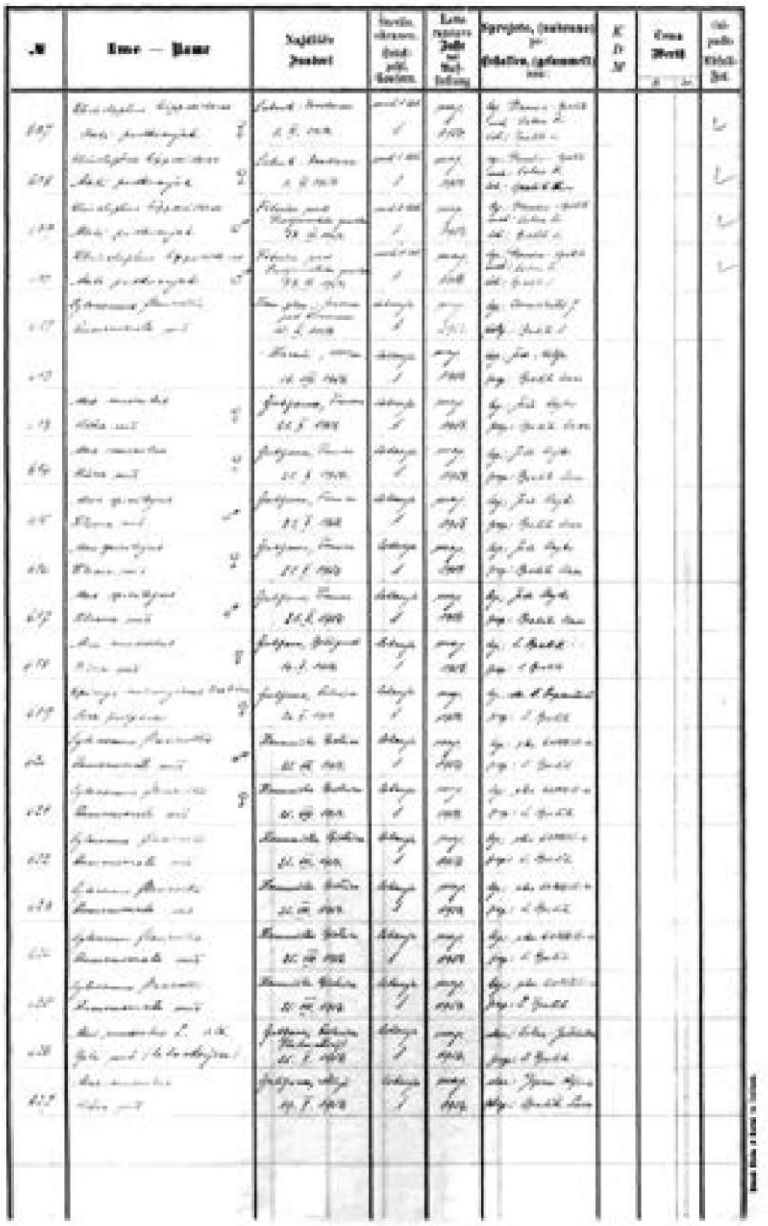


Figure 8. Page 33 in the CATALOGUE with part of acquisitions for 1954. Specimens were catalogued by Savo Brelih in his characteristic handwriting style.

Slika 8. Stran 33 v KATALOGU z delom pridobitev za leto 1954. Primerke je katalogiziral Savo Brelih v svojem značilnem rokopisu.

a scientific collection. It is also known that Jošt collected specimens at Ljubljansko barje in 1939-1940 (KRYŠTUFEK 1982). Further small mammals from Jošt were catalogued in 1941-1943. A noteworthy sample of 42 skulls (#480-521; Fig. 7) was donated to the Museum in 1946 by Stanko Bevk (1875-1956). Eighteen species are represented (ten of them are carnivores), collected between 1913 and 1940 in various regions of Slovenia. Bevk undoubtedly used this cranial material to improve scientific accuracy of his handbook on the vertebrates of Slovenia (BEVK 1957).

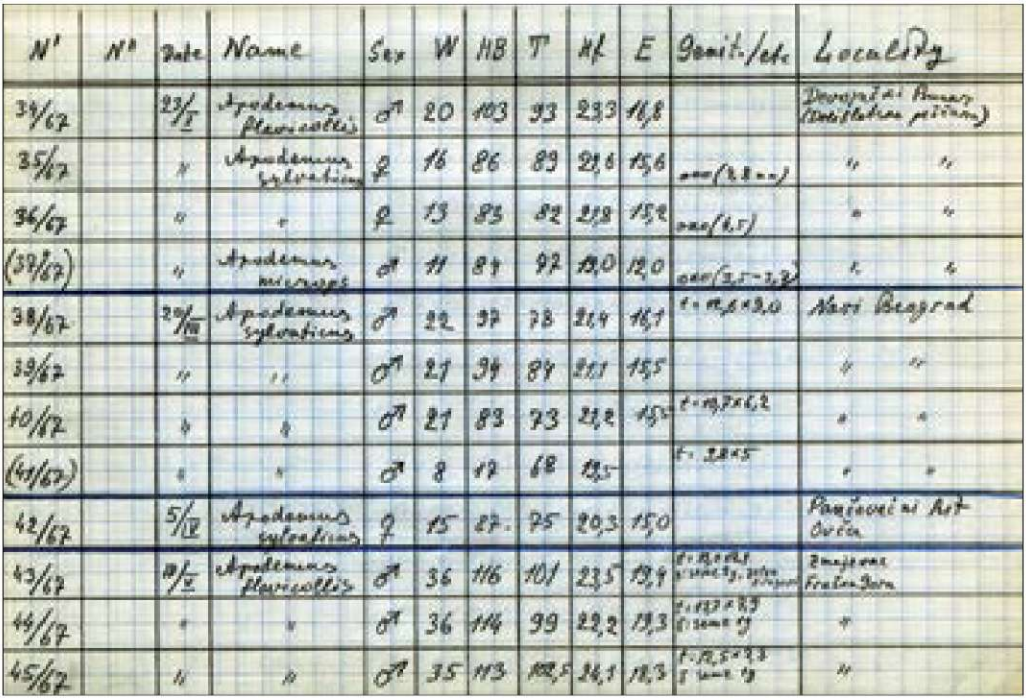
Savo Brelih (1927-2012) was the last Museum curator who had a significant impact on the mammal collection. Between 1951 and 1954 he catalogued 80 mammals, many of which were collected and prepared by him. During this period, acquisitions were catalogued by different persons, but the characteristic handwriting of Brelih is easily recognizable (Fig. 8). In 1954, the Museum acquired 48 specimens, but only 34 specimens were catalogued between 1955 and 1965. In the 1950s, the Museum turned its attention primarily to exhibitions, and the interest in collections rapidly subsided.

The current collection steams from the former private collection of B. Kryštufek (cf. GENOWAYS & SCHLITTER 1981) who used since 1978 his book of acquisition instead of the obsolete CATALOGUE, and which became subsequently the new catalogue of the Mammal Collection. It was computerized in the mid-2000s. The main acquisition was a donation by Boris M. Petrov (1917-2004) in 1984 of a collection of small mammals from the former Yugoslavia (Fig. 9). The collection mainly consists of skulls and dry skins with hair inside. Part of skins was later dampened allowing them to be stuffed as round skins. The majority of specimens were collected between 1965 and 1983. A smaller part of Petrov's collection from before 1950 is nearly uniformly labelled only by collector's field numbers with no supplementary catalogue.

raziskovalne zbirke. Prav tako je znano, da je Jošt zbiral na Ljubljanskem barju (KRYŠTUFEK 1982). Nadaljnji mali sesalci, dobljeni od Jošta, so bili katalogizirani v letih 1941-1943. Pomembno zbirko 42 lobanj (#480-521; sl. 7) je leta 1946 podaril Muzeju Stanko Bevk (1875-1956). V materialu je zastopanih 18 vrst (med njimi 10 vrst zveri), ki so bile zbrane med letoma 1913 in 1940 v različnih območjih Slovenije. Bevk je ta kraniološki material nedvomno uporabljal pri pripravi svojega dela "Vretenčarji Slovenije" (BEVK 1957).

Savo Brelih (1927-2012) je bil zadnji muzejski kustos, ki je pomembno vplival na zbirko sesalcev. Med letoma 1951 in 1954 je katalogiziral 80 sesalcev, od katerih je mnoge sam zbral in prepariral. V tem obdobju so muzejske pridobitve katalogizirale različne osebe. Kljub temu so Brelihovi vpisi lahko prepoznavni po njegovem značilnem rokopisu (sl. 8). Leta 1954 je Muzej pridobil 48 primerkov, v celotnem obdobju 1955-1965 pa samo 34. V 50-ih letih preteklega stoletja se je Muzej vse bolj ukvarjal z razstavami, zanimanje za zbirke pa je hitro plahnelo.

Sedanja muzejska zbirka izvira iz nekdanje zasebne zbirke B. Kryštufka (cf. GENOWAYS & SCHLITTER 1981). Po letu 1978 je Kryštufek namesto zastarelega KATALOGA uporabljal svojo knjigo pridobitev, ki je tudi postala katalog obstoječe Zbirke sesalcev. KATALOG je bil sredi preteklega desetletja digitaliziran. Glavna pridobitev je bila donacija zbirke Borisa M. Petrova (1917-2004) leta 1984, ki vključuje predvsem male sesalce nekdanje Jugoslavije (sl. 9). Zbirka sestoji v glavnem iz lobanj in delno prepariranih kož, ki so sušene tako, da je odlakana stran obrnjena navznoter. Del kož je bil v preteklosti navlažen, kar je omogočilo njihovo prepariranje kot standardne muzejske kožice (balgi). Večina primerkov je bila zbrana v letih 1965-1983. Manjši del Petrovove zbirke izpred leta 1950 je skoraj v celoti etiketiran samo s terensko številko, vendar je brez spremljevalnih terenskih beležk.



N'	N°	Date	Name	Sex	W	HB	T	Hf	E	Genit./etc.	Locality
34/67		23/I	Apodemus flavicollis	♂	20	103	93	23,3	16,8		Devojački Bunar (Deliblatska peščara)
35/67		"	Apodemus sylvaticus	♀	16	86	89	21,6	15,6	[illegible] (3,8 mm)	" "
36/67		"	"	♀	13	85	82	21,8	15,2	[illegible] (4,5)	" "
(37/67)		"	Apodemus microps	♂	11	84	92	19,0	12,0	[illegible] (2,5-3,2)	" "
38/67		29/VIII	Apodemus sylvaticus	♂	22	97	78	21,4	16,1	t = 12,6×9,0	Novi Beograd
39/67		"	"	♂	21	94	84	21,1	15,5		" "
40/67		"	"	♂	21	83	73	21,2	15,5	t = 13,7×6,2	" "
(41/67)		"	"	♂	8	17	68	19,5		t = 3,8×5	" "
42/67		5/IX	Apodemus sylvaticus	♀	15	87	75	20,3	15,0		Pančevački Rit Ovča
43/67		18/X	Apodemus flavicollis	♂	36	116	101	23,5	19,4	[illegible]	Zmajevac Fruška Gora
44/67		"	"	♂	36	114	99	22,2	19,3	[illegible]	"
45/67		"	"	♂	35	113	102,5	24,1	18,3	[illegible]	"

Figure 9. Page (200 × 140 mm) from the catalogue of Petrov's collection with field numbers. Boris M. Petrov prepared this catalogue (in four notebooks) by himself for the shipment of his material from Belgrade to the Slovenian Museum of Natural History in Ljubljana.

Slika 9. Stran (200 × 140 mm) iz kataloga Petrovove zbirke, s terenskimi številkami. Boris M. Petrov je osebno pripravil ta katalog (v štirih zvezkih) za selitev zbirke iz Beograda v Prirodoslovni muzej Slovenije v Ljubljani.

As already stated above, the Mammal Collection mainly contains specimens from South-Eastern Europe. Table 2 summarizes specimen holdings in the region. Data are incomplete and biased as surveys extended over a period of three decades. Data on collections in national museums (Belgrade), regional museums (Pristhina, Podgorica) and universities (e.g. Patras and Edirne) are missing. Despite these gaps, the overall holdings within the region exceed 50 thousand specimens, which is a significant resource. Although numbers in Table 2 are to be interpreted with great caution, it is evident that the PMS Mammal Collection is among the largest in the region.

Omenila sva že, da večina materiala v Zbirki sesalcev izvira iz jugovzhodne Evrope. Tabela 2 povzema obseg zbirk sesalcev v regiji. Podatki niso popolni, neposredna primerjava pa je negotova zaradi dolgega obdobja njihovega zbiranja, ki je bilo razvlečeno čez tri desetletja. Manjkajo podatki o zbirkah v nacionalnih muzejih (Beograd), regionalnih muzejih (Priština, Podgorica) in na univerzah (npr. Patras in Edirne). Kljub navedenim pomanjkljivostim lahko zaključimo, da je v regiji več kot 50 tisoč primerkov, kar je pomemben vir informacije. Prav tako je očitno, da je Zbirka sesalcev med največjimi v regiji.

Table 2. Specimen holdings in mammal collections in South-eastern Europe. Note that data were collected over a protracted period of about 30 years. The 2009 results are from a survey performed by one of us (B.K.); data were provided by Ferdinand Bego[1a], Elton Rogozi[1b], Dražen Kotrošan[1c], Nikola Tvrtković[1d], Anastasios Legakis[1e], Leda Koletti[1f], Maria Dimaki[1g], Petros Lymberakis[1h], and Bayran öztürk[1i]. The remaining data are from a survey by Genoways & Schlitter (1981)[2]. [3]Exclusively Cetacea. B&H – Bosnia & Herzegovina.

Tabela 2. Število primerkov v zbirkah sesalcev v jugovzhodni Evropi. Podatki so bili zbrani v 30-letnem obdobju. Rezultati za leto 2009 so iz ankete, ki jo je opravil eden od avtorjev (B.K.); podatke so prispevali Ferdinand Bego[1a], Elton Rogozi[1b], Dražen Kotrošan[1c], Nikola Tvrtković[1d], Anastasios Legakis[1e], Leda Koletti[1f], Maria Dimaki[1g], Petros Lymberakis[1h], in Bayran öztürk[1i]. Drugi podatki so iz raziskave, ki sta jo opravila Genoways & Schlitter (1981)[2]. [3]Izključno kiti. B&H – Bosna in Hercegovina.

Country **Država**	**Institution** **Institucija**	**City** **Mesto**	**# vouchers** **Št. osebkov**	**Percent (%)** **Odstotek (%)**
Albania[1a]	Tirana University	Tirana	3619	6.8
Albania[1b]	Institute of Public Health	Tirana	268	0.5
B&H[1c]	National Museum of Bosnia and Herzegovina	Sarajevo	1004	1.9
Bulgaria[2]	Institute of Zoology, Bulgarian Academy of Sci.	Sofia	8400	15.7
Bulgaria[2]	National Natural History Museum	Sofia	1010	1.9
Bulgaria[2]	University of Sofia	Sofia	600	1.1
Bulgaria[2]	Natural History Museum	Plovdiv	150	0.3
Bulgaria[2]	University of Plovdiv	Plovdiv	1500	2.8
Croatia[2]	University in Zagreb and Dr. Dulić's Collection	Zagreb	5000	9.4
Croatia[1d]	Croatian Natural History Museum	Zagreb	6581	12.3
Greece[1e]	Zoological Museum, University of Athens	Athens	538	1.0
Greece[1f]	Natural History Museum of Amaroussion	Amaroussion	145	0.3
Greece[1g]	The Goulandris Natural History Museum	Kifissia	100	0.2
Greece[1h]	University of Crete	Irakelio	4000	7.5
Slovenia	Slovenian Museum of Natural History	Ljubljana	20195	37.8
Turkey[1i]	Turkish Marine Research Foundation	Istanbul	298[3]	0.6
Total / **Skupaj**			**53408**	**100.0**

The Catalogue

Subsequently we list and comment on museum vouchers from nine mammalian orders: Lagomorpha, Erinaceomorpha,

Katalog

V nadaljnjem besedilu navajava in komentirava muzejski material iz devetih sesalčjih redov: Lagomorpha, Erinaceomorpha,

Table 3. Taxonomic representation of the orders reported in this paper and preserved in the Mammal Collection of the Slovenian Museum of Natural History

Tabela 3. Taksonomska zastopanost redov, obravnavanih v tej objavi, ki so shranjeni v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

Order Red	Families Družine	Genera Rodovi	Species Vrste	Countries Države	# individuals Št. osebkov
Lagomorpha	2	4	10	16	102
Erinaceomorpha	1	2	4	14	161
Macroscelidea	1	2	2	2	2
Afrosoricida	1	1	1	1	4
Scandentia	1	1	1	1	2
Hyracoidea	1	1	1	2	3
Didelphimorphia	1	1	1	1	2
Diprotodontia	1	2	2	1	2
Monotremata	1	1	1	1	1
Total / Skupaj	**10**	**15**	**23**	**23**	**279**

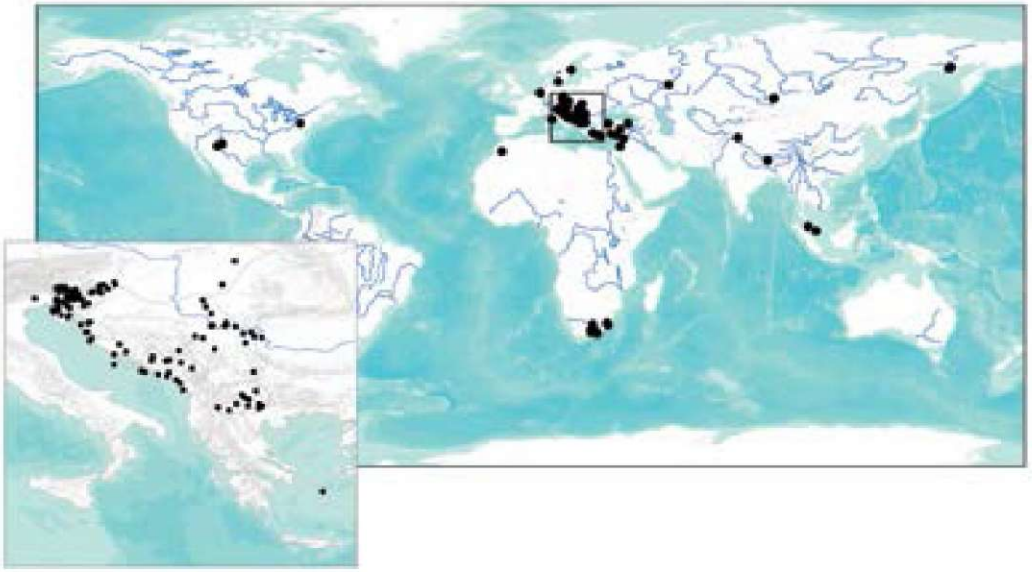


Figure 10. Geographic location of mammalian vouchers reported in this survey and deposited in the Slovenian Museum of Natural History. South-eastern Europe is enlarged in the insert.

Slika 10. Geografski izvor primerkov sesalcev, ki jih obravnavava v tem poročilu in so shranjeni v Prirodoslovnem muzeju Slovenije. Jugovzhodna Evropa je povečana v insertu.

Table 4. Geographic representation of the orders reported in this paper and preserved in the Mammal Collection of the Slovenian Museum of Natural History

Tabela 4. Geografska zastopanost redov, obravnavanih v tej objavi in shranjenih v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

Coutry Država	Orders Redovi	Families Družine	Genera Rodovi	Species Vrste	# individuals Št. osebkov
Slovenia	2	2	3	5	123
Australia	2	2	3	3	3
Bosnia & Herzegovina	2	2	2	2	5
Croatia	2	2	3	3	26
Czech Republic	2	2	3	3	5
Germany	1	1	1	1	1
Greece	1	1	1	2	5
Hungary	2	2	2	2	2
Israel	1	1	1	1	1
Italy	2	2	2	2	2
Macedonia	2	2	2	2	17
Montenegro	2	2	2	2	11
Malaysia	2	2	2	2	3
Morocco	1	1	1	1	1
Nepal	1	1	1	1	3
Pakistan	1	1	1	1	1
RSA	4	4	4	4	8
Russia	2	2	2	4	5
Serbia	2	2	2	2	31
Sweden	1	1	2	2	2
Syria	1	1	1	1	1
Turkey	1	1	1	2	6
USA	2	2	2	2	3
no history	3	3	3	3	14
Total / Skupaj	**9**	**10**	**15**	**23**	**279**

Macroscelidea, Afrosoricida, Scandentia, Hyracoidea, Didelphimorphia, Diprotodontia, and Monotremata. The Museum holds 279 specimens of 23 species in 15 genera and 10 families (Table 3). The great majority of specimens are lagomorphs (36.3%) and hedgehogs (57.9%).

The specimens in the Slovenian Museum of Natural History originate from 23 countries in five biogeographical regions: the Palaearctic (89.2% of vouchers), the Nearctic (1.1%), Ethiopian (2.9%), Oriental (1.1%), and Australian (1.1%). The majority of individuals are from Slovenia (44.4% of the total) and from

Macroscelidea, Afrosoricida, Scandentia, Hyracoidea, Didelphimorphia, Diprotodontia in Monotremata. V Muzeju je 279 primerkov, ki pripadajo 23 vrstam iz 15 rodov in 10 družin (tabela 3). Velika večina teh primerkov so zajci, kunci in žvižgači (36,3 %) in ježi (57,9 %).

Material v Prirodoslovnem muzeju Slovenije izvira iz 23 držav v petih biogeografskih regijah: palaearktis (89,2 % muzejskih primerkov), nearctis (1,1 %), ethiopis (2,9 %), orientalis (1,1 %) in avstralis (1,1 %). Večina primerkov je iz Slovenije (44,4 % vseh primerkov) in iz jugovzhodne Evrope (78,0 % vseh

South-Eastern Europe (78.0% of the total). Specimens were collected in 90 localities within Slovenia (45.0% of all localities) and 110 localities (55.0%) abroad; total sum is 200 localities (cf. Gazetter of localities at the end).

The majority of specimens are preserved as skulls (84.8% of vouchers) or skins and skulls. About one third (35.7%) of museum specimens are skins, while 1.4% of them are saved as skeletons. Further 9.4% of individuals are taxidermic mounts; these include historic specimens which, however, frequently lack appropriate labels. Only 4.0% of individuals are preserved in ethanol (Table 5).

primerkov). Primerki so bili zbrani na 90 nahajališčih v Sloveniji (45,0 % vseh nahajališč) in 110 nahajališčih v tujini (55,0 %); skupni seštevek je 200 nahajališč (cf. Seznam nahajališč na koncu).

Primerki so večinoma ohranjeni kot lobanje (84,8 % vseh primerkov) ali kot kože in lobanje. Približno tretjino (35,7 %) primerkov sestavljajo kože, od 1,4 % primerkov pa je shranjeno tudi okostje. Nadaljnjih 9,4 % primerkov so dermoplastični preparati; večina izmed njih je zgodovinski material, ki pa pogosto ni ustrezno etiketiran. Samo 4,0 % primerkov je shranjenih v etanolu (tabela 5).

Table 5. Preparations contained in the Mammal Collection of the Slovenian Museum of Natural History according to orders

Tabela 5. Preparati v Zbirki sesalcev Prirodoslovnega muzeja Slovenije, razvrščeni po redovih

Order Red	Wet Tekočina	Taxidermy Taksidermija	Skin Koža	Skull Lobanja	Skeleton Okostje	No. individuals Št. osebkov
Lagomorpha	4	8	26	88	1	102
Erinaceomorpha	6	14	66	138	1	161
Macroscelidea			2	2		2
Afrosoricida	1		2	4	1	4
Scandentia			2	2		2
Hyracoidea			1	3	1	3
Didelphimorhia		1		1		2
Diprotodontia		2				2
Monotremata		1				1
Total / Skupaj	**11**	**26**	**99**	**238**	**4**	**279**

Abbreviations	**Okrajšave**
Collection	Zbirka
Mammal Collection of the Slovenian Museum of Natural History	Zbirka sesalcev v Prirodoslovnem muzeju Slovenije
PMS	PMS
Abbreviation of the Collection	Okrajšava zbirke
HPM	HPM
Croatian Museum of Natural History, Zagreb	Hrvatski prirodoslovni muzej, Zagreb
#	#
Indicates specimens listed in the Catalogue	Oznaka za primerke, navedene v Katalogu
Catalogue	Katalog
The Accession Book of Mammals, Fishes, Reptiles of the Natural History Museum (up to 1978)	Inventarna knjiga sesalcev, rib, ptic, plazilcev Prirodoslovnega muzeja (do 1978)
Files	Kartoteka
Data on a pre-WWII mammal collection typed on File cards	Podatki o predvojni zbirki sesalcev, vneseni na kartotečne listke
Proceedings	Obravnave
Rechenſchafts-Bericht des krainiſchen Landesausſchuſſes	Poročilo o delovanju kranjskega deželnega odbora
GL	GL
Game breeding and hunting preserve	Gojitveno lovišče
LD	LD
Hunting Society	Lovska družina
LPN	LPN
Hunting preserve with specific purposes	Lovišče s posebnimi nameni
Age	Age
Age of an individual	Starost osebka
ad.	ad.
Adult	Odrasel
sad.	sad.
Subadult	Subadulten
juv.	juv.
Juvenile	Mladič

Abbreviations	Okrajšave
Sex	Spol
Sex of an individual	Spol osebka
♀	♀
Female	Samica
♂	♂
Male	Samec
Measurements	Dimenzije
If not indicated otherwise in mm	Če ni označeno drugače v mm
W	W
Body mass (in grams)	Telesna masa (v gramih)
H&B	H&B
Length of head and body (anus is the reference point against the tail)	Dolžina trupa z glavo (referenčna točka glede na rep je anus)
TL	TL
Length of tail (anus is the reference point against the body)	Dolžina repa (referenčna točka glede na trup je anus)
HF	HF
Length of hind foot	Dolžina stopala
E	E
Length of ear	Dolžina uhlja
OnL	OnL
Occipitonasal length of skull	Okcipitonazalna dolžina lobanje
CbL	CbL
Condylobasal length of skull	Kondilobazalna dolžina lobanje
ZgB	ZgB
Breadth of skull across zygomatic arches	Širina lobanje prek ličnih lokov
IoC	IoC
Width of interorbital constriction	Interorbitalna širina
UTR	UTR
Length of upper row of teeth	Dolžina gornjega niza zob
N	N
Samples size	Število osebkov

Order: Lagomorpha
Lagomorphs

The collection contains 102 voucher specimens of lagomorphs, belonging to ten species: three hare, two rabbit and five pika species (Table 6). Material originates from 16 countries in three zoogeographic regions (Palaearctic, Nearctic and Ethiopian); the majority of individuals (70%) are from Slovenia (Table 7). They are mainly preserved as skulls, more rarely as skins and skulls (Table 6).

Red: Lagomorpha
Zajci, kunci in žvižgači

Zbirka vsebuje 102 primerka iz reda Lagomorpha, ki pripadajo desetim vrstam: trem vrstam zajcev, dvema vrstama kuncev in petim vrstam žvižgačev (tabela 6). Material izvira iz 16 držav v treh zoogeografskih območjih (palearktis, nearktis in etiopis); večina živali (70 %) je iz Slovenije (tabela 7). Primerki so večinoma shranjeni kot lobanje, redkeje kot kože in lobanje (tabela 6).

Table 6. Taxonomic representation and preparations of lagomorphs in the Mammal Collection of the Slovenian Museum of Natural History

Tabela 6. Taksonomska zastopanost in preparati zajcev, kuncev in žvižgačev v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

Species Vrsta	Wet Tekočina	Taxidermy Taksidermija	Skin Koža	Skull Lobanja	Skeleton Okostje	No. individuals Št. osebkov
Lepus timidus		2	4	4		**6**
Lepus europaeus		6	12	62	1	**72**
Lepus saxatilis			1	1		**1**
Oryctolagus cuniculus			3	13		**13**
Sylvilagus auduboni			2			**2**
Ochotona pallasi			1	1		**1**
Ochotona dauurica			1	1		**1**
Ochotona hyperborea			2	2		**2**
Ochotona roylei	3			3		**3**
Ochotona macrotis	1			1		**1**
Total / Skupaj	**4**	**8**	**26**	**88**	**1**	**102**

Table 7. Geographic representation of lagomorphs in the Mammal Collection of the Slovenian Museum of Natural History

Tabela 7. Geografska zastopanost zajcev, kuncev in žvižgačev v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

Coutry Država	No. species Št. vrst	No. individuals Št. osebkov
Slovenia	3	60
Bosnia & Herzegovina	1	1
Croatia	2	7
Czech Republic	2	4
Germany	1	1
Hungary	1	1
Italy	1	1
Macedonia	1	3
Montenegro	1	1
Nepal	1	3
Pakistan	1	1
RSA	1	1
Russia	3	4
Serbia	1	7
Sweden	2	2
USA	1	2
no history / brez zgodovine	1	3
Total / Skupaj	**10**	**102**

Family: Leporidae
Hares and rabbits

Družina: Leporidae
Zajci in kunci

Lepus timidus Linnaeus, 1758
Mountain Hare

Planinski zajec

COLLECTION

ZBIRKA

Slovenia:

Dražgoše, Mošenjska planina (1200 m a.s.l.): 1 skin with a skull (PMS 15530), sex unknown, collected on 10 November 1996 by J. Veber.

Karavanke (Karavanke) Mts., Golica (1700 m a.s.l.): 1 skin with a skull (PMS 15536), a male, collected on 27 November 1996 by Branko Galjot.

Mt. Jelovica, Rovtarica (= Rovtarica-Vresje) (ca 1000 m a.s.l.): 1 skin with a skull (PMS 8126), a female, collected on 25 October 1990 by Janez Nečemer.

Mt. Mangart, Mangartsko sedlo (ca 2000 m a.s.l.): 1 skin with a skull (PMS 8125), a male, collected on 24 October 1990 by Damjan Muznik.

No history: 1 taxidermic mount (PMS 19651), sex not recorded, reported by KOS (1933).

Sweden:

Uppsala: 1 taxidermy (PMS 19650), a male collected in December 1963; donated to PMS in 1987 by Jorgen A. Pederson, Zoological Museum Oslo (ZMO 3409).

Table 8. Geographic representation and preparations of Mountain Hares *Lepus timidus* in the Mammal Collection of the Slovenian Museum of Natural History

Tabela 8. Geografska zastopanost in preparati planinskega zajca *Lepus timidus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

Country Država	Taxidermy Taksidermija	Skin Koža	Skull Lobanja	No. individuals Št. osebkov
Slovenia	1	4	4	**5**
Sweden	1			**1**
Total / Skupaj	2	4	4	**6**

The following vouchers are recorded in the CATALOGUE:

V KATALOGU so zavedeni sledeči primerki:

#142 (a duplicate number, cf. below; catalogued before 1896): labelled as *Lepus variabilis*, probably acquired in 1880s, or before; discarded in 27 December 1922.

#143: a male (sex recorded in the FILES, not in the CATALOGUE), labelled as *Lepus variabilis*, put on display in 1881.

#144: labelled as *Lepus variabilis*, probably acquired in 1880s, discarded on 27 December 1922.

#216: a male labelled as *Lepus varronis*; collected in "Lengenfeld" (= Dovje pri Mojstrani) and secured for the museum by V. Galle; exhibited in 1894, disposed in December 1949.

No #: a male, labelled as *Lepus variabilis*, collected in 1910 at "Lom pri Sv. Katarini nad Tržičem" (now Lom pod Storžičem) and donated to the Museum by H. Roblek from Tržič.

#142 (a duplicate number, cf. above; catalogued in 1911): labelled as *Lepus variabilis*, in winter pelage, collected in the Karavanke Mts. in 1910; donated to the Museum by the "Carniolan Committee of the 1st Hunting Exhibition in Vienna" [Kranjski odbor I. lovske razstave na Dunaju] in 1910. Disposed from the Museum as early as in 1913.

#251: labelled as *Lepus varronis*, no history, catalogued in 1920.

#252: a male (sex recorded in the FILES, not in the CATALOGUE), labelled as *Lepus varronis*, collected in October 1898, exhibited in the same year; catalogued in 1920.

#266: labelled as *Lepus varronis*, in winter pelage. No history but from "the old stock"; catalogued in 1922, exhibited in 1926.

#425: the first hare in Museum which was labelled as *Lepus timidus varronis*, a female, collected on 17 February 1929 at "Planina Govnač/Komna" (FILE), catalogued in 1934. Donated to the Museum by the Forest Authority in Ljubljana [Šumska direkcija v Ljubljani]; disposed in December 1949.

#636: unsexed hare in winter fur, obtained in December (probably 1959) in the Karavanke Mts.; donated to the Museum by Game Breeding and Hunting Preserve Preddvor. Exhibited on 15 December 1959.

PROCEEDINGS report on donations of Mountain Hares (as "planinski zajec") in the periods of 1 January – end of December 1894 (PROCEEDINGS 1895; two individuals obtained from F. Rupnik, "forestry superintendent in Radoljica [= Radovljica]") and of 1 October 1897 – end of September 1898 (PROCEEDINGS 1899; one specimen from Sorica, obtained from "Dean Sušnik"). None of these donations is evident from the CATALOGUE.

OBRAVNAVE poročajo o donacijah planinskih zajcev (pod tem slovenskim imenom) v obdobjih 1. januar – konec decembra 1894 (OBRAVNAVE 1895; dva primerka, ki ju je daroval F. Rupnik, "gozdni upravnik v Radoljici [= Radovljica]"), in 1 oktober 1897 – konec septembra 1898 (OBRAVNAVE 1899; en primerek s Sorice, ki ga je daroval "Kanonik Sušnik"). Nobeno od teh daril ni navedeno v KATALOGU.

The Museum is in possession of six Mountain Hares belonging to two subspecies: the nominotypical *L. t. timidus* (PMS 19650 from Uppsala, Sweden, which is the type locality for the species; MILLER, 1912: 527), and *L. t. varronis* (specimens from Slovenia). The four hares in the Museum, which are prepared as standard museum skins and skulls, were collected between 1990 and 1996. As evident from the CATALOGUE, eleven Mountain Hares were acquired prior to 1960, with the majority of them (eight) received by the Museum before 1900. Only one of these hares (a taxidermy PMS 19651) is still in the Collection; one taxidermy was disposed in 1913, two in 1922, and further two in 1949; the remaining taxidermic specimens were discarded at unknown times. Taxidermic mount PMS 19651 was published by KOS (1933), together with a photograph, but no details are provided. This animal cannot be

V Muzeju je šest primerkov planinskih zajcev, ki pripadajo dvema podvrstama: nominotipski *L. t. timidus* (PMS 19650 iz Uppsale, Švedska, ki je tipsko nahajališče vrste; MILLER, 1912: 527), in *L. t. varronis* (primerki iz Slovenije). Štirje primerki v Prirodoslovnem muzeju, ki so preparirani kot standardne muzejske kože z lobanjami, so bili pridobljeni v letih 1990-1996. Kot je razvidno iz KATALOGA, je bilo enajst planinskih zajcev pridobljenih pred letom 1960, večina od njih (osem) pa je bila v Muzeju že pred letom 1900. Samo eden od teh zajcev (dermoplastika PMS 19651) je še vedno v Zbirki; ena dermoplastika je bila zavržena leta 1913, dve v letu 1922 in nadaljnji dve leta 1949; preostali muzejski preparati so bili odstranjeni iz Muzeja v neznanem času. Dermoplastični preparat PMS 19651 je objavil KOS (1933), skupaj s fotografijo, ne navaja pa nobenih podrobnosti. Te dermoplastike ni

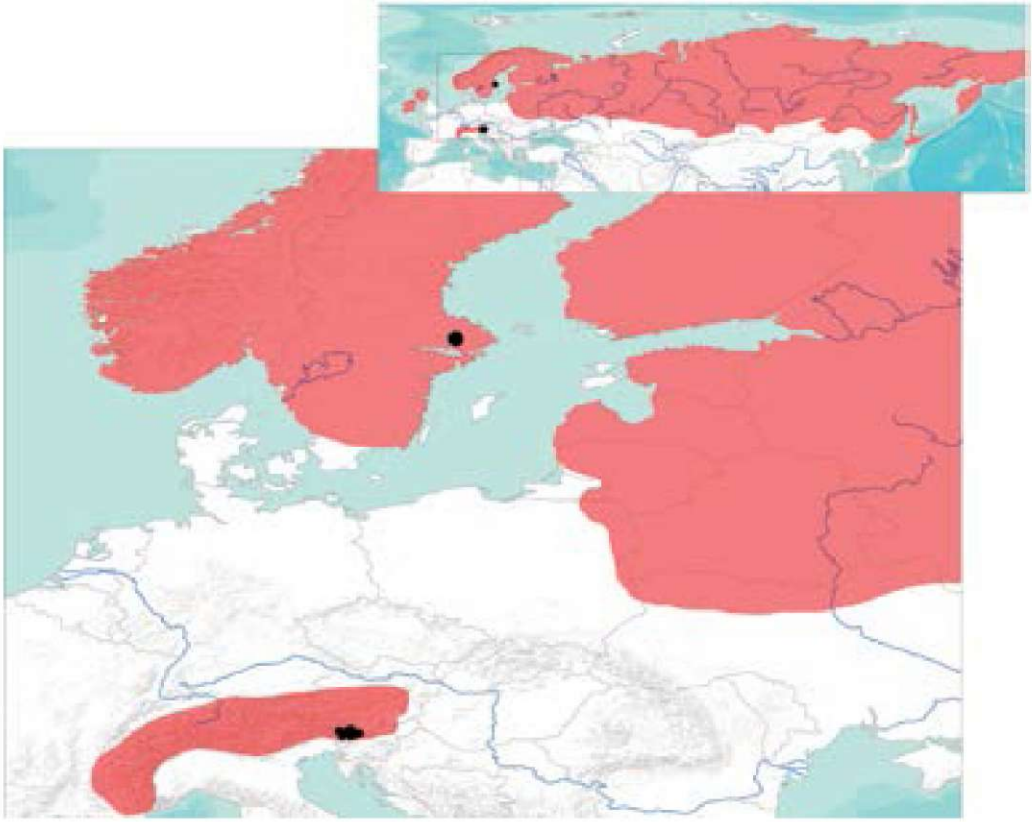


Figure 11. Geographic location of Mountain Hares *Lepus timidus* from the Mammal Collection of the Slovenian Museum of Natural History. Range of the species follows SMITH & JOHNSTON (2013a).

Slika 11. Geografski izvor planinskih zajcev *Lepus timidus* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za razširjenost vrste sta SMITH & JOHNSTON (2013a).

linked to any specimen catalogued before 1934. During relocation of the collection in 1998, the specimen was damaged (broken right ear), but repaired in 2013. The pelage was full of dust and could not be cleaned successfully (Fig. 13).

NOMENCLATURE

FREYER (1842:5) used the name "*L.[epus] variabilis* Pall." for Mountain Hares, accompanied with the following vernaculars: "Alpenhaſe" and "Schneehaſe, vernderlichee Hase" in German, and "planinſki sajz" in Slovene (a language referred to as "krainiſch" or "windiſch").

mogoče povezati z nobenim primerkom, katalogiziranim pred letom 1934. Med selitvijo zbirke leta 1998 je bil preparat poškodovan (zlom desnega uhlja), kar je bilo popravljeno leta 2013. Kožuh živali je umazan od prahu in ga ni bilo mogoče uspešno očistiti (sl. 13).

POIMENOVANJE

FREYER (1842:5) je za planinskega zajca uporabljal ime "*L.[epus] variabilis* Pall.", ki mu je pripisal še nemška imena "Alpenhaſe" in "Schneehaſe, vernderlichee Hase" in "planinſki sajz" v slovenščini (v Freyerjevem izvirniku "krainiſch" ali "windiſch").

Figure 12. Hares catalogued in 1888-89 on page 7 of the CATALOGUE only a section of the page is shown. Acquisition numbers are in the left column, names as given originally in the middle column, and remarks on a revision performed between 27 December 1926 and December 1949 in the right column. Note the match between scientific and vernacular names in the central column: "*Lepus timidus*" with "Feldhase", and "*Lepus variabilis*" with "Alpenhase". Scientific names were corrected and Slovene vernaculars added (inscriptions in light ink) after 27 December 1926: "*europaeus* Pall." (= Pallas) and "Poljski zajec" (specimens #138, #139, and #141), and "*varronis* Mill." (= Miller) and "Planinski zajec" (#143). Strikethrough specimens were disposed in December 1949 (#138, together with #139) and 27 December 1926 (#142 and #144).

Slika 12. Zajci, katalogizirani v letih 1888-89 na 7. strani KATALOGA. Prikazan je samo izsek iz KATALOGA. Kataloške številke so v levem stolpcu, prvotna imena pa v srednjem. Opombe iz revizije, opravljene med 27. decembrom 1926 in decembrom 1949, so vpisane v desni stolpec. Očitna je povezava med znanstvenim imenom in imenom v nemščini iz srednjega stolpca "*Lepus timidus*" s "Feldhase" in "*Lepus variabilis*" z "Alpenhase". Znanstvena imena so bila revidirana, slovenska imena pa dodana (vpisi v svetlejšem črnilu) po 27 decembru 1926: "*europaeus* Pall." (= Pallas) in "Poljski zajec" (primerki #138, #139 in #141), in "*varronis* Mill." (= Miller) in "Planinski zajec" (#143). Primerki s prečrtanimi imeni so bili odstranjeni iz Muzeja decembra 1949 (#138, skupaj z #139) in 27. decembra 1926 (#142 in #144).

The oldest Mountain Hares in the Museum (#142 and #143 from the 1880s, and #216 from 1894) were named, at the time of cataloguing, by the German vernacular "Schneehafe", in addition to the technical name *Lepus variabilis* (Fig. 12). The Slovene vernacular "planinski zajec" (= mountain hare) appeared in

Najstarejši planinski zajci v Muzeju (#142 in #143 iz 1880-ih, in #216 iz 1894) so bili v času katalogiziranja poimenovani z nemškim imenom "Schneehafe" in s tehničnim imenom *Lepus variabilis* (sl. 11). Slovensko ime "planinski zajec" se v KATALOGU prvič pojavi leta 1910 (za muzejski primerek brez kataloške

the CATALOGUE for the first time in 1910 (for an individual without a catalogue number) and was used for all subsequent acquisitions. This vernacular was added to pre-1900 acquisitions while revised sometimes between 27 December 1926 and December 1949.

In public communication, the vernacular "planinski zajec" was persistently used since 1842 when introduced by FREYER (see above). It was used in PROCEEDINGS at least since 1894 (PROCEEDINGS 1895: 240) and in all major mammal texts published during the 20th century (KOS 1933, BEVK 1957, MIRIĆ 1970, KRYŠTUFEK 1991, KRYŠTUFEK & JANŽEKOVIĆ 1999).

Mountain Hares catalogued between 1888 and 1910 (#142, #143, #144, #216, and a specimen from 1910 with no catalogue number) were consistently labelled as *Lepus variabilis*; *L. variabilis* Pallas, 1778 is a renaming of *timidus* and is now a junior synonym of the nominotypical subspecies (ELLERMANN & MORRISON-SCOT 1951: 139). Mountain Hare of the Alps was first described as a species in its own right *Lepus varronis* (MILLER 1901: 27), but subsequently classified as a subspecies of the widespread *Lepus timidus*, therefore *L. t. varronis* (MILLER 1912). The combination *Lepus varronis* was applied in the CATALOGUE for the first time in 1920 (acquisitions #251 and #252) and again in 1922 (#266). This suggests that Miller's "Catalogue of the European Mammals" (MILLER 1912) was still not used in the early 1920s in the Museum as the taxonomic and nomenclatural source. It is worth mentioning that the nomenclature by TROUESSART (1910) was similarly ignored in the Museum practice. TROUESSART (l.c.) considered *varronis* as a subspecies of *Lepus medius* Nilsson, 1908 (now junior synonym of *L. europaeus*; HOFFMANN & SMITH 2005) and restricted *timidus* to the northern populations of Mountain Hares (*collinus, hibernicus, lutescens*, etc.). The first Mountain Hare in the Museum collection, which was labelled as *Lepus timidus varronis*, was catalogued in 1934 (#425).

številke), uporabili pa so ga tudi pri vseh kasnejših vpisih te vrste. Ko so v obdobju med 27. decembrom 1926 in decembrom 1949 revidirali KATALOG, so vsem planinskim zajcem, pridobljenim pred letom 1900, dodali tudi slovensko ime vrste.

Ime "planinski zajec" se je v javnosti stalno uporabljalo najmanj od leta 1842, ko ga je zapisal Freyer (glej zgoraj). V OBRAVNAVAH se to ime uporablja od leta 1894 (OBRAVNAVE 1895: 240), navedeno pa je tudi v vseh pomembnejših delih o sesalcih, objavljenih v 20. stoletju (KOS 1933, BEVK 1957, MIRIĆ 1970, KRYŠTUFEK 1991, KRYŠTUFEK & JANŽEKOVIĆ 1999).

Planinski zajci, katalogizirani med letoma 1888 in 1910 (#142, #143, #144, #216 in primerek iz leta 1910, ki je brez kataloške številke), so bili dosledno vpisani kot *Lepus variabilis*; *L. variabilis* Pallas, 1778 je preimenovanje *L. timidus*, tako da je mlajši sinonim nominotipske podvrste (ELLERMANN & MORRISON-SCOT 1951: 139). Planinski zajci iz Alp so bili najprej opisani kot samostojna vrsta *Lepus varronis* (MILLER 1901: 27), kasneje pa uvrščeni v široko razširjeno vrsto *Lepus timidus* kot podvrsta *L. t. varronis* (MILLER 1912). Kombinacija *Lepus varronis* je v KATALOGU prvič uporabljena leta 1920 (primerka #251 in #252) in nato ponovno leta 1922 (#266). To kaže, da se Millerjev "Katalog evropskih sesalcev" (MILLER 1912) v zgodnjih 20-ih letih prejšnjega stoletja v Muzeju še ni uporabljal kot taksonomski in nomenklaturni vir. Omeniti velja, da je bila v muzejski praksi ignorirana tudi nomenklatura, ki jo je uporabljal TROUESSART (1910). TROUESSART (l.c.) je obravnaval ime *varronis* kot podvrstno ime *Lepus medius* Nilsson, 1908 (dejansko mlajši sinonim *L. europaeus*; HOFFMANN & SMITH 2005), ime *timidus* pa je omejil na severne populacije planinskih zajcev (*collinus, hibernicus, lutescens* etc.). Prvi planinski zajec v muzejski zbirki, ki je bil katalogiziran z imenom *Lepus timidus varronis*, je bil primerek #425 iz leta 1934.

TAXONOMY

Since the beginning of the 20th century, the isolated population of Mountain Hares in the Alps has been considered to belong to an endemic taxon *varronis* (MILLER 1901, 1912, ELLERMAN & MORRISON-SCOTT 1951, THULIN & FLUX 2003). MARTINO (1935) stressed in his revision of hares of the Kingdom of Yugoslavia that he was not in a possession of museum vouchers for the Mountain Hare (footer on p. 213). ĐULIĆ & MIRIĆ (1967: 17) and MIRIĆ (1970: 88) classified mountain hares of Slovenia as *L. timidus varronis*. Although neither the Natural History Museum in Belgrade, where Mirić worked, nor the Department of Zoology at the University in Zagreb, where Đulić was employed, are in a possession of Mountain Hares from the former Yugoslavia (personal communications by Drs. Milan Paunović and Marko Ćaleta, respectively), there are at least two taxidermies in the Croatian Natural History Museum (HPM) in Zagreb (personal communication by Dr. Nikola Tvrtković). It is therefore plausible to assume that the subspecies designation, as reported in ĐULIĆ & MIRIĆ (l.c.), resulted from the examination of museum specimens, and was not based merely on geographic assumption. One of the HPM specimens originate from Carinthia ("Koruška": collected in 1901 and donated by Countess Jelačić), while the other one was purchased at Bohinjska Bistrica on 14 December 1931 (N. Tvrtković in litt.).

The Alpine subspecies *varronis* was diagnosed on the basis of its small size: "Occipitonasal length of adult skulls ranging from 85 to 93 mm" (as opposed to 95–103 mm in *L. t. timidus*); ears (90–100 mm) are longer than in *L. t. scoticus* (80–90 mm; MILLER 1912:496). Dimensions of PMS material match the range for *varronis* in the occipitonasal length, but not the ear length. Cranial dimensions are mainly within the range reported for Mountain Hares from the Austrian Alps (BAUER 2001).

TAKSONOMIJA

Vse od začetka 20. stoletja velja populacija planinskih zajcev, ki je izolirana v Alpah, za endemičen takson *varronis* (MILLER 1901, 1912, ELLERMAN & MORRISON-SCOTT 1951, THULIN & FLUX 2003). MARTINO (1935) je v reviziji zajcev Kraljevine Jugoslavije poudaril, da ni imel na voljo nobenega preparata planinskega zajca (podpis na str. 213). ĐULIĆ & MIRIĆ (1967: 17) in MIRIĆ (1970: 88) so planinske zajce iz Slovenije opredelili kot *L. timidus varronis*. V Prirodoslovnem muzeju v Beogradu, kjer je bil zaposlen Mirić, in na Zavodu za zoologijo Univerze v Zagrebu, kjer je delala Beatrica Đulić, ni nobenega planinskega zajca z območja nekdanje Jugoslavije (osebna komunikacija z dr. Milanom Paunovićem in dr. Markom Ćaleto). Najmanj dva dermoplastična preparata sta shranjena v Hrvaškem prirodoslovnem muzeju (HPM) v Zagrebu (osebna komunikacija z dr. Nikolo Tvrtkovićem). To dejstvo dopušča domnevo, da je uvrstitev v podvrsto, kot jo navajata ĐULIĆ & MIRIĆ (l.c.), temeljila na pregledu muzejskih primerkov, ne pa samo na geografiji temelječih predvidevanjih. Eden izmed primerkov v HPM izvira iz Koroške ("Koruška": donacija grofice Jelačić iz leta 1901), drugi pa je bil 14 decembra 1931 kupljen v Bohinjski Bistrici (N. Tvrtković in litt.).

Alpska podvrsta *varronis* je bila opredeljena na osnovi majhne rasti: "Okcipitonazalna dolžina odraslih lobanj niha od 85 do 93 mm" (pri *L. t. timidus* je razpon 95–103 mm); uhlji (dolžina 90–100 mm) so daljši kot pri *L. t. scoticus* (80–90 mm: MILLER 1912:496). Dimenzlje okcipitonazalne dolžine lobanje pri primerkih v PMS so v mejah razpona, značilnega za *varronis*, uhlji pa so nekoliko krajši. Lobanjske dimenzlje so podobne kot pri planinskih zajcih iz avstrijskih Alp (BAUER 2001).

Figure 13. Taxidermic mount of the Alpine Mountain Hare *Lepus timidus varronis* in winter hair; specimen PMS 19651, origin not known. Photograph of the same individual was published by Kos (1933). Photo: Ciril Mlinar

Slika 13. Dermoplastika alpskega planinskega zajca *Lepus timidus varronis* v zimski dlaki; primerek PMS 19651, izvor ni znan. Fotografijo tega primerka je objavil Kos (1933). Foto: Ciril Mlinar

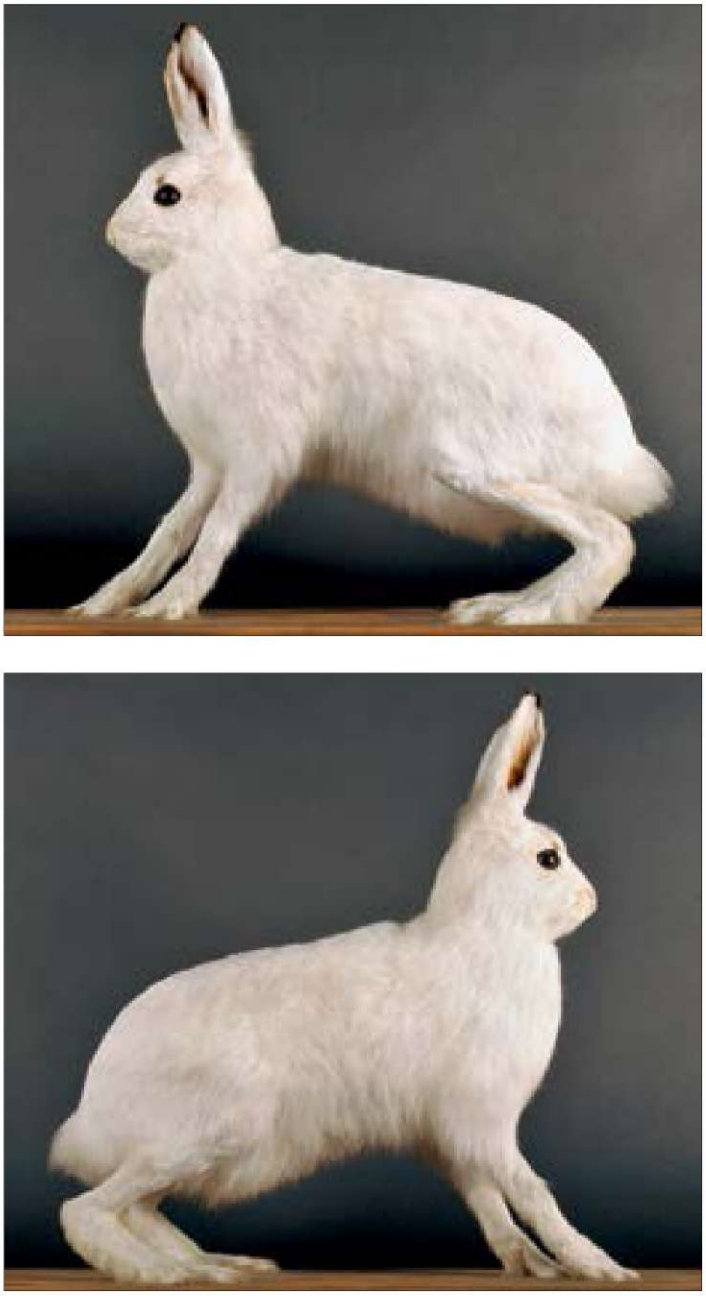


Figure 14. Taxidermic mount of the nominotypical subspecies of Mountain Hare *Lepus timidus timidus* in winter hair; specimen PMS 19650 from Uppsala, Sweden; collected in December 1963. Photo: Ciril Mlinar

Slika 14. Dermoplastika nominotipske podvrste planinskega zajca *Lepus timidus timidus* v zimski dlaki; primerek PMS 19650 iz Uppsale, Švedska; zbran decembra 1963. Foto: Ciril Mlinar

Figure 15. Skin (dorsal, lateral and ventral views) of Alpine Mountain Hare *Lepus timidus varronis* in winter hair; specimen PMS 8125 from Mangart, Julian Alps of Slovenia, collected on 24 October 1990. Photo: Ciril Mlinar

Slike 15. Koža (hrbtna, bočna in trebušna stran) alpskega planinskega zajca *Lepus timidus varronis* v zimski dlaki; primerek PMS 8125 z Mangarta, Julijske Alpe v Sloveniji, zbran 24. oktobra 1990. Foto: Ciril Mlinar

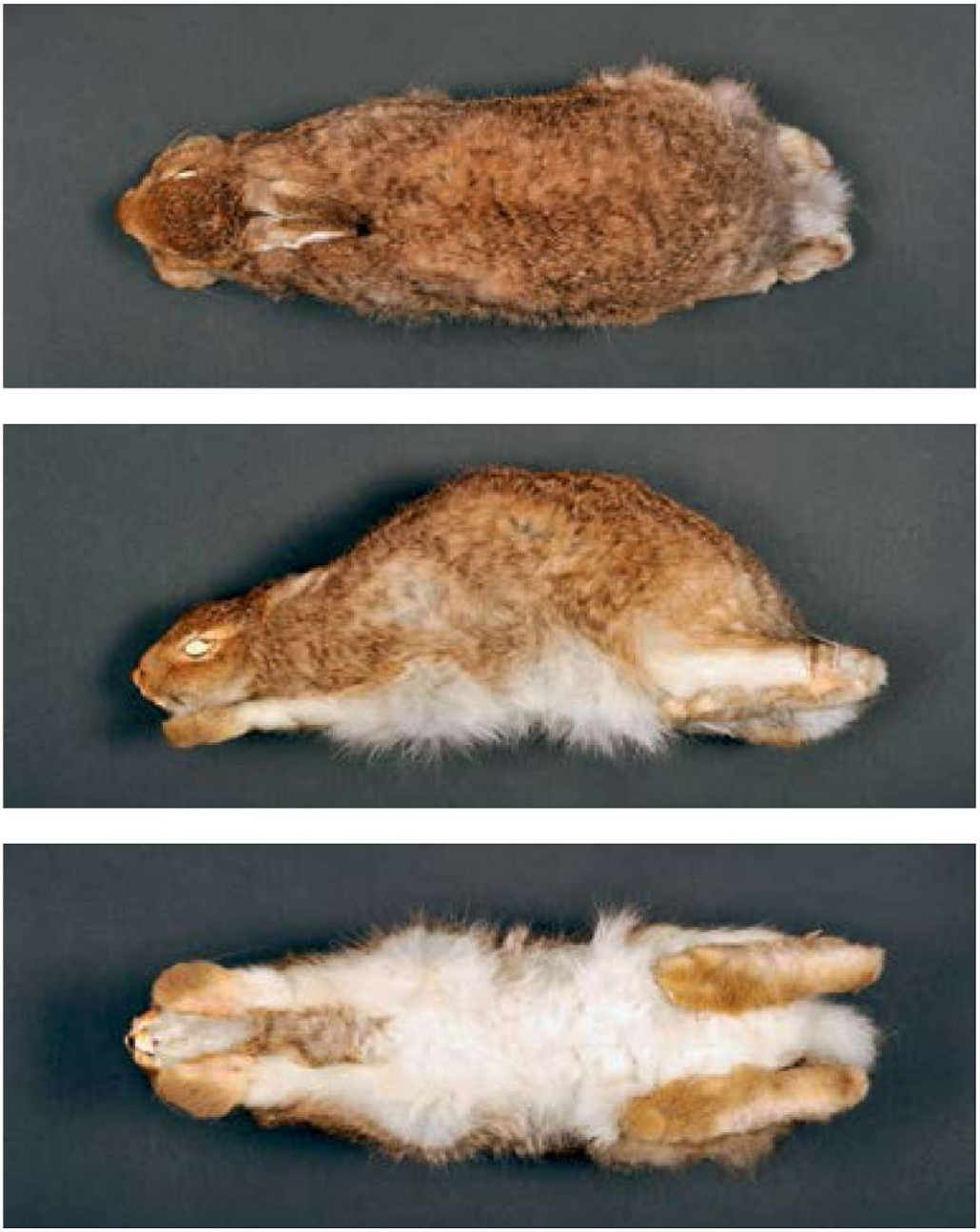


Figure 16. Skin (dorsal, lateral and ventral views) of Alpine Mountain Hare *Lepus timidus varronis* in summer hair; specimen PMS 8126 from Mt. Jelovica, Slovenia, collected on 25 October 1990. Photo: Ciril Mlinar

Slika 16. Koža (hrbtna, bočna in trebušna stran) alpskega planinskega zajca *Lepus timidus varronis* v letni dlaki; primerek PMS 8126 z Jelovice, Slovenija, zbran 25. oktobra 1990. Foto: Ciril Mlinar

Figure 17. Skins in winter fur (dorsal view) of Alpine Mountain Hares *Lepus timidus varronis* from Slovenia. Left: PMS 15530 from Mošenjska planina (10 November 1996); right: PMS 15536 from Golica (27 November 1996). Moult is still not entirely complete in the animal on the right. Photo: Ciril Mlinar

Slika 17. Koži v zimski dlaki (hrbtna stran) alpskih planinskih zajcev *Lepus timidus varronis* iz Slovenije. Levo: PMS 15530 z Mošenjske planine (10. november 1996); desno: PMS 15536 z Golice (27. november 1996). Pri desnem primerku menjava dlake še ni povsem končana. Foto: Ciril Mlinar

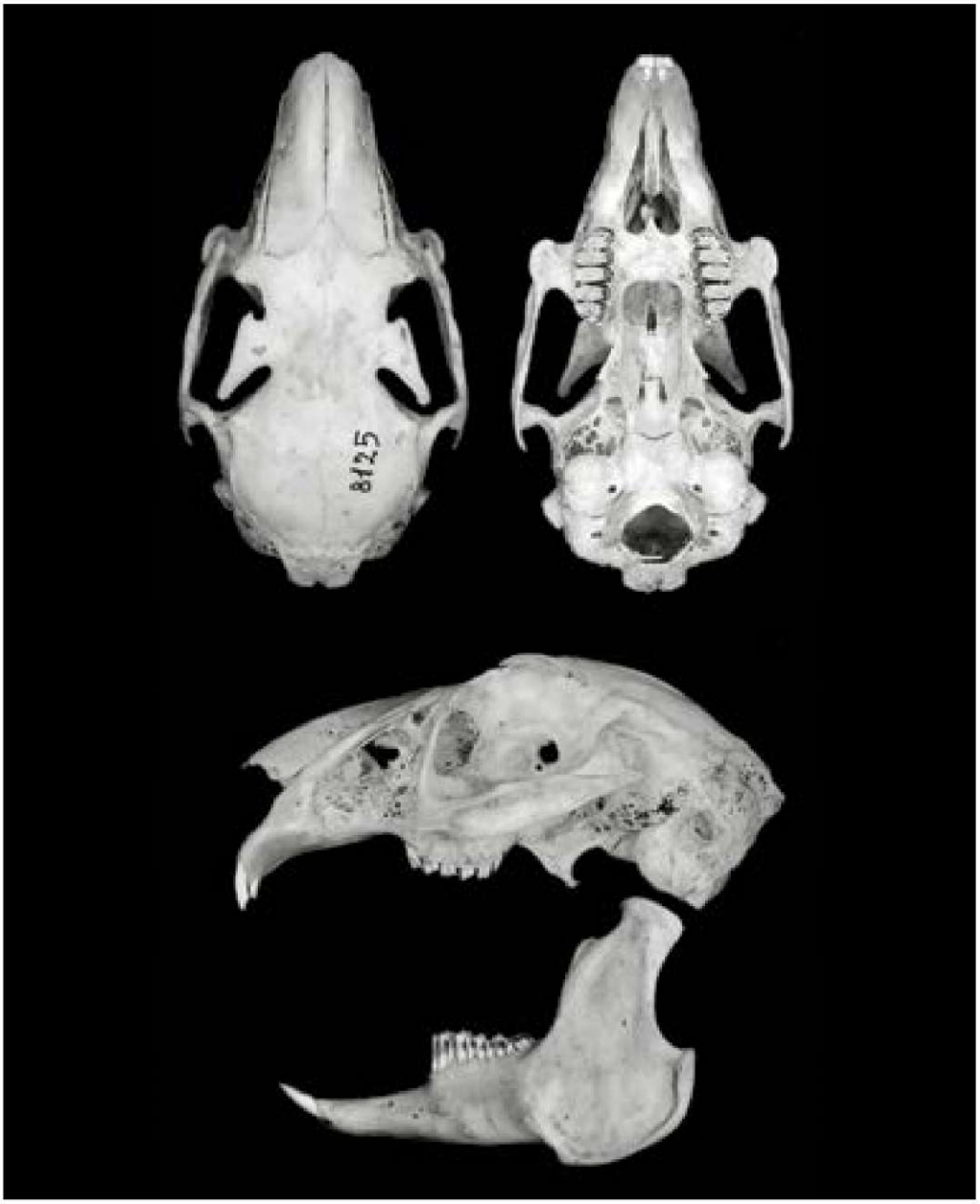


Figure 18. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Alpine Mountain Hare *Lepus timidus varronis* from Mangart, Slovenia. Specimen PMS 8125, collected on 24 October 1990. Photo: Boris Kryštufek

Slika 18. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) alpskega planinskega zajca *Lepus timidus varronis* z Mangarta, Slovenija. Primerek PMS 8125, zbran 24. oktobra 1990. Foto: Boris Kryštufek

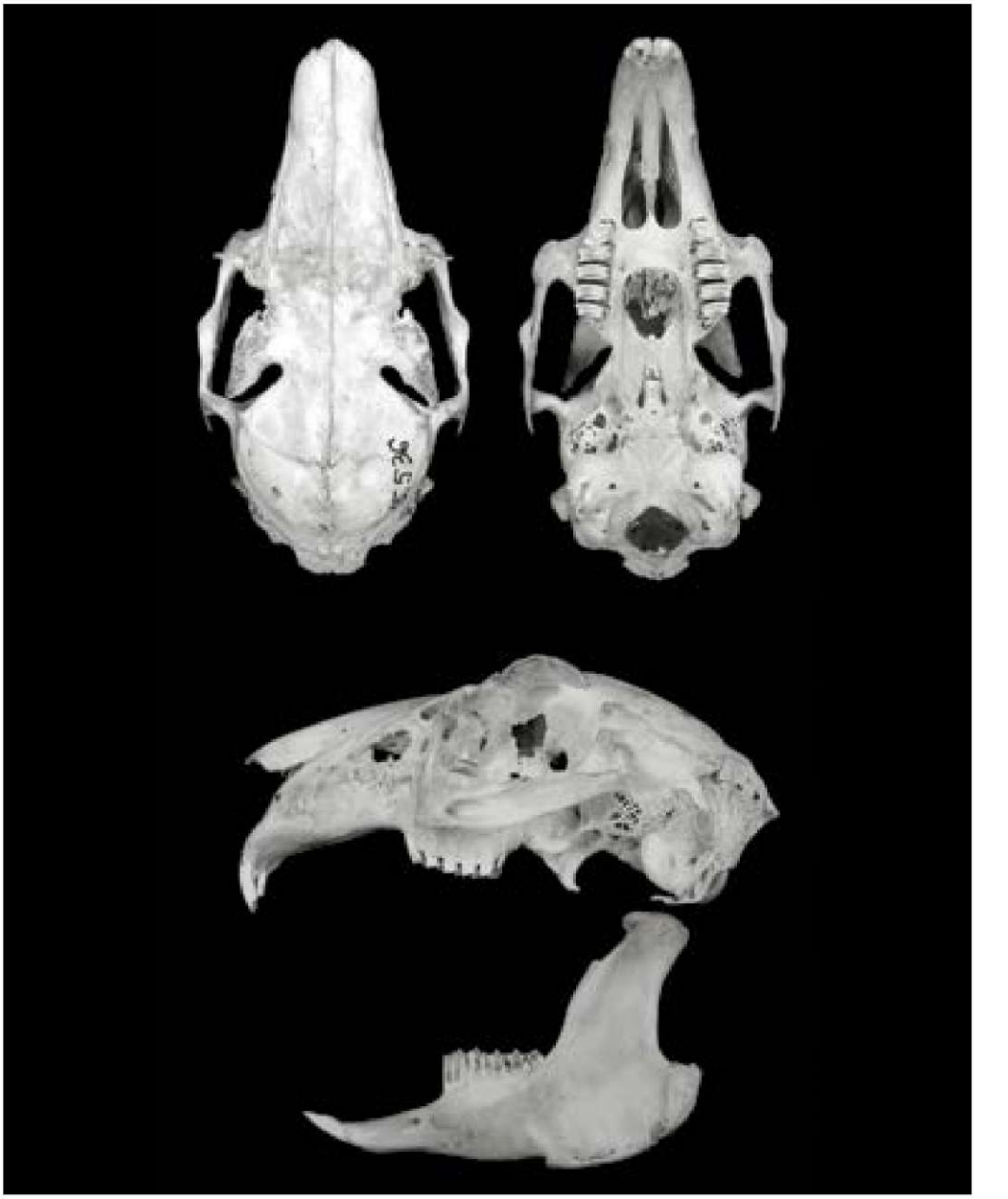


Figure 19. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Alpine Mountain Hare *Lepus timidus varronis* from Golica, Slovenia. Specimen PMS 15536, collected on 27 November 1996. Photo: Boris Kryštufek

Slika 19. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) alpskega planinskega zajca *Lepus timidus varronis* z Golice, Slovenija. Primerek PMS 15536, zbran 27. novembra 1996. Foto: Boris Kryštufek

Table 9. External and cranial dimensions of Mountain Hares *Lepus timidus* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Measured on the zygomatic root of the temporal bone; [b]length of the row of cheek-teeth.

Tabela 9. Zunanje in lobanjske dimenzije planinskih zajcev *Lepus timidus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Merjeno na lični korenini senčnice; [b]dolžina niza kočnikov.

PMS No.	Sex	Age	W	H&B	TL	HF	E	PL	OnL	CbL	ZgB[a]	UTR[b]
8125	♂	ad.	1875	500	85	145	85	84.2	82.9	75.0	44.4	15.0
8126	♀	sad.	1250	395	39	123	80	73.5	70.4	62.6	41.0	14.0
15530		ad.	2500	498	56	151	96	91.4	91.2	81.2	45.4	17.9
15536	♂	ad.									44.4	16.3

Lepus europaeus Pallas, 1778

Brown Hare

Poljski zajec

Collection

Zbirka

Slovenia:

Ankaran – Debeli rtič (between): 1 skin with a skull (PMS 20191), died on 25 July 2013 in Animal Shelter Koper [Zavetišče za prosto živeče živali Koper], donated by Tjaša Zagoršek.

Dolenjske Toplice: 1 skull (PMS 3258), sex unknown, collected in December 1983.

GL (now LPN) Ljubljanski vrh: 1 skull (PMS 5418), sex unknown, collected in 1986.

Idrija, Godovič: 1 skin with a skull (PMS 9174), a juvenile of unknown sex, collected on 20 June 1991.

Ilirska Bistrica: 3 skulls (PMS 3052, 3053, 3054), sex unknown, collected in November 1983. – 1 skull (PMS 3059), sex unknown, collected in November 1983. – 2 skulls (PMS 4425, 4426), sex unknown, collected in November 1984.

Kranj: 1 skull (PMS 295), a juvenile male, collected as a carcass on 1 September 1975 by Boris Kryštufek.

Kranj, Brnik: 1 skull (PMS 6032), a female, collected on 8 November 1987 by Boris Leskovic.

Kranjska Gora: 1 skin with a skull (PMS 7764), a male, road casualty, collected on 14 May 1990 by Janez Gregori.

Kranjska gora, Srednji vrh: 1 skin with a skull (PMS 9091), a male, collected on 30 October 1990 by Janez Gregori.

LD Ivančna Gorica: 1 skull (PMS 4458), a female, collected in December 1984.

LD Izola: 1 skull (PMS 4535), sex unknown, collected on 18 January 1985 by Boris Kryštufek.

LD Kajuh: 1 skull (PMS 5542), sex unknown, collected in 1986.

LD Košana (now LD Gradišče Košana): 1 skull (PMS 3060), a female, collected on 22 November 1983.

LD Loče: 1 skull (PMS 4480), sex unknown, collected on 26 November 1984.

LD Pšata: 1 skull (PMS 5562), sex unknown, collected in September 1986.

LD Rogaška Slatina: 1 skull (PMS 3062), a male, collected on 22 November 1983. – 1 skull (PMS 5540), sex unknown, collected in 1986; 1 skull (PMS 5551), sex unknown, collected in 1986.

Table 10. Geographic representation and preparations of Brown Hares *Lepus europaeus* in the Mammal Collection of the Slovenian Museum of Natural History

Tabela 10. Geografska zastopanost in preparati poljskega zajca *Lepus europaeus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

Country Država	Taxidermy Taksidermija	Skin Koža	Skull Lobanja	Skeleton Okostje	No individuals Št. osebkov
Slovenia	4	7	46	1	52
Bosnia and Herzegovina			1		1
Croatia		2	1		3
Czech Republic		1	1		1
Hungary			1		1
Macedonia		1	3		3
Montenegro			1		1
Serbia		1	7		7
no history[2]	2		1		3
Total	6	12	62	1	**72**

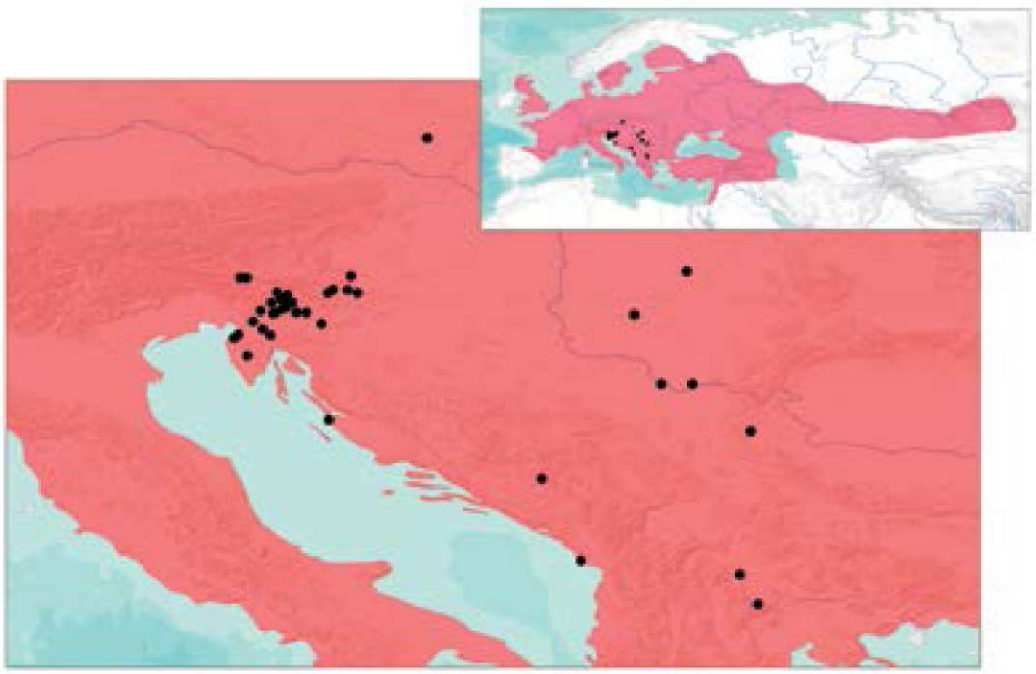


Figure 20. Geographic origin of Brown Hares *Lepus europaeus* in the Mammal Collection of the Slovenian Museum of Natural History. Range follows Smith & Johnston (2008b) and Vuković (2010).

Slika 20. Geografski izvor poljskih zajcev *Lepus europaeus* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vira za območje razširjenosti sta Smith & Johnston (2008b) in Vuković (2010).

LD Ruše: 1 skull (PMS 5541), sex unknown, collected in 1986; 1 skull (PMS 5550), sex unknown, collected in November 1986; 2 skulls (PMS 5563, 5640), sex unknown, collected in September and November 1986, respectively.
LD Šmarna gora: 1 skull (PMS 5561), sex unknown, collected in 1986.
LD Vič (now LD Brezovica, but the borders not exactly the same): 1 skull (PMS 5119), a male, collected on 17 November 1985 by Boris Leskovic.
LD Vodice: 1 skull (PMS 4479), sex unknown, collected on 18 December 1984 by Boris Kryštufek.
LD Vojkovo (now LD Vojkovo Podnanos): 1 skull (PMS 3061), a male, collected on 22 November 1983.
LD Žalec: 1 skull (PMS 4481), sex unknown, collected on 10 December 1984.
Ljubljana (on the road Ižanska cesta): 1 skin with a skull (PMS 9095), a male, collected on 28 April 1991 by Darc Šerc.
Ljubljana: 1 skull (PMS 9093), sex unknown, collected in 1987 by Boris Leskovic.
Ljubljana, Bistra: 1 skull (PMS 5118), a male, collected on 30 October 1985 by Boris Leskovic.
Ljubljana, Črnuče: 1 mounted skeleton (PMS 19644), a female, collected on 22 December 1927 and donated to the Museum by A. Shuster (#335 in the old CATALOGUE).
Ljubljana, Gameljne: 1 skull (PMS 4459), a female, collected on 25 November 1984.
Ljubljana, Grosuplje: 1 skin with a skull (PMS 623), a female, collected on 31 October 1976 by Niko Mikolič.
Ljubljana, Kozlerjeva gošča: 1 skull (PMS 6031), a male, collected on 5 December 1987.
Ljubljana, Mestni log: 1 skull (PMS 5022), a female, collected on 3 October 1985 by Boris Leskovic.
Ljubljana, Rakova Jelša: 1 skull (PMS 5023), a female, collected on 14 October 1985 by Boris Leskovic. – 1 skull (PMS 5434), a female, collected on 16 October 1986 by Boris Leskovic. – 1 skull (PMS 5552), a male, collected in October 1986 by Boris Leskovic.
Ljubljana, Pirniče: 1 taxidermy (PMS 19648), male, collected on 13 January 1960 (prepared by Franc Barbič); re-catalogued from the old collection, #639 in the CATALOGUE (cf. below). Between 1956 and 2012, this mount was exhibited in the large forest diorama.
Ljubljana, Tacen: 1 taxidermy (PMS 19647), an unsexed juvenile, collected on 12 February 2009; done in by taxidermist Leopold Gerdej.
Ljubljana, Tomačevo: 1 skull (PMS 2904), sex unknown, collected in 1982.
Ljubljana, Vič: 1 skull (PMS 9094), sex unknown, collected in the winter 1987-1988 by Boris Leskovic.
Ljubljana, Vič, Dolgi most: 1 skull (PMS 20054), a male, collected on 11 April 2013 by Mojca Jernejc Kodrič and Urška Kačar.
Ljubljana, Vnanje Gorice: 1 skull (PMS 9092), a female, collected on 9 November 1987 by Boris Leskovic.
No history: 1 skin (PMS 19673), done in the Museum workshop in 21 September 1990, but anonymous through loss of appropriate labels. – 2 taxidermies (PMS 19645, 19646), sex and origin not recorded (purchased in 2010 from taxidermist Jožef Mauser); PMS 19645 was put on display in the large forest diorama in 2012.

Bosnia and Herzegovina:
Tjentište (on the road to Čemerno): 1 skull (PMS 18075), a female, road casualty, found on 13 September 2010 by Boris Kryštufek.

Croatia:
Istria, Pazin, Vela Traba (355 m a.s.l.): 1 skull (PMS 19672), sex not recorded, collected on 18 December 2011 by Milan Ladavac (donated by Toni Koren).
Zadar, Zaton: 2 skins (PMS 3514, 3515), sex unknown, collected in the winter 1983-1984, obtained from a local hunter by Boris Kryštufek.

Czech Republic:
Mikulov, Valtice: 1 skin with a skull (PMS 9243), a male, road casualty, collected on 10 April 1992 by Boris Kryštufek.

Hungary:
Gyula, Csandapaca: 1 skull (PMS 18884), a female, road casualty, collected on 8 October 2011 by Boris Kryštufek.

Macedonia:
Kožuf Mt., Konopište: 2 skulls (PMS 229, 230), a male and a female, collected on 5 and 13 November 1975, respectively; obtained from Milan Tasev, a local hunter, by Boris Kryštufek.
Titov Veles (now Veles): 1 skin with a skull (PMS 8374), a female, collected on 23 November 1990 by Boris Kryštufek.

Montenegro:
Ulcinj: 1 skull (PMS 3063), sex unknown, collected on 12 November 1983, obtained from a local hunter by Boris Kryštufek.

Serbia:
Beograd, Mirjevo: 1 skin with a skull (PMS 9090), sex unknown, collected on 28 October 1990 by Davor Beaković.
Voivodina, Kovin, Gaj: 1 skull (PMS 18502), sex unknown, a road casualty, collected on 29 January 2011 by Boris Kryštufek.
Voivodina, Senta: 4 skulls (PMS 3055-3058), sex unknown, collected in November 1983 by Andrej Bidovec.
Zlot, canyon of the River Lazareva reka: 1 skull (PMS 2881), sex unknown, prey of *Aquila chrysaetos*, collected in September 1982 by Georg Džukić.

No locality (probably Slovenia):
1 skull (PMS 19463), sex and date unknown, present in the Museum before 1980; possibly identical with either #275 or #497 (Catalogue) in the old collection. –1 taxidermy (PMS 19649) (Fig. 22), obtained on 1 October 1971 from Ursuline Women's High School Uršulinska ženska gimnazija in Ljubljana (1928-1945). – 1 taxidermy (PMS 20052), unsexed juvenile, originally labelled *Lepus timidus*; determination was subsequently changed to *europaeus*; catalogued in 1888-89 under #141.

The following vouchers are recorded in the Catalogue:

V Katalogu so zavedeni sledeči primerki:

#138: a male (sex recorded in the Files, not in the Catalogue), catalogued in 1888-89 (according to the Files in 1890); originally identified as *Lepus timidus*; determination was subsequently changed to *L. europaeus*; disposed in December 1949.

#139: a male (sex recorded in the FILES, not in the CATALOGUE), catalogued in 1888-89; originally identified as *Lepus timidus*; determination was subsequently changed to *L. europaeus*.

#140: originally identified as "*Lepus timidus var.*" and "Feldhafe"; the abbreviation "var." evidently does not mean "*variabilis*". Catalogued in 1888-89; discarded in "7/9 1894" (probably 7 September 1894). Not recorded in the FILES.

#141: a taxidermic specimen, still in the Museum. Originally catalogued in 1888-89, re-catalogued in 2013 as PMS 20052 (see above).

#200: a male (sex recorded in the FILES, not in the CATALOGUE), originally labelled as *Lepus timidus*; the identification subsequently changed to *europaeus*. Collected at Črnuče; donated by Johan [Ivan] Luckmann, a merchant from Ljubljana; exhibited in 1890; disposed from the Museum on 5 March 1948. This donation was recorded in the "PROCEEDINGS 1892:193", which covers the period from 1. September 1890 till the end of 1891.

#275: a skull, obtained on 22 January 1923 from taxidermist Herfort. The first brown hare in the CATALOGUE which was labelled as *Lepus europaeus;* afterwards the name *europaeus* was consistently used for all subsequent acquisitions of brown hares.

#328: a male, collected on 15 November 1926 at Črni Vrh near Polhov Gradec and catalogued that same year; purchased from taxidermist Herfort.

#334: a male, collected on 8 January 1928 at Črnuče; donated by merchant A. Schuster from Ljubljana and catalogued in 1928; disposed from the Museum on 20 March 1956. This specimen and #335 (now PMS 19644) are the first hares that were scored for external dimensions (see Table 11).

#335: voucher specimen still present in the Museum; re-catalogued in 2013 under the PMS 19644 (see above).

#347: a male, collected on 2 February 1929 at Črnuče and catalogued that same year; donated to the Museum by A. Schuster. Disposed in May 1954.

#497: a skull, obtained in 1946 from Stanko Bevk.

#555: a male, collected on 30 November 1952 at Smlednik; donated to the Museum by F. Barbič, Jr.; prepared by F. Barbič; disposed at unknown time; scored for external dimensions that had evidently been wrongly recorded (not reported in Table 11).

#556: a female, collected on 11 January 1953 at Rigel pri Medvodah; donated to the museum by F. Barbič, Jr., prepared by F. Barbič; disposed on 20 September 1956; scored for external dimensions that had evidently been wrongly recorded (not reported in Table 11).

#639: a taxidermic specimen, still in the Museum. Re-catalogued in 2013 as PMS 19648 (see above).

PROCEEDINGS (1893) report on donation of a hare skin (donated by Mr. Regoršek, merchant from Ljubljana). This acquisition was not catalogued (see the CATALOGUE).

The majority of Brown Hares (= 72%) in the Collection are from Slovenia. Collecting was most intensive in the 1980s (38 hares gathered) for the purposes of the "Mammals of Slovenia" project. Inspection of labels shows that Slovenian animals with known dates of collection (N = 37) were obtained between September and June; three quarters (N = 27, 73%) of these hares are

OBRAVNAVE (1893) navajajo tudi donacijo kože poljskega zajca, ki jo je daroval g. Regoršek, trgovec iz Ljubljane. Ta pridobitev ni bila katalogizirana (glej KATALOG).

Večina poljskih zajcev (= 72 %) v Zbirki je iz Slovenije. Zbiranje je bilo najbolj intenzivno v 80-ih letih preteklega stoletja (zbranih 38 zajcev) za namene projekta "Sesalci Slovenije". Pregled etikete pokaže, da so bile živali v Sloveniji z znanim datumom zbiranja (N = 37) dobljene med septembrom in junijem; tri četrtine (N = 27) teh zajcev je iz obdobja med

from the 1 October – 15 December period, i.e. from the hunting season stipulated by the law.

Fourteen Brown Hares were catalogued in the CATALOGUE between 1888 and 1960, with five of them from the 19th century. Museum vouchers were disposed from the Museum gradually over six decades: 1894 (1 specimen), 1948 (1 specimen), 1949 (1 specimen), 1954 (1 specimen), and 1956 (2 specimens); the remaining vouchers were discarded at unknown times.

NOMENCLATURE

FREYER (1842:5) reported the Brown Hare as "*L.[epus] timidus* L.", with the following vernacular names "gemeiner hafe" and "Feldhafe" (German), and "divji sajz" in Slovene ["krainifch or windifch"], with "sajka" for a female. The name *timidus* was in use for Brown Hare *Lepus europaeus* throught the 19th century and into the early 20th century; in the former Yugoslavia, it was still in use in the 1920s (MARTINO 1935).

The oldest Brown Hares in the Museum (#138–141 from 1888-1889 and #200 from 1890-1891) were labelled as "*Lepus timidus*", but accompanied by the German vernacular "Feldhafe"; this no doubt implies taxonomic identity of animals. The name *L. europaeus*, in combination with the Slovene vernacular "poljski zajec" (= field hare), was used for the first time for the acquisition #275 (catalogued in 1923) and was consistently used for all subsequent acquisitions of Brown Hares. The common name "poljski zajec" was used already in PROCEEDINGS (1892: 193) for the acquisition #200; it remained in permanent use throughout the 20th century (KOS 1933, BEVK 1957, MIRIĆ 1970, KRYŠTUFEK 1991, KRYŠTUFEK & JANŽEKOVIČ 1999).

TAXONOMY

Brown Hare is a polytypic species; HOFFMANN & SMITH (2005) list 16 subspecies with unresolved borders of their ranges. The only taxonomic revision of hares occupying the former Yugoslavia was conducted by MARTINO (1935) who recognized two subspecies "which can be

1 oktobrom in 15. decembrom, torej iz lovne sezone, kot jo določa zakon.

Med letoma 1888 in 1960 je bilo vknjiženih v KATALOG 14 zajcev, od katerih jih je bilo pet iz 19. stoletja. Preparate so postopno odstranili iz Muzeja v teku šestih desetletij: po en primerek v letih 1894, 1948, 1949 in 1954, leta 1956 pa dva primerka. Čas, v katerem je bil zavržen preostali material, ni znan.

POIMENOVANJE

FREYER (1842:5) je navedel poljskega zajca z imenom "*L.[epus] timidus* L.", dodal pa je tudi sledeča narodna imena: "gemeiner hafe" in "Feldhafe" (nemško) in "divji sajz" v slovenščini ["krainifch or windifch"]; za samico navaja ime "sajka". Ime *timidus* je bilo v rabi za poljskega zajca *Lepus europaeus* vse 19. stoletje in na začetku 20. stoletja; v nekdanji Jugoslaviji so ga uporabljali še v 20-ih letih preteklega stoletja (MARTINO, 1935).

Najstarejši poljski zajci v Muzeju (#138–141 iz let 1888-1889 in #200 iz 1890-1891) so bili določeni kot "*Lepus timidus*", dodano pa jim je tudi nemško ime "Feldhafe"; slednje ne dopušča nobenih dvomov glede dejanske taksonomski identitete živali. Ime *L. europaeus*, v kombinaciji s slovenskim imenom "poljski zajec", je bilo prvič uporabljeno za primerek, ki je bil katalogiziran leta 1923 pod številko #275. To ime se je odtlej dosledno navajalo pri vseh pridobljenih primerkih. Slovensko ime "poljski zajec" se prvič omenja v OBRAVNAVAH (1892: 193) za pridobitev #200; kasneje je bilo v rabi skozi celotno 20. stoletje (KOS 1933, BEVK 1957, MIRIĆ 1970, KRYŠTUFEK 1991, KRYŠTUFEK & JANŽEKOVIČ 1999).

TAKSONOMIJA

Poljski zajec je politipska vrsta: HOFFMANN & SMITH (2005) navajata 16 podvrst, katerih meje niso razrešene. Edino taksonomsko revizijo zajcev z ozemlja nekdanje Jugoslavije je opravil MARTINO (1935). Prepoznal je dve podvrsti , "ki se razlikujejo le z *veliko*

distinguished only with *great difficulty*" (italicized emphasis by Martino), and only in larger samples. These subspecies were mainly distinguished by their size: the occipitonasal length in "full grown adults" of *L. e. transsylvanicus* Matschie, 1901 "nearly always exceeds 100 mm", while this "rarely exceeds 100 mm" in *L. e. meridiei* Hilzheimer, 1906; corresponding cut-off for hind foot length is 140 mm. Besides, the rump in *transsylvanicus* was said to be more grey-washed than in *meridiei*. MARTINO (l.c.) evidently built on MILLER (1912), who reported the range of *transsylvanicus* to stretch between Romania and Peloponnesus (including British Museum vouchers from Bosnia and Herzegovina, and Albania), and that of *meridiei* to range between South-Eastern France and the Island of Corfu. As seen from Table 11, the great majority of Brown Hares in the Museum belong to the large morphotype.

Although the PMS material was collected with the intention to assess the geographic variation, this never materialized. Morphometric ranges for the Slovenian population were published based on 27 hares: W ≤ 5 kg, H&B 500-610, TL 80-115, HF 135-153, E 102-140, CbL 85-92.1 (KRYŠTUFEK 1991). In Slovenia, hares were widely translocated between the regions, a practice initiated in 1926 at the latest. Since the1960s, hares were also imported from Croatia, Serbia and Czechoslovakia and released in various regions of Slovenia. Numbers of translocated animals were considerable, e.g. 2,527 hares were imported between December 1968 and January 1969, with the majority of them (68.7%) coming from the former Czechoslovakia (mainly Moravia). The practice continued until 1975 (KRYŠTUFEK 1991) and its possible impact on the genetic makeup and morphology of native hares is not known.

First hares in the Museum, which were scored for external dimensions, were acquired in 1927-1928 (#334 and #335). This attempt to quantify the morphotype more accurately possibly suggests that the Museum staff developed interest in subspecific taxonomy.

težavo" (poudarek v poševnem tisku je Martinojev) in samo v večjih serijah. Podvrsti sta se v glavnem razlikovali po velikosti: okcipitonazalna dolžina "povsem odraslih" primerkov *L. e. transsylvanicus* Matschie, 1901 "skoraj vselej presega 100 mm", medtem ko pri *L. e. meridiei* Hilzheimer, 1906 "redko presega 100 mm"; razmejitvena vrednost za dolžino stopala je navedena kot 140 mm. Poleg tega je križ pri *transsylvanicus* bolj izrazito sivkast kot pa pri *meridie*. MARTINO (l.c.) je očitno gradil na taksonomiji MILLER-ja (1912), po katerem je območje *transsylvanicus* segalo od Romunije do Peloponeza; tej podvrsti je pripisal tudi material iz Bosne in Hercegovine in Albanije. V podvrsto *meridiei* je Miller uvrstil zajce z ozemlja med jugovzhodno Francijo in otokom Krf. Kot je razvidno iz tabele 11, pripada večina poljskih zajcev v muzejski Zbirki večjemu morfotipu.

Čeprav je bil material zajcev v Zbirki Muzeja zbran z namenom ovrednotenja geografske variabilnosti, do tega ni nikoli prišlo. Objavljeni so bili edinole morfometrični podatki (v obliki razponov variacijske širine) serije 27 zajcev iz Slovenije: W ≤ 5 kg, H&B 500-610, TL 80-115, HF 135-153, E 102-140, CbL 85-92,1 (KRYŠTUFEK, 1991). V Sloveniji so najkasneje leta 1926 pričeli preseljevati zajce med posameznimi območji. Od 60-ih let prejšnjega stoletja so zajce tudi uvažali iz Hrvaške, Srbije in Češkoslovaške in jih izpuščati v različne predele Slovenije. Obseg tega preseljevanja je bil znaten; samo med decembrom 1968 in januarjem 1969 so izpustili 2527 zajcev, katerih večina (68,7 %) je bila iz bivše Češkoslovaške (predvsem z Moravskega). Ta praksa je potekala vse do leta 1975 (KRYŠTUFEK 1991), njenega možnega vpliva na genetski zapis in morfologijo avtohtonih zajcev pa ne poznamo.

V Muzeju so prve poljske zajce premerili in zapisali njihove zunanje dimenzije v letih 1927-1928 (#334 in #335). Ta poskus kvantificiranja morfološke variabilnosti morda kaže na naraščajoče zanimanje za podvrstno taksonomijo.

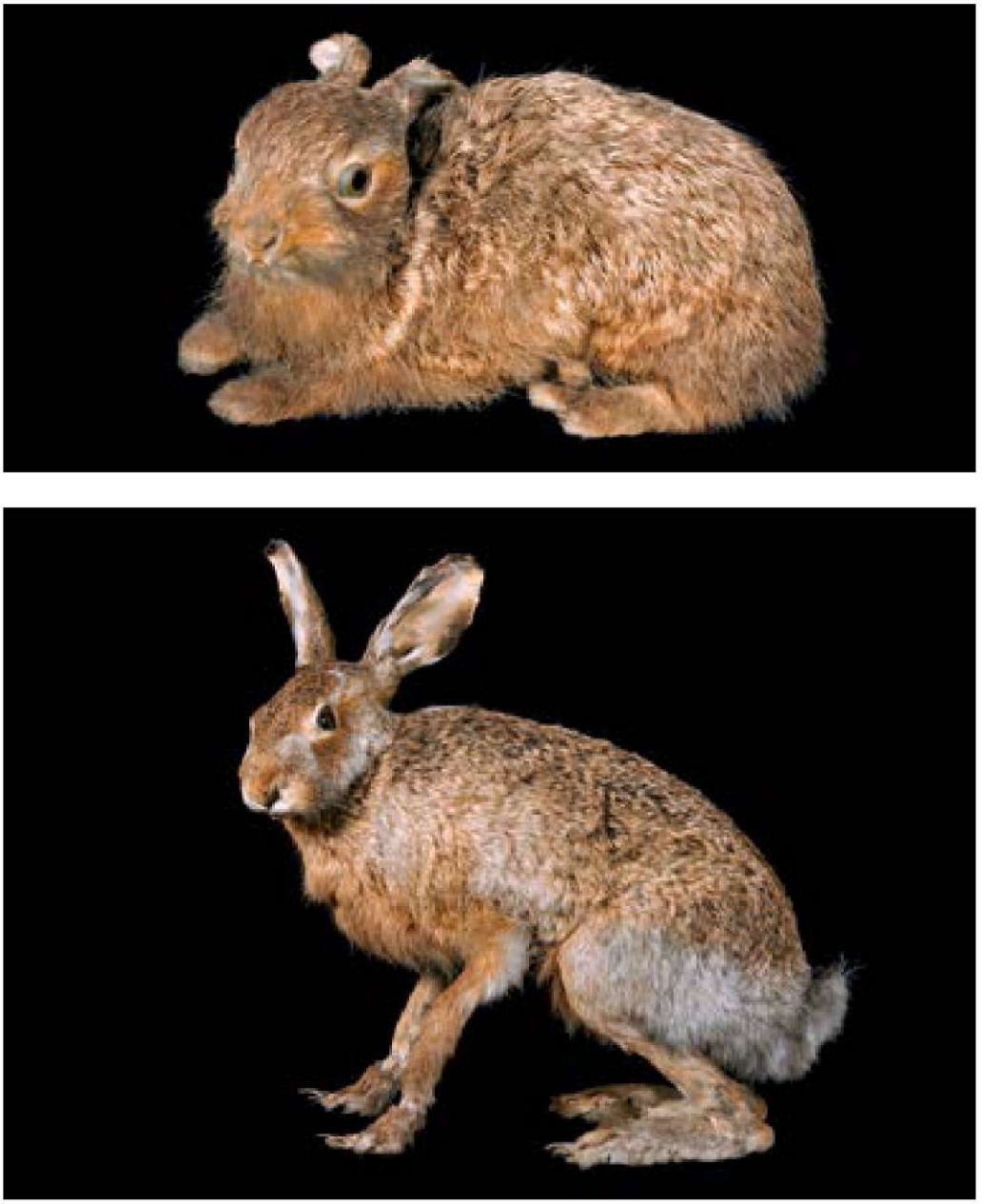


Figure 21. Taxidermic mounts of Brown Hares *Lepus europaeus*. Top: PMS 20052, originally catalogued in 1888-89. Bottom: PMS 19648 from Pirniče near Ljubljana, Slovenia, collected on 13 January 1960. Photo: Ciril Mlinar

Slika 21. Dermoplastična preparata poljskih zajcev *Lepus europaeus*. Zgoraj: PMS 20052, prvotno katalogiziran v letih 1888-89. Spodaj: PMS 19648 iz Pirnič pri Ljubljani, zbran 13. januarja 1960. Foto: Ciril Mlinar

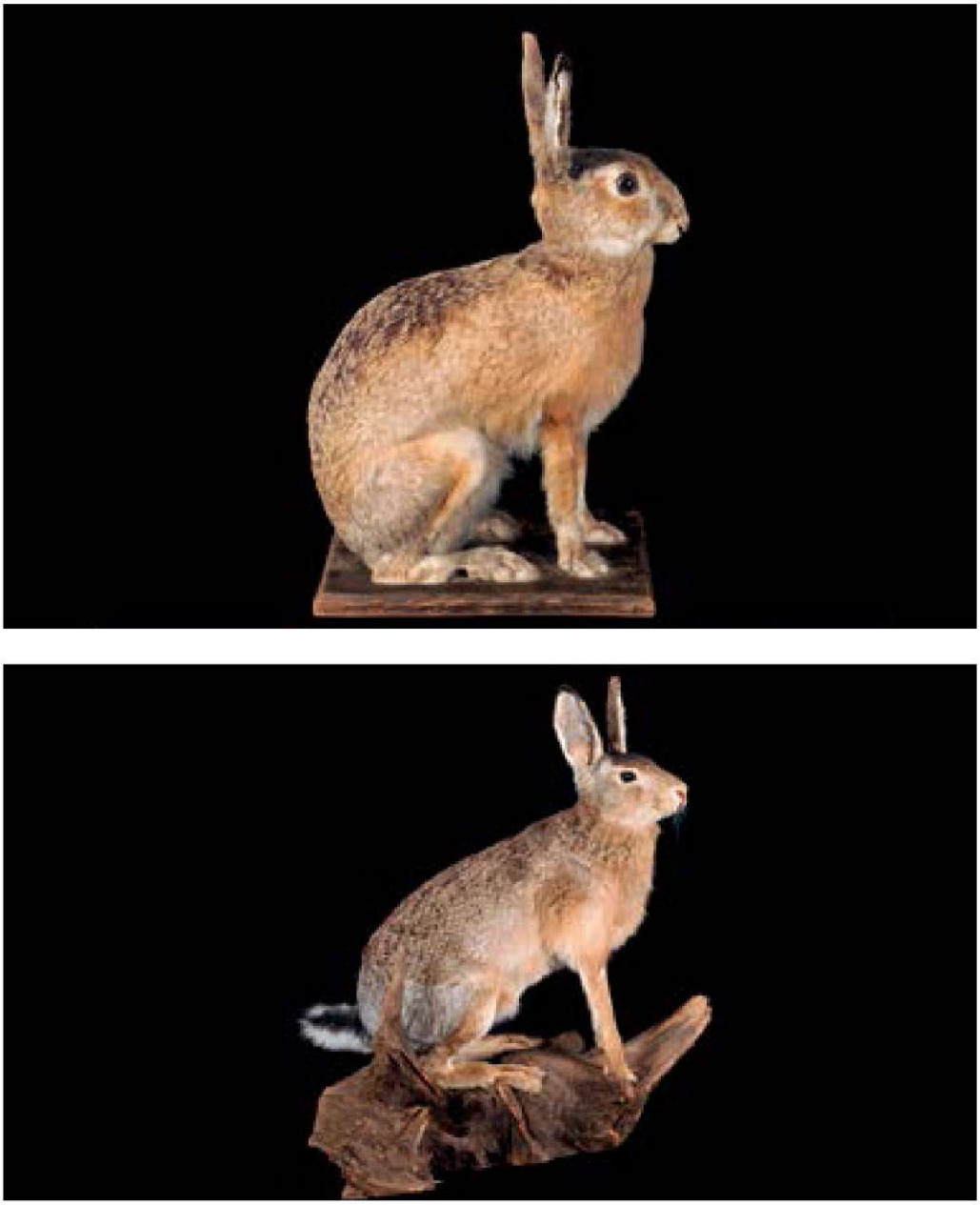


Figure 22. Taxidermic mounts of Brown Hares *Lepus europaeus*. Top: PMS 19649; from the former Ursuline Women's High School in Ljubljana. Bottom: PMS 19645, collected in Slovenia; purchased in 2010 from the workshop of Jožef Mauser. Photo: Ciril Mlinar

Slika 22. Dermoplastiki poljskih zajcev *Lepus europaeus*. Zgoraj: PMS 19649; iz nekdanje Uršulinske ženske gimnazije v Ljubljani. Spodaj: PMS 19645, pridobljen v Sloveniji; kupljen leta 2010 v delavnici Jožefa Mausarja. Foto: Ciril Mlinar

Figure 23. A skeleton of Brown Hare *Lepus europaeus*, collected on 22 December 1927 near Ljubljana, Slovenia. PMS 19644; recorded in the CATALOGUE as #335. Photo: Ciril Mlinar

Slika 23. Okostje poljskega zajca *Lepus europaeus*, zbranega 22. decembra 1927 v okolici Ljubljane. PMS 19644; v KATALOGU zaveden pod številko #335. Foto: Ciril Mlinar

Figure 24. Carded skin (dorsal and ventral views) of Brown Hare *Lepus europaeus*; specimen PMS 623 from Grosuplje, Slovenia, collected on 31 October 1976. Photo: Ciril Mlinar

Slika 24. Ploščata koža (hrbtna in trebušna stran) poljskega zajca *Lepus europaeus*; primerek PMS 623 iz Grosupelj, Slovenija, zbran 31. oktobra 1976. Foto: Ciril Mlinar

Figure 25. Skin (dorsal, lateral and ventral views) of Brown Hare *Lepus europaeus*; specimen PMS 9095 from Ljubljana, Slovenia, collected on 28 April 1991. Photo: Ciril Mlinar

Slika 25. Koža (hrbtna, bočna in trebušna stran) poljskega zajca *Lepus europaeus*; primerek PMS 9095 iz Ljubljane, zbran 28. aprila 1991. Foto: Ciril Mlinar

Figure 26. Skin (dorsal, lateral and ventral views) of Brown Hare *Lepus europaeus*; specimen PMS 9091 from Srednji vrh near Kranjska gora, Slovenia, collected on 30 October 1990. Photo: Ciril Mlinar

Slika 26. Koža (hrbtna, bočna in trebušna stran) poljskega zajca *Lepus europaeus;* primerek PMS 9091 iz Srednjega vrha pri Kranjski gori, Slovenija, zbran 30. oktobra 1990. Foto: Ciril Mlinar

Figure 27. Skin of Brown Hare *Lepus europaeus*, specimen PMS 3514 from Zaton near Zadar, Croatia, collected in winter 1983-84. Photo: Ciril Mlinar

Slika 27. Koža poljskega zajca *Lepus europaeus*, primerek PMS 3514 iz Zatona pri Zadru, Hrvaška, zbran v zimi 1983-84. Foto: Ciril Mlinar

Figure 28. Skin (dorsal, lateral and ventral views) of Brown Hare *Lepus europaeus*; specimen PMS 9243 from Valtice near Mikulov, Czech Republic, collected on 10 April 1992. Photo: Ciril Mlinar

Slika 28. Koža (hrbtna, bočna in trebušna stran) poljskega zajca *Lepus europaeus*; primerek PMS 9243 iz Valtic pri Mikulovu, Češka, zbran 10. aprila 1992. Foto: Ciril Mlinar

Figure 29. Skin (dorsal, lateral and ventral views) of Brown Hare *Lepus europaeus*; specimen PMS 8374 from Veles, Macedonia, collected on 23 November 1990. Photo: Ciril Mlinar

Slika 29. Koža (hrbtna, bočna in trebušna stran) poljskega zajca *Lepus europaeus*; primerek PMS 8374 iz Velesa, Makedonija, zbran 23. novembra 1990. Foto: Ciril Mlinar

Figure 30. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Brown Hare *Lepus europaeus* from Ljubljana, Slovenia. Specimen PMS 9095, collected on 28 April 1991. Photo: Boris Kryštufek

Slika 30. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) poljskega zajca *Lepus europaeus* iz Ljubljane. Primerek PMS 9095, zbran 28. aprila 1991. Foto: Boris Kryštufek

Figure 31. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Brown Hare *Lepus europaeus* from Vela Traba near Pazin, Croatia. Specimen PMS 19672, collected on18 December 2011. Photo: Boris Kryštufek

Slika 31. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) poljskega zajca *Lepus europaeus* iz Vele Trabe pri Pazinu, Hrvaška. Primerek PMS 19672, zbran 18. decembra 2011. Foto: Boris Kryštufek

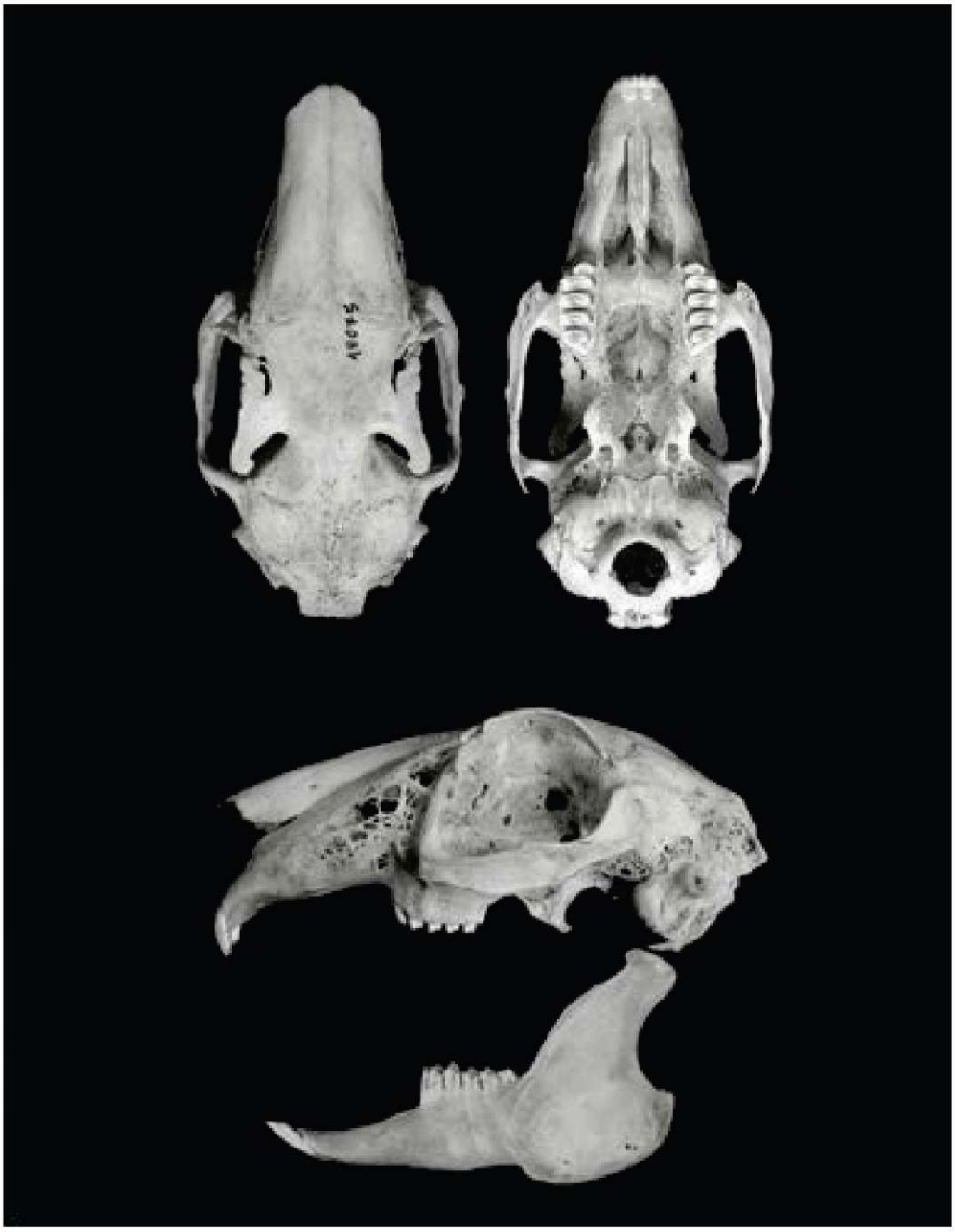


Figure 32. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Brown Hare *Lepus europaeus* from Tjentište, Bosnia and Herzegovina. Specimen PMS 18075, collected on13 September 2010. Photo: Boris Kryštufek

Slika 32. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) poljskega zajca *Lepus europaeus* s Tjentišta, Bosna in Hercegovina. Primerek PMS 18075, zbran 13. septembra 2010. Foto: Boris Kryštufek

Table 11. External and cranial dimensions of Brown Hares *Lepus europaeus* in the Mammal Collection of the Slovenian Museum of Natural History. Age groups: sad. – subadults (less than 8 month old); ad.I – young adults (9–12 months old); ad.II – adults (more than 1 year old). Age criteria follow CABÓN-RACZYŃSKA (1964). [a]Measured on the zygomatic root of the temporal bone; [b]length of the row of cheek-teeth; [c]voucher specimen not preserved.

Tabela 11. Zunanje in lobanjske dimenzije poljskih zajcev *Lepus europaeus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. Starostne skupine: sad. – subadulti (mlajši od 8 mesecev); ad.I – mladi odrasli (starost 9–12 mesecev); ad.II – odrasli (starejši od enega leta). Starostni kriteriji so povzeti po CABÓN-RACZYŃSKA (1964). [a]Merjeno na lični korenini senčnice; [b]dolžina niza kočnikov; [c]primerek ni ohranjen.

Country/region	PMS No.	Sex	Age	W	H&B	TL	HF	E	OnL	CbL	ZgB[a]	UTR[b]
NW Slovenia	7764	♂	ad.II	3900	570	89	158	115	101.0	89.6	46.0	17.1
	9091	♂	ad.I	2400	550	92	165	112	92.4	81.7	43.7	15.4
NE Slovenia	3062	♂	ad.II		570	115	138	116	95.9	83.1	46.8	17.7
	4480		ad.II						97.7	87.7		17.4
	5540		ad.II						101.5	90.3	46.4	18.9
	5541		ad.I						95.5	84.3	46.4	17.0
	5550		sad.						81.9	72.7	42.4	14.5
	5551		ad.II						106.0	88.2	45.7	18.3
	5563		ad.II						101.0	88.5	47.5	17.7
	5640		ad.II						102.3	89.3	45.5	18.9
Central Slovenia	623	♀	ad.II	5000	610	95	150	115	102.7	89.0	46.0	16.4
	2904		ad.II						102.0	88.8	45.5	18.8
	4458	♀	ad.I						94.1	83.1	44.4	16.4
	4459	♀	ad.II						96.2	85.0	46.2	17.0
	4479		ad.II						101.1	89.0	48.1	18.1
	4481		ad.II						102.0	89.8	46.8	18.2
	5022	♀	ad.II		580		145	140	97.6	87.6	46.6	17.6
	5023	♀	ad.II							89.8	47.5	18.0
	5118	♂	ad.II						95.6	85.4	45.2	17.2
	5119	♂	ad.II	4600					104.8	90.0	49.1	18.2
	5418		ad.II						94.4	84.0	48.0	17.0
	5434	♀	ad.I						98.8	87.8	47.5	18.6
	5542		ad.II						95.9	84.4	44.6	17.0
	5552	♂	ad.II						99.7	87.0	45.6	17.8
	5561		ad.II						101.1	88.4	47.0	17.8
	5562		ad.II						100.4	85.2	43.0	17.2
	6031	♂	ad.II									18.5
	6032	♀	ad.II									16.8
	9092	♀	ad.II						98.5	86.3	46.9	17.5
	9093		ad.II						96.2	84.9	46.5	17.0
	9094		ad.II						100.7	87.7	46.6	18.0
	9095	♂	ad.II	4000	600	100	147	115	102.9	89.6	47.4	17.7
	19644	♀	ad.I		330	75	145	120	101.4	89.9	47.1	18.5
	19674		sad.								42.6	15.6
	20054	♂	ad.II		645	115	150	111	105.8	91.6	45.2	17.2

Country/region	PMS No.	Sex	Age	W	H&B	TL	HF	E	OnL	CbL	ZgB[a]	UTR[b]
	#334[c]	♂			345	82	150	125				
SW Slovenia	3052		sad.		550	100	142	103	88.0	78.7	45.3	16.0
	3053		sad.		490	85	138	110	85.7	76.2	44.6	15.5
	3054		ad.II		560	95	135	102	96.8	85.3	16.4	17.7
	3059		ad.II		600	80	142	111	99.2	88.6	48.2	18.8
	3060	♀	ad.I		565	110	143	108		83.1	43.4	16.4
	3061	♂	ad.I		600	110	153	112	100.0	88.2	46.1	16.7
	4425		ad.II		540	95	153	113	98.0	89.9	48.1	17.2
	4426		ad.II		500	90	150	110	97.0	85.2	46.4	16.0
	4535		ad.I						93.0	81.7	45.1	16.5
	20191	♂	juv.	407	250	45	84.5	59.6	55.7	49.2	32.4	
SE Slovenia	3258		ad.II						101.8	90.6	48.1	18.3
Bosnia & Herz.	18075	♀	ad.II		535	105	170	110	101.6	91.0	49.7	19.0
Croatia	19673		ad-I						96.4	84.4	47.5	16.6
Czech Republic	9243	♂	ad.II	4200	550	90	155	110	103.6	90.0	46.9	18.8
Hungary	18884	♀	ad.I		570	100	148	110	98.8	87.1	46.0	18.7
Macedonia	229	♂	sad.						87.9	81.9	44.6	16.1
	230	♀	sad.						86.5	78.6		16.7
	8374	♀	ad.I		596	67	158	112				17.6
Montenegro	3063		ad.I							83.1	45.6	18.1
Serbia	2881		ad.II						94.1	84.0	46.1	17.7
	3055		ad.II						101.6	88.3	47.4	19.1
	3056		ad.II						102.7	90.3	47.4	19.0
	3057		ad.II						103.8	91.0	48.3	19.4
	3058		ad.II						103.6	91.3	47.8	19.0
	9090		sad.	2300	570	89	158	115	82.0	72.8	43.0	15.2
	18502		ad.II						100	88.7	49.7	17.7

Lepus saxatilis F. Cuvier, 1823

Scrub Hare

Grmiščni zajec

Collection

Zbirka

Republic of South Africa:

Eastern Cape Province, Grahamstown, Great Fish River Reserve, Top House Bucklands (456 m a.s.l.): 1 skin with a skull (PMS 17668), sex unknown, collected as a carcass on 24 February 2005 by Boris Kryštufek.

Determination is based on white colouration of the underparts, without ochraceous-buffy bands (Skinner & Chimimba 2005). Besides, the Scrub Hare is the only hare recorded in the Great Fish River Reserve (AVKR/SKR 1998).

Vrstna določitev temelji na beli obarvanosti spodnje strani telesa, brez rumeno-rjavkastih pasov (Skinner & Chimimba 2005). Poleg tega je grmiščni zajec edina vrsta rodu *Lepus*, ki je bila doslej ugotovljena za Great Fish River Reserve (AVKR/SKR 1998).

The specimen was picked up as fresh carcass in the valley thicket vegetation, consisting of dense stands of woody shrubs and trees interspersed with *Euphorbia* and grass (*Themeda triandra, Sporobolus fimbriatus, Digitaria eriantha*). The site was quite rocky. Hares were rarely observed during our field work in the Great Fish River Reserve in 2001–2005.

Primerek je bil najden kot sveže truplo v dolinski goščavni vegetaciji, sestoječi iz gostih sestojev lesnatih grmov in dreves, pomešanih z mlečki *Euphorbia* in travami (*Themeda triandra, Sporobolus fimbriatus, Digitaria eriantha*). Nahajališče je bilo dokaj skalnato. Med terenskim delom v Great Fish River Reserve v letih 2001–2005 smo zajce opazovali le poredkoma.

Table 12. External and cranial measurements of a Shrub Hare *Lepus saxatilis* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Measured on the zygomatic root of the temporal bone; [b]length of the row of cheek-teeth.

Tabela 12. Zunanje in lobanjske dimenzije grmiščnega zajca *Lepus saxatilis* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Merjeno na lični korenini senčnice; [b]dolžina niza kočnikov.

PMS No.	Age	H&B	TL	HF	E	OnL	CbL	ZgB[a]	UTR[b]
17668	juv.	447	65	96	99.6	65.6	58.3	35.7	12.8

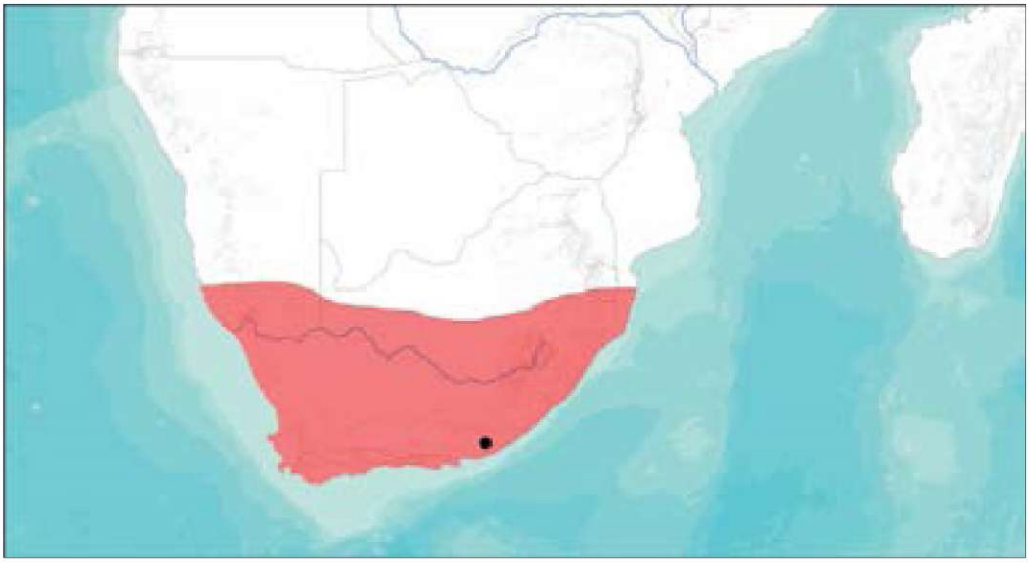


Figure 33. Geographic origin of a Scrub Hare *Lepus saxatilis* in the Mammal Collection of the Slovenian Museum of Natural History. Tentative range of the species is modified from Happold (2013).

Slika 33. Geografski izvor grmiščnega zajca *Lepus saxatilis* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Približna razširjenost vrste je povzeta po Happold-u (2013).

Figure 34. Carded skin (dorsal and ventral views) of Scrub Hare *Lepus saxatilis* from Great Fish River Reserve, Eastern Cape Province, Republic of South Africa. Specimen PMS 17668, collected on 24 February 2005. Photo: Ciril Mlinar

Slika 34. Ploščata koža (hrbtna in trebušna stran) grmiščnega zajca *Lepus saxatilis* iz Rezervata Great Fish River, Vzhodna Kapska Provinca, Južnoafriška republika. Primerek PMS 17668, zbran 24. februarja 2005. Foto: Ciril Mlinar

Figure 35. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Scrub Hare *Lepus saxatilis* from Great Fish River Reserve, Eastern Cape Province, Republic of South Africa. Specimen PMS 17668, collected on 24 February 2005. Photo: Boris Kryštufek

Slika 35. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) grmiščnega zajca *Lepus saxatilis* iz Rezervata Great Fish River, Vzhodna Kapska Provinca, Južnoafriška republika. Primerek PMS 17668, zbran 24. februarja 2005. Foto: Boris Kryštufek

Oryctolagus cuniculus (Linnaeus, 1758)

European Rabbit **Kunec**

COLLECTION ZBIRKA

Slovenia:

Kranj: 1 skull PMS 19653), not sexed, from a captive stock, obtained in 2009 by Alenka Petrinjak.

Ljubljana, Spodnje Gameljne: 1 skull (PMS 19693), sex not known, found in the 1990s by Mojca Jernejc Kodrič.

Mt. Krim, Rakitna, Linte: 1 skull (PMS 16391), sex not known, found in 2002 by Boris Kryštufek.

Croatia:

Island of Pag, Metajna: 1 skull (PMS 5647), a juvenile of unknown sex, found as a carcass on 27 July 1987 by Boris Kryštufek. – Island of Pag, Kolansko polje: 2 skins with skulls (PMS 18712, 18713), sex unknown, collected on October 2011 and 18 December 2011, respectively, by Dare Šere.

Island of Rab, Lopar: 1 skull (PMS 16187), sex not known, found as carcass in July 1995 by Franc Janžekovič.

Czech Republic:

Mladá Boleslav, Radouč: 2 skulls (PMS 19526, 19527), sex unknown, found as carcasses on 4 August 2012 by Boris Kryštufek.

South Bohemia, Ruda (near Veseli na Lužnici): 1 skin with a skull (PMS 8604), a female, collected on November 1967 (No. 0223 in the Zoological collection, Department of Zoology, Charles University, Prague, donated in 1987 by Vladimir Vohralik).

Germany:

Westphalia, Northrhine, Wesel, Hünxe: 1 skull (PMS 9977), a male, collected on 14 February 1994 by Holger Meinig.

Italy:

Isola del Giglio: 1 skull (PMS 19455), sex unknown, found as a mummy in 2012 by Peter Maričić.

Sweden:

Near Malmö: 1 skull (PMS 9358), a juvenile of unknown sex, found as a carcass on 20 June 1992 by Boris Kryštufek.

Table 13. Geographic representation and preparations of European Rabbit *Oryctolagus coniculus* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Captive animal.

Tabela 13. Geografska zastopanost in preparati kunca *Oryctolagus coniculus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Udomačena žival.

Country Država	Skin Koža	Skull Lobanja	No. individuals Št. osebkov
Slovenia		3[a]	3
Croatia	2	4	4
Czech Republic	1	3	3
Germany		1	1
Italy		1	1
Sweden		1	1
Total	3	13	**13**

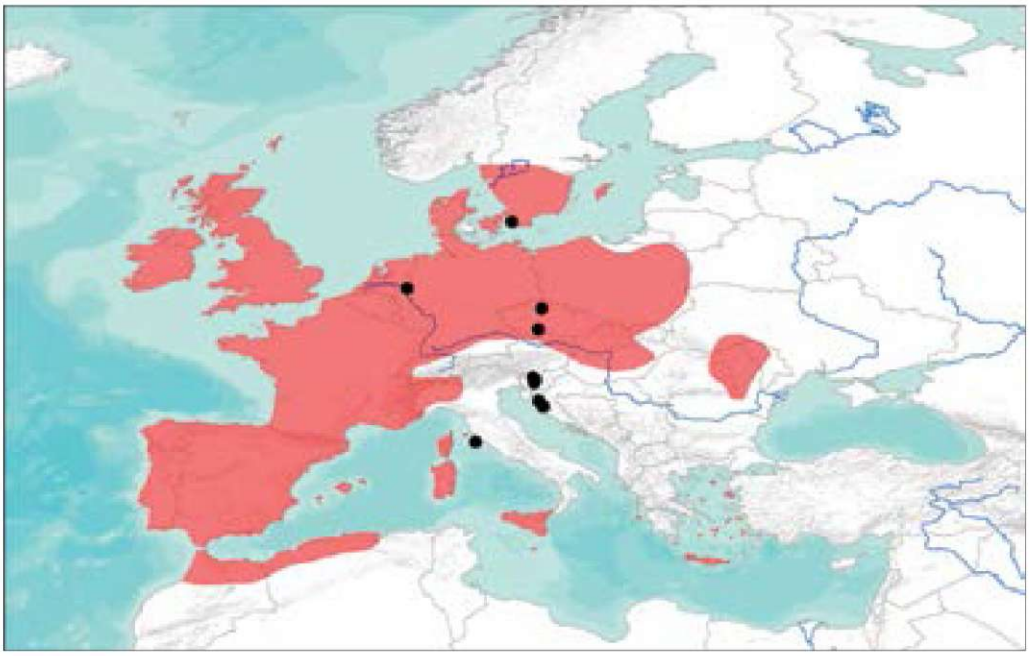


Figure 36. Geographic origin of European Rabbits *Oryctolagus cuniculus* in the Mammal Collection of the Slovenian Museum of Natural History. Tentative range of free-living rabbits is modified from Smith & Boyers (2013a).

Slika 36. Geografski izvor kuncev *Oryctolagus cuniculus* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za približno razširjenost prosto živečih kuncev sta Smith & Boyers (2013a).

Another European Rabbit is registered in the Catalogue under #191: a male (sex recorded in the Files, not in the Catalogue), labelled as *Lepus cuniculus* (Catalogue) and *Cuniculus*

Primerek kunca je zabeležen v Katalogu pod številko #191; gre za samca (spol je zapisan v Kartoteki, ne pa v Katalogu), določenega kot *Lepus cuniculus* (Katalog) oziroma

cuniculus (File), obtained from "Laibach" (= Ljubljana), evidently from a domestic stock; gathered for the Museum by Ferdinand Schulz, probably in the 1880s; disposed on 20 March 1956.

European Rabbit is native to south-western Europe and north-western Africa, but was introduced across Europe and beyond (Smith & Boyer 2008a). PMS specimens originate from the introduced populations (Fig. 36). European Rabbit is a common domestic animal, but there are no free-living colonies in Slovenia. Feral animals have been observed only occasionally (Kryštufek 1991, Janžekovič & Klenovšek 2001). The two cranial fragments (PMS 16391 and 19693), which were found in nature, are evidently of domestic origin. All skulls from Slovenia, PMS 19653 in particular (Fig. 40), differ from feral rabbits by their large size (Table 14). Feral skulls belong to two size classes (Table 14), a larger northern type from Central Europe (Fig. 38), and a smaller Mediterranean type (Fig. 39).

Cuniculus cuniculus (Kartoteka). Kot nahajališče je zapisano "Laibach" (= Ljubljana), tako da gre očitno za domačo žival. Za Muzej ga je pridobil Ferdinand Schulz, verjetno v 80-ih letih 19. stoletja; odstranjen 20. marca 1956.

Kunec je avtohton v jugozahodni Evropi in severozahodni Afriki, naseljen pa je bil v številna območja Evrope in sveta (Smith & Boyer 2008a). Primerki v Zbirki izvirajo iz naseljenih populacij (sl. 36). V Sloveniji je kunec pogosta domača žival, v prosti naravi pa ne živi. Obstajajo le posamična poročila o pobeglih primerkih (Kryštufek 1991, Janžekovič & Klenovšek 2001). Dva fragmenta lobanje (PMS 16391 in 19693), ki sta bila najdena v naravi, sta očitno domačega izvora. Vse lobanje iz Slovenije se razlikujejo od prosto živečih kuncev po večjih dimenzijah; to je zlasti očitno pri primerku PMS 19653 (tabela 14, sl. 40). Lobanje prosto živečih kuncev pripadajo dvema velikostnima razredoma (tabela 14): večjemu severnemu tipu (sl. 38) iz celinske Evrope in manjšemu sredozemskemu tipu (sl. 39).

Table 14. External and cranial measurements of European Rabbits *Oryctolagus cuniculus* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Measured on the zygomatic root of the temporal bone; [b]length of the row of cheek-teeth; [c]from domestic stock; [d]deviscerated.

Tabela 14. Zunanje in lobanjske dimenzije kuncev *Oryctolagus cuniculus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Merjeno na lični korenini senčnice; [b]dolžina niza kočnikov; [c]udomačena žival; [d]devisceriran.

Country	PMS No.	Sex	Age	W	H&B	TL	HF	E	OnL	CbL	ZgB[a]	UTR[b]
Slovenia	16391[c]		ad.								48.4	19.3
	19653[c]		ad.						105.5	97.1	44.5	18.5
	19693		ad.									16.6
Germany	9977	♂	ad.						81.1	70.7	38.4	14.7
Czech	8604	♀	ad.						81.6	70.9	37.6	14.9
Republic	19526		ad.						82.1	73.0	38.6	14.6
	19527		ad.						81.6	72.6	39.4	15.0
Italy	19455		ad.						74.0	66.3	35.8	13.8
Croatia	16187		ad.						72.6	64.6		13.2
	18712		ad.	843[d]	374	39	73.7	65.3				
	18713		ad.	800[d]	357	61	84.1	73.5	75.0	64.6	35.6	13.0

Figure 37. Skin (dorsal, lateral and ventral views) of a feral European Rabbit *Oryctolagus cuniculus*; specimen PMS 8604 from Ruda (Veselí na Lužnicí), Czech Republic, collected in November 1967. Photo: Ciril Mlinar

Slika 37. Koža (hrbtna, bočna in trebušna stran) prosto živečega kunca *Oryctolagus cuniculus*; primerek PMS 8604 iz Ruda (Veselí na Lužnicí), Češka, zbran novembra 1967. Foto: Ciril Mlinar

Figure 38. Skull (dorsal, lateral and ventral views) and mandible (lateral) of a feral European Rabbit *Oryctolagus cuniculus*; specimen PMS 9977 from Hünxe, Westphalia, Germany, collected on 14 February 1994. Photo: Boris Kryštufek

Slika 38. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) prosto živečega kunca *Oryctolagus cuniculus*; primerek PMS 9977 iz kraja Hünxe v Vestfaliji, Nemčija, zbran 14. februarja 1994. Foto: Boris Kryštufek

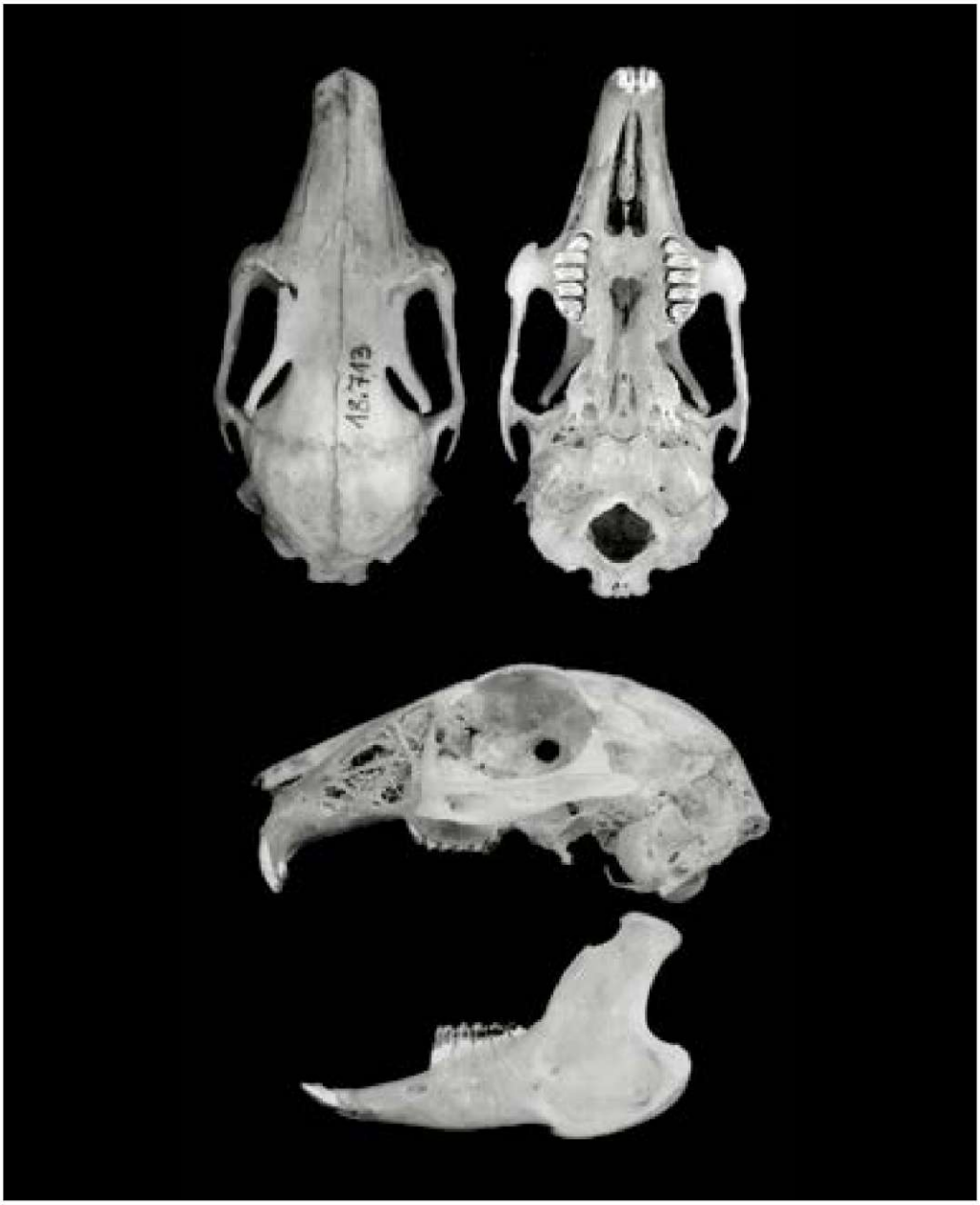


Figure 39. Skull (dorsal, lateral and ventral views) and mandible (lateral) of a feral European Rabbit *Oryctolagus cuniculus*; specimen PMS 18713 from Kolansko polje, Island of Pag, Croatia, collected on 18 December 2011. Photo: Boris Kryštufek

Slika 39. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) prosto živečega kunca *Oryctolagus cuniculus*; primerek PMS 18713 s Kolanskega polja, otok Pag, Hrvaška, zbran 18. decembra 2011. Foto: Boris Kryštufek

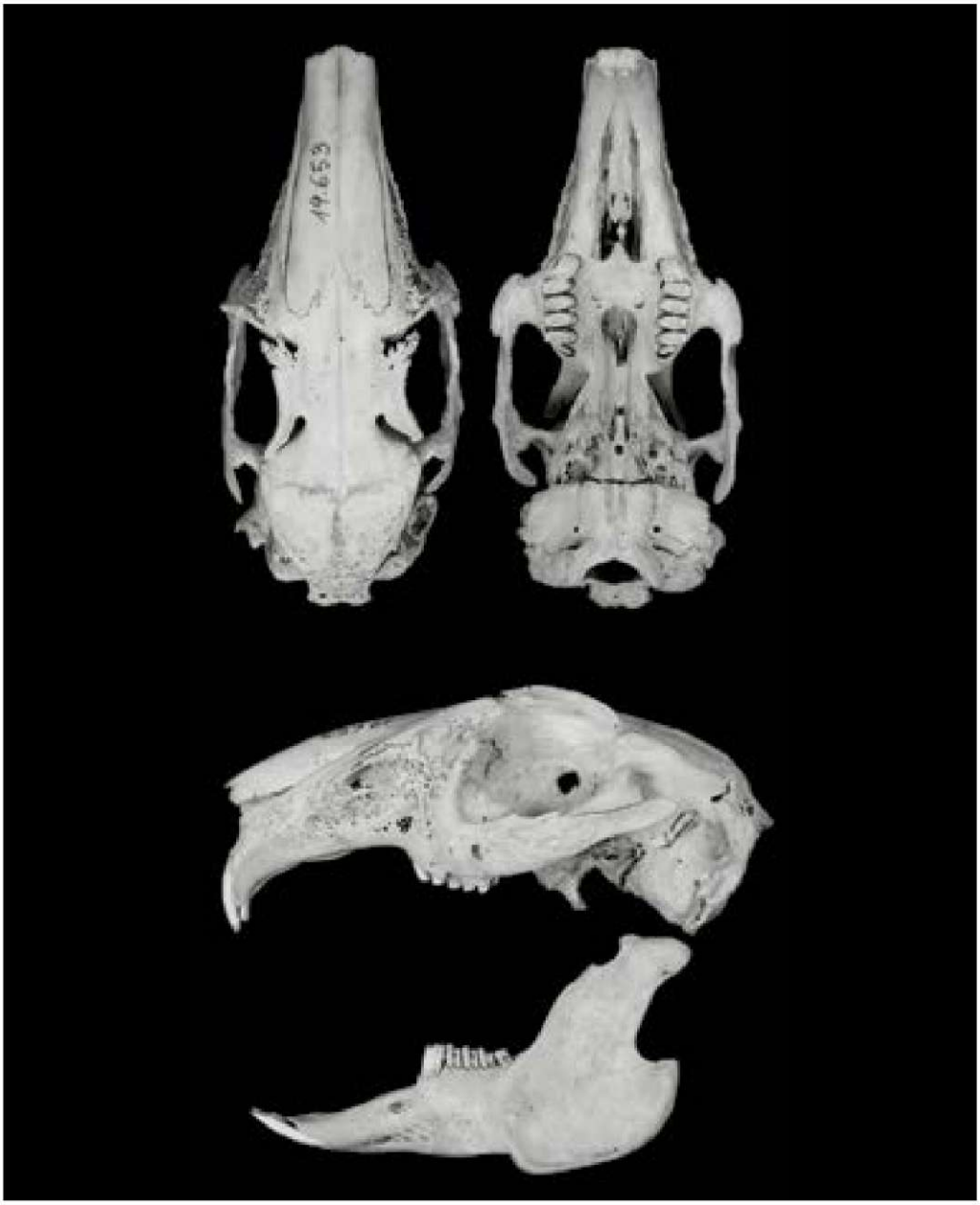


Figure 40. Skull (dorsal, lateral and ventral views) and mandible (lateral) of a domestic European Rabbit *Oryctolagus cuniculus*; specimen PMS 19653 from Kranj, Slovenia, acquired in 2009. Photo: Boris Kryštufek

Slika 40. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) udomačenega kunca *Oryctolagus cuniculus*; primerek PMS 19653 iz Kranja, Slovenija, pridobljen leta 2009. Foto: Boris Kryštufek

Sylvilagus audubonii Baird, 1858

Desert Cottontail

Puščavski belorepi kunec

COLLECTION

ZBIRKA

USA, New Mexico:

Lincoln County, 5 miles north-west of Captain: 1 skin (PMS 20065), unsexed, found as a carcass on 29 June 1998 by Boris Kryštufek.

Sierra County, east of Arrey: 1 skin (PMS 19676), a male collected on 1 July 1998 by Boris Kryštufek.

Among two species of Cottontail Rabbits, which occupy the south-western part of New Mexico (*S. nuttallii* is extralimital, SMITH & BOYER 2008b), *S. auduboni* is recognizable externally from *S. floridanus* by its smaller size (FINDLEY et al. 1975). Classification of a juvenile PMS 20065 is tentative.

Near Arrey, one adult male (with scrotal testes) was caught in a Victor-type rat trap, baited with peanut butter. Traps were set in a line along dense shrubby vegetation. The habitat near Captain, where a juvenile carcass was found, was a mesquite shrubland. Cottontails were abundant there.

Od dveh vrst belorepih kuncev, ki živita v jugozahodnih območjih Nove Mehike (*S. nuttallii* v tem predelu ne živi, SMITH & BOYER, 2008b), se *S. auduboni* razlikuje od *S. floridanus* po manjših dimenzijah (FINDLEY et al. 1975). Uvrstitev mladega primerka PMS 20065 ni zanesljiva.

Blizu Arreya je bil odrasel samec (s skrotalnimi testisi) ujet v past tipa Victor rat trap, s kikirikijevim maslom kot vabo. Pasti so bile postavljene v vrsti na robu gostega grmičevja. Habitat blizu Captaina, kjer smo našli truplo mladiča, je bil grmičevje *mesquite*. Belorepi kunci so bili tu številčni.

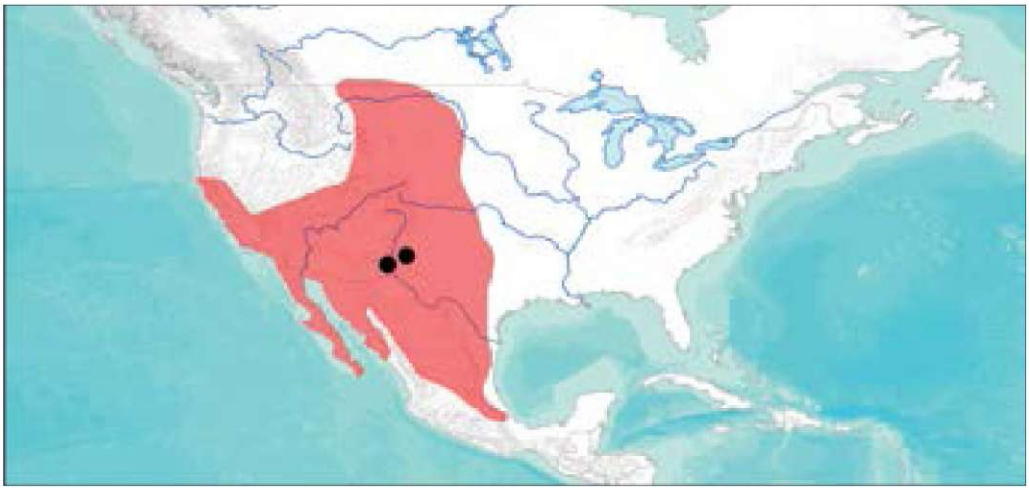


Figure 41. Geographic location of Desert Cottontails *Sylvilagus audubonii* from the Mammal Collection of the Slovenian Museum of Natural History. Range is modified from COLLINS et al. (2008).

Slika 41. Geografski izvor puščavskih belorepih kuncev *Sylvilagus audubonii* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za območje razširjenosti je COLLINS et al. (2008).

Figure 42. Carded skin (dorsal and ventral views) of Desert Cottontail *Sylvilagus audubonii* from Arrey, Sierra County, New Mexico, USA. Specimen PMS 19676, collected on 1 July 1998. Photo: Ciril Mlinar

Slika 42. Ploščata koža (hrbtna in trebušna stran) puščavskega belorepega kunca *Sylvilagus audubonii* iz Arreya, okraj Sierra, Nova Mehika, ZDA. Primerek PMS 19676, zbran 1. julija 1998. Foto: Ciril Mlinar

Table 15. External measurements of Desert Cottontails *Sylvilagus audubonii* in the Mammal Collection of the Slovenian Museum of Natural History

Tabela 15. Zunanje dimenzije puščavskih belorepih kuncev *Sylvilagus audubonii* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

PMS No.	Sex		H&B	TL	HF	E
19676	♂	ad.	300	45	82.0	66.0
20065		juv.	172	25	46.7	42.6

Family: Ochotonidae
Pikas

Five species are represented in the Museum Collection, out of a total 30 as recognized by Hoffmann & Smith (2005). Systematics of this genus is notoriously unstable, and taxonomic determination based on morphological traits is rather difficult. For taxonomic identification we primarily relied on Sokolov et al. (2009). Specimens were preserved either as carded skins and skulls or were submerged to ethanol with a skull extracted subsequently (Table 16).

Družina: Ochotonidae
Žvižgači

V Zbirki sesalcev so žvižgači zastopani s samo petimi vrstami, od skupno 30, kolikor jih v rodu prepoznata Hoffmann & Smith (2005). Sistematska ureditev rodu *Ochotona* ni stabilna, taksonomska uvrstitev na osnovi morfoloških lastnosti pa je dokaj težavna. Pri določevanju materiala iz Zbirke smo se največ zanašali na Sokolova et al. (2009). Muzejski primerki so shranjeni bodisi kot kože z lobanjami, ali pa so bili potopljeni v etanol, lobanje pa so bile naknadno preparirane (tabela 16).

Table 16. Taxonomic representation and preparations of Pikas *Ochotona* in the Mammal Collection of the Slovenian Museum of Natural History

Tabela 16. Taksonomska zastopanost in preparati žvižgačev *Ochotona* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

Species Vrsta	Wet Tekočina	Skin Koža	Skull Lobanja	No. individuals Št. osebkov
O. pallasi		1	1	1
O. daurica		1	1	1
O. hyperborea		2	2	2
O. roylei	3		3	3
O. macrotis	1		1	1
Total / Skupaj	4	4	8	**8**

Table 17. External and cranial dimensions of Pikas *Ochotona* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Measured on the zygomatic root of the temporal bone; [b]length of the row of cheek-teeth; [c]external measurements scored from a carcass fixed in ethanol.

Tabela 17. Zunanje in lobanjske dimenzije žvižgačev *Ochotona* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Merjeno na lični korenini senčnice; [b]dolžina niza kočnikov; [c]zunanje dimenzije, merjene na primerkih, ki so bili konzervirani v etanolu.

Species	PMS No.	Sex	Age	W	H&B	HF	E	CbL	ZgB[a]	IoC	UTR[b]
O. pallasi	18512	♀	ad.	236	215	32	22	44.3	24.3	4.0	9.0
O. dauurica	18515	♂	ad.	154	190	30	19.5	40.0	22.3	3.9	9.0
O. hyperborea	18667	♀	ad.	94	168	24	17			4.6	7.0
	18690	♀	ad.	102	170	24	18.5			4.9	6.9
O. roylei	4538	♂	sad.		225[c]	30.5	22	40.3	21.9	4.9	8.5
	4539	♂	ad.		235[c]	32	25	41.4	22.3	4.8	8.7
	4540	♂	sad.		225[c]	29.3	25.9	41.1	21.6	4.8	8.9
O. macrotis	5339	♀	juv.		200[c]	31.5	22.8	36.6	20.7	5.3	7.5

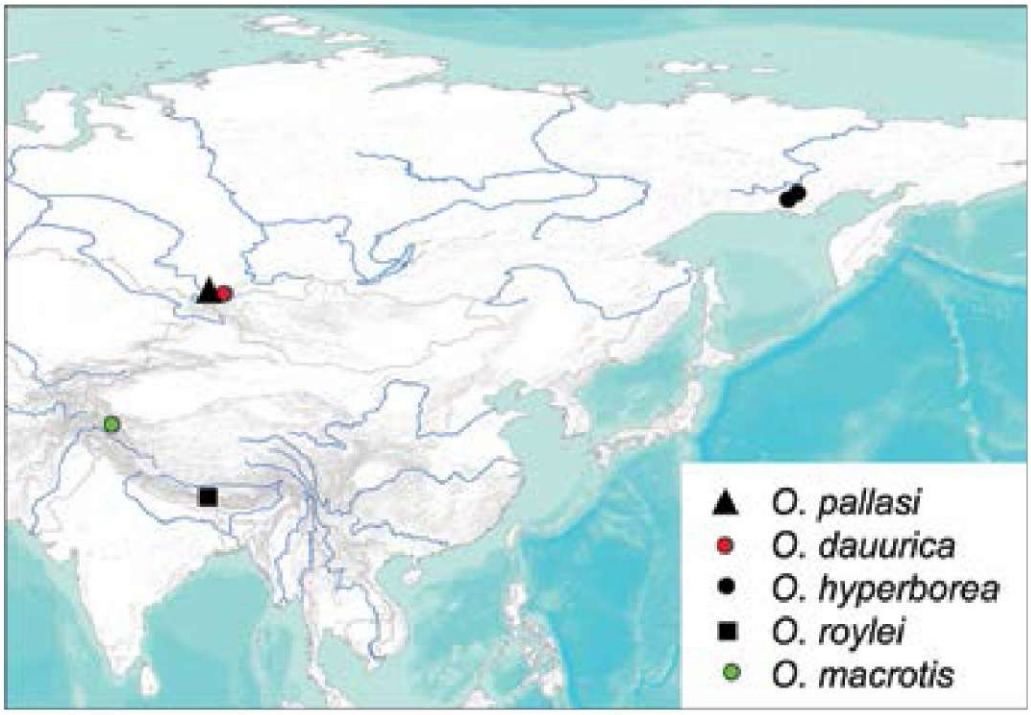


Figure 43. Geographic origin of Pikas *Ochotona* in the Mammal Collection of the Slovenian Museum of Natural History.

Slika 43. Geografski izvor žvižgačev *Ochotona* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije.

Ochotona pallasi (Gray, 1867)

Mongolian Pika **Mongolski žvižgač**

COLLECTION ZBIRKA

Russia:
Republika (Republic) Altaj. Kosh-Agach, Tashanta, valley of the River Ulandrik (2050 m a.s.l.):
1 skin with a skull (PMS 18512), a female, collected on 22 June 2011 by Boris Kryštufek.

Identification of the animal was based on its (i) moderate size (Table 17), (ii) separation of the incisive foramina from the palatal foramina by processes of the premaxillae, (iii) a lack of perforations in the frontal bones, and (iv) narrow interorbital region (Fig. 46). The specimen was trapped in a small colony which was situated on a barren slope with patches of grass and low shrubs what is typical habitat for the Mongolian Pika (SOKOLOV et al. 2009). Juveniles were already weaned at the time of collection (Fig. 44). Pikas were the most abundant small mammals in the Ulandrik River Valley.

Vrstna določitev osebka temelji na sledečih značilnostih: (i) dimenzije so srednje (tabela 17), (ii) med nebno špranjo in odprtino na nebnici je odrastek predčeljustnice, ki ju loči, (iii) čelnica ni perforirana, (iv) medočnična regija pa je ozka (sl. 46). Primerek je bil ujet v majhni koloniji na golem pobočju, le redko poraslem s šopi trav in nizkim grmičevjem, kar je značilno življenjsko okolje mongolskega žvižgača (SOKOLOV et al. 2009). V času zbiranja so bili mladiči že samostojni (sl. 44). Žvižgači so bili najbolj številčni mali sesalci v dolini reke Ulandrik.

Figure 44. Locality in the River Ulandrik valley (Tashanta, Kosh-Agach, Republic Altay, Russia) where a specimen PMS 18512 of Mongolian Pika *Ochotona pallasi* was collected. a – habitat of Mongolian Pikas; b – entrances to burrows within the colony; c – a young pika. Photo: Alenka Kryštufek

Slika 44. Nahajališče v dolini reke Ulandrik (Tašanta, Koš-Agač, Republika Altaj, Rusija), kjer je bil ujet primerek mongolskega žvižgača *Ochotona pallasi* PMS 18512. a – habitat mongolskega žvižgača; b – vhodi v rov v koloniji žvižgačev; c – mlad žvižgač. Foto: Alenka Kryštufek

Figure 45. Carded skin (dorsal and ventral views) of Mongolian Pika *Ochotona pallasi* from Ulandrik, Kosh-Agach, Republic Altay, Russia. Specimen PMS 18512, collected on 22 June 2011. Photo: Ciril Mlinar

Slika 45. Ploščata koža (hrbtna in trebušna stran) mongolskega žvižgača *Ochotona pallasi* iz doline reke Ulandrik, Koš-Agač, Republika Altaj, Rusija. Primerek PMS 18512, zbran 22. junija 2011. Foto: Ciril Mlinar

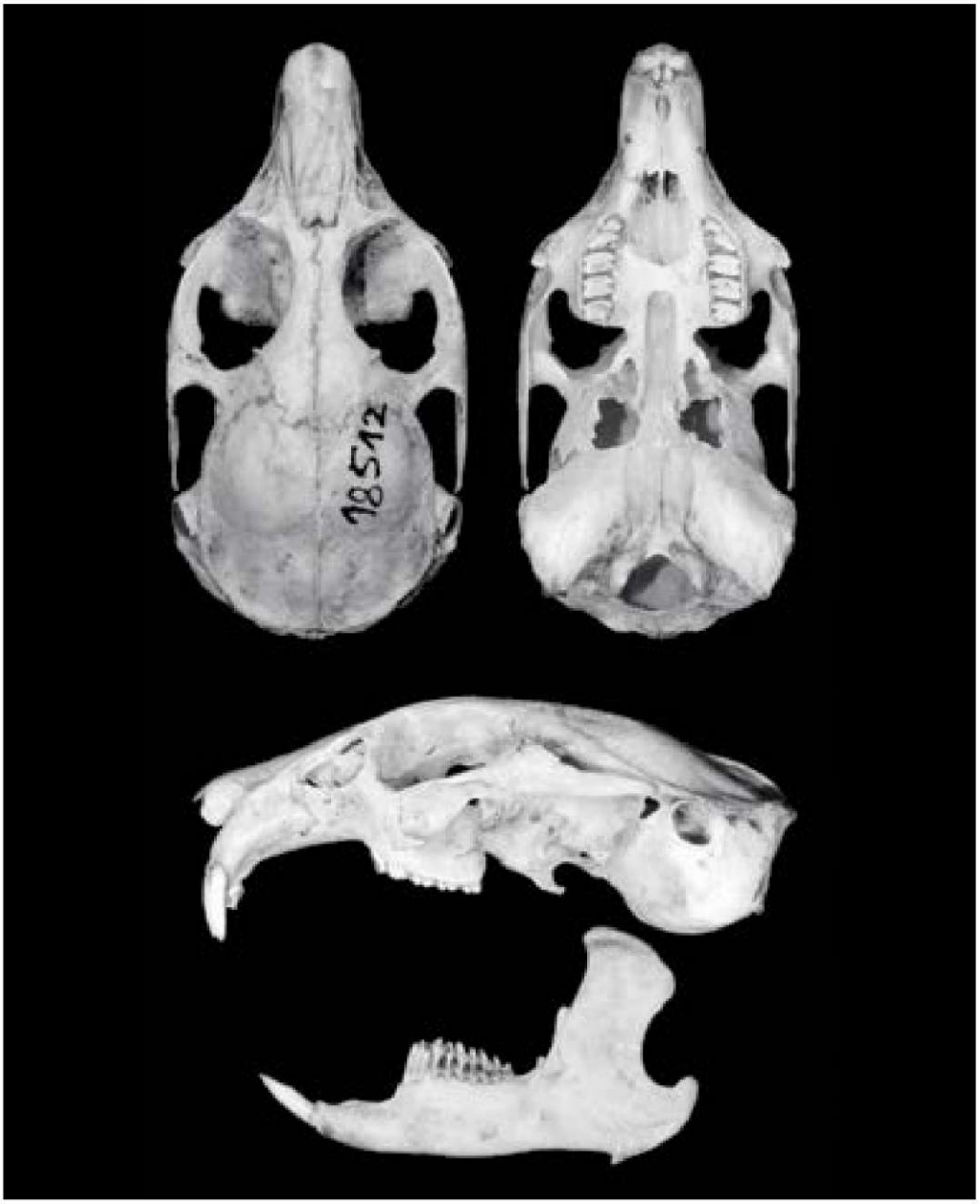


Figure 46. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Mongolian Pika *Ochotona pallasi* from Ulandrik, Kosh-Agach, Republic Altay, Russia. Specimen PMS 18512, collected on 22 June 2011. Photo: Boris Kryštufek

Slika 46. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) mongolskega žvižgača *Ochotona pallasi* iz doline reke Ulandrik, Tašanta, Koš-Agač, Republika Altaj, Rusija. Primerek PMS 18512, zbran 22. junija 2011. Foto: Boris Kryštufek

Ochotona dauurica (Pallas, 1776)

Daurian Pika

COLLECTION

Davrski žvižgač

ZBIRKA

Russia:
Republika (Republic) Altaj, Kosh-Agach, Tashanta, ridge of Saylugyem, valley of the River Yustit (2240 m a.s.l.): 1 skin with a skull (PMS 18515), a male, collected on 23 June 2011 by Boris Kryštufek.

The identification of the specimen was based on the basis of its (i) moderate size (Table 17), (ii) confluent palatal and incisive foramina, (iii) presence of a supraorbital crest, (iv) lack of perforations in the frontal bones (Fig. 49), and (v) white margined ears (Fig. 48). The specimen is from the very north-western margin of the species' range (SOKOLOV et al. 2009). It was collected in a depression with more luxuriant grassy vegetation than the surrounding dry steppe (Fig. 47). The vicinity was inhabited by *Marmota baibacina, Urocitellus undulatus,* and *Microtus gregalis*. Daurian Pikas were uncommon and shy in the part of the Yustit River, which was visited by the collector.

Vrstna določitev osebka temelji na sledečih značilnostih: (i) zmerni velikosti (tabela 17), (ii) povezavi med nebno špranjo in odprtino na nebnici, (iii) grebenu nad očnico, (iv) čelnica ni perforirana (sl. 49), (v) uhlji so belo obrobljeni (sl. 48). Muzejski primerek je s skrajnega severozahodnega roba areala vrste (SOKOLOV et al. 2009). Ujet je bil v depresiji z bujnejšo vegetacijo, kot pa je bila značilna za suho stepo v okolici (sl. 47). Okolico so naseljevale sledeče vrste glodavcev: *Marmota baibacina, Urocitellus undulatus* in *Microtus gregalis*. Davrski žvižgači so bili maloštevilni in plašni v tistem delu ob reki Yustit, ki jih je obiskal zbiratelj.

Figure 47. Habitat of Daurian Pika *Ochotona dauurica* in the River Yusit valley, Kosh-Agach, Republic Altay, Russia. The Museum specimen PMS 18515 was trapped in the patch of fresh green vegetation in the foreground. Photo: Boris Kryštufek

Slika 47. Habitat davrskega žvižgača *Ochotona dauurica* v dolini reke Yusit, Koš-Agač, Republika Altaj, Rusija. Muzejski primerek PMS 18515 je bil ujet v zaplati sveže zelene vegetacije v ospredju. Foto: Boris Kryštufek

Figure 48. Carded skin (dorsal and ventral views) of Daurian Pika *Ochotona dauurica* from the River Yusit valley, Kosh-Agach, Republic Altay, Russia. Specimen PMS 18515, collected on 23 June 2011. Photo: Ciril Mlinar

Slika 48. Ploščata koža (hrbtna in trebušna stran) davrskega žvižgača *Ochotona dauurica* iz doline reke Yusit, Koš-Agač, Republika Altaj, Rusija. Primerek PMS 18515, zbran 23. junija 2011. Foto: Ciril Mlinar

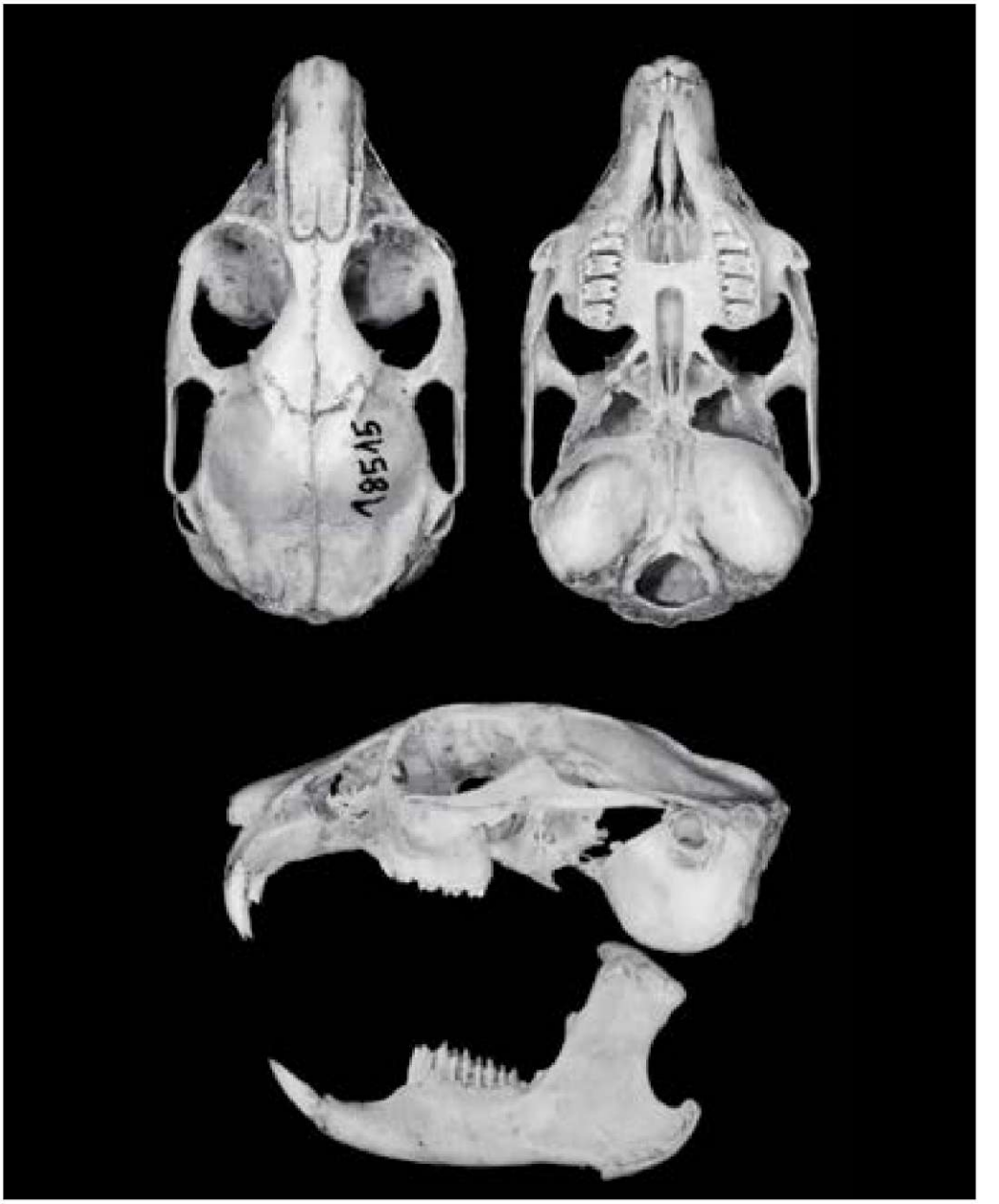


Figure 49. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Daurian Pika *Ochotona dauurica* from the River Yusit valley, Kosh-Agach, Republic Altay, Russia. Specimen PMS 18515, collected on 23 June 2011. Photo: Boris Kryštufek

Slika 49. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) davrskega žvižgača *Ochotona dauurica* iz doline reke Yusit, Koš-Agač, Republika Altaj, Rusija. Primerek PMS 18515, zbran 23. junija 2011. Foto: Boris Kryštufek

Ochotona hyperborea (Pallas, 1811)

Northern Pika **Severni žvižgač**

COLLECTION ZBIRKA

Russia:

Magadan, Atka, Lake Grand (810 m a.s.l.): 1 skin with a skull (PMS 18667), a female, collected on 7 July 2011 by Boris Kryštufek

Magadan, Karamken Pass (800 m a.s.l.): 1 skin with a skull (PMS 18690), a male, collected on 11 July 2011 by Boris Kryštufek.

Identification of vouchers was based on their (i) small size (Table 17), (ii) separation of the incisive foramina from the palatal foramina by processes of the premaxillae, and (iii) by white margined ears (Fig. 51). Records are well within the range of the species (Sokolov et al. 2009). Specimens were collected in rocky habitats, more specifically, in accumulations of rocks and boulders on hilly slopes. Such habitats were interspersed by patches of Siberian Dwarf Pine (*Pinus pumila*) with occasional presence of the Siberian Larch (*Larix sibirica*). At Lake Grand, pikas were never seen, and the only individual was trapped unexpectedly in a trap randomly set within a fixed line. The other small mammals collected from the same habitat were *Clethrionomys rutilus* and *Alticola lemminus*. Pikas were more abundant at the Karamken Pass, where the animals and heaps of their excrements were regularly observed in rocky situations. No other small mammals were trapped in pika's habitat.

Vrstna določitev osebka temelji na sledečih značilnostih: (i) majhni velikosti (tabela 17), (ii) med nebno špranjo in odprtino na nebnici je odrastek predčeljustnice, ki ju loči, in (iii) belo obrobljenih uhljih (sl. 51). Nahajališči sta globoko znotraj znanega arealu severnega žvižgača (Sokolov et al. 2009). Ob primerka sta bila ujeta v skalnatem habitatu, natančneje v nakopičenem skalovju na pobočju v hriboviti krajini. Takšen habitat so prekinjale zaplate pritlikavega sibirskega bora (*Pinus pumila*), ki je ponekod rastel skupaj s sibirskim macesnom (*Larix sibirica*). Pri jezeru Grang v času zbiranja žvižgači niso bili opaženi, edini primerek pa je bil nepričakovano ujet v past, ki je bila postavljena naključno v lovni vrsti. V istem habitat so bili ujeti še primerki *Clethrionomys rutilus* in *Alticola lemminus*. Žvižgači so bili številčnejši na prelazu Karamken, kjer so bila v skalnatih habitatih pogosta opažanja živali in kupčki njihovih iztrebkov. Druge vrste na tej lokaciji v habitatu žvižgačev niso bile ugotovljene.

Figure 50. Habitat of Northern Pika *Ochotona hyperborea* at Karamken Pass, north of Magadan, Russia (a). An adult animal at the same site (b). Photo: Alenka Kryštufek

Slika 50. Habitat severnega žvižgača *Ochotona hyperborea* na prelazu Karamken, severno od Magadana, Rusija (a). Odrasla žival na istem nahajališču (b). Foto: Alenka Kryštufek

Figure 51. Carded skins in dorsal (top) and ventral views (bottom) of Northern Pikas *Ochotona hyperborea*, collected to the north of Magadan, Russia, in July 2011. Both specimens are in moult. Left: PMS 18667; right: PMS 18690. Photo: Ciril Mlinar

Slika 51. Ploščati koži (zgoraj hrbtna, spodaj trebušna stran) severnih žvižgačev *Ochotona hyperborea*, ujetih severno od Magadana, Rusija, julija 2011. Oba primerka menjata dlako. Levo: PMS 18667; desno: PMS 18690. Foto: Ciril Mlinar

Ochotona roylei (Ogilby, 1839)

Roylei's Pika **Nepalski žvižgač**

COLLECTION ZBIRKA

Nepal:
Mt. Makalu. Base Camp (4900 m a.s.l.): 3 bodies in alcohol, skulls extracted (PMS 4538, 4539, 4540), 3 males, collected on September 16, 20, and 24, 1972, by Janez Gregori.

Roylei's Pikas were gathered during the Yugoslav 1972 Himalaya Expedition to Makalu, with the entire collection of small mammals published subsequently (GREGORI & PETROV 1976). Specimens were identified by the late Boris Petrov who adopted the taxonomy of ELLERMAN & MORRISON-SCOTT (1951). Taxonomic assignment actually followed the previous identification of pikas by GRUBER (1969): "Our specimens were determined as *O. r. roylei* as it had been done by Gruber (1969) for his material" (GREGORI & PETROV 1976:8). DANIEL & HANZÁK (1985) also classified their sample from the Barun Valley (where Gregori collected the PMS specimens) as *O. r. roylei*. Given that the taxonomy of *Ochotona* underwent significant changes in the last decades, we re-identified the material, relying primarily on MITCHELL (1978) and SMITH & XIE (2008). On the basis of (i) fused palatal and incisive foramina, and (ii) fenestrated anterior frontals (Fig. 53), the PMS material matches description for *O. roylei* and *O. macrotis* (Günther, 1875). MITCHELL (1978) reported for the eastern Nepal also *O. angdawai* Biswas & Khajuria, 1955, and *O. mitchelli* Agrawal & Chakraborty, 1971, which are currently in the synonymy of the nominotypical subspecies of *O. roylei* (HOFFMANN & SMITH 2005). Our vouchers are classified as *O. roylei* because of their (iii) moderately long ears (28–30 mm in *O. macrotis*; DANIEL & HANZÁK 1985), which are sparsely haired in their inner surface (SMITH & XIE 2008), and (iv) a narrow interorbital region (interorbital width in *O. macrotis* is 5.2–6.0 mm; MITCHELL 1978). The subspecies in eastern Nepal is *O. r. roylei* (MITCHELL 1978), which accords the original taxonomic identification of the PMS material

Nepalski žvižgači so bili zbrani med jugoslovansko himalajsko odpravo na Makalu leta 1972. Celotna zbirka malih sesalcev je objavljena (GREGORI & PETROV 1976). Živali je determiniral pokojni Boris Petrov, ki se je naslanjal na taksonomijo, kot sta jo objavila ELLERMAN & MORRISON-SCOTT (1951). Taksonomija žvižgačev dejansko temelji na predhodni določitvi GRUBER-ja (1969): "Naši primerki so bili določeni kot *O. r. roylei*, kot je to storil Gruber (1969) pri svojem materialu" (GREGORI & PETROV 1976:8). DANIEL & HANZÁK (1985) sta material iz doline reke Barun (kjer je Gregori zbral primerke za Prirodoslovni muzej) prav tako določila kot *O. r. roylei*. Ker je taksonomija rodu *Ochotona* v zadnjih desetletjih doživela številne spremembe, sva preverila določitev, pri čemer sta nam bila najpomembnejša vira MITCHELL (1978) in SMITH & XIE (2008). Material iz PMS ustreza opisu za vrsti *O. roylei* in *O. macrotis*, kar je razvidno na osnovi (i) povezave med nebno špranjo in odprtino na nebnici in (ii) perforacijami v prednjem delu čelnice (sl. 53) (Günther, 1875). MITCHELL (1978) navaja za vzhodni Nepal tudi *O. angdawai* Biswas & Khajuria, 1955, in *O. mitchelli* Agrawal & Chakraborty, 1971, ki pa danes veljata za sinonima nominotipske podvrste *O. roylei* (HOFFMANN & SMITH 2005). Muzejski material uvrščamo k *O. roylei* na osnovi sledečih značilnosti: (iii) zmerno dolgih uhljev (28–30 mm pri *O. macrotis*; DANIEL & HANZÁK 1985), ki so na notranji površini redko odlakani (SMITH & XIE 2008), in (iv) ozke medočnične zožitve (medočnična širina pri *O. macrotis* znaša 5.2–6.0 mm; MITCHELL 1978). Podvrsta v vzhodnem Nepalu je *O. r. roylei* (MITCHELL 1978), kar je v skladu s prvotno taksonomsko uvrstitvijo muzejskega materiala,

in Gregori & Petrov (1976). Frontal fenestrae are present in all three skulls and the voucher PMS 4538 displays an additional posterior pair of openings at the level of the zygomatic root of the temporal bone. Dorsal skull of PMS 4539 is figured in Gregori & Petrov (1976, Fig. 6 in p. 13). Photographs of pikas from the Barun-Makalu region are available in Gregori & Petrov (1976, Fig. 4 in p. 8) and Daniel & Hanzák (1985, Fig. XX); see also Fig. 52.

Specimens that are now in PMS were collected in the Base Camp, above the Barun glacier (sensu Daniel & Hanzák 1985), at the north-western end of the Barun Valley. Details on the habitat are reported as follows: "All three specimens were collected in the surroundings of the base camp (4900 m), which was far above the timber line. The moraine slopes are stabilized, more or less overgrown with turf. The following plants are characteristic ...: *Kobresia* spec. div., *Saxifraga aristulata, Saxifraga nutans, Gentiana ornate, Gentiana nepalensis, Artemisia* cf. *scoparia, Comastoma pedunculatum* and *Polygonum glaciale*... Pikas are numerous ..." and were observed all the way from the Barun Valley, starting at 3700 m a.s.l. (Gregori & Petrov 1976); Daniel & Hanzák (1985) gave the altitudinal range in the Barun-Makalu region between 3450 and 5950 m a.s.l.

kot sta jo objavila Gregori & Petrov (1976). Odprtine na čelnici so vidne pri vseh treh primerkih, primerek PMS 4538 pa ima v nivoju osnove ličnega loka (tvori ga senčnica) še posteriorni par čelničnih perforacij. Fotografijo hrbtne strani primerka PMS 4539 sta objavila Gregori & Petrov (1976, sl. 6 na str. 13). Fotografije žvižgačev z območja Baruna in Makaluja so objavili Gregori & Petrov (1976, sl. 4 na str. 8) in Daniel & Hanzák (1985, Sl. XX); glej tudi sl. 52.

Primerki, ki so v zbirki Prirodoslovnega muzeja, so bili zbrani v baznem taboru nad ledenikom Baruna (sensu Daniel & Hanzák 1985) na severozahodnem koncu doline Barun. Podrobnosti o habitatu so sledeče: "Vsi trije primerki so bili zbrani v bližini baznega tabora (4900 m), ki je bilo visoko nad gozdno mejo. Morenska pobočja so stabilizirana in bolj ali manj porasla. Značilne so sledeče rastlinske vrste ...: *Kobresia* spec. div., *Saxifraga aristulata, Saxifraga nutans, Gentiana ornate, Gentiana nepalensis, Artemisia* cf. *scoparia, Comastoma pedunculatum* in *Polygonum glaciale*... Žvižgači so številčni...", opazovali pa so jih vse od doline Barun na višini 3700 m (Gregori & Petrov 1976); Daniel & Hanzák (1985) navajata višinski razpon nahajališč na območju Barun-Makalu od 3450 do 5950 m nad morjem.

Figure 52. Roylei's Pikas *Ochotona roylei* photographed in September 1972 below Mt. Makalu, on a spot where vouchers in the Mammal Collection of the Slovenian Museum of Natural History were captured. Juveniles at the bottom, adult on top. Photo: Janez Gregori

Slika 52. Nepalski žvižgači *Ochotona roylei*, slikani septembra 1972 pod Makalujem na mestu, kjer je bil zbran material, ki je shranjen v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. Spodaj sta mladiča, zgoraj je odrasla žival. Foto: Janez Gregori

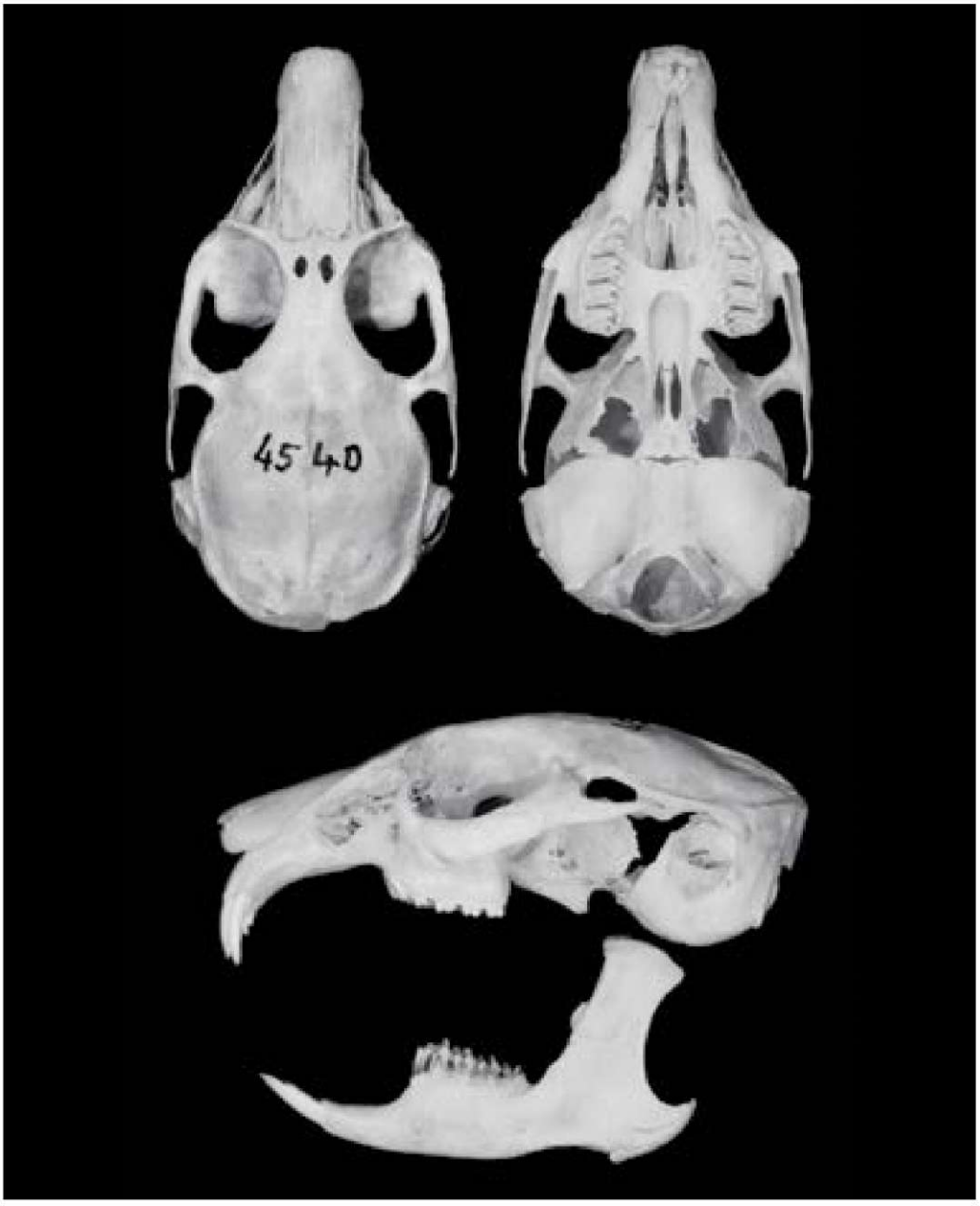


Figure 53. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Roylei's Pika *Ochotona roylei* from Mt. Makalu, Nepal. Specimen PMS 4540, collected on 20 September 1972. Photo: Boris Kryštufek

Slika 53. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) nepalskega žvižgača *Ochotona roylei* z Makaluja, Nepal. Primerek PMS 4540, zbran 20. septembra 1972. Foto: Boris Kryštufek

Ochotona macrotis (Günther, 1875)

Large-eared Pika **Dolgouhi žvižgač**

COLLECTION ZBIRKA

Pakistan:
Godwen Austen. Broad Peak, Base Camp (4805 m a.s.l.): 1 body in alcohol, skull extracted (PMS 5339), a female, collected on 10 July 1986 by Mojmir Štangelj.

The PMS voucher undoubtedly belongs to the *roylei-macrotis* group, but its further identification is puzzling. ROBERTS (1977) lists three species of pikas for Pakistan, which all display fused palatal and incisive foramina. The PMS specimen cannot be classified as *O. rufescens* because of its (i) fenestrated frontals and (ii) wide interorbital region (3–4.9 mm in *rufescens*; SOKOLOV et al. 2009). Following ROBERTS (1977), it belongs to *O. roylei*, but differs from the PMS material of this species from eastern Nepal (cf. above) in having wider interorbital region (Table 17), which is in the range of *O. macrotis* (MITCHELL 1978): see the above account on *O. roylei* for comparison of the two pika species. The ears, however, which "are never less than 27 mm in length" in *O. macrotis* from Nepal (MITCHELL 1978) are evidently shorter in the juvenile from Broad Peak. Also the inner surface of the ears is as sparsely haired as in the PMS material of *O. roylei* from Nepal. Short ears of the PMS specimen may be due to its juvenile age since long ears are visible on photographs of adults from the same site (Fig. 54). SRINIVASULU et al. (2004) and the IUCN Red List data base refer to both, *O. roylei* (SMITH & BOYER 2008c) and *O. macrotis* (SMITH & JOHNSTON 2008c), as occupying northern Pakistan. ROBERTS (1977) mapped *O. roylei* as more widespread of the two and in his subsequent edition of the "Mammals of Pakistan" and reported *macrotis* merely as a subspecies of *O. roylei*. In conclusion, the PMS voucher was classified as *O. macrotis* (and not *roylei*) since it differs from *O. roylei* from Nepal, most notably in its wide interorbital region. Photographs of adult pikas taken around a camp below Broad Peak display long ears and therefore match *marotis* better than *roylei*.

Primerek v zbirki Prirodoslovnega muzeja nedvomno pripada skupini *roylei-macrotis*, nadaljnja opredelitev pa je manj zanesljiva. ROBERTS (1977) navaja za Pakistan tri vrste žvižgačev, vsi pa imajo povezano nebno špranjo z odprtino na nebnici. Muzejski primerek ne ustreza opisu *O. rufescens* zaradi (i) perforirane čelnice in (ii) široke medočnične regije (3–4.9 mm pri *rufescens*: SOKOLOV et al. 2009). Sodeč po podatkih, ki jih navaja ROBERTS (1977), bi muzejski primerek sodil k *O. roylei*, vendar se razlikuje od muzejskega materiala te vrste iz vzhodnega Nepala (glej zgoraj) po širši medočnični regiji (tabela 17), ki je v okviru variacijske širine pri *O. macrotis* (MITCHELL 1978): za primerjavo med obema vrstama glej zgornje poglavje o *O. roylei*. Uhlji, ki pri *O. macrotis* iz Nepala niso "nikoli krajši od 27 mm" (MITCHELL 1978), so pri primerku z Broad Peaka očitno krajši. Tudi notranja stran uhljev je enako redko odlakana, kot je pri muzejskem material *O. roylei* iz Nepala. Kratki uhlji muzejskega primerka so morda posledica juvenilne starosti; pri fotografiju odraslih živali z Broad Peaka so vidni dolgi uhlji (sl. 54). SRINIVASULU et al. (2004) in podatkovna baza IUCN Rdečega seznama navajata za severni Pakistan tako *O. roylei* (SMITH & BOYER 2008c) kot tudi *O. macrotis* (SMITH & JOHNSTON 2008c). ROBERTS (1977) je označil *O. roylei* za vrsto, ki ima večji areal od *O. macrotis*, v naslednji izdaji "Sesalcev Pakistana" (ROBERTS 1997) pa je obravnaval *macrotis* samo kot podvrsto *O. roylei*. Muzejski primerek žvižgača iz Pakistana smo torej uvrstili v *O. macrotis* (in ne v *roylei*) zato, ker se razlikuje od *O. roylei* iz Nepala, ta razlika pa je zlasti očitna v medočnični regiji. Na fotografijah odraslih žvižgačev, slikanih v baznem taboru pod Broad Peakom, so lepo vidni dolgi uhlji, ki se bolje ujemajo z *macrotis* kot pa z *roylei*.

The animal was collected in a rocky habitat near the glacier (Fig. 54). Pikas were sparse around the Base Camp (Mojmir Štangelj, verbal communication).

Muzejski primerek je bil ujet v skalnatem habitatu v bližini ledenika (sl. 54). V okolici baznega tabora so bili žvižgači maloštevilni (Mojmir Štangelj, ustno obvestilo).

Figure 54. Habitat of Long-eared Pika *Ochotona macrotis* at Broad Peak, Pakistan, at an elevation of about 4800 m a.s.l. (a). Inserts (b) and (c) show adult Long-eared Pika on the same site. Photographed in July 1986. Photo: Mojmir Štangelj

Slika 54. Habitat dolgouhega žvižgača *Ochotona macrotis* pod Broad Peakom, Pakistan, na nadmorski višini približno 4800 m (a). Na gornjih slikah (b) in (c) sta odrasla dolgouha žvižgača z istega nahajališča. Fotografirano julija 1986. Foto: Mojmir Štangelj

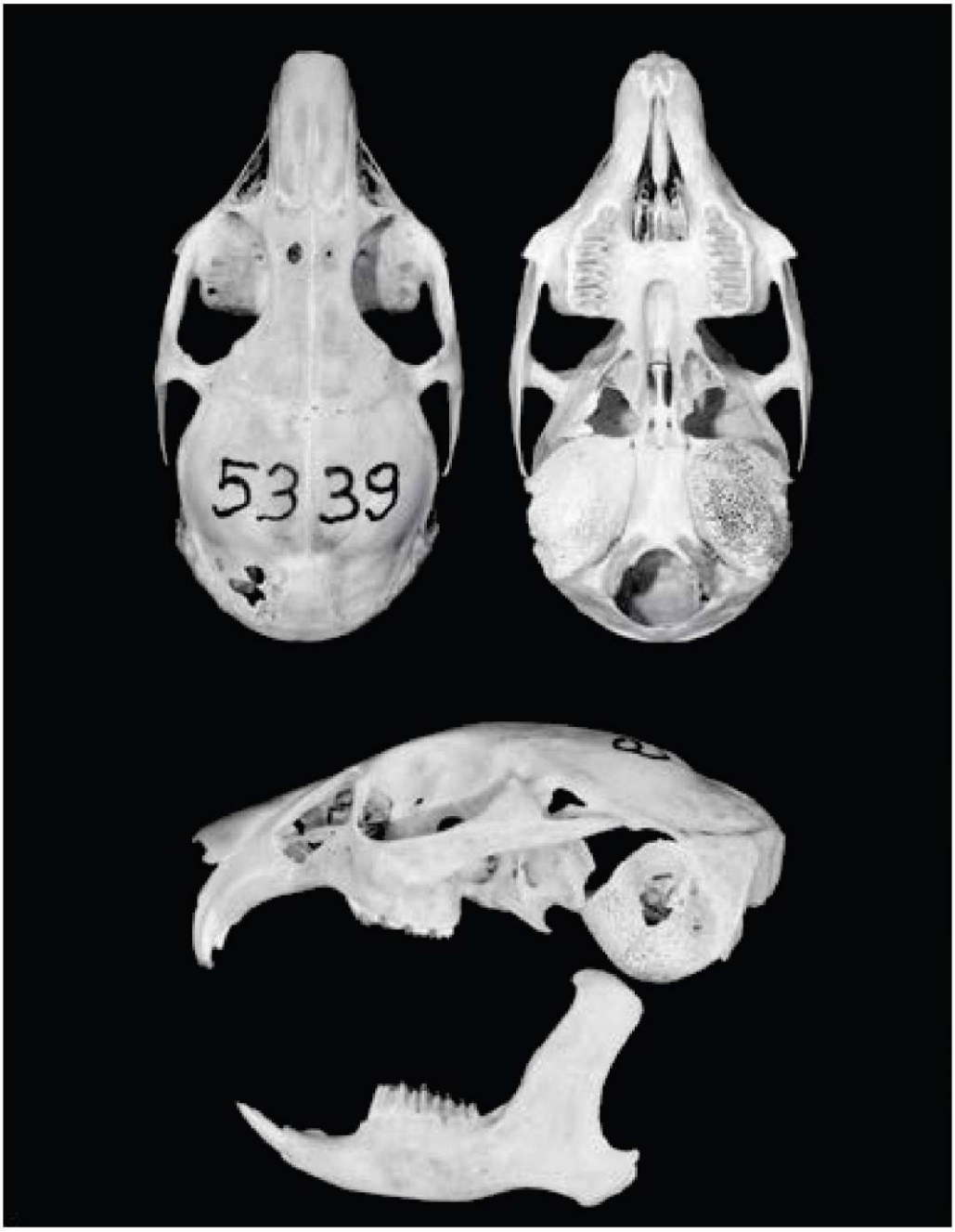


Figure 55. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Long-eared Pika *Ochotona macrotis* from Broad Peak, Pakistan. Specimen PMS 5339, collected on 10 July 1986. Photo: Boris Kryštufek

Slika 55. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) dolgouhega žvižgača *Ochotona macrotis* z Broad Peaka, Pakistan. Primerek PMS 5339, zbran 10. julija 1986. Foto: Boris Kryštufek

Order: Erinaceomorpha
Family: Erinaceidae
Hedgehogs

The Museum is in possession of four hedgehog species from two genera (Table 18). A disproportionate majority of vouchers (90.1%) are *Erinaceus roumanicus*. They originate from 14 countries in Europe and Asia (Table 19). The bulk of hedgehogs in the Collection are skulls (85.7%) and slightly less than a half of the vouchers (40.4%) are also skins. Taxidermies are reasonably well represented (9.0% of vouchers), but they are mainly old and as such frequently lack labels. Majority of taxidermic mounts are from before the WWII period.

Red: Erinaceomorpha
Družina: Erinaceidae
Ježi

Muzej hrani štiri vrste ježev iz dveh različnih rodov (tabela 18). Velika večina preparatov (90,1 %) pripada vrsti *Erinaceus roumanicus*. Ježi so bili zbrani v 14 državah v Evropi in Aziji (tabela 19). Najštevilčnejša oblika preparata v Zbirki je lobanja (85.7 % vseh primerkov), nekoliko manjše pa je število kož (40,4 %). Dermoplastični preparati so razmeroma dobro zastopani (9,0 % vseh primerkov), vendar jih je večina iz stare zbirke, tako da so pogosto brez etikete s podatki. Večina dermoplastičnih preparatov izvira iz obdobja pred 2. svetovno vojno.

Table 18. Taxonomic representation and preparations of hedgehogs (Erinaceidae) in the Mammal Collection of the Slovenian Museum of Natural History

Tabela 18. Taksonomska zastopanost in preparati ježev (Erinaceidae) v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

Species	Wet	Taxidermy	Skin	Skull	Skeleton	Individuals
Erinaceus europaeus			3	5		**5**
Erinaceus roumanicus	6	14	56	122	1	**145**
Erinaceus concolor			6	10		**10**
Hylomys suilus			1	1		**1**
Total	6	14	66	138	**1**	**161**

Table 19. Geographic representation of hedgehogs (Erinaceidae) in the Mammal Collection of the Slovenian Museum of Natural History

Tabela 19. Geografska zastopanost ježev (Erinaceidae) v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

Coutry	Species	Individuals
Slovenia	2	64
Bosnia & Herzegovina	1	4
Croatia	1	19
Czech Republic	1	1
Greece	2	5
Hungary	1	1
Italy	1	1
Macedonia	1	14

Coutry	Species	Individuals
Montenegro	1	10
Malaysia	1	1
Russia	1	1
Serbia	1	24
Syria	1	1
Turkey	2	6
no history	1	10
Total	**4**	**161**

Erinaceus europaeus Linnaeus, 1758

Western European Hedgehog

Zahodni (rjavoprsi) jež

Collection

Zbirka

Slovenia:

Nova Gorica (97 m a.s.l.), 1 skin with a skull (PMS 7765), a female, road casualty, collected on 7 August 1990 by Dario Bon; 1 skin with a skull (PMS 8603), a male, collected in 1990; 1 skull (PMS 18021), a female, road casualty, collected on 19 August 2010 by Boris Kryštufek.

Steske (Nova Gorica), 1 fragmented skull (PMS 11090), sex not recorded, collected on 13 July 2010 by D. Stankovič.

Italy:

Pordenone, Cordenons Dintori, 1 skin with a skull (PMS 5415), a male, road casualty, collected on 22 March 1987 by Luca Lapini.

Table 20. Geographic representation and preparations of the Western Euroepan Hedgehog *Erinaceus europaeus* in the Mammal Collection of the Slovenian Museum of Natural History

Tabela 20. Geografska zastopanost in preparati zahodnega ježa *Erinaceus europaeus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

Country	Skin	Skull	Individuals
Slovenia	2	4	4
Italy	1	1	1
Total	3	5	**5**

Besides a single individual from Miren near Nova Gorica, which was the first record for Slovenia (Petrov 1989), all the remaining vouchers originating from Slovenia are seemingly deposited in the Slovenian Museum of Natural History. A detailed account on *E. europaeus* in the neighbouring North-Eastern Italy is provided in Lapini & Perco (1986) and Lapini et al. (1995).

Z izjemo primerka iz Mirna pri Novi Gorici, ki je bil prvi dokazni primerek vrste za Slovenijo (Petrov 1989), so vsi preostali muzejski primerki zahodnega ježa iz Slovenije po vsej verjetnosti shranjeni v Prirodoslovnem muzeju Slovenije. Natančen pregled *E. europaeus* v sosednjih območjih severovzhodne Italije so objavili Lapini & Perco (1986) in Lapini et al. (1995).

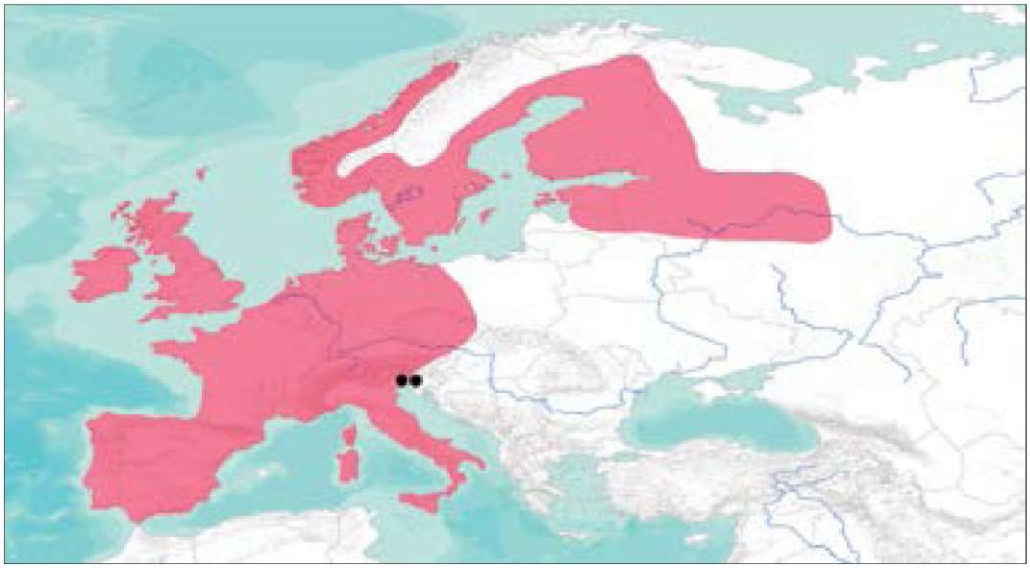


Figure 56. Geographic location of Western European Hedgehogs *Erinaceus europaeus* from the Mammal Collection of the Slovenian Museum of Natural History. Range of the species is modified from Amori et al. (2008a).

Slika 56. Geografski izvor zahodnih ježev *Erinaceus europaeus* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za območje razširjenosti vrste je Amori et al. (2008a).

Table 21. External and cranial dimensions of Western European Hedgehogs *Erinaceus europaeus* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Measured from the 1st incisor to the last molar.

Tabela 21. Zunanje in lobanjske dimenzije zahodnih ježev *Erinaceus europaeus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Merjeno od prvega sekalca do zadnjega meljaka.

Country	PMS No.	Sex	Age	W	H&B	TL	HF	E	CbL	ZgB	UTR[a]
Slovenia	7765	♀	ad.	640	207	16	49.7	30			27.6
	8603	♂	juv.	240	142	20	39	24	45.0	27.2	24.8
	18021	♀	ad.	645	267	22	41.9	25	54.8	33.8	27.4
Italy	5415	♂	ad.	460	195	24	40.3	22	52.6	32.3	26.3

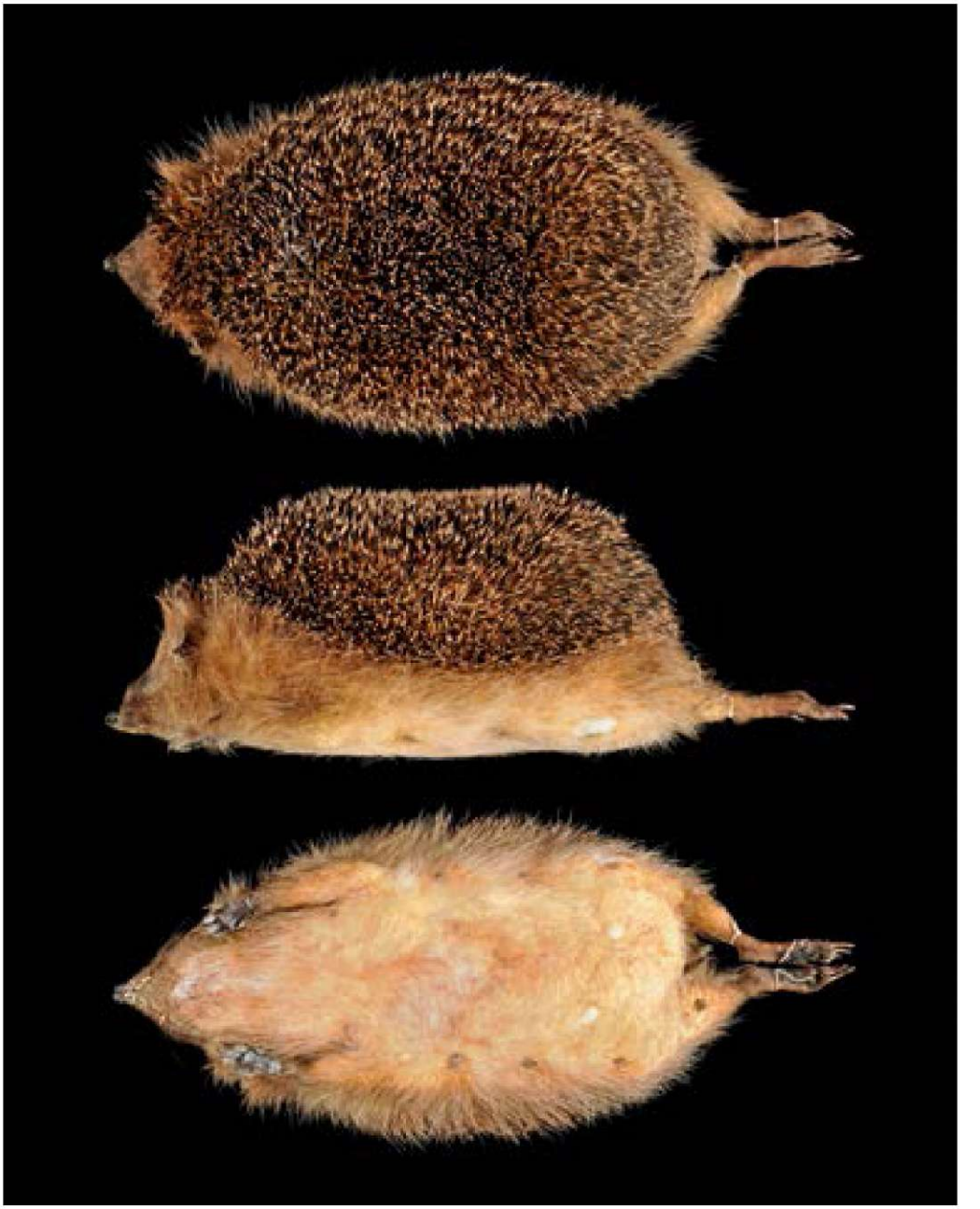


Figure 57. Skin (dorsal, lateral and ventral views) of Western European Hedgehog *Erinaceus europaeus* from Nova Gorica, Slovenia. Specimen PMS 7765, collected on 7 August 1990. Photo: Ciril Mlinar

Slika 57. Koža (hrbtna, bočna in trebušna stran) zahodnega ježa *Erinaceus europaeus* iz Nove Gorice, Slovenija. Primerek PMS 7765, zbran 7. avgusta 1990. Foto: Ciril Mlinar

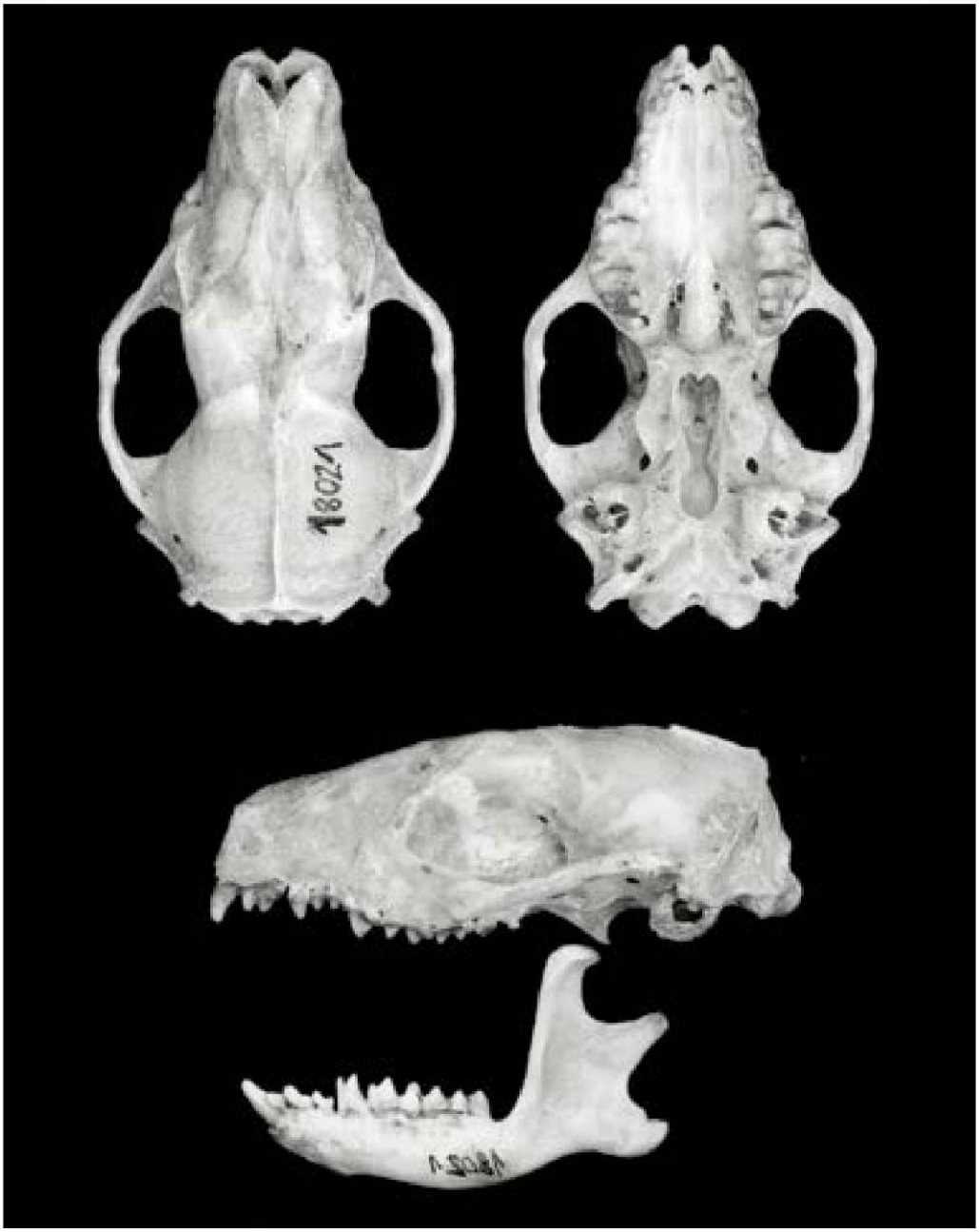


Figure 58. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Western European Hedgehog *Erinaceus europaeus* from Nova Gorica, Slovenia. Specimen PMS 18021, collected on 19 August 2010. Photo: Boris Kryštufek

Slika 58. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) zahodnega ježa *Erinaceus europaeus* iz Nove Gorice, Slovenija. Primerek PMS 18021, zbran 19. avgusta 2010. Foto: Boris Kryštufek

Erinaceus roumanicus Barrett-Hamilton, 1900

Northern White-breasted Hedgehog **Severni beloprsi jež**

COLLECTION ZBIRKA

Slovenia:

Beltinci: 1 skin with a skull (PMS 8578), a female, collected on 16 July 1969 by Boris Petrov.

Dolenjske Toplice: 2 specimens in ethanol (PMS 13246, 13250), sex not recorded, collected on 20 June 1995 by Tomi Trilar.

Dragonja, Stena: 2 skulls without mandibles (PMS 13061, 13062), collected from the nest of *Bubo bubo* on 8 July 1986 by Lovrenc Lipej.

Idrija, Godovič: 1 skin with a skull (PMS 6716), a male, collected on 18 April 1989 by Vili Žgavec.

Jezersko (= Zgornje Jezersko): 1 skull (PMS 921), a female collected in 1978.

Kočevje, Gorenje: 1 skin with a skull (PMS 13063), a male, collected on 2 August 1993 by Boris Kryštufek.

Komen: 1 skin with a skull (PMS 5188), a female, collected in August 1985 by Boris Kryštufek.

Koper: 3 juveniles in ethanol (PMS 20192, 20193, 20194), 2 females and a male (age of about 1 day), died on 11 June 2013 in Animal shelter Koper (Zavetišče za prosto živeče živali Koper), donated by Peter Maričić.

Koper, Strunjan: 1 skin with a skull (PMS 50), a young male collected on 15 September 1973 by Mihael J. Toman.

Kranj: 1 skin with a skull (PMS 73), a male, collected on 18 November 1973 by Boris Kryštufek; 1 skin with a skull (PMS 624), a male, collected on 4 May 1977 by Boris Kryštufek; 1 skull (PMS 3528), a male, collected on 3 October 1982 by Boris Kryštufek.

Kranj, Praše: 1 skull (PMS 371), a male, collected on 2 May 1976 by Drago Žepič.

Kranj, Žeje: 1 skin with a skull (PMS 74), a male, collected on 21 April 1974 by Drago Žepič.

Kranjska Gora, Dovje (= Dovje pri Mojstrani): 1 skin with a skull (PMS 1960), a male, collected on 15 May 1980 by Janez Gregori.

Ljubljana: 1 skull (PMS 370), a male, found on 7 May 1976 by Alenka Gomišček; 1 skull (PMS 3529), a female, collected on 18 September 1982 by Boris Kryštufek; 1 skull (PMS 5021), a male, collected on 30 September 1985.

Ljubljana, Besnica: 1 skin with a skull (PMS 8867), a female, collected on 17 June 1991 by Bogdan Horvat.

Ljubljana, lg. Kremenica: 1 skull (PMS 3527), a male, collected on 30 September 1983 by Savo Brelih.

Ljubljana,Ižanska cesta (road): 1 skull (PMS 6309), a male, road casualty, collected on 28 August 1988 by Boris Kryštufek.

Ljubljana, Tivoli: 1 skull (PMS 7114), a male, road casualty, collected on 17 May 1989 by Ivo Božič.

Logatec: 1 skull (PMS 615), found in 1976 by Alenka Gomišček.

Maribor: 1 skull (PMS 372), unsexed carcass, found on 17 September 1976 by Andrej Šorgo.

Maribor, Pernica (250 m): 1 skull (PMS 4866), sex not recorded, collected in 1985 by Boris Kryštufek.

Maribor, Ruše, Laznica: 1 skull (PMS 20048), a female, road casualty, collected on 30 August 2008 by Boris Kryštufek.

Medvode: 1 skin with a skull (PMS 81), a male, collected on 16 May 1974 by Dare Hočevar; 2 skins and 3 skulls (PMS 170, 171, 172), a female and two males, collected on 4 May 1975

by Dare Hočevar; PMS 170 (a male, skin and skull) was donated in 1998 to the Vertebrate Museum, Shippesburg University, Pennsylvania, USA; the collection is now in The Pennsylvania State Museum, Harrisburg. – 1 skull (PMS 920), a male, collected in May 1977 by Dare Hočevar; 1 skull (PMS 3532), sex not recorded, collected in August 1980 by Boris Kryštufek; 1 skull (PMS 4862), a male, collected on 14 May 1985 by Boris Kryštufek.

Moravče, Brezovica: 1 skull (PMS 5931), a male, road casualty, collected on 7 May 1988 by Boris Kryštufek.

Muljava: 1 skull (PMS 9098), a male, road casualty, collected on 14 April 1991 by Boris Kryštufek.

Murska Sobota, Sebeborci (230 m a.s.l.): 1 skull (PMS 20046), sex not recorded, road casualty, collected on 25 June 2007 by Boris Kryštufek.

Nova Gorica, Dornberk: 1 skin (PMS 8868), a female, collected on 13 November 1990 by M. Fakin.

Nova Gorica, Opatje selo, Kostanjevica na Krasu: 1 fragment of mandible (PMS19675), sex not recorded, road casualty, collected on 24 March 1990 by Boris Kryštufek.

Nova Gorica, Vogrsko, Repje: 1 skin with a skull (PMS 2901), a female, collected on 20 March 1983 by Boris Kryštufek.

Piran, Sečoveljske soline: 1 skull (PMS 2352), sex not recorded, collected on 22 August 1982 by Jani Forte; 2 skins and 3 skulls (PMS 2399, 2421, 2439), 2 females, 1 male, collected on August 26, 28, and 29, 1982, by Boris Kryštufek.

Ptuj, Spuhlja: 1 skull (PMS 6369), a male, road casualty, collected on 17 May 1988 by Boris Kryštufek.

Radovljica: 1 skull (PMS 9109), a male, collected on 21 April 1992 by Boris Kryštufek.

Radvanje, Štajersko: 1 skull (PMS 20190), not sexed, collected in 1932; donated to the Museum by Stanko Bevk in 1946; catalogued in 1946 under #484, re-catalogued in 2013. In the CATALOGUE labelled as *Erinaceus europaeus*; subspecific name *roumanicus* was added on the label attached to the skull.

Sv. Jakob ob Savi (= Ljubljana, Sv. Jakob): 1 taxidermy (PMS 19655), partly albinistic female (Fig. 62), collected on 10 March 1926 by Vikt. Herfort, Jr.; catalogued in 1926 under #305, re-catalogued in 2013. Originally labelled as *Erinaceus europaeus*. There is discrepancy over external measurements: length of hind foot of 25 mm in the CATALOGUE is probably erroneous: 35 mm, which is more likely correct, is recorded in the FILES. The skin has been on display since the early 1980s.

Tržič, Križe: 1 skin with a skull (PMS 67), a young male collected on 30 September 1973 by Drago Žepič; 1 skull (PMS 1023), a male, collected on 30 July 1978 by M. Kruževič.

Žiri, a "family group" of 6 taxidermic individuals: 2 adults (PMS 19656, 19657) and 4 juveniles (PMS 19658, 19659, 19660, 19661); collected in 1929 by Mr. Julij Lenasi (also Lenassi), merchant from Žiri; catalogued in 1930 under #355 as "a male and a female with cubs"; re-catalogued under new collection nos. in 2013. Originally labelled as *Erinaceus europaeus*. Since 22 September 1956 exhibited in display of "large mammals" (Fig. 65).

No locality (probably Slovenia): 1 skull (PMS 20049) anonymous through loss of appropriate labels. – 1 taxidermy (PMS 20053), unsexed juvenile, anonymous through loss of appropriate labels. – 1 mounted skeleton (PMS 19654), a male, collected in 1925, catalogued in 1926 under #303; on permanent display. Originally labelled as *Erinaceus europaeus*. – 2 taxidermies (PMS 19662, 19663), prepared by taxidermist Gerdej. – 1 taxidermy (PMS 19664), prepared by taxidermist Hafner. – 1 taxidermy (PMS 19667), acquired in 1871. – 2 taxidermies (PMS 19665, 19666); anonymous through loss of appropriate labels; probably obtained from a natural history cabinet in some secondary school.

Bosnia and Herzegovina:
Goražde, Kopači: 1 skin with a skull (PMS 7535), female, collected on 27 May 1990 by Boris Kryštufek.
Mostar, Buna: 1 skull (PMS 9428), sex not recorded, collected on 19 October 1990 by Boris Kryštufek.
Mostar, Potoci: 1 skull (PMS 5336), male, road casualty, collected on 10 June 1986 by Boris Kryštufek.
Tjentište, Prijeđel (740 m a.s.l.): 1 skull (PMS 18071), sex not recorded, road casualty, collected on 11 September 2010 by Boris Kryštufek.

Croatia:
Cetinsko polje (= vrelo Cetine): 1 skull (PMS 3368), unsexed skull found in 1983.
Istria, Savudrija, Bašanlja: 1 skull (PMS 9368), sex not recorded, collected by Alenka Kryštufek.
Istria, Savudrija: 1 skin with a skull (PMS 932), a female, collected in 1978 by Milena Lasić.
Istria, Vozilići: 1 skull (PMS 619), unsexed carcass, found by Nikola Tvrtković in 1970s, exact date not known.
Kapela, Razvala (800 m a.s.l.): 1 skin with a skull (PMS 8579), a female, collected on 16 August 1968 by Boris Petrov.
Lokrum Is.: 1 skin with a skull (PMS 8580), a female, collected on 4 July 1965 by Boris Petrov.
Mljet Is., 3 km east of Polače: 1 skull (PMS 20042), not sexed, road casualty, collected on 27 July 2005 by Boris Kryštufek.
Mljet Is., Babino polje: 1 skull (PMS 20043), not sexed, road casualty, collected on 27 July 2005 by Boris Kryštufek.
Mljet Is., Polače: 2 skulls, 1 skin in ethanol (PMS 19695, 20044), 2 males, road casualties, collected on 28 July 2005 by Boris Kryštufek.
Otočac, Brlog: 1 skull (PMS 2500), a female, collected on 6 September by Srečko Leiner.
Pag Is., Metajna: 1 skin with a skull (PMS 5648), a male, collected on 24 July 1987 by Boris Kryštufek.
Trilj, Košute (315 m a.s.l.): 1 skull (PMS 20045), a male, road casualty, collected on 13 May 2007 by Boris Kryštufek.
Trogir, Seget Vranjina: 1 skull (PMS 20070), an unsexed road casualty, collected on 7 June 2013 by Boris Kryštufek.
Učka Mt.: 1 skin with a skull (PMS 1961), a female collected in 1980 by Nikola Tvrtković.
Ugljan Is., Čeprljanda: 1 skin with a skull (PMS 3390), sex not known, collected in August 1983 by Boris Kryštufek.
Umag, Lovrečica: 1 skin with a skull (PMS 291), a male, collected on 10 August 1975 by Milica Kač.
Vis Is., Vis: 2 skins with skulls (PMS 4863, 4864), 2 females collected on 23 July and 1 August 1984 by Boris Kryštufek.

Czech Republic:
Prague: 1 skull (PMS 16681), sex not recorded, collected on 31 October 2003 by Vladimír Vohralík.

Greece:
Mykonos Is.: 1 broken skull (PMS 13064), sex not recorded, collected in 1979 by Nikola Tvrtković.

Hungary:
Debrecen: 1 skull (PMS 5189), a male, road casualty, collected on 13 May 1985 by Boris Kryštufek.

Macedonia:
Bitola, Magarevo: 1 skull, right tibia with a hind hoot (PMS 9922), sex not known, found as dry carcass on 13 September 1990 by Simon Shimson.
Gevgelija, Bogorodica: 1 skull (PMS 16471), a female, road casualty, collected on 2 July 2006 by Boris Kryštufek.
Gradsko, Ulanci: 1 skin with a skull (PMS 8602), a male, collected on 5 April 1968 by Boris Petrov.
Kočani: 1 skin with a skull (PMS 4992), collected on 7 May 1985 by Boris Kryštufek.
Krivolak, Pepelište (150 m a.s.l.): 2 skins & 4 skulls (PMS 8596, 8597, 8598, 8599), 3 males, 1 female, collected on 9 April 1939 by Boris Petrov.
Nov Dojran: 1 skull (PMS 228), unsexed carcass, collected on 21 July 1975 by Boris Kryštufek.
Ohrid (693 m a.s.l.): 1 skull (PMS 20047), sex not recorded, road casualty, collected on 6 September 2007 by Boris Kryštufek.
Prilep: 1 skull (PMS 6153), a female, road casualty, collected on 1 June1988 by Boris Kryštufek; 1 skull (PMS 8600), a male, collected on 21 April 1969 by Boris Petrov.
Titov Veles (now Veles), Hemijska industrija Veles: 1 skull (PMS 13065), a female, road casualty, collected on 6 May 1989 by Boris Kryštufek.
Valandovo: 1 skin with a skull (PMS 8601), a male, collected on 7 April 1968 by Boris Petrov.

Montenegro:
Bjelasica Mt., Biogradsko jezero: 1 skin, 3 skulls and 1 wet specimen (PMS 377, 378, 379, 380), a female with 3 cubs, collected on 20 July 1976 by Andrej Podobnik; two cubs died within few days while PMS 380 survived until the autumn.
Cetinje: 1 skin with a skull (PMS 7536), a male, collected on 31 May 1990 by Boris Kryštufek.
Durmitor Mts., Žabljak: 1 skull (PMS 4258), a male carcass found in September 1984 by Boris Kryštufek.
Orjen Mt., Vrbanje (1000 m a.s.l.): 1 skin with a skull (PMS 8581), a male, collected on 29 May 1968 by Boris Petrov.
Ulcinj (5 m a.s.l.): 1 skull (PMS 3816), sex not recorded, collected in November 1983 by Boris Kryštufek.
Vilusi: 1 skin with a skull (PMS 8582), a male, collected on 8 August 1970 by Georg Džukić.
Virpazar: 1 skull (PMS 3369), unsexed carcass, found in November 1983 by Mojmir Štangelj.

Russia:
Republic Tatarstan, Leninogorsk District, Novaye Shogurovo (=Yana Shugur): 1 broken skull (PMS 19342), not sexed, road casualty, collected on 17 May 2012 by Boris Kryštufek.

Serbia:
Banat, Ečka: 1 skin with a skull (PMS 8591), 1 female, collected in 1948 by Boris Petrov.
Beograd: 1 skin with a skull (PMS 8594), a male, collected on 27 October 1943 by B. Rapajević.
Beograd, Jatagan mala: 1 skin with a skull (PMS 8595), a female, collected on 23 October 1936 by Boris Petrov.
Beograd, Košutnjak: 1 skin with a skull (PMS 8592), 1 female, collected in 1941 by Vladimir and Evgenija Martino; 1 skin with a skull; 1 with a skull (PMS 8593), a female, collected on 18 April 1942 by L. Rajevski.

Deliblato, Česta šuma (132 m a.s.l.): 1 skull (PMS 8589), sex not recorded, collected by Boris Petrov.
Deliblato, Rošijana (150 m a.s.l.): 1 skin with a skull (PMS 8590), sex not recorded, collected by Georga Džukić. The skin is undoubtedly from Petrov's collection, but the label was not attached; it is therefore uncertain whether the skin belongs to the skull PMS 8590, which poses no doubt regarding its origin.
Deliblatska peščara, Kovin, Majur Bara (85 m a.s.l.): 1 skin and 2 skulls (PMS 616, 617), 2 males, collected on 17 May 1976 by Predrag Petrović.
Donji Milanovac, Golubinje (162 m a.s.l.): 1 skull (PMS 5873), a female, road casualty, collected on 23 April 1988 by Boris Kryštufek.
Đerdap, Veliko Gradište (80 m a.s.l.): 1 skull (PMS 5874), a male, road casualty, collected on 23 April 1988 by Boris Kryštufek.
Kraljevo, Musina reka (250 m a.s.l.): 1 skull (PMS 2885), a female, collected on 12 July 1981 by Boris Kryštufek.
Novi Bečej, Slano (= Lesino) Kopovo (71 m a.s.l.): 1 skin with a skull (PMS 618), a male, collected on 18 May 1976 by Nikola Tvrtković.
Valjevo, Kamenica: 1 skull (PMS 8124), a male, road casualty, collected on 2 May 1990 by Boris Kryštufek.
Valjevo, Mionica, Paštrić: 1 skull (PMS 5335), a female, collected on 15 June 1986 by Boris Kryštufek.
Majdanpek, Blagojev kamen (270 m a.s.l.): 2 skins with skulls (PMS 8583, 8584), 2 males, collected on 9 June 1937 by Boris Petrov; 1 skin with a skull (PMS 8585), a female, collected on 15 June 1937 by Boris Petrov; 1 skin with a skull (PMS 8586), a female, collected on 3 July 1937 by Boris Petrov.
Negotin, Radujevac: 2 skins with skulls (PMS 5871, 5872), a female and a male, collected on 22 April 1988 by Georg Džukić and Miloš Kalezić.
Negotin, Štubik (203 m a.s.l.): 1 skin with a skull (PMS 5870), a female, collected on 20 April 1988 by Boris Kryštufek.
Vlasina Mt., Rid: 2 skins with skulls (PMS 8587, 8588), 2 males, collected on 20 August 1947 by Boris Petrov.

Turkey:
Sakarya, 2 km east of Beylidze: 1 skin with a skull (PMS 10663), a female, road casualty, collected on 1 July 1994 by Boris Kryštufek; skin was prepared after it was conserved in ethanol.

No locality: 1 skin (PMS 20195) from the collection of B. Petrov; the label was not attached to the specimen.

Table 22. Geographic representation and preparations of the Northern White-breasted Hedgehog *Erinaceus roumanicus* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Probably Slovenia.

Tabela 22. Geografska zastopanost in preparati severnega beloprsega ježa *Erinaceus roumanicus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Verjetno Slovenija.

Country	Wet	Taxidermy	Skin	Skull	Skeleton	Individuals
Slovenia	5	7	17	46		59
Bosnia and Herzegovina			1	4		4
Croatia			10	19		19
Czech Republic				1		1
Greece				1		1
Hungary				1		1
Macedonia			5	14		14
Montenegro	1		4	9		10
Russia				1		1
Serbia			17	24		24
Turkey			1	1		1
No history[a]		7	1	1	1	10
Total	6	14	56	122	1	**145**

The following vouchers are recorded in the Catalogue:

V Katalogu so vknjiženi sledeči primerki:

#78: labelled as "*Erinaceus europaeus* (Gemeiner Igel)"; the Slovene vernacular "jež" was added subsequently; exhibited in 1888, disposed in May 1954.
#79: a female with her cub, labelled as "*Erinaceus europaeus* (Gemeiner Igel)"; Slovene vernacular "jež" was added subsequently; acquired/exhibited in 1887/1888, disposed in May 1954.
#303: a skeleton, re-catalogued in 2013 under PMS 19654; see above.
#304: labelled as "*Erinaceus europaeus* (jež)", a juvenile male, collected in 5 October 1925 in Grosuplje by Dr. Fr. Kos. Catalogued in 1926, disposed as "useless" in May 1954.
#305: partly albinistic taxidermy. Catalogued in 1926, re-catalogued in 2013 under PMS 19655; see above. The first hedgehog, which was scored for external measurements (Table 23).
#329: labelled as "*Erinaceus europaeus* (jež)", male, collected on 6 July 1926 in Mestni log, Ljubljana, and donated to the Museum by Jože Križman. Catalogued in 1926, disposed as "useless" in May 1954.
#355: a family group of 6 taxidermic skins, re-catalogued in 2013 under nos. PMS 19658-19661 (see above).
#485: labelled as "*Erinaceus europaeus* (jež)", unsexed skull, collected in 1932 (1938 according to the Files) at "Žirovski vrh, Štajersko" ("Žirovski vrh" in the Files), donated to the Museum in 1946 by Stanko Bevk. The locality is evidently recorded erroneously in the Catalogue; there is no locality like Žirovski vrh in the province of Štajerska (Styria); besides, the Museum is in a possession of further mammals (including hedgehogs) from Žiri and Žirovski vrh near Žiri.

The oldest vouchers were catalogued in 1888-89 and were perhaps acquired much earlier. However, all specimens from the 19th century were discarded in 1954. The oldest voucher in

Najstarejši muzejski primerek je bil kataloziziran v letih 1888-89, pridobljen pa morda dolgo pred tem; žal je Muzej leta 1954 zavrgel vse preparate iz 19. stoletja. Najstarejši preparat

the Collection is the mounted skeleton (PMS 19654) collected in 1925; locality is not known. The oldest vouchers with recorded localities are from 1929 (a "family group" on permanent display; PMS 19656-19661; Fig. 65) and the skull PMS 20190 from 1932 (Fig. 61). Among 24 hedgehogs from the collection of B. Petrov (PMS 8578–8601), 16 vouchers were collected between 1936 and 1948, i.e. before Petrov's departure to Bulgaria (and afterwards to Soviet Union) in 1950. The great majority of specimens in PMS, however, were obtained in the 1970s and afterwards; e.g. 36 hedgehogs from Slovenia are from the 1970s and 1980s.

v Zbirki je sestavljeno okostje (PMS 19654) iz leta 1925; nahajališče ni znano. Najstarejši primerki z zabeleženim nahajališčem so iz leta 1929 ("družinska skupina" v veliki gozdni diorami; PMS 19656-19661; sl. 65) in lobanja PMS 20190 iz leta 1932 (sl. 61). Med 24 ježi iz zbirke B. Petrova (PMS 8578–8601) je bilo 16 primerkov zbranih me letoma 1936 in 1948, torej pred Petrovovim odhodom v Bolgarijo (in nato v Sovjetsko Zvezo) leta 1950. Velika večina primerkov v Zbirki PMS pa je bila pridobljena v 1970-ih letih prejšnjega stoletja in kasneje; tako je 36 ježev z nahajališčem v Sloveniji iz 70-ih in 80-ih let prejšnjega stoletja.

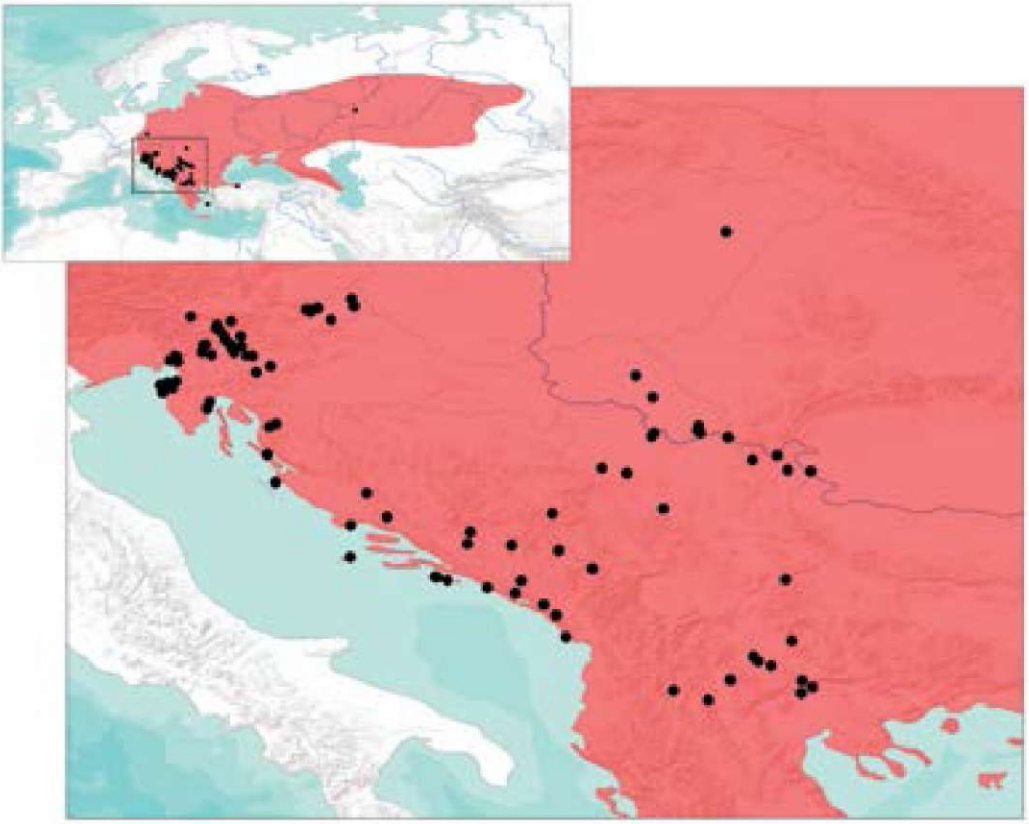


Figure 59. Geographic location of Northern White-breasted Hedgehogs *Erinaceus roumanicus* from the Mammal Collection of the Slovenian Museum of Natural History. Range of the species follows Amori et al. (2008b).

Slika 59. Geografski izvor severnih beloprsih ježev *Erinaceus roumanicus* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za areal vrste je Amori et al. (2008b).

The Museum collection was extensively utilized and eventually published. Vouchers with numbers PMS 922 and lower were listed in a B.Sc. Thesis by KRYŠTUFEK (1978) and published subsequently in KRYŠTUFEK (1983). The entire collection was included in a comprehensive morphometric analysis with taxonomic implications (KRYŠTUFEK 2002) and in an analysis of size response along the latitudinal gradient and under island conditions (KRYŠTUFEK 2009). The vouchers PMS 170, 380, 624, and 920 were karyotyped (KRYŠTUFEK 1978, 1983). The Museum vouchers, which are of particular historical or zoological interest, are discussed in further text.

Muzejska zbirka ježev je v veliki meri obdelana in je bila objavljena. Primerki s številkami do PMS 922 so navedeni v diplomskem delu Kryštufka (KRYŠTUFEK 1978), kasneje pa so bili tudi objavljeni (KRYŠTUFEK 1983). Celoten material je bil vključen v obsežno morfometrično analizo s taksonomskimi implikacijami (KRYŠTUFEK 2002) in v analizi odziva telesne velikosti glede na zemljepisno širino ter na otoški učinek (KRYŠTUFEK 2009). Muzejski primerki PMS 170, 380, 624 in 920 so bili preiskani na kromosomski komplet (KRYŠTUFEK 1978, 1983). Primerke, ki so zanimivi z zgodovinskega ali zoološkega vidika, posebej komentirava v nadaljevanju besedila.

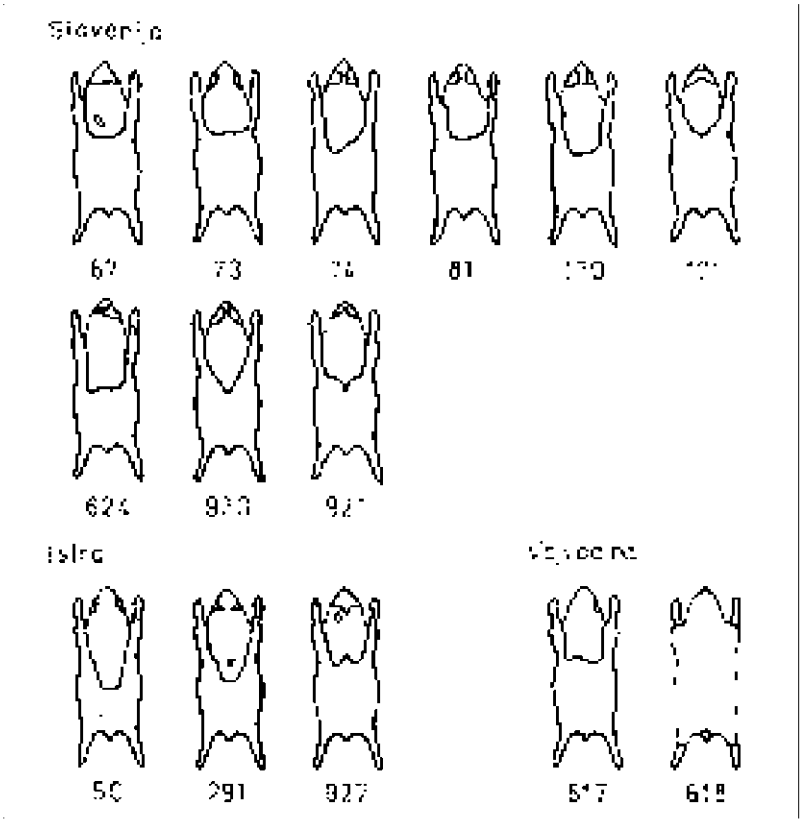


Figure 60. Variability in the extent of white chest patch in Northern White-breasted Hedgehogs *Erinaceus roumanicus* (from KRYŠTUFEK 1978). Species identities correspond to PMS numbers reported in this paper. Compare to Figures 66 and 68.

Slika 60. Variabilnost v obsegu bele prsne lise pri severnih beloprsih ježih *Erinaceus roumanicus* (povzeto iz KRYŠTUFEK 1978). Oznake osebkov so kataloške številke PMS, navedene v tem pregledu. Primerjaj s slikama 66 in 68.

Four vouchers with B. Petrov's collection numbers 218 to 221 (re-catalogued as PMS 8596 to 8599) originate from Pepelište near Krivolak (now in Macedonia) and were

Štirje primerki s kataloškimi številkami zbirke B. Petrova (od 218 do 221; katalogizirani kot PMS 8596 do 8599) izvirajo iz Pepelišta blizu Krivolaka (Makedonija), objavil pa jih

Figure 61. Skull of Northern White-breasted Hedgehog *Erinaceus roumanicus* PMS 20190. This specimen was collected in 1932 at Radvanje (north-eastern Slovenia) and donated to the Museum in 1946 by Stanko Bevk. The original vial with the skull (bottom left), skull in dorsal view (bottom right), and the label with the number #484 of the old CATALOGUE (top left) are shown. Not to scale. Photo: Boris Kryštufek

Slika 61. Lobanja severnega beloprsega ježa *Erinaceus roumanicus* PMS 20190. Primerek je bil zbran leta 1932 v Radvanjah (severovzhodna Slovenija), Muzeju pa ga je leta 1946 podaril Stanko Bevk. Na posnetku je izvirna posoda z lobanjo (levo spodaj), hrbtna stran lobanje (desno spodaj) in originalna etiketa s številko #484 iz KATALOGA (levo zgoraj). Ni v sorazmerju. Foto: Boris Kryštufek

published by PETROV (1940; dimensions are on p. 62). These were the first hedgehogs collected in Macedonia after Martino described a new morph (*Erinaceus roumanicus roumanicus drozdovskii* Martino & Martino, 1933) from Kočani. Note that Petrov preferred to retain *drozdovskii* as a morph "*Erinaceus roumanicus* morpha *drozdovskii* Martino", rather than elevating it to a subspecies (treated as such by ĐULIĆ & MIRIĆ 1967). Noteworthy, a hedgehog PMS 8596 from Petrov's collection bears the original specimen tag with Petrov's handwriting; *drozdovskii* is used as a subspecific name (Fig. 75). The Museum voucher #4992, which is topotypical to *drozdovskii*, is peculiar due to its dark colour (Fig. 76), which is not typical of the taxon. Given that this individual was obtained from the edge of extensive rice fields, it conforms to the prediction by MARTINO & MARTINO (1933:57) that coloration in hedgehogs depends on microclimatic conditions, specifically aridity. One of the palest hedgehogs in the Museum (PMS 618; Fig. 68) is from saline steppe in northern Serbia. Another topotype in the Museum is PMS 7536 from Cetinje, Montenegro (a topotype of *Erinaceus roumanicus roumanicus* morpha *bolkayi* Martino, 1930: Fig. 81).

The Museum voucher PMS 10663 from Sakarya (Turkey) is to the best of our knowledge the only solid evidence on the presence of *E. roumanicus* in Anatolia. The species identity was assessed from two independent analyses, the electrophoretic (Filippucci & Simson 1996) and the craniometric (Kryštufek 2002). Photograph of this hedgehog is published (as *E. concolor*) in KRYŠTUFEK & VOHRALÍK (2001: Fig. 39 on p. 56).

An unsexed hedgehog from Česta šuma (PMS 8589) was published in a review of the mammals occupying steppe habitats of Deliblatska peščara, Serbia (PETROV 1949: 202–203); a family group from Biogradsko jezero in Montenegro (PMS 377-380) was published in a faunal paper dealing with small mammals on Mt. Bjelasica (KRYŠTUFEK 1979).

je PETROV (1940; dimenzije navaja na str. 62). To je bil prvi material ježev, zbran v Makedoniji po tem, ko sta zakonca Martino opisala novo obliko (*Erinaceus roumanicus roumanicus drozdovskii* Martino & Martino, 1933) iz Kočanov. Petrov je obdržal *drozdovskii* kot obliko "*Erinaceus roumanicus* morpha *drozdovskii* Martino", ki je ni dvignil na nivo podvrste (kot podvrsto jo kasneje obravnavata ĐULIĆ & MIRIĆ 1967). To je zanimivo, kajti jež PMS 8596 (iz Petrovove zbirke) ima originalno etiketo, na kateri je Petrov uporabil *drozdovskii* kot podvrstno ime (sl. 75). Muzejski primerek #4992, ki je topotip *drozdovskii*, je zanimiv zaradi temne obarvanosti, ki ni značilna za ta takson (sl. 76). To, da je bila žival ujeta na robu razsežnih riževih polj, očitno potrjuje predvidevanje zakoncev Martino (MARTINO & MARTINO 1933:57), da je obarvanost ježev odvisna od mikroklimatskih razmer, predvsem od sušnosti. Eden najbolj svetlih ježev v Muzeju (PMS 618; sl. 68) je iz slane stepe v Vojvodini. Nadaljnji topotipski primerek v Muzeju je PMS 7536 iz Cetinj, Črna gora (topotip *Erinaceus roumanicus roumanicus* morpha *bolkayi* Martino, 1930; sl. 81).

Študijski preparat PMS 10663 iz Sakarye (Turčija) je, po našem poznavanju te vrste, edini dokazni primerek o pojavljanju vrste *E. roumanicus* v Anatoliji. Vrstna določitev je utemeljena na dveh neodvisnih podatkovnih naborih: elektroforetski analizi encimov (Filippucci & Simson 1996) in analizi lobanje (Kryštufek 2002). Fotografijo tega ježa sta objavila (kot *E. concolor*) KRYŠTUFEK & VOHRALÍK (2001: sl. 39 na str. 56).

Primerek ježa iz Česte šume (PMS 8589) je objavil PETROV (1949: 202–203) v pregledu sesalcev Deliblatske peščare (Srbija), družinsko skupino z Biogradskega jezera v Črni Gori (PMS 377-380) pa je objavil (KRYŠTUFEK 1979) v favnističnem pregledu malih sesalcev planine Bjelasice.

Taxonomy and nomenclature

All Northern White-breasted Hedgehogs acquired by the Museum before 1946 were identified as *E. europaeus*. There was a long-lasting dispute in European mammalogy whether *E. romanicus* merits a specific recognition. Influential in this respect was the taxonomic revision by Wettstein (1942) who recognized a single polytypic species (*E. europaeus*). Contrary to this, Miller (1912) for Europe and V. Martino for the former Yugoslavia (Martino 1930) strictly separated *roumanicus* from the scope of *europaeus*. As was already concluded for the nomenclature of hares (*Lepus*), the Museum was ignorant of Miller's (1912) standard monograph also for hedgehogs. More puzzling perhaps is that the Museum ignored Martino, who was undoubtedly the most authoritative student of mammal fauna in Yugoslavia in the interwar period. Although the extent of possible contacts between the Museum and V. Martino is not known, the Museum was aware of Martino's mammalogical activities and purchased from him several museum specimens of small mammals in 1931. Besides, Vladimir and Evgenija Martino published a description of a new hedgehog from Macedonia (*Erinaceus roumanicus roumanicus drozdovskii*) in a Slovenian periodical (Martino & Martino 1933), which could not be overlooked in the Museum. Bevk (1957:244) was perhaps the first authority who stated *E. roumanicus* to occur in the "eastern regions" of Slovenia and who based his conclusion on examination of specimens. Bevk in 1946 donated to the Museum two hedgehog skulls from Slovenia, catalogued as *E. europaeus*; the PMS 20190 skull bears and additional label with a subspecific name *roumanicus* (Fig. 61).

As far as nomenclature is concerned, it is worth mentioning the vernacular names listed in Freyer (1842): the "gemeiner Igel" in German and "navádni jésh" in Slovene ("kr." = krainiſch). On the same page, Freyer quotes two more Slovene vernaculars with no German synonyms and without further comments: "fvinſki in [and] paſji jésh". Namely, according

Taksonomija in nomenklatura

Vsi severni beloprsi ježi, ki jih je Muzej pridobil pred letom 1946, so določeni kot *E. europaeus*. V evropski mamologiji je dolgo časa obstajalo nesoglasje glede tega, ali je *E. romanicus* samostojna vrsta ali ne. V tem pogledu je imela velik vpliv taksonomska revizija Wettsteina (Wettstein 1942), ki je prepoznal eno samo politipsko vrsto (*E. europaeus*). Po drugi strani sta Miller (1912) za Evropo in V. Martino za nekdanjo Jugoslavijo (Martino 1930) dosledno ločevala med *roumanicus* in *europaeus* kot dvema različnima vrstama. Kot sva že poudarila pri nomenklaturnih vprašajih okrog rodu *Lepus*, Muzej ni upošteval Miller-jeve (1912) standardne monografije niti pri ježih. Težje razumljivo je ignoriranje Martinoja, ki je bil med obema vojnama nedvomno najbolj vplivna avtoriteta za sesalce Jugoslavije. Morebitnih stikov med Muzejem in V. Martinojem sicer ne poznamo, nobenega dvoma pa ni, da je Muzej poznal Martinojevo mamalološko dejavnost, saj je leta 1931 od njega kupil nekaj muzejskih primerkov malih sesalcev. Poleg tega sta Vladimir in Evgenija Martino objavila opis novega ježa iz Makedonije (*Erinaceus roumanicus roumanicus drozdovskii*) v slovenski periodiki (Martino & Martino 1933), česar Muzej ni mogel spregledati. Tako je bil Bevk (1957:244) verjetno prvi avtor, ki je navedel, da *E. roumanicus* živi "v vzhodnih pokrajinah" Slovenije, svoj zaključek pa je utemeljil na preučevanju primerka. Bevk je leta 1946 Muzeju poklonil dve lobanji ježev iz Slovenije, ki sta bili vpisani v Katalog kot *E. europaeus*; lobanja PMS 20190 ima etiketo, na kateri je pripisano podvrstno ime *roumanicus* (sl. 61).

Pri obravnavanju nomenklature velja omeniti domača imena, ki jih je zapisal Freyer (1842): "gemeiner Igel" v nemščini in "navádni jésh" v slovenščini ("kr." = krainiſch). Na isti strani Freyer navaja brez komentarjev še dve slovenski imeni brez sopomenk v nemščini, in sicer "fvinſki in paſji jésh". Po splošnem prepričanju naj bi ježi v Slovenji pripadali dvema

to the belief, which is widespread in Slovenia, there are two kinds of hedgehogs, a "swine" hedgehog and a "dog" hedgehog, which differ in the shape of snout. Of the two, only the "swine" hedgehog is edible. This popular belief was deeply rooted still in the 1970s and 1980s, although one of us (B.K.) never met a person who would be able to tell the actual difference between the two "species".

vrstama, "svinjskemu" in "pasjemu" ježu, ki se razlikujeta po obliki gobčka. Užitna je samo "svinjska" vrsta. To mnenje je bilo široko razširjeno še v 70-ih in 80-ih letih preteklega stoletja, vendar eden od avtorjev (B.K.) ni nikjer naletel na osebo, ki bi mu pojasnila, v čem so dejanske razlike med "vrstama".

Table 23. External and cranial dimensions of Northern White-breasted Hedgehogs *Erinaceus roumanicus* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Measured from the 1st incisor to the last molar; [b]donated to the Vertebrate Museum, Shippensburg University; [c]voucher specimen not preserved; [d]probably Slovenia.

Tabela 23. Zunanje in lobanjske dimenzije severnih beloprsih ježev *Erinaceus roumanicus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Merjeno od prvega sekalca do zadnjega meljaka; [b]podarjeno inštituciji Vertebrate Museum, Shippensburg University; [c]primerek ni ohranjen; [d]verjetno Slovenija.

Country/region	PMS No.	Sex	Age	W	H&B	TL	HF	E	CbL	ZgB	UTR[a]
NW Slovenia	67	♂	juv.		180	19	33.0	21.3	44.4	28.8	24.1
	73	♂	juv.	590	227	17	36.4	25.3	50.4	31.0	26.6
	74	♂	ad.	1005	263	27	43.7	24.5	58.1	34.9	29.1
	371	♂	ad.		266	21	44.9	27.8	57.3	34.5	29.0
	624	♂	ad.		257	27	44.5	30.0	57.7	34.5	29.5
	921	♀	sad.		235	20	44.0	23.5	52.3	33.2	27.0
	1023	♂	juv.		204	21	40.8	24.5	50.6	31.0	26.6
	1960	♂	ad.		219	24	42.2	23.0	58.5	33.6	29.4
	3528	♂	juv.	163	163	22	35.4	24.5	45.7	27.1	25.3
	6716	♂	ad.	880	240	21	45.4	23.8	57.9	34.9	29.4
	9109	♂	ad.		280	30	43.5	22.5	58.0	34.9	30.0
NE Slovenia	372		juv.				35.2	23.7		27.9	23.7
	4866		ad.								28.8
	6369	♂	ad.		280	28	41.5	25	58.5	35.1	30.2
	8578	♀	ad.		214	19	40.0	24.3			28.5
	20046		ad.						55.9		28.1
	20048	♀	juv.	465	180	21	41.8	22.8	52.1		26.3
	20190		juv.						48.6	28.1	26.5
Central	81	♂	ad.	1050	275	27	41.9	25.0	58.2	36.1	28.5
Slovenia	170[b]	♂	ad.		230	25	40.6	26.6	54.8	33.9	27.4
	171	♀	ad.		240	21	43.3	23.8	56.5	33.6	28.2
	172	♂	ad.		275	28	42.9	27.3	58.4	35.8	29.0
	370	♂	juv.						50.6	31.2	27.6
	615		ad.						59.4	36.4	28.6
	920	♂	ad.		230	22	44.5	26.0	60.6	36.0	29.6
	3527	♂	juv.	165	165	35	36.2	23.0	47.3	29.3	25.4
	3529	♀	ad.		228	27	42.7	27.5	58.1	38.9	29.0
	3532		sad.						53.7	33.3	27.7
	4862	♂	ad.		260	30	42.8	26.0	58.0	33.3	30.7

Country/region	PMS No.	Sex	Age	W	H&B	TL	HF	E	CbL	ZgB	UTR[a]
	5021	♂	juv.		155	16	32.5	19.5	44.3	27.9	24.6
	5931	♂	ad.		240	20	45.3	22.5	57.5	34.2	29.0
	6309	♂	ad.		240	24	48.0	27.5	59.1		30.0
	7114	♂	ad.		270	21	45.0	23.5	57.7	35.4	29.7
	8867	♀	ad.	1200	250	23	50.0	29.0	60.6	35.9	29.7
	9098	♂	ad.	640	242	23	42.4	25.0		33.8	28.0
	19655	♀	ad.		245	24	35	23			
	#329[c]	♂			280	21	43	30			
SW Slovenia	50	♂	juv.		178	19	37.9	22.5	47.2	29.7	26.0
	2352		juv.	146	157	12	31.0	22.3			
	2399	♂	sad.	345	232	20	39.6	22.7	52.4	32.4	27.6
	2421	♀	ad.		270	28	43.1	26.1	60.9	37.7	29.9
	2439	♀	sad.		220	22	40.3	24.3	52.8	32.4	27.6
	2901	♀	ad.		237	25	42.6	23.0	56.2	34.3	28.7
	5188	♀	ad.	1180	255	31	43.7	26.0	58.0	37.8	28.8
	8868	♀	juv.	390	154	14	47.0	24.0			
	13061		ad.						61.4	38.7	30.4
	13062		ad.						55.4		27.9
	20192	♀	juv.	13.3	62	6	8.0	4.9			
	20193	♀	juv.	15.4	65	7	8.0	5.3			
	20194	♂	juv.	13.8	63	7	8.5	4.6			
SE Slovenia	13063	♂	ad.		240	25	48.5	25.0			
Bosnia and	5336	♂	ad.								30.0
Herzegovina	7535	♀	ad.	1350	310	34	45-0	31.5	62.3	37.8	30.3
	9428		juv.	340	175		37.5	18.5			26.3
	18071		ad.								31.5
Croatia	291	♂	sad.		205	26	36.3	23.5	48.5	30.2	25.6
Mainland	619		ad.						59.8	37.7	29.9
	932	♀	ad.		265	24	43.0	27.5	55.2	33.1	28.4
	1961	♀	ad.		228	23	41.6	24.0	56.3	35.2	27.5
	2500	♀	ad.		273	25	43.3	25.8	59.8	37.1	29.3
	3368		ad.						59.2	35.2	28.8
	8579	♀	ad.		245	22	43.9	29.8	61.5	37.7	29.5
	9368		juv.						52.3	32.4	26.6
	20045	♂	ad.		250	27	47.0	28.0	61.2	35.9	30.7
Croatia	3390		juv.						44.0	27.4	23.8
Islands	4863	♀	juv.		183	22	34.6	22.0	45.4	28.3	25.1
	4864	♀	juv.	160	160	13	30.5	21.5	40.0	25.9	27.2
	5648	♂	ad.	1040	225	26.5	45.6	25.0	60.2	37.4	28.6
	8580	♀	ad.		229	31	44.8	28.0	60.2	37.6	29.7
	19695		juv.	+142	145		35.5	22.0			23.4
	20042		ad.						56.7	33.4	28.4
	20043	♂	ad.		190	20	39.6	25.0	53.5	31.6	28.2
	20044	♂	ad.	770	243	31	45.2	27.0	59.2	35.1	29.6
Czech R.	16681		juv.						45.6	27.4	25.3
Hungary	5189	♂	ad.						56.8	32.8	28.2
Macedonia	228		ad.						59.3	36.7	30.8
	4992	♀	ad.	950	240	28	45.5	25.7	58.8	36.3	29.9

Country/region	PMS No.	Sex	Age	W	H&B	TL	HF	E	CbL	ZgB	UTR[a]
	6153	♀	ad.						60.9	37.3	29.9
	8596	♂	ad.		275	36	43.5	30.0	62.1	40.3	31.2
	8597	♀	ad.		290	25	46.7	31.0	65.3	37.6	32.8
	8598	♂	ad.		280	29	48.5	30.0	62.4	40.0	31.5
	8599	♂	ad.		290	37	48.8	32.0	65.0	40.4	32.4
	8600	♂	ad.						61.5	39.5	30.0
	8601	♂	ad.		239	26	42.0	26.8	55.9	34.0	29.0
	8602	♂	ad.		264	28	46.5	32.5	61.3	37.9	30.5
	13065	♀	ad.		265	29	43.7	33.3	61.2	38.6	30.0
	16471	♀	ad.						59.8	34.2	29.7
	20047		ad.						58.4	36.3	28.5
Montenegro	377	♀	ad.		268	36	42.3	25.7	56.3	36.4	29.3
	378	♂	juv.	130	130	10	27.6	13.7	35.4	23.4	
	379	♂	juv.	115	135	11	25.1	16.3			
	380	♂	juv.		230	28	42.8	25.3	51.4	32.3	26.6
	3369		juv.						52.4	33.6	28.1
	3816		juv.						53.8	30.7	28.3
	4258	♂	ad.						66.1		32.0
	7536	♂	ad.	1160	240	29	47.0	32.0	61.1	38.3	30.6
	8581	♂	ad.		293	30	46.8	27.2	62.3	37.7	31.0
	8582	♂	ad.		337	21	47.8	31.0	67.1	38.1	33.0
Serbia	616	♂	ad.		270	21.5	45.5	30.0	58.6	36.2	29.4
	617	♂	ad.		250	31.5	43.2	27.2	57.6	33.7	29.0
	618	♂	ad.		253	26	42.2	27.0	57.0	35.4	28.5
	2885	♀	ad.						59.2	37.3	29.3
	5335	♀	ad.	700	255	27	38.5	25.0	55.7	34.7	27.6
	5870	♀	ad.		215	26	41.0	27.0	58.2	34.9	28.6
	5871	♀	ad.		258	21	45.7	25.0	59.3	36.3	29.9
	5872	♂	ad.		254	25	42.4	27.7	56.9	33.7	28.5
	5873	♀	ad.		200		42.8	25.5	54.1		28.1
	5874	♂	ad.		265	24	47.5	24.0	59.2	36.4	30.4
	8124	♂	ad.	560	232	26	42.5	27.0	55.3		28.7
	8583	♂	ad.		273	31	46.0	26.0	57.7	35.3	29.6
	8584	♂	ad.		254	27	42.7	28.0	28.7	33.4	28.7
	8585	♀	ad.		250	28	44.5	28.5	61.1	35.3	30.1
	8586	♀	ad.		260	29	41.0	26.5	60.0	34.5	30.5
	8587	♂	juv.						48.0	28.9	25.4
	8588	♂	ad.		245	29	44.7	27.0	59.1	34.7	29.9
	8589		ad.						60.7		30.6
	8590		ad.						57.4	34.3	28.5
	8591	♀	ad.		290	31	41.3	28.2	56.1	33.8	29.0
	8592	♀	ad.		205	19	39.0	23.0	55.5	32.9	28.3
	8593	♀	ad.		237	32	44.2	26.0	58.1	35.9	28.4
	8594	♂	ad.		240	22	38.6	21.0	54.3	33.6	27.5
	8595	♀	ad.		215	25	40.8	28.5	58.5	34.5	29.1
Turkey	10663	♀	ad.		250	25	43.2	32	59.4		29.6
No history[d]	19654	♂	juv.						50.7	31.7	27.3
	20049		juv.						50.9	31.4	26.5

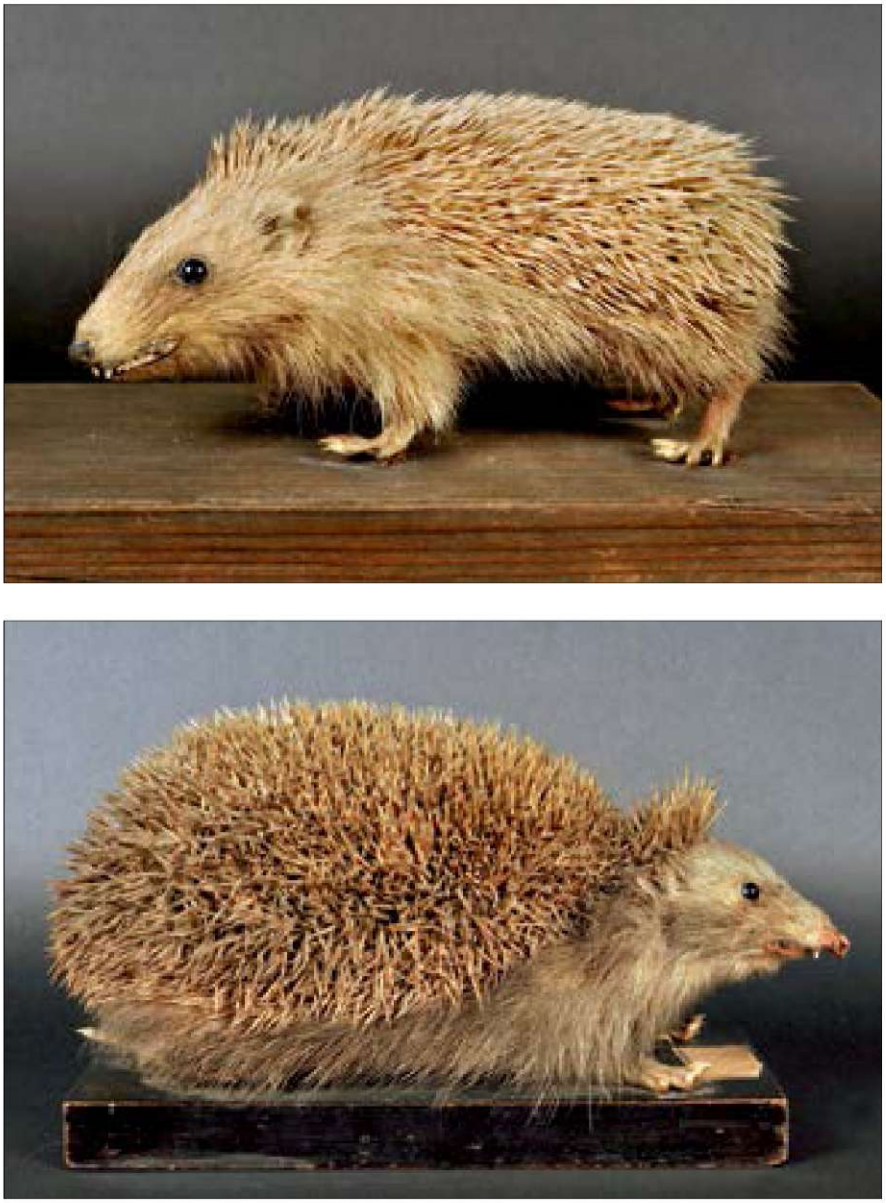


Figure 62. Old taxidermic mounts of Northern White-breasted Hedgehogs *Erinaceus roumanicus* with no history. Bottom: PMS 19665. Top: PMS 19666, young animal, probably partly albinistic. Photo: Ciril Mlinar

Slika 62. Stara dermoplastična preparata severnega beloprsega ježa *Erinaceus roumanicus* brez zgodovine. Spodaj: PMS 19665. Zgoraj: PMS 19666, mlada žival, verjetno delni albin. Foto: Ciril Mlinar

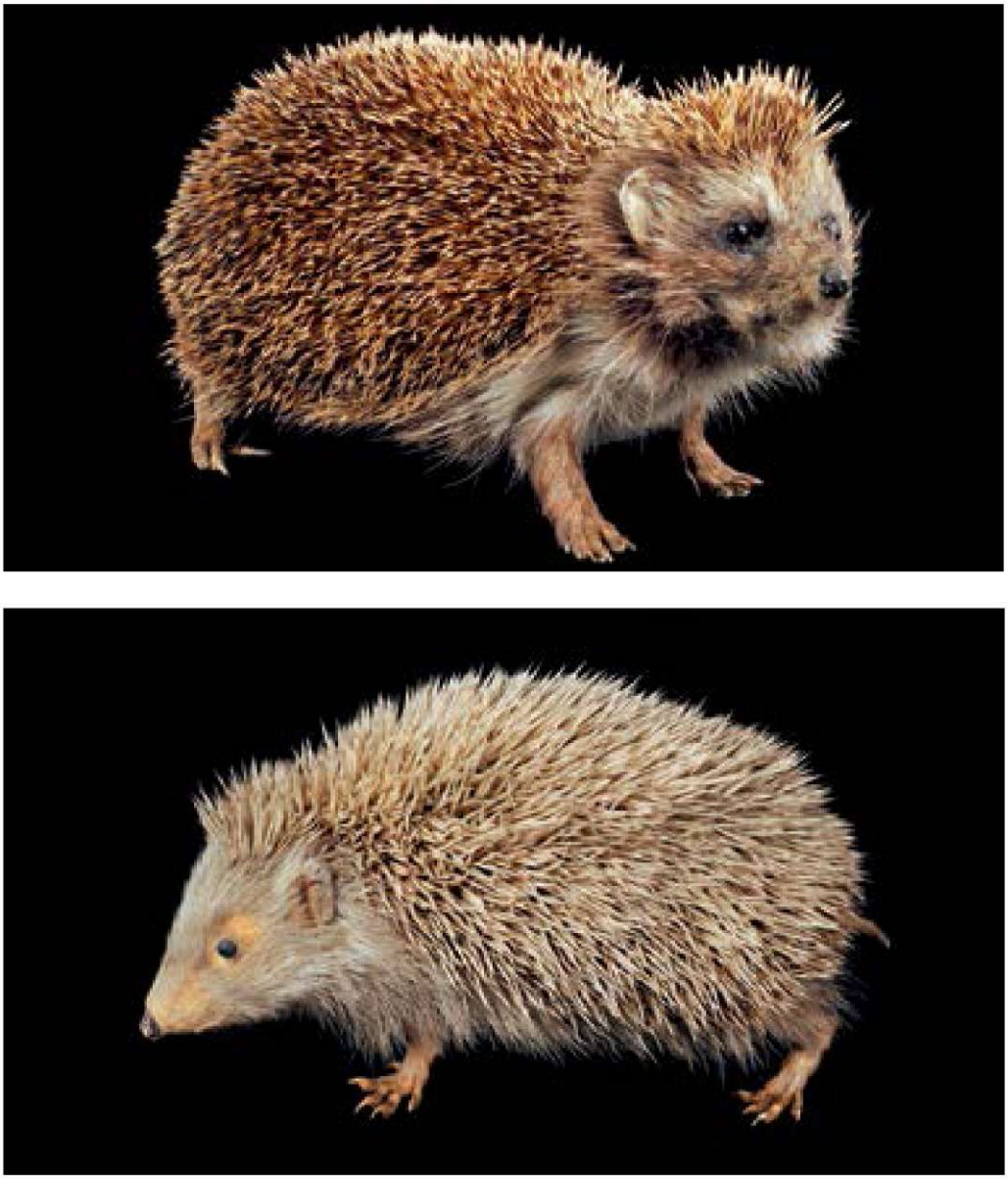


Figure 63. Taxidermic mounts of Northern White-breasted Hedgehogs *Erinaceus roumanicus.* Bottom: partly albinistic female PMS 19655 from Sv. Jakob ob Savi (Ljubljana), Slovenia, collected on 10 March 1926; catalogued in 1926 as #305. Top: PMS 19664 is a recently acquired mount (from Hafner's workshop), but lacks supplementary information; very probably originates from Slovenia. Photo: Ciril Mlinar

Slika 63. Dermoplastična preparata severnih beloprsih ježev *Erinaceus roumanicus.* Spodaj: delno albinistična samica PMS 19655 iz Sv. Jakoba ob Savi (Ljubljana), Slovenija, zbrana 10. marca 1926; katalogizirana leta 1926 kot #305. Zgoraj: primerek PMS 19664 je nedavno pridobljeni preparat (iz Hafnerjeve delavnice), vendar je brez spremne dokumentacije; zelo verjetno izvira iz Slovenije. Foto: Ciril Mlinar

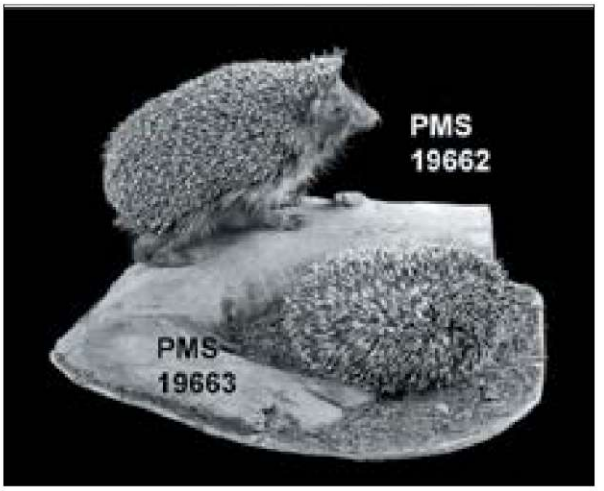


Figure 64. Taxidermic mounts of Northern White-breasted Hedgehogs *Erinaceus roumanicus*, which were prepared in Gerdej's workshop. Photo: Ciril Mlinar

Slika 64. Dermoplastična preparata severnih beloprsih ježev *Erinaceus roumanicus*, narejena v Gerdejevi preparatorski delavnici. Foto: Ciril Mlinar

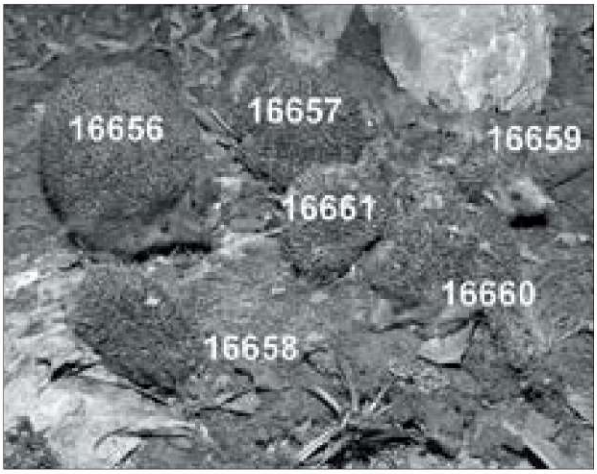


Figure 65. Taxidermic mount of six Northern White-breasted Hedgehogs *Erinaceus roumanicus* organized in a "family group" of two adults (PMS 19656, 19657) and four juveniles (PMS 19658-19661). Animals were collected in 1929 at Žiri, Slovenia. Photo: Ciril Mlinar

Slika 65. Dermoplastike šestih severnih beloprsih ježev *Erinaceus roumanicus* urejenih kot "družinaska skupina", sestoječa iz dveh odraslih (PMS 19656, 19657) in štirih mladičev (PMS 19658-19661). Živali so bile zbrane leta 1929 v Žireh, Slovenia. Foto: Ciril Mlinar

Figure 66. Skin (dorsal and ventral views) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Žeje near Kranj, Slovenia. Specimen PMS 74, collected on 21 April 1974. Photo: Ciril Mlinar

Slika 66. Koža (hrbtna in trebušna stran) severnega beloprsega ježa *Erinaceus roumanicus* iz Žej pri Kranju, Slovenija. Primerek PMS 74, zbran 21. aprila 1974. Foto: Ciril Mlinar

Figure 67. Skin (dorsal, lateral and ventral view) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Besnica near Ljubljana, Slovenia. Specimen PMS 8867, collected on 17 June 1991. Photo: Ciril Mlinar

Slika 67. Koža (hrbtna, bočna in trebušna stran) severnega beloprsega ježa *Erinaceus roumanicus* iz Besnice pri Ljubljani, Slovenija. Primerek PMS 8867, zbran 17. junija 1991. Foto: Ciril Mlinar

Figure 68. Skin (dorsal and ventral views) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Slano Kopovo near Novi Bečej, Voivodina, Serbia. Specimen PMS 618, collected on 18 May 1976. Photo: Ciril Mlinar

Slika 68. Koža (hrbtna in trebušna stran) severnega beloprsega ježa *Erinaceus roumanicus* iz Slanega Kopova pri Novem Bečeju, Vojvodina, Srbija. Primerek PMS 618, zbran 18. maja 1976. Foto: Ciril Mlinar

Figure 69. Skin (dorsal, lateral and ventral views) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Radujevac near Negotin, Serbia. Specimen PMS 5871, collected on 22 April 1988. Photo: Ciril Mlinar

Slika 69. Koža (hrbtna, bočna in trebušna stran) severnega beloprsega ježa *Erinaceus roumanicus* iz Radujevca pri Negotinu, Srbija. Primerek PMS 5871, zbran 22. aprila 1988. Foto: Ciril Mlinar

Figure 70. Skin (dorsal, lateral and ventral views) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Rid on Mt. Vlasina, Serbia. Specimen PMS 8587, collected on 20 August 1947. The original specimen tag (bottom) is from the Institute of Ecology at the Serbian Academy of Sciences. Photo: Ciril Mlinar

Slika 70. Koža (hrbtna, bočna in trebušna stran) severnega beloprsega ježa *Erinaceus roumanicus* iz Rida na planini Vlasini, Srbija. Originalna etiketa (spodaj) je od Ekološkega inštituta Srbske akademije znanosti. Primerek PMS 8587, zbran 20. avgusta 1947. Foto: Ciril Mlinar

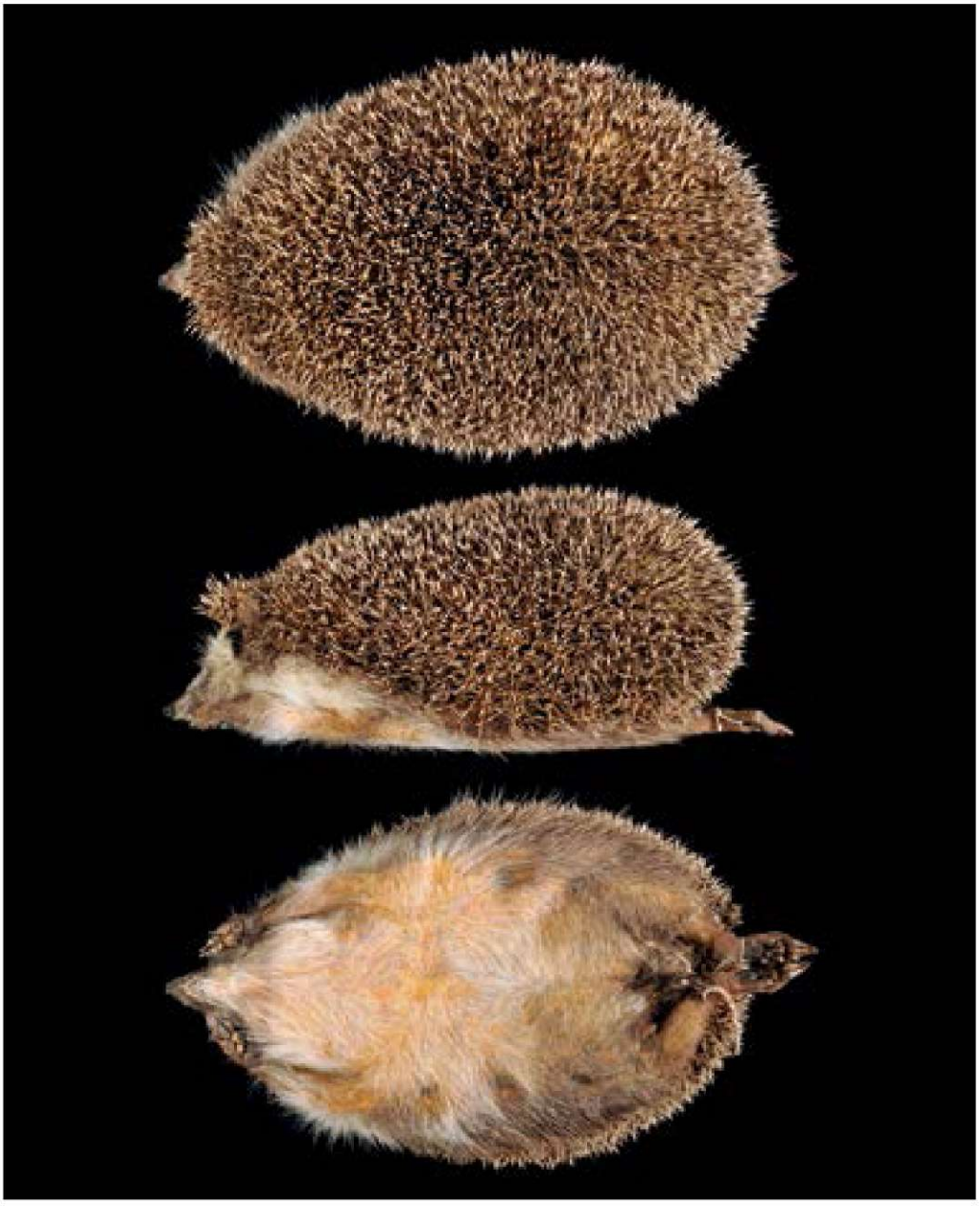


Figure 71. Skin (dorsal, lateral and ventral views) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Kopači near Goražde, Bosnia and Herzegovina. Specimen PMS 7535, collected on 27 May 1990. Photo: Ciril Mlinar

Slika 71. Koža (hrbtna, bočna in trebušna stran) severnega beloprsega ježa *Erinaceus roumanicus* iz Kopačev pri Goraždu, Bosna in Hercegovina. Primerek PMS 7535, zbran 27. maja 1990. Foto: Ciril Mlinar

Figure 72. Skin (dorsal and ventral views) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from the Island of Pag, Croatia. Specimen PMS 5648, collected on 24 July 1987. Photo: Ciril Mlinar

Slika 72. Koža (hrbtna in trebušna stran) severnega beloprsega ježa *Erinaceus roumanicus* z otoka Pag, Hrvaška. Primerek PMS 5648, zbran 24. julija 1987. Foto: Ciril Mlinar

Figure 73. Skin (dorsal and ventral views) of young Northern White-breasted Hedgehog *Erinaceus roumanicus* from the Island of Vis, Croatia. Specimen PMS 4863, collected on 23 July 1984. Photo: Ciril Mlinar

Slika 73. Koža (hrbtna in trebušna stran) mladega severnega beloprsega ježa *Erinaceus roumanicus* z otoka Vis, Hrvaška. Primerek PMS 4863, zbran 21. julija 1984. Foto: Ciril Mlinar

Figure 74. Skin (dorsal, lateral and ventral view) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from the Island of Lokrum, Croatia. Specimen PMS 8580, collected on 4 July 1965. Photo: Ciril Mlinar

Slika 74. Koža (hrbtna, bočna in trebušna stran) severnega beloprsega ježa *Erinaceus roumanicus* z otoka Lokrum, Hrvaška. Primerek PMS 8580, zbran 4. julija 1965. Foto: Ciril Mlinar

Figure 75. Skin (dorsal, lateral and ventral views) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Pepelište near Krivolak, Macedonia. The original label (bottom) is from the private collection of Boris Petrov. Specimen PMS 8596, collected on 9 April 1939. Photo: Ciril Mlinar

Slika 75. Koža (hrbtna, bočna in trebušna stran) severnega beloprsega ježa *Erinaceus roumanicus* iz Pepelišta pri Krivolaku, Makedonija. Originalna etiketa (spodaj) je iz zasebne zbirke Borisa Petrova. Primerek PMS 8596, zbran 9. aprila 1939. Foto: Ciril Mlinar

Figure 76. Skin (dorsal and ventral views) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Kočani, Macedonia, a topotype of *Erinaceus roumanicus roumanicus drozdovskii* Martino & Martino, 1933. Specimen PMS 4992, collected on 7 May 1985. Photo: Ciril Mlinar

Slika 76. Koža (hrbtna in trebušna stran) severnega beloprsega ježa *Erinaceus roumanicus* iz Kočanov, Makedonija; topotip *Erinaceus roumanicus roumanicus drozdovskii* Martino & Martino, 1933. Primerek PMS 4992, zbran 7. maja 1985. Foto: Ciril Mlinar

Figure 77. Skin (dorsal, lateral and ventral views) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Beylidze near Sakarya, Turkey in Asia. Specimen PMS 10663, collected on 1 July 1994. Photo: Ciril Mlinar

Slika 77. Koža (hrbtna, bočna in trebušna stran) severnega beloprsega ježa *Erinaceus roumanicus* iz Beylidz pri Sakaryji, azijska Turčija. Primerek PMS 10663, zbran 1. julija 1994. Foto: Ciril Mlinar

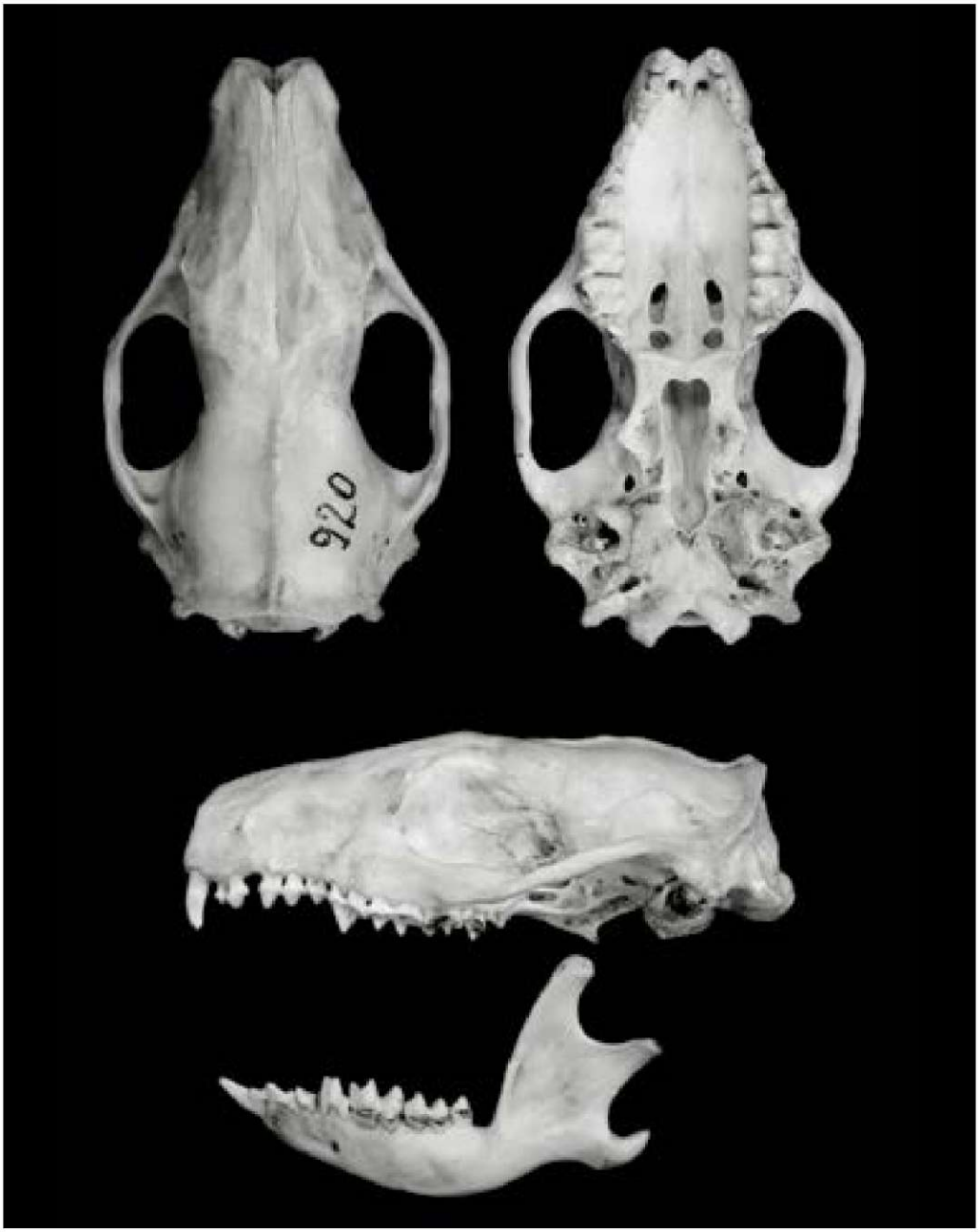


Figure 78. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Medvode, Slovenia. Specimen PMS 920, collected in May 1977. Photo: Boris Kryštufek

Slika 78. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) severnega beloprsega ježa *Erinaceus roumanicus* iz Medvod, Slovenija. Primerek PMS 920, zbran maja 1977. Foto: Boris Kryštufek

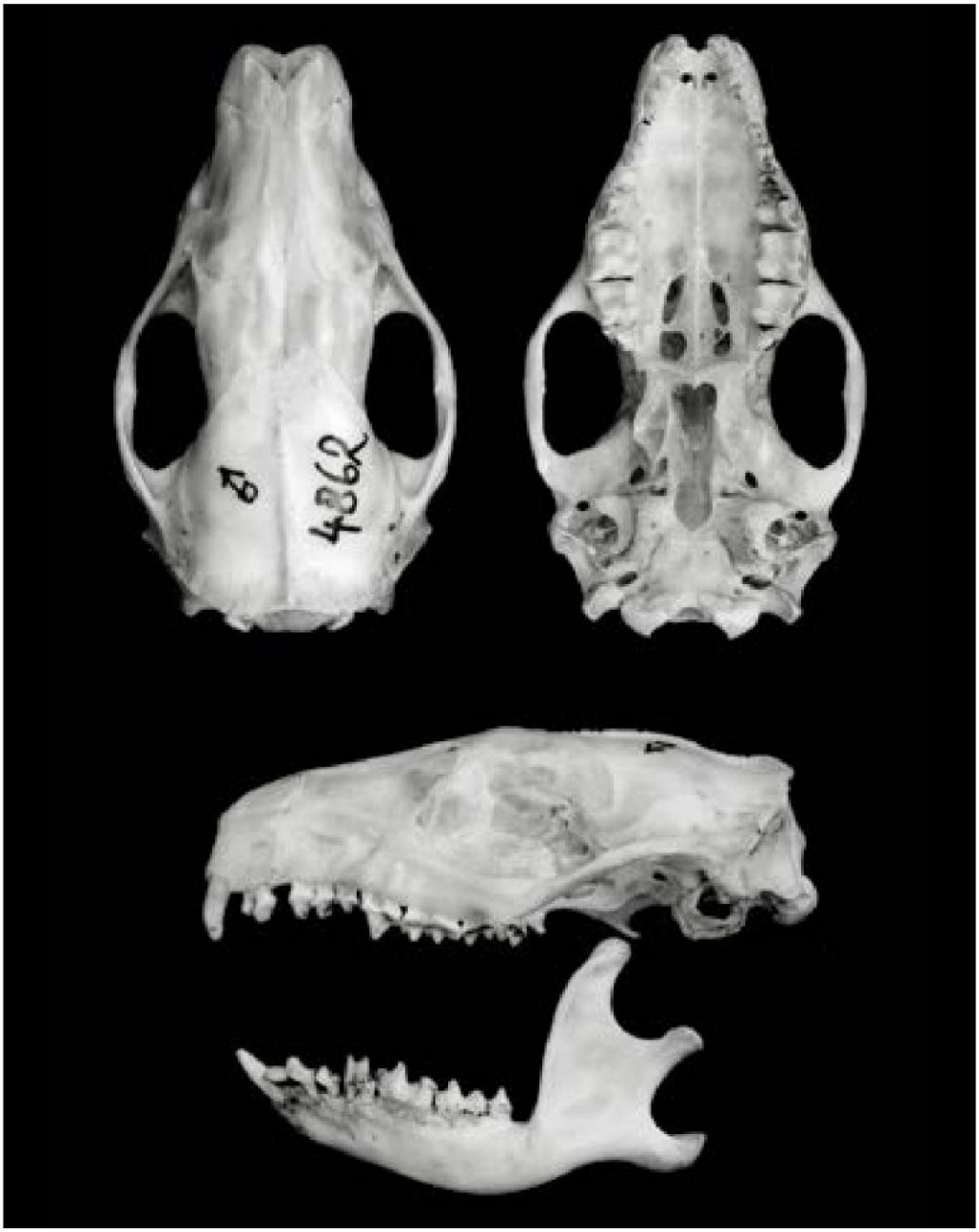


Figure 79. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Medvode, Slovenia. Specimen PMS 4862, collected on 14 May 1985. Photo: Boris Kryštufek

Slika 79. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) severnega beloprsega ježa *Erinaceus roumanicus* iz Medvod, Slovenija. Primerek PMS 4862, zbran 14. maja 1985. Foto: Boris Kryštufek

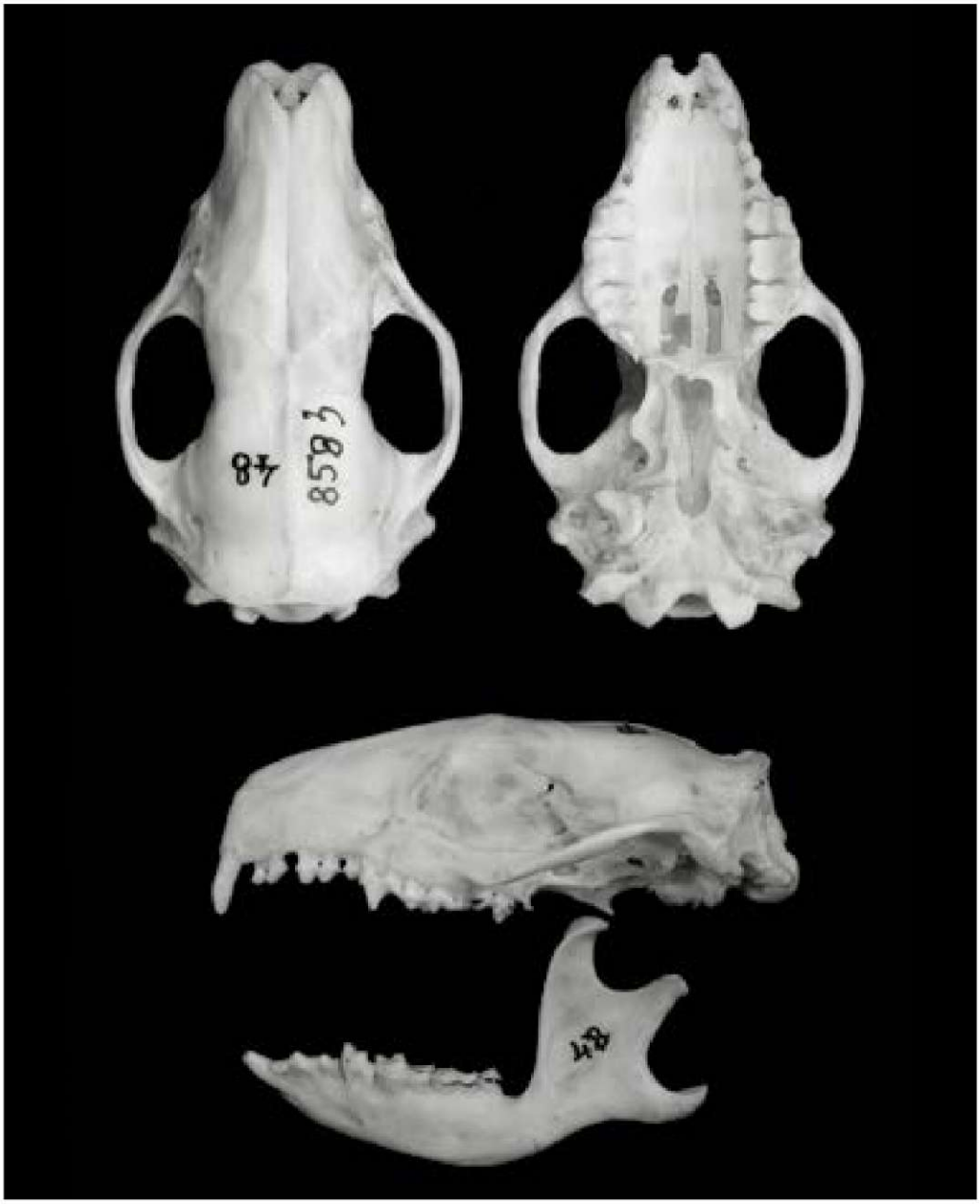


Figure 80. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Blagojev kamen near Majdanpek, Serbia. Specimen PMS 8583, collected on 9 June 1937. In private collection of Boris Petrov catalogued as No. 48. Photo: Boris Kryštufek

Slika 80. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) severnega beloprsega ježa *Erinaceus roumanicus* iz Blagojevega kamna blizu Majdanpeka, Srbija. Primerek PMS 8583, zbran 9. junija 1937. V zasebni zbirki Borisa Petrova katalogiziran pod št. 48. Foto: Boris Kryštufek

Figure 81. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Cetinje, Montenegro; topotypical with *Erinaceus roumanicus roumanicus* morpha *bolkayi* Martino, 1930. Specimen PMS 7536, collected on 31 May 1990. Photo: Boris Kryštufek

Slika 81. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) severnega beloprsega ježa *Erinaceus roumanicus* s Cetinja, Črna gora; topotip *Erinaceus roumanicus roumanicus* morpha *bolkayi* Martino, 1930. Primerek PMS 7536, zbran 31. maja 1990. Foto: Boris Kryštufek

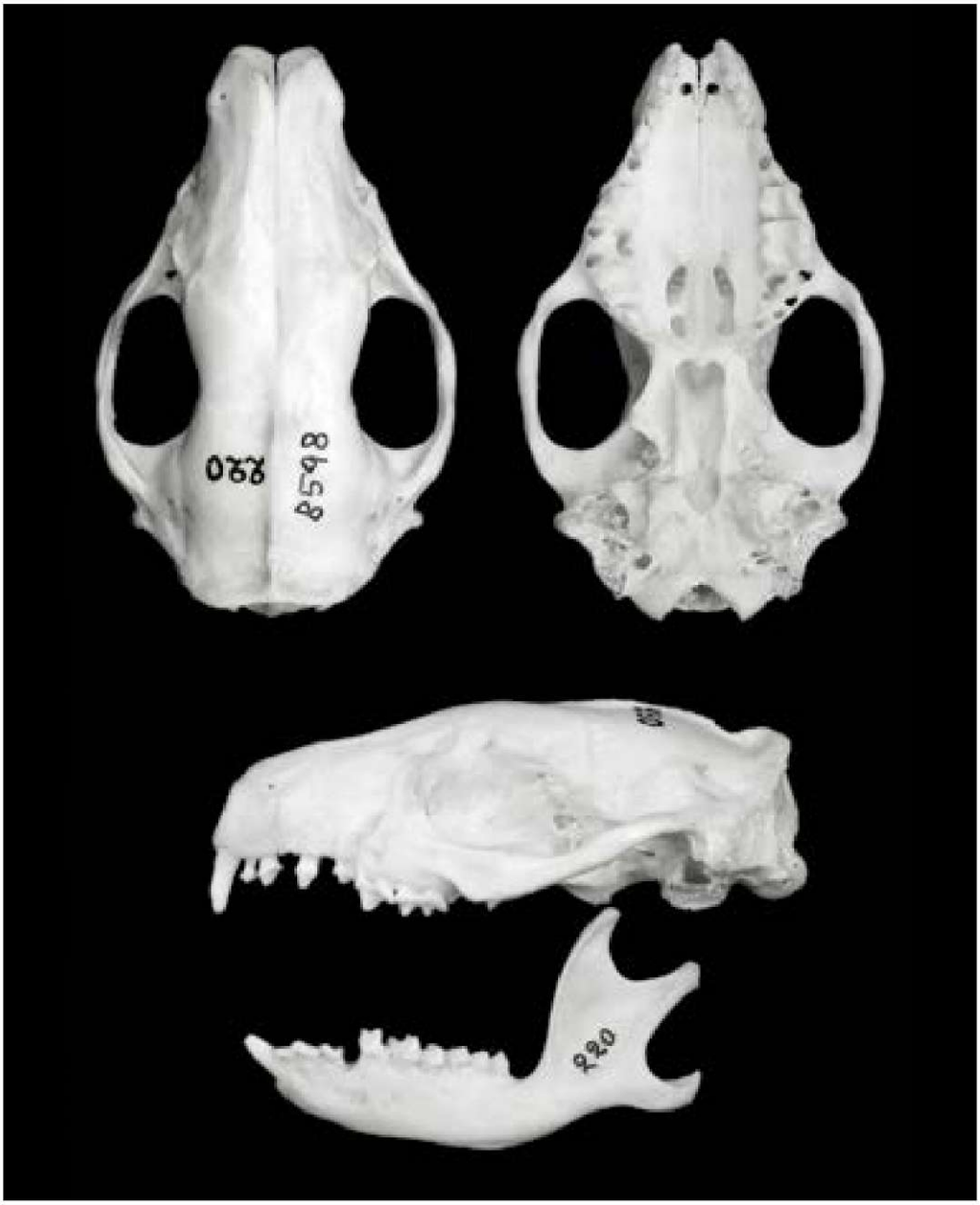


Figure 82. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Krivolak near Pepelište, Macedonia. Specimen PMS 8598, collected on 9 June 1937. In private collection of Boris Petrov catalogued as No. 220. Photo: Boris Kryštufek

Slika 82. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) severnega beloprsega ježa *Erinaceus roumanicus* iz Krivolaka blizu Pepelišta, Makedonija. Primerek PMS 8598, zbran 9. junija 1937. V zasebni zbirki Borisa Petrova katalogiziran pod št. 220. Foto: Boris Kryštufek

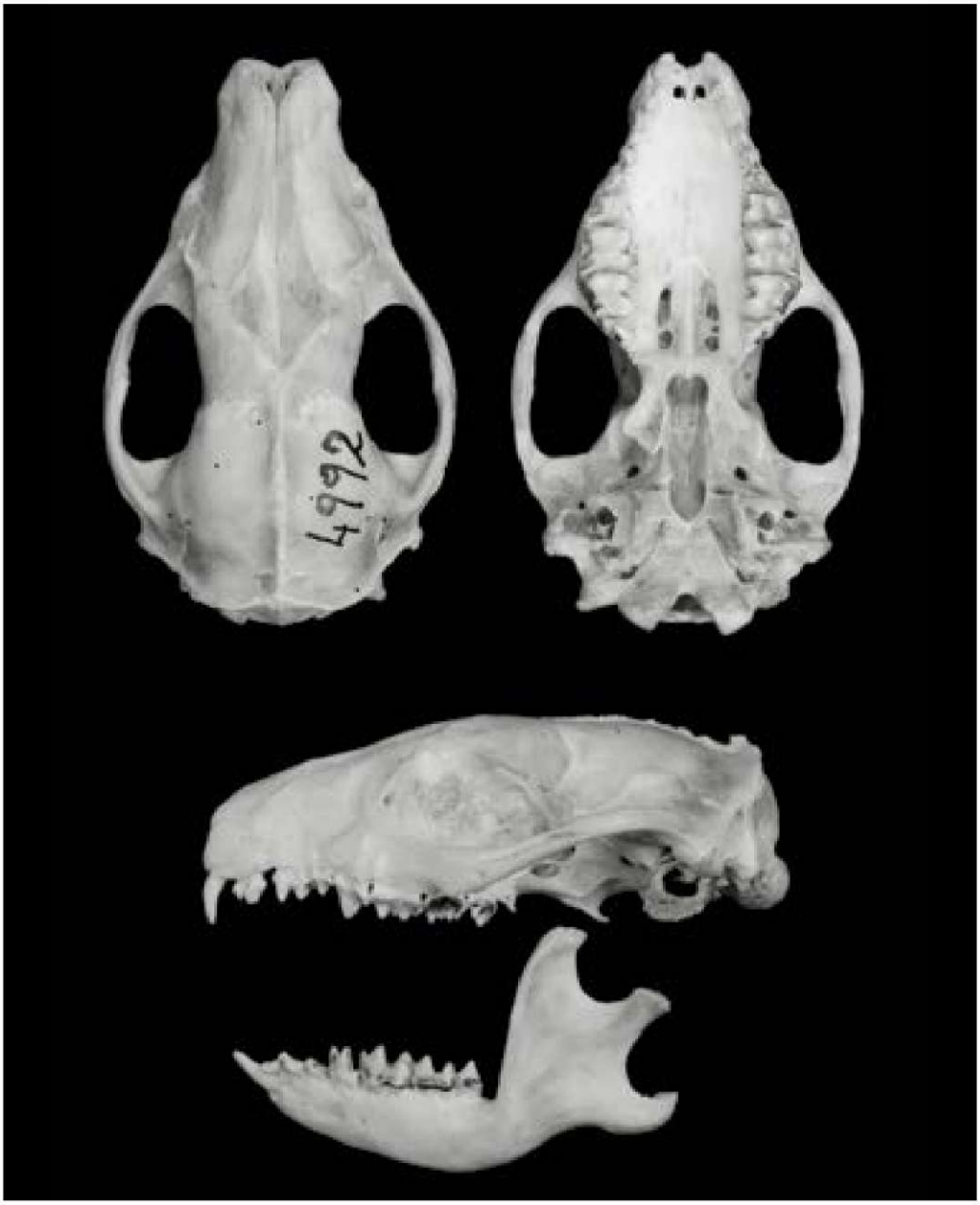


Figure 83. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Kočani, Macedonia; topotype of *Erinaceus roumanicus roumanicus drozdovskii* Martino & Martino, 1933. Specimen PMS 4992, collected on 7 May 1985. Photo: Boris Kryštufek

Slika 83. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) severnega beloprsega ježa *Erinaceus roumanicus* iz Kočanov, Makedonija; topotip *Erinaceus roumanicus roumanicus drozdovskii* Martino & Martino, 1933. Primerek PMS 4992, zbran 7. maja 1985. Foto: Boris Kryštufek

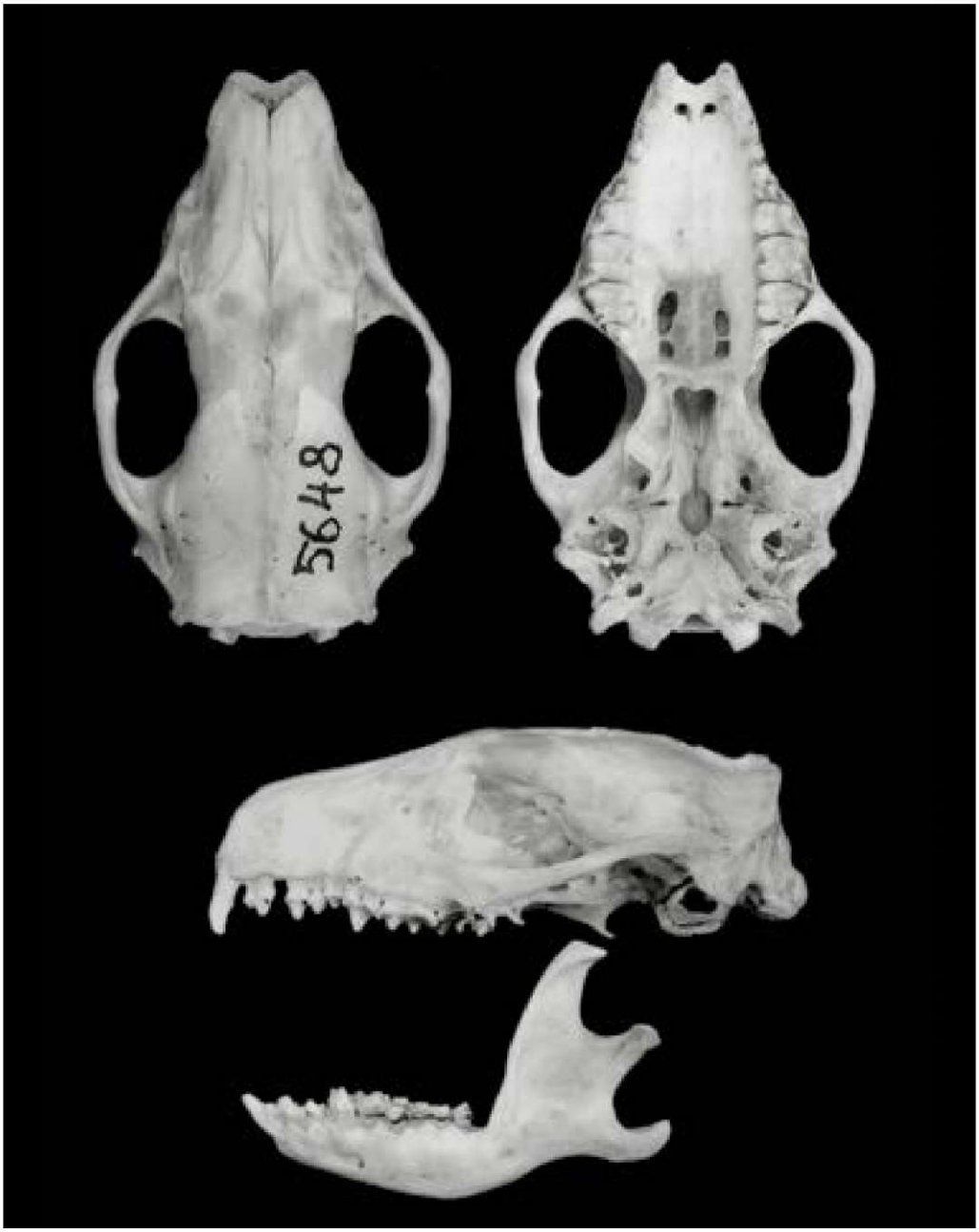


Figure 84. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from the Island of Pag, Croatia. Specimen PMS 5648, collected on 24 July 1987. Photo: Boris Kryštufek

Slika 84. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) severnega beloprsega ježa *Erinaceus roumanicus* z otoka Pag, Hrvaška. Primerek PMS 5648, zbran 24. julija 1987. Foto: Boris Kryštufek

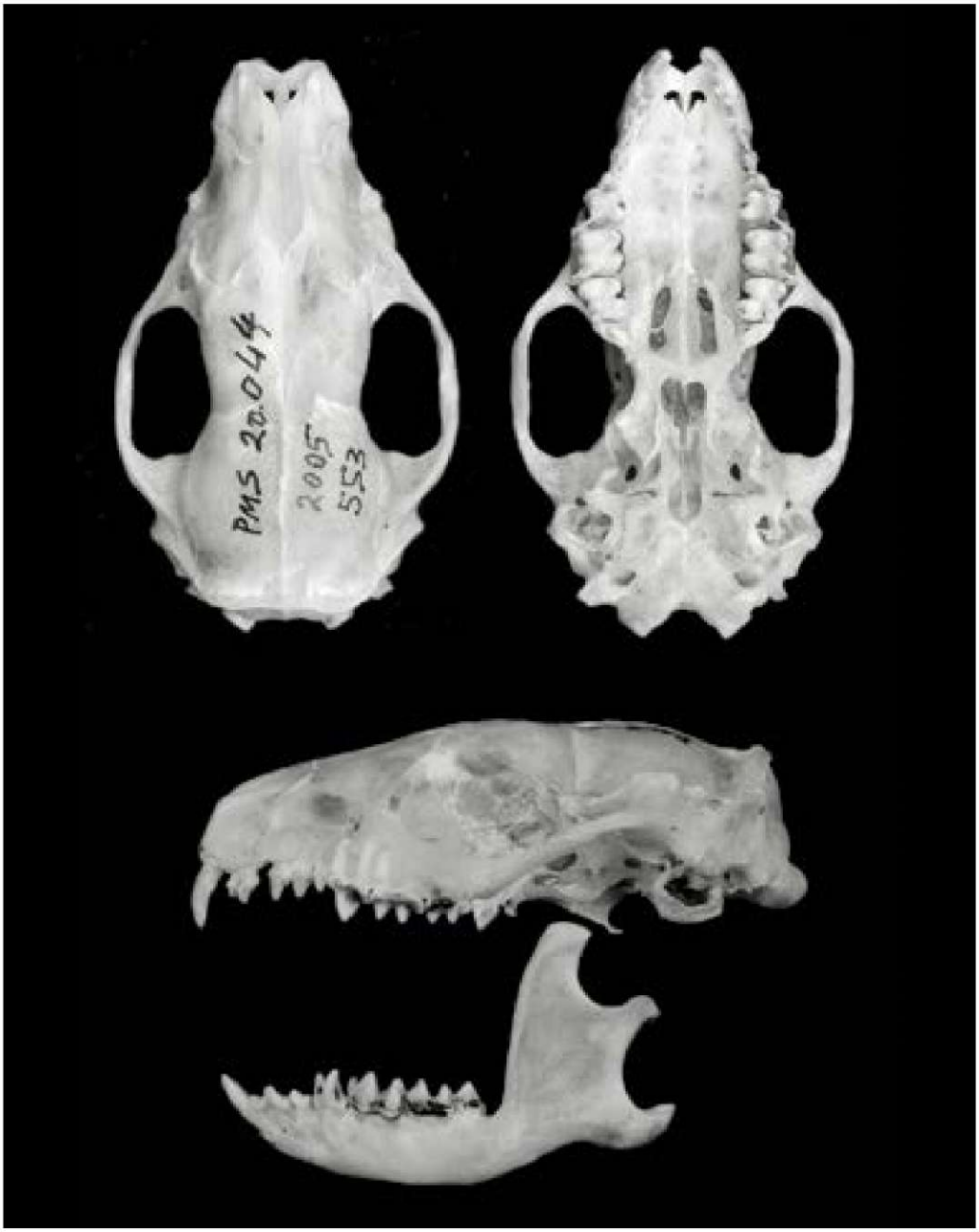


Figure 85. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from the Island of Mljet, Croatia. Specimen PMS 20044, collected on 28 July 2005. Photo: Boris Kryštufek

Slika 85. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) severnega beloprsega ježa *Erinaceus roumanicus* z otoka Mljet, Hrvaška. Primerek PMS 20044, zbran 28. julija 2005. Foto: Boris Kryštufek

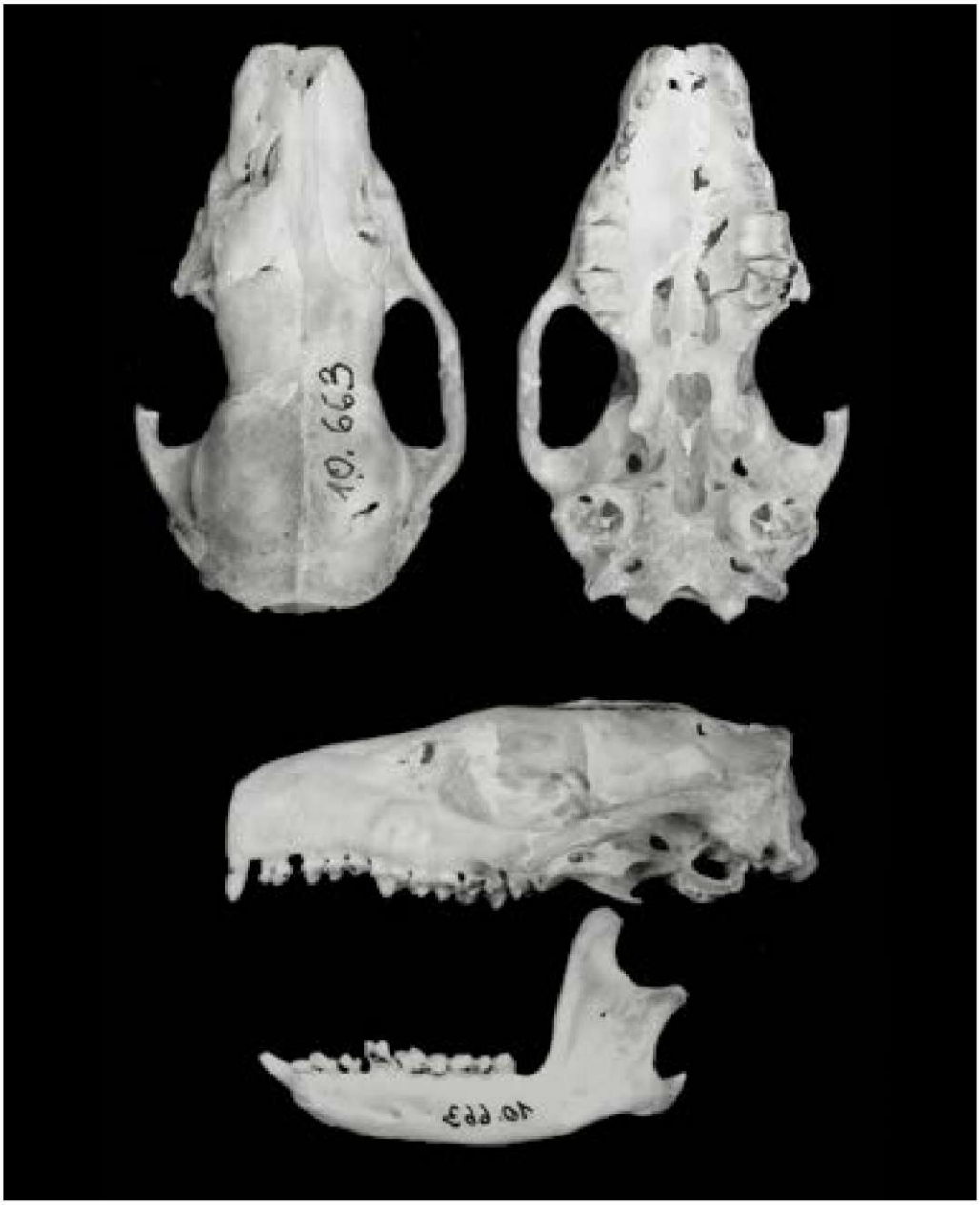


Figure 86. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Northern White-breasted Hedgehog *Erinaceus roumanicus* from Beylidze near Sakarya, Turkey in Asia. Specimen PMS 10663, collected on 1 July 1994. Photo: Boris Kryštufek

Slika 86. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) severnega beloprsega ježa *Erinaceus roumanicus* iz Beylidz pri Sakaryji, azijska Turčija. Primerek PMS 10663, zbran 1. julija 1994. Foto: Boris Kryštufek

Figure 87. Skeleton of Northern White-breasted Hedgehog *Erinaceus roumanicus*, collected in 1925, probably in Slovenia. PMS 19654; recorded in the Catalogue as #303. Photo: Ciril Mlinar

Slika 87. Okostje severnega beloprsega ježa *Erinaceus roumanicus*, zbranega leta 1925, verjetno v Sloveniji. PMS 19654; v Katalogu zapisan pod številko #303. Foto: Ciril Mlinar

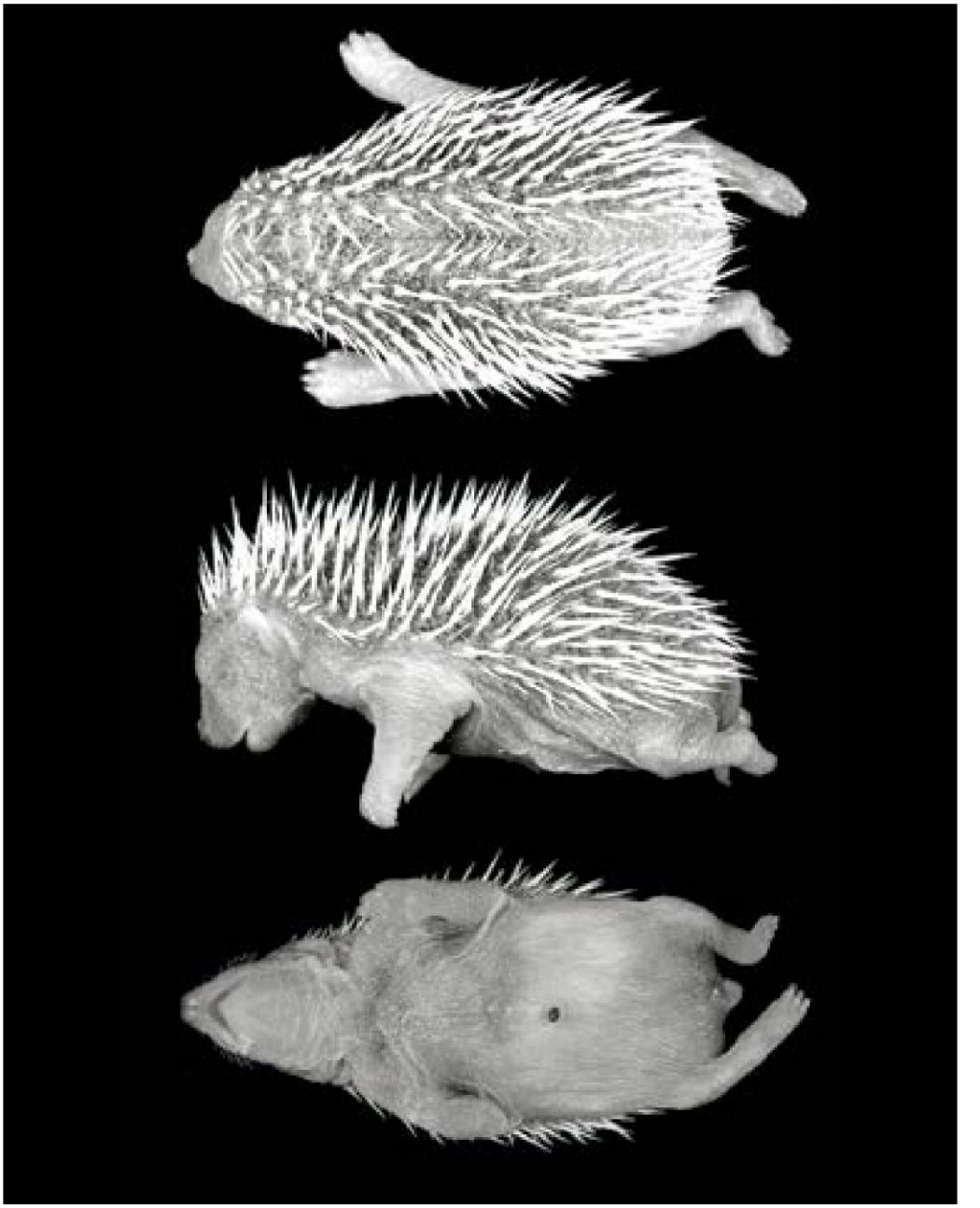


Figure 88. About a day old Northern White-breasted Hedgehog *Erinaceus roumanicus* (dorsal, lateral and ventral views) from Koper, Slovenia, collected on 11 June 2013; PMS 20192. Photographed before its fixation in ethanol. Photo: Boris Kryštufek

Slika 88. Približno en dan star severni beloprsi jež *Erinaceus roumanicus* (hrbtna, bočna in trebušna stran) iz Kopra, Slovenija, zbran 11 junija 2013; PMS 20192. Fotografiran pred potopitvijo v etanol. Foto: Boris Kryštufek

Erinaceus concolor Martin, 1837

Eastern White-breasted Hedgehog

Vzhodni beloprsi jež

Collection

Zbirka

Greece:

Kos Is., Kardamena: 2 skulls (PMS 16796, 16797), unsexed road casualties, collected on 27 May 2009 by Boris Kryštufek. –Kos Is., Marmari: 1 skin with a skull (PMS 16805), a male, road casualty, collected on 29 May 2009 by Boris Kryštufek.

Rhodes Is., Soroni (sea level): 1 skin with a broken skull (PMS 17643), a male, road casualty, collected on 29 April 2004 by Boris Kryštufek.

Syria:

Al Ghab: 1 broken skull (PMS 17713), an unsexed road casualty, collected on 16 June 2010 by Boris Kryštufek.

Turkey:

Konya villayet, Gökcimen: 1 skin with a skull (PMS 10400), a male, found as a road casualty on 30 October 1993 by Boris Kryštufek.

Mersin villayet, Limonlu (100 m a.s.l.): 2 skins with skulls (PMS 11188, 11189), 2 males, found on 12 June 1995 by Eduard Kletečki.

Ordu, Ulubey, Akpınar (350 m a.s.l.): 1 skull (PMS 11289), a male, road casualty, collected on 21 June 1995 by Boris Kryštufek.

Yeşilhisar (1350 m a.s.l.): 1 skin with a skull (PMS 11215), a male, found on 16 June 1995 by Boris Kryštufek.

Table 24. Geographic representation and preparations of the Eastern White-breasted Hedgehog *Erinaceus concolor* in the Mammal Collection of the Slovenian Museum of Natural History

Tabela 24. Geografska zastopanost in preparati vzhodnega beloprsega ježa *Erinaceus concolor* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

Country	Skin	Skull	Individuals
Greece	2	4	4
Syria		1	1
Turkey	4	5	5
Total	6	10	**10**

The Museum vouchers from Turkey were included in a comprehensive morphometric analysis (Kryštufek 2002) with implications for the taxonomic arrangement of the western Palaearctic hedgehogs (Hutterer 2005). Kryštufek & Vohralík (2001:59) plotted localities onto distribution map of hedgehogs in Turkey. In the same publication, PMS 10400 is figured as a skull (Kryštufek & Vohralík 2001:58) and a skin (colour plate X/I on p. 130 in Kryštufek & Vohralík 2001).

Muzejski primerki iz Turčije so bili vključeni v obsežno morfometrijsko analizo (Kryštufek 2002) z implikacijami za taksonomsko ureditev ježev v zahodnem palearktisu (Hutterer 2005). Kryštufek & Vohralík (2001:59) sta nahajališča vrisala na zemljevid razširjenosti ježev v Turčiji. V isti publikaciji je primerek PMS 10400 upodobljen kot risba lobanje (Kryštufek & Vohralík 2001:58) in fotografija kože (barvna priloga X/I na str. 130 v Kryštufek & Vohralík 2001).

Table 25. External and cranial dimensions of Eastern White-breasted Hedgehogs *Erinaceus concolor* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Measured from the 1st incisor to the last molar.

Tabela 25. Zunanje in lobanjske dimenzije vzhodnih beloprsih ježev *Erinaceus concolor* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Merjeno od prvega sekalca do zadnjega meljaka.

Country	PMS No.	Sex	Age	W	H&B	TL	HF	E	CbL	ZgB	UTR[a]
Greece	16796		ad.		155	22	37.7	24.8			
	16797		ad.		290	22	43.5	35.0	55.9		27.5
	16805	♂	ad.		225	28	44.0	27.0	57.1		28.0
	17643	♂	ad.		240	30	41.5	26.5			
Turkey	10400	♂	ad.		275	34	47.5	31.5	62.7	39.1	31.1
	11188	♂	juv.	155	150	15	31.0	22.5	41.2	25.0	22.3
	11189	♂	ad.		250	30	46.5	24.0	59.4	38.7	28.7
	11289	♂	ad.		250	30	46.5	24.0	58.3	34.6	29.4
	11215	♂	ad.		270	34	46.5	29.0	60.4	37.3	30.5

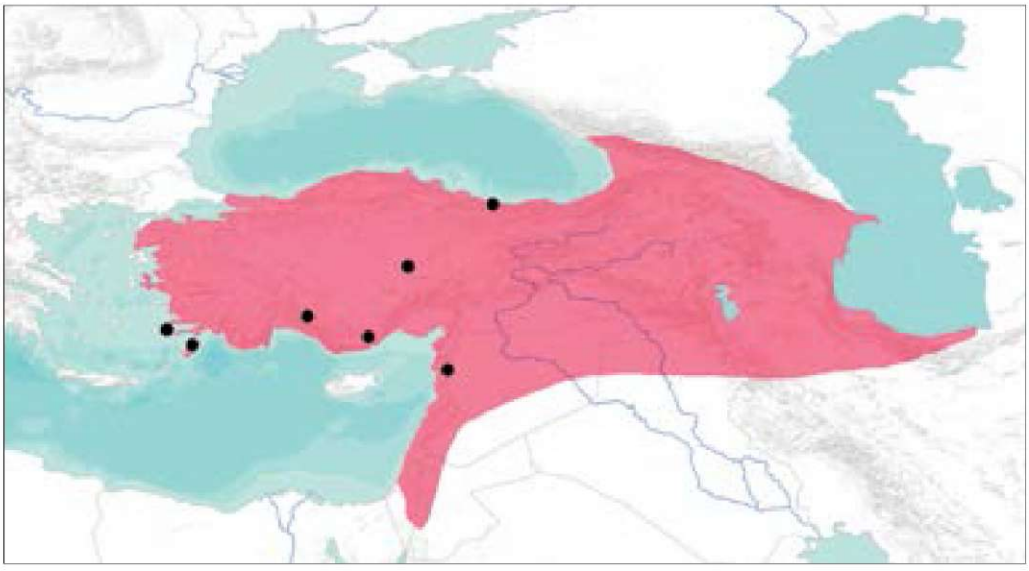


Figure 89. Geographic origin of Eastern White-breasted Hedgehogs *Erinaceus concolor* in the Mammal Collection of the Slovenian Museum of Natural History. Amori et al. (2008c).

Slika 89. Geografski izvor vzhodnih beloprsih ježev *Erinaceus concolor* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za areal vrste je Amori et al. (2008c).

Figure 90. Skin (dorsal and ventral views) of Eastern White-breasted Hedgehog *Erinaceus concolor* from the Island of Rhodes, Greece; topotype of *Erinaceus europaeus rhodius* Festa, 1914. Specimen PMS 17643, collected on 29 April 2004. Photo: Ciril Mlinar

Slika 90. Koža (hrbtna in trebušna stran) vzhodnega beloprsega ježa *Erinaceus concolor* z otoka Rodos, Grčija; topotip *Erinaceus europaeus rhodius* Festa, 1914. Primerek PMS 17643, zbran 29. aprila 2004. Foto: Ciril Mlinar

Figure 91. Skin (dorsal and ventral views) of Eastern White-breasted Hedgehog *Erinaceus concolor* from the Island of Kos, Greece. Specimen PMS 16805, collected on 29 May 2009. Photo: Ciril Mlinar

Slika 91. Koža (hrbtna in trebušna stran) vzhodnega beloprsega ježa *Erinaceus concolor* z otoka Kos, Grčija. Primerek PMS 16805, zbran 29. maja 2009. Foto: Ciril Mlinar

Figure 92. Skin (dorsal, lateral and ventral views) of Eastern White-breasted Hedgehog *Erinaceus concolor* from Limonlu, Mersin villayet, Turkey. Specimen PMS 11189, collected on 12 June 1995. Photo: Ciril Mlinar

Slika 92. Koža (hrbtna, bočna in trebušna stran) vzhodnega beloprsega ježa *Erinaceus concolor* iz Limonluja, villayet Mersin, Turčija. Primerek PMS 11189, zbran 12. junija 1995. Foto: Ciril Mlinar

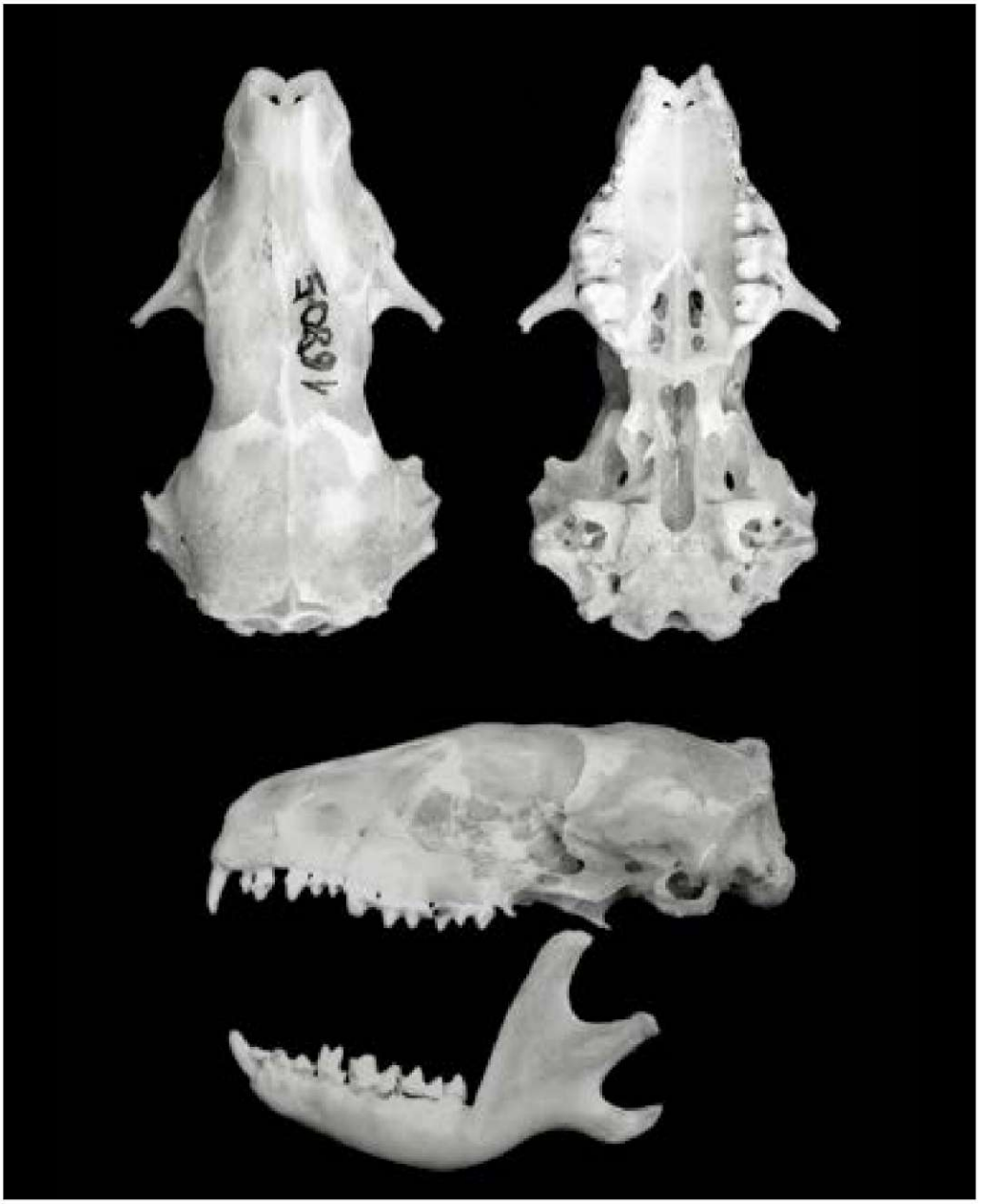


Figure 93. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Eastern White-breasted Hedgehog *Erinaceus concolor* from the Island of Kos, Greece. Specimen PMS 16805, collected on 29 May 2009. Photo: Boris Kryštufek

Slika 93. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) vzhodnega beloprsega ježa *Erinaceus concolor* z otoka Kos, Grčija. Primerek PMS 16805, zbran 29. maja 2009. Foto: Boris Kryštufek

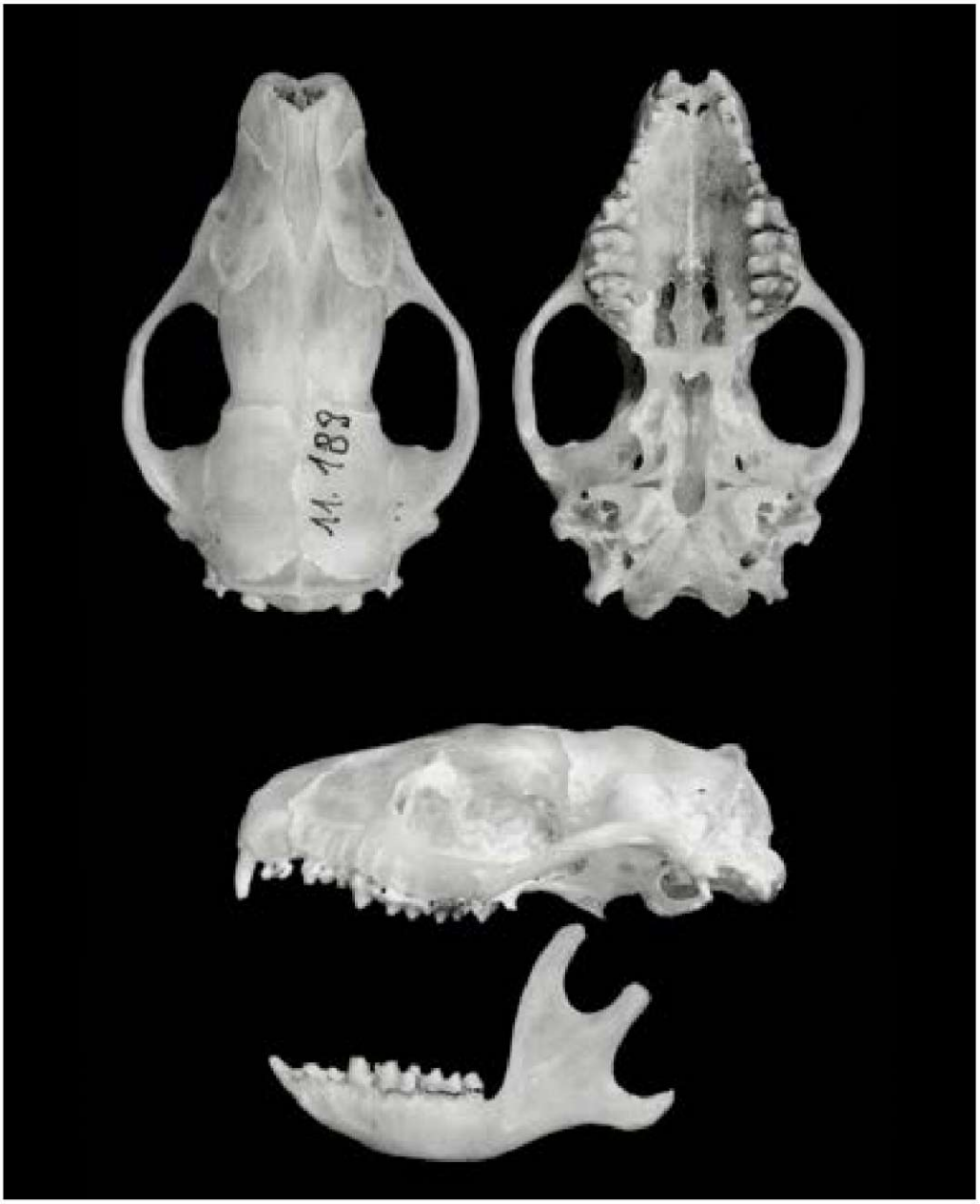


Figure 94. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Eastern White-breasted Hedgehog *Erinaceus concolor* from Limonlu, Mersin villayet, Turkey. Specimen PMS 11189, collected on 12 June 1995. Photo: Boris Kryštufek

Slika 94. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) vzhodnega beloprsega ježa *Erinaceus concolor* iz Limonluja, villayet Mersin, Turčija. Primerek PMS 11189, zbran 12. junija 1995. Foto: Boris Kryštufek

Hylomys suilus Müller, 1840

Lesser Gymnure

COLLECTION

Mali podganji jež

ZBIRKA

Malaysia:
Cameron Highlands, Tanah Rata: 1 skin with a skull (PMS 11137), a male, collected on 2 February 1997 by Boris Kryštufek.

The PMS specimen has been identified on the basis of (i) small size and short tail (Fig. 96), (ii) developed 1st premolar in both, the maxilla and the mandible, and (iii) a relatively large lower canine (distinctly larger than 3rd lower molar; Fig. 97) (FROST et al. 1991). This is the only representative of the genus in the

Primerek iz Zbirke PMS je bil določen kot mali podganji jež na osnovi (i) majhne velikosti in kratkega repa (sl. 96), (ii) prvega predmeljaka v zgornji in spodnji čeljustnici in (iii) razmeroma velikega spodnjega podočnika (ki je občutno večji od tretjega spodnjega meljaka; sl. 97) (FROST et al. 1991). To je edini

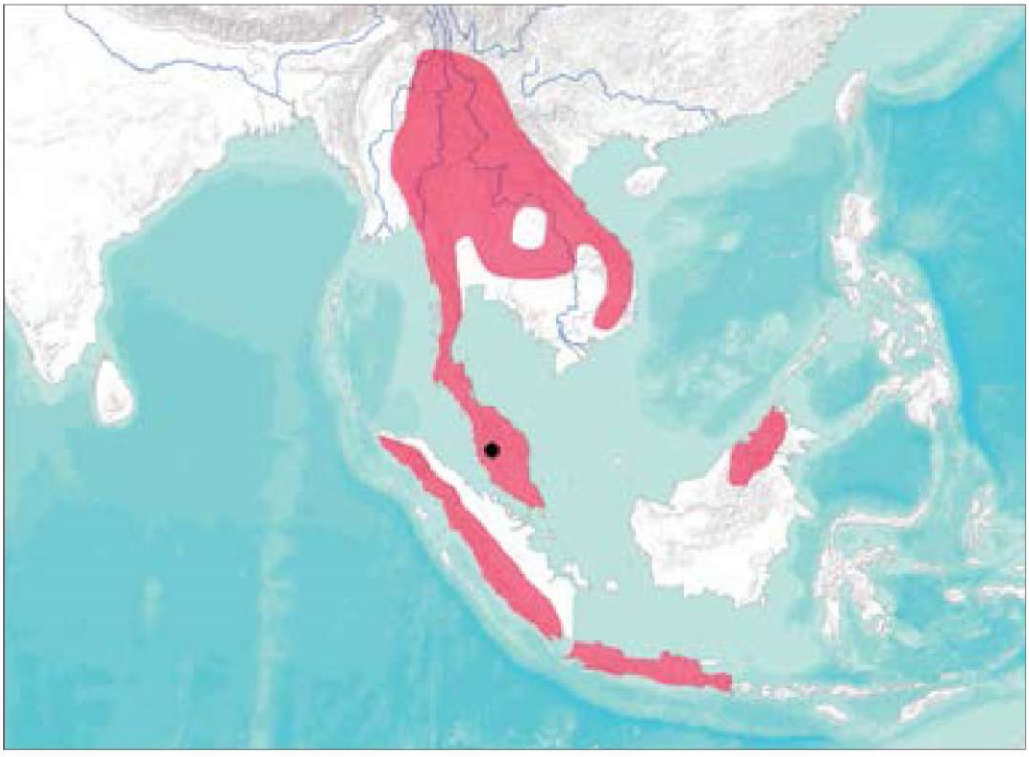


Figure 95. Geographic origin of Lesser Gymnure *Hylomys suilus* in the Mammal Collection of the Slovenian Museum of Natural History. Range of the species is modified from CHIOZZA (2008).

Slika 95. Geografski izvor malega podganjega ježa *Hylomys suilus* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za areal vrste je CHIOZZA (2008).

peninsular Malaysia, and the subspecies is *H. s. maxi* Sody, 1933 (Hill 1960). It is a common inhabitant of the forest floor above 2000 ft (Lord Medway 1983). The PMS specimen originates from a disturbed forest outside Tanah Rata and was trapped in a snap trap baited with peanut-butter bait.

predstavnik rodu na Malajskem polotoku, kjer je zastopan s podvrsto *H. s. maxi* Sody, 1933 (Hill 1960). Mali podganji jež je pogost na gozdnih tleh na nadmorski višini nad 2000 čevljev (= c. 600 m; Lord Medway 1983). Primerek v PMS je bil ujet v degradiranem gozdu na obrobju Tanah Rate, ujel pa se je v past s kikirikijevim maslom kot vabo.

Table 26. External and cranial dimensions of a Lesser Gymnure *Hylomys suilus* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Measured from the 1st incisor to the last molar.

Tabela 26. Zunanje in lobanjske dimenzije malega podganjega ježa *Hylomys suilus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Merjeno od prvega sekalca do zadnjega meljaka.

PMS No.	Sex	Age	W	H&B	TL	HF	E	CbL	ZgB	UTR[a]
11137	♂	ad.	90	146	15.5	25.8	18.2	36.3	19.7	19.1

Figure 96. Skin (dorsal, lateral and ventral views) of a Lesser Gymnure *Hylomys suilus* from Tanah Rata, Cameron Highlands, Malaysia. Specimen PMS 11137, collected on 2 February 1997. Photo: Ciril Mlinar

Slika 96. Koža (hrbtna, bočna in trebušna stran) malega podganjega ježa *Hylomys suilus* iz Tanah Rate, Cameronsko višavje, Malezija. Primerek PMS 11137, zbran 2. februarja 1997. Foto: Ciril Mlinar

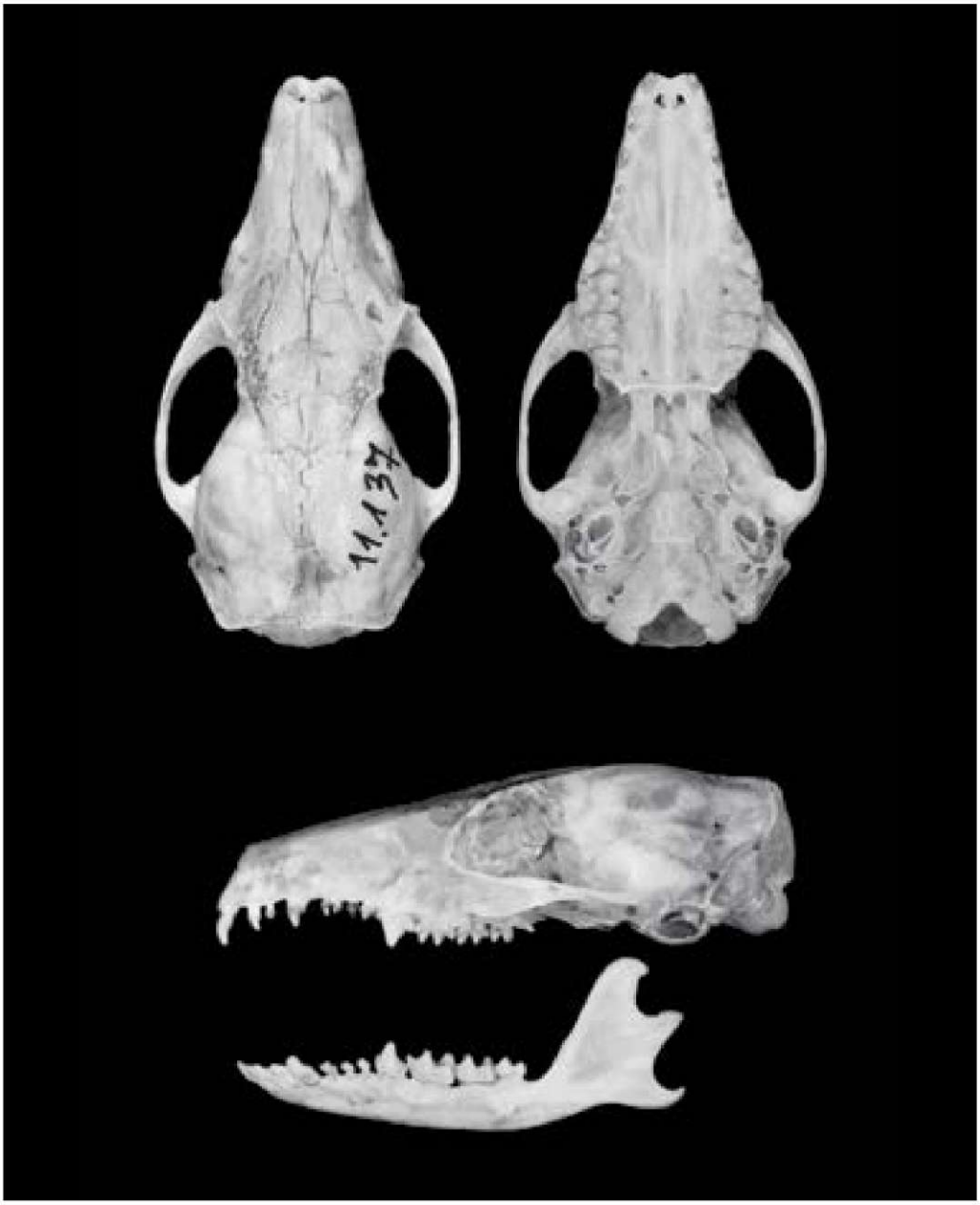


Figure 97. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Lesser Gymnure *Hylomys suilus* from Tanah Rata, Cameron Highlands, Malaysia. Specimen PMS 11137, collected on 2 February 1997. Photo: Boris Kryštufek

Slika 97. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) malega podganjega ježa *Hylomys suilus* iz Tanah Rate, Cameronsko višavje, Malezija. Primerek PMS 11137, zbran 2. februarja 1997. Foto: Boris Kryštufek

Order: Macroscelidea
Family: Macroscelididae
Elephant-shrews

Red: Macroscelidea
Družina: Macroscelididae
Rilčasti skakači

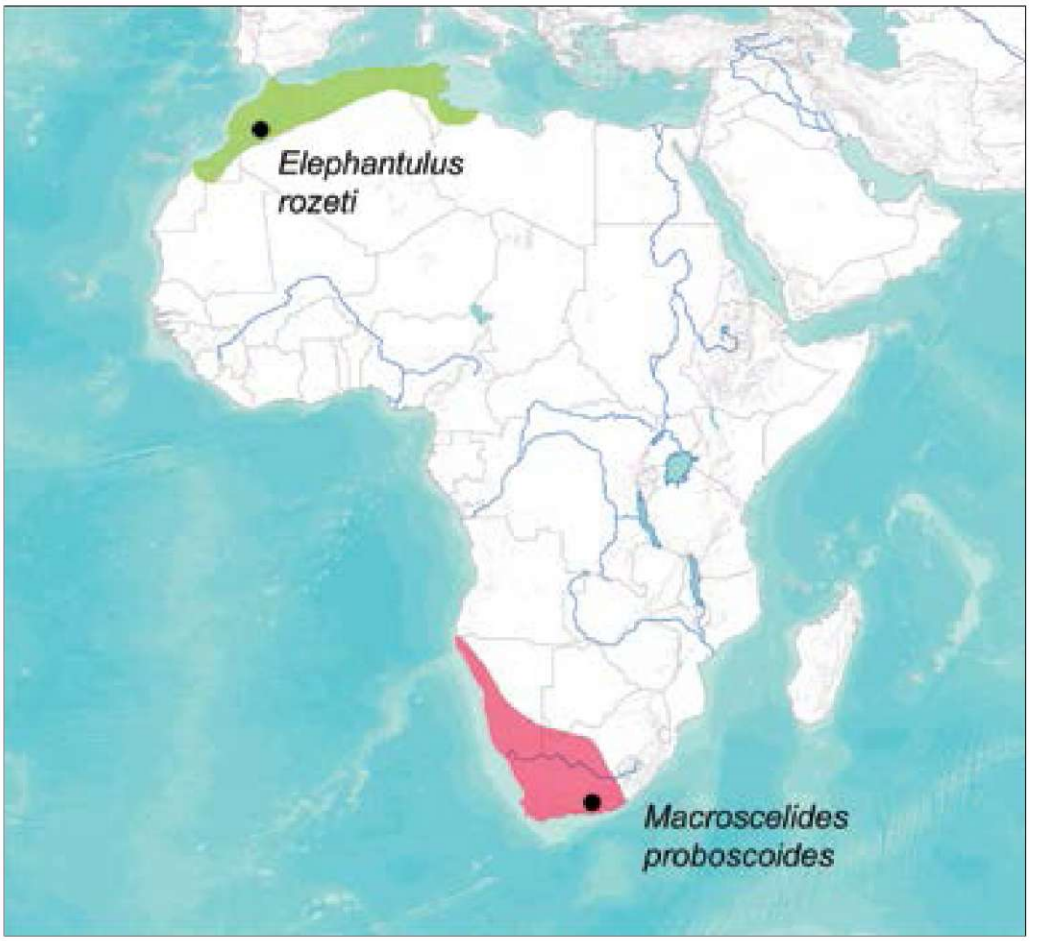


Figure 98. Geographic origin of elephant-shrews in the Mammal Collection of the Slovenian Museum of Natural History. Ranges are modified from PERRIN et al. (2008) and STUART et al. (2008).

Slika 98. Geografski izvor rilčastih skakačev iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vira za areala sta PERRIN et al. (2008) in STUART et al. (2008).

Elephantulus rozeti (Duvernoy, 1833)

North African Elephant-shrew

Severnoafriški slonček

Collection

Zbirka

Morocco:

East of Quarzazate (1140 m a.s.l.): 1 skin and skull (PMS 19284), a female, collected on 10 April 2012 by Gabriel Chişamera.

This is the only Palaearctic elephant-shrew and is very distinct from the other *Elephantulus* species from the Ethiopian region (Corbet 1978). The PMS specimen was snap-trapped in a dry, barren rocky hill. No other small mammals occupy the same habitat, but Gerbils (*Gerbillus* sp.) and Jirds (*Meriones* sp.) frequented the vicinity.

To je edini palearktični predstavnik rilčastih skakačev in se jasno razlikuje od drugih vrst rodu *Elephantulus* iz etiopske regije (Corbet 1978). Primerek v PMS je bil ujet v past na sušnem in golem skalnatem hribu (sl. 99). V istem habitatu ni bilo drugih malih sesalcev, v bližnji okolici pa so živele male tekačice (*Gerbillus* sp.) in puščavske podgane (*Meriones* sp.).

Figure 99. Habitat of North African Elephanth-shrew *Elephantulus rozeti* (PMS 19284) in Quarzazate, Morocco. Photo: Boris Kryštufek

Slika 99. Habitat severnoafriškega slončka *Elephantulus rozeti* (PMS 19284) pri Quarzazatu, Maroko. Foto: Boris Kryštufek

Figure 100. Carded skin (dorsal and ventral views) of North African Elephant-shrew *Elephantulus rozeti* from Quarzazate, Morocco. Specimen PMS 19284, collected on 10 April 2012. Photo: Ciril Mlinar

Slika 100. Ploščata koža (hrbtna in trebušna stran) severnoafrišega slončka *Elephantulus rozeti* iz Quarzazata, Maroko. Primerek PMS 19284, zbran 10. aprila 2012. Foto: Ciril Mlinar

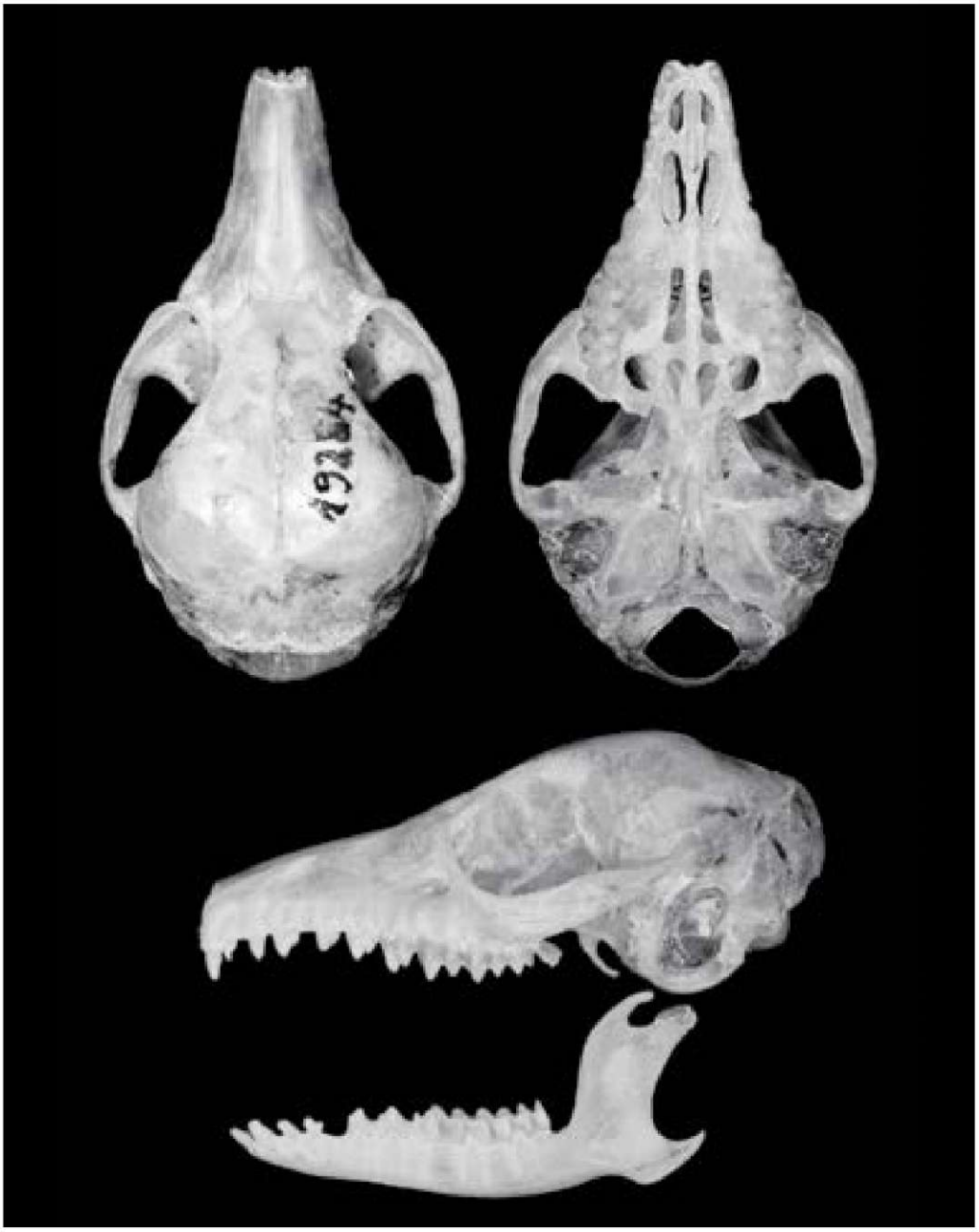


Figure 101. Skull (dorsal, lateral and ventral views) and mandible (lateral) of North African Elephant-shrew *Elephantulus rozeti* from Quarzazate, Morocco. Specimen PMS 19284, collected on 10 April 2012. Photo: Boris Kryštufek

Slika 101. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) severnoafriškega slončka *Elephantulus rozeti* iz Quarzazata, Maroko. Primerek PMS 19284, zbran 10. aprila 2012. Foto: Boris Kryštufek

Macroscelides proboscideus (Shaw, 1800)

Round-eared Elephant-shrew

COLLECTION

Navadni rilčasti skakač

ZBIRKA

Republic of South Africa:
Pinelands, Wolwefontein, Karoo, Eastern Cape Province: 1 skin with a skull (PMS 20183), a female, collected on 5 January 2004 by Boris Kryštufek.

Macroscelides proboscoideus is readily recognizable among the South African elephant-shrews by its enormously inflated bullae, which expand beyond the level of condyles (RATHBUN 2005). The PMS specimen was pregnant with two embryos, and was snap-trapped in a typical Karoo landscape, i.e. in an arid plain sparsely overgrown with low bushes.

Med južnoafriškimi rilčastimi skakači je *Macroscelides proboscoideus* lahko prepoznaven po izjemno povečanih bobničnih mehurjih, ki segajo daleč nazaj za zatilnični čvrš (RATHBUN 2005). Samica v zbirki PMS je bila breja z dvema zarodkoma. Ujeta je bila v krajini, značilni za Karoo, t.j. na sušni ravnici, ki je bila porasla z redkimi, nizkimi grmički.

Table 27. External and cranial dimensions of elephant shrews in Mammal Collection of the Slovenian Museum of Natural History. [a]Measured from the 1st incisor to the 3rd molar.

Tabela 27. Zunanje in lobanjske dimenzije rilčastih skakačev v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Merjeno od prvega sekalca do tretjega meljaka.

Species	PMS No.	Sex	W	H&B	TL	HF	E	CbL	ZgB	UTR[a]
E. rozeti	19284	♀	38.5	115	126	33.5	27.2	31.1	19.5	17.7
M. proboscoides	20183	♀	53	126	120	35.0	21.5	30.5	20.5	15,8

Figure 102. Carded skin (dorsal and ventral views) of Round-eared Elephant-shrew *Macroscelides proboscoideus* from Wolwefontein, Eastern Cape Province, Republic of South Africa. Specimen PMS 20183, collected on 5 January 2004. Photo: Ciril Mlinar

Slika 102. Ploščata koža (hrbtna in trebušna stran) navadnega rilčastega skakača *Macroscelides proboscoideus* iz Wolwefonteina, Vzhodna kapska Provinca, Južnoafriška republika. Primerek PMS 20183, zbran 5. januarja 2004. Foto: Ciril Mlinar

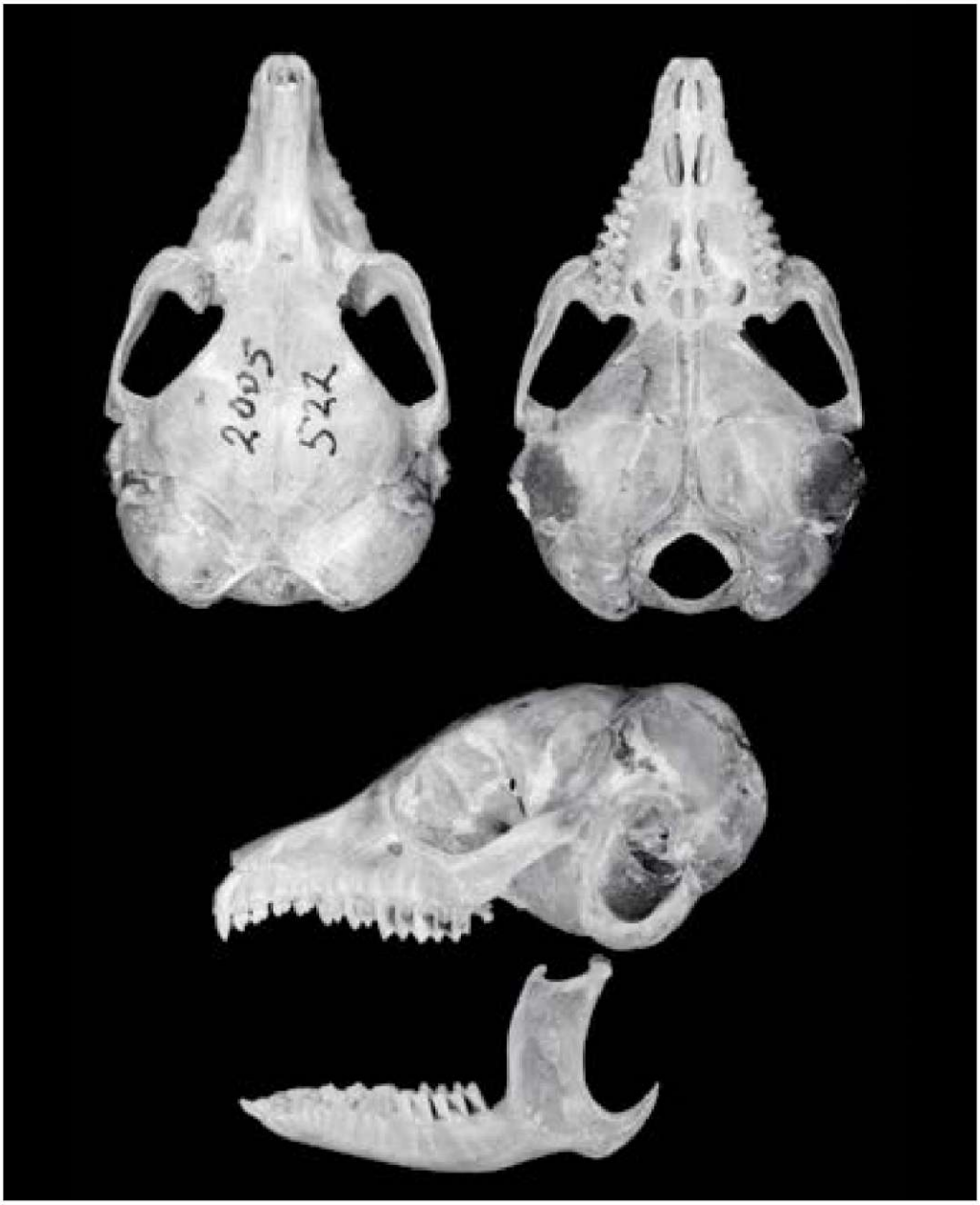


Figure 103. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Round-eared Elephant-shrew *Macroscelides proboscoideus* from Wolwefontein, Eastern Cape Province, Republic of South Africa. Specimen PMS 20183, collected on 5 January 2004. Photo: Boris Kryštufek

Slika 103. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) navadnega rilčastega skakača *Macroscelides proboscoideus* iz Wolwefonteina, Vzhodnokapska provinca, Južnoafriška republika. Primerek PMS 20183, zbran 5. januarja 2004. Foto: Boris Kryštufek

Order: Afrosoricida
Family: Chrysochloridea
Golden Moles

Red: Afrosoricida
Družina: Chrysochloridea
Zlati krti

Amblysomus hottentotus **(A. Smith, 1829)**

Hottentot Golden Mole

Hotentotski zlati krt

COLLECTION

ZBIRKA

Republic of South Africa:

Fort Beaufort, Eastern Cape Province (425 m a.s.l.): 1 skull (PMS 20187), a female, killed by a dog, collected on 30 December 2003 by Boris Kryštufek.

Pietermaritzburg, KwaZulu-Natal: 1 skin, skull and partial postcranial skeleton (PMS 20184), a female, collected on 15 May 1987 by Graham C. Hickman (collector's # PMB17). Obtained as alcoholic specimen in 1988 from Shimon Shimson (than at the University in Haifa, Israel); skinned subsequently in PMS; original label is of the University of Natal.

Roundhill Oribi Nature Reserve, near Grahamstown, Eastern Cape Province (330 m a.s.l.): 1 skin and skull (PMS 20186), a female, collected on 19 April 2000 by Boris Kryštufek.

Umdoni Park (= Umdoni Park Golf Course, near Pennington), Natal (= KwaZulu-Natal): 1 alcoholic specimen with extracted skull (PMS 20185), sex not recorded, collected on 27 September 1988. Obtained in 1988 from Shimon Shimson (than at the University in Haifa, Israel); original label is of the University of Natal.

Determination of a species using morphological characteristics is a demanding task in golden moles. The majority of species, however, are extremely rare and localized in distribution. Hottentot Golden Mole is among the very few species, which are common. Two of the PMS vouchers had already been identified before reaching the Museum and therefore served as reference specimens to facilitate species identification of the remaining material. Identification was based primarily on (i) colouration (dark reddish-brown dorsally, lighter on flanks, belly orange; Figs. 105, 106), (ii) relatively wide skull (quotient of ZgB with CbL = 0.64–0.68; Fig. 107), and (iii) geographic overlap of collecting sites with the range of *A. hottentotus* (BRONNER & BENNETT 2005). Despite the small collection, sampling covers well the range of the species (Fig. 104). Specimens were captured at a golf course (PMS 20185), in pristine grassland (PMS 20186) and in a town meadow (PMS 20187).

Določevanje vrst zlatih krtov na osnovi morfoloških značilnosti je zelo zahtevno. Večina vrst je izjemno redka z ozko razširjenostjo, hotentotski zlati krt pa je ena izmed maloštevilnih vrst, ki so pogoste. Dva izmed muzejskih primerkov sta bila določena že pred sprejemom v zbirko, tako da sta rabila kot referenčni material pri determinaciji preostalih primerkov. Determinacija je utemeljena predvsem na (i) barvi (zgoraj temno rdečе-rjava, svetlejša na bokih, trebuh oranžen; sl. 105, 106), (ii) relativno široki lobanji (količnik ZgB s CbL = 0.64–0.68; Sl. 107) in (iii) geografskemu prekrivanju nahajališč z območjem razširjenosti *hottentotus* (BRONNER & BENNETT 2005). Čeprav je zbirka majhna, pa nahajališča dobro pokrivajo celotno območje razširjenosti vrste (sl. 104). Primerki so bili ujeti na golfišču (PMS 20185), na naravnem travniku (PMS 20186) in v parku v mestu (PMS 20187).

Table 28. External and cranial dimensions of Hottentot Golden Moles *Amblysomus hottentotus* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Measured from the 1st incisor to the last molar.

Tabela 28. Zunanje in lobanjske dimenzije hotentotskih zlatih krtov *Amblysomus hottentotus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Merjeno od prvega sekalca do zadnjega meljaka.

PMS No.	Sex	W	H&B	HF	CbL	ZgB	UTR[a]
20184	♀	60	130	12.0	24.3	16.9	10.9
20185		50	121	14.0	23.6	16.7	10.7
20186	♀	50	123	12.5	22.1	16.0	10.0
20187	♀	50	120	13.0	22.4	15.4	10.5

Figure 104. Geographic origin of Hottentot Golden Moles *Amblysomus hottentotus* in the Mammal Collection of the Slovenian Museum of Natural History. Range of the species follows Bronner (2008).

Slika 104. Geografski izvor hotentotskih zlatih krtov *Amblysomus hottentotus* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za areal vrste je Bronner (2008).

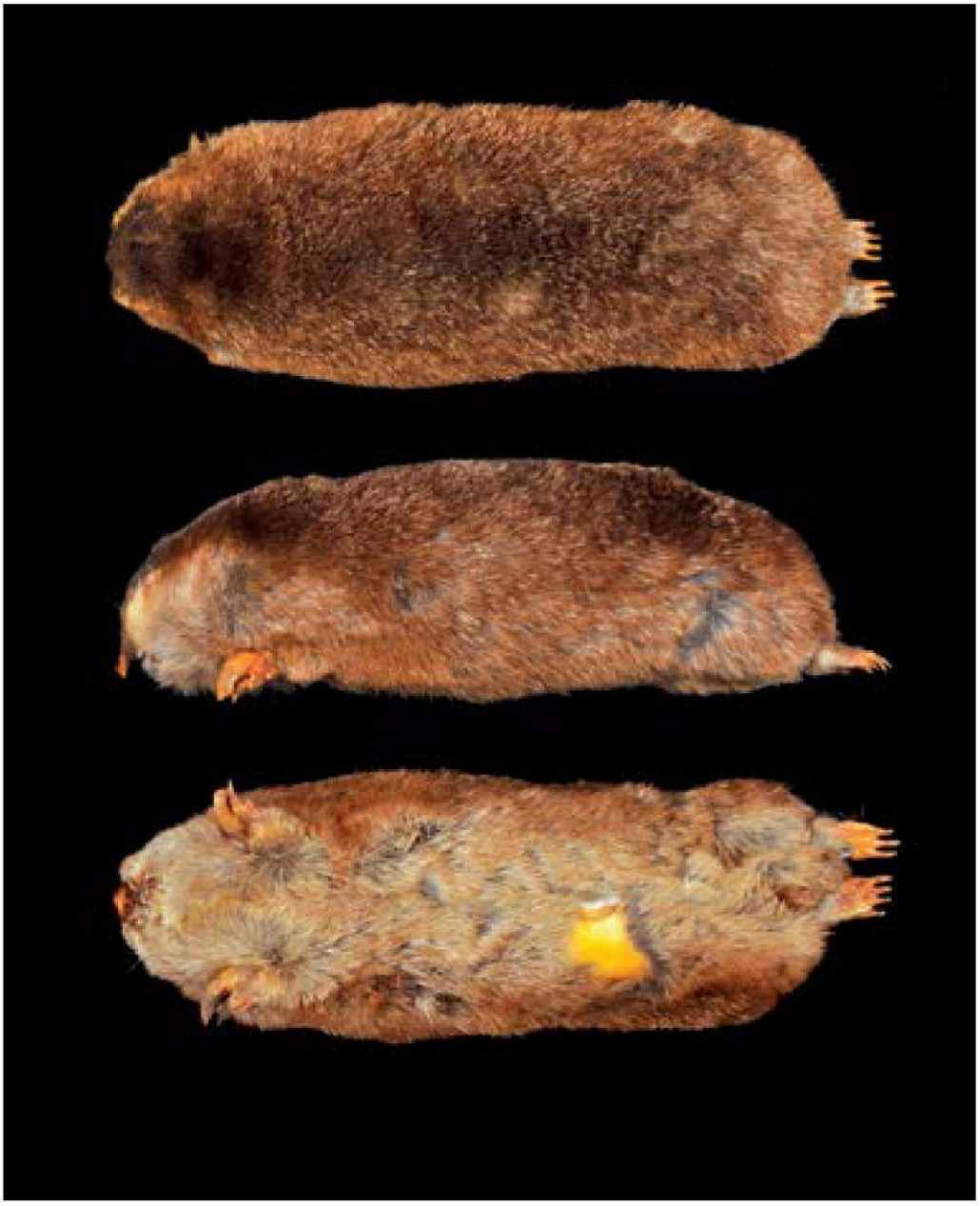


Figure 105. Skin (dorsal, lateral and ventral views) of Hottentot Golden Mole *Amblysomus hottentotus* from Pietermaritzburg, KwaZulu Natal, Republic of South Africa. Specimen PMS 20184, collected on 15 May 1987. Skin prepared from a specimen in ethanol. Photo: Ciril Mlinar

Slika 105. Koža (hrbtna, bočna in trebušna stran) hotentotskega zlatega krta *Amblysomus hottentotus* iz Pietermaritzburga, KwaZulu Natal, Južnoafriška republika. Primerek PMS 20184, zbran 15. maja 1987. Koža preparirana z osebka, ki je bil shranjen v etanolu. Foto: Ciril Mlinar

Figure 106. Carded skin (dorsal and ventral views) of Hottentot Golden Mole *Amblysomus hottentotus* from Roundhill Oribi Nature Reserve near Grahamstown, Eastern Cape Province, Republic of South Africa. Specimen PMS 20186, collected on 19 April 2000. Photo: Ciril Mlinar

Slika 106. Ploščata koža (hrbtna in trebušna stran) hotentotskega zlatega krta *Amblysomus hottentotus* iz rezervata Roundhill Oribi Nature Reserve pri Grahamstownu, Vzhodnokapska provinca, Južnoafriška republika. Primerek PMS 20186, zbran 19. aprila 2000. Foto: Ciril Mlinar

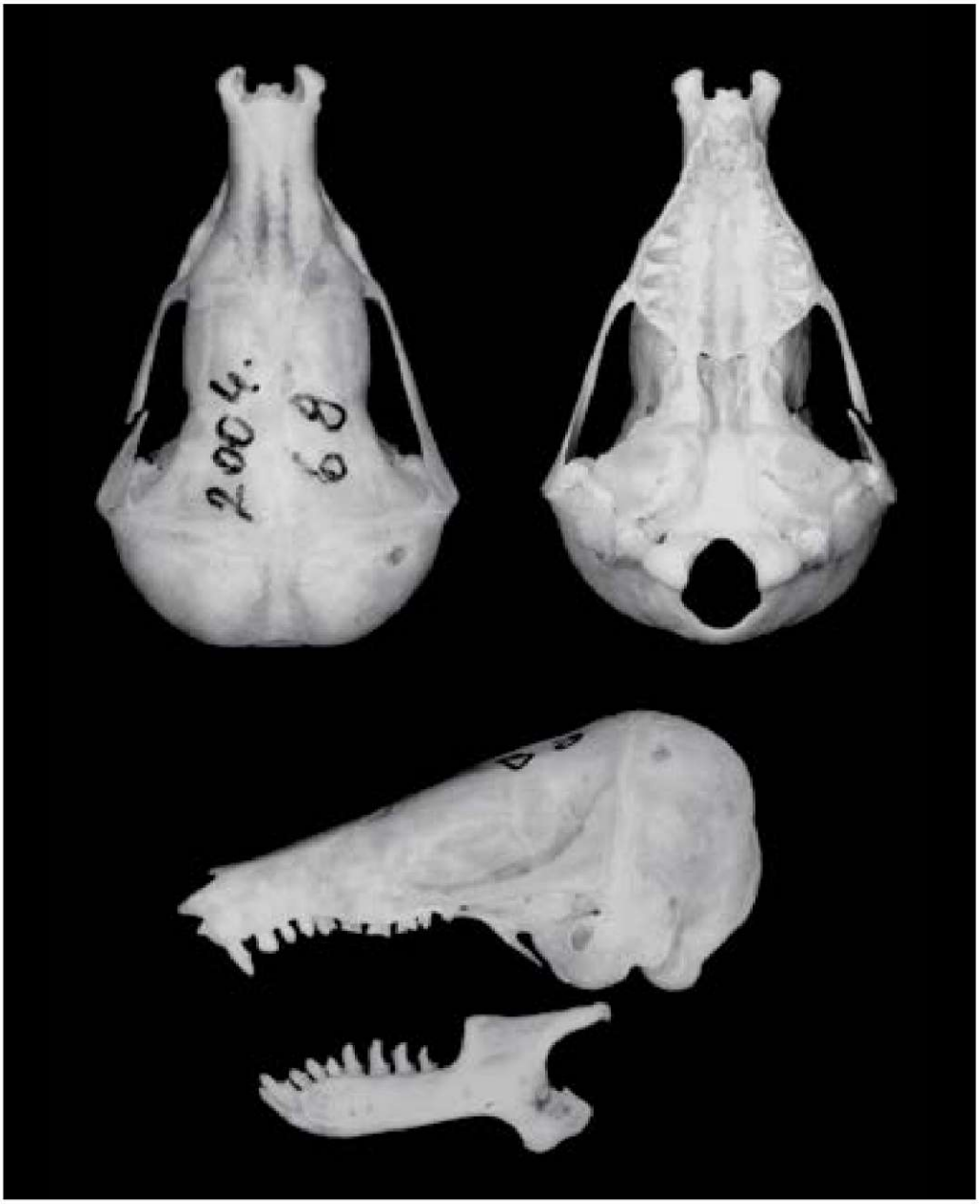


Figure 107. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Hottentot Golden Mole *Amblysomus hottentotus* from Roundhill Oribi Nature Reserve near Grahamstown, Eastern Cape Province, Republic of South Africa. Specimen PMS 20186, collected on 19 April 2000. Photo: Boris Kryštufek

Slika 107. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) hotentotskega zlatega krta *Amblysomus hottentotus* iz rezervata Roundhill Oribi Nature Reserve pri Grahamstownu, Vzhodnokapska provinca, Južnoafriška republika. Primerek PMS 20186, zbran 19. aprila 2000. Foto: Boris Kryštufek

Order: Scandentia
Family: Tupaidae
Treeshrews

Red: Scandentia
Družina: Tupaidae
Tupaje

Tupaia glis (Diard, 1820)

Common Treeshrew

Navadna tupaja

Collection

Zbirka

Malaysia:

Tioman Island, Kampung Penuba: 2 skins with skulls (PMS 11132, 11133), 1 male and 1 female, collected on 25 January 1997 by Boris Kryštufek.

The identification was based on a set of characteristics provided in Lord Medway (1983) and Corbet & Hill (1992): (i) the tail is bushy and distichous (Fig. 109), (ii) incisive foramina are large, (iii) the rostrum is rather long (Fig. 110), (iv) the overall size is large and the hind foot is long (Table 29), (v) the tail is shorter than head and body, and (vi) the dorsal pelage is reddish-grizzled brown (Fig. 109). *Tupaia glis* is easily recognizable among the treeshrews of the peninsular Malaysia (Lord Medway 1983) and is the only tree shrew present on the Island of Tioman (Lord Medway 1966). Many races of *T. glis* have been described from the mainland of Malaysia and its islands (Corbet & Hill 1992). The Island of Tioman is reportedly the homeland of the endemic *T. g. sordida* Miller, 1900, which is very similar to the mainland *T. g. ferruginea* Raffles, 1821 (Hill 1960). The common treeshrew was abundant on the island at the time when the collection was done, and is reported as such for the Tioman (Lord Medway 1966) and Malayan lowland forests in general (Harrison 1969).

Determinacija muzejskega materiala je temeljila na nizu značilnosti, ki jih navajajo Lord Medway (1983) in Corbet & Hill (1992): (i) košat rep ima dlake usmerjene vstran (sl. 109, (ii) odprtina na predčeljustnici je velika, (iii) rostrum je razmeroma dolg (sl. 110), (iv) žival je razmeroma velika, zadnje stopalo pa dolgo (tabela 29), (v) rep je krajši od trupa z glavo in (vi) hrbet je rižast in rdečkasto-rjav (sl. 109). Poleg tega, da je *Tupaia glis* lahko razlikovati od preostalih tupaj Malajskega polotoka, je tudi edini predstavnik skupine na otoku Tioman (Lord Medway 1966). Z Malajskega polotoka in otokov je bilo poimenovano veliko število podvrst *T. glis* (Corbet & Hill 1992). Na Tiomanu živi podvrsta *T. g. sordida* Miller, 1900, ki je endemična za otok, je pa zelo podobna celinski podvrsti *T. g. ferruginea* Raffles, 1821 (Hill 1960). V času, ko sta bila zbrana muzejska primerka, je bila navadna tupaja na otoku številčna. Kot takšno jo za Tioman navaja Lord Medway (1966), za malajske nižinske gozdove pa Harrison (1969).

Table 29. External and cranial dimensions of Common Treeshrews *Tupaia glis* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Measured from the 1st incisor to the 3rd molar.

Tabela 29. Zunanje in lobanjske dimenzije navadnih tupaj *Tupaia glis* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Merjeno od prvega sekalca do tretjega meljaka.

PMS No.	Sex	W	H&B	TL	HF	E	CbL	ZgB	UTR[a]
11132	♀	136	180	155	41.2	17.6	45.8	25.4	27.0
11133	♂	150	185	147	41.4	17.4	47.7	25.5	27.6

Figure 108. Geographic location of Common Treeshrew *Tupaia glis* from the Mammal Collection of the Slovenian Museum of Natural History. Range of the species is modified from Han (2008).

Slika 108. Geografski izvor navadnih tupaj *Tupaia glis* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za areal vrste je Han (2008).

Figure 109. Skin (dorsal, lateral and ventral views) of Common Treeshrew *Tupaia glis* from Tioman Island, Malaysia. Specimen PMS 11133, collected on 25 January 1997. Photo: Ciril Mlinar

Slika 109. Koža (hrbtna, bočna in trebušna stran) navadne tupaje *Tupaia glis* z otoka Tioman, Malezija. Primerek PMS 11133, zbran 25. januarja 1997. Foto: Ciril Mlinar

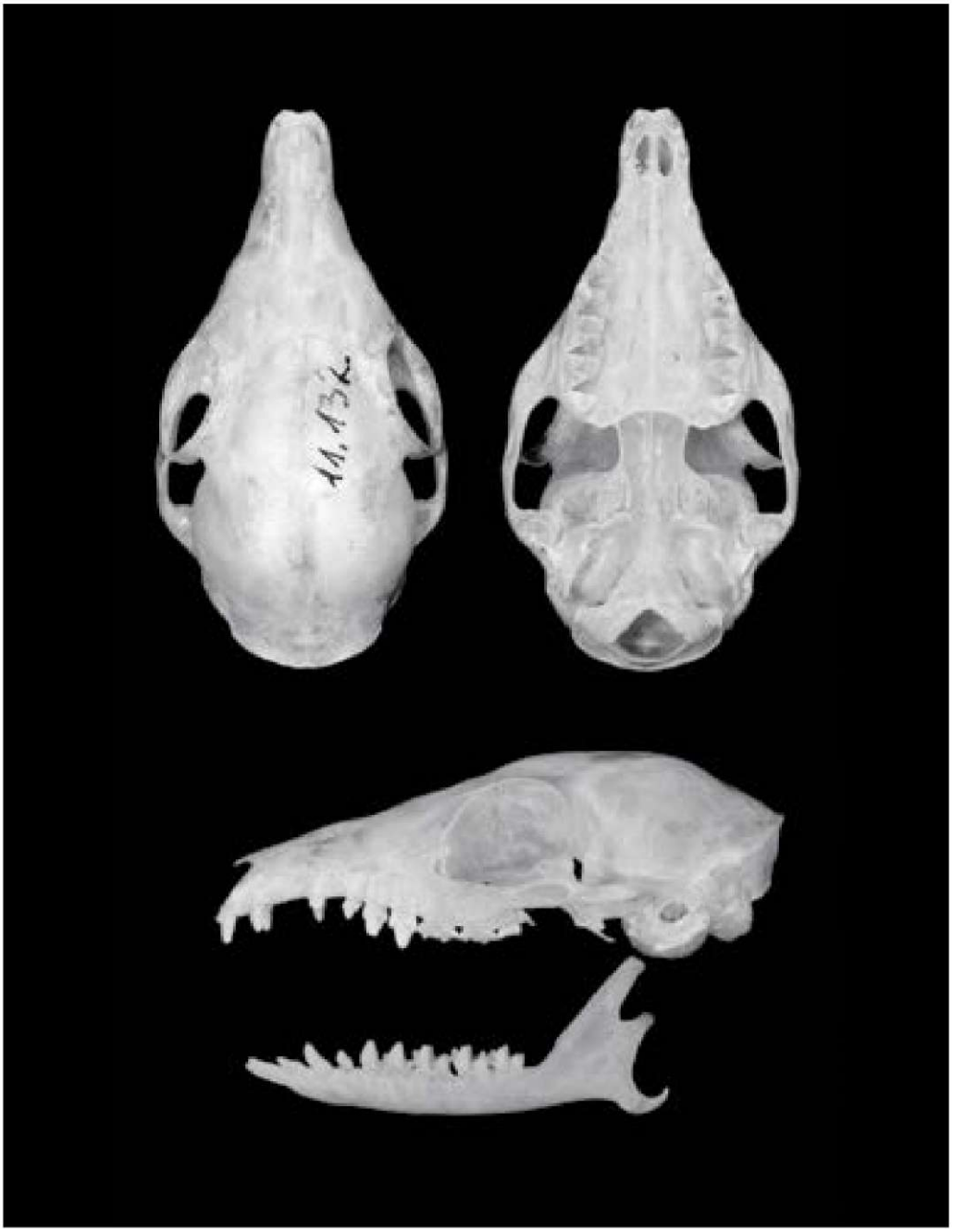


Figure 110. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Common Treeshrew *Tupaia glis* from Tioman Island, Malaysia. Specimen PMS 11132, collected on 25 January 1997. Photo: Boris Kryštufek

Slika 110. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) navadne tupaje *Tupaia glis* z otoka Tioman, Malezija. Primerek PMS 11132, zbran 25. januarja 1997. Foto: Boris Kryštufek

Order: Hyracoidea
Family: Procaviidae
Hyraxes

Red: Hyracoidea
Družina: Procaviidae
Pečinarji

Procavia capensis (Pallas, 1766)

Rock Hyrax

Južnoafriški pečinolazec

COLLECTION

ZBIRKA

Israel:

Mt. Carmel: 1 skin with a skull (PMS 13077), sex not recorded, obtained in 1988 from Shimon Shimson (than at the University in Haifa) as alcoholic specimen; skinned subsequently.

Republic of South Africa:

Philippolis, Free State: 1 skull (PMS 20074), identical to #221 in the CATALOGUE; donated by Dr. Holub in 1897. Dentition is deformed as a result of loss of cheek-teeth and subsequent mal--occlusion; cheek-teeth are also heavily worn-out. The following teeth are missing in maxilla: PM1, PM4 and M1 (left side); PM1 and PM3-4 (right side); missing teeth in mandible: pm1-2 and m1-3 (left side); pm1 (right side). The remaining left molars are much overgrown. The animal possibly originates from captivity.

Valley of Desolation, Graaff-Rainet, Eastern Cape Province: 1 skull without mandible; isolated postcranial bones (pelvis, both femora, humerus, tibia, fragment of ulna) (PMS 20050), found on 1 January 2004 by Boris Kryštufek. A juvenile, with not fully erupted posterior molars (M2-3).

Table 30. Geographic representation and preparations of Rocky Hyraxes *Procavia capensis* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Isolated bones.

Tabela 30. Geografska zastopanost in preparati južnoafriških pečinolazcev *Procavia capensis* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Izolirane kosti.

Country	Skin	Skull	Skeleton	Individuals
Israel	1	1		1
Republic of South Africa		2	1[a]	2
Total	1	3	1	**3**

Rock Hyrax is the only species of the group in the Palaearctic region (CORBET 1978), therefore the identity of the specimen from Israel posed no problem. Identification of South African material was based on its (i) hypsodont molars and (ii) a relatively short row of upper premolars (P^{1-4}) in comparison to the length of molars (M^{1-3}; Figs. 113, 114) (GAYLARD 2005). Two subspecies are represented in PMS: the

Južnoafriški pečinolazec je edini predstavnik skupine v palearktični regiji (CORBET 1978), tako da identiteta primerka iz Izraela ni vprašljiva. Določitev južnoafriškega materiala je utemeljena na (i) hipsodontnih meljakih in (ii) na relativno kratkem nizu zgornjih predmeljakov (P^{1-4}) glede na dolžino niza meljakov (M^{1-3}; sl. 113, 114) (GAYLARD 2005). V materialu PMS sta zastopani dve podvrsti: primerka iz Južne

specimens from South Africa are *P. c. capensis*, while the individual from Israel belongs to *P. c. syriacus* (Schreber, 1784).

Afrike sodita k *P. c. capensis*, žival iz Izraela k *P. c. syriacus* (Schreber, 1784).

Table 31. External and cranial dimensions of Rock Hyraxes *Procavia capensis* in the Mammal Collection of the Slovenian Museum of Natural History. [a]Length of the row of cheek-teeth.

Tabela 31. Zunanje in lobanjske dimenzije afriških pečinolazcev *Procavia capensis* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Dolžina niza kočnikov.

Country	PMS No.	Age	H&B	HF	E	CbL	ZgB	UTR[a]
Israel	13077	ad.	410	72	35	88.8	52.9	39.4
South Africa	20050	juv.						37.8
	20074	ad.				82.6	53.9	35.5

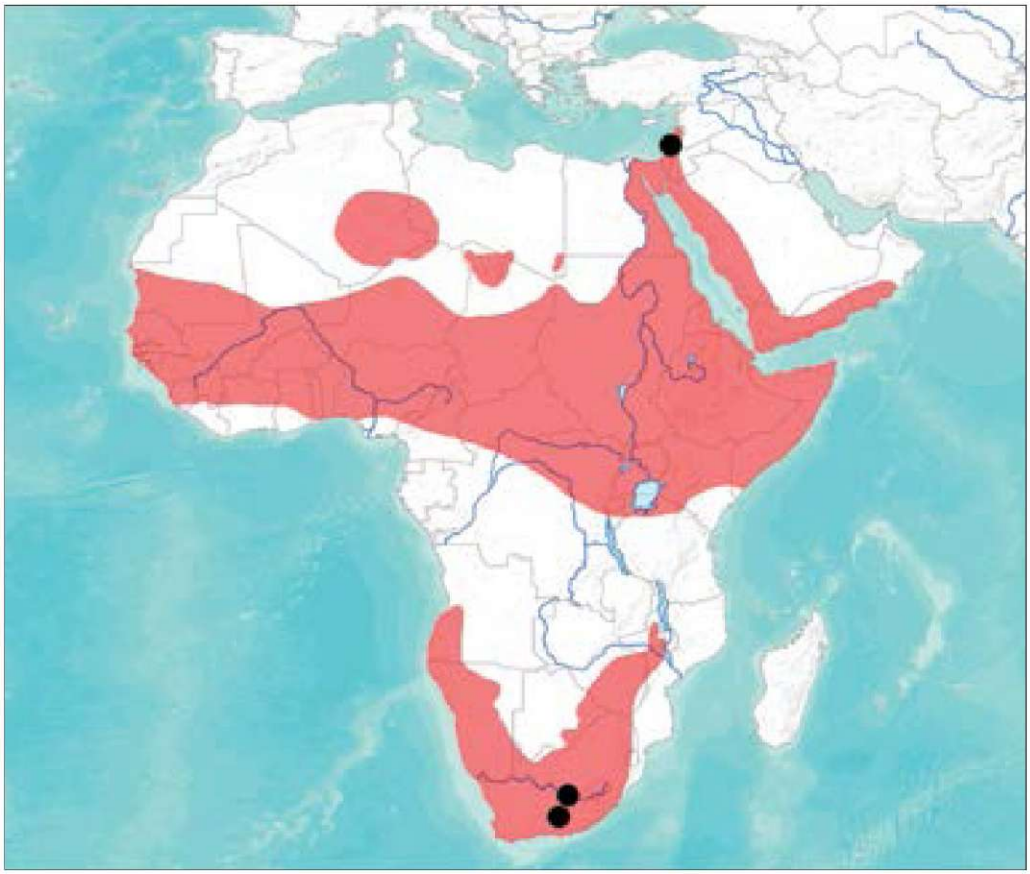


Figure 111. Geographic location of Rocky Hyraxes *Procavia capensis* from the Mammal Collection of the Slovenian Museum of Natural History. Range of the species is modified from Barry et al. (2008).

Slika 111. Geografski izvor južnoafriških pečinolazcev *Procavia capensis* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za areal vrste je Barry et al. (2008).

Figure 112. Skin (dorsal, lateral and ventral views) of Rocky Hyrax *Procavia capensis* from Mt. Carmel, Israel; specimen PMS 13077. Photo: Ciril Mlinar

Slika 112. Koža (hrbtna, bočna in trebušna stran) južnoafriškega pečinolazca *Procavia capensis* z gore Carmel, Izrael; primerek PMS 13077. Foto: Ciril Mlinar

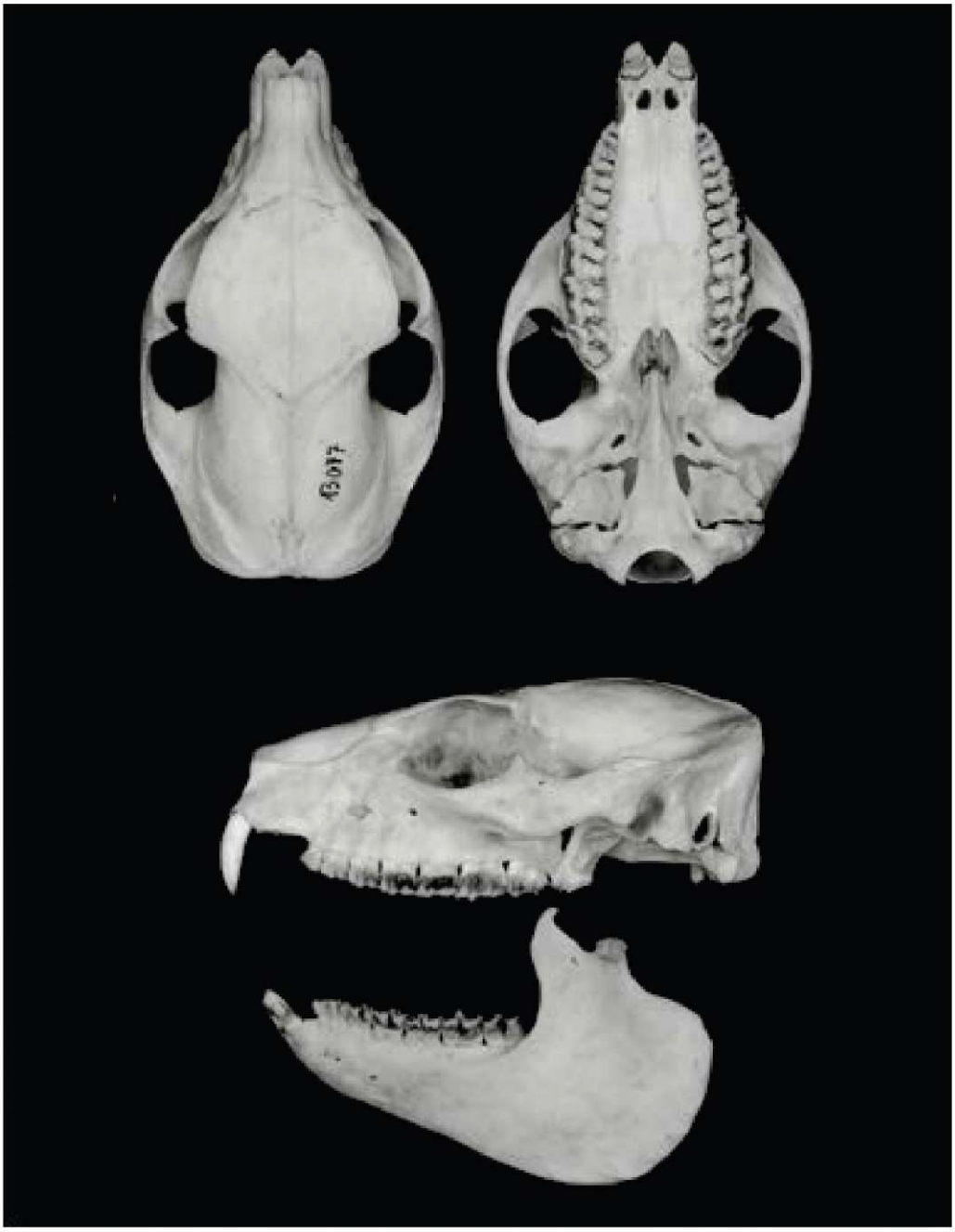


Figure 113. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Rocky Hyrax *Procavia capensis* from Mt. Carmel, Israel. Specimen PMS 13077. Photo: Boris Kryštufek

Slika 113. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) južnoafriškega pečinolazca *Procavia capensis* z gore Carmel, Izrael; primerek PMS 13077. Foto: Boris Kryštufek

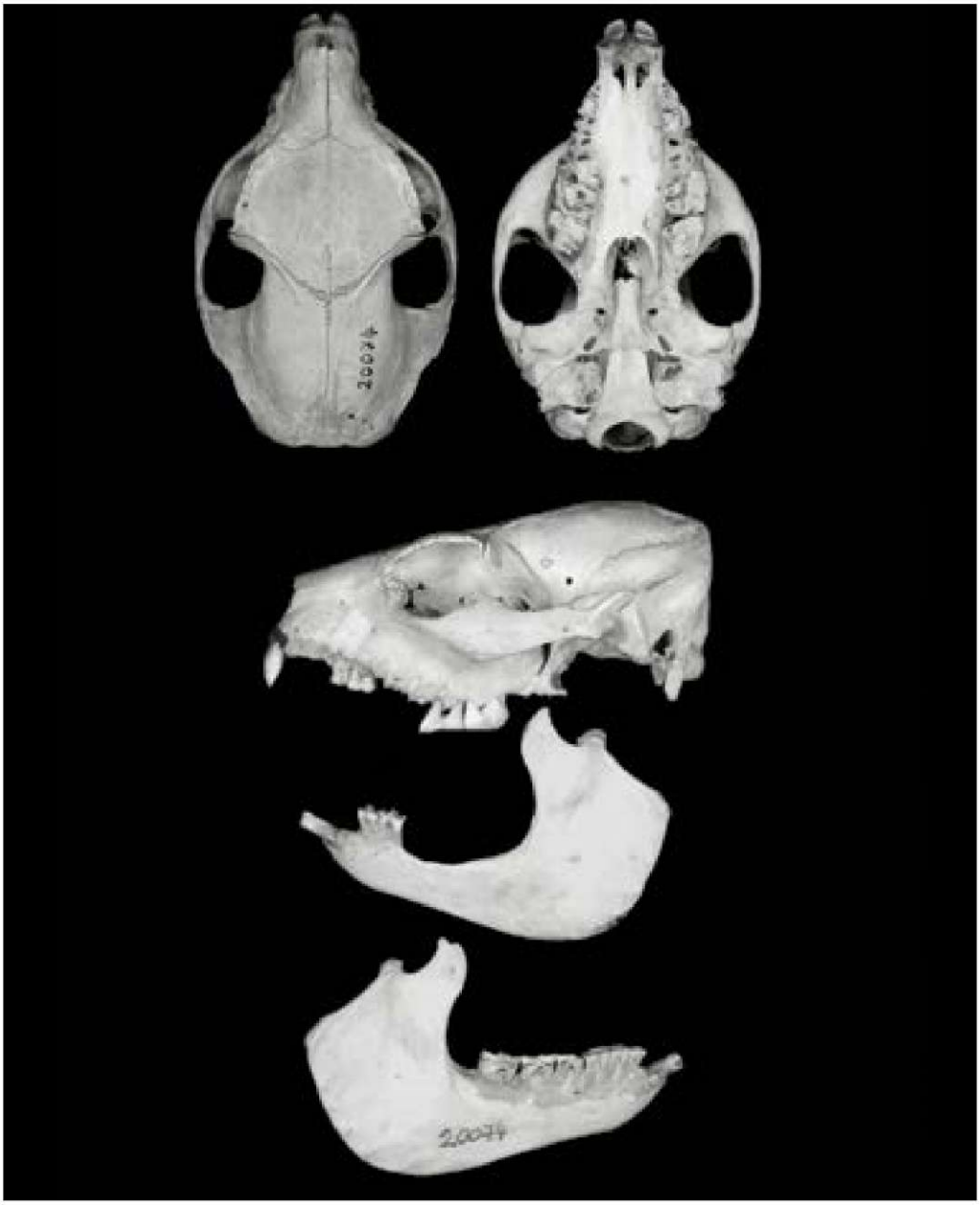


Figure 114. Skull (dorsal, lateral and ventral view) and mandible (lateral) of Rocky Hyrax *Procavia capensis* from Philippolis, Free State, Republic of South Africa. Specimen PMS 20074 from the 19th century. Both sides of mandible are shown due to the asymmetrical mal-occlusion. Photo: Boris Kryštufek

Slika 114. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) južnoafriškega pečinolazca *Procavia capensis* iz Philippolisa, Free State, Južnoafriška republika. Primerek PMS 20074 iz 19. stoletja. Zaradi asimetrične deformacije sta prikazani obe spodnji čeljustnici. Foto: Boris Kryštufek

Order: Didelphimorphia
Family: Didelphidae
Opossums

Red: Didelphimorphia
Družina: Didelphidae
Oposumi

Didelphis virginiana Kerr, 1792

Virginian Opossum

Virginijski oposum

Collection

Zbirka

USA:

Shippensburg, Pennsylvania: 1 skull (PMS 20051), a female, collected on 21 April 1998 as a road casualty by Boris Kryštufek.

Virginian Opossum is easily recognizable among Nearctic mammals and is the only opossum occupying Pennsylvania, where represented by the nominotypical subspecies (Hall & Kelson 1959). The PMS specimen was found dead on a side road within deciduous forest. Skull dimensions (in mm) are CbL 105,7, ZgB 56,5, UTR (from canine to the3rd molar) 31,3.

Virginjski oposum je med nearktičnimi sesalci zlahka prepoznaven; je pa tudi edina vrsta oposuma, ki živi v Pennsylvaniji, kjer je zastopan z nominotipsko podvrsto (Hall & Kelson 1959). Primerek v PMS je bil najden mrtev na stranski cesti sredi listopadnega gozda. Lobanjske dimenzije (v mm) so: CbL 105,7, ZgB 56,5, UTR (od podočnika do 3. meljaka) 31,3.

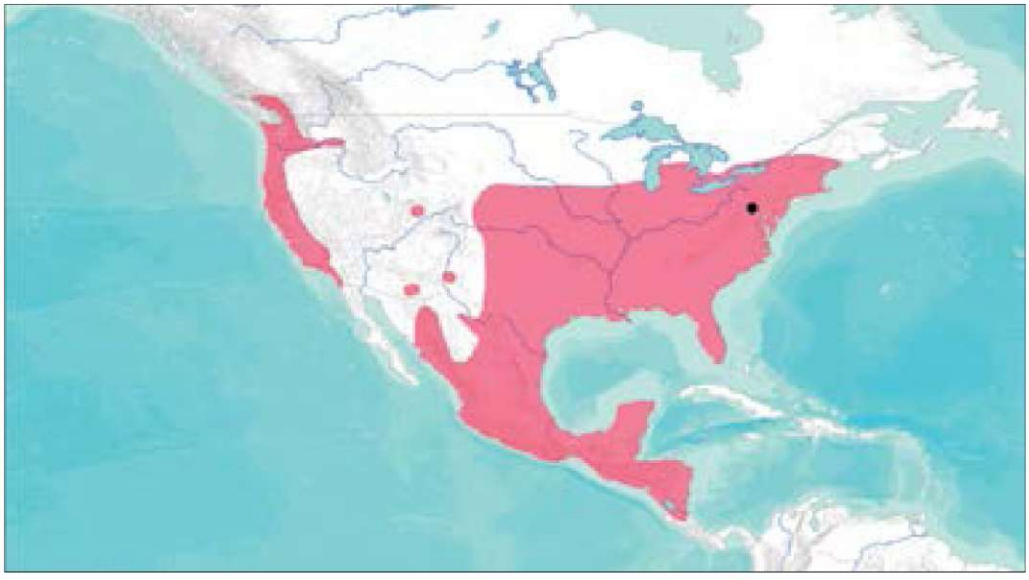


Figure 115. Geographic location of Virginian Opossum *Didelphis virginiana* from the Mammal Collection of the Slovenian Museum of Natural History. Range follows Cuarón et al. (2008).

Slika 115. Geografski izvor virginijskega oposuma *Didelphis virginiana* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za območje razširjenosti je Cuarón et al. (2008).

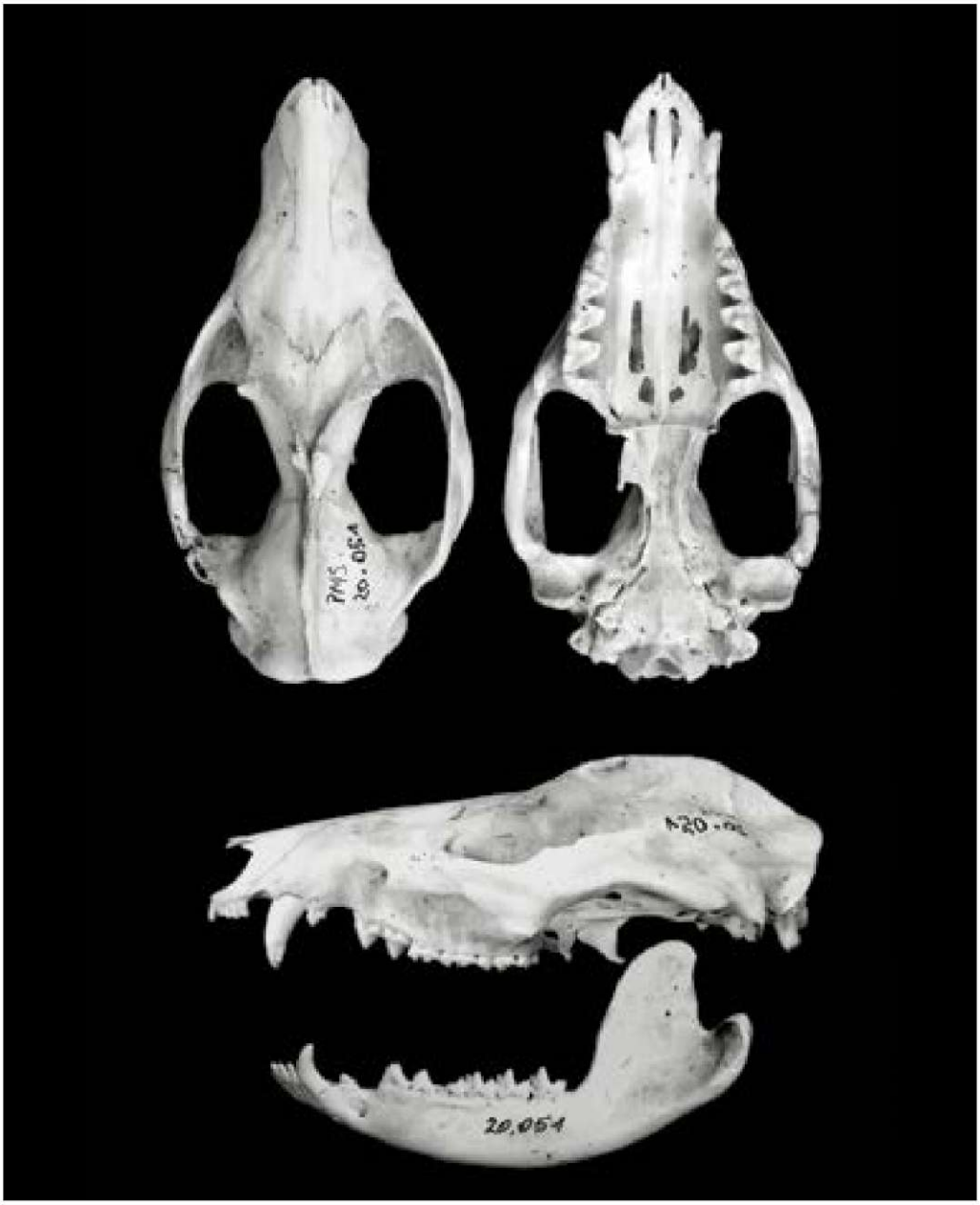


Figure 116. Skull (dorsal, lateral and ventral views) and mandible (lateral) of Virginian Opossum *Didelphis virginiana* from Shippensburg, Pennsylvania, USA. Specimen PMS 20051 collected on 21 April 1998. Photo: Boris Kryštufek

Slika 116. Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) virginijskega oposuma *Didelphis virginiana* iz Shippensburga, Pennsylvania, ZDA. Primerek PMS 20051 zbran 21. aprila 1998. Foto: Boris Kryštufek

Marmosa cfr. *robinsoni* Bangs, 1898

Robinson's Mouse Opossum

Robinsonov mali oposum

COLLECTION

ZBIRKA

No history: 1 taxidermic mount (PMS 20173), a female with two cubs on her back.

This mount holds two numbers (206/09, Nr.A863.BI2-69), but is not catalogued in the Museum neither in the CATALOGUE nor in the FILES. Most probably, the mount was obtained from a natural history collection of some secondary school in Slovenia, but the acquisition remained unrecorded.

Dermoplastika ima dve številki (206/09, Nr. A863.BI2-69), vendar ni zapisana niti v KATALOGU niti v KARTOTEKI. Najverjetneje je bila dobljena iz naravoslovne zbirke v kateri od srednjih šol v Sloveniji, pridobitev pa ni bila dokumentirana.

The original identification was *Didelphis* sp. While juveniles are too small (length of about 60 mm) for positive identification, the fur of the adult animal is faded and the ears are damaged (Fig. 118). The female shows three abdominal nipples on the right side and one nipple on the left side. We determined this mount as a Mouse Opossum *Marmosa* on the basis of the following characteristics: (i) short and fine fur, which is not velvety, (ii) lack of pouch, (iii) absence of pectoral nipples, (iv) dark facial markings around the eyes, (v) coexistence of annular and spiral arrangement of caudal scales. The specimen resembles the Robinson's Mouse Opossum *Marmosa robinsoni* Bangs, 1898 in the following external character states: (vi) large and prominent black eye ring (in PMS 20173 obvious on the right side that is less faded than the left side), which does not contact the base of the ear, (vii) pale cheeks to behind ears, (viii) contrasting midrostral and crown fur, (ix) absent dark medial rostral stripe, (x) relatively large dimensions, (xi) thick and relatively short tail, which is of uniform (all-dark) colour, and (xii) proportionally short and broad hind-foot (EMMONS & FEER 1990, O'CONNELL 1983, ROSSI et al. 2010). On the other hand, *Marmosa robinsoni* typically has pilose tail which, however, is nude in the Museum specimen.

Prvotno je bil primerek določen kot *Didelphis* sp. Mladiča sta premajhna (dolžina približno 60 mm) za pozitivno determinacijo, kožuh odrasle živali pa je obledel in uhlja odlomljena (sl. 118). Samica ima tri abdominalne seske na desni strani in enega na levi. Primerek smo uvrstili v rod malih oposumov *Marmosa* na osnovi sledečih značilnosti: (i) kratke in fine dlake, ki pa ni žametna, (ii) nima vreče, (iii) je brez pektoralnih seskov, (iv) okrog oči je temna obrazna maska, (v) repne luske so urejene v kombinaclje anularnega in spiralnega vzorca. Primerek je najbližji Robinsonovemu malemu oposumu *Marmosa robinsoni* Bangs, 1898, kar je razvidno iz sledečih značilnosti: (vi) velik in prominenten črn obroč okrog oči (pri PMS 20173 je očiten na desni strani, ki je manj obledela od leve strani), ki ne seže do osnove uhlja, (vii) svetla lica segajo do uhlja in naprej, (viii) kontrast med dlako na sredini rostruma in na vrhu glave, (ix) izostanek temne mediane črte na rostrumu, (x) relativno velike dimenzije (tabela 32), (xi) krepak in relativno kratek rep, ki je enotno (temno) obarvan, (xii) proporcionalno kratko in široko stopalo (EMMONS & FEER 1990, O'CONNELL 1983, ROSSI et al. 2010). Po drugi strani ima *Marmosa robinsoni* navadno odlakan rep, ki je pri PMS primerku gol.

We quote the comment by Dr. Rainer Hutterer from September 2013 on this taxidermy: "The posture in which the mount was

Dr. Rainer Hutterer je septembra 2013 komentiral dermoplastiko: "Položaj dermoplastičnega preparata spominja na risbe rodov

Table 32. External dimensions of Robinson's Mouse Opossum *Marmosa* cfr. *robinsoni* in the Mammal Collection of the Slovenian Museum of Natural History, estimated from a taxidermic mount

Tabela 32. Zunanje dimenzije dermoplastičnega preparata Robinsonovega malega oposuma *Marmosa* cfr. *robinsoni* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije

PMS No.	Age	Sex	H&B	TL	HF
20173	ad.	♀	187	215	20.4

made reminds on the 19th Century figures of *Didelphis* or *Marmosa*; young on the back, tangled along the tail of the adult... For this alone the old mount is an interesting piece of history of art and taxidermy." Evidently, opossums were mounted in such posture in larger numbers. The National Museum in Prague holds a mount of an unidentified opossum (P6j-101/90), which is of the same size as the PMS animal and stuffed in exactly the same posture (Fig. 117). The Prague mount is from a natural history business of Václav

Didelphis ali *Marmosa* iz 19. stoletja; mladi na hrbtu, oviti okrog repa odrasle živali... Že samo po tem je preparat zanimiv dokument zgodovine umetnosti in taksidermije." Očitno so izdelovali preparate oposumov v tem položaju v večjem številu. Narodni muzej v Pragi hrani preparat nedoločenega oposuma (P6j-101/90), ki je enake velikosti kot primerek v PMS in prepariran v natanko enakem položaju (sl. 117). Praški preparat je iz trgovine Václava Friča, ki je bil ves čas v stiku z Narodnim muzejem v Pragi (Reiling & Spunarová 2005).

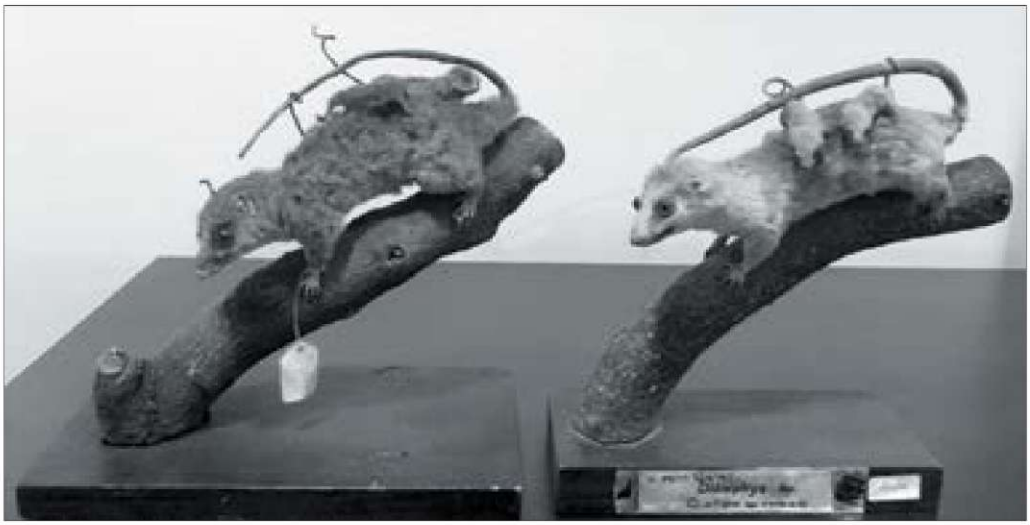


Figure 117. Taxidermic mounts of two different species of medium-sized opossums, which are stuffed in exactly the same posture with two cubs tangled along the female's tail. Cubs are not well fixed in the left-hand mount, therefore their position is not as originally set. Left: specimen P6j-101/90 in the National Museum in Prague; right: PMS 20173. Photo: Boris Kryštufek

Slika 117. Dermoplastična preparata dveh različnih vrst srednje velikih oposumov, ki sta preparirana v povsem enakem položaju, vsak z dvema mladičema, ki se prijemata repa odrasle samice. Mladiča na levem preparatu nista dobro pritrjena, zato njun položaj ni takšen, kot je bil prvotno. Levo: primerek P6j-101/90 v Narodnem muzeju v Pragi; desno: PMS 20173. Foto: Boris Kryštufek

Frič, who maintained a steady relationship with the National Museum in Prague (Reiling & Spunarová 2005). Because Frič merchantized worldwide, it is plausible to presume that the PMS mount is from same taxidermic workshop as the one in Prague.

Ker je Frič trgoval po celem svetu, je seveda povsem mogoče, da je tudi primerek PMS nastal v isti preparatorski delavnici kot praška dermoplastika.

Thanks to the courtesy of Professor Bojan Zorko (Faculty of Veterinary Medicine, University in Ljubljana), the mount was X-rayed in September 2013 (Fig. 118). The original aim was to gain information on cranial peculiarities, which would facilitate the taxonomic identification. Only the rostrum and the mandibular corpus are preserved, evidently owing to the teeth, which are exposed in the mount. Of the remaining bones, meso- and metapodium are preserved in limbs. There is no central wire from head to tail and the entire mount is supported by a fairly complex system of wires. The supporting leg wires are thrust into the replacement body and anchored to a branch (Fig 118). In cubs, the main support is provided by a central wire from head to tip of the tail. This is a clear example of taxidermy done by a bind-up method, which "was a common technique employed by many 19th century taxidermists and is still widely used today" (Morris 2010:47). In the opinion of taxidermist Alojz Šmuc, a primitive version of bind-up method was adopted, which is evident from the way the wire network was constructed. Glass eyes are inappropriate for any opossum. It was common practice for taxidermists to "use whatever cheap eyes …, so long as they were about the right size" and "overlooking details of what the animal actually looked like in life" (Morris 2010: 84-5).

Po zaslugi prijaznosti prof. dr. Bojana Zorka (Veterinarska fakulteta Univerze v Ljubljani) smo septembra 2013 preparat rentgensko slikali (sl. 118). Prvotni namen je bil pridobiti informacijo o lobanji, ki bi omogočila zanesljivejšo taksonomsko determinacijo. Od lobanje sta ohranjena samo rostrum in spodnječeljustnično telo, očitno zaradi zobovja, ki je v dermoplastiki opazno. Od drugih kosti so v okončinah ohranjeni elementi mezo- in metapodija. Preparat nima osrednje žice, ki bi segala od glave do repa, ampak je podprt z dokaj kompleksnim sistemom žic. Žice, ki podpirajo okončine, so zasajene v umetno telo, na drugem koncu pa zasidrane v nosilno vejo (sl. 118). Pri mladičih pa je glavna opora osrednja žica, ki poteka skozi celotno telo in rep. Preparat je jasen primer dermoplastike, izdelane po metodi "oblikovanja modela s povezovanjem". To "je bila v 19. stoletju metoda, h kateri so se zatekali številni preparatorji, uporablja pa se tudi danes" (Morris 2010:47). Po mnenju preparatorja Alojza Šmuca gre za dokaj prvinsko izpeljavo metode, na kar kaže konstrukcija žic. Steklene oči niso ustrezne ne glede na vrsto oposuma. V preteklosti se je pogosto dogajalo, da so preparatorji "uporabili katerekoli poceni oči … da so le bile vsaj približno ustrezne velikosti", ob tem pa so "spregledali podrobnosti o dejanskem videzu žive živali" (Morris 2010: 84-5).

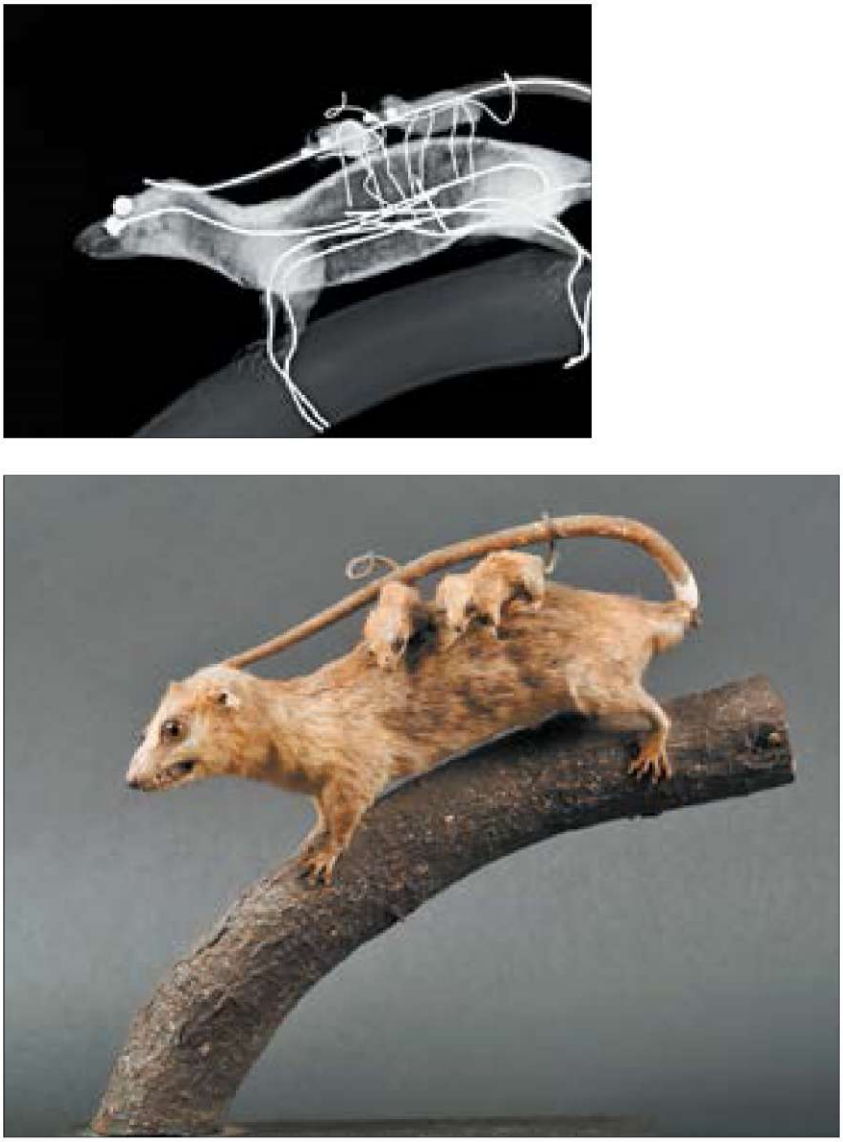


Figure 118. Taxidermic mount of a female Mouse Opossum *Marmosa* cf. *robinsoni* with two juveniles on her back, tangled along the tail (PMS 20173; photo Ciril Mlinar). This mount is possibly from the natural history bussines of Václav Frič. The top insert shows an X-rayed image, which retrieves a bind-up method as a taxidermic method employed in this case (photo: Surgery and Small Animals Clinic of the veterinary Faculty, University of Ljubljana).

Slika 118. Dermoplastični preparat samice Robinsonovega malega oposuma *Marmosa* cf. *robinsoni* z dvema mladičema na hrbtu, ki se oprijemata njenega repa (PMS 20173; foto Ciril Mlinar). Ta preparat morda izvira iz trgovine s prirodninami Václava Friča. Zgornja slika kaže rentgenski posnetek, s katerega je očitno, da je preparator uporabil tehniko "oblikovanja modela s povezovanjem" (foto: Klinika za kirurgijo in male živali Veterinarske fakultete, Univerza v Ljubljani).

Order: Diprotodontia
Family: Macropodidae
Kangaroos

Red: Diprotodontia
Družina: Macropodidae
Kenguruji

***Macropus rufogriseus* (Desmartes, 1817)**

Red-necked Wallaby

Rdečevrati kenguru

COLLECTION

ZBIRKA

No locality: 1 taxidermic mount (PMS 20147), a female, obtained from the Institute (of Zoology?) of the University in Ljubljana. Labelled as *Macropus giganteus*.

The Museum is in possession of two mounts of kangaroos, which are both old and in poor condition. The original colour faded in both animals under long-lasting exposure to light and dust. Of the two specimens, the PMS 20147 is in worse condition; besides, its glass eyes were removed. The original identification is *Macropus giganteus* but this is evidently wrong because *giganteus* (i) has hairy muzzle (naked in the PMS specimen; Fig. 119), (ii) tail has black distal portion (tail has merely a short black crest on its tip in the PMS animal; Fig. 120), and (iii) tail is much shorter than head and body (FRITH & CALABY 1969, STRAHAN 1995). Claws of the outer and the inner toes are at approximately same level in *giganteus*; in the PMS specimen, the inner toe is shifted backwards, just as in vouchers of *M. rufogriseus* in the collection of the National Museum in Prague. We identified the PMS animal as *rufogriseus* also for the following character states: (iv) matches in size and relative tail length (tail slightly shorter than head and body), (v) rusty neck, (vi) white stripe on upper lip, (vii) lack of stripe on thigh, and (viii) small 3rd upper incisor (FRITH & CALABY 1969, STRAHAN 1995).

Red-necked Wallaby is "common to abundant in most parts of its range" (CALABY 1995: 351) which covers eastern Australia and Tasmania; it was also introduced to England (MITCHELL-JONES et al. 1999).

Muzej ima dva stara dermoplastična preparata kengurujev, ki pa sta v slabem stanju. Prvotna obarvanost je v veliki meri izginila zaradi dolgotrajne izpostavljenosti svetlobi in prahu. Od dveh preparatov je primerek PMS 20147 še v posebej slabem stanju; odstranjeni sta mu bili tudi obe stekleni očesi. Prvotna determinacija *Macropus giganteus* je očitno napačna, kajti za *giganteus* so značilni (i) odlakan gobec (gol pri primerku v PMS; sl. 119), (ii) črno obarvan končni del repa (primerek v PMS ima na samem vrhu kratek črn greben; sl. 120) in (iii) rep, ki je veliko krajši od trupa z glavo (FRITH & CALABY 1969, STRAHAN 1995). Kremplja na zunanjem in notranjem prstu sta pri *giganteus* v približno isti ravnini, pri primerku iz PMS pa je notranji prst potisnjen nazaj, enako kot pri preparatih *M. rufogriseus* iz zbirke Narodnega muzeja v Pragi. Primerek iz PMS sva določila kot *rufogriseus* tudi na osnovi (iv) skladja v velikosti in relativni dolžini repa (rep je le nekoliko krajši od trupa z glavo), (v) rdečkastega vratu, (vi) bele proge na zgornji ustnici, (vii) izostanka proge na stegnu in (viii) majhnega tretjega zgornjega sekalca (FRITH & CALABY 1969, STRAHAN 1995).

Rdečevrati kenguru je "pogost in številčen v večini območij njegove razširjenosti" (CALABY 1995: 351), ki obsega vzhodno Avstralijo in Tasmanijo; naselili so ga tudi v Anglijo (MITCHELL-JONES et al. 1999).

Table 33. External dimensions of two Kangaroos *Macropus* in the Mammal Collection of the Slovenian Museum of Natural History, estimated from taxidermic mounts

Tabela 33. Zunanje dimenzije dveh kengurujev *Macropus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije, izmerjene na dermoplastičnih preparatih

Species	PMS No.	Sex	H&B	TL	HF	E
Macropus rufogriseus	20147	♀	980	745	246	>50
Macropus rufus	20148	♂	980	590	275	85

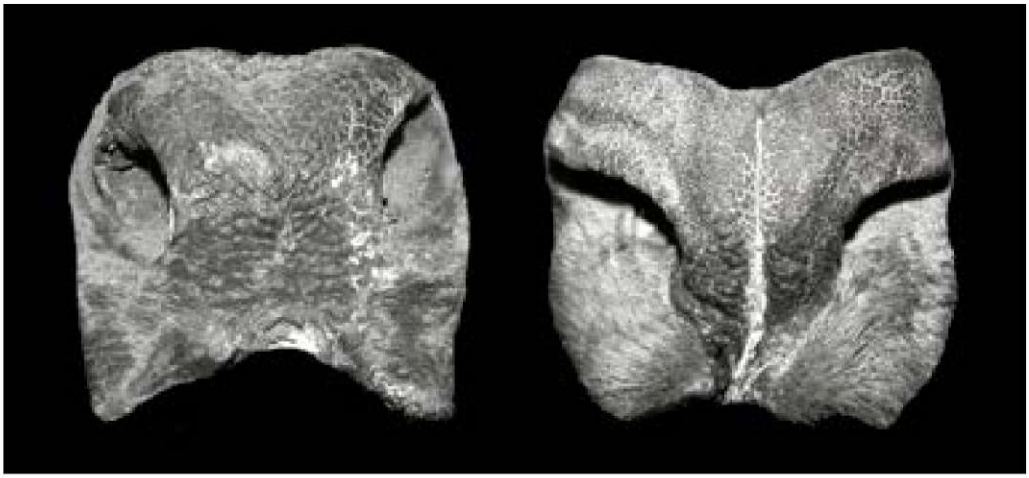


Figure 119. Noses of mounted kangaroos in the Museum Collection. Left: *Macropus rufogriseus* (PMS 20147); right: *Macropus rufus* (PMS 20148). Not to scale. Photo: Boris Kryštufek

Slika 119. Nosova dermoplastičnih preparatov kengurujev v muzejski Zbirki. Levo: *Macropus rufogriseus* (PMS 20147); desno: *Macropus rufus* (PMS 20148). Ni v sorazmerju. Foto: Boris Kryštufek

Figure 120. An old taxidermic mount of a Red-necked Wallaby *Macropus rufogriseus* (PMS 20147). Photo: Ciril Mlinar

Slika 120. Star dermoplastičen preparat rdečevratega kenguruja *Macropus rufogriseus* (PMS 20147). Foto: Ciril Mlinar

Macropus rufus (Desmartes, 1822)

Red Kangaroo

Rdeči veliki kenguru

COLLECTION

ZBIRKA

No locality: 1 taxidermic mount (PMS 20148), a male from "Australia", labelled as *Wallabia* (incorrectly spelled as *Wellebia*) *elegans*.

This mount bears number 206.19, which is not inscribed neither in the CATALOGUE nor in the FILES. Most probably, the mount was obtained from a natural history collection of some secondary school in Slovenia, but the acquisition remained unrecorded in the Museum.

The determination as *Wallabia* (spelled incorrectly as *Wellebia*) *elegans* is erroneous. The name *elegans* G. Cuvier, 1816 is a synonym of a Banded Hare Wallaby *Lagostrophus fasciatus* (Péron et Lesueur, 1807), which formerly occupied extreme south-western Australia, but survived only on Bernier and Dorre islands offshore the Western Australian coast. Banded Hare Wallaby is a small animal (H&B 400-460 mm, TL 320-400 mm) and, as suggested by its common name, readily distinguished by its banded colour pattern (GROOVES 2005, NOWAK 1999). Because the PMS voucher is of large size (Table 33) and lacks banded pattern, it does not match the Banded Hare Wallaby.

We identified the PMS specimen as *M. rufus* on the basis of a subsequent combination of characteristics: (i) large size, (ii) tail is evidently shorter than head and body (Table 33), (iii) fairly small rhinarium and moderately hairy nose (Fig. 119), (iv) small 3rd upper incisor, (v) muzzle with dark and white patch, and (vi) broad pale stripe from mouth to ear (FRITH & CALABY 1969, STRAHAN 1995). This species is widespread in Australia and is the only kangaroo "truly characteristic of the arid zone" (NEWSOME 1995: 353).

Ta preparat ima številko 206.19, ki pa ni vpisana niti v KATALOGU niti v KARTOTEKI. Najverjetneje je bil primerek pridobljen iz naravoslovne zbirke katere od srednjih šol v Sloveniji, pridobitev pa v Muzeju ni bila dokumentirana.

Določitev kot *Wallabia* (napačno črkovano *Wellebia*) *elegans* ni pravilna. Ime *elegans* G. Cuvier, 1816 je sopomenka za progastega zajčjega valabija *Lagostrophus fasciatus* (Péron et Lesueur, 1807), ki je v preteklosti naseljeval skrajni jugozahodni del Avstralije, preživel pa je samo na otokih Bernier in Dorre ob zahodni avstralski obali. Progasti zajčji valabi je majhen kenguru (H&B 400-460 mm, TL 320-400 mm), a kot kaže že njegovo ime, je lahko prepoznaven po progastem vzorcu kožuha (GROOVES 2005, NOWAK 1999). Ker je primerek v PMS velikih dimenzij (tabela 33) in nima progastega vzorca, ga ni mogoče determinirati kot progastega zajčjega valabija.

Preparat iz PMS smo opredelili kot *M. rufus*, in sicer na osnovi sledečih značilnosti: (i) velikih dimenzij, (ii) repa, ki je občutno krajši od trupa z glavo (tabela 33), (iii) razmeroma majhnega smrčka in zmerno odlakanega gobca (sl. 119), (iv) majhnega tretjega zgornjega sekalca, (v) gobca s temno in svetlo liso in (vi) široke svetle proge od ust do uhljev (FRITH & CALABY 1969, STRAHAN 1995). Ta vrsta ima v Avstraliji obsežen areal razširjenosti in je edini kenguru, ki je "resnično značilen za sušno območje" (NEWSOME 1995: 353).

Figure 121. An old taxidermic mount of a Red Kangaroo *Macropus rufus* (PMS 20148). Photo: Ciril Mlinar

Slika 121. Star dermoplastičen preparat rdečega velikega kenguruja *Macropus rufus* (PMS 20148). Foto: Ciril Mlinar

Order: Monotremata
Family: Ornithorhynchidae
Monotremes, Platypus

Red: Monotremata
Družina: Ornithorhynchidae
Stokovci, kljunaši

Ornithorhynchus anatinus (Shaw, 1799)

Duck-billed Platypus | **Kljunaš**

COLLECTION | ZBIRKA

No locality: 1 taxidermy (PMS 20146), an unsexed animal purchased for 120 (Austro-Hungarian) crowns from "A. PichlersWitwe & Sohn in Wien, Buchhandlung und Lehrmittelanstalt, V. Margarclenplatz 2". Most probably mounted (or merchandized) in August 1898 (see date on left bottom of the label; Fig. 122).

This taxidermic mount holds two labels with numbers 206/4 and ZI/20, respectively, but was not recorded in the Museum neither in the CATALOGUE nor in the FILES. Similarly as suggested above for the origin of marsupials, the mount of platypus was perhaps obtained from a natural history collection in some secondary school in Slovenia. Many such collections were dismissed in the 1990s. When vouchers were deposited in the Museum, no attention was paid even to document the acquisition.

Dermoplastičen preparat ima dve številki (206/4 in ZI/20), vendar nobena od njiju ni zabeležena ne v KATALOGU ne v KARTOTEKI. Podobno, kot sva zaključila že glede izvora preparatov vrečarjev, tudi kljunaš po vsej verjetnosti izvira iz naravoslovnega kabineta katere od srednjih šol. Številne zbirke na šolah so bile odstranjene v 90-ih letih prejšnjega stoletja. Ko je Prirodoslovni muzej prevzel ta material, ni nihče poskrbel, da bi se pridobitve dokumentirale.

Total length of the animal is 530 mm and length of tail is 165 mm; the bill is 69 mm long and 49 mm wide (Fig. 122).

Celotna dolžina živali znaša 530 mm, dolžina repa pa 165 mm; kljun je 69 mm dolg in 49 mm širok (sl. 122).

Figure 122. Taxidermic mount (dorsal and lateral views) of a Duck-billed Platypus *Ornithorhynchus anatinus* (PMS 20146), which probably originates from the late 19th century. The original label of a merchant is in the top insert. Photo: Ciril Mlinar

Slika 122. Dermoplastični preparat (bočna in hrbtna stran) kljunaša *Ornithorhynchus anatinus* (PMS 20146), ki verjetno izvira s konca 19. stoletja. Izvirna etiketa trgovca je zgoraj. Foto: Ciril Mlinar

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Geographic Gazetteer

Coordinates are in WGS 84 format.

Abbreviations:
BiH Bosnia and Herzegovina
CR Czech Republic
RSA Republic of South Africa
USA United States of America

Pregled nahajališč

Koordinate so v formatu WGS 84.

Okrajšave:
BiH Bosna in Hercegovina
CR Češka republika
RSA Južnoafriška republika
USA Združene države Amerike

Country	Locality	Latitude	Longitude
Država	**Nahajališče**	**Širina**	**Dolžina**
Slovenia	Ankaran - Debeli rtič	45.58451	13.71932
Slovenia	Beltinci	46.60853	16.23519
Slovenia	Besnica (Ljubljana)	46.03857	14.64767
Slovenia	Bistra (Ljubljana)	45.94817	14.33287
Slovenia	Brezovica (Moravče)	46.17988	14.63666
Slovenia	Brnik	46.25822	14.34712
Slovenia	Črni Vrh (Polhov Gradec)	46.08847	14.25903
Slovenia	Črnuče	46.10121	14.55534
Slovenia	Dolenjske Toplice	45.75645	15.05934
Slovenia	Dolenjske Toplice	45.75645	15.05934
Slovenia	Dornberk (Nova Gorica)	45.88893	13.73822
Slovenia	Dovje pri Mojstrani	46.4556	13.933
Slovenia	Dovje pri Mojstrani	46.4556	13.933
Slovenia	Dražgoše, Mošenjska planina	46.33579	14.20973
Slovenia	Gameljne	46.12608	14.4944
Slovenia	Godovič	45.95879	14.091
Slovenia	Godovič	45.95795	14.09234
Slovenia	Golica	46.49083	14.05347
Slovenia	Gorenje (Kočevje)	45.67095	14.8557
Slovenia	Grosuplje	45.957	14.65902
Slovenia	Ilirska Bistrica	45.57176	14.23966
Slovenia	Karavanke Mts.		
Slovenia	Komen	45.81899	13.74816
Slovenia	Koper	45.54796	13.72945
Slovenia	Kostanjevica na Krasu	45.84447	13.64156
Slovenia	Kozlerjeva gošča	46.01354	14.48118
Slovenia	Kranj	46.25781	14.34557

Country	Locality	Latitude	Longitude
Država	**Nahajališče**	**Širina**	**Dolžina**
Slovenia	Kranj	46.25781	14.34557
Slovenia	Kranj	46.25781	14.34557
Slovenia	Kranjska Gora	46.48752	13.78716
Slovenia	Kremenica (Ig)	45.95243	14.54847
Slovenia	Križe (Tržič)	46.33988	14.30024
Slovenia	Laznica (Maribor)	46.5578	15.56684
Slovenia	LD Gradišče Koašana	45.66469	14.12361
Slovenia	LD Ivančna Gorica	45.93957	14.80408
Slovenia	LD Izola	45.52583	13.66974
Slovenia	LD Kajuh	46.29453	15.23941
Slovenia	LD Loče	46.30188	15.49656
Slovenia	LD Pšata	46.09939	14.60023
Slovenia	LD Rogaška Slatina	46.25846	15.62376
Slovenia	LD Ruše	46.52497	15.52626
Slovenia	LD Šmarna gora	46.1292	14.46354
Slovenia	LD Vič	See Vič	
Slovenia	LD Vodice	46.19053	14.49406
Slovenia	LD Vojkovo Podnanos	45.79691	13.97126
Slovenia	LD Žalec	46.25229	15.16491
Slovenia	Linte (Rakitna)	45.92704	14.43981
Slovenia	Ljubljana	46.05942	14.50882
Slovenia	Ljubljana	46.05942	14.50882
Slovenia	Ljubljana	46.05942	14.50882
Slovenia	Ljubljana, Ižanska cesta	45.99959	14.51635
Slovenia	Ljubljana, Sv. Jakob	46.11046	14.43959
Slovenia	Ljubljana, Tivoli	46.05703	14.49317
Slovenia	Logatec	45.91656	14.22802
Slovenia	Lom pod Storžičem	46.36665	14.33371
Slovenia	LPN Ljubljanski vrh	45.93121	14.2975
Slovenia	Mangart, Mangartsko sedlo	46.44277	13.64166
Slovenia	Maribor	46.55438	15.64825
Slovenia	Medvode	46.14158	14.41109
Slovenia	Medvode	46.14158	14.41109
Slovenia	Mestni log (Ljubljana)	46.03675	14.48908
Slovenia	Muljava	45.90294	14.80034

Country	Locality	Latitude	Longitude
Država	**Nahajališče**	**Širina**	**Dolžina**
Slovenia	Nova Gorica	45.96143	13.654522
Slovenia	Pernica (Maribor)	46.57987	15.72707
Slovenia	Pirniče	46.14012	14.43329
Slovenia	Planina Govnač	46.28783	13.76053
Slovenia	Praše (Kranj)	46.19374	14.40142
Slovenia	Radvanje	46.53076	15.61735
Slovenia	Rakova jelša	46.01973	14.50007
Slovenia	Repje (Vogrsko)	45.90476	13.70998
Slovenia	Rigel (Medvode)	See Medvode	
Slovenia	Rovtarica-Vresje	46.28711	14.04566
Slovenia	Sebeborci (Murska Sobota)	46.71021	16.19949
Slovenia	Sečoveljske soline (Piran)	45.46519	13.61127
Slovenia	Smlednik	46.16723	14.43446
Slovenia	Spodnje Gameljne	46.12233	14.50383
Slovenia	Spuhlja (Ptuj)	46.41325	15.91231
Slovenia	Srednji vrh (Kranjska gora)	46.49059	13.83728
Slovenia	Stena (Dragonja)	45.44881	13.67761
Slovenia	Steske (Nova Gorica)	45.87326	13.7658
Slovenia	Strunjan	45.52601	13.61085
Slovenia	Tacen	46.12703	14.46831
Slovenia	Tomačevo	46.08061	14.53508
Slovenia	Vič	46.02665	14.45861
Slovenia	Vič, Dolgi most	46.03577	14.46097
Slovenia	Vnanje gorice	46.00567	14.42067
Slovenia	Zgornje Jezersko	46.39354	14.49928
Slovenia	Žeje (Kranj)	46.2902	14.2887
Slovenia	Žiri	46.05203	14.11208
Slovenia	Žirovski vrh	46.05858	14.14487
BiH	Buna (Mostar)	43.25039	17.83723
BiH	Goražde, Kopači	43.6783	19.03379
BiH	Potoci (Mostar)	43.41216	17.8749
BiH	Prijeđel (Tjentište)	43.22758	18.45791
BiH	Tjentište	43.26483	18.60638
Croatia	Babino polje (Mljet Is.)	42.7357	17.55091
Croatia	Brlog (Otočac)	44.94342	15.1333

Country	Locality	Latitude	Longitude
Država	**Nahajališče**	**Širina**	**Dolžina**
Croatia	Cetinsko polje	43.96465	16.41245
Croatia	Čeprljanda (Ugljan Is.)	44.12196	15.12465
Croatia	Kolansko polje (Pag. Is.)	44.49675	14.95136
Croatia	Košute (Trilj)	43.62682	16.6999
Croatia	Lokrum Is.	42.63049	18.11773
Croatia	Lopar (Rab Is.)	44.83153	14.72918
Croatia	Lovrečica (Umag)	45.38294	13.53788
Croatia	Metajna (Pag. Is.)	44.50985	15.01076
Croatia	Metajna (Pag. Is.)	44.50985	15.01076
Croatia	Polače (Mljet Is.)	42.78573	17.37852
Croatia	Polače, 3 km east (Mljet Is.)	42.77751	17.41075
Croatia	Razvala	44.89747	15.04092
Croatia	Savudrija	45.492	13.50429
Croatia	Savudrija, Bašanija	45.48625	13.49627
Croatia	Seget Vranjina (Trogir)	43.51221	16.18727
Croatia	Učka Mt.	45.25048	14.20015
Croatia	Vela Traba	45.24794	13.86748
Croatia	Vis (Vis Is.)	43.06107	16.1835
Croatia	Vozilići	45.15868	14.16358
Croatia	Zaton (Zadar)	44.21223	15.18448
CR	Prague	50.15667	14.47976
CR	Radouč	50.43168	14.89826
CR	Ruda (Veselí na Lužnicí)	49.15174	14.69532
CR	Valtice	48.74614	16.75398
Germany	Hünxe	51.64146	6.76672
Greece	Kardamena (Kos Is.)	36.78406	27.13001
Greece	Marmari (Kos Is.)	36.86273	27.15357
Greece	Mykonos Is.	37.45006	25.35124
Greece	Soroni (Rhodes Is.)	36.36957	28.01424
Hungary	Csandapaca (Gyula)	46.60361	20.93329
Hungary	Debrecen	47.65059	21.48607
Israel	Mt. Carmel	32.73749	35.05045
Italy	Isola del Giglio	42.35931	10.89569
Italy	Pordenone, Cordenons Dintori	45.98635	12.70346
Macedonia	Bogorodica (Gevgelija)	41.14082	22.54854

Country	Locality	Latitude	Longitude
Država	**Nahajališče**	**Širina**	**Dolžina**
Macedonia	Hemijska indistrija Veles	41.65667	21.87015
Macedonia	Kočani	41.88132	22.41406
Macedonia	Konopište	41.24603	22.07557
Macedonia	Magarevo (Bitola)	41.04261	21.23691
Macedonia	Nov Dojran	41.22689	22.69894
Macedonia	Ohrid	41.17659	20.74763
Macedonia	Pepelište (Krivolak)	41.52734	22.12079
Macedonia	Prilep	41.32681	21.54345
Macedonia	Ulanci (Gradsko)	41.5882	21.94278
Macedonia	Valandovo	41.31466	22.55617
Macedonia	Veles	41.72031	21.79331
Malaysia	Penuba, Tioman Island	2.851567	104.1646
Malaysia	Tanah Rata	4.461532	101.3718
Montenegro	Biogradsko jezero	42.89826	19.60123
Montenegro	Cetinje	42.3919	18.9138
Montenegro	Ulcinj	41.93012	19.22333
Montenegro	Ulcinj	41.93012	19.22333
Montenegro	Vilusi	42.72812	18.59296
Montenegro	Virpazar	42.23926	19.09002
Montenegro	Vrbanje	42.5527	18.50902
Montenegro	Žabljak	43.15454	19.12298
Morocco	Quarzazate (east of)	30.9664	-6.76751
Nepal	Base camp, Mt. Makalu	27.82541	87.07558
Pakistan	Base camp, Broad Peak	35.80236	76.51703
RSA	Fort Beaufort	-32.7799	26.62832
RSA	GFRR, Top House Bucklands	-33.1059	26.71944
RSA	Phillipolis	-30.2459	25.25549
RSA	Pietermaritzburg	-29.5999	30.36659
RSA	Pinelands, Wolwefontein	-32.9888	24.6928
RSA	Roundhill Oribi Nature Reserve	-33.4045	26.89761
RSA	Umdoni Park Golf Course	-30.3962	30.68549
RSA	Valley of Desolation, Graaff-Rainet	-32.2833	24.46669
Russia	Karamken Pass (Magadan)	60.32287	151.1911
Russia	Lake Grand (Atka)	60.72694	151.9062
Russia	Novaye Shogurovo	54.50045	52.08324

Country	Locality	Latitude	Longitude
Država	**Nahajališče**	**Širina**	**Dolžina**
Russia	Ulandrik River, the valley	49.67963	89.07852
Russia	Yustit River, the valley	49.79811	89.36829
Serbia	Beograd	44.81472	20.47091
Serbia	Beograd, Jatagan mala	44.79158	20.44941
Serbia	Beograd, Košutnjak	44.76709	20.43481
Serbia	Blagojev Kamen (Majdanpek)	44.43476	21.85278
Serbia	Česta šuma (Deliblato)	44.8465	21.0858
Serbia	Ečka	45.31739	20.44982
Serbia	Gaj	44.78583	21.02955
Serbia	Golubinje (Donji Milanovac)	44.49675	22.20263
Serbia	Kamenica (Valjevo)	44.31943	19.73296
Serbia	Lazareva reka	44.02936	21.96236
Serbia	Lesino Kopovo (Novi Bečej)	45.6246	20.2102
Serbia	Majur Bara (Kovin)	44.81399	21.12636
Serbia	Mirjevo (Beograd)	44.78972	20.5295
Serbia	Musina reka (Kraljevo)	43.7467	20.60314
Serbia	Paštrić (Valjevo)	44.24873	20.08292
Serbia	Radujevac (Negotin)	44.26979	22.67813
Serbia	Rid (Mt. Vlasina)	42.74449	22.32176
Serbia	Rošijana (Deliblato)	44.91705	21.0999
Serbia	Senta	45.90148	20.09331
Serbia	Štubik (Negotin)	44.29088	22.35471
Serbia	Veliko Gradište (Đerdap)	44.75063	21.51618
Sweden	Malmö	55.66093	13.09776
Sweden	Uppsala	59.85887	17.63921
Syria	Al Ghab	35.49995	36.3002
Turkey	Akpınar (Ordu)	40.90021	37.7831
Turkey	Beylidze, 2 km east (Sakarya)	40.80082	30.81631
Turkey	Gökcimen (Konya)	37.25014	31.74929
Turkey	Limonlu (Mersin)	36.56619	33.71601
Turkey	Yeşilhisar	38.86658	34.99987
USA	Arrey (east of)	32.84815	-107.303
USA	Captain, 5 miles north-west	33.5903	-105.6594
USA	Shippensburg	40.06746	-77.5303

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