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*Skin and skull of a Leopard* (Panthera pardus) *from the Mammal Collection of the Slovenian Museum of Natural History*

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# Katalog sesalcev v zbirki Prirodoslovnega muzeja Slovenije II Red: Carnivora; podred: Feliformia

# Catalogue of the mammals in the collection of the Slovenian Museum of Natural History II Order: Carnivora; suborder: Feliformia

Mojca JERNEJC KODRIČ[1], Boris KRYŠTUFEK[1]

## Izvleček

V tej objavi je podan pregled muzejskih primerkov podreda Feliformia (mačkam podobne zveri). V zbirki Prirodoslovnega muzeja Slovenije hranimo 88 primerkov, ki pripadajo 18 vrstam v 14 rodovih in 4 družinah. Velika večina primerkov je iz družine mačk Felidae (75 %). Material izvira iz 11 držav v treh biogeografskih območjih: palearktičnem (72,7 % primerkov), etiopskem (9,1 %) in orientalnem (4,6 %). Nadaljnjih 13,6 % materiala je brez podatkov o izvoru ali pa izvira iz ujetništva. Primerki so bili zbrani na 39 nahajališčih v Sloveniji in 21 nahajališčih v tujini; seštevek je 60 nahajališč. Polovica primerkov je iz Slovenije. Primerki so večinoma ohranjeni kot lobanje (77,3 %). Kože so ohranjene od 26,1 % muzejskih primerkov, od 5,7 % primerkov pa se je ohranilo tudi okostje. Nadaljnjih 18,2 % primerkov so dermoplastični preparati; ti vključujejo zgodovinske primerke, ki so pogosto pomanjkljivo dokumentirani. Mokrih primerkov navedenega podreda v zbirki ni.

**Ključne besede:** muzejske zoološke zbirke, mačke, cibetovke, ihneumoni, hijene, lobanja, dermoplastika

## Abstract

In this paper we list and comment on museum vouchers from the mammalian suborder Feliformia (cat-like carnivorans). The Slovenian Museum of Natural History holds 88 specimens of 18 species in 14 genera and 4 families. The great majority of specimens are cats (family Felidae; 75%). The material originates from 11 countries in three biogeographical regions: the Palaearctic (72.7% of vouchers), Ethiopian (9.1%), and Oriental (4.6%). From captivity or with no history is 13.6% of the material. The specimens were collected in 39 localities in Slovenia and 21 localities abroad, with a total sum of 60 localities. A half of the individuals are from Slovenia. The majority of vouchers are preserved as skulls (77.3%). Skins are preserved from 26.1% of the museum specimens, while 5.7% of them are skeletons. Further 18.2% of individuals are taxidermic mounts; these include historic specimens which, however, frequently lack appropriate labels. No vouchers are preserved as wet specimens.

**Key words:** museum zoological collections, Cats, Civets, Mongooses, Hyenas, skull, taxidermy

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# Vsebina



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## SCOPOLIA No. 95 (Suppl.)

# Uvod

Pričujoče delo podaja pregled materiala iz podreda Feliformia (mačke in njim podobne zveri) v zbirki Prirodoslovnega muzeja Slovenije. Sledi va ciljem, kot so opredeljeni v Katalogu sesalcev v zbirki Prirodoslovnega muzeja Slovenije I, Redovi: Lagomorpha, Erinaceomorpha, Macroscelidea, Afrosoricida, Scandentia, Hyracoidea, Didelphimorpia, Diprotodontia, Monotremata (Kryštufek & Jernejc 2013; odslej Katalog 2013): (i) zainteresirani javnosti omogočiti dostop do informacije, ki je shranjena v zbirki sesalcev, (ii) pospešiti in olajšati nadaljnje kuratorsko delo v zbirki, in (iii) zbrati ter preveriti informacije, ki spremljajo muzejske primerke. Ker so standardi hranjenja prirodoslovnih muzealij v Sloveniji izjemno nizki, je katalog tudi oblika ohranjanja informacije v razmerah, ko nad materialnim gradivom visi Damoklejev meč popolnega uničenja.

Zgodovinski razvoj in pomen zbirke sesalcev Prirodoslovnega muzeja Slovenije sva podrobno predstavila v Katalogu 2013. V dobrih petih letih od njegovega izida se je zbirka sesalcev, ki je dne 5. septembra 2013

# Introduction

The present publication is a review of the material from suborder Feliformia (cat-like carnivores) in the collection of the Slovenian Museum of Natural History. We follow objectives specified in the 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 (Kryštufek & Jernejc 2013; hereinafter referred to as "the Catalogue 2013"): (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. Since the standards for the preservation of natural history collections in Slovenia are extremely low, the catalogue is also a form of securing the information in conditions where the Sword of Damocles of utter destruction hangs over the museum material.

The historical development and significance of the Mammal Collection of the Slovenian

**Tabela 1.** Število primerkov Zbirke sesalcev Prirodoslovnega muzeja Slovenije z dne 1.1.2019 glede na državo. Upoštevan je samo material iz jugovzhodne Evrope. *Odstotek celotne zbirke sesalcev Prirodoslovnega muzeja Slovenije.

**Table 1.** Specimen holdings according to separate countries in the Mammal Collection of the Slovenian Museum of Natural History on 1. January 2019. Only the material from South-eastern Europe is taken into consideration. * Percent of total mammal collection of the Slovenian Museum of Natural History.

| **Država**<br>**Country** | **Št. osebkov**<br>**No. individuals** | **Odstotek za JV Evropo (%)**<br>**Percent of SE Europe (%)** | **Odstotek celote (%)***<br>**Percent of total (%)*** |
|---|---|---|---|
| Bulgaria | 34 | 0,15 | 0,1 |
| Bosnia and Herzegovina | 961 | 4,4 | 3,7 |
| Croatia | 1065 | 4,9 | 4,1 |
| Greece | 200 | 0,9 | 0,8 |
| Kosovo | 72 | 0,3 | 0,3 |
| Macedonia | 2286 | 10,5 | 8,7 |
| Montenegro | 728 | 3,4 | 2,8 |
| Slovenia | 14.256 | 65,5 | 54,2 |
| Romania | 159 | 0,7 | 0,6 |
| Serbia | 1749 | 8,05 | 6,7 |
| Turkey (in Europe) | 254 | 1,2 | 1,0 |
| **Skupaj / Total** | **21.764** | **100%** | **83%** |

obsegala 20.195 katalogiziranih primerkov, povečala za 6097 katalogiziranih primerkov in je 1. januarja 2019 štela 26.292 katalogiziranih primerkov. V geografskem pogledu ostaja zbirka regionalna in geografsko pokriva predvsem jugovzhodno Evropo. Na dan 1. januar 2019 je tako vsebovala 21.764 katalogiziranih primerkov iz jugovzhodne Evrope, kar pomeni 83 % vseh katalogiziranih primerkov sesalcev. Od tega je 14.256 primerkov iz Slovenije (65,5 % primerkov iz jugovzhodne Evrope in 54,2 % vseh v zbirki katalogiziranih primerkov).

Muzejski material devetih sesalčjih redov, opisan v Katalogu 2013 (redovi: Lagomorpha, Erinaceomorpha, Macroscelidea, Afrosoricida, Scandentia, Hyracoidea, Didelphimorphia, Diprotodontia, Monotremata), se je v času od 5. septembra 2013 do 1. januarja 2019 povečal za 122 primerkov in šteje 402 katalogiziranih primerkov. Največje število novih pridobitev je bilo iz reda Lagomorpha (61); od tega 56 kuncev *Oryctolagus cuniculus,* 4 poljski zajci *Lepus europaeus* in 1 severni žvižgač *Ochotona hyperborea*. Iz reda Erinaceomorpha je bilo 52 novih primerkov: 42 severnih beloprsih ježev *Erinaceus roumanicus*, 9 alžirskih ježev *Atelerix algirus* in 1 puščavski jež *Paraechinus aethiopicus.* Slednja dva taksona sta bila za zbirko nova rodova in novi vrsti. Iz reda Macroscelidea je bilo v zbirko vnesenih devet novih primerkov severnoafriških slončkov *Petrosaltator rozeti* (v Katalogu 2013 navedenih kot *Elephantulus rozeti*).

Seznam muzejskih primerkov, dodanih zbirki v času od 5.9.2013 do 1.1.2019, je sledeč:

Museum of Natural History was detailed in the Catalogue 2013. The Collection expanded from 20,195 specimens on 5 September 2013 to 26,292 specimens on 1 January 2019; in a little more than five years it increased by 6,097 specimens. In it's geographical scope, the collection remains regional and the majority of specimens originate from Southeast Europe. On 1 January 2019, it contained 21,764 catalogued specimens from Southeast Europe, representing 83% of all cataloged mammals. Of these, 14,256 were from Slovenia (65.5% of Southeastern Europe and 54.2% of all catalogued specimens).

The museum material from nine mammalian orders listed in the Catalogue 2013 (Lagomorpha, Erinaceomorpha, Macroscelidea, Afrosoricida, Scandentia, Hyracoidea, Didelphimorphia, Diprotodontia, Monotremata) in the period from 5 September 2013 to 1 January 2019 increased by 122 specimens; a total number in the collection on 1 January 2019 amounted to 402 specimens. Most of the new acquisitions were Lagomorphs (61); 56 European Rabbits *Oryctolagus cuniculus*, 4 Brown Hares *Lepus europaeus* and 1 Northern Pika *Ochotona hyperborea*. There were 52 new acquisitions of Erinaceomorphs: 42 Northern White-breasted Hedgehogs *Erinaceus roumanicus*, 9 North African Hedgehogs *Atelerix algirus* and 1 Desert Hedgehog *Paraechinus aethiopicus*. The latter two taxa were new for the collection. There were also 9 new specimens of North African Elephant-shrews *Petrosaltator rozeti* (in the Catalogue 2013 referred to as *Elephantulus rozeti*) from order Macroscelidea.

List of museum vouchers added to collection in the period from 5 September 2013 to 1 January 2019:

Order Lagomorpha:

*Ochotona hyperborea:* PMS 21558 (skull, Russia).

*Oryctolagus cuniculus:* PMS 20824 (skull, Macedonia); PMS 21423 (skin, Spain); PMS 22204 (skull, Spain); PMS 23892 (wet specimen, No locality); PMS 24019– 24022 (skulls, Slovenia); PMS 24356 (skull, skeleton, Spain); PMS 24357 (wet specimen, Spain); PMS 24358, 24359 (skulls, Spain); PMS 24360 (skull, skeleton, Spain); PMS 24362 (skull, Czech Republic); PMS 24365–24367 (skulls, Spain); PMS 24406– 24411 (skulls, Spain); PMS 24413–24416 (skulls, Spain); PMS 24425 (skull, Spain); PMS 24428–24430 (skulls, Spain); PMS 24511 (skull, Morocco); PMS 24691–24692 (skulls, Slovenia); PMS 24897–24899 (skulls, Czech Republic); PMS 24900 (skull, skin, Czech Republic); PMS 25394 (skull, Slovenia); PMS 25538 (mandible, No locality); PMS 25670–25685 (skulls, Bulgaria).

*Lepus europaeus:* PMS 23818 (skin, Croatia); PMS 23876 (skeleton, Croatia); PMS 25539, 25540; (skulls, No locality).

Order Erinaceomorpha:

*Erinaceus roumanicus:* PMS 20335 (skull, Slovenia); PMS 20517–20546 (skulls, Croatia); PMS 21510 (skull, Serbia); PMS 21692 (wet specimen, Slovenia); PMS 21711, 21712 (skulls, Slovenia); PMS 22145 (skull, Slovenia); PMS 22405 (wet specimen, Slovenia); PMS 23468 (skin, Croatia); PMS 24823 (skull, Croatia); PMS 25541 (skull, No locality); PMS 26081 (skull, Slovenia); PMS 26272 (skull, Slovenia).

*Atelerix algirus:* PMS 21419 (skull, skin, Spain); PMS 21421 (skin, Spain); PMS 21422 (skull, Spain); PMS 24353 (skull, Morocco); PMS 24354 (skull, Morocco); PMS 24506–24509 (skulls, Morocco).

*Paraechinus aethiopicus:* PMS 22246 (skull, Morocco).

Order Macroscelidea:

*Petrosaltator rozeti* (all from Morocco): PMS 24275 (skull, skeleton, skin); PMS 24280 (skull, skeleton, skin); PMS 24281 (skull, skin); PMS 24331 (skull, skin); PMS 24339 (skull, skin); PMS 24347 (skull, skin); PMS 24348 (skull, skin); PMS 24349 (skull, skin); PMS 24350 (wet specimen).

**Tabela 2.** Taksonomska zastopanost devetih sesalčjih redov, obravnavanih v Katalogu 2013, v zbirki sesalcev na dan 1. januar 2019.

**Table 2.** Taxonomic representation of the nine mammalian orders reported in the Catalogue 2013, in the museum collection on 1 January 2019.

| Red<br>Order | Družine<br>Families | Rodovi<br>Genera | Vrste<br>Species | Države<br>Countries | Št. osebkov<br>No. individuals |
|---|---|---|---|---|---|
| Lagomorpha | 2 | 4 | 10 | 19 | 164 |
| Erinaceomorpha | 1 | 4 | 5 | 16 | 213 |
| Macroscelidea | 1 | 2 | 2 | 2 | 11 |
| Afrosoricida | 1 | 1 | 1 | 1 | 4 |
| Scandentia | 1 | 1 | 1 | 1 | 2 |
| Hyracoidea | 1 | 1 | 1 | 2 | 3 |
| Didelphimorphia | 1 | 2 | 2 | 1 | 2 |
| Diprotodontia | 1 | 1 | 2 | 1 | 2 |
| Monotremata | 1 | 1 | 1 | 1 | 1 |
| **Skupaj / Total** | **10** | **17** | **25** | **25** | **402** |

**Tabela 3.** Geografska zastopanost redov, obravnavanih v Katalogu 2013, v zbirki sesalcev na dan 1. januar 2019.

**Table 3.** Geographic representation of the orders reported in the Catalogue 2013, in the museum collection on 1 January 2019.

| Država<br>Country | Redovi<br>Orders | Družine<br>Families | Rodovi<br>Genera | Vrste<br>Species | Št. osebkov<br>No. individuals |
|---|---|---|---|---|---|
| Slovenia | 2 | 2 | 3 | 5 | 151 |
| Australia | 2 | 2 | 3 | 3 | 3 |
| Bulgaria | 1 | 1 | 1 | 1 | 16 |
| Bosnia & Herzegovina | 2 | 2 | 2 | 2 | 5 |
| Croatia | 2 | 2 | 3 | 3 | 60 |
| Czech Republic | 2 | 2 | 3 | 3 | 10 |
| 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 | 3 | 3 | 18 |
| Montenegro | 2 | 2 | 2 | 2 | 11 |
| Malaysia | 2 | 2 | 2 | 2 | 3 |
| Morocco | 3 | 3 | 4 | 4 | 18 |
| Nepal | 1 | 1 | 1 | 1 | 3 |
| Pakistan | 1 | 1 | 1 | 1 | 1 |
| South Africa | 4 | 4 | 4 | 4 | 8 |
| Russia | 2 | 2 | 2 | 4 | 6 |
| Serbia | 2 | 2 | 2 | 2 | 32 |
| Spain | 2 | 2 | 2 | 2 | 27 |
| 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 | 4 | 4 | 7 |
| **Skupaj / Total** | **9** | **10** | **17** | **25** | **402** |

**Tabela 4.** Preparati v Zbirki sesalcev Prirodoslovnega muzeja Slovenije, razvrščeni po redovih, obravnavanih v Katalogu 2013, na dan 1. januar 2019.

**Table 4.** Preparations contained in the Mammal Collection of the Slovenian Museum of Natural History, according to orders reported in the Catalogue 2013, on 1 January 2019.

| Red<br>Order | Tekočina<br>Wet | Taksidermija<br>Taxidermy | Koža<br>Skin | Lobanja<br>Skull | Okostje<br>Skeleton | Št. osebkov<br>No. individuals |
|---|---|---|---|---|---|---|
| Lagomorpha | 6 | 8 | 29 | 145 | 4 | 164 |
| Erinaceomorpha | 8 | 14 | 71 | 188 | 1 | 213 |
| Macroscelidea | 1 | | 10 | 10 | 2 | 11 |
| 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 |
| **Skupaj / Total** | **16** | **26** | **115** | **353** | **9** | **402** |

| **Okrajšave** | **Abbreviation** |
|---|---|
| Zbirka | Collection |
| Zbirka sesalcev v Prirodoslovnem muzeju Slovenije | Mammal Collection of the Slovenian Museum of Natural History |
| PMS | PMS |
| Okrajšava zbirke | Acronym of the Collection |
| Muzej | Museum |
| Prirodoslovni muzej Slovenije (izhajajoč iz Kranjskega deželnega muzeja) | Slovenian Museum of Natural History (derived from Provincial Museum for Carniola) |
| # | # |
| Oznaka za primerke, navedene v Katalogu | Indicates specimens listed in the Catalogue |
| Katalog | Catalogue |
| »Inventarna knjiga sesalcev, rib, ptic, plazilcev Prirodoslovnega muzeja«; glavni vir podatkov o zbirkah vretenčarjev od druge polovice 19. stoletja do 70-ih let prejšnjega stoletja. Naslov izvira iz obdobja po 2. svetovni vojni. | »The Accession Book of Mammals, Fishes, Reptiles of the Natural History Museum«; main source of data about vertebrate collections from second half of the 19th century till seventies of the previous century. The title originates from the post- World War II period.» |
| Kartoteka | Files |
| Pred 2. svetovno vojno so informacijo v Katalogu pretipkali na kartotečne liste. V nekaterih primerih je na kartotečnih listkih informacija, ki ni navedena v Katalogu. | Before WWII, data from the Catalogue were typed on File cards. In some cases, there is additional information in the Files, which is not listed in the Catalogue. |
| Obravnave | Proceedings |
| Poročilo o delovanju kranjskega deželnega odbora | Rechenſchafts-Bericht des krainiſchen Landes-ausſchuſſes |
| LD | LD |
| Lovska družina | Hunting Society |
| Age | Age |
| Starost osebka | Age of individual |
| ad. | ad. |
| Odrasel | Adult |

| Okrajšave | Abbreviation |
|---|---|
| sad. | sad. |
| Subadulten | Subadult |
| juv. | juv. |
| Mladič | Juvenile |
| Spol | Sex |
| Spol osebka | Sex of individual |
| ♀ | ♀ |
| Samica | Female |
| ♂ | ♂ |
| Samec | Male |
| Dimenzije | Measurements |
| Če ni označeno drugače v mm | In mm, if not indicated otherwise |
| W | W |
| Telesna masa (v gramih) | Body mass (in grams) |
| H&B | H&B |
| Dolžina trupa z glavo (referenčna točka glede na rep je anus) | Length of head and body (anus is the reference point against the tail) |
| TL | TL |
| Dolžina repa (referenčna točka glede na trup je anus) | Length of tail (anus is the reference point against the body) |
| HF | HF |
| Dolžina stopala | Length of hind foot |
| E | E |
| Dolžina uhlja | Length of ear |
| PL | PL |
| Največja dolžina lobanje | Greatest length of skull |

| **Okrajšave** | **Abbreviation** |
|---|---|
| CbL | CbL |
| Kondilobazalna dolžina lobanje | Condylobasal length of skull |
| ZgB | ZgB |
| Širina lobanje prek ličnih lokov | Breadth of skull across zygomatic arches |
| IoC | IoC |
| Interorbitalna širina | Width of interorbital constriction |
| UTR | UTR |
| Dolžina gornjega niza zob | Length of upper row of teeth |
| Md | Md |
| Spodnja čeljustnica | Mandible |
| N | N |
| Število osebkov | Sample size |

## Katalog Feliformia

Podred Feliformia je eden od dveh podredov živečih zveri (Carnivora), ki obsega 6 družin s 55 rodovi in 121 vrstami. V Zbirki je 88 primerkov tega podreda, ki pripadajo 18 vrstam iz 14 rodov in 4 družin. Velika večina primerkov je iz družine mačk (75 %), ki ima v Sloveniji dve avtohtoni vrsti (divja mačka in ris). Obe avtohtoni vrsti sta v muzejski zbirki razmeroma dobro zastopani.

Material iz sesalčjega podreda Feliformia v Zbirki izvira iz 11 držav v treh biogeografskih območjih: palearktičnem (72,7 % muzejskih

## Catalogue Feliformia

The Feliformia is one of the two suborders of living Carnivora, consisting of 6 families with 55 genera and 121 species. The Museum holds 88 specimens of 18 species in 14 genera and 4 families. The great majority of specimens are cats (75%); this family has two autochtonous species in Slovenia (Wild Cat and Lynx). Both autochthonous species are relatively well represented in the Collection.

The material of Feliformia suborder in the Collection originates from 11 countries in three biogeographical regions: the Palaearctic

**Tabela 5.** Taksonomska zastopanost podreda Feliformia, obravnavanega v tej objavi, katerega primerki so shranjeni v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

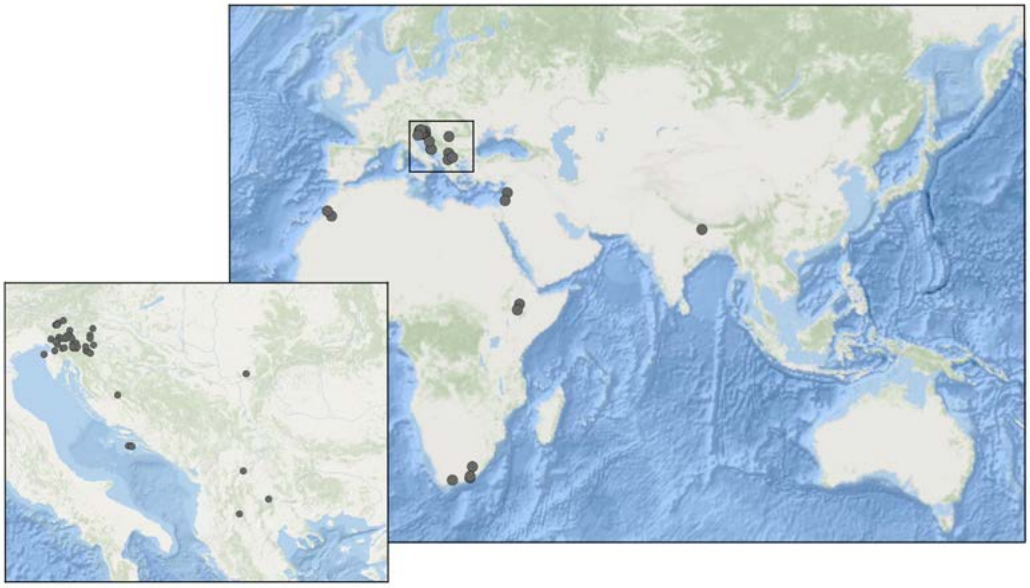
**Table 5.** Taxonomic representation of the suborder Feliformia of which specimens are preserved in the Mammal Collection of the Slovenian Museum of Natural History.

| Družina<br>Family | Rodovi<br>Genera | Vrste<br>Species | Države<br>Countries | Št. osebkov<br>No. individuals |
|---|---|---|---|---|
| Felidae | **4** | **8** | **10** | **66** |
| Viverridae | **3** | **3** | **3** | **5** |
| Herpestidae | **4** | **5** | **4** | **13** |
| Hyaenidae | **3** | **3** | **1** | **4** |
| **Skupaj / Total** | **14** | **18** | **11** | **88** |

**Tabela 6.** Geografska zastopanost primerkov Feliformia shranjenih v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

**Table 6.** Geographic representation of Feliformia specimens preserved in the Mammal Collection of the Slovenian Museum of Natural History.

| Država<br>Country | Družine<br>Families | Rodovi<br>Genera | Vrste<br>Species | Št. Osebkov<br>No. Individuals |
|---|---|---|---|---|
| Slovenia | 1 | 2 | 3 | 44 |
| Bosnia & Herzegovina | 1 | 1 | 1 | 2 |
| Croatia | 2 | 2 | 2 | 9 |
| Ethiopia | 2 | 3 | 3 | 3 |
| India | 3 | 4 | 4 | 4 |
| Israel | 1 | 1 | 1 | 2 |
| Lebanon | 1 | 1 | 1 | 1 |
| Macedonia | 1 | 1 | 2 | 2 |
| Morocco | 1 | 1 | 1 | 2 |
| South Africa (RSA) | 4 | 5 | 5 | 5 |
| Serbia | 1 | 2 | 2 | 2 |
| from captivity / iz ujetništva | 3 | 3 | 3 | 3 |
| no locality / brez lokalitete | 3 | 5 | 5 | 9 |
| **Skupaj / Total** | **4** | **13** | **18** | **88** |



**Slika 1.** Geografski izvor primerkov sesalcev, obravnavanih v tej objavi in shranjenih v Prirodoslovnem muzeju Slovenije. Jugovzhodna Evropa je povečana v insertu.

**Figure 1.** Geographic origin of mammalian vouchers reported in this survey and deposited in the Slovenian Museum of Natural History. South-eastern Europe is enlarged in the insert.

primerkov), etiopskem (9,1 %) in orientalnem (4,6 %). Iz ujetništva in brez podatkov o izvoru je 13,6 % primerkov. Primerki so bili zbrani na 39 nahajališčih v Sloveniji (65 % vseh nahajališč) in 21 nahajališčih v tujini (35 %); skupni seštevek je 60 nahajališč (seznam nahajališč na koncu). Polovica (50 %) vseh primerkov je iz Slovenije.

Zbiranje materiala je bilo večinoma naključno oziroma priložnostno. Najstarejša ohranjena primerka sta dermoplastična preparata avtohtonih slovenskih risov, ki sta bila domnevno ubita sredi 19. stoletja. V Zbirki je 7 primerkov iz 19. stoletja, 29 primerkov iz 20. stoletja ter 37 primerkov, zbranih po letu 2000. Za 15 primerkov datum zbiranja ni znan. Pridobitve za muzejsko zbirko so bile v 19. in deloma v 20. stoletju dokumentirane v Katalogu (zadnji zapis je iz leta 1978). V njem so navedeni sledeči primerki obravnavane skupine: 3 primerki risa (dva sta se ohranila do danes), 13 primerkov divjih mačk (ohranjeni trije) in 6 primerkov domačih mačk

(72.7% of vouchers), Ethiopian (9.1%) and Oriental (4.6%). 13.6% of vouchers originate from captivity or lack data on history. The specimens were collected in 39 localities within Slovenia (65% of all localities) and 21 localities (35%) abroad; the sum total is 60 localities (gazetter of localities at the end). A half of the specimens are from Slovenia.

Collecting of the material was mostly random or occasional. The oldest preserved specimens are taxidermic mounts of Slovenian autochthonous Lynxes, which were probably killed in the middle of the 19th century. The Collection holds 7 specimens from the 19th century and 29 specimens from the 20th century, with additional 37 specimens collected after the year 2000. For 15 specimens, the date of collection is unknown. In the 19th and partly in the 20th century, the acquisitions were documented in the Catalogue (the last record was in 1978). The following vouchers are listed: 3 Lynxes (two preserved to date), 13 Wild Cats (three preserved) and 6 Domestic Cats (none preserved). Thus, 17 of the 22 specimens

(niso ohranjeni). Torej se ni ohranilo 17 od 22 primerkov, navedenih v KATALOGU. KOS (1929) navaja štiri primerke risov, ki so bili v letih 1824, 1834, 1836 in 1853 darovani Kranjskemu deželnemu muzeju, v muzeju pa jih ni bilo že v času njegovega pisanja. OBRAVNAVE za obdobje 1. september 1890 – konec 1891 (str. 192) poročajo, da je »Vesel iz Zamostka« muzeju daroval lobanjo divje mačke. Ta donacija v KATALOGU ni zavedena, prav tako pa se ni ohranil primerek. Po letu 1950 so bili številni preparati sesalcev izločeni kot neprimerni za razstavljanje. MUZEJ jih je podaril različnim ustanovam, predvsem šolam, ali pa preprosto zavrgel.

Primerki podreda Feliformia iz ZBIRKE so bili večinoma zbrani posamič. Manjšo serijo je MUZEJ pridobil od Indijskega misijonskega muzeja v Ljubljani (Bengalski muzej), ki so ga jezuiti leta 1935 odprli pri cerkvi Sv. Jožefa na Zrinjskega cesti 9. Razstavljal je prirodoslovne in narodopisne eksponate, ki so jih v domovino pošiljali misijonarji iz Bengalije (danes večinoma v Bangladešu). Misijon slovenskih in hrvaških jezuitskih misijonarjev v delti Gangesa, imenovan Basanti (Bošonti), je deloval od leta 1925. Zadnji slovenski misijonar je tja prispel leta 1950. Sicer so imeli slovenski misijonarji v Indiji več postojank, med drugim tudi misijon Kurseong pri Darjeelingu ob vznožju Himalaje. Ta je bil od Basantija oddaljen približno 600 kilometrov zračne črte. V misijonskem muzeju v Ljubljani si je bilo moč ogledati preparirane zveri, kače, eksotične ptiče, metulje in hrošče, ena glavnih privlačnosti je bil dermoplastični preparat tigra. Indijski misijonski muzej je bil ukinjen leta 1949, naravoslovni material pa je prevzel Prirodoslovni muzej Slovenije. Standardi dela v MUZEJU so bili v tem času tako nizki, da prejeti material ni bil katalogiziran ali kako drugače dokumentiran, zbirka pa ni bila shranjena kot celota.

Ob koncu 19. in na začetku 20. stoletja je MUZEJ pridobil nekaj primerkov mačk in sorodnih zveri z odkupi od potujočih menažerij, nekaj starejših dermoplastičnih preparatov pa verjetno izvira iz naravoslovnih šolskih zbirk

listed in the CATALOGUE have not been preserved to date. KOS (1929) lists four Lynx specimens that were donated to the Carniolan Provincial Museum in 1824, 1834, 1836 and 1853, but at the time of his writing they were no longer preserved in the MUSEUM. The PROCEEDINGS for the period from 1 September 1890 to the end of 1891 (page 192) reports that "Mr Vesel from Zamostek" donated to the MUSEUM the skull of a Wild Cat. This donation was not registered in the CATALOGUE, and neither has the specimen been preserved. After the year 1950, many preparations of Mammals were excluded from the COLLECTION as inappropriate for further display. They were donated to various institutions, especially schools, or simply discarded.

The specimens of Feliformia, preserved in the COLLECTION, were mostly collected individually. A smaller series was acquired from the Indian Missionary Museum in Ljubljana (the Bengal Museum), which was established by the Jesuits in 1935 at the Church of Sv. Jožef on Zrinjskega St. 9. There were ethnological and natural history objects exhibited, sent by missionaries from the Bengal region (now mostly in Bangladesh). The mission of the Slovenian and Croatian Jesuits in the Ganges delta, called Basanti (Boshonti), has operated since 1925. The last Slovenian missionary arrived there in 1950. Otherwise, there were several Slovenian missions in India, including the Kurseong in Darjeeling at the foot of Himalayas; it was about 600 km bee-line of Basanti. The Missionary Museum in Ljubljana set on display prepared carnivores, snakes, exotic birds, butterflies and beetles, while one of the main attractions was the taxidermic mount of a Tiger. The Indian Missionary Museum was closed down in 1949 and natural history material was taken over by the Slovenian Museum of Natural History. The standards of work in the MUSEUM were at that time so low that the received material was not catalogued or otherwise documented and the collection was not preserved as an entitty.

At the end of the 19th and the beginning of the 20th century, the MUSEUM acquired some specimens of Feliformia with purchases from travelling menageries, while some older taxidermic mounts probably originate from natural histo-

po Sloveniji. Novejši material v Zbirki je bil večinoma zbran s povozi in pogini živali.

Lobanja tigra (*Panthera tigris*) je v Zbirki edini primerek iz podreda Feliformia, ki pripada ogroženi vrsti (EN) z Rdečega seznama ogroženih vrst Mednarodne zveze za varstvo narave (IUCN). Štirje primerki pripadajo ranljivim vrstam (VU): lev *Panthera leo* (1 dermoplastični preparat) in leopardi *Panthera pardus* (2 lobanji, 1 koža). Dva primerka progaste hijene *Hyaena hyaena* (dermoplastična preparata) pripadata potencialno ogroženi vrsti (NT). Drugi primerki obravnavanega podreda pripadajo vrstam, ki so na Rdeči seznam uvrščene kot najmanj ogrožene (LC). V Zbirki je 46 primerkov v Sloveniji zavarovanih živalskih vrst (*Uredba o zavarovanih prosto živečih živalskih vrstah (Uradni list RS, št. 46/04, 109/04, 84/05, 115/07, 32/08-odlUS, 96/08, 36/09, 102/11, 15/14 in 64/16)*: 9 primerkov risov *Lynx lynx* (3 dermoplastični preparati, 1 koža, 7 lobanj) in 37 primerkov divjih mačk *Felis silvestris* (4 dermoplastični preparati, 16 kož, 30 lobanj, 4 skeleti).

Primerki v Zbirki so večinoma ohranjeni kot lobanje (77,3 % vseh primerkov). Kože so ohranjene od 26,1 % muzejskih primerkov, od 5,7 % primerkov pa je shranjeno tudi okostje. Nadaljnjih 18,2 % primerkov so dermoplastični preparati; v večini primerov gre za zgodovinski material, ki v glavnem ni ustrezno etiketiran. Mokrih primerkov navedenega podreda v zbirki ni (tabela 7).

ry collections of secondary schools in Slovenia. The newer material in the Collection were mostly road casualties.

The skull of a Tiger *Panthera tigris* is in the Collection the only specimen of Feliformia, listed as Endangered species (EN) on the IUCN Red List of Threatened Species. Four specimens belong to Vulnerable species (VU): the Lion *Panthera leo* (1 taxidermic mount) and the Leopards *Panthera pardus* (2 skulls, 1 skin). Two specimens of the Striped Hyaena *Hyaena hyaena* (taxidermic mounts) belong to the Near Threatened Species (NT). Other specimens belong to the species listed as of Least Concern (LC). In the Collection there are 46 specimens of species protected in Slovenia (*Decree on protected wild animal species (Official Gazette of the Republic of Slovenia, No. 46/04, 109/04, 84/05, 115/07, 32/08, 96/08, 36/09, 102/11, 15/14 and 64/16*): 9 specimens of Lynxes *Lynx lynx* (3 taxidermic mounts, 1 skin, 7 skulls) and 37 Wild Cats *Felis silvestris* (4 dermoplastic mounts, 16 skins, 30 skulls, 4 skeletons).

The majority of specimens are preserved as skulls (77.3% of vouchers). Skins are preserved from 26.1% of the museum specimens, while 5.7% of them are also saved as skeletons. Further 18.2% of individuals are taxidermic mounts; these include historic specimens which, however, frequently lack appropriate labels. There are no vouchers preserved as wet specimens (Table 7).

**Tabela 7.** Preparati podreda Feliformia, shranjeni v Zbirki sesalcev Prirodoslovnega muzeja Slovenije, razvrščeni po družinah.

**Table 7.** Preparations of the suborder Feliformia reported in this paper and preserved in the Mammal Collection of the Slovenian Museum of Natural History, according to families.

| Družina<br>Family | Taksidermija<br>Taxidermy | Koža<br>Skin | Lobanja<br>Skull | Okostje<br>Skeleton | Št. osebkov<br>No. individuals |
|---|---|---|---|---|---|
| Felidae | 9 | 18 | 54 | 5 | 66 |
| Viverridae | 3 | 1 | 2 | | 5 |
| Herpestidae | 2 | 3 | 11 | | 13 |
| Hyaenidae | 2 | 1 | 1 | | 4 |
| **Skupaj / Total** | **16** | **23** | **68** | **5** | **88** |

# Družina: Felidae
## Mačke

Muzej hrani 66 primerkov mačk, ki pripadajo sedmim vrstam iz štirih različnih rodov (tabela 8). Več kot polovica preparatov (56,1 %) pripada divjim mačkam *Felis silvestris*. Mačke so bile zbrane v 10 državah v Evropi, Afriki in Aziji (tabela 9). En primerek izhaja iz ujetništva, za 6 primerkov ni podatkov o državi izvora. V zbirki je največ lobanj (81,8 % vseh primerkov), koža je 27,3 %. Dermoplastični preparati so razmeroma dobro zastopani (13,6 % vseh primerkov).

# Family: Felidae
## Cats

The Museum is in possession of 66 cat specimens from seven species and four genera (Table 8). The majority of vouchers (56.1%) are Wild Cats *Felis silvestris*. Cats originate from 10 countries in Europe, Africa and Asia (Table 9). One specimen is from captivity, while for six specimens there are no data on origin. The bulk of cats in the Collection are skulls (81.8%) and 27.3% of vouchers are preserved also as skins. Taxidermic mounts are reasonably well represented (13.6% of vouchers).

**Tabela 8.** Taksonomska zastopanost in preparati mačk Felidae v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. [a]Skelet PMS 3772: posamezne kosti. [b]PMS 24075, 20128: le spodnja čeljustnica.

**Table 8.** Taxonomic representation and preparations of cats Felidae in the Mammal Collection of the Slovenian Museum of Natural History. [a]Skeleton PMS 3772: isolated bones. [b]Skulls PMS 24075, 20128: only Mandibles.

| Vrsta<br>Species | Taksidermija<br>Taxidermy | Koža<br>Skin | Lobanja<br>Skull | Okostje<br>Skeleton | Št. osebkov<br>No. individuals |
|---|---|---|---|---|---|
| *Felis silvestris* | 4 | 16 | 30 | 4[a] | 37 |
| *Felis catus* | | | 14[b] | 1 | 14 |
| *Lynx lynx* | 3 | 1 | 7 | | 9 |
| *Panthera leo* | 1 | | | | 1 |
| *Panthera pardus* | | 1 | 2 | | 3 |
| *Panthera tigris* | | | 1 | | 1 |
| *Leptailurus serval* | 1 | | | | 1 |
| **Skupaj / Total** | **9** | **18** | **54** | **5** | **66** |

**Tabela 9.** Geografska zastopanost mačk Felidae v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. Geografski izvor je v nekaterih primerih negotov; razlaga je v besedilu.

**Table 9.** Geographic representation of cats Felidae in the Mammal Collection of the Slovenian Museum of Natural History. Geographic origin is in some cases uncertain; the explanation is in the text.

| Država<br>Country | Št. vrst<br>No. species | Št. osebkov<br>No. individuals |
|---|---|---|
| Slovenia | 3 | 44 |
| Bosnia & Herzegovina | 1 | 2 |
| Croatia | 1 | 2 |
| Ethiopia | 2 | 2 |
| India | 1 | 1 |
| Lebanon | 1 | 1 |
| Macedonia | 2 | 2 |
| Morocco | 1 | 2 |
| South Africa (RSA) | 1 | 1 |
| Serbia | 2 | 2 |
| from captivity / iz ujetništva | 1 | 1 |
| no locality / brez lokalitete | 2 | 6 |
| **Skupaj / Total** | **7** | **66** |

# *Felis* Linnaeus, 1758

## Male mačke

Čeprav je splošno sprejeto, da sta domača (*Felis catus*) in divja mačka (*Felis silvestris*) konspecifični (Sanquist & Sanquist 2009), zanju uporabljava različni taksonomski imeni. Strogo gledano takšna praksa nomenklaturno sicer ni pravilna, je pa v splošni uporabi iz praktičnih razlogov (e.g. Harris & Yalden 2008, Grimmberger 2017).

Večina divjih mačk se od domačih razlikuje že po zunanjih značilnostih, vendar ločevanje med njimi otežujejo hibridi in osebki z vmesnimi (prehodnimi) znaki. Celotno zbirko divjih in domačih mačk sva ponovno klasificirala na podlagi sledečih zunanjih, lobanjskih in zobnih znakov, objavljenih v Kryštufek (1991), Hemmer (1993) in Harris & Yalden (2008):

1. Hrbtna proga: pri *silvestris* se konča na bazi repa; pri *catus* se nadaljuje na rep; pogosto manjka (Kitchener & Daniels 2008).
2. Konica repa: topa / odsekana pri *silvestris*; koničasta pri *catus* in križancih (Kryštufek 1991).
3. Temni obroči na repu: razločni, prečni pri *silvestris*; pri *catus* združeni z dorzalno repno progo, ali pa jih ni (Kitchener & Daniels 2008).
4. Pege na bokih in zadku: pri *silvestris* jih ni; pri *catus* številne ali pa jih ni (Kitchener & Daniels 2008).
5. Proge na tilniku: štiri široke pri *silvestris*; pri *catus* ozke ali pa jih ni (Kitchener & Daniels 2008).
6. Proge na ramenih: dve široki pri *silvestris*; pri *catus* neizrazite ali pa jih ni (Kitchener & Daniels 2008).
7. Smrček: rožnat pri *silvestris*; pri *catus* drugačne barve (Kryštufek 1991).
8. Anteriorni rob nosnic: oblike črke V pri *silvestris*; na stiku leve in desne kosti izbočen pri *catus* (MacDonald & Kitchener 2008).

## Small Cats

Although Domestic Cat (*Felis catus*) is widely accepted as being conspecific to the Wild Cat *Felis silvestris* (Sanquist & Sanquist 2009), we use different binominals for naming them. Strictly speaking, this is not correct, but is widely used for practical purposes (e.g. Harris & Yalden 2008, Grimmberger 2017).

The majority of Wild and Domestic Cats can be raedily distinguished already by their external appearance, but this is not always the case. The issue of differentiating the two types is further compromised by hybridization and presence of individuals of intermediate characteristics. We re-classified the entire collection of Wild and Domestic Cats, utilizing a set of external, cranial and dental traits reported in Kryštufek (1991), Hemmer (1993) and Harris & Yalden (2008). The traits are as follows:

1. Dorsal stripe – the stripe ends at base of tail in *sivestris*, but continues on the tail in *catus*. In *catus*, the stripe is frequently absent (Kitchener & Daniels 2008).
2. Tip of tail – the tip is blunt in *silvestris* but tapered to point in *catus* and in hybrids (Kryštufek 1991).
3. Tail bands – the tail has distinct transverse bands in *silvestris*. Bands are absent in *catus*; when present, they join the dorsal stripe (Kitchener & Daniels 2008).
4. Spots on flanks and hindquarters. Spots are absent in *sivelstris*. Spots are many or absent in *catus* (Kitchener & Daniels 2008).
5. Stripes on nape – there are four wide stripes in *silvestris*. Stripes are narrow or absent in *catus* (Kitchener & Daniels 2008).
6. Stripes on shoulders – there are two wide stripes in *silvestris*. Stripes are indistinct or absent in *catus* (Kitchener & Daniels 2008).
7. Rhinarium – it is pinky (fleshy) in *silvestris*, but of different colour in *catus* (Kryštufek 1991).
8. Anterior margin of nasal bones – the margin is V-shaped in *silvestris* and notched in *catus* (MacDonald & Kitchener 2008).

9. Posteriorni vrh nosnic: pri *silvestris* občutno preseže črto, ki veže zadnja dva robova zgornjih čeljustnic; pri *catus* ne preseže občutno črte, ki veže zadnja dva robova zgornjih čeljustnic (Kryštufek 1991).
10. Sagitalni šiv: vijugast (nepravilen) pri *silvestris*; raven pri *catus* (MacDonald & Kitchener 2008).
11. Širina velike line: ≥ 13,7 mm pri *silvestris*; ≤ 14,5 mm pri *catus* (Hemmer 1993).
12. Skupna dolžina tretjega in četrtega zgornjega predmeljaka ($P^{3-4}$): ≥ 16,6 mm pri *silvestris*; pri *catus* ≤ 17,8 (Miller 1912).
13. Dolžina spodnjega meljaka (M1): ≥ 7,8 mm pri *silvestris*; pri *catus* ≤ 8,6 mm (Miller 1912).
14. Prostornina lobanje: prostornina možganske votline > 35 $cm^3$ pri *silvestris*; pri *catus* < 32$cm^3$ (Kitchener & Daniels 2008).
15. Relativna prostornina lobanje je največja dolžina lobanje (v mm) / prostornina lobanje; < 2,75 pri *silvestris*; > 2,75 pri *catus* (Kitchener & Daniels 2008).
16. Kotni podaljšek spodnje čeljustnice; dobro razvit pri *silvestris*; slabo razvit pri *catus* (MacDonald & Kitchener 2008).

Linearne meritve sva opravila s kljunastim merilom z natančnostjo 0,1 mm. Prostornino lobanje sva ocenila s količino svinčenih kroglic premera 2,4 mm, ki so zapolnile možgansko votlino. Svinčene kroglice sva stehtala in maso pretvorila v prostornino (1 g kroglic ima prostornino 0,16361 ml). Pri vsakem muzejskem primerku sva posamezen diagnostični znak opredelila kot značilen za *F. silvestris* (S), značilen za *F. catus* (C), ali vmesno stanje znaka (SC).

9. Posterior tip of nasals – in *silvestris*, the tip extends beyond the premaxillo-maxillary suture, while in *catus* it is at the level of the suture (Kryštufek 1991).
10. Sagittal suture – the suture is convoluted in *silvestris* but straight in *catus* (MacDonald & Kitchener 2008).
11. Breadth of foramen magnum – the width of foramen is ≥ 13.7 mm in *silvestris*, and ≤ 14.5 mm in *catus* (Hemmer 1993).
12. Length of $P^{3-4}$ – combined length of 3rd and 4th upper premolars is ≥ 16.6 mm in *silvestris* and ≤ 17.8 in *catus* (Miller 1912).
13. Length of lower molar – the lower molar (M1. length is ≥ 7.8 mm in *silvestris* and ≤ 8.6 mm in *catus* (Miller 1912).
14. Skull volume – volume of the neurocranium (brain case) is > 35 $cm^3$ in *silvestris* and < 32$cm^3$ in *catus* (Kitchener & Daniels 2008).
15. Relative skull volume – relative volume is expressed as quotient of greatest length of skull (in mm) with skull volume as denominator. Relative volume is < 2.75 in *silvestris* and > 2.75 in *catus* (Kitchener & Daniels 2008).
16. Angular process of the mandibles – the process is poorly developed in *catus* but well developed in *silvestris* (MacDonald & Kitchener 2008).

Linear measurements were scored using Vernier calliper adjusted to the nearest 0.1 mm. Skull volume was estimated by quantity of lead bullets (diameter 2.4 mm) which filled the neurocranium (brain case). The bullets were weighted and the mas was converted to the volume (1 g of bullets has the volume of 0.16361 ml). For individual specimens, all character states were classified as typical of - *silvestris* (S), - *catus* (C) or as intermediate (SC).

**Tabela 10.** Stanje diagnostičnih znakov na materialu malih mačk (*Felis*) v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. Opis 16 zunanjih, lobanjskih in zobnih diagnostičnih znakov je v besedilu. Stanje znaka: -s: *Felis silvestris*; -c: *Felis catus*; -sc: vmesno stanje znaka, ki ne dopušča kategorične odločitve, -s > c: znak kaže bolj na *Felis silvestris* kot na *Felis catus*, -[a]: znak ni ohranjen ali ni jasen. (Cfr: determinacija ni popolnoma zanesljiva).

**Table 10.** State of diagnostic traits for *Felis* material in the Mammal Collection of the Slovenian Museum of Natural History. Description of 16 external, cranial and dental traits is in the text. State of traits: - s; *Felis silvestris*, - c; *Felis catus*, - sc: intermediate state of a trait, - s > c; more *Felis silvestris* than *Felis catus,* [a] trait not clear or not preserved. (Cfr – species determination not totally reliable).

| PMSNo. | 1. hrbtna proga / dorsal stripe | 2. konica repa / tip of tail | 3. temni obroči na repu / tail bands | 4. pege na bokih in zadku / spots on flanks and hindquarters | 5. proge na tilniku / stripes on nape | 6. proge na ramenih / stripes on shoulders | 7. smrček / rhinarium | 8. anteriorni rob nosnic / anterior margin of nasal bones | 9. posteriorni vrh nosnic / posterior tip of nasals | 10. sagitalni šiv / saagital suture | 11. širina velike line / breadth of foramen magnum | 12. dolžina $P^{3-4}$ / length of $P^{3-4}$ | 13. dolžina spodnjega meljaka (M1) / length of first lower molar | 14. prostornina lobanje / skull volume | 15. relativna prostornina lobanje / relative skull volume | 16. kotni podaljšek spodnje čeljustnice / angular process of the mandibles | vrstna določitev / species datermination |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20120 | s | s | s | s | s | s | s | / | / | / | / | / | / | / | / | / | silvestris |
| 18432 | / | / | / | / | / | / | / | s | s | oblit | 15,6/s | 19,4/s | 8,6/sc | 47,96/s | 2,14/s | s | silvestris |
| 20119 | s | s | s | s | s | s | sc | / | / | / | / | / | / | / | / | / | silvestris |
| 16447 | s | s | s | s | sc | s | s | / | / | / | / | / | / | / | / | / | silvestris |
| 17111 | / | / | / | / | / | / | / | s | s | s | 14/sc | 19,34/s | / | 41,61/s | 2,38/s | / | silvestris |
| 22052 | s | s | s | s | s | s | c | / | / | / | / | / | / | / | / | / | silvestris |
| 16446 | c | s | s | sc | s | s | s | s | s | oblit | 15,6/s | 19,5/s | 9,3/s | 44,27/s | 2,31/s | c | silvestris |
| 13209 | c | s | s | s | sc | s | s | s | sc | s | 14,9/s | 18,3/s | 9/s | / | / | s | silvestris |
| 16682 | c | c | s | s | sc | [a] | s | s | s | s | 14,9/s | 19,5/s | 8,8/s | 48,1/s | 1,9/s | c | silvestris |
| 20040 | / | / | / | / | / | / | / | s | s | s | 15/s | 18,5/s | 8,5/sc | 41,84/s | 2,3/s | c | silvestris |
| 3302 | / | / | / | / | / | / | / | s | s | s | 14,6/s | 17,9/s | 8,2/sc | 43,86/s | 2,14/s | c | silvestris |
| 5830 | / | / | / | / | / | / | / | s | sc | s | 15,2/s | 19/s | 8,7/s | 46,6/s | 2,21/s | c | silvestris |
| 16137 | / | / | / | / | / | / | / | c | s | s | 15/s | 19,8/s | 8,7/s | 43,98/s | 3,11/s | c | silvestris |
| 13206 | s | s | s | s | s | sc | s | s | s | / | / | 16,7/sc | 8,6/sc | / | / | s | silvestris |
| 7515 | / | / | / | / | / | / | / | c | c | oblit | 14,8/s | 18,9/s | 8,7/s | 43,41/s | 2,39/s | s | silvestris |
| 25668 | s | s | s | s | s | c | [a] | / | / | / | / | / | 9,3/sc | / | / | / | silvestris |
| 3051 | / | / | / | / | / | / | / | s | s | s | 13,6/c | / | / | 43,36/s | 1,95/s | c | silvestris |
| 18458 | s | sc | s | s | sc | s | s | c | s | s | 14,8/s | 17,6/sc | 8/sc | 42,77/s | 2,17/s | s | silvestris |
| 20478 | s | [a] | s | / | s | sc | c | / | / | / | / | / | / | / | / | / | silvestris |
| 20035 | c | / | / | c | sc | / | c | s | s | oblit | 15,5/s | 16,4/c | 8,9/s | 45,63/s | 2,25/s | s | silvestris |
| 20037 | / | / | / | / | / | / | / | s | s>c | s | 14,5/sc | 18/s | 8,3/sc | 40,38/s | 2,3/s | c | silvestris |
| 20038 | / | / | / | / | / | / | / | s | s | s | 13,9/sc | 17,1/sc | 8,6/sc | 35,54/s | 2,36/s | c | silvestirs |
| 20039 | / | / | / | / | / | / | / | c | s | s | 14,2/sc | 16,7/sc | 7,6/c | 38,4/s | 2,44/s | s | silvestris |
| 16428 | c | s | s | c | sc | s | s | c | s | s | / | 18,6/s | 8,3/sc | / | / | c | silvestirs |
| 25669 | s | [a] | s | s | sc | sc | s | c | s | sc | 13,6/c | 17,2/sc | 7,8/sc | 35,72/s | 2,36/s | / | silvestris |
| 3772 | c | s | s | c | s | c | c | c | s | s | 13,6/c | 18,7/s | 7,8/sc | 37,11/s | 2,33/s | c | silvestris |
| 8229 | / | / | / | / | / | / | / | s | s | sc | 14,2/sc | / | 8,9/s | 34,51/sc | 2,44/s | c | silvestris |
| 22039 | / | / | / | / | / | / | / | c | s | s | 13,2/c | 17,2/sc | 8,2/sc | 36,11/s | 2,3/s | c | silvestris |
| 7519 | / | / | / | / | / | / | / | c | s | s | 14,4/sc | 18,8/s | 8,5/sc | / | / | c | cfr. silvestris |

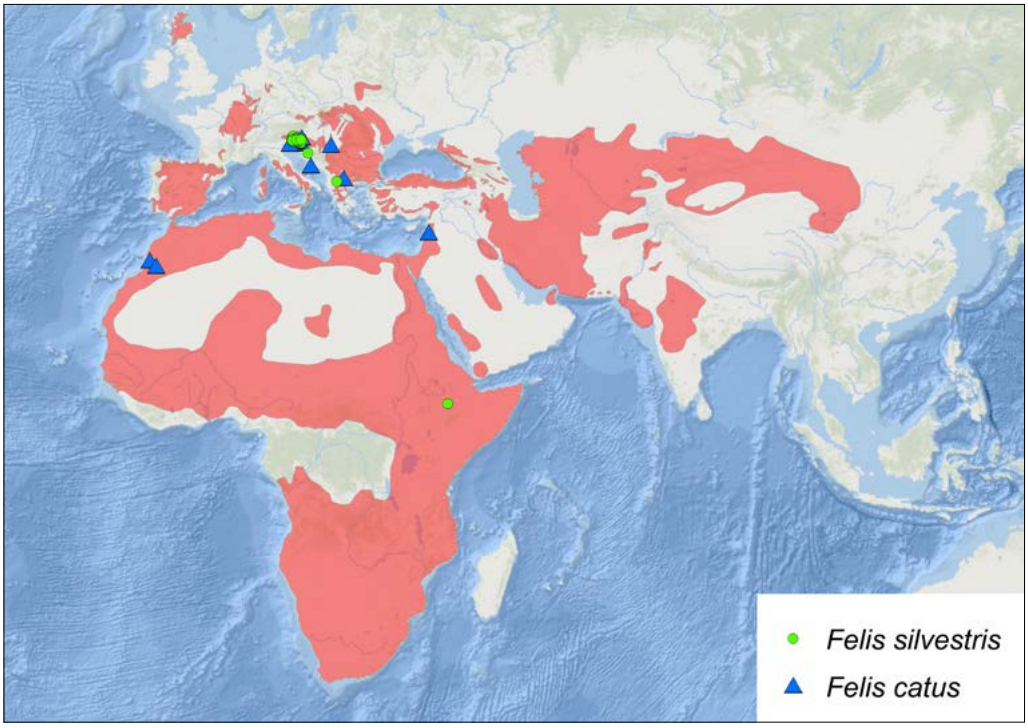
| PMSNo. | 1. hrbtna proga / dorsal stripe | 2. konica repa / tip of tail | 3. temni obroči na repu / tail bands | 4. pege na bokih in zadku / spots on flanks and hindquarters | 5. proge na tilniku / stripes on nape | 6. proge na ramenih / stripes on shoulders | 7. smrček / rhinarium | 8. anteriorni rob nosnic / anterior margin of nasal bones | 9. posteriorni vrh nosnic / posterior tip of nasals | 10. sagitalni šiv / saagital suture | 11. širina velike line / breadth of foramen magnum | 12. dolžina $P^{3-4}$ / length of $P^{3-4}$ | 13. dolžina spodnjega meljaka (M1) / length of first lower molar | 14. prostornina lobanje / skull volume | 15. relativna prostornina lobanje / relative skull volume | 16. kotni podaljšek spodnje čeljustnice / angular process of the mandibles | vrstna določitev / species datermination |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5709 | c | sc | s | s | sc | c | s | / | / | / | / | / | / | / | / | / | cfr. silvestris |
| 16745 | c | s | s | c | sc | c | s | / | / | / | / | / | / | / | / | / | cfr. silvestris |
| 16406 | c | sc | s | c | sc | sc | s | c | s | s | 15,1/s | 17,6/sc | 7,9/sc | / | / | c | cfr. silvestris |
| 20034 | c | sc | sc | s | sc | c | c | sc | s | s | c.12,2/c | 18,8/s | 8,3/sc | / | / | s | cfr. silvestris |
| 20036 | / | / | / | / | / | / | / | / | / | / | / | 18,6/s | 8,3/sc | / | / | c | silvestris |
| 5831 | / | / | / | / | / | / | / | s | sc | s | 13,6/c | 17/sc | 7,9/sc | 31,04/c | 2,73/s | c | silvestris |
| 5708 | c | c | sc | s | sc | c | s | s | sc | sc | 14,2/sc | 17,8/sc | 8,5/sc | 36,01/s | 2,25/s | c | silvestris |
| 20128 | / | / | / | / | / | / | / | / | / | / | / | / | 6,9/c | / | / | s | cfr. catus |
| 5718 | / | / | / | / | / | / | / | sc | c | oblit | 13,4/c | 18/s | 9,1/s | 31,12/c | 3,24/c | sc | s. ocreata* |
| 25395 | / | / | / | / | / | / | / | c | s | c | 14,4/sc | 16,5/c | 7,2/c | 32,36/sc | 2,62/s | / | catus |
| 19671 | / | / | / | / | / | / | / | s | c | c | 14,2/sc | 15,4/c | / | 30,78/c | 2,67/s | / | catus |
| 19181 | / | / | / | / | / | / | / | c | s | oblit | 12,5/c | 18,8/s | 8,1/sc | 30,71/c | 2,84/c | c | catus |
| 17116 | / | / | / | / | / | / | / | c | sc | oblit | 13,4/c | c.17,4/sc | 8,2/sc | 24,97/c | 3,51/c | c | catus |
| 17112 | / | / | / | / | / | / | / | c | sc | oblit | 14,4/sc | 16,5/c | 7,4/c | 30,37/c | 3,21/c | c | catus |
| 17114 | / | / | / | / | / | / | / | c | sc | oblit | 13/c | 17,1/sc | 7/c | 28,47/c | 3,31/c | c | catus |
| 17113 | / | / | / | / | / | / | / | / | / | sc | 12,7/c | 15,6/c | / | 27,95/c | 3,13/c | / | catus |
| 17115 | / | / | / | / | / | / | / | / | / | sc | 12,7/c | c.14,6/c | / | 24,56/c | 3,4/c | / | catus |
| 21696 | / | / | / | / | / | / | / | c | s | c | 13,1/c | 15,5/c | / | 31,82/c | 2,91/c | / | catus |
| 24512 | / | / | / | / | / | / | / | c | c | sc | 12,8/c | 15,6/c | / | 26,36/c | 3,28/c | / | catus |
| 24075 | / | / | / | / | / | / | / | / | / | / | / | / | 7/c | / | / | / | catus |
| 26269 | / | / | / | / | / | / | / | c | c | oblit | 13,5/c | 16,1/c | / | 30,84/c | 3,04/c | / | catus |
| 26209 | / | / | / | / | / | / | / | c | c | oblit | 12,1/c | 14,32/c | 6,7/c | 25,39/c | 3,49/c | / | catus |

**Felis silvestris ocreata* (PMS 5718 ) sodi v skupino podvrst *lybica,* iz katere izvira tudi domača mačka, zato je prostornina lobanje primerka znotraj razpona, značilnega za domačo mačko.

**Felis silvestris ocreata* (PMS 5718) classifies to *lybica* subspecies group, from which Domestic Cat originates as well, so specimen's skull volume value fits in the range characteristic of Domestic Cat.

Za razlikovanje divjih in domačih mačk sta se kot najboljša diagnostična znaka izkazala prostornina lobanje (znak št. 14) in relativna prostornina lobanje (št. 15). Pri treh primerkih ocene na osnovi prostornin lobanj niso dale skladnih rezultatov. Pri primerkih PMS 5831 in PMS 19671 je bila prostornina lobanje v območju *F. catus*, relativna prostornina lobanje pa v območju *F. silvestris.* Pri primerku PMS 25395 je bila prostornina lobanje

In distinguishing Wild from Domestic Cats, the skull volume (trait No. 14) and the relative skull volume (trait No. 15) turned out as the best diagnostic traits. In three specimens, the estimates based on these two traits did not yield compliant results. Skull volume of the specimens PMS 5831 and PMS 19671 was in the range of *F. catus* and the relative skull volume in the range of *F. silvestris*. The skull volume of the specimen PMS 25395




**Slika 2.** Geografski izvor divjih mačk *Felis silvestris* in domačih mačk *Felis catus* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za območje razširjenosti divje mačke je Yamaguchi et al. (2015).

**Figure 2.** Geographic origin of Wild Cats *Felis silvestris* and Domestic Cats *Felis catus* in the Mammal Collection of the Slovenian Museum of Natural History. Range of the species follows Yamaguchi et al. (2015).

v območju prekrivanja stanja znaka (SC) relativna prostornina lobanje pa v območju *F. silvestris.* Glede na stanje drugih diagnostičnih znakov, sva uvrstila v *F. catus* primerek PMS 19671 (zbran v Libanonu) in primerek PMS 25395 (iz šolske zbirke), juvenilni primerek PMS 5831 iz Adlešičev v Beli krajini pa v *F. silvestris.* Pri primerkih PMS 5709, PMS 7519, PMS 16406, PMS 16745 in PMS 20034 lobanja ni ohranjena ali pa je tako poškodovana, da njene prostornine ni bilo moč izmeriti. V vseh the primerih diagnostični znaki na koži niso dopuščali zanesljive uvrstitve zato so ti primerki klasificirani kot *Felis* cfr. s*ilvestris*. Na delu materiala (primerki PMS 20035–20040) je bila na Oddelku za biologijo Biotehniške fakultete Univerze v Ljubljani opravljena genetska analiza; vsi našteti primerki so bili uvrščeni v *F. silvestris*; ni znano ali so bile sekvence deponirane v genski banki (GenBank).

was in the area of overlapp (SC)and with relative skull volume in the *F. silvestris* range. According to the state of the other diagnostic traits, we classified specimens PMS 19671 (collected in Lebanon) and PMS 25395 (from the school collection) as *F. catus*, and the juvenile specimen PMS 5831 from Adlešiči in Bela krajina as *F. silvestris*. Specimens PMS 5709, PMS 7519, PMS 16406, PMS 16745 and PMS 20034 lack or have damaged skulls and the skull volume could not have been measured. At the same time, the diagnostic traits of the skin did not allow reliable classification; these specimens are listed as *Felis* cfr. *silvestris*. Part of the material (PMS 20035–20040) was screened for genetic makeup at the Department of Biology, Biotechnical Faculty of the University of Ljubljana; all these specimens were classified as *F. silvestris*; it is not known whether the sequences have been deposited in GenBank

# *Felis silvestris* Schreber, 1777

## Divja mačka

Zbirka

## Wild Cat

Collection

**Slovenia**:

Adlešiči: 1 skull (PMS 5831), a male, collected on 25 November 1987 by Tomaž Burazer.

Bohinj, Jereka: 1 skull (PMS 18432), a male, road casualty, collected on 7 February 2011 by Anton Urh.

Bohinj, Nomenj: 1 skin with a skull and skeleton (PMS 25669), a female, road casualty, collected on 6 December 2017 by Peter Benedik.

Bohinjska Bela: 1 skin with a skull (PMS 16446), a male, road casualty, collected on 10 February 2009.

Borovnica: 1 taxidermy (PMS 22052), a male, collected in January 1961, prepared by F. Leben, under #641 in Catalogue (see below), on permanent display.

Cerknica, Goričice: 1 skull (PMS 20040), a female, found on 7 March 2005 by Franc Kljun.

Črniče (UTM: VL08, 170 m a.s.l.): 1 skull (PMS 16137), a female, collected on 21 December 1992 by Tomi Trilar and Viljem Žgavec.

Črnuče, Rašica: one mounted skeleton (PMS 22039), unsexed, collected on 18 January 1931, donated by Hertle, under #361 in Catalogue (see below), exhibit on permanent display.

Drskovče, Sv. Pavel: 1 skull (PMS 20038), a female, road casualty, collected on 11 March 2005 by Franc Kljun, Ivan Kos & Hubert Potočnik.

Godovič: 1 skull (PMS 8229), a male, collected on 15 January 1989 by Viljem Žgavec. - 1 skin (PMS16447), a female, road casualty, collected on 18 February 2009 by Viljem Žgavec.

LD Črnomelj, Rodine: 1 skull (PMS 5830), a male, collected on 19 January 1987 by Tomaž Burazer.

LD Črnomelj, Vojna vas: 1 skull (PMS 3051), a female, collected on 1 November 1983 by Boris Kryštufek.

Ljubljansko barje (on the road Ižanska cesta, at the exit to Iška Loka): 1 skin with a skull (fragmented) and a skeleton (PMS 25668), a male, road casualty, collected on 21 October 2016 by Dare Fekonja.

Ljubljansko barje, Notranje Gorice: 1 skin with a skull (PMS 5708), a female, collected in February 1985 by Viktor Čuden.

Ljubljansko barje, Notranje Gorice: 1 skin (PMS 5709), collected in December 1984 by Viktor Čuden.

Ljubljansko barje, Vnanje Gorice: 1 skin with a skull and parts of a skeleton (PMS 3772), a female, collected on 16 August 1984 at a pheasant farm.

Logatec: 1 taxidermy (PMS 20478), unsexed, collected on 8 November 1889 by Frančišek Arko, under #193 in Catalogue (see below), catalogued or put on display in 1889; re-catalogued in 2014, the Proceedings (1 September 1889 – 31 August 1890) reports on p. 164 on donation of a Wild Cat obtained from Frančišek Arko from Spodnji Logatec.

Loški Potok – Draga (road section): 1 skin (PMS 16745), road casualty, collected on 4 April 2009.

Loški Potok – Draga (road section): 1 skin with a skull (PMS 20034), a male, road casualty, collected on 15 June 2002 by Brane Grebenc.

Podnanos: 1 skin with a skull (PMS 16682), a female, collected on 22 March 2009.

Podnanos, Rebernice: 1 skin with a skull (PMS 16406), road casualty, collected on 25 September 2008.

Ribnica, Ortnek: 1 skull (PMS 20037), a female, road casualty, collected on 14 January 2006 by Ivan Kos.

Ribnica, Velika gora, Konfinska: 1 skin with a skull (PMS 20035), a male, collected on 11 February 2004 by Tomaž Skrbinšek.

Ribnica, Velika gora, Zakristinc: 1 skull (PMS 20039), a female, found dead, collected on 23 April 2006 by Franc Kljun.
Sodražica – Žimarice (road section): 1 skin with a skull (PMS 13209), a female, road casualty, collected on 1 December 2005.
Spodnji Boštanj, Sevnica: 1 skin with a skull (PMS 13206), a female, collected on 14 November 2005.
Trnovski gozd: 1 skull (PMS 7519), a male, collected in February 1990 by Boris Kryštufek.
Vipava: 1 skin with a skull (PMS 16428), a male, road casualty, collected on 16 December 2008.
Vrh nad Želimljami, Gradišče: 1 skull (PMS 20036, a male, road casualty, collected on 15 December 2003 by Ivan Kos.
Vrhnika, Ljubljanski vrh: 1 skull (PMS 7515), collected in 1985 by Blaž Krže.
No locality: 1 skull (PMS 3302), collected by Tomaž Burazer. - 1 skin with a skull (PMS 18458), a female, no other data available.

**Bosnia and Herzegovina**:
Drvar: 2 taxidermic mounts (PMS 20119, PMS 20120), unsexed, in 2010 bought from Mausar's workshop.

**Macedonia**:
Pelister, Gavran: 1 skull (PMS 17111), unsexed, collected in 1977 by Boris Kryštufek.

**Ethiopia:**
Addis Ababa, Mojo, along the Awash River: 1 skull (PMS 5718), unsexed, collected on 20 November 1960 by Savo Brelih.

**Tabela 11.** Geografska zastopanost in preparati divjih mačk *Felis silvestris* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

**Table 11.** Geographic representation and preparations of Wild Cats *Felis silvestris* in the Mammal Collection of the Slovenian Museum of Natural History.

| Država<br>Country | Taksidermija<br>Taxidermy | Koža<br>Skin | Lobanja<br>Skull | Okostje<br>Skeleton | Št. osebkov<br>No. individuals |
|---|---|---|---|---|---|
| Slovenia | 2 | 16 | 28 | 4 | 33 |
| Bosnia and Herzegovina | 2 | | | | 2 |
| Macedonia | | | 1 | | 1 |
| Ethiopia | | | 1 | | 1 |
| **Skupaj / Total** | **4** | **16** | **30** | **4** | **37** |

V Katalogu so zavedeni sledeči primerki:

The following vouchers are recorded in the Catalogue:

#82: labelled as *Felis catus*, the first cat recorded in the Museum's Catalogue, catalogued/put on display in 1888; donated to Železniki High School on 16 January 1951.
#83: labelled as *Felis catus*, probably catalogued/put on display in 1888; discarded on 20 August 1942.
#84: a male, labelled as *Felis catus*, collected at Bistra in February 1860 (month recorded in the Files, not in the Catalogue), collected/donated by Anton Galle; discarded in 20 August 1942.
#193: labelled as *Felis catus*, from Logatec, collected/donated by Frančišek Arko, catalogued or put on display in 1889; re-catalogued in 2014 as PMS 20478 (see above).
#195: labelled as *Felis catus*, collected at Logatec by Frančišek Arko, catalogued/put on display in 1889; disposed from the Museum at unknown time.

#205: a male, labelled as *Felis catus*, collected/donated by F. Galle, catalogued/put on display in 1894, donated to the Technical Museum of Slovenia on 14 November 1954.
#261: a male, juvenile, labelled as *Felis catus*, colleceted near Kočevje on 13 February 1915, donated by the Military-Forestry Office in Kočevje; in May 1954 donated to Moravče High School (in the Catalogue additionally recorded in 1915 under #82).
#361: a mounted skeleton, unsexed juvenile, first specimen in the Catalogue labelled as *Felis silvestris*; collected at Rašica near Črnuče on 18 January 1931, donated by Hertle, re- catalogued in 2014 under PMS 22039 (see above), on permanent display.
#444: a male, labelled as *Felis silvestris*, collected at Logatec on 24 February 1938; disposed from the Museum at unknown time.
#475: juvenile, labelled as *Felis silvestris;* in May 1954 donated to Rakovnik High School.
#491: a skull, labelled as *Felis silvestris*, collected at Pijava Gorica; probably in 1922, donated by Dr S. Bevk, put on display in 1946; disposed from the Museum at unknown time.
#495: a skull, labelled as *Felis silvestris*, collected in 1932, donated by Dr S. Bevk, in 1946 put on display; disposed from the Museum at unknown time.
#641: a taxidermy, a male, labelled as *Felis silvestris*, collected at Borovnica in January 1961, prepared by F. Leben, re-catalogued in 2014 under PMS 22052 (see above), on permanent display.

Obravnave za obdobje od 1. septembra 1890 do konca 1891 (str. 192) poročajo o donaciji lobanje divje mačke, lisice in jazbeca, ki jih je daroval »*Vesel iz Zamostka*«. To darilo ni zavedeno v Katalogu.

The Proceedings (1 September 1890 – end of 1891, p. 192) reports on donation of a Wild Cat, Fox and Badger skulls obtained from Mr Vesel from Zamostek. This donation is not evident from the Catalogue.

**Tabela 12.** Zunanje in lobanjske dimenzije divjih mačk *Felis silvestris* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije; *izmerjene na dermoplastičnem preparatu, [def]konica repa manjka.

**Table 12.** External and cranial dimensions of Wild Cats *Felis silvestris* in the Mammal Collection of the Slovenian Museum of Natural History, *estimated from taxidermic mount. [def]tail top lacks.

| Country/ Region | PMS No. | Sex | Age | W | H&B | TL | HF | E | PL | CbL | ZgB | IoC | UTR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NW Slovenia | 8229 | ♂ | juv | / | / | / | / | / | 84,3 | 76,8 | 58,2 | 14,8 | 29,4 |
| | 16446 | ♂ | ad | 4100 | / | / | / | / | 102,2 | 94,3 | 70,6 | 17,7 | 32 |
| | 16447 | ♀ | ad | 2500 | 845 | 316 | 112 | 58 | / | / | / | / | / |
| | 18432 | ♂ | ad | / | / | / | / | / | 102,8 | 96 | 77,6 | 22,2 | 33,1 |
| | 25669 | ♀ | sad | 2400 | 480 | 260 | 118 | 59 | / | / | / | / | / |
| Central Slovenia | 3772 | ♀ | juv | / | / | / | / | / | 86,5 | 78,7 | 61,1 | 18 | 28,6 |
| | 5708 | ♀ | juv | / | / | / | / | / | 81,2 | 76,6 | 57,5 | 15,2 | 27,8 |
| | 5709 | / | ad | / | / | / | / | / | / | / | / | / | / |
| | 7515 | / | ad | / | / | / | / | / | 103,8 | 96,8 | 72,5 | 19 | 31,9 |
| | 20036 | ♂ | ad | 5000 | 570 | 315 | 130 | 54 | / | / | / | / | / |
| | 20478* | / | ad | / | 665 | 280[def] | 155 | 57,5 | / | / | / | / | / |
| | 22039 | / | ad | / | / | / | / | / | 82,9 | 76,8 | 58,2 | 17 | 27,3 |
| | 22052* | ♂ | ad | / | 637 | 312 | 125 | 54 | / | / | / | / | / |
| | 25668 | ♂ | ad | 4400 | 580 | 320 | 146,5 | 66,5 | / | / | / | / | / |
| SW Slovenia | 7519 | ♂ | ad | 3500 | 670 | 330 | 147 | / | / | / | / | 17,5 | 29,9 |
| | 16137 | ♀ | ad | 3500 | 555 | 304 | 122 | 62,5 | 92,6 | 86,6 | 63,8 | 18,2 | 30,8 |
| | 16406 | / | ad | 3600 | 720 | 266 | 124 | 64 | / | / | 65,5 | 18,8 | 28 |
| | 16428 | ♂ | ad | 5200 | 940 | 285 | 140 | 58 | / | / | 69 | 20,5 | 31,1 |

| Country/ Region | PMS No. | Sex | Age | W | H&B | TL | HF | E | PL | CbL | ZgB | IoC | UTR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 16682 | ♀ | ad | 3900 | 820 | 270 | 127 | 60 | 91,6 | 87,4 | 65,5 | 19,2 | 31 |
| | 20038 | ♀ | sad | 1800 | 475 | 380 | 137 | 75 | 84 | 79,4 | 60,3 | 16,4 | 27,8 |
| | 20040 | ♀ | ad | 2300 | 610 | 300 | 135 | 63 | 96,2 | 87,8 | 71,3 | 18,5 | 31,4 |
| SE Slovenia | 5831 | ♂ | juv | / | / | / | / | / | 84,6 | 78,7 | 58,6 | 16 | 28,3 |
| | 3051 | ♀ | juv | / | 450 | / | 124 | 65 | 84,4 | 75,4 | 57,8 | 14,6 | / |
| | 5830 | ♂ | ad | / | / | / | / | / | 103,1 | 96,8 | 74,6 | 21 | 33,4 |
| | 13206 | ♀ | ad | 2100 | 770 | 255 | 112 | 66 | / | / | / | 19 | 29,1 |
| | 13209 | ♀ | ad | 4800 | 830 | 300 | 130 | 59 | / | / | / | 18,6 | 31,5 |
| | 16745 | / | ad | / | / | / | / | / | / | / | / | / | / |
| | 20034 | ♂ | ad | 4600 | 585 | 295 | 132 | 59 | / | 89,4 | 66,8 | 17,9 | 31,6 |
| | 20035 | ♂ | ad | 6000 | 665 | 105[def] | 148 | 67 | 102,9 | 95,4 | 73,6 | 19,3 | 33 |
| | 20037 | ♀ | ad | 3100 | 550 | 315 | 133 | 56 | 92,8 | 83,5 | 76,1 | 18 | 30,1 |
| | 20039 | ♀ | ad | 2800 | 560 | 355 | 130 | 59 | 93,6 | 85,8 | 67,9 | 18,6 | 28,4 |
| Slovenia, no locality | 3302 | / | ad | / | / | / | / | / | 94,1 | 86,9 | 67,9 | 19,3 | 29,2 |
| | 18458 | ♀ | ad | / | 603 | 270 | 120 | / | 92,7 | 85 | 65,7 | 18,4 | 28,8 |
| Bosnia and Herzegovina | 20119* | / | ad | / | 615 | 265 | 116,5 | 50 | / | / | / | / | / |
| | 20120* | / | ad | / | 685 | 265 | 116 | 45 | / | / | / | / | / |
| Macedonia | 17111 | / | ad | / | / | / | / | / | 99 | 93,5 | 69,7 | 19 | 33,3 |
| Ethiopia | 5718[b] | / | ad | / | / | / | / | / | 100,9 | 93 | 73,7 | 18,4 | 31,2 |


**Slika 3.** Od dermoplastičnih preparatov divjih mačk, ki so bili pred letom 1950 del stalne muzejske razstavne postavitve, se je ohranil le preparat, uokvirjen desno zgoraj (PMS 20478). Zbran je bil 8. novembra 1889 v Logatcu (glej sliko 4). Foto: Arhiv Prirodoslovnega muzeja Slovenije

**Figure 3.** Only one of the taxidermic mounts of Wild Cats *Felis silvestris*, displayed before 1950 on the permanent museum exhibition, is still in the Museum (PMS 20479); in the frame top right. It was collected on 8 November 1889 in Logatec (see Figure 4.) Photo: Archives of the Slovenian Museum of Natural History


**Slika 4.** Dermoplastični preparat divje mačke *Felis silvestris* iz Logatca, Slovenija. Primerek PMS 20478 zbran 8. novembra 1889, daroval Frančišek Arko, prvotno inventariziran pod št. #193 v Katalogu. Foto: David Kunc

**Figure 4.** Taxidermic mount of a Wild Cat *Felis silvestris* from Logatec, Slovenia. Voucher PMS 20478 collected on 8 November 1889, donated by Frančišek Arko, originally catalogued as #193. Photo: David Kunc

**Slika 5.** Dermoplastični preparat divje mačke *Felis silvestris* iz Borovnice, Slovenija. Primerek PMS 22052 zbran januarja 1961, prvotno inventariziran pod št. #641 v Katalogu, prepariral Franc Leben. Foto: Boris Kryštufek

**Figure 5.** Taxidermic mount of a Wild Cat *Felis silvestris* from Borovnica, Slovenia. Specimen PMS 22052 collected in January 1961, originally catalogued as #641, prepared by Franc Leben. Photo: Boris Kryštufek

**Slika 6.** Dermoplastični preparat divje mačke *Felis silvestris* iz Drvarja, Bosna in Hercegovina. Primerek PMS 20119, leta 2010 kupljen od preparatorstva Mauser. Foto: David Kunc

**Figure 6.** Taxidermic mount of a Wild Cat *Felis silvestris* from Drvar, Bosnia and Herzegovina. Specimen PMS 20119, purchased in 2010 from Mausar's Workshop. Photo: David Kunc

**Slika 7.** Dermoplastični preparat divje mačke *Felis silvestris* iz Drvarja, Bosna in Hercegovina. Primerek PMS 20120, leta 2010 kupljen od preparatorstva Mauser. Foto: David Kunc

**Figure 7.** Taxidermic mount of a Wild Cat *Felis silvestris* from Drvar, Bosnia and Herzegovina. Specimen PMS 20120, purchased in 2010 from Mausar's Workshop. Photo: David Kunc

**Slika 8.** Koža divje mačke *Felis silvestris* iz Bohinjske Bele, Slovenija. Primerek PMS 16446, zbran 10. februarja 2009. Foto: David Kunc

**Figure 8.** Skin of a Wild Cat *Felis silvestris* from Bohinjska Bela, Slovenia. Specimen PMS 16446, collected on 10 February 2009. Photo: David Kunc

**Slika 9.** Koža divje mačke *Felis silvestris* iz Godoviča, Slovenija. Primerek PMS 16447, zbran 18. februarja 2009. Foto: David Kunc

**Figure 9.** Skin of a Wild Cat *Felis silvestris* from Godovič, Slovenia. Specimen PMS 16447, collected on 18 February 2009. Photo: David Kunc

**Slika 10.** Koža (hrbtna, bočna in trebušna stran) divje mačke *Felis silvestris* z Ljubljanskega barja (Ižanska cesta pri odcepu za Iško Loko), Slovenija. Primerek PMS 25668, zbran 21. oktobra 2016. Foto: David Kunc

**Figure 10.** Skin (dorsal, lateral and ventral views) of a Wild Cat *Felis silvestris* from Ljubljansko barje (Ižanska road, at the exit to Iška Loka), Slovenia. Specimen PMS 25668, collected on 21 October 2016. Photo: David Kunc

**Slika 11.** Koža divje mačke *Felis silvestris* iz Notranjih Goric na Ljubljanskem barju, Slovenija. Primerek PMS 5708, zbran februarja 1985. Foto: David Kunc

**Figure 11.** Skin of a Wild Cat *Felis silvestris* from Notranje Gorice at Ljubljansko barje, Slovenia. Specimen PMS 5708, collected in February 1985. Photo: David Kunc

**Slika 12.** Koža divje mačke *Felis* cfr. *silvestris* iz Notranjih Goric na Ljubljanskem barju, Slovenija. Primerek PMS 5709, zbran decembra 1984. Foto: David Kunc

**Figure 12.** Skin of a Wild Cat *Felis* cfr. *silvestris* from Notranje Gorice at Ljubljansko barje, Slovenia. Specimen PMS 5709, collected in December 1984. Photo: David Kunc

**Slika 13.** Koža divje mačke *Felis silvestris* iz Vnanjih Goric na Ljubljanskem barju, Slovenija. Primerek PMS 3772, zbran 16. avgusta 1984. Foto: David Kunc

**Figure 13.** Skin of a Wild Cat *Felis silvestris* from Vnanje Gorice at Ljubljansko barje, Slovenia. Specimen PMS 3772, collected on 16 August 1984. Photo: David Kunc

**Slika 14.** Koža divje mačke *Felis* cfr. *silvestris*, povožene na cestnem odseku Loški Potok - Draga, Slovenija. Primerek PMS 16745, zbran 4. aprila 2009. Foto: David Kunc

**Figure 14.** Skin of a Wild Cat *Felis* cfr. *silvestris;* road casualty on the road section Loški Potok - Draga, Slovenia. Specimen PMS 16745, collected on 4 April 2009. Photo: David Kunc

**Slika 15.** Koža divje mačke *Felis* cfr. *silvestris*, povožene na cestnem odseku Loški Potok - Draga, Slovenija. Primerek PMS 20034, zbran 15. junija 2002. Foto: David Kunc

**Figure 15.** Skin of a Wild Cat *Felis* cfr. *silvestris;* road casualty on the road section Loški Potok - Draga, Slovenia. Specimen PMS 20034, collected on 15 June 2002. Photo: David Kunc

**Slika 16.** Koža divje mačke *Felis silvestris* iz Podnanosa, Slovenija. Primerek PMS 16682, zbran 22. marca 2009. Foto: David Kunc

**Figure 16.** Skin of a Wild Cat *Felis silvestris* from Podnanos, Slovenia. Specimen PMS 16682, collected on 22 March 2009. Photo: David Kunc

**Slika 17.** Koža divje mačke *Felis* cfr. *silvestris* iz Rebernic pri Podnanosu, Slovenija. Primerek PMS 16406, zbran 25. septembra 2008. Foto: David Kunc

**Figure 17.** Skin of a Wild Cat *Felis* cfr. *silvestris* from Rebernice near Podnanos, Slovenia. Specimen PMS 16406, collected on 25 September 2008. Photo: David Kunc

**Slika 18.** Koža divje mačke *Felis silvestris* iz Velike gore (predel Konfinska) pri Ribnici, Slovenija. Primerek PMS 20035, zbran 11. februarja 2004. Foto: David Kunc

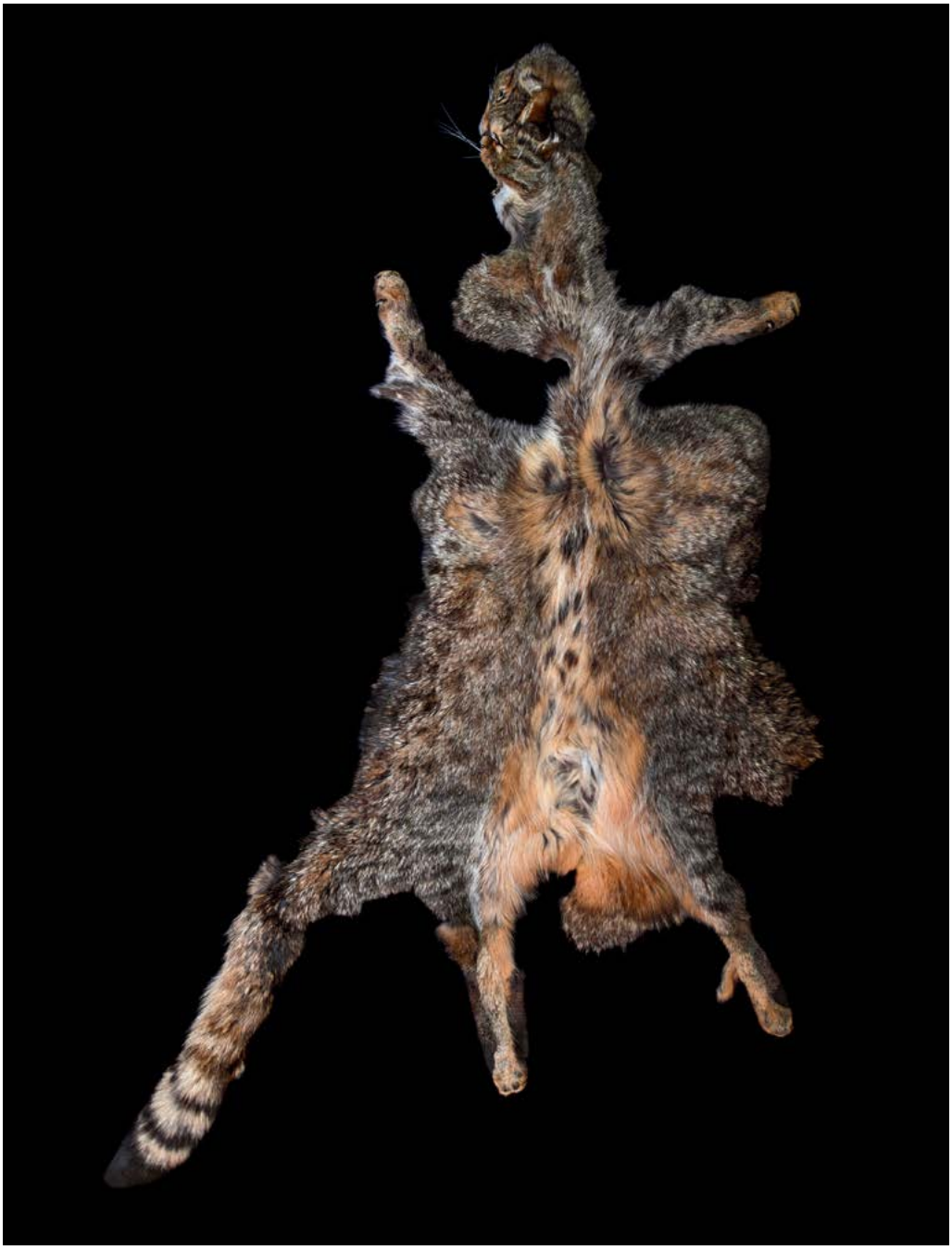
**Figure 18.** Skin of a Wild Cat *Felis silvestris* from Velika gora (Konfinska area) near Ribnica, Slovenia. Specimen PMS 20035, collected on 11 February 2004. Photo: David Kunc

**Slika 19.** Koža divje mačke *Felis silvestris,* povožene na cestnem odseku Sodražica – Žimarice, Slovenija. Primerek PMS 13209, zbran 1. decembra 2005. Foto: David Kunc

**Figure 19.** Skin of a Wild Cat *Felis silvestris*; road casualty on the road section Sodražica – Žimarice, Slovenia. Specimen PMS 13209, collected on 1 December 2005. Photo: David Kunc

**Slika 20.** Koža divje mačke *Felis silvestris* iz Spodnjega Boštanja pri Sevnici, Slovenija. Primerek PMS 13206, zbran 14. novembra 2005. Foto: David Kunc

**Figure 20.** Skin of a Wild Cat *Felis silvestris* from Spodnji Boštanj near Sevnica, Slovenia. Specimen PMS 13206, collected on 14 November 2005. Photo: David Kunc



**Slika 21.** Koža divje mačke *Felis silvestris* iz Vipave, Slovenija. Primerek PMS 16428, zbran 16. decembra 2008 (povoz; koža zašita po delih). Foto: David Kunc

**Figure 21.** Skin of a Wild Cat *Felis silvestris* from Vipava, Slovenia. Specimen PMS 16428, collected on 16 December 2008 (road casualty; skin sewn up by parts). Photo: David Kunc

**Slika 22.** Koža divje mačke *Felis silvestris* brez znane lokacije, verjetno iz Slovenije. Primerek PMS 18458. Foto: David Kunc

**Figure 22.** Skin of a Wild Cat *Felis silvestris* with no locality, probably from Slovenia. Specimen PMS 18458. Photo: David Kunc


**Slika 23.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris*; primerek PMS 5831 iz Adlešičev, Slovenija, zbran 25. novembra 1987. Foto: Boris Kryštufek

**Figure 23.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Adlešiči in Bela krajina, Slovenia. Specimen PMS 5831 collected on 25 November 1987. Photo: Boris Kryštufek

**Slika 24.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Jereke pri Bohinju, Slovenija. Primerek PMS 18432 zbran 7. februarja 2011. Foto: Boris Kryštufek

**Figure 24.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Jereka near Bohinj, Slovenia. Specimen PMS 18432, collected on 7 February 2011. Photo: Boris Kryštufek


**Slika 25.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Nomenja pri Bohinju, Slovenija. Primerek PMS 25669 zbran 6. decembra 2017. Foto: Boris Kryštufek

**Figure 25.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Nomenj near Bohinj, Slovenia. Specimen PMS 25669, collected on 6 December 2017. Photo: Boris Kryštufek


**Slika 26.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Bohinjske Bele, Slovenija. Primerek PMS 16446 zbran 10. februarja 2009. Foto: Boris Kryštufek

**Figure 26.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Bohinjska Bela, Slovenia. Specimen PMS 16446 collected on 10 February 2009. Photo: Boris Kryštufek


**Slika 27.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Goričic pri Cerknici, Slovenija. Primerek PMS 20040 zbran 7. marca 2005. Foto: Boris Kryštufek

**Figure 27.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Goričice near Cerknica, Slovenia. Specimen PMS 20040 collected on 7 March 2005. Photo: Boris Kryštufek


**Slika 28.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Črnič, Slovenija. Primerek PMS 16137 zbran 21. decembra 1992. Foto: Boris Kryštufek

**Figure 28.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Črniče, Slovenia. Specimen PMS 16137 collected on 21 December 1992. Photo: Boris Kryštufek


**Slika 29.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Sv. Pavla pri Drskovčah, Slovenija. Primerek PMS 20038 zbran 11. marca 2005. Foto: Boris Kryštufek

**Figure 29.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Sv. Pavel near Drskovče, Slovenia. Specimen PMS 20038 collected on 11 March 2005. Photo: Boris Kryštufek


**Slika 30.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Godoviča, Slovenija. Primerek PMS 8229 zbran 15. januarja 1989. Foto: Boris Kryštufek

**Figure 30.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Godovič, Slovenia. Specimen PMS 8229 collected on 15 January 1989. Photo: Boris Kryštufek


**Slika 31.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Rodin v lovišču LD Črnomelj, Slovenija. Primerek PMS 5830 zbran 19. januarja 1987. Foto: Boris Kryštufek

**Figure 31.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Rodine, LD Črnomelj hunting district, Slovenia. Specimen PMS 5830 collected on 19 January 1987. Photo: Boris Kryštufek


**Slika 32.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Vojne vasi v lovišču LD Črnomelj, Slovenija. Primerek PMS 3051 zbran 1. novembra 1983. Foto: Boris Kryštufek

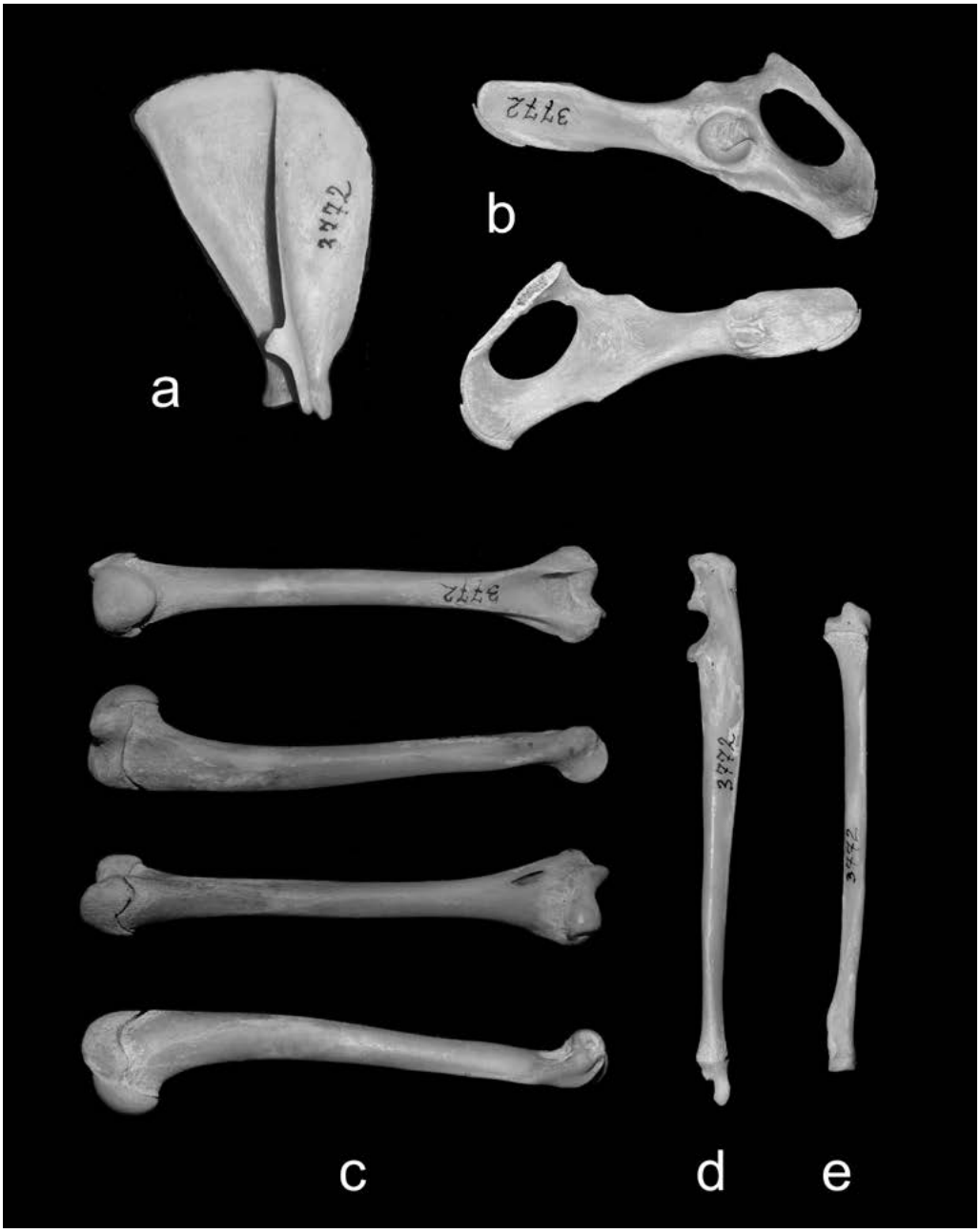
**Figure 32.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Vojna vas, LD Črnomelj hunting district, Slovenia. Specimen PMS 3051 collected on 1 November 1983. Photo: Boris Kryštufek


**Slika 33.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Notranjih Goric na Ljubljanskem barju, Slovenija. Primerek PMS 5708, zbran februarja 1985. Foto: Boris Kryštufek

**Figure 33.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Notranje Gorice at Ljubljansko barje, Slovenia. Specimen PMS 5708, collected in February 1985. Photo: Boris Kryštufek


**Slika 34.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Vnanjih Goric na Ljubljanskem barju, Slovenija. Primerek PMS 3772, zbran 16. avgusta 1984. Foto: Boris Kryštufek

**Figure 34.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Vnanje Gorice at Ljubljansko barje, Slovenia. Specimen PMS 3772, collected on 16 August 1984. Photo: Boris Kryštufek




**Slika 35.** Deli okostja (a – lopatica, b – medenica, c – nadlahtnica (od zgoraj navzdol; anteriorni, lateralni, posteriorni in medialni pogled), d – podlahtnica, e – koželjnica) divje mačke *Felis silvestris* iz Vnanjih Goric na Ljubljanskem barju. Slovenija. Primerek PMS 3772 zbran 16. avgusta 1984. Foto: Boris Kryštufek

**Figure 35.** Parts of the skeleton (a – scapula, b – pelvis, c – humerus (from top to bottom: – anterior, – lateral, – posterior, – medial views), d – ulna, e – radius) of a Wild Cat *Felis silvestris* from Vnanje Gorice at Ljubljansko barje, Slovenia. Specimen PMS 3772 collected on 16 August 1984. Photo: Boris Kryštufek


**Slika 36.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis* cfr. *silvestris,* povožene na cestnem odseku Loški Potok - Draga, Slovenija. Primerek PMS 20034, zbran 15. junija 2002. Foto: Boris Kryštufek

**Figure 36.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis* cfr. *silvestris;* road casualty on the road section Loški Potok - Draga, Slovenia. Specimen PMS 20034, collected on 15 June 2002. Photo: Boris Kryštufek


**Slika 37.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Podnanosa, Slovenija. Primerek PMS 16682, zbran 22. marca 2009. Foto: Boris Kryštufek

**Figure 37.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Podnanos, Slovenia. Specimen PMS 16682, collected on 22 March 2009. Photo: Boris Kryštufek


**Slika 38.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis* cfr. *silvestris* iz Rebernic pri Podnanosu, Slovenija. Primerek PMS 16406, zbran 25. septembra 2008. Foto: Boris Kryštufek

**Figure 38.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis* cfr. *silvestris* from Rebernice near Podnanos, Slovenia. Specimen PMS 16406, collected on 25 September 2008. Photo: Boris Kryštufek


**Slika 39.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Ortneka pri Ribnici, Slovenija. Primerek PMS 20037, zbran 14. januarja 2006. Foto: Boris Kryštufek

**Figure 39.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Ortnek near Ribnica, Slovenia. Specimen PMS 20037, collected on 14 January 2006. Photo: Boris Kryštufek


**Slika 40.** Lobanja (hrbtna, bočna in trebušna stran) divje mačke *Felis silvestris* iz Velike gore (predel Konfinska) pri Ribnici, Slovenija. Primerek PMS 20035, zbran 11. februarja 2004. Foto: Boris Kryštufek

**Figure 40.** Skull (dorsal, lateral and ventral views) of a Wild Cat *Felis silvestris* from Velika gora (Konfinska area) near Ribnica, Slovenia. Specimen PMS 20035, collected on 11 February 2004. Photo: Boris Kryštufek


**Slika 41.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Velike gore (predel Zakristinc) pri Ribnici, Slovenija. Primerek PMS 20039, zbran 23. aprila 2006. Foto: Boris Kryštufek

**Figure 41.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Velika gora (Zakristinc area) near Ribnica, Slovenia. Specimen PMS 20039, collected on 23 April 2006. Photo: Boris Kryštufek


**Slika 42.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris,* povožene na cestnem odseku Sodražica – Žimarice, Slovenija. Primerek PMS 13209, zbran 1. decembra 2005. Foto: Boris Kryštufek

**Figure 42.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris*; road casualty on the road section Sodražica – Žimarice, Slovenia. Specimen PMS 13209, collected on 1 December 2005. Photo: Boris Kryštufek


**Slika 43.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Spodnjega Boštanja pri Sevnici, Slovenija. Primerek PMS 13206, zbran 14. novembra 2005. Foto: Boris Kryštufek

**Figure 43.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Spodnji Boštanj near Sevnica, Slovenia. Specimen PMS 13206, collected on 14 November 2005. Photo: Boris Kryštufek


**Slika 44.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis* cfr. *silvestris* iz Trnovskega gozda, Slovenija. Primerek PMS 7519, zbran februarja 1990. Foto: Boris Kryštufek

**Figure 44.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis* cfr. *silvestris* from Trnovski gozd, Slovenia. Specimen PMS 7519, collected in February 1990. Photo: Boris Kryštufek


**Slika 45.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Vipave, Slovenija. Primerek PMS 16428, zbran 16. decembra 2008. Foto: Boris Kryštufek

**Figure 45.** Skull (dorsal, lateral and ventral views) of a Wild Cat *Felis silvestris* from Vipava, Slovenia. Specimen PMS 16428, collected on 16 December 2008. Photo: Boris Kryštufek


**Slika 46.** Lobanja (bočno) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* iz Gradišča pri Vrhu nad Želimljami, Slovenija. Primerek PMS 20036, zbran 15. decembra 2003. Foto: Boris Kryštufek

**Figure 46.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Gradišče near Vrh nad Želimljami, Slovenia. Specimen PMS 20036, collected on 15 December 2003. Photo: Boris Kryštufek


**Slika 47.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* z Ljubljanskega vrha pri Vrhniki, Slovenija. Primerek PMS 7515 zbran leta 1985. Foto: Boris Kryštufek

**Figure 47.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* from Ljubljanski vrh near Vrhnika, Slovenia. Specimen PMS 7515 collected in1985. Photo: Boris Kryštufek


**Slika 48.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* brez znane lokacije, verjetno iz Slovenije. Primerek PMS 3302. Foto: Boris Kryštufek

**Figure 48.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* with no locality, probably from Slovenia. Specimen PMS 3302. Photo: Boris Kryštufek


**Slika 49.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris* brez znane lokacije, verjetno iz Slovenije. Primerek PMS 18458. Foto: Boris Kryštufek

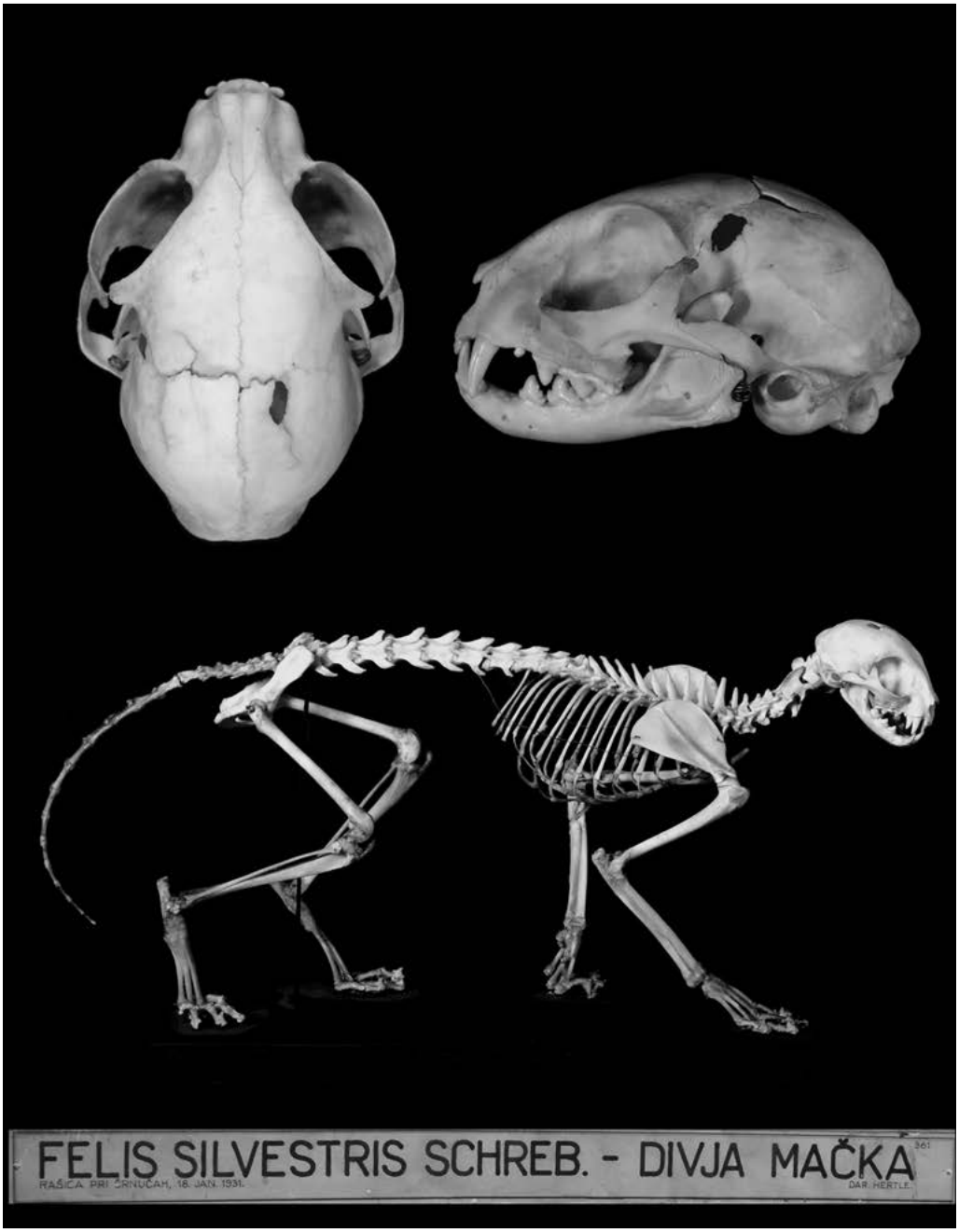
**Figure 49.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris* with no locality, probably from Slovenia. Specimen PMS 18458. Photo: Boris Kryštufek


**Slika 50.** Lobanja (hrbtna, bočna in trebušna stran) divje mačke *Felis silvestris* iz Gavrana na Pelistru, Makedonija. Primerek PMS 17111 zbran leta 1977. Foto: Boris Kryštufek

**Figure 50.** Skull (dorsal, lateral and ventral views) of a Wild Cat *Felis silvestris* from Gavran on Mt Pelister, Macedonia. Specimen PMS 17111 collected in 1977. Photo: Boris Kryštufek


**Slika 51.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) divje mačke *Felis silvestris ocreata* iz Moja ob reki Awash pri Adis Abebi, Etiopija. Primerek PMS 5718 zbran 20. novembra 1960. Foto: Boris Kryštufek

**Figure 51.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Wild Cat *Felis silvestris ocreata* from Mojo along the river Awash near Addis Ababa, Ethiopia. Specimen PMS 5718 collected on 20 November 1960. Photo: Boris Kryštufek




**Slika 52.** Okostje divje mačke *Felis silvestris* z Rašice pri Črnučah, Slovenija. Primerek PMS 22039 zbran 18. januarja 1931, v Katalogu zapisan pod številko #361. Foto: Boris Kryštufek

**Figure 52.** Skeleton of a Wild Cat *Felis silvestris* from Rašica near Črnuče, Slovenia. Specimen PMS 22039, collected on 18 January 1931, recorded in the Catalogue as #361. Photo: Boris Kryštufek

# *Felis catus* Linnaeus, 1758

## Domača mačka

## Domestic Cat

Zbirka

Collection

**Slovenia**:
Kastelec - Kozina road section: 1 skull (PMS 19181), unsexed, road casualty, collected on 23 January 2012.
Videm, Dobrepolje, Potiskavec:1 skull (PMS 17115), unsexed, collected on 9 May 1982.
Jakob pri Šentjurju: 1 skull (PMS 26269), unsexed, collected in September 2018 by Mojca Rajh.

**Croatia:**
Savudrija: 1 skull (PMS 17116), unsexed, collected in May 1982.
Island of Korčula, Smokvice : 1 skull (PMS 26209), collected in August 2002 by Franc Janžekovič.

**Serbia:**
Deliblatska peščara: 1 skull (PMS 17113), lacks mandible, unsexed, date of collection unknown.

**Macedonia:**
Demir Kapija: 1 skull (PMS 17114), unsexed, found on 6 September 1986 by Boris Kryštufek.

**Lebanon:**
Sir el-Donnieh (North Lebanon): 1 skull (PMS 19671), unsexed, collected on 9 December 2012 by Max Kasparek.

**Morocco:**
Agadir (NE), Agafaye (162m a.s.l.), 1 skull (PMS 24512), unsexed, found on 3 September 2016 by Boris Kryštufek.
Akka (app 900m a.s.l.): a mandible (PMS 24075), unsexed, found on 19 April 2016 by Boris Kryštufek.

**No locality:**
1 skull (PMS 17112), unsexed, no data. - 1 skull (PMS 21696), unsexed, no data, No. 384 written on the skull. - 1 skull and skeleton (PMS 25395), unsexed, no data, obtained in 2017 from a Secondary school »Prva gimnazija Maribor«, 1 mandible (PMS 20128), no data (No. 392 written on the mandible).

V Katalogu so zavedeni sledeči primerki:

The following vouchers are recorded in the Catalogue:

#201: a female (sex recorded in the Files, not in the Catalogue ), labelled as *Felis domestica*, (postscript: feral cat), collected at Stadtwald (in Files* added in writing: Mestni Log), catalogued or put on display in 1891, donated by Von Roth, disposed from the Museum at unknown time, the Proceedings (1 September 1890 – end of 1891, p. 193) reports on donation of a domestic cat (feral domestic cat, shot in Ljubljana, Mestni Log) obtained from Von Roth from Litija.

#229: labelled as *Felis domestica*, collected in 1908, disposed from the Museum at unknown time, the Proceedings (1 January – end of December 1908, p. 204) reports on purchase of a domestic cat obtained from one land-owner from Ljubljana.

#231: labelled only as cat skeleton, purchased in 1908 from company »Leonir – Forster« at Vienna, disposed from the Museum at unknown time, the Proceedings (1 January – end of December 1908, p. 204) reports on purchase of a domestic cat skeleton in crawl position for biological group: »Mammal locomotion« obtained from company Leonir – Forster.

#253: a skull, labelled as *Felis domestica*, obtained at Trieste in 1917 from Dr F. Kos, catalogued and put on display in 1921, disposed from the Museum at unknown time.

#277: a skeleton, labelled as *Felis domestica*, no history, in Catalogue written: from » the old stock«, catalogued and put on display in 1923, disposed from the Museum at 10 May 1937.

#496: a skull, labelled as *Felis domestica*, donated by Dr S. Bevk, catalogued and put on display in 1946, disposed from the Museum at unknown time.

**Tabela 13.** Geografska zastopanost in preparati domačih mačk *Felis catus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

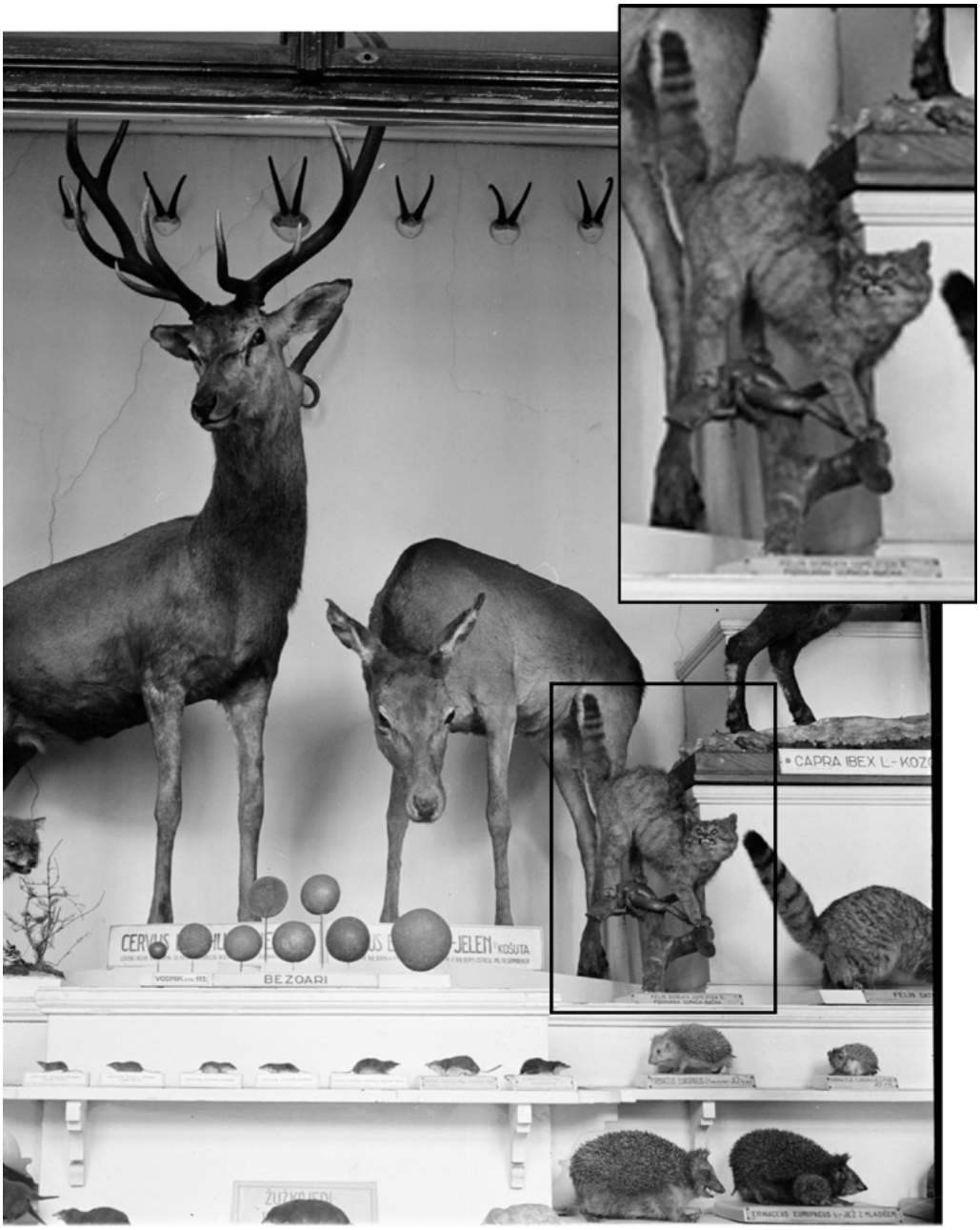
**Table 13.** Geographic representation and preparations of Domestic Cats *Felis catus* in the Mammal Collection of the Slovenian Museum of Natural History.

| Država<br>Country | Lobanja<br>Skull | Okostje<br>Skeleton | Št. osebkov<br>No. individuals |
|---|---|---|---|
| Slovenia | 3 | | 3 |
| Croatia | 2 | | 2 |
| Lebanon | 1 | | 1 |
| Macedonia | 1 | | 1 |
| Morocco | 2 | | 2 |
| Serbia | 1 | | 1 |
| No locality | 4 | 1 | 4 |
| **Skupaj / Total** | **14** | **1** | **14** |

**Tabela 14.** Lobanjske dimenzije domačih mačk *Felis catus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije, * le spodnja čeljustnica.

**Table 14.** Cranial dimensions of Domestic Cats *Felis catus* in the Mammal Collection of the Slovenian Museum of Natural History, * mandible only.

| Country | PMS No. | Sex | Age | PL | CbL | ZgB | IoC | UTR |
|---|---|---|---|---|---|---|---|---|
| Slovenia | 19181 | / | ad | 87,3 | 89 | 69,4 | 18 | 30,8 |
| Slovenia | 17115 | / | ad | 83,5 | 76,7 | 57,8 | 16 | 27,1 |
| Slovenia | 26269 | / | ad | 93,6 | 86 | 64 | 17,1 | 29,7 |
| Croatia | 17116 | / | ad | 87,6 | 80 | 65,2 | 15,7 | 28,5 |
| Croatia | 26209 | / | ad | 88,5 | 82,7 | 62,8 | 16,9 | 27,6 |
| Serbia | 17113 | / | ad | 87,6 | 82,4 | 64,6 | 16,5 | 27 |
| Macedonia | 17114 | / | ad | 94,3 | 85,7 | 68,5 | 19,6 | 29,7 |
| Lebanon | 19671 | / | juv | 82,3 | 76,3 | / | 16,6 | 25,6 |
| Morocco | 24512 | / | ad | 86,4 | 79,2 | 62,4 | 16,7 | 26,3 |
| Morocco | 24075* | / | / | / | / | / | / | / |
| no locality | 17112 | / | ad | 86,4 | 79,2 | 62,4 | 16,7 | 28,7 |
| no locality | 21696 | / | ad | 92,7 | 85,4 | 65,2 | 17,4 | 29,2 |
| no locality | 25395 | / | ad | 84,1 | 76,5 | 59,7 | 15,2 | 26,8 |




**Slika 53.** Dermoplastični preparat domače mačke *Felis catus*, ki je bil v preteklosti del stalne muzejske razstavne postavitve; preparat se ni ohranil. Fotografija je nastala pred letom 1950. Foto: Arhiv Prirodoslovnega muzeja Slovenije

**Figure 53.** Taxidermic mount of a Domestic Cat *Felis catus* displayed in the past as part of the permanent museum exhibition, disposed from the Museum at unknown time. Photo was made before the year 1950. Photo: Archives of the Slovenian Museum of Natural History


**Slika 54.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) domače mačke *Felis catus*; primerek PMS 19181 povožen na cestnem odseku Kastelec – Kozina, Slovenija, zbran 23. januarja 2012. Foto: Boris Kryštufek

**Figure 54.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Domestic Cat *Felis catus*; specimen PMS 19181, on 23 January 2012 collected as road casualty on the section Kastelec - Kozina, Slovenia. Photo: Boris Kryštufek


**Slika 55.** Lobanja (hrbtna, bočna in trebušna stran) domače mačke *Felis catus*; primerek PMS 17115 iz Vidma, Dobrepolje, Potiskavec, Slovenija, zbran 9. maja 1982 . Foto: Boris Kryštufek

**Figure 55.** Skull (dorsal, lateral and ventral views) of a Domestic Cat *Felis catus*; specimen PMS 17115 from Videm, Dobrepolje, Potiskavec, Slovenia, collected on 9 May 1982. Photo: Boris Kryštufek


**Slika 56.** Lobanja (hrbtna, bočna in trebušna stran) domače mačke *Felis catus*; primerek PMS 26269 iz Jakoba pri Šentjurju, Slovenija, zbran septembra 2018. Foto: Boris Kryštufek

**Figure 56.** Skull (dorsal, lateral and ventral views) of a Domestic Cat *Felis catus*; specimen PMS 26269 from Jakob near Šentjur, Slovenia, collected in September 2018. Photo: Boris Kryštufek


**Slika 57.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) domače mačke *Felis catus*; primerek PMS 17116 iz Savudrije, Hrvaška, zbran maja 1982. Foto: Boris Kryštufek

**Figure 57.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Domestic Cat *Felis catus*; specimen PMS 17116 from Savudrija, Croatia, collected in May 1982 . Photo: Boris Kryštufek


**Slika 58.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) domače mačke *Felis catus*; primerek PMS 26209 iz Smokvic na otoku Korčuli, Hrvaška, zbran avgusta 2002. Foto: Boris Kryštufek

**Figure 58.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Domestic Cat *Felis catus*; specimen PMS 26209 from Smokvice on Korčula Is., Croatia, collected in August 2002 . Photo: Boris Kryštufek


**Slika 59.** Lobanja (hrbtna, bočna in trebušna stran) domače mačke *Felis catus*; primerek PMS 17113 iz Deliblatske peščare, Srbija. Foto: Boris Kryštufek

**Figure 59.** Skull (dorsal, lateral and ventral views) of a Domestic Cat *Felis catus*; specimen PMS 17113 from Deliblatska peščara, Serbia. Photo: Boris Kryštufek


**Slika 60.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) domače mačke *Felis catus*; primerek PMS 17114 iz Demir Kapije, Makedonija, zbran 6. septembra 1986. Foto: Boris Kryštufek

**Figure 60.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Domestic Cat *Felis catus*; specimen PMS 17114 from Demir Kapija, Macedonia, collected on 6 September 1986. Photo: Boris Kryštufek

**Slika 61.** Lobanja (hrbtna, bočna in trebušna stran) domače mačke *Felis catus*; primerek PMS 19671 iz Sir el-Donnieha, Libanon, zbran 9. decembra 2012. Foto: Boris Kryštufek

**Figure 61.** Skull (dorsal, lateral and ventral views) of a Domestic Cat *Felis catus*; specimen PMS 19671 from Sir el-Donnieh, Lebanon, collected on 9 December 2012. Photo: Boris Kryštufek


**Slika 62.** Lobanja (hrbtna, bočna in trebušna stran) domače mačke *Felis catus*; primerek PMS 24512 iz Agadirja, Agafaye, Maroko, zbran 3. septembra 2016. Foto: Boris Kryštufek

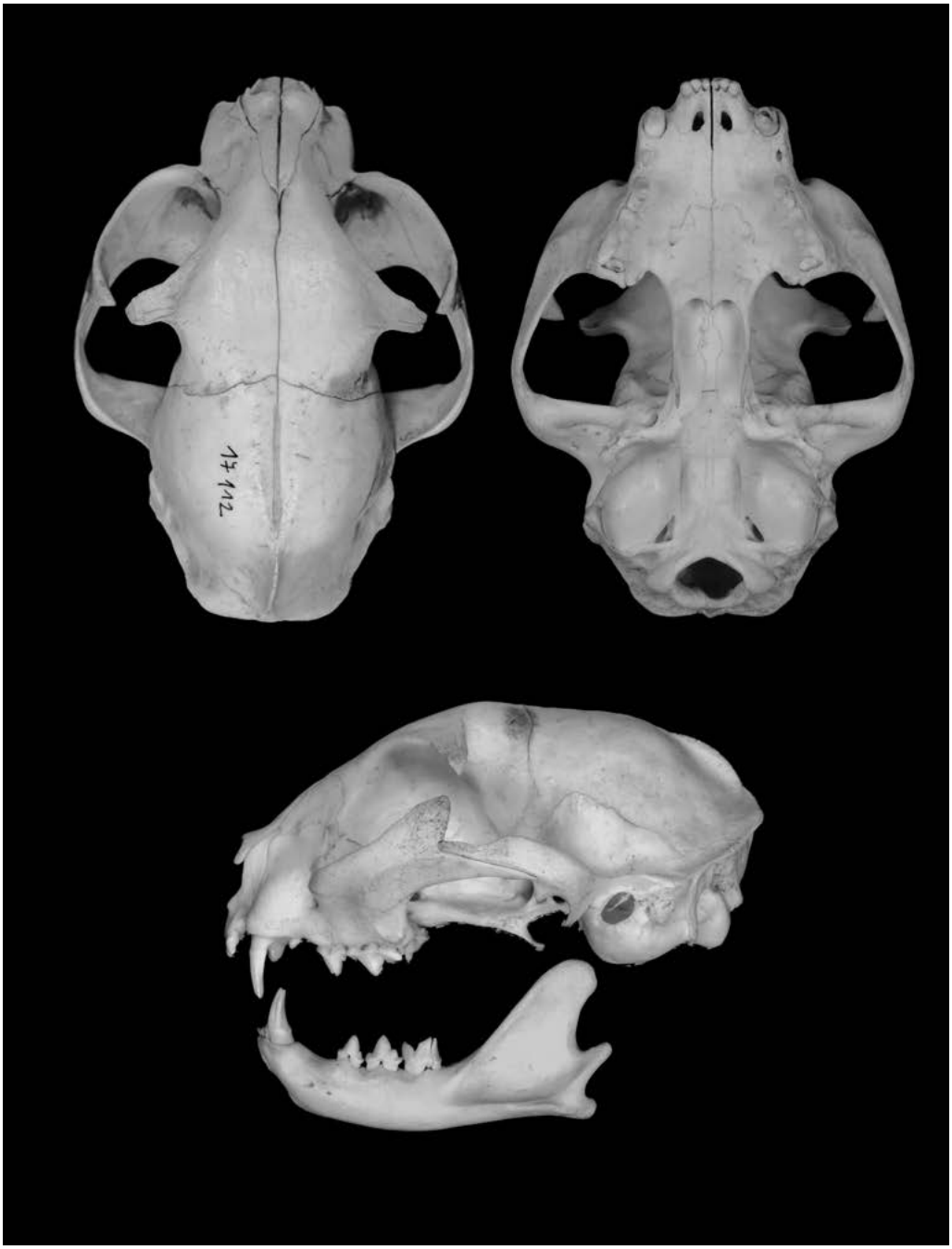
**Figure 62.** Skull (dorsal, lateral and ventral views) of a Domestic Cat *Felis catus*; specimen PMS 24512 from Agadir, Agafaye, Morocco, collected on 3 September 2016. Photo: Boris Kryštufek


**Slika 63.** Desna (zgoraj) in leva (spodaj) polovica **s**podnje čeljustnice domače mačke *Felis catus* iz Akke, Maroko. Primerek PMS 24075 zbran 19. aprila 2016. Foto: Boris Kryštufek

**Figure 63.** Right (top) and left (bottom) half of the mandible of a Domestic Cat *Felis catus*; specimen PMS 24075 from Akka, Morocco, collected on 19 April 2016. Photo: Boris Kryštufek


**Slika 64. S**podnja čeljustnica domače mačke *Felis* cfr. *catus*; primerek PMS 20128, brez podatkov o izvoru. Foto: Boris Kryštufek

**Figure 64.** Mandible of a Domestic Cat *Felis* cfr. *catus*; specimen PMS 20128, with no history. Photo: Boris Kryštufek

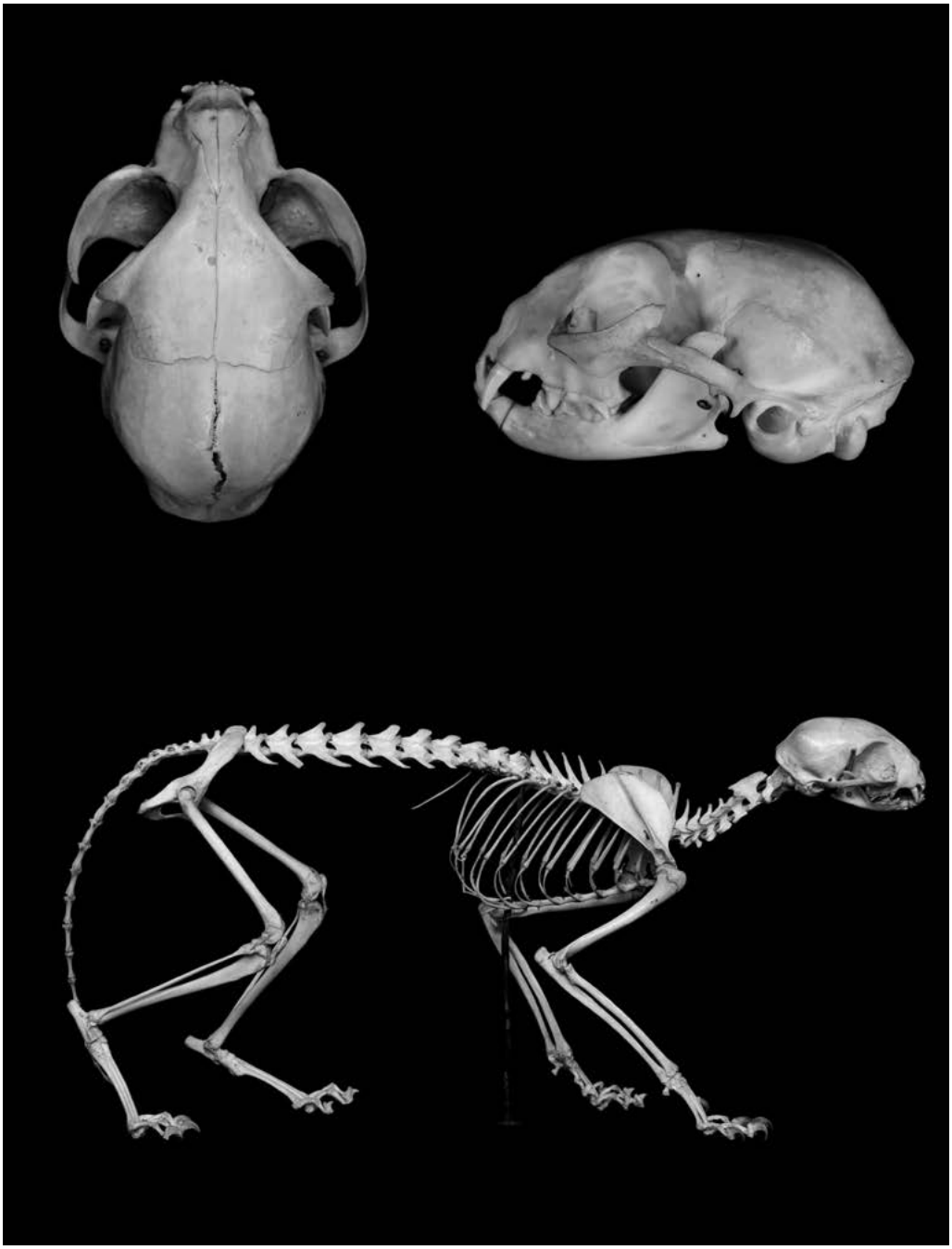



**Slika 65.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) domače mačke *Felis catus*; primerek PMS 17112, brez podatkov o izvoru. Foto: Boris Kryštufek

**Figure 65.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Domestic Cat *Felis catus*; specimen PMS 17112, with no history. Photo: Boris Kryštufek


**Slika 66.** Lobanja (hrbtna, bočna in trebušna stran) domače mačke *Felis catus*; primerek PMS 21696, brez podatkov o izvoru. Foto: Boris Kryštufek

**Figure 66.** Skull (dorsal, lateral and ventral views) of a Domestic Cat *Felis catus*; specimen PMS 21696, with no history. Photo: Boris Kryštufek



**Slika 67.** Okostje domače mačke *Felis catus*; primerek PMS 25395, brez podatkov o izvoru. Muzeju ga je leta 2017 podarila Prva gimnazija Maribor. Foto: Boris Kryštufek

**Figure 67.** Skeleton of a Domestic Cat *Felis catus*; specimen PMS 25395, with no history, in 2017 donated to the Museum by the secondary school »Prva gimnazija Maribor«. Photo: Boris Kryštufek

# *Lynx lynx* (Linnaeus, 1758)

## Ris

## Eurasian Lynx

Zbirka

Collection

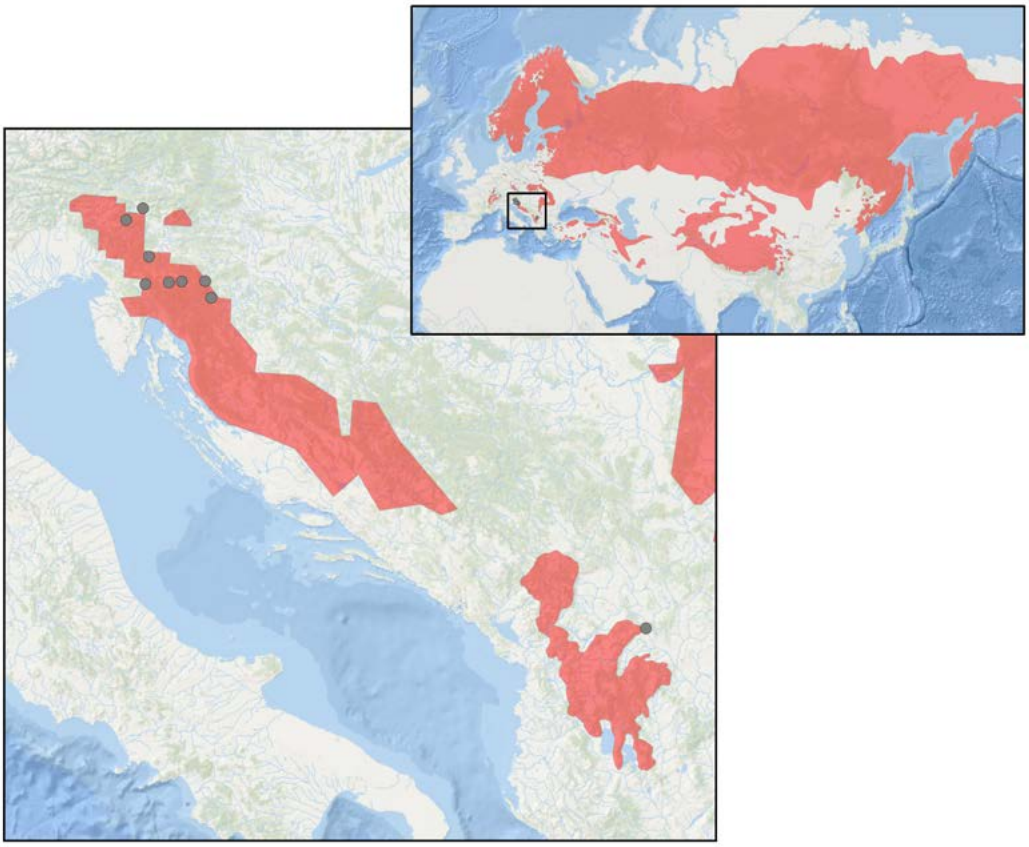
**Slovenia**:
Bela krajina: 1 skull (PMS 4173), not sexed, obtained in 1983, donated by Boris Leskovic.
Bistra: 1 taxidermic mount (PMS 22026) of autochthonous lynx; origin not undoubtedly clear, a female, probably shot in this location in March 1854, acquired by the Museum between 1854 and 1875, Catalogue: probably catalogued under #85 or #86 and exhibited in 1860.
Sv. Katarina in the Karavanke Mountains: 1 taxidermic mount (PMS 22027) of autochthonous lynx; origin not undoubtedly clear, acquired by the Museum before 1875, Catalogue: probably catalogued under #85 or #86 and exhibited in 1860.
Dolenjske Toplice, Travni dol pri Uršnih selih, hrib Pajkež: 1 skull (PMS 20332), a female, found as a carcass on 7 October 2012, prepared by Slavko Polak.
Jasnica: 1 skin with a skull (PMS 24459), a male, road casualty, collected on 22 August 2016.
lovišče / hunting district LD Loški Potok: 1 skull (PMS 20333), a female, found as carcass on 10 July 2012, prepared by Slavko Polak.
lovišče / hunting district LD Pivka: 1 skull (PMS 24946), a female, road casualty, collected on 30 October 1989 by Janez Čop, donated in 2017 by Janez Čop.
lovišče / hunting district LD Nomenj-Gorjuše: 1 taxidermic mount; skull kept separately (PMS 20375), a male, road casualty; the carcass collected on 6 January 2014, taxidermy by Alojz Šmuc.

**Serbia (Kosovo):**
Šar planina, Kačanik: 1 skull (PMS19700): topotype of *Lynx lynx balcanicus* (for type locality see Kryštufek 2013), bagged on 21 September 1940 by Tone Černač; donated in 2012 by Janez Černač.

**Tabela 15.** Geografska zastopanost in preparati risov *Lynx lynx* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

**Table 15.** Geographic representation and preparations of Eurasian Lynxes *Lynx lynx* in the Mammal Collection of the Slovenian Museum of Natural History.

| Država<br>Country | Taksidermija<br>Taxidermy | Koža<br>Skin | Lobanja<br>Skull | Št. osebkov<br>No individuals |
|---|---|---|---|---|
| Slovenia | 3 | 1 | 6 | 8 |
| Serbia | | | 1 | 1 |
| **Skupaj / Total** | **3** | **1** | **7** | **9** |



**Slika 68.** Geografski izvor risov *Lynx lynx* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za območje razširjenosti je Breitenmoser et al. (2015).

**Figure 68.** Geographic origin of Eurasian Lynxes *Lynx lynx* in the Mammal Collection of the Slovenian Museum of Natural History. Range of the species follows Breitenmoser et al. (2015).

V Katalogu so zavedeni sledeči primerki:

The following vouchers are recorded in the Catalogue:

#85: 1 taxidermic mount, exhibited in 1860, re-catalogued as PMS 22027 (see above).
#86: 1 taxidermic mount, exhibited in 1860, re-catalogued as PMS 22026 (see above).
#439: 1 skull, purchased in 1882 by the State High School in Ljubljana from a merchant Marguaj (Trieste) for 6 goldinars; donated to the Museum in 1937; catalogued and exhibited in 1937, disposed from the Museum at unknown time. The skull was possibly of one of the two lynxes shot at Primorska in 1882 (Kos 1924). Photograph of the skull was published in Kos (1924); Figure 71).

Fran Kos (1885-1956), kustos in pozneje direktor Prirodopisnega oddelka Narodnega muzeja v Ljubljani (danes Prirodoslovni muzej Slovenije), je leta 1929 objavil študijo *Ris (Lynx lynx L.) na ozemlju etnografske Slovenije*. V njej je kronološko predstavil kraje uplenitve ali opažanj zadnjih živečih risov na slovenskem narodnostnem ozemlju. Med drugim navaja zapise iz seznamov daril Kranjskemu deželnemu muzeju:

- » *L. 1824 je poslalo škofjeloško okrajno oblastvo deželnemu muzeju v Ljubljani enega risa, samca. Najdišče v seznamu muzejskih daril ni označeno, bilo pa je najbrž v območju takratne škofjeloške oblasti.«* (str. 60)
- *»Leta 1834 je poslal muzeju lepega, starega risa, samca, A. pl. Lazarini, lastnik graščine Čušperk, in je podaril poleg še dva goldinarja za stroške gačenja. Kraj odstrela ni označen, a verjetno je, da so to bili tedanji obsežni čušperški gozdi.«* (str. 61)
- *»Zanimiv je protokol, sestavljen dne 17. februarja 1836 od muzejskih kuratorjev grofa Lichttenberga in stolnega dekana Jerina. Glasom tega protokola je muzejski kuratorij določil, da se pošlje v zameno za nekatere ptice nekemu V. Hueberju v Celovec med drugim tudi en ris. To zopet krepi misel, da v tisti dobi v naših krajih ni manjkalo risov in da ni imel muzejski kuratorij vsled tega posebnih pomislekov proti oddaji te zveri iz muzejskih zbirk.«* (str.61)
- *»Leta 1836 je poslal okrajni komisar Matevž Fleischmann s Snežnika muzeju v Ljubljani posebno velikega risa » einen Luchs der grossten Art« in muzejski kustos H. Freyer je navedel v letnem poročilu z dne 10. septembra 1836 muzejsko zbirko sesalcev iz Kranjske za kompletno.«* (str. 61)
- *»Gozdarski urad v Idriji je ponudil leta 1853 lepega risa deželnemu muzeju v Ljubljani z naslednjim dopisom: »Am 27. Januar 1863 ist in den hierortigen Reichsforsten ein Luchs (weiblichen Geschlechtes) erlegt worden, welcher ausgesteckt von der Spitze der hintersten Pfote bis zu jener der vordern Pfote 5 Fuss 4½ Zoll, nach dem Körper mit dem Kopf*

Fran Kos (1885-1956), curator and later on director of the Natural History Department of the National Museum in Ljubljana (now Slovenian Museum of Natural History) published a study *»Lynx (Lynx lynx L.) in the territory of ethnographic Slovenia«* in 1929. He chronologically listed the localities of hunted Lynxes and observations of the last living individuals in the Slovene national territory. Among other, he listed the donatoins to the Provincial Museum for Carniola:

- *"In the year1824, the county authority of Škofja Loka sent to the Provincial Museum for Carniola in Ljubljana a male Lynx. The locality is not recorded in the list of donations to the Museum, but was probably situated in the area of the Škofja Loka authorities.*"(p. 60)
- *"In the year 1834, A. pl. Lazarini, the owner of the Čušperk Manor, sent to the Museum a beautiful old Lynx, a male, and additionally donated two goldinars for the costs of stuffing. The locality is not marked, but the animal was most likely shot in the then extensive Čušperks forests."*(p. 61)
- *»Museum's curators, count Lichttenberg and clerical dignitary Jerina wrote an interesting protocol on 17 February 1836. In it, the museum curatorial decided to send, among others, one Lynx specimen to V. Hueber from Klagenfurt in exchange for several birds. This again reinforces the idea that at that time there was no shortage of Lynxes and that the museum curatorial did not have any hesitation to give away a Lynx specimen from museum collections.«*(p. 61)
- *»In the year 1836, commissioner Matevž Fleischmann from Snežnik sent to the* Museum *an especially large Lynx ("einen Luchs der grossten Art"), and the museum curator H. Freyer stated in the annual report on 10 September 1836 that the museum collection of mammals from Carniola was thus complete.«*(p. 61)
- *»In the year 1853, The Forestry Office in Idrija offered to the Provincial Museum for Carniola a beautiful lynx with the following letter: On 27January 1863, a lynx was cap-*

*3 Fuss und in der Höhe 2 Fuss misst«;[»27. januarja 1863 je bil v tukajšnjih bogatih gozdovih uplenjen ris (samička), ki je od konice zadnje šape do sprednje šape iztegnjen meril 5 čevljev 4½ palcev, dolžina telesa z glavo je znašala 3 čevlje, v višino pa je meril 2 čevlja«]. Muzejski kuratorij je odgovoril, da ima v svojih zbirkah že enega risa, da pa bo ta izredno veliki eksemplar prav lepa akvizicija za muzej in da se zanj priporoča. V muzej je prispel ta ris dne 9.2.1853.«* (str.63)

- *»Deželni muzej v Ljubljani, ki je leta 1856 še zamenjal risa za nekatere ptice, se obrača v začetku leta 1877 že na javnost z željo po risu za muzejske zbirke. Tako piše muzejski kustos K. Deschmann 1.1.1877: »Falls von dem in Krain schon zur grössten Seltenheit gewordenen Luchs irgendwo ein Stück erlegt werden sollte, möge dessen Einlieferung an das Museum im nicht ausgebalgten Zustande nicht versäumt werden«; [V primeru uplenitve risa, ki je na Kranjskem že prava redkost, je želja, da se ga neizkoženega dostavi v muzej.«]* (str. 66)

*tured in the local forest, a female, which when stretched out from the tip of the hind paw to the front paw measured 5 feet 4½ inches; the length of the body with the head was 3 feet and the measured height was 2 feet. The museum curators replied that there was already one lynx in the museum's collections, but that this extraordinary great exemplar would be a nice acquisition for the museum. This specimen arrived in the museum on 9 February 1853.«* (p. 63)

- *»The Provincial Museum for Carniola, which had as late as 1856 exchanged the Lynx for some birds, at the beginning of 1877 addressed the public with a wish to acquire one specimen for the museum collections. On 1 January 1877, the museum curator K. Deschmann wrote: If the Lynx, which is already a rarity in Carniola, will be shot, it is requested to be delivered unskinned to the museum).«* (p. 66)

**Slika 69.** Portret Frana Kosa (1885–1956), kustosa in direktorja Prirodopisnega oddelka Narodnega muzeja v Ljubljani (danes Prirodoslovni muzej Slovenije). Leta 1929 je objavil študijo *Ris (Lynx lynx L.) na ozemlju etnografske Slovenije*. Gre za temeljno delo o avtohtonem slovenskem risu in za najtemeljitejšo študijo o izumiranju živalske vrste na Slovenskem. Vir: Wikimedia Commons

**Figure 69.** Portrait of Fran Kos (1885-1956), curator and director of the Natural History Department of the National Museum in Ljubljana (now Slovenian Museum of Natural History). In 1929, he published the study *Lynx (Lynx lynx L.) in the territory of ethnographic Slovenia*. This is a fundamental work on the autochthonous Slovenian Lynx and the most thorough study on the extinction of any animal species in Slovenia. Photo:Wikimedia Commons

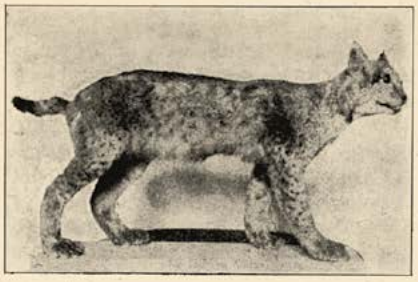
*Iz prirodopisnega oddelka Narodnega muzeja v Ljubljani..*

# Ris (Lynx lynx L.) na ozemlju etnografske Slovenije.

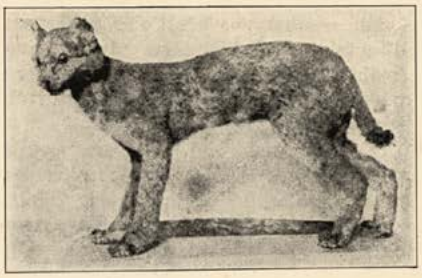
**Dr. Fran Kos.**

S 3 slikami v besedilu.

Dva nagačena, a že razpadajoča risa v zooloških zbirkah Narodnega muzeja v Ljubljani (sl. 1. in 2.), nagačeni ris v prirodopisnih zbirkah državne realke v Mariboru, risova lobanja v zooloških zbirkah državne realke v Ljubljani (sl. 3.),[1] nedavno v Giontinijevi zapuščini v Ljubljani nahajajoči se, tudi že razpadajoči, a sedaj ne ve se kam izginuli nagačeni ris, daljši ali krajši zapiski o



Sl. 1.



Sl. 2.

Ris *(Lynx lynx L.)* v zooloških zbirkah Nar. muzeja v Ljubljani. Oba mehova sta že v razpadajočem stanju. Sl. 1. je zmanjšana 18·6 krat, sl. 2. pa 14·8 krat nar. vel.

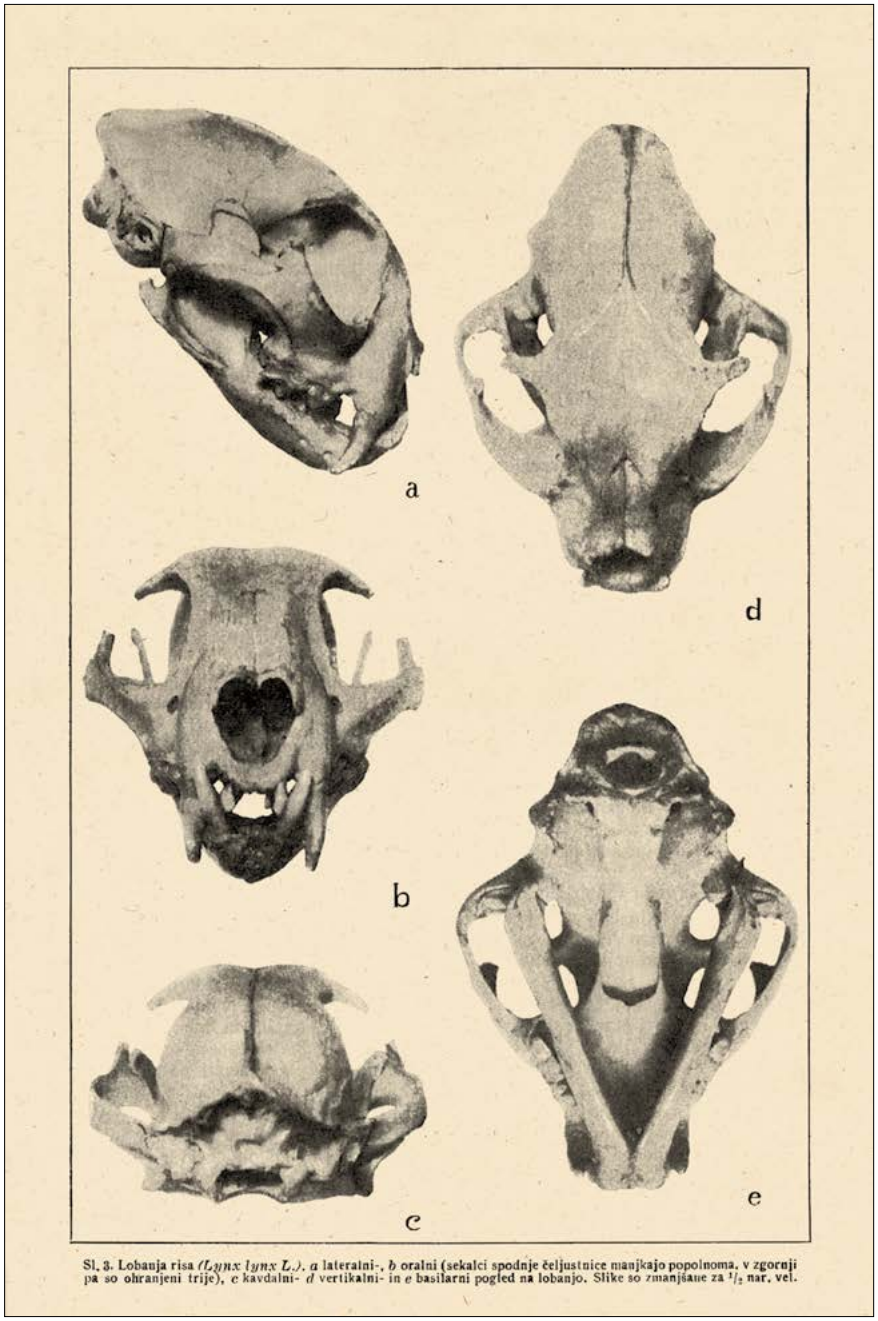
teh zvereh iz plemena mačk, raztreseni po raznih časopisih, uradnih aktih in seznamih muzejskih daril, ter podatki v privatnih pismih in zapiskih, to je prilično vse, kar še spominja na te, za naše ozemlje svoj čas dosti pogoste, a sedaj nedvomno izumrle oblike.

Da otmem pozabljenju to zanimivo gradivo, tikajoče tako karakterističnega bivšega člana favne naše slovenske zemlje, kakor je ris, zbral sem, kolikor se

[1] V delih o sesalcih, avtorjev kot so Weber, Bronn-Giebel-Leche, Brohmer, Zittel, Abel, Leunis in še pri drugih, nisem našel niti delne niti celotne slike risove lobanje, le težko dostopni Miller-jev Catalogue of the Mammals, 1912, ima tozadevne risbe. Vsled redkosti in pa ker se bodo slike risove lobanje gotovo še rabile pri določevanju osteološkega gradiva, izkopanega v bodoče na ljubljanskem barju in skoro gotovo tudi v naših jamah, priobčujem te slike.

**Slika 70.** Fotografiji dermoplastičnih preparatov risov PMS 22026 in PMS 22027 v študiji »*Ris (Lynx lynx L.) na ozemlju etnografske Slovenije*« (Kos, 1929).

**Figure 70.** Taxidermic mounts of Lynxes PMS 22026 and PMS 2227, published in »*Lynx (Lynx lynx L.) in the territory of ethnographic Slovenia*« (Kos, 1929).




Sl. 3. Lobanja risa (*Lynx lynx* L.). *a* lateralni-, *b* oralni (sekalci spodnje čeljustnice manjkajo popolnoma, v zgornji pa so ohranjeni trije), *c* kavdalni- *d* vertikalni- in *e* basilarni pogled na lobanjo. Slike so zmanjšane za $^1/_2$ nar. vel.

**Slika 71.** Lobanja risa, ki jo je objavil Kos (1929). V Katalogu je bila zavedena pod #439; državna realka v Ljubljani jo je leta 1882 kupila v Trstu in jo leta 1937 podarila Muzeju, kjer pa se ni ohranila.

**Figure 71.** Photograph of the Lynx skull published in Kos (1929). In the Catalogue listed under #439; Ljubljana State High School bought the skull in Trieste in 1882 and donated it to the Museum in 1937. Disposed from the Museum at unknown time.

Dermoplastična preparata PMS 22026 in PMS 22027 sta edina ohranjena primerka avtohtonega risa na Slovenskem. Njuna natančna zgodovina in izvor nista znana. Kos (1929) je rekonstruiral najverjetnejši izvor teh muzejskih primerkov. Preparata omenja kot »*dva nagačena, a že razpadajoča risa v zooloških zbirkah Narodnega muzeja v Ljubljani, ki sta se ohranila do danes*« in ju je v študiji iz leta 1929 predstavil na sl. 1 in 2. Po izjavi upokojenega preparatorja in asistenta deželnega muzeja, Ferdinanda Schulza (zapisana novembra 1928), sta bila oba risa leta 1875, ko je Schulz nastopil službo, že v muzeju. Za manjšega risa (PMS 22027) je Schulz trdil, da je pri Sv. Katarini v Karavankah pojedel zastrupljeno vabo, nastavljeno lisicam. Podrobnosti in časa, kdaj se je to zgodilo in kako je ta ris prišel v muzej, se Schulz ni spominjal. Večji preparat (PMS 22026) je velika samica "v zimski dlaki". Takratni tajnik dunajskega zoološko-botaničnega društva, G. Frauenfeld, je 18. aprila 1854 v gradu feldmaršala Radetzkega (sedanji Tivolski grad v Ljubljani) izmeril nagačenega risa. Šlo je za samico, ustreljeno sredi marca tistega leta v gozdovih okrog Bistre pri Vrhniki. Ker so bile dimenzije zelo podobne meram večjega muzejskega preparata, je Kos je zaključil, da gre morda za isti primerek, ki je bil domnevno darovan muzeju med letoma 1854 in 1875. Kosovemu sklepu dodajava kratek skeptični pripis: malo verjetno je, da bi bil dermoplastični preparat risa izgotovljen samo mesec dni po uplenitvi živali.

Taxidermic mounts PMS 22026 and PMS 22027 are the only vouchers of the exterminated autochthonous Lynx in Slovenia. Their exact history and origin are not known. Kos (1929) reconstructed their most likely origin. He mentioned the mounts as "*two stuffed but already decaying Lynxes in the zoological collections of the National Museum in Ljubljana, which have been preserved to this day*" and presented them in Figures 1 and 2. According to the statement by the retired taxidermist and assistant of the Provincial Museum for Carniola Ferdinand Schulz (written in November 1928), both Lynxes were in 1875, when he was employed, already in the Museum. For the smaller Lynx (PMS 22027), Schulz claimed that it ate poisoned bait, set for foxes at Sv. Katarina in the Karavanke Mts. Details and time, when this happened and how this Lynx was acquired by the Museum, Schulz had no recollection of. The larger mount (PMS 22026) is a female "in winter coat". On 18 April 1854, the then secretary of the Zoo and Botanical Society of Vienna, Mr Frauenfeld, measured the stuffed Lynx in the castle of the Marshal Radetzky (the current Tivoli Castle in Ljubljana). It was a female shot in winter (in mid-March) of that year, in the forests around Bistra near Vrhnika. Since her dimensions were very similar to the ones of the larger museum mount, Kos concluded that it could have been the same specimen, and that the animal was supposedly donated to the museum between 1854 and 1875. Let us add a sceptic note to Kos' conclusion: it is quite unlikely that the taxidermic mount was prepared just one month after the animal was taken.

**Slika 72.** Dermoplastični preparat avtohtonega risa, ki verjetno izvira iz okolice Bistre. Primerek PMS 22026, samica, verjetno ustreljena marca 1854. Foto: Ciril Mlinar

**Figure 72.** Taxidermic mount of an autochthonous Lynx, probably from Bistra, Slovenia. Specimen PMS 22026, a female, probably shot in 1854. Photo: Ciril Mlinar

**Slika 73.** Dermoplastični preparat avtohtonega risa, ki verjetno izvira iz Sv. Katarine v Karavankah. Primerek PMS 22027, pridobljen pred letom 1857. Foto: Ciril Mlinar

**Figure 73.** Taxidermic mount of an autochthonous Lynx, probably from Sv. Katarina in the Karavanke Mts, Slovenia. Specimen PMS 22027, obtained by the Museum prior to 1857. Photo: Ciril Mlinar

Primerka PMS 22026 in PMS 22027 sicer nista omenjena v Dežmanovem muzejskem vodniku iz leta 1888, omenjata pa ju *Vodnik po zbirkah Narodnega muzeja v Ljubljani; Prirodopisni del* (Kos, 1933) in *Vodič po zbirkah Prirodoslovnega muzeja v Ljubljani* iz leta 1949. Slednji na str. 32 navaja: »*Dvorana*

The vouchers PMS 22026 and PMS 22027 are not mentioned in the Dežman's museum guide from 1888, but are referred to in the *Guide to the collections of the National Museum in Ljubljana; Natural history* (Kos, 1933) and *Guide to collections of the Museum of Natural History in Ljubljana* from 1949. The latter states on p. 32:


**Slika 74.** »Velika steklenjača št. 47-53: o. 47« v Dvorani X z dermoplastikama risov PMS 22026 in PMS 22027 (desni zgornji kot). Fotografija je bila posneta pred letom 1950. Foto: Arhiv Prirodoslovnega muzeja Slovenije

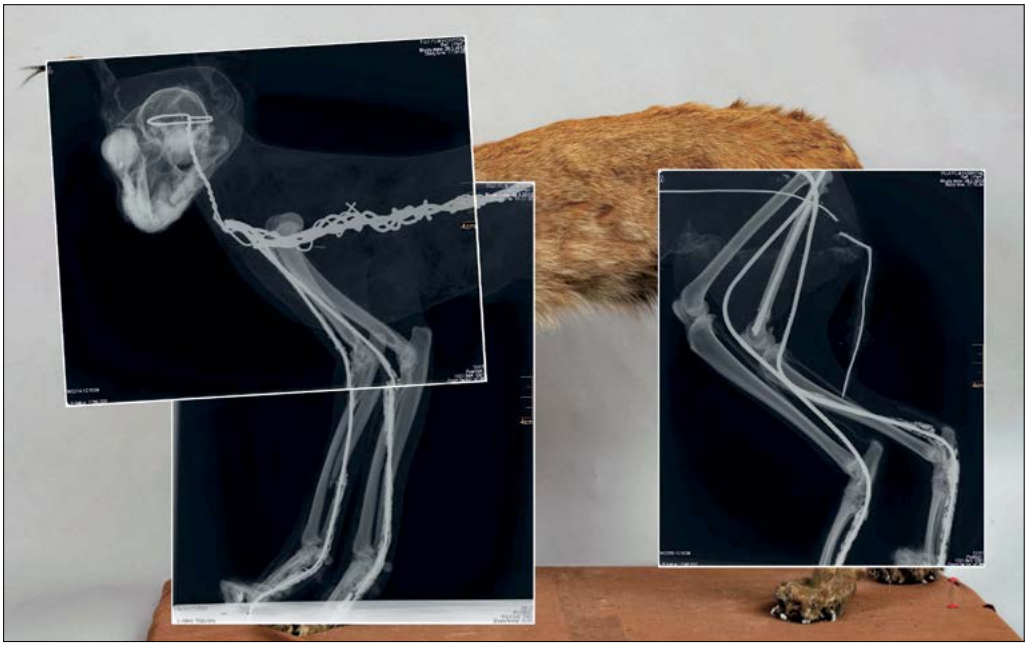
**Figure 74.** Taxidermic mounts PMS 22026 and PMS 22027 were on display in »The large glass-cabinet No. 47-53: o.47" in Hall X. The photograph was taken before 1950. Photo: Archives of the Slovenian Museum of Natural History.

*X, velika steklenjača št. 47-53: o.47: na desni strani v zadnjem delu omare sta izstavljena dva risa, posebnost med sesalci muzejske zbirke. To sta menda zadnja dva, ki sta bila pri nas uplenjena.*« Dermoplastiki sta bila po prenovi razstavnih zbirk v 50-ih letih umaknjeni v nekakšen improviziran »depo« na desni strani velike gozdne diorame, ki je bil dejansko zaprašena ropotarnica. Standardi hranjenja so ostali nizki vse do danes, tako da sta preparata v slabem stanju in potrebna restavracije. Muzej za tak poseg nima sredstev in usposobljenih kadrov.

Kosove podatke o izumiranju risa na ozemlju Slovenije je uporabil kustos sesalcev Prirodoslovnega muzeja v Beogradu Đorđe Mirić (1919–1994) v preglednem delu o avtohtonem balkanskem risu (Mirić, 1974). Reproduciral je tudi fotografijo preparata risa PMS 22026 iz Kappusove objave (Kappus,

"*Hall X, large glass-cabinet No. 47-53: o.47: on the right at the back of the cabinet there are two Lynxes, a special feature among the Mammals of the museum collection. These are probably the last two that were hunted in our country.* "After the renovation of displays in the 1950s, the taxidermic mounts were withdrawn into an improvised and dusty depository" on the right side of a large forest display. As the preservation standards have remained low until this day, the mounts are in poor condition and in need of restauration. The Museum does not have the resources and trained personnel for such proceeding.

Paper on the extinction of Lynx in Slovenia (Kos 1929) was used by the curator of the mammals at the Museum of Natural History in Belgrade, Đorđe Mirić (1919-1994), in a publication on the autochthonous Balkan Lynx (Mirić, 1974). He also reproduced a photo of the mount of PMS 22026 from a paper by Kappus (Kappus, 1933)



**Slika 75.** Rentgenski posnetki dermoplastičnega preparata risa iz Sv. Katarine v Karavankah (PMS 22027). V ozadju je dejanski dermoplastični preparat. Foto: Klinika za reprodukcijo in velike živali Veterinarske fakultete, Univerza v Ljubljani

**Figure 75.** X-rayed image of the taxidermic mount of a Lynx from Sv. Katarina in the Karavanke Mts (PMS 22027). In the background of the photo is the actual taxidermic mount. Photo: Reproduction and Big Animals Clinic of the Faculty of Veterinary Medicine, University of Ljubljana.

1933) s pripisom: »*Dermoplastični preparat risa iz Slovenije, iz Prirodoslovnega muzeja v Ljubljani*«

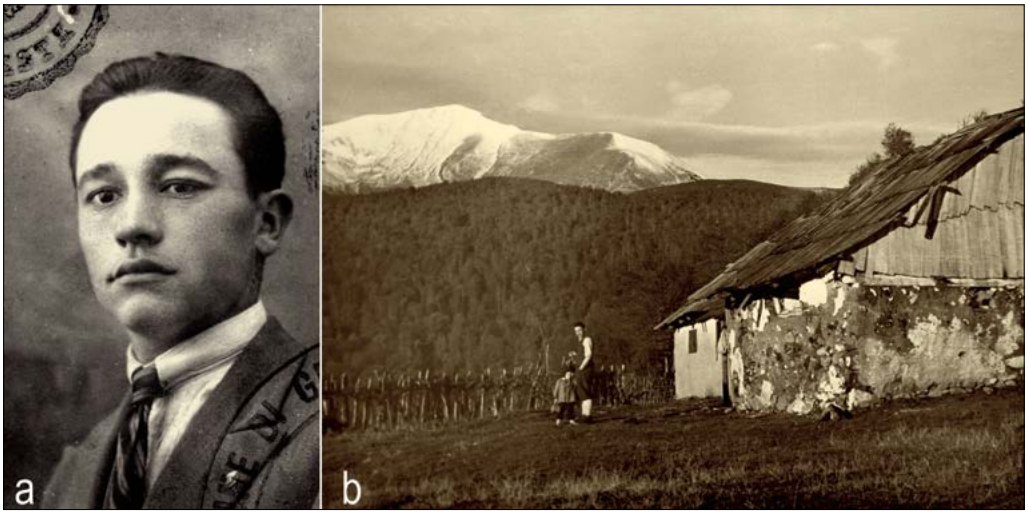
Dermoplastična preparata risov PMS 22026 in PMS 22027 sta bila leta 2013 rentgensko slikana na Veterinarski fakulteti Univerze v Ljubljani. Lobanja je vgrajena v oba preparata, v manjšem primerku pa so tudi dolge kosti okončin. Preparator je hrbtenico nadomestil z močno žico, na katero je pritrdil lobanjo, prav tako je z žico utrdil kosti okončin.

Primerek PMS 19700 je Muzeju podaril mag. Janez Černač leta 2012 ob priložnostni muzejski razstavi »*Avtohtoni balkanski ris*«. Njegov oče, Tone Černač (1905–1984), je pred 2. svetovno vojno nekaj let služboval kot logar v takratni Vardarski Banovini, ki je v letih 1929–1941 obsegala Makedonijo in sosednje dele Srbije, vključno s Kosovim. Balkanskega risa je pomotoma ustrelil 21. septembra 1940 v Kačaniku na severnih pobočjih Šar planine, ko

with the following note: "*Taxidermic mount of a Lynx from Slovenia, from the Museum of Natural History in Ljubljana*".

Taxidermic mounts of the Lynxes PMS 22026 and PMS 22027 were in 2013 X-rayed at the Faculty of Veterinary Medicine, University of Ljubljana. It turned out that complete skull was embedded in both mounts and, in the smaller specimen, also long bones of the limbs. The taxidermist replaced the backbone with a strong wire on which he secured the skull and furthermore fixed bones of the limbs with a wire.

Voucher PMS 19700 was donated to the Museum by Janez Černač, MSc, on the occasion of the museum exhibition "*Autochthonous Balkan Lynx*" in 2012. Before the Second World War, his father Tone Černač (1905-1984) served as a forester in the then Vardarska Banovina, which in the 1929-1941 period consisted of Macedonia and adjacent parts of Serbia and Kosovo. Tone Černač accidentally shot the Lynx on 21 September 1940




**Slika 76.** Levo: portret Toneta Černača v mladih letih. T. Černač je 21. septembra 1940 pomotoma ustrelil risa (PMS 19700), ki ga je v mraku zamenjal z volkom. Desno: hiša, v kateri je z družino domoval T. Černač kot logar v kraju Crni kamen na Kačaniku v tedanji Vardarski banovini (danes Kosovo). Ris je bil uplenjen nedaleč stran. Foto: Arhiv Prirodoslovnega muzeja Slovenije (iz zbirke mag. Janeza Černača)

**Figure 76.** Left: portrait of Tone Černač in his younger years. T. Černač erroneously shot the Lynx (PMS 19700) on 21 September 1940; in poor visibility at dusk, he mistook it for a wolf. Right: a house in which T. Černač lived with his family, when serving as a forester in the town of Crni kamen at Kačanik in the former Vardar Banovina (now Kosovo). The Lynx was shot not far away. Photo: Archives of the Slovenian Museum of Natural History (from the collection of Janez Černač, MSc).

ga je v mraku zamenjal z volkom. Risa je prepariral kot kožo in lobanjo, vendar je bila koža kasneje zavržena. Za podrobnejše zgodovinske okoliščine glej KRYŠTUFEK, 2013.

Glede primerka PMS 20332 sta Skupina za ekologijo živali na Biotehniški fakulteti in Inštitut za zdravstveno varstvo in gojitev divjih živali, rib in čebel na Veterinarski fakulteti Univerze v Ljubljani dne 22.10.2012 v *Sporočilu za medije* poročala, da je bila najdena poginula starejša risinja v začetku oktobra 2012, v bližini Travnega dola pri Uršnih Selih. V času najdbe je bilo truplo že deloma razpadlo. Po pregledu trupla na Veterinarski fakulteti so kot vzrok smrti izključili mehanske poškodbe in strelno rano. Žival je bila negativna na trihinelozo in črevesne zajedavske bolezni, bila pa je podhranjena, saj je truplo tehtalo le 10,5 kg. Natančnejšega vzroka podhranjenosti in smrti zaradi napredujočih procesov razpadanja ni bilo možno ugotoviti.

Glede primerka PMS 20333 sta Skupina za ekologijo živali na Biotehniški fakulteti in Inštitut za zdravstveno varstvo in gojitev divjih živali, rib in čebel na Veterinarski fakulteti Univerze v Ljubljani dne 6.9.2012 v *Sporočilu za medije* poročala, da je risinja poginila sredi julija 2012. Januarja 2012 so jo uslužbenci Oddelka za biologijo Biotehniške fakultete odlovili na območju ribniške Velike gore in ji namestili GPS-GSM-telemetrično ovratnico; dobila je ime Maja. Do konca maja je polegla tri mladiče na svojem teritoriju na območju Travne gore in Goteniške gore na Kočevskem. Na osnovi rezultatov raziskav, opravljenih na Veterinarski fakulteti, je bil vzrok smrti gnojna pljučnica. Žival je bila močno izčrpana in garjava, kar je, skupaj z nedavno brejostjo, lahko pripomoglo k zmanjšani odpornosti ter posledično večji dovzetnosti za okužbe. Preiskava je kot vzroke smrti izključila steklino, mehanske poškodbe skeleta in poškodbe, povzročene s strelnim orožjem.

Dermoplastični preparat primerka PMS 20375 je razstavljen v muzejski gozdni diorami. V žival je januarja 2014 pri Nomenju trčilo vozilo; truplo je bilo najdeno nekaj dni kasneje v bližini mesta povoza. Ris je bil, po oceni v

at Kačanik on the northern slopes of the Šar Planina Mt, when in poor visibility at dusk, he mistook it for a wolf. The Lynx was prepared as a skin and skull, but the skin was later discarded. For further historical circumstances, see KRYŠTUFEK, 2013.

Group on Animal Ecology at the Biotechnical Faculty and the Institute for Health Care and Breeding of Wild Animals, Fish and Bees at the Faculty of Veterinary Medicine at the University of Ljubljana reported on 22 October 2012 in a press release that an older female Lynx was found death in the beginning of October 2012, in the vicinity of Travni Dol near Uršna Sela (specimen PMS 20332). At the time of the find, her body had already been partially decomposed. After examining the animal at the Faculty of Veterinary Medicine, injury and gunshot wounds were excluded as the cause of hear death. The animal was negative for trichinosis and intestinal parasitic diseases, but it was undernourished as the body weighed only 10.5 kg. Due to the progressive decaying processes, it was not possible to determine the precise cause of the animal's malnutrition and death.

Animal Ecology Group at the Biotechnical Faculty and the Institute for Healthcare and Breeding of Wild Animals, Fish and Bees at the Faculty of Veterinary Medicine at the University of Ljubljana reported on 6 September 2012 in a press release that a female Lynx was found dead in mid-July 2012 in the area of LD Loški Potok hunting-ground (specimen PMS 20333). Previously, in January 2012, she was captured in the area of Velika Gora (Ribnica) and equipped with a GPS-GSM telemetric collar (she was named Maya). In her territory, in the area of Travna gora and the Goteniška gora in the Kočevska region, she delivered three puppies by the end of May 2012. The examination carried out at the Faculty of Veterinary Medicine showed that she had died of pneumonia. The animal was utterly exhausted and scabby which, together with recent pregnancy, could contribute to lower resistance and, consequently, to greater susceptibility to infection. As a cause of death, the examination excluded rabies, injury of the skeleton, and gunshot wounds.

The taxidermic mount PMS 20375 is displayed in the museum forest biological group. The animal collided with a car in January 2014 at

**Tabela 16.** Zunanje in lobanjske dimenzije risov *Lynx lynx* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije, * izmerjene na dermoplastičnem preparatu), [def]konica repa manjka, [a]*Lynx lynx balcanicus.*

**Table 16.** External and cranial dimensions of Eurasian Lynxes *Lynx lynx* in the Mammal Collection of the Slovenian Museum of Natural History,* estimated from taxidermic mount, [def]tail top lacking, [a]*Lynx lynx balcanicus*.

| Country/Region | PMS No. | Sex | Age | W | H&B | TL | HF | E | PL | CbL | ZgB | IoC | UTR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NW Slovenia | 20375 | ♂ | ad | 23000 | 1090 | 175 | 242 | 85 | 158,4 | 143,1 | 106,9 | 31,8 | 49,3 |
| | 22027* | | ad | / | 955 | 195 | 295 | L:68,5 D:71 Lčopek:33 Dčopek:36 | / | / | / | / | / |
| Central Slovenia | 22026* | ♀ | ad | / | 1100 | 60[def] | 300 | D;L:82,5 Lčopek:23 | / | / | / | / | / |
| SW Slovenia | 24946 | ♀ | ad | / | / | / | / | / | 148,9 | 136,8 | 107,3 | 32,8 | 46,5 |
| SE Slovenia | 4173 | | ad | / | / | / | / | / | 148,6 | 133,3 | 99,6 | 29,7 | 48,6 |
| | 20332 | ♀ | ad | 10500 | / | / | / | / | 143,8 | 130,4 | 97,9 | 29,1 | 45,6 |
| | 20333 | ♀ | ad | / | / | / | / | / | 152,8 | 139,7 | 111 | / | 48,2 |
| | 24459 | ♂ | ad | 2100 | 950 | 190 | / | 90 | 157 | 142,7 | 113,1 | 34,7 | 49,4 |
| Serbia | 19700[a] | | ad | / | / | / | / | / | 142,7 | 130,7 | 101,8 | 34,4 | 46,4 |

Zapisniku Zavoda za gozdove Slovenije, star 2-3 leta. O povozu je pisala tudi revija Lovec (Bergant, 2014).

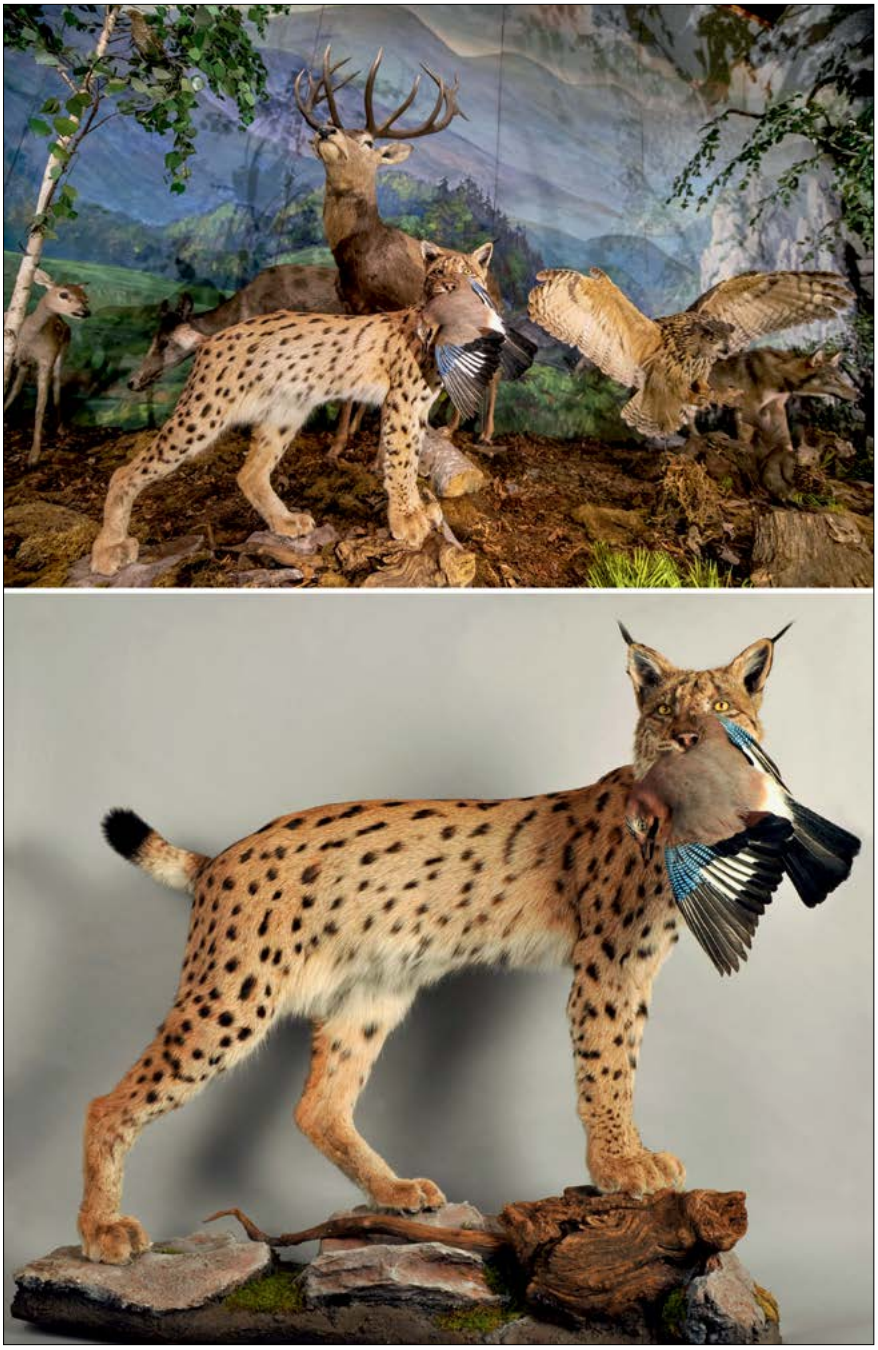
Zobna formula risa je 3/3 1/1 2/2 1/1=28 zob. Občasno lahko pride do sprememb v številu, položaju, velikosti in obliki posameznih zob. Da te anomalije pri severnoameriških predstavnikih rodu *Lynx* niso neobičajne, poroča Manville (1962). Odmike od standardne zobne formule zasledimo tudi pri evropskih risih (npr. Hell, 1966; Mirić, 1973). Hell (1966) tako poroča o nadštevnih zobeh (polidontiji) pri 14 od 62 (22,6 %) pregledanih lobanjah slovaških risov. Pri 57,1 % primerkov je šlo za dodatne zgornje predmeljake, pri 42,9 % pa za dodatni spodnji meljak. Od primerkov z izraženo polidontijo je eden imel mlečno zobovje. Pri starejših primerkih je pogosto opazil prazne zobne jamice, ki so nakazovale že izpadle nadštevne kočnike. Domneval je, da ti dodatni zobje pri risih hitro izpadejo.

Na lobanjah risov iz Zbirke so bile zobne anomalije vidne pri dveh primerkih. Pri primerku PMS 24946 je na dodatni predmeljak $P^2$ v levi zgornji čeljustnici, ki je sicer izpadel tekom življenja, kazala alveola (slika 84). Pri primerku PMS 20333 sta manjkala oba zgornja meljaka $M^1$ (slika 83). Oba primerka sta bila odrasla, s stalnim zobovjem.

Nomenj near Bohinj; the body was found near the place of collision a few days later. It's estimated age was 2-3 years (Protocol of the Slovenia Forest Service). A notice was also published in the magazine Lovec (Bergant, 2014).

Lynx dental formula is 3/3 1/1 2/2 1/1 = 28 teeth. Occasionally there may be deviations in the number, position, size and shape of individual teeth. That these anomalies in North American representatives of *Lynx* are not uncommon, reports Manville (1962). Recorded deviations from the usual number are also found in European Lynxes (e.g. Hell, 1966; Mirić, 1973). Hell (1966) reports on polydontia in 14 out of 62 (22.6%) examined skulls from Slovakia. In 57.1% of the specimens there were additional upper premolars and in 42.9% additional lower molars. Of the specimens with polydonty, only one still had deciduous dentition. In older specimens, Hell often noticed empty alveoli as indication of supernumerary cheek-teeth which were lost ante-mortem. He assumed that suppernumerary teeth are lost quite easily.

Dental anomalies were encountered in two vouchers from the Collection. In the skull PMS 24946, an empty alveola indicated additional premolar $P^2$ in the left upper jaw, which was lost ante-mortem (Figure 84). In the skull PMS 20333, the both upper molars ($M^1$) were missing (Figure 83). Both specimens were adults with permanent teeth.

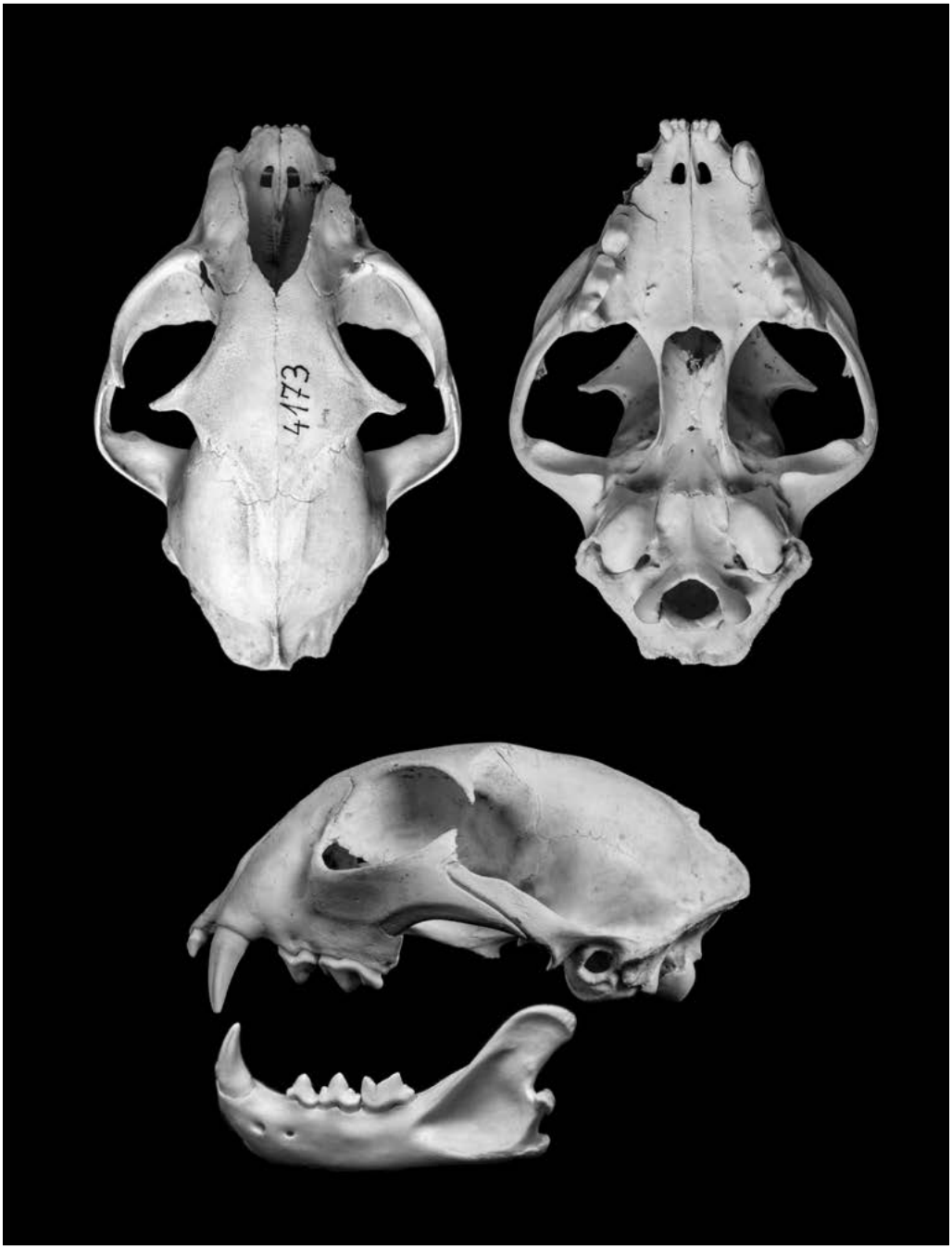


**Slika 77.** Dermoplastični preparat risa *Lynx lynx* iz Nomenja, Slovenija, narejen v preparatorski delavnici Alojza Šmuca. Primerek PMS 20375 je bil zbran 6.1.2014. Foto: Ciril Mlinar, David Kunc

**Figure 77.** Taxidermic mount of a Lynx *Lynx lynx* from Nomenj, Slovenia. Specimen PMS 20375, collected on 6 January 2014, prepared in Šmuc's Workshop. Photo: Ciril Mlinar

**Slika 78.** Koža risa *Lynx lynx* iz Jasnice, Slovenija. Primerek PMS 24459, zbran 22.8.2016. Foto: David Kunc

**Figure 78.** Skin of a Lynx *Lynx lynx* from Jasnica, Slovenia. Specimen PMS 24459, collected on 22 August 2016. Photo: David Kunc




**Slika 79.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) risa *Lynx lynx* iz Bele krajine. Primerek PMS 4173, zbran leta 1983. Foto: David Kunc

**Figure 79.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Lynx *Lynx lynx* from Bela krajina. Specimen PMS 4173, collected in 1983. Photo: David Kunc


**Slika 80.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) risa *Lynx lynx* iz Travnega dola pri Uršnih selih pri Dolenjskih Toplicah, Slovenija. Primerek PMS 20332, zbran 7. oktobra 2012. Foto: David Kunc

**Figure 80.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Lynx *Lynx lynx* from Travni dol near Uršna sela close to Dolenjske Toplice, Slovenia. Specimen PMS 20332, collected on 7 October 2012. Photo: David Kunc


**Slika 81.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) risa *Lynx lynx* iz Nomenja. Primerek PMS 20375, zbran 6 januarja 2014. Foto: David Kunc

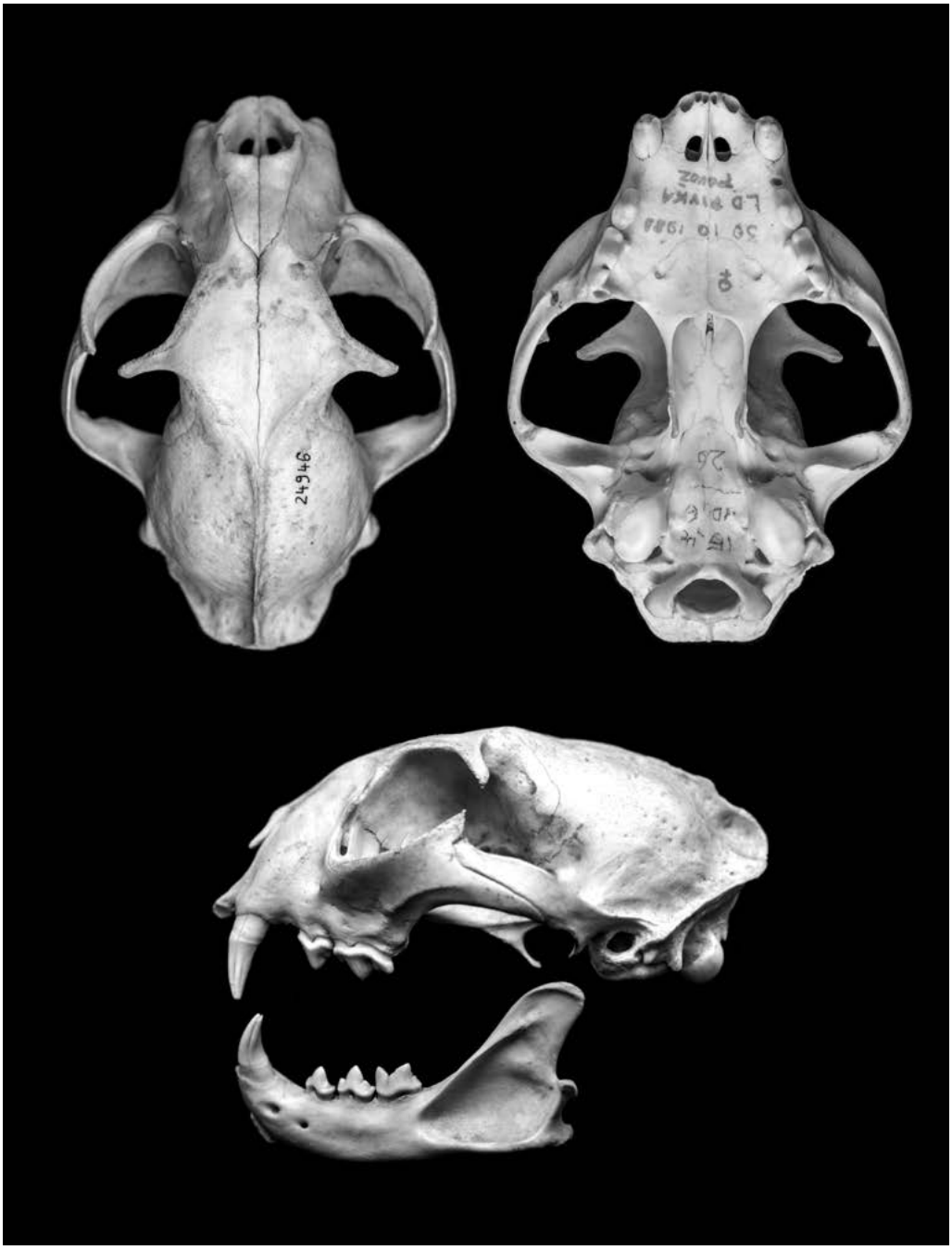
**Figure 81.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Lynx *Lynx lynx* from Nomenj, Slovenia. Specimen PMS 20375, collected on 6 January 2014. Photo: David Kunc


**Slika 82.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) risa *Lynx lynx* iz Jasnice, Slovenija. Primerek PMS 24459, zbran 22.8.2016. Foto: David Kunc

**Figure 82.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Lynx *Lynx lynx* from Jasnica, Slovenia. Specimen PMS 24459, collected on 22 August 2016. Photo: David Kunc


**Slika 83.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) risa *Lynx lynx* iz lovišča LD Loški potok, Slovenija. Primerek PMS 20333, zbran 10.7.2012. Foto: David Kunc

**Figure 83.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of Lynx *Lynx lynx* from LD Loški potok hunting district, Slovenia. Specimen PMS 20333, collected on 10 July 2012. Photo: David Kunc




**Slika 84.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) risa *Lynx lynx* iz lovišča LD Pivka. Primerek PMS 24946, zbran 30 oktobra 1989, podaril Janez Čop. Foto: David Kunc

**Figure 84.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Lynx *Lynx lynx* from LD Pivka hunting district, Slovenia. Specimen PMS 24964, collected on 30 October 1989, collected and donated by Janez Čop. Photo: David Kunc


**Slika 85.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) balkanske podvrste risa *Lynx lynx balcanicus* iz Kačanika na Šar planini, Srbija. Primerek PMS 19700, uplenjen 21.9.1940, lobanjo je leta 2012 podaril mag. Janez Černač. Foto: David Kunc

**Figure 85.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Balkan Lynx *Lynx lynx balcanicus* from Kačanik in the Šar planina Mt, Serbia. Specimen PMS 19700, captured on 21 September 1940, donated in 2012 by Janez Černač, MSc. Photo: David Kunc

# *Leptailurus serval* (Schreber, 1776)

## Serval

Zbirka

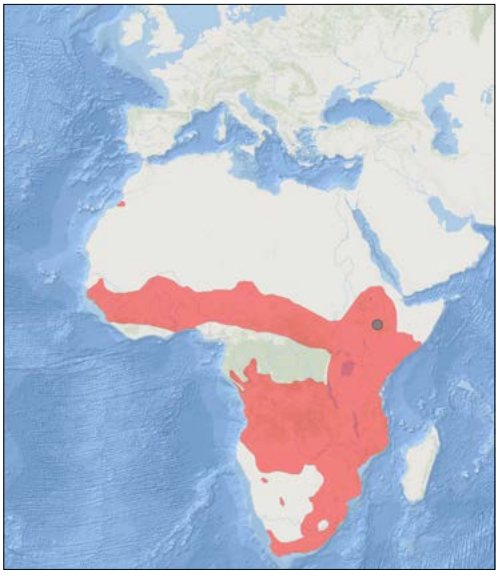
## Serval

Collection

**Ethiopia**:
Awasa, 1 taxidermic mount (PMS 22025), a male, found as orphan, on 5 July 1961 died in captivity (Slovenia, Ljubljana), obtained by Savo Brelih, prepared by Franc Barbič, in 1961 catalouged under #643 in the Catalogue.

Primerek PMS 22025 je pridobil muzejski kustos Savo Brelih (1927–2012), na zoološki odpravi v Etiopijo v letih 1960–1961. Člani odprave so po spletu okoliščin sprejeli v oskrbo osirotelega mladiča in ga poimenovali »Pikec«. Po končani odpravi so ga vzeli s seboj v domovino, kjer so zanj potem izmenično skrbeli Brelih in drugi člani odprave. Žival se je ponesrečila poleti 1961. Izkušnje s servalom je opisal Brelih (1979). Za Muzej je žival prepariral Franc Barbič.

Voucher PMS 22025 was acquired by the museum curator Savo Brelih (1927-2012), during the zoological expedition to Ethiopia in 1960-1961. Members of the expedition obtained, through a set of circumstances, an orphan puppy, which they nicknamed »Pikec«. When the expedition was accomplished, the serval was brought to Slovenia, where Brelih and others took care of the animal alternately. Pikec died after badly injured in the summer of 1961. The experience with the serval was described by Brelih (1979).The animal was prepared for the Museum by Franc Barbič.



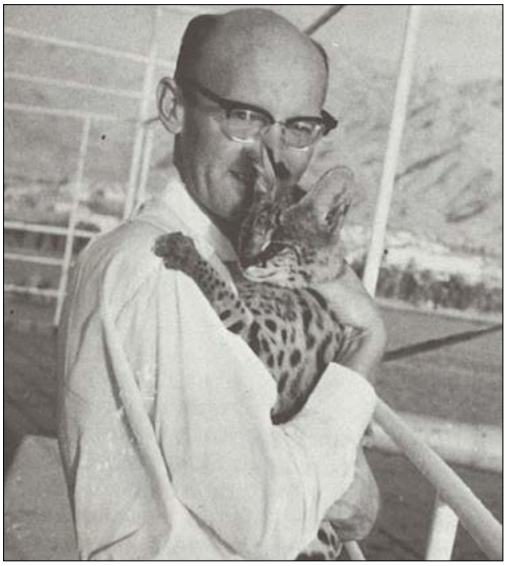
**Slika 86.** Geografski izvor servala *Leptailurus serval* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za območje razširjenosti je Thiel (2015).

**Figure 86.** Geographic origin of a Serval *Leptailurus serval* in the Mammal Collection of the Slovenian Museum of Natural History. Range of the species follows Thiel (2015).

**Tabela 17.** Zunanje in zobne dimenzije servala *Leptailurus serval* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije, izmerjene na dermoplastičnem preparatu. [a]Merjeno od podočnika do tretjega predmeljaka.

**Table 17.** External and dental dimensions of a Serval *Leptailurus serval* in the Mammal Collection of the Slovenian Museum of Natural History, estimated from taxidermic mount. [a]Measured from the canine to 3rd premolar.

| Country | PMS No. | Sex | Age | H&B | TL | HF | E | UTR[a] |
|---|---|---|---|---|---|---|---|---|
| Ethiopia/from captivity | 22025 | ♂ | Sad | 754 | 275 | 160 | 62 | 37,1 |



**Slika 87.** Kustos Prirodoslovnega muzeja Slovenije Savo Brelih z osirotelim servalom, najdenim v Awasi, Etiopija in kasneje vzrejenim v ujetništvu v Ljubljani (Brelih, 1979).

**Figure 87.** Museum curator Savo Brelih with serval, found as orphan in Awasa, Ethiopia, and rised in captivity in Ljubljana, Slovenia (Brelih, 1979).

**Slika 88.** Dermoplastični preparat servala *Leptailurus serval* PMS 22025 iz Awase, Etiopija. Isti primerek kot na sliki 87. Foto: David Kunc

**Figure 88.** Taxidermic mount of a Serval *Leptailurus serval* (PMS 22025) from Awasa, Ethiopia. Same specimen as in Fig. 87. Photo: David Kunc

# *Panthera leo* (Linnaeus, 1758)

## Lev

Zbirka

## Lion

Collection

**From captivity:** 1 taxidermic mount (PMS 20555), a female cub, born on 10 November 1881, died on 14 November 1881, in Catalogue under #151, exhibited in 1881.

**Tabela 18.** Zunanje dimenzije leva *Panthera leo* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije, izmerjene na dermoplastičnem preparatu.

**Table 18.** External measurements of a Lion *Panthera leo* in the Mammal Collection of the Slovenian Museum of Natural History, estimated from taxidermic mount.

| Country | PMS No. | Sex | Age | H&B | TL | HF | E |
|---|---|---|---|---|---|---|---|
| from captivity | 20555 | ♀ | Juv | 390 | 140 | 61,5 | / |

Kranjski deželni muzej (iz katerega izhaja Prirodoslovni muzej Slovenije) je konec 19. in v začetku 20. stoletja nekaj primerkov sesalcev pridobil z odkupi od potujočih zverinjakov (menažerij), ki so občasno gostovali v Ljubljani. Tako je Muzej leta 1881 od nemške menažerije Kreutzberg v Ljubljani odkupil truplo štiri dni starega levjega mladiča. Dermoplastični preparat je bil del stare stalne muzejske postavitve.

In the late 19th and early 20th centuries, the Provincial Museum for Carniola (a direct predecessor of the Slovenian Museum of Natural History,) acquired a few specimens of mammals with purchases from menageries that occasionally visited Ljubljana. Thus, in 1881 the Museum purchased a dead four-day old lion's cub from the German menagerie Kreutzberg. The taxidermic mount was part of the old museum's permanent exhibition.


**Slika 89.** Dermoplastični preparat štiri dni starega levjega mladiča *Panthera leo*, ki ga je Kranjski deželni muzej 1881 v Ljubljani odkupil od nemške menažerije Kreutzberg. Foto: David Kunc

**Figure 89**. A taxidermic mount of a four days old Lion cub *Panthera leo* purchased in Ljubljana from German Menagerie Kreutzberg. Specimen PMS 20555, obtained in 1881. Photo: David Kunc

# *Panthera tigris* (Linnaeus, 1758)

## Tiger

Zbirka

## Tiger

Collection

**India:**
Himalaya, Teraj: 1 skull (PMS 16141), shot in 1935, as dermoplastic mount obtained from Missionary Museum in Ljubljana, apart from skull disposed from the Museum.

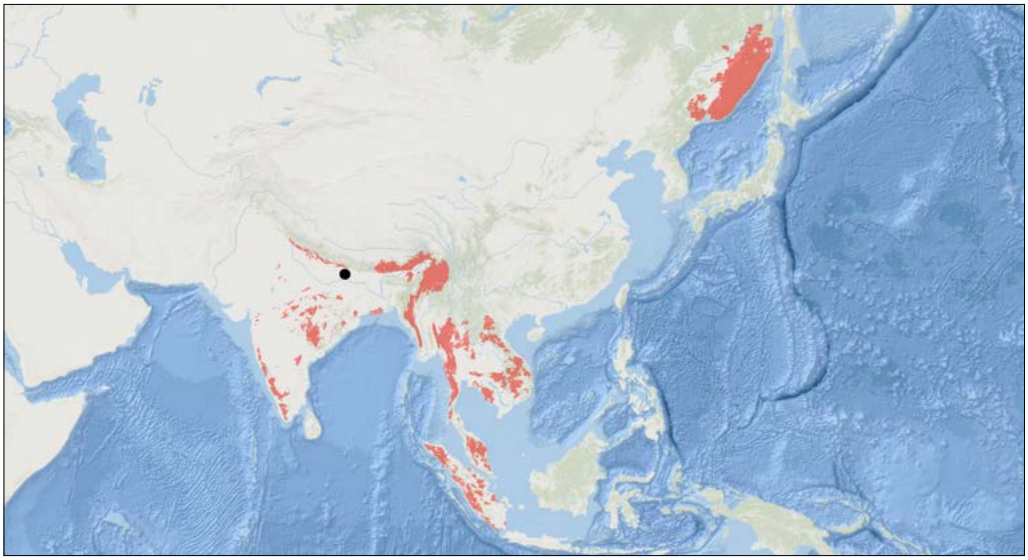
V Katalogu je zaveden sledeči primerek:

The following voucher is recorded in the Catalogue

#396: 1 skull, originally recorded as *Felis tigris*, catalogued and exhibited in 1932, disposed from the Museum at unknown time. Additional information in the Files: the specimen died in captivity in August 1932, in Ljubljana, Slovenia.

Primerek PMS 16141 je Muzej prejel po 2. svetovni vojni kot dermoplastičen preparat od Indijskega misijonskega muzeja v Ljubljani. V letih 1933 in 1937 sta bili na ljubljanskem velesejmu veliki misijonski razstavi (Kokalj, 1989). Častnik Jutro je dne 27. avgusta 1937 poročal: *»Tiger v Ljubljani. Na velesejmu bo*

The Museum obtained voucher PMS 16141 after the Second World War as a taxidermic mount from the Indian Missionary Museum in Ljubljana,. In the years 1933 and 1937, great missionary exhibitions at the Ljubljana Fair were held (Kokalj, 1989). On 27 August 1937 the newspaper »Jutro« reported: "*Tiger in Ljubljana. At the Ljubljana Fair,*



**Slika 90.** Geografski izvor tigra *Panthera tigris* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za območje razširjenosti je Goodrich et al. (2015)

**Figure 90.** Geographic origin of a Tiger *Panthera tigris* in the Mammal Collection of the Slovenian Museum of Natural History. Range of the species follows Goodrich et al. (2015).


**Slika 91.** Dermoplastični preparat tigra *Panthera tigris* iz Teraja pod Himalajo, Indija, razstavljen v Indijskem misijonskem muzeju v Ljubljani. Vir: Misijonska razglednica (izdajatelj: misijonsko središče pri cerkvi Sv. Jožefa na Zrinjskega c. 9 v Ljubljani), arhiv dr. Božidarja Flajšmana.

**Figure 91.** Taxidermic mount of a Tiger *Panthera tigris* from Teraj in Himalaya, India, on display in Missionary Museum in Ljubljana. Photo: Misionary postcard (Publisher: Missionary centre, Zrinjskega St. 9, Ljubljana), Dr. Božidar Flajšman archives.

*v misijonskem paviljonu G posebna privlačnost pravi bengalski kraljevski tiger, ki je bil ustreljen 1. 1935 v Teraju pod Himalajo in so ga naši slovenski misijonarji v Indiji poslali za indijsko misijonsko razstavo v Ljubljani. Tiger postaja tudi v Indiji vedno večja dragocenost in stane boljši eksemplar do 80.000 din. Lovijo ga v pasti ali jame; vsako leto pa napravijo bogati maharadže večje love s sloni po bengalskih džunglah in močvirjih, kjer se skriva tiger. Naš eksemplar je izredno velik, meri 3,20 m, s strašnim zobovjem in demonskim pogledom ter mu je naš dvorni preparator g. Herfort dal tako obliko, da bo zbujal splošno pozornost. Prav gotovo nima para v vsej Jugoslaviji. Obiskovalci velesejma si ga bodo lahko ogledali na velezanimivi misijonski razstavi, na katero že sedaj opozarjamo.*« Letak za misijonsko razstavo »Indija in naši misijonarji« v Ljubljani, na velesejmu 1.-12. septembra 1937 v posebnem paviljonu "G", VII. Indijska džungla

*in the Missionary Pavilion G, a special attraction will be on display; a Bengal royal tiger, which was shot in year 1935 in Teray at the foot of the Himalayas, and was sent by our Slovenian missionaries for the purpose of the Indian missionary exhibition in Ljubljana. Tigers are becoming increasingly valuable in India and a good specimen may cost up to 80,000 dinars. They are hunted in traps or caves; every year, rich maharajahs perform big hunts with elephants along the Bengal jungles and swamps, where tigers are hiding. Our specimen is extremely big, measuring 3.20 m, with scary teeth and a demonic look, and our taxidermist Mr Herfort gave the mount such a form that it will attract general attention. It is certainly without comparison in the whole of Yugoslavia. Visitors of the Ljubljana Fair will be able to see it at a very interesting missionary exhibition we are already calling your attention to."* A leaflet for the mentioned exhibition (*»India and our Missionaries«)* at the Ljubljana Fair, which took place on 1 -12 September 1937 in the special

**Slika 92.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) tigra *Panthera tigris* iz Teraja v Himalaji, Indija (PMS 16141). Isti primerek kot na sliki 91. Foto: David Kunc

**Figure 92.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Tiger *Panthera tigris* from Teraj in the Himalayas, India (PMS 16141). Same specimen as in Fig. 91. Photo: David Kunc

**Tabela 19.** Lobanjske dimenzije tigra *Panthera tigris* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.
**Table 19.** Cranial measurements of a Tiger *Panthera tigris* in the Mammal Collection of the Slovenian Museum of Natural History.

| Country | PMS No. | Age | CbL | ZgB | IoC | UTR |
|---|---|---|---|---|---|---|
| India | 16141 | ad | 302,4 | 226,6 | 64,5 | 97,1 |

(po naravi) pa navaja sledeče eksponate: "*Prekrasne skupine indijskih živali…, zveri, med njimi prekrasni 3,20 m dolg tiger z demonskim pogledom, ki napada bivola.*«

Ob čiščenju muzejskega podstrešja v 70-ih letih prejšnjega stoletja je tedanji direktor Muzeja odredil, da se dermoplastični preparat odpelje na smetišče. Primerek so iz 1. nadstropja vrgli na dvorišče muzejske stavbe na Prešernovi 20, kustos Janez Gregori pa je v zadnjem trenutku rešil lobanjo. Lobanjo je s preparata odstranil preparator Janez Dovič.

Pavilion G, VII *The Indian jungle (by nature)* lists the following exhibits*: "Beautiful Indian animals..., carnivorans, among them a beautiful 3.20-metre long tiger with a demonic look, attacking a buffalo*."

While cleaning the museum attic in the 1970s, the then director of the Museum ordered the taxidermic mount of the tiger to be discarded. The specimen was thrown from the first floor to the courtyard of the museum building at Prešerenova 20, but the curator Janez Gregori managed to save the skull of the specimen at the last minute. The skull was removed from the mount by the taxidermist Janez Dovič.

## *Panthera pardus* (Linnaeus, 1758)

### Leopard

Zbirka

### Leopard

Collection

**Republic of South Africa:** 1 skin (PMS 20584), unsexed, obtained in c. 1995 as border seizure.

**No locality:** 1 skull (PMS 20472), no data, 1 skull (PMS 20473), a male, No. 633 written on the skull; possibly identical to # 633 in the Catalogue (*Felis* sp. catalogued in 1957). Both skulls were probably from the Missionary Museum in Ljubljana. Both vouchers lack occipital condyles.

Primerka PMS 20472 in PMS 20473 verjetno izvirata iz Indijskega misijonskega muzeja v Ljubljani. Časnik »Slovenec« z dne 5. aprila 1934 med drugimi eksponati, ki so na ogled v Indijskem misijonskem muzeju, navaja tudi »*bele lobanje orjaških šakalov in leopardov.*«

The vouchers PMS 20472 and PMS 20473 probably originated from the Indian Missionary Museum in Ljubljana. The newspaper »Slovenec«, issued on 5 April 1934, among other exhibits of the Indian Missionary Museum, also mentions "*white skulls of giant jackals and leopards*."

**Tabela 20.** Lobanjske in zunanje dimenzije leopardov *Panthera pardus* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije. * Merjeno na koži.

**Table 20.** Cranial and external measurements of Leopards *Panthera pardus* in the Mammal Collection of the Slovenian Museum of Natural History. *Measured on skin.

| Country | PMS No. | Sex | Age | H&B | TL | HF | E | PL | ZgB | IoC | UTR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| no locality | 20472 | / | ad | / | / | / | / | 186,9 | 120,5 | 42,5 | 61,8 |
| no locality | 20473 | ♂ | ad | / | / | / | / | 228,7 | 149,8 | 42,5 | 70,3 |
| Republic of South Africa | 20584 | / | ad | 1310* | 750* | / | / | / | / | / | / |

**Slika 93.** Koža leoparda *Panthera pardus* iz Južnoafriške Republike, na meji zasežena okoli leta 1995; primerek PMS 20584. Foto: David Kunc

**Figure 93.** Skin of a Leopard *Panthera pardus* from the Republic of South Africa, obtained around 1995 as border seizure; voucher PMS 20584. Photo: David Kunc

**Slika 94.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) leoparda *Panthera pardus*, verjetno pridobljena od Misijonskega muzeja v Ljubljani; primerek PMS 20472. Foto: David Kunc

**Figure 94.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Leopard *Panthera pardus* probably obtained from Missionary Museum in Ljubljana; specimen PMS 20472. Photo: David Kunc


**Slika 95.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) leoparda *Panthera pardus*, verjetno pridobljena od Misijonskega muzeja v Ljubljani; primerek PMS 20473. Foto: David Kunc

**Figure 95.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Leopard *Panthera pardus*; probably obtained from the Missionary Museum in Ljubljana; voucher PMS 20473. Photo: David Kunc

# Družina: Herpestidae

## Ihneumoni

Muzej hrani 13 primerkov ihneumonov, ki pripadajo petim vrstam iz štirih različnih rodov (tabela 21). Ihneumoni so bili zbrani v Južnoafriški republiki, Izraelu, Indiji in na Hrvaškem, en primerek pa izhaja iz ujetništva (tabela 22). V Zbirki je enajst lobanj, tri kože in dva dermoplastična preparata.

# Family: Herpestidae

## Mongooses

The Museum is in possession of thirteen vouchers from five species and four genera (Table 21). They originate from Republic Of South Africa, Israel, India and Croatia, one specimen was obtained from captivity (Table 22). The Collection holds eleven skulls, three skins and two taxidermic mounts.

**Tabela 21.** Taksonomska zastopanost in preparati ihneumonov v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

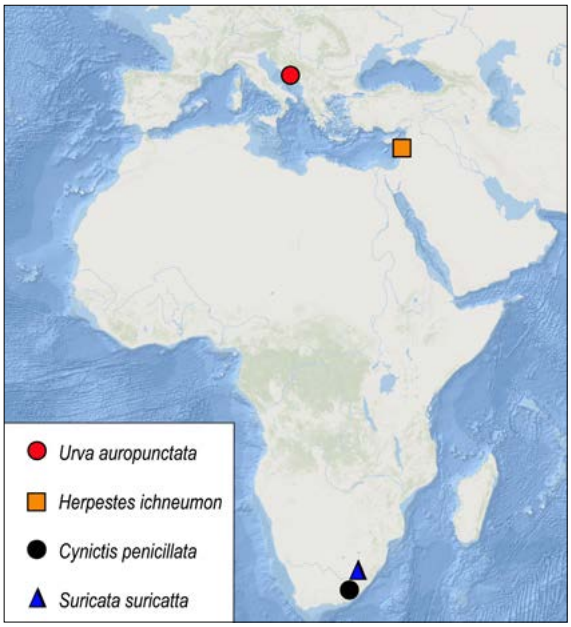
**Table 21.** Taxonomic representation and preparations of mongooses in the Mammal Collection of the Slovenian Museum of Natural History.

| Vrsta<br>Species | Taksidermija<br>Taxidermy | Koža<br>Skin | Lobanja<br>Skull | Št. osebkov<br>No. individuals |
|---|---|---|---|---|
| *Urva auropunctata* | 1 | 1 | 7 | 8 |
| *Urva edwarsi* | 1 | | | 1 |
| *Herpestes ichneeumon* | | | 2 | 2 |
| *Cynictis penicillata* | | 1 | 1 | 1 |
| *Suricata suricatta* | | 1 | 1 | 1 |
| **Skupaj / Total** | **2** | **3** | **11** | **13** |

**Tabela 22.** Geografska zastopanost ihneumonov v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

**Table 22.** Geographic representation of mongooses in the Mammal Collection of the Slovenian Museum of Natural History.

| Država<br>Country | Št. vrst<br>No. species | Št. osebkov<br>No. individuals |
|---|---|---|
| Croatia | 1 | 7 |
| Israel | 1 | 2 |
| South Africa (RSA) | 2 | 2 |
| India | 1 | 1 |
| from captivity / iz ujetništva | 1 | 1 |
| **Skupaj / Total** | **6** | **13** |




**Slika 96.** Geografski izvor malih indijskih mungov *Urva auropunctata*, navadnih mungov *Herpestes ichneumon*, lisičje manguste *Cynictis penicillata* in surikate *Suricata suricatta* v Zbirki sesalcev v Prirodoslovnem muzeju Slovenije

**Figure 96.** Geographic origin of Small Indian Mongooses *Urva auropunctata*, Egyptian Mongooses *Herpestes ichneumon, a* Yellow Mongoose *Cynictis penicillata* and a Meerkat *Suricata suricatta* in the Mammal Collection of the Slovenian Museum of Natural History

# *Urva auropunctata* (Hodgson, 1836)

## Mali indijski mungo

## Small Indian Mongoose

Zbirka

Collection

**Croatia:**
Island of Korčula, Blato: 1 skin with a skull (PMS 5437), a male, collected on 12 April 1987 by Boris Kryštufek, 1 skull (PMS 20548), a male, collected on 1 May 1997 by Al Vrezec.
Island of Korčula, Smokvice, Banja : 2 skulls (PMS 26210, 26211), collected in August 2002 by Franc Janžekovič.
Island of Korčula, vicinity of Smokvice: 3 skulls (PMS 26212, 26213, (26214; fragmented), collected in August 2003 by Franc Janžekovič.

**From captivity:** 1 taxidermic mount (PMS 22053), a male, obtained on 15 April 1953 from Ljubljana ZOO, catalogued in 1953 under #563 in the Catalogue; exhibited in 1953, donated by M. Vadnal, prepared by F. Barbič.

Doslej znan kot *Herpestes auropunctatus*. Nedavna rekonstrukcija filogenetske zgodovine družine Herpestide je pokazala, da je monofilija rodu *Herpestes* med drugim mogoča z izključitvijo orientalnih vrst (*auropunctatus*, *javanicus,* itd.) in njihovo uvrstitvijo v rod *Urva* (Patou et al., 2009).

Previously known as *Herpestes auropunctatus*. The recent reconstruction of the phylogenetic history of the Herpestidae family has shown that the monophyly of the genus Herpestes is possible, among other, by exclusion of Oriental species (*aurpounctatus, javanicus*, etc.) and their classification in the genus Urva (Patou et al., 2009).

Razlikovanje med vrstama *Urva auropuncatata* in *U. edwardsi* omogočajo, poleg splošne velikosti, še dolžina dlake ter širina prek zgornjih in spodnjih sekalcev (tabela 23). *Urva auropunctata* je v primerjavi z *U. edwardsi* manjši, ima krajšo dlako in ožji niz sekalcev.

Primerki v Zbirki, ki izhajajo iz Hrvaške, so potomci malih indijskih mungov, ki so bili v prvih desetletjih prejšnjega stoletja naseljeni na otoke osrednje Dalmacije. Primerek PMS 5347 je bil del materiala, na katerem je bila prvič ugotovljena taksonomska identiteta te invazivne vrste v Evropi (Tvrtković & Kryštufek 1990). Za zgodovino naselitve glej citirani vir.

*Urva auropunctata* differs from *U. edwardsi*, in addition to the general size, in the length of the hair and in the width of the upper and lower incisors (Table 23). *U. auropunctata* is smaller, has shorter hair and narrower incisor-row.

Specimens in the Collection which originate from Croatia are descendants of Small Indian Mongooses introduced in the first decades of the last century on the islands of central Dalmatia. The specimen PMS 5347 was part of the material on which the taxonomic identity of this invasive species in Europe was first established (Tvrtković & Kryštufek 1990). For the history of introduction, see the cited reference.

**Tabela 23.** Primerjava dimenzij glave, sekalcev in dlake malih indijskih mungov mungov *Urva auropunctata* in indijskih mungov *Urva edwardsi* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

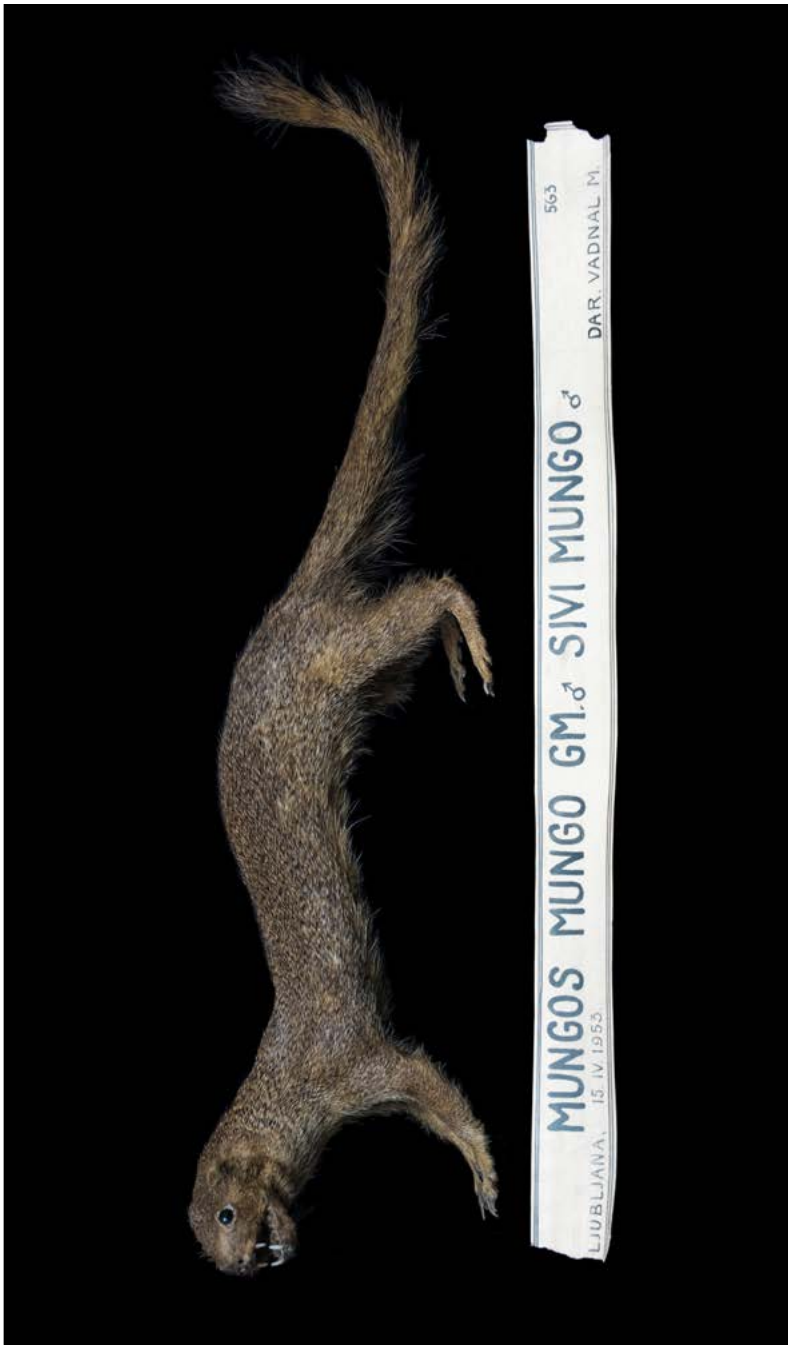
**Table 23.** Comparison of head, incisors and hair dimensions of Small Indian Mongooses *Urva auropunctata* and Indian Grey Mongooses *Urwa edwardsi* in the Mammal Collection of the Slovenian Museum of Natural History.

| Vrsta /Species | Država/ Country | PMS No. | Dolžina glave/ Length of head | Dolžina dlake na hrbtu/ Length of hair on mid-back | Dolžina dlake sredi repa/ Length of hair on mid-tail | Širina prek zgornjih sekalcev/ Width across upper incisors | Širina prek spodnjih sekalcev/ Width across lower incisors |
|---|---|---|---|---|---|---|---|
| *U. auropunctata* | Croatia | 5437 | / | 10-15 | >30 | 5,8 | 4,61 |
| *U. auropunctata* | Croatia | 20548 | / | / | / | 5,67 | 4,37 |
| *U. auropunctata* | Croatia | 22053 | c.62 | 8,5-12 | <25 | 5,46 | 4,75 |
| *U. auropunctata* | Croatia | 26212 | / | / | / | 5,9 | / |
| *U. edwardsi* | India | 22188 | c.78 | 27-35 | <55 | 6,57 | 5,1 |

**Tabela 24.** Zunanje in lobanjske dimenzije malih indijskih mungov *Urva auropunctata* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

**Table 24.** External and cranial dimensions of Small Indian Mongooses *Urva auropunctata* in the Mammal Collection of the Slovenian Museum of Natural History.

| Country | PMS No. | Sex | Age | W | H&B | TL | HF | E | CbL | ZgB | IoC | UTR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Croatia | 5437 | ♂ | ad | 700 | 315 | 250 | 51 | 21,4 | 62,2 | 32,8 | 11,4 | 22 |
| Croatia | 20548 | ♂ | ad | / | 300 | 162 | 51 | 21 | 62,3 | 34,1 | 10,4 | 22,7 |
| Croatia | 26210 | / | ad | / | / | / | / | / | 57,9 | 30,1 | 10,5 | 20,1 |
| Croatia | 26211 | / | ad | / | / | / | / | / | 63,4 | 33 | 10,9 | 22,8 |
| Croatia | 26212 | / | ad | / | / | / | / | / | / | 32,3 | 11,8 | 22,2 |
| Croatia | 26213 | / | / | / | / | / | / | / | / | / | 9,8 | 21 |
| Croatia | 26214 | / | / | / | / | / | / | / | / | / | / | 21 |
| from captivity | 22053 | ♂ | ad | / | 332 | 254 | D:48,9 L:49,7 | 18,5 | / | / | / | / |




**Slika 97.** Dermoplastični preparat malega indijskega munga *Urva auropunctata*, dobljenega iz Zoološkega vrta v Ljubljani aprila 1953; primerek PMS 22053, daroval M. Vadnal, prepariral F. Barbič. Foto: David Kunc

**Figure 97.** Taxidermic mount of a Small Indian Mongoose *Urva auropunctata*, obtained from Ljubljana ZOO in April 1953; specimen PMS 22053, donated by M. Vadnal, prepared by F. Barbič. Photo: David Kunc

**Slika 98.** Koža malega indijskega munga *Urva auropunctata* iz Blata na otoku Korčuli, Hrvaška. Primerek PMS 5437, zbran 12. aprila 1987. Foto: David Kunc

**Figure 98.** Skin of a Small Indian Mongoose *Urva auropunctata* from Blato on the Island of Korčula, Croatia. Specimen PMS 5437, collected on 12 April 1987. Photo: David Kunc


**Slika 99.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) malega indijskega munga *Urva auropunctata* iz Blata na otoku Korčuli, Hrvaška. Primerek PMS 5437, zbran 12. aprila 1987. Foto: Boris Kryštufek

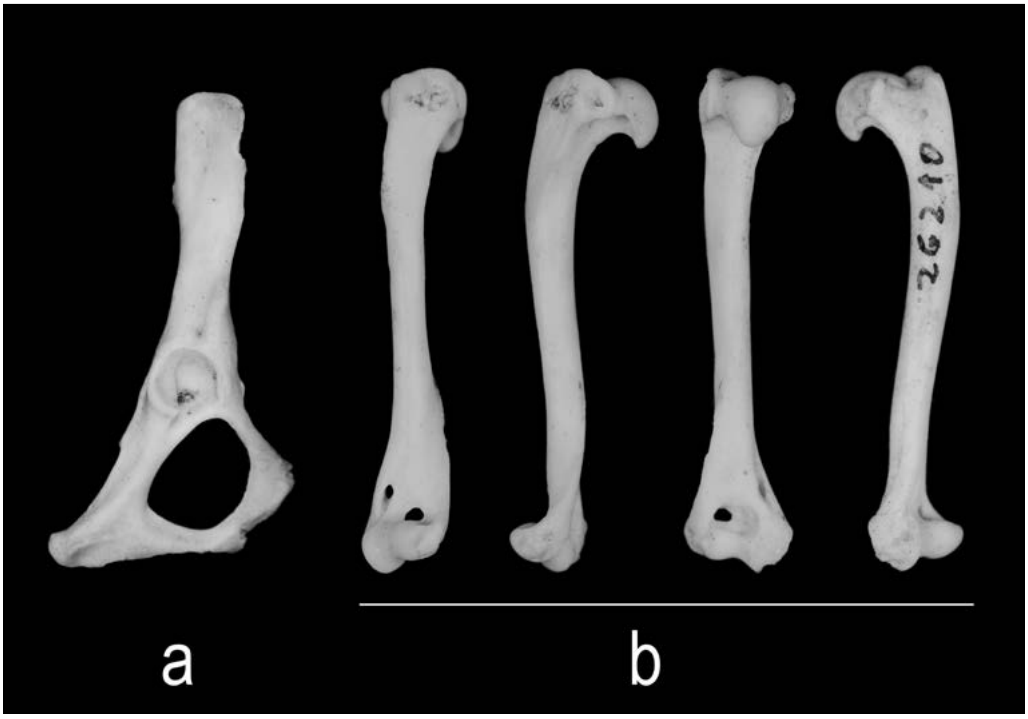
**Figure 99.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Small Indian Mongoose *Urva auropunctata* from Blato on the Island of Korčula, Croatia. Specimen PMS 5437, collected on 12 April 1987. Photo: Boris Kryštufek


**Slika 100.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) malega indijskega munga *Urva auropunctata* iz Blata na otoku Korčuli, Hrvaška. Primerek PMS 20548, zbran 1. maja 1997. Foto: Boris Kryštufek

**Figure 100.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Small Indian Mongoose *Urva auropunctata* from Blato on the Island of Korčula, Croatia. Specimen PMS 20548, collected on 1 May 1997. Photo: Boris Kryštufek


**Slika 101.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) malega indijskega munga *Urva auropunctata* iz Banje pri Smokvicah na otoku Korčuli, Hrvaška. Primerek PMS 26210, zbran avgusta 2002. Foto: Boris Kryštufek

**Figure 101.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Small Indian Mongoose *Urva auropunctata* from Banja near Smokvice on the Island of Korčula, Croatia. Specimen PMS 26210, collected in August 2002. Photo: Boris Kryštufek




**Slika 102.** Deli okostja (a: medenica, b: nadlahtnica; od leve proti desni: anteriorni, lateralni, posteriorni in medialni pogled) malega indijskega munga *Urva auropunctata* iz Banje pri Smokvicah na otoku Korčuli, Hrvaška (PMS 26210). Isti primerek kot na sliki 101. Foto: Boris Kryštufek

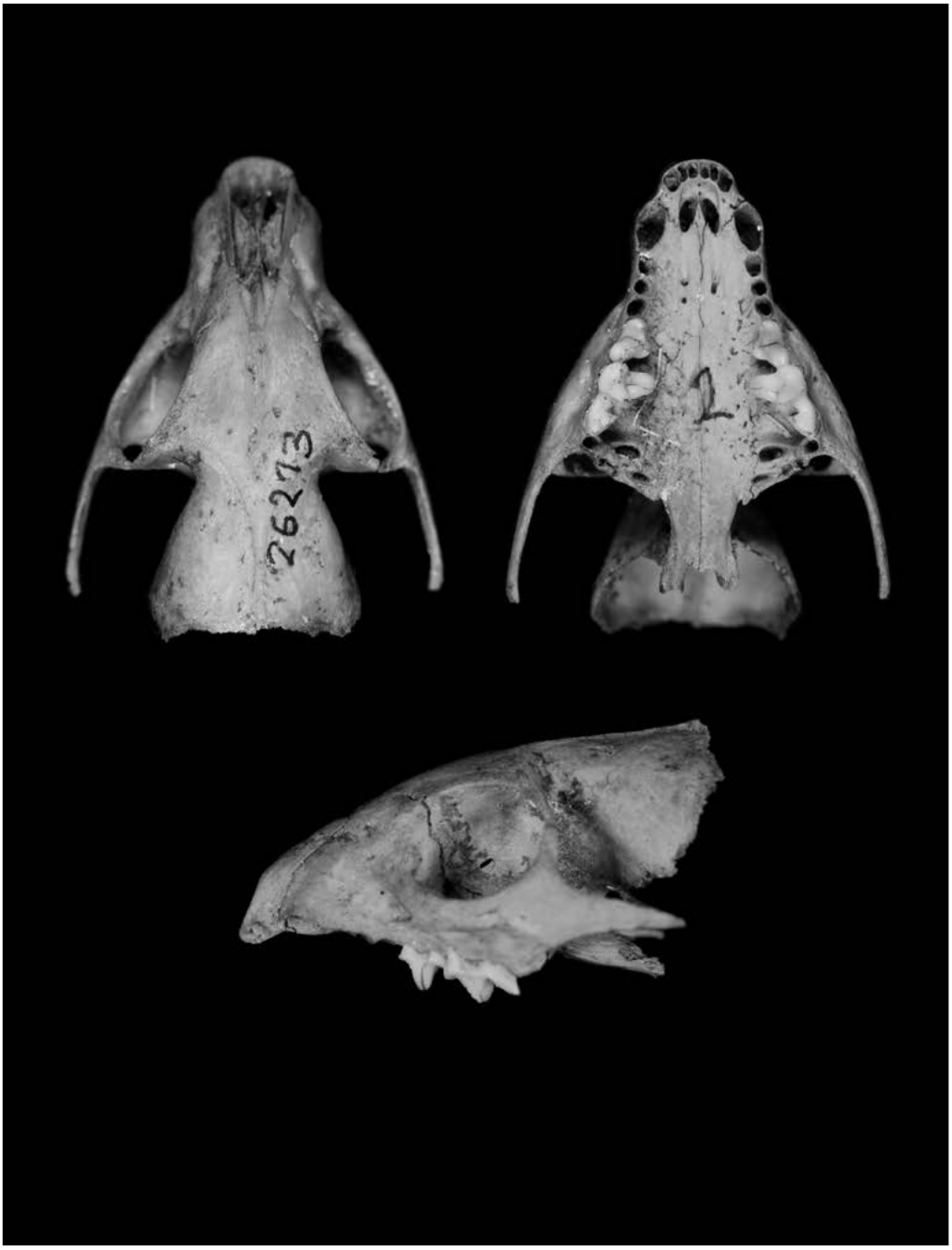
**Figure 102.** Isolated bones (a: pelvis, b: humerus; from left to right: anterior, lateral, posterior and medial view) of a Small Indian Mongoose *Urva auropunctata* from Banja near Smokvice on the Island of Korčula, Croatia (PMS 26210). Same specimen as in Fig. 101. Photo: Boris Kryštufek


**Slika 103.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) malega indijskega munga *Urva auropunctata* iz Banje pri Smokvicah na otoku Korčuli, Hrvaška. Primerek PMS 26211, zbran avgusta 2002. Foto: Boris Kryštufek

**Figure 103.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Small Indian Mongoose *Urva auropunctata* from Banja near Smokvice on the Island of Korčula, Croatia. Specimen PMS 26211, collected in August 2002. Photo: Boris Kryštufek


**Slika 104.** Lobanja (hrbtna, bočna in trebušna stran) malega indijskega munga *Urva auropunctata* iz okolice Smokvic na otoku Korčuli, Hrvaška. Primerek PMS 26212, zbran avgusta 2003. Foto: Boris Kryštufek

**Figure 104.** Skull (dorsal, lateral and ventral views) of a Small Indian Mongoose *Urva auropunctata*, found in the vicinity of Smokvice on the Island of Korčula, Croatia. Specimen PMS 26212, collected in August 2003. Photo: Boris Kryštufek




**Slika 105.** Lobanja (hrbtna, bočna in trebušna stran) malega indijskega munga *Urva auropunctata* iz okolice Smokvic na otoku Korčuli, Hrvaška. Primerek PMS 26213, zbran avgusta 2003. Foto: Boris Kryštufek

**Figure 105.** Skull (dorsal, lateral and ventral views) of a Small Indian Mongoose *Urva auropunctata*, found near Smokvice on the Island of Korčula, Croatia. Specimen PMS 26213, collected in August 2003. Photo: Boris Kryštufek

# *Urva edwardsi* (E. Geoffroy Saint-Hilaire, 1818)

## Indijski mungo

Zbirka

## Indian Grey Mongoose

Collection

**India:**
No locality: 1 taxidermic mount (PMS 22188), unsexed, with no history.

Primerek PMS 22188, ki je brez podatkov o lokaciji, je bil najverjetneje pridobljen iz naravoslovne zbirke kake srednje šole v Sloveniji, pridobitev pa v Muzeju ni bila dokumentirana. Na originalni etiketi je navedena inv. št. No. 5, vendar pod to št. ni vpisana niti v Katalogu niti v Kartoteki. Za primerjavo z *U. auropunctata* glej tabelo 23. *Urva edwardsi* je v primerjavi z *U. auropunctata* večji (dolžina glave, dolžina stopala), ima daljšo dlako in širši niz sekalcev.

Voucher PMS 22188 was most probably obtained from a natural history collection in a secondary school in Slovenia, but the acquisition was not documented in the Museum. This taxidermic mount holds label with number 5, but it is not registered under it, neither in the Catalogue nor in the Files. For comparison with *U. auropunctata*, see Table 23. *Urva edwardsi* is larger (longer head, longer foot), has longer hair and incisor-row.

**Tabela 25.** Zunanje dimenzije indijskega munga *Urva edwardsi* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije, izmerjene na dermoplastičnem preparatu, [def]konica repa manjka.

**Table 25.** External dimensions of an Indian Grey Mongoose *Urwa edwardsi* in the Mammal Collection of the Slovenian Museum of Natural History, estimated from taxidermic mount, [def]tail top lacking.

| Country | PMS No. | Age | H&B | TL | HF | E |
|---|---|---|---|---|---|---|
| India | 22188 | ad | 465 | 220[def] | c. 17 | c. 19 |


**Slika 106.** Dermoplastični preparat indijskega munga *Urva edwardsi* brez zgodovine; primerek PMS 22188. Foto: David Kunc

**Figure 106.** Taxidermic mount of an Indian Grey Mongoose Urwa *edwardsi* with no history; specimen PMS 22188. Photo: David Kunc

# *Herpestes ichneumon* (Linnaeus, 1758)

## Navadni mungo

ZBIRKA

## Egyptian Mongoose

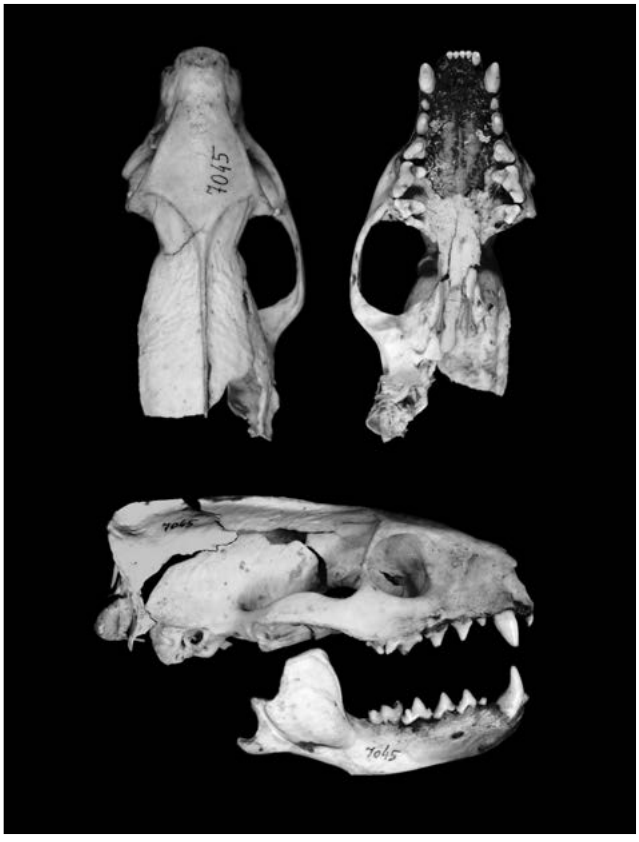
COLLECTION

**Israel:**
Lower Galilee: 2 skulls (PMS 7044, PMS7045), males, road casualties, collected on 10 February 1989 by Shimon Simson.

**Tabela 26.** Lobanjske dimenzije navadnih mungov *Herpestes ichneumon* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

**Table 26.** Cranial dimensions of Egyptian Mongooses *Herpestes ichneumon* in the Mammal Collection of the Slovenian Museum of Natural History.

| Country | PMS No. | Sex | Age | CbL | ZgB | IoC | UTR |
|---|---|---|---|---|---|---|---|
| Israel | 7044 | ♂ | ad | 98,5 | 49,7 | 17,5 | 35,8 |
| Israel | 7045 | ♂ | ad | / | / | 18,8 | 37,2 |




**Slika 107.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) navadnega munga *Herpestes ichneumon* iz Spodnje Galileje, Izrael. Primerek PMS 7045, zbran 10. februarja 1989. Foto: Boris Kryštufek

**Figure 107.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of an Egyptian Mongoose *Herpestes ichneumon* from Lower Galilee, Israel. Specimen PMS 7045, collected on 10 February 1989. Photo: Boris Kryštufek


**Slika 108.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) navadnega munga *Herpestes ichneumon* iz Spodnje Galileje, Izrael. Primerek PMS 7044, zbran 10. februarja 1989. Foto: Boris Kryštufek

**Figure 108.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of an Egyptian Mongoose *Herpestes ichneumon* from Lower Galilee, Israel. Specimen PMS 7044, collected on 10 February 1989. Photo: Boris Kryštufek

# *Cynictis penicillata* (G.[Baron] Cuvier, 1829)

## Lisičja mangusta

Zbirka

## Yellow Mongoose

Collection

**Republic of South Africa:**
Eastern Cape Prov., Makhanda (ex Grahamstown), 4 km SE of Fort Brown: 1 skin with a skull (PMS 17657), a male, road casualty, collected on 29 December 2003 by Boris Kryštufek, found in arid country covered by shrubs (vegetation type: Valley Thicket).

**Tabela 27.** Zunanje dimenzije lisičje manguste *Cynictis penicillata* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

**Table 27.** External dimensions of a Yellow Mongoose *Cynictis penicillata* in the Mammal Collection of the Slovenian Museum of Natural History.

| Country | PMS No. | Sex | Age | H&B | TL | HF | E |
|---|---|---|---|---|---|---|---|
| Republic of South Africa | 17657 | ♂ | ad | 400 | 230 | 73 | 38,5 |


**Slika 109.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) lisičje manguste *Cynictis penicillata* iz Makhande v Vzhodni Kapski provinci, Južnoafriška republika (PMS 17657). Isti primerek kot na sliki 109. Foto: Boris Kryštufek

**Figure 109.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Yellow Mongoose *Cynictis penicillata* from Makhanda in the Eastern Cape Prov., Republic of South Africa (PMS 17657). Same specimen as in Fig. 109. Photo: Boris Kryštufek

**Slika 110.** Koža lisičje manguste *Cynictis penicillata* iz Makhande v Vzhodni Kapski provinci, Južnoafriška republika. Primerek PMS 17657, zbran 29. decembra 2003. Foto: David Kunc

**Figure 110.** Skin of a Yellow Mongoose *Cynictis penicillata* from Makhanda in the Eastern Cape Prov., Republic of South Africa. Specimen PMS 17657, collected on 29 December 2003. Photo: David Kunc

# *Suricata suricatta* (Schreber, 1776)

## Surikata

Zbirka

## Meerkat

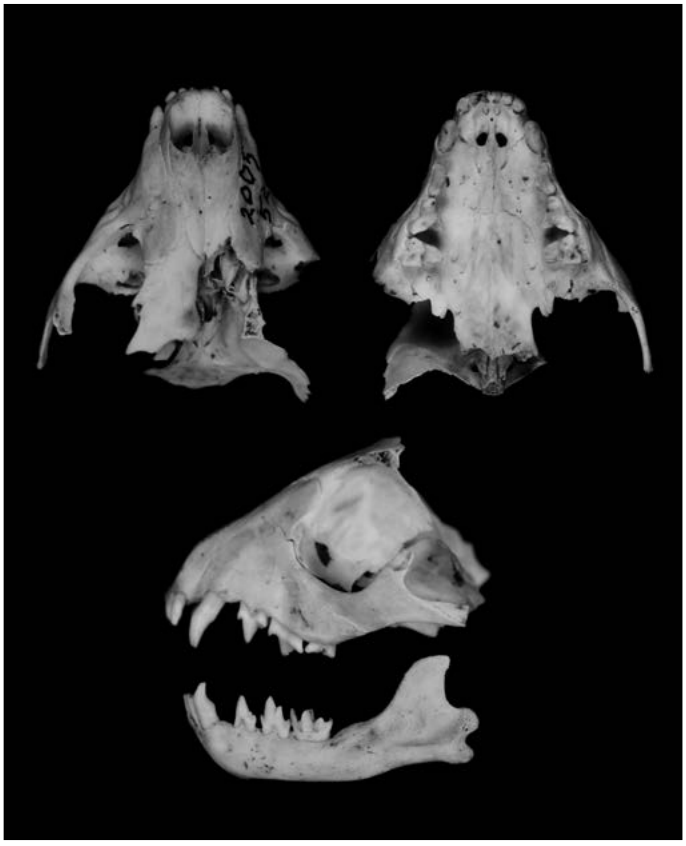
Collection

**Republic of South Africa:**
Eastern Cape Province, 5km west of Lady Grey: 1 skin with a skull (PMS 20557), a male, road casualty, collected on 7 January 2004 by Boris Kryštufek.

**Tabela 28.** Zunanje in lobanjske dimenzije surikate *Suricata suricatta v* Zbirki sesalcev Prirodoslovnega muzeja Slovenije (del lobanje manjka; meritve CbL, ZgB, UTR niso mogoče).

**Table 28.** External and cranial dimensions of a Meerkat *Suricata suricatta* in the Mammal Collection of the Slovenian Museum of Natural History (part of a skull lacking; CbL, ZgB, UTR measurements not possible).

| Country | PMS No. | Sex | Age | W | H&B | TL | HF | E | IoC |
|---|---|---|---|---|---|---|---|---|---|
| Republic of South Africa | 20557 | ♂ | juv | 300 | 235 | 130 | 57 | 19 | 11,6 |



**Slika 111.** Sprednji del lobanje (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) surikate *Suricata suricatta* (PMS 20557). Isti primerek kot na sliki 112. Foto: Boris Kryštufek

**Figure 111.** Anterior part of the skull (dorsal, lateral and ventral views) and mandible (lateral) of a Meerkat *Suricata suricatta* (PMS 20557). Sames specimens as in Fig. 112. Photo: Boris Kryštufek


**Slika 112.** Koža surikate *Suricata suricatta*, zbrane 5 km vzhodno od kraja Lady Grey v Vzhodni Kapski provinci, Južnoafriška republika, 7. januarja 2004 (primerek PMS 20557). Foto: David Kunc

**Figure 112.** Skin of a Meerkat *Suricata suricatta* collected 5km west of Lady Grey in the Eastern Cape Province, Republic of South Africa, on 7 January 2004 (specimen PMS 20557). Photo: David Kunc

# Družina: Viverridae

## Cibetovke

Muzej hrani 5 primerkov cibetovk, ki pripadajo trem vrstam iz treh različnih rodov (tabela 29). Cibetovke so bile zbrane v Južnoafriški republiki, Etiopiji in Indiji, za en primerek ni podatka o izvoru (tabela 30). V Zbirki hranimo dve lobanji, kožo in tri starejše dermoplastične preparate.

# Family: Viverridae

## Vivverids

The Museum is in possession of five vouchers from three species and three genera (Table 29). They originate from the Republic of South Africa, Ethiopia and India; for one specimen, its origin is unknown (Table 30). The Collection holds two skulls, one skin and three older taxidermic mounts.

**Tabela 29.** Taksonomska zastopanost in preparati cibetovk Viverridae v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

**Table 29.** Taxonomic representation and preparations of civets Viverridae in the Mammal Collection of the Slovenian Museum of Natural History.

| Vrsta<br>Species | Taksidermija<br>Taksidermy | Koža<br>Skin | Lobanja<br>Skull | Št. osebkov<br>No. individuals |
|---|---|---|---|---|
| *Genetta genetta* | 1 | 1 | 2 | 3 |
| *Viverra zibetha* | 1 | | | 1 |
| *Paradoxurus hermaphroditus* | 1 | | | 1 |
| **Skupaj / Total** | **3** | **1** | **2** | **5** |

**Tabela 30.** Geografska zastopanost cibetovk Viverridae v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

**Table 30.** Geographic representation of civets Viverridae in the Mammal Collection of the Slovenian Museum of Natural History.

| Država<br>Country | Št. vrst<br>No. species | Št. osebkov<br>No. individuals |
|---|---|---|
| Ethiopia | 1 | 1 |
| Rep. Of South Africa (RSA) | 1 | 1 |
| India | 2 | 2 |
| no history / brez zgodovine | 1 | 1 |
| **Skupaj / Total** | **3** | **5** |

# *Genetta genetta (Linnaeus, 1758)*

## Severnoafriška ženeta

## Common Genet

Zbirka

Collection

**Ethiopia:**
Addis Ababa, Mojo, by the river Awash: 1 skull (PMS 5719), unsexed, collected on 20 November 1960 by Savo Brelih (Zoological Expedition to Ethiopia in 1960/1961).

**Republic of South Africa:**
Oudtshoorn, West Cape Province (440 m asl) (grassland): 1 skin with a skull (PMS 20556), a male, road casualty, collected on 5 January 2004 by Boris Kryštufek.

**No locality:** 1 taxidermic mount (PMS 20491), unsexed, the meaning of the year (1871) on the label is not clear.

**Tabela 31.** Geografska zastopanost in preparati severnoafriških ženet *Genetta genetta* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

**Table 31.** Geographic representation and preparations of Common Genets *Genetta genetta* in the Mammal Collection of the Slovenian Museum of Natural History.

| Država<br>Country | Taksidermija<br>Taxidermy | Koža<br>Skin | Lobanja<br>Skull | Št. osebkov<br>No. individuals |
|---|---|---|---|---|
| Ethiopia | | | 1 | 1 |
| Republic of South Africa | | 1 | 1 | 1 |
| No locality | **1** | | | **1** |
| **Skupaj / Total** | **1** | **1** | **2** | **3** |

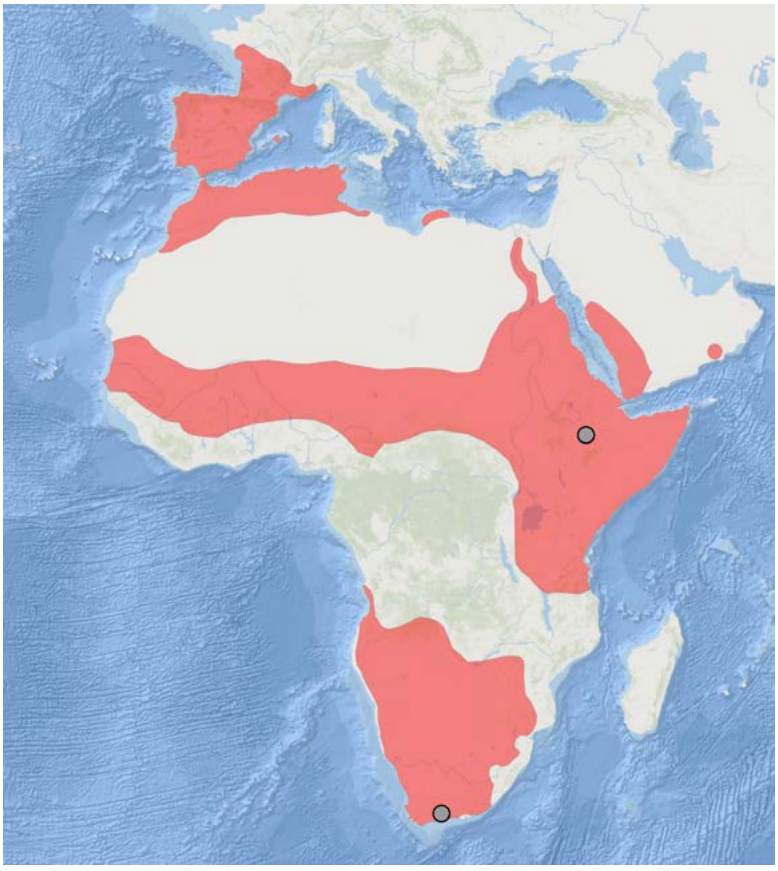
Primerek PMS 20491, ki je brez podatkov o lokaciji, je bil najverjetneje pridobljen iz naravoslovne zbirke kake srednje šole v Sloveniji, kar pa v Muzeju ni bilo dokumentirano. Na originalni etiketi je navedena »inv. št. Nr. A39 (prečrtano) BI2-7«, ki pa ni vpisana ne v Katalogu ne v Kartoteki. Dermoplastični preparat je močno obledel. Značilnosti kožuha, kolikor so še razvidne, so sledeče: za pleči je mediana dorzalna proga; pege na hrbtu in bokih so zlite; na repu je največ 8 svetlih obročev, ki so ožji od izmenjujočih se temnih obročev; notranja stran zadnjih nog je temna. Obarvanost primerka PMS 20556 je razvidna s slike 116.

Specimen PMS 20491 was most likely obtained from a natural history collection of a secondary school in Slovenia, but the acquisition remained unrecorded in the Museum. This taxidermic mount holds label with No. A39 (crossed) and No. B12-7, which are inscribed neither in the Catalogue nor in the Files. The mount is faded. The characteristics of the fur, as far as they can be seen, are as follows: -the median dorsal line is present behind the shoulder; spots on the back and on the hips are fused; the tail has eight light-coloured rings at the most, which are narrower than the alternating dark rings; the inner side of the hind legs is dark. The colouration of voucher PMS 20556 is shown in Figure 116.

**Tabela 32.** Zunanje in lobanjske dimenzije severnoafriških ženet *Genetta genetta* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije, *zunanje dimenzije izmerjene na dermoplastičnem preparatu, [def]konica repa manjka.

**Table 32.** External and cranial dimensions of Common Genets *Genetta genetta* in the Mammal Collection of the Slovenian Museum of Natural History, *external dimensions estimated from taxidermic mount, [def]tail top lacking.

| Country | PMS No. | Sex | Age | H&B | TL | HF | E | CbL | ZgB | IoC | UTR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethiopia | 5719 | / | Ad | / | / | / | / | 86,5 | 41,1 | 12,1 | 33,6 |
| Republic of South Africa | 20556 | ♂ | Ad | 480 | 455 | 86 | 55 | / | / | 13 | 34,7 |
| no locality | 20491* | / | Ad | 585 | 355[def] | 95 | D:44,5<br>L:41,5 | / | / | / | / |

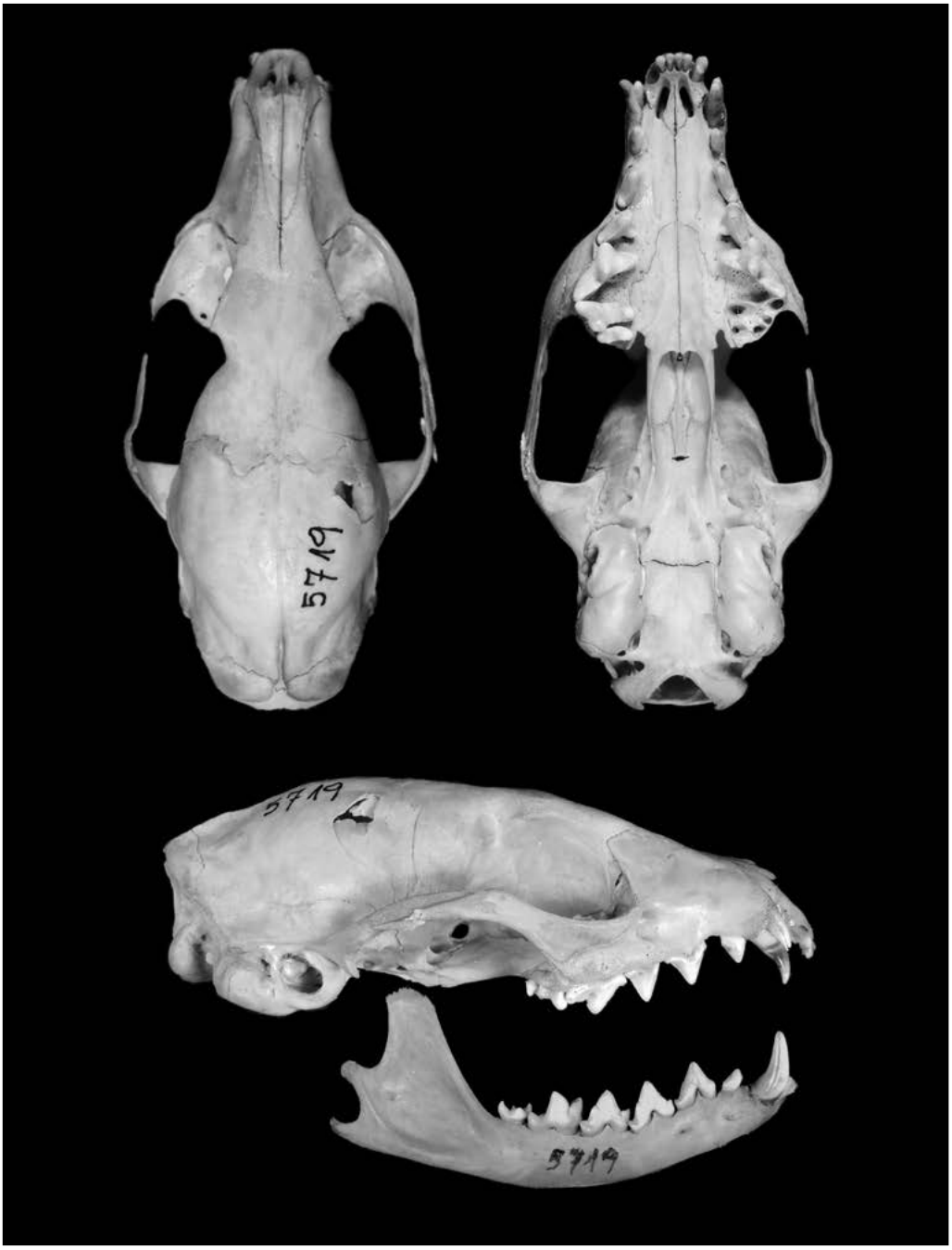


**Slika 113.** Geografski izvor severnoafriških ženet *Genetta genetta* iz Zbirke sesalcev v Prirodoslovnem muzeju Slovenije. Vir za območje razširjenosti je Gaubert et al. (2008).

**Figure 113.** Geographic origin of Common Genets *Genetta genetta* in the Mammal Collection of the Slovenian Museum of Natural History. Range of the species follows Gaubert et al. (2008).

**Slika 114.** Dermoplastični preparat severnoafriške ženete *Genetta genetta*, brez zgodovine; primerek PMS 20491. Foto: David Kunc

**Figure 114.** Taxidermic mount of a Common Genet *Genetta genetta;* without history; voucher PMS 20491. Photo: David Kunc




**Slika 115.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) severnoafriške ženete *Genetta genetta* iz Moja ob reki Awash pri Adis Abebi, Etiopija. Primerek PMS 5719, zbran 20. novembra 1960. Foto: Boris Kryštufek

**Figure 115.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Common Genet *Genetta genetta* from Mojo along the river Awash near Addis Ababa, Ethiopia. Specimen PMS 5719, collected on 20 November 1960. Photo: Boris Kryštufek

**Slika 116.** Koža severnoafriške ženete *Genetta genetta* iz Oudtshoorna v Zahodni Kapski provinci, Južnoafriška republika. Primerek PMS 20556, zbran 5. januarja 2004. Foto: David Kunc

**Figure 116.** Skin of a Common Genet *Genetta genetta* from Oudtshoorn in the Western Cape Province, Republic of South Africa. Specimen PMS 20556, collected on 5 January 2004. Photo: David Kunc


**Slika 117.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) severnoafriške ženete *Genetta genetta* (PMS 20556). Isti primerek, kot na sliki 116. Foto: Boris Kryštufek

**Figure 117.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Common Genet *Genetta genetta* (PMS 20556). Same specimens as in Fig. 116. Photo: Boris Kryštufek

# *Viverra zibetha* Linnaeus, 1758

## Velika indijska cibetovka

Zbirka

## Large Indian Civet

Collection

**India**: 1 taxidermic mount (PMS 22249), unsexed, no history.

Primerek PMS 22249 je brez podatkov o lokaciji, najverjetneje pa je bil pridobljen iz naravoslovne zbirke kake srednje šole v Sloveniji; pridobitev v Muzeju ni bila dokumentirana. Na originalni etiketi je navedena inv. št. No. 17, vendar pod to št. ni vpisana ne v Katalogu ne v Kartoteki.

Specimen PMS 22249 was most probably obtained from a natural history collection of a secondary school in Slovenia, but the acquisition remained unrecorded in the Museum. This taxidermic mount holds label No. 17, but is inscribed neither in the Catalogue nor in the Files.

**Tabela 33.** Zunanje dimenzije velike indijske cibetovke *Viverra zibetha* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije, izmerjene na dermoplastičnem preparatu.

**Table 33.** External dimensions of a Large Indian Civet *Viverra zibetha* in the Mammal Collection of the Slovenian Museum of Natural History, estimated from taxidermic mount.

| Country | PMS No. | Age | H&B | TL | HF | E |
|---|---|---|---|---|---|---|
| India | 22249 | Ad | 655 | 330 | 108 | D:33,6<br>L: 39,8 |


**Slika 118.** Dermoplastični preparat velike indijske cibetovke *Viverra zibetha* brez zgodovine; primerek PMS 22249. Foto: David Kunc

**Figure 118.** Taxidermic mount of a Large Indian Civet *Viverra zibetha* with no history; specimen PMS 22249. Photo: David Kunc

# *Paradoxurus hermaphroditus* (Pallas, 1777)

## Malajski musang

Zbirka

## Asian Palm Civet

Collection

**India:** 1 taxidermic mount (PMS 25661), unsexed, obtained from the Missionary Museum in Ljubljana. External dimensions, estimated from taxidermy: H&B and TL 540 mm; HF 71 mm.

Primerek malajskega musanga izhaja iz Indijskega misijonskega muzeja v Ljubljani in je prepariran kot plen pitona. Časnik »Slovenec« z dne 5. aprila 1934 poroča o » *zanimivi razstavi v ljubljanskem jezuitskem samostanu iz življenja in kulture bengalskih in indijskih domačinov ter iz ondotnega živalstva*«. Navaja tudi sledeči zapis o primerku PMS 25661:« … o*gromen udav, ki je prižel s svojo strahovito močjo ob hrapavo deblo gineto (neke vrste tigrasta mačka)… je prišla koža te kače iz Indije brez glave in ji je naš dvorni preparator Herfort glavo umetno zmodeliral, vendar tako, da se ji to sploh ne pozna*."

The taxidermic mount of Asian Palm Civet, prepared as prey of a Python, was gained from the Indian Missionary Museum in Ljubljana. The newspaper "Slovenec" published on 5 April 1934 a report on "an *interesting exhibition in the Missionary Museum in Ljubljana, dealing with the life and culture of Bengal and Indian native people as well as animals that live there."* It also cited the following record on the specimen PMS 25661: *"... a huge python which pressed a civet (some kind of a tabby cat) with its immense power against a rough trunk ...The skin of this snake was sent from India without a head, but our taxidermist Mr Herfort made an artificial model of the head in such a perfect way that it looked real."*


**Slika 119.** Dermoplastični preparat malajskega musanga *Paradoxurus hermaphroditus* (PMS 25661), prepariran kot plen, prejet od Indijskega misijonskega muzeja v Ljubljani (a - povečano v insertu, b – celoten preparat). Foto: David Kunc

**Figure 119.** Taxidermic mount of an Asian Palm Civet *Paradoxurus hermaphroditus* (PMS 25661), prepared as prey, gained from the Missionary Museum in Ljubljana (a - enlarged in the insert, b - entire mount). Photo: David Kunc

# Družina: Hyaenidae

## Hijene

Muzej hrani 4 primerke hijen, ki pripadajo trem vrstam iz treh različnih rodov (tabela 34). Hijene so bile zbrane v Južnoafriški republiki in iz ujetništva, za dva primerka pa ni podatkov o izvoru (tabela 35). V Zbirki so po ena lobanja in koža ter dva starejša dermoplastična preparata.

# Family: Hyaenidae

## Hyenas

The Museum is in possession of four vouchers from three species and three genera (Table 34). They originate from the Republic of South Africa and from captivity, while for two specimens no locality is known (Table 35). In the Collection we keep two skulls, two skins and two older taxidermic mounts.

**Tabela 34.** Taksonomska zastopanost in preparati hijen Hyaenidae v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

**Table 34.** Taxonomic representation and preparations of hyenas Hyaenidae in the Mammal Collection of the Slovenian Museum of Natural History.

| Vrsta<br>Species | Taksidermija<br>Taxidermy | Koža<br>Skin | Lobanja<br>Skull | Št. osebkov<br>No. Individuals |
|---|---|---|---|---|
| *Hyaena hyaena* | 2 | | | 2 |
| *Crocuta crocuta* | | | 1 | 1 |
| *Proteles cristata* | | 1 | | 1 |
| **Skupaj / Total** | **2** | **1** | **1** | **4** |

**Tabela 35.** Geografska zastopanost hijen Hyaenidae v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.

**Table 35.** Geographic representation of hyenas Hyaenidae in the Mammal Collection of the Slovenian Museum of Natural History.

| Država<br>Country | Št. vrst<br>No. species | Št. osebkov<br>No. individuals |
|---|---|---|
| Rep. of South Africa (RSA) | 1 | 1 |
| iz ujetništva /from captivity | 1 | 1 |
| brez nahajališča /no locality | 2 | 2 |
| **Skupaj / Total** | **3** | **4** |

# *Hyaena hyaena* (Linnaeus, 1758)

## Progasta hijena

ZBIRKA

## Striped Hyena

COLLECTION

**From captivity**: 1 taxidermic mount (PMS 20072), a female, collected on 10 October 1898 at Rašica, donated by Baron Lichtenberg, in 1922 catalogued under #256 in the CATALOGUE.

**No locality:** 1 taxidermic mount (PMS 20483), unsexed; the meaning of the year (1897) on the label is not clear.

Primerek PMS 20072 je kot darilo Barona Lichtenberga MUZEJU omenjen na strani 184 *Poročila o delovanju kranjskega deželnega odbora za dobo od 1. oktobra 1897 do konca septembra 1898*. V KATALOGU je bil inventariziran šele leta 1922, in sicer s pripisom »iz stare zaloge«, kot čas razstave pa je navedeno leto 1898. Preparat je omenjen v *Vodiču po zbirkah Prirodoslovnega muzeja v Ljubljani* iz leta 1949; razstavljen je bil v dvorani X, v omari št. 53, kot tudi že v predhodnem V*odniku po zbirkah Narodnega muzeja v Ljubljani; Prirodopisni del* (KOS, 1933). Ob preureditvi razstavnih zbirk v 50-ih letih je bila dermoplastika umaknjena v nekakšen improviziran »depo« na desni strani velike gozdne diorame.

Zanimiva je zgodba o pridobitvi tega primerka. Progasta hijena je aprila 1898 pobegnila iz menažerije Schulze v Ljubljani. V začetku septembra so jo prvič opazili na Rašici pri Črnučah, kjer jo je približno mesec dni kasneje, 9. oktobra 1898, ustrelil lovski nadzornik Franc Aleš. Šlo je za 25 kg (56 funtov) težko samico. V njenem želodcu so bili ostanki koruznih storžev in kurja peresa. O »redkem lovskem plenu« so poročali v časopisju. Med drugim so zapisali (ANONYMOUS, 1898): »*... da se je potikala po Rašiški hosti neka čudna zver, ktere ni nobeden poznal, a vsakdo se je je bal, še psi so se skrivali pred njo. Držala se je blizu vasi, menda v nadi, da se tukaj lože dobi kaj za lačni želodec. Ljudje, ki so jo večkrat opazili, so rekli: "To ni volk, ni pes, ni lisica!" Kaj pa je toraj ?...*« Baron Lichtenberg, ki je imel zakupno pravico za lov na območju Rašice, je hijeno podaril Kranjskemu deželnemu muzeju.

The PROCEEDINGS for the period from 1 October 1897 to the end of September 1898 (p. 184) quotes specimen of a Striped Hyena (PMS 20072) as a gift by Baron Lichtenberg to the MUSEUM. In the CATALOGUE, this taxidermic mount was recorded as late as in 1922 with a notice: "*from the old stock*", and with 1898 as the year of the exhibition. The specimen is mentioned in the *Guide through the collections of the Museum of Natural History in Ljubljana* (published in 1949); it was exhibited in hall X, cabinet No. 53. It was also mentioned in the preceding *Guide through the collections of the National Museum in Ljubljana, Natural-history* (KOS, 1933). When a major reconstruction of the museum's displays in the 1950s took place, the mount was withdrawn into an improvised "depository" on the right side of a large "forest" permanent display.

An interesting story associates with the acquisition of this specimen. In April 1898, a Striped Hyena escaped from the Schulze menagerie, which was visiting Ljubljana at that time. In the beginning of September it was first seen on Rašica Hill near Črnuče where, about a month later (on 9 October 1898) hunting supervisor Franc Aleš shot it. It was a 25kg (56 pounds) heavy female. Her stomach contained residues of corncobs and hen's feathers. The newspapers reported on "a *rare hunting game*", among others (ANONYMOUS, 1898): »*... there was a strange beast in the Rašica forest, which was totally unknown to all, but everyone was terribly afraid of it, and even dogs were hiding from this beast. It stayed near the village in hope there would be something for its hungry stomach. People who have seen it several times said: "This is not*

Primerek PMS 20483, ki je brez podatkov o lokaciji, je bil najverjetneje pridobljen iz naravoslovne zbirke kake srednje šole v Sloveniji, pridobitev pa v Muzeju ni bila dokumentirana. Na originalni etiketi je navedeno leto 1897 in inv. št. NrA745 (prečrtano) BI2 – 8, ki pa ni vpisana ne v Katalogu ne v Kartoteki. Preparat je v slabem stanju in velik del dlake je izpadel.

*a wolf, not a dog and not a fox!" So what is it then?*» Baron Lichtenberg, who had a hunting lease in the Rašica Hill area, donated the Hyena to the Provincial Museum for Carniola.

Specimen PMS 20483 was most probably obtained from a natural history collection of a secondary school in Slovenia, but the acquisition remained unrecorded in the Museum. This taxidermic mount holds a label with two numbers, i.e. NrA745 (crossed) and BI2 - 8, but they are inscribed neither in the Catalogue nor in the Files. The mount is in poor condition and much of the hair has fallen out.

**Tabela 36.** Zunanje dimenzije progastih hijen *Hyaena hyaena* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije, izmerjene na dermoplastičnih preparatih. *Dolžina grive (merjena na sredini hrbta).

**Table 36.** External dimensions of Striped Hyenas *Hyaena hyaena* in the Mammal Collection of the Slovenian Museum of Natural History, estimated from taxidermic mounts, *measured in themed-back.

| Country | PMS No. | Sex | Age | W | H&B | TL | HF | E | Length of mane* |
|---|---|---|---|---|---|---|---|---|---|
| from captivity | 20072 | ♀ | ad | 25000 | 1180 | 295 | 210 | 125 | 140-160 |
| no locality | 20483 | / | sad | / | 860 | 185 | 165 | 104 | 120-150 |

**Slika 120.** Dermoplastični preparat progaste hijene *Hyaena hyaena;* brez zgodovine; primerek PMS 20482. Foto: David Kunc

**Figure 120.** Taxidermic mount of a Striped Hyena *Hyaena hyaena*; without history; specimen PMS 20482. Photo: David Kunc


**Slika 121.** Dermoplastični preparat progaste hijene *Hyaena hyaena*, ki je aprila 1898 pobegnila iz menažerije Schulze, gostujoče v Ljubljani, in je bila 9. oktobra 1898 ustreljena na Rašici pri Črnučah; primerek PMS 20072. Foto: Ciril Mlinar

**Figure 121.** Taxidermic mount of a Striped Hyena *Hyaena hyaena*, which escaped from menagerie Schulze while visiting Ljubljana in April 1898 and was shot at Rašica near Črnuče on 9 October 1898; voucher PMS 20072. Photo: Ciril Mlinar

# *Crocuta crocuta* (Erxleben, 1777)

## Lisasta hijena

Zbirka

## Spotted Hyena

Collection

**No locality**: 1 skull (PMS 22043), unsexed, catalogued under #187 and / or #188 in the Catalogue; exhibited in 1876, obtained from Karel Schaffer.

Lobanja lisaste hijene je razstavljena v vitrini z osteološko zbirko. V Katalogu je pod inventarno št. #187 prvotno naveden zapis za lobanjo hijene, naknadno pa sta mu dodana pripisa »*napačno*« in »*volčja lobanja*«, kot nahajališče je navedena le Afrika. Pod inv. št. #188 je v Katalogu prvotno zaveden medved, z dodanima pripisoma »*napačno*« in »*lisasta hijena, lobanja*«. Pri obeh omenjenih inventarnih številkah je kot čas razstave navedeno leto 1876, v razpredelku »*sprejeto po*« pa je naveden »Kapt. Schaffer«. V Kartoteki je pod št. #187 zavedena lobanja volka, pod št. #188 pa lobanja lisaste hijene; na lobanji in na etiketi podstavka je zapisana št. 188.

Karel Schaffer se je rodil leta 1831 v Sežani. Po končani Vojnopomorski akademiji v Trstu, kjer je diplomiral leta 1848, je plul na različnih ladjah po vsem svetu in v avstroogrski vojni mornarici postopoma napredoval do čina kontraadmirala. Kasneje je postal tudi načelnik vojaške pomorske akademije na Reki. Med drugim je poveljeval eni od bojnih ladij znamenite »meksikajnarske« ekspedicije nadvojvode Maksimiljana Ferdinanda Habsburškega, mlajšega brata avstrijskega cesarja Franca Jožefa. Postal je Maksimiljanov osebni tajnik in bil skupaj z njim v Mehiki obsojen na smrt, vendar ga je njegova premožna mehiška soproga odkupila od revolucionarnih oblasti in ga na trgovski ladji pretihotapila v Evropo (Pahor, 1977). Kranjski deželni muzej je poleg lobanje lisaste hijene od Schafferja prejel tudi lobanjo povodnega konja (PMS 16407, v Katalogu #157; leto razstave 1881), ki ga je uplenil na vzhodnoafriški subekvatorialni obali (Deschmann, 1888).

The skull of the Spotted Hyena is part of the museum's osteological exhibition. The Catalogue under #187 originally quoted the skull of the Hyena, but later on the notes "*wrong*" and "*a Wolf skull*" were added. Only Africa is listed as the location. Under #188 the Catalogue originally quoted a Bear skull, while latter on the notes "*wrong*" and "*Spotted Hyena skull*" were added. In both cases, 1876 as the year of the exhibition, and Capt. Schaffer in the column "accepted from" are stated. The Files under #187 holds a Wolf skull and under #188 a Spotted Hyena skull. The specimen itself and the label of its pedestal are marked No. 188.

Karel Schaffer was born in Sežana in 1831. After graduating from the Military Academy in Trieste in 1848, he sailed aboard various ships all over the world, and in the Austro-Hungarian Navy gradually achieved the rank of Rear Admiral. Later, he became the Head of the Naval Academy in Rijeka. Schaffer commanded one of the battleships of the famous "Mexican" expedition led by Austrian Archduke Maximilian Ferdinand, the younger brother of the Austrian Emperor Franz Joseph. Schaffer became Maximilian's personal secretary and was sentenced to death in Mexico, but his wealthy Mexican wife redeemed him from the revolutionary authorities and smuggled him to Europe on a merchant ship (Pahor, 1977). In addition to the skull of the Spotted Hyena, the Provincial Museum for Carniola also received from Schaffer the skull of a Hippopotamus (PMS 16407, in the Catalogue under # 157 and year of exhibition 1881), which he personally shot on the East African subequatorial coast (Deschmann, 1888).

**Slika 122.** Lobanja (hrbtna, bočna in trebušna stran) in spodnja čeljustnica (bočno) lisaste hijene *Crocuta crocuta.* Primerek PMS 22043; zbral Karel Schaffer, v Katalogu zavedena pod #187ali #188 in letom razstave 1876. Foto: David Kunc

**Figure 122.** Skull (dorsal, lateral and ventral views) and mandible (lateral) of a Spotted Hyena *Crocuta crocuta.* Specimen PMS 22043, collected by Karel Schaffer, originally catalogued as #187 or #188, exhibited in 1876. Photo: David Kunc

**Tabela 37.** Lobanjske dimenzije progaste hijene *Crocuta crocuta* v Zbirki sesalcev Prirodoslovnega muzeja Slovenije.
**Table 37.** Cranial dimensions of a Spotted Hyena *Crocuta crocuta* in the Mammal Collection of the Slovenian Museum of Natural History.

| Country | PMS No. | Age | CbL | ZgB | IoC | UTR |
|---|---|---|---|---|---|---|
| no locality | 22043 | ad | 250 | 176,7 | 63,8 | 101,4 |

**Slika 123.** Kranjski deželni muzej, iz katerega izhaja Prirodoslovni muzej Slovenije, je lobanjo lisaste hijene (PMS 22043) prejel od Karla Schafferja (1831–1904) iz Sežane, kontraadmirala avstroogrske vojne mornarice. Vir: Fotodokumentacija Pomorskega muzeja "Sergej Mašera" Piran, inv. št. P 3953

**Figure 123.** Provincial Museum of Carniola, a direct predecessor of the Slovenian Museum of Natural History, obtained the skull of a Spotted Hyena (PMS 22043) from Rear Admiral Karel Schaffer (1831–1904) from Sežana. Photo: Pomorski muzej (Maritime Museum) "Sergej Mašera" Piran, Inv. No. P 3953

# *Proteles cristata* (Sparrman, 1783)

## Pižmova hijena

## Aardwolf

Zbirka

Collection

**Republic of South Africa**:
Eastern Cape Province: 1 skin (PMS 19209), unsexed, purchased in 2005 on the marketplace in Fort Beaufort by Boris Kryštufek. Skin measures 48 cm in length and 28 cm in width.

**Slika 124.** Koža pižmove hijene *Proteles cristata* iz Južnoafriške republike; primerek PMS 19209, pridobljen 2005. Foto: David Kunc

**Figure 124.** Skin of an Aardwolf *Proteles cristata* from the Republic of South Africa; specimen PMS 19209, acquired in 2005. Photo: David Kunc

## Zahvale

Zahvaljujeva se vsem, ki so prispevali primerke za Zbirko sesalcev Prirodoslovnega muzeja Slovenije. Posebna zahvala gre mag. Janezu Černaču in Janezu Čopu za podarjeni lobanji risov.

Pri pripravi kataloga sva bila deležna pomoči mnogih posameznikov; našteti so po abecednem redu: dr. Dragan Božič (Inštitut za arheologijo ZRC SAZU, Ljubljana) je razbral star zapis; dr. Božidar Flajšman (Oddelek za zgodovino Filozofske fakultete Univerze v Ljubljani) je posredoval razglednico z motivom eksponata tigra, razstavljenega v Indijskem misijonskem muzeju v Ljubljani; dr. Marko Frelih (Slovenski etnografski muzej, Ljubljana) je posredoval informacijo o letih delovanja Indijskega misijonskega muzeja v Ljubljani; doc. dr. Dani Ivanjšič (Oddelek za biologijo Fakultete za naravoslovje in matematiko Univerze v Mariboru) je pomagal oblikovati zemljevide; David Kunc in Ciril Mlinar (Prirodoslovni muzej Slovenije, Ljubljana) sta fotografirala kože, dermoplastike in nekatere lobanje primerkov iz zbirke; asist. dr. Hubert Potočnik (Oddelek za biologijo Biotehniške fakultete Univerze v Ljubljani) je posredoval informacijo o genetsko določenih primerkih mačk; dr. Nadja Terčon (Pomorski muzej »Sergej Mašera« Piran) je posredovala fotografijo Karla Schafferja; doc. dr. Julijana Visočnik (Nadškofijski arhiv v Ljubljani) je omogočila delo v Nadškofijskem arhivu v Ljubljani; prof. dr. Bojan Zorko, prof. dr. Modest Vengušt in Fahrudin Botonjić (Veterinarska fakulteta univerze v Ljubljani) so omogočili rentgensko slikanje dermoplastičnih preparatov.

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# Pregled nahajališč

Koordinate so v formatu WGS 84

Okrajšave:
BiH Bosna in Hercegovina
RSAJužnoafriška republika

# Geographic Gazetteer

Coordinates are in WGS 84 format.

Abbreviations:
BiH Bosnia and Herzegovina
RSA Republic of South Africa

| **Država**<br>Country | **Nahajališče**<br>Locality | **Zemlj. širina**<br>Latitude | **Zemlj. dolžina**<br>Longitude |
|---|---|---|---|
| Slovenia | Adlešiči | 45.51666 | 15.30000 |
| Slovenia | Bela krajina | c.45.53333 | c.15.2000 |
| Slovenia | Bistra | 45.93333 | 14.33333 |
| Slovenia | Bohinjska Bela | 46.33333 | 14.05000 |
| Slovenia | Borovnica | 45.91666 | 14.35000 |
| Slovenia | Črniče | 45.90000 | 13.76666 |
| Slovenia | Godovič | 45.95000 | 14.08333 |
| Slovenia | Goričice (Cerknica) | 45.73773 | 15.42147 |
| Slovenia | Jakob pri Šentjurju | 46.18460 | 15.39659 |
| Slovenia | Jasnica | 45.69135 | 14.78942 |
| Slovenia | Jereka (Bohinj) | 46.28333 | 13.95000 |
| Slovenia | Kastelec – Kozina | 45.58333 | 13.91666 |
| Slovenia | LD Loški potok | 45.68231 | 14.61031 |
| Slovenia | LD Nomenj - Gorjuše | 46.28747 | 14.01705 |
| Slovenia | LD Pivka | 45.66666 | 14.28333 |
| Slovenia | Ljubljanski vrh | 45.91666 | 15.28333 |
| Slovenia | Ljubljansko barje (Ižanska road; near the turn to Iška Loka) | 45.98333 | 14.51666 |
| Slovenia | Logatec (vicinity) | 45.91666 | 14.21666 |
| Slovenia | Loški potok – Draga | 45.65874 | 14.62927 |
| Slovenia | Nomenj (Bohinj) | 46.28333 | 14.00000 |
| Slovenia | Notranje Gorice | 45.98333 | 14.38333 |
| Slovenia | Ortnek | 45.78783 | 14.68192 |
| Slovenia | Pajkež (Travni dol pri Uršnih selih, Dolenjske Toplice) | 45.69504 | 15.11695 |
| Slovenia | Podnanos | 45.85372 | 14.00925 |
| Slovenia | Potiskavec (Videm, Dobrepolje) | 45.78333 | 14.75000 |
| Slovenia | Rašica | 46.13333 | 14.50000 |
| Slovenia | Rebrnice (Podnanos) | c.45.76666 | c.14.01666 |
| Slovenia | Rodine (LD Črnomelj) | 45.58333 | 15.13333 |
| Slovenia | Sodražica – Žimarice | 45.76666 | 14.61666 |
| Slovenia | Spodnji Boštanj (Sevnica) | 46.00000 | 15.28333 |
| Slovenia | Sveta Katarina (Karavanke Mts.) | not identifiable | |
| Slovenia | Sveti Pavel (Drskovče) | 45.65030 | 14.22285 |
| Slovenia | Trnovski gozd | c.45.9500 | c.13.8500 |
| Slovenia | Velika gora (Konfinska) | 45.65342 | 14.74247 |
| Slovenia | Velika gora (Zakristinc) | 45.72296 | 14.69165 |
| Slovenia | Vipava | 45.83333 | 13.95000 |
| Slovenia | Vnanje Gorice | 46.00000 | 14.41666 |

| **Država**<br>Country | **Nahajališče**<br>Locality | **Zemlj. širina**<br>Latitude | **Zemlj. dolžina**<br>Longitude |
|---|---|---|---|
| Slovenia | Vojna vas (Črnomelj) | 45.56666 | 15.20000 |
| Slovenia | Vrh nad Želimljami (Gradišče) | 45.91385 | 14.58564 |
| BiH | Drvar | 44.36666 | 16.36666 |
| Croatia | Blato (Korčula Is.) | 42.93333 | 16.78333 |
| Croatia | Smokvice (Korčula Is.) | 42.92738 | 16.88905 |
| Croatia | Banja (Smokvice, Korčula Is.) | 42.921083 | 16.88880 |
| Croatia | Smokvice (vicinity) (Korčula Is.) | 42.91366 | 16.91927 |
| Croatia | Savudrija | 45.48333 | 13.50000 |
| Ethiopia | Mojo (Addis Ababa) | 8.58333 | 39.11666 |
| Ethiopia | Awasa | 7.18333 | 38.55000 |
| India | Teraj (Himalaya) | c.26.4000 | c.85.03333 |
| Israel | Lower Galilee | 32.73333 | 35.45000 |
| Lebanon | Sir el-Donnieh | 34.38333 | 36.01666 |
| Macedonia | Gavran (Pelister) | 40.96666 | 21.10000 |
| Macedonia | Demir Kapija | 41.40000 | 22.23333 |
| Morocco | Agafaye (NE of Agadir) | 30.51070 | -9.28016 |
| Morocco | Akka | 29.38862 | -8.24376 |
| RSA | Eastern Cape Province | -32.76666 | 26.66785 |
| RSA | Fort Brown; 4 km SE (Makhanda (ex Grahamstown), Eastern Cape Province) | -33.11666 | 26.61666 |
| RSA | Lady Grey; 5 km W (Eastern Cape Province) | -30.70000 | 27.20000 |
| RSA | Oudtshoorn (West Cape Province) | -33.59307 | 22.20367 |
| Serbia | Deliblatska peščara | 44.85000 | 21.08333 |
| Serbia | Kačanik (Šar planina) | 42.21666 | 21.25000 |

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# Professor Jan Zima

## 14 August 1952 - 26 March 2019

Photo: Jaroslav Červený

On Tuesday, March 26th, 2019, Jan Zima peacefully passed away on his home in the district of Bystrc, city of Brno, Czech Republic. The previous evening he was still working, but needed urgent medical help on Tuesday morning. The intervention arrived too late. Despite this, there was probably little left what medical could still do. In 2015, Jan (Honza to his friends) was diagnosed with an invasive type of cancer. The surgery, which followed in the autumn, first raised hopes but it soon became apparent that the disease could not be cured. Since then, Honza's health steadily deteriorated. He was well aware that his chances were poor, and carried this burden most stoically, never complaining but fully controlling his emotions. Wholly in line with his character, Honza resumed his duties shortly after the surgery and continued to work hard till the very last day of his life. The funeral was on April 3rd, and the urn was placed in a cemetery at Klínec, a village near Prague. Honza was survived by his wife Irena, two daughters (Marketa and Barbora), son Jan, and ten grandchildren.

Honza was born on 14 August 1952 in Prague, in the Czech part of what was then still Czechoslovakia. His father made a name in research on electronics and radio communications, and one of his grandfathers published extensively on agricultural issues. The other grandfather, who was collecting butterflies and beetles, introduced Honza to natural history. Honza attended a secondary school in Prague. At that time he was playing ice-hockey, although, in his own words, he had never been too enthusiastic about sports. He was also prone to forbidden pleasures and once the schoolmaster caught him smoking in ladies' toilet. The socialistic Czechoslovakia offered youngsters a variety of organized activities and Honza joined a naturalist club for youth. There he met Ivan Horáček and Jaroslav Červený, both of whom also made respectful academic careers in mammalogy and became his life-long friends. The club regularly organised trips and summer

expeditions throughout the former Czechoslovakia. At that time, Honza was already firmly in the grasp of natural history, at first geology and speleology, but finally decided to opt for life sciences. In 1970 he won the national competition at the Biological Olympics, and entered in that same year the Faculty of Science at the Charles University. He graduated from biology in 1975. The topic of his diploma thesis was chromosomal research in bats and in decades to follow Honza made his name from mammalian karyology more than from any other biological disciplines. In 1981, Honza defended his doctoral thesis under the tutorship of Professor Oldřich Štěrba and submitted his DSc thesis at the Academy of Sciences in the mid-1990s.

Honza's first position was at the Institute of Vertebrate Zoology of the Czechoslovak Academy of Sciences in Brno and he worked there from 1976 to 1993. At that time, the Director Joseph Kratochvíl succeeded to position the Institute among the leading institutions in mammal research in Europe. In 1978, the Institute organized the 2nd International Theriological Congress which gathered mammalogists from all five continents. Honza, as a member of the organizing committee, actively went through all stages of organising a large international meeting. His organizational skills soon became apparent and appreciated. But perhaps more importantly, he made international contacts which were crucial for his future career. In his own words, it was the Congress which placed him on the international stage of mammalogy. Perhaps more correctly, Honza was capable of making the best of the opportunities he had. The World was still polarized in those times and divided by the Iron Curtain which put scientists on to the eastern side in disadvantageous position. Be it as it may, while the international contacts opened the door for Honza to the international science, his organizational skills, brilliancy in execution of tasks, capability of working long and hard, and scientific competency, provided for promotions also at the Institute itself. In addition to technical skills, Honza was also a patient interlocutor and people liked working with him and under his guidance. He was a born leader. Unsurprisingly, Honza soon assumed a duty of Scientific Secretary. Between 1993 and 1998, he was appointed Head of laboratory at the Institute of Animal Physiology and Genetics of the Academy of Sciences in Brno, but he returned in 1998 to the Institute of Vertebrate Zoology, now operating under the name Institute of Vertebrate Biology. First, he served as Chairman of the Scientific Board but was appointed as Director in March 2000. In 2009, he was elected a Member of the Academy Council of the Academy of Sciences of the Czech Republic and kept the office until 2017. In the mid-1990s, Honza submitted his DSc thesis at the Academy of Sciences and the habilitation thesis at the Charles University (in 1997). In 2004, he was elected Full Professor at the Masaryk University in Brno.

Throughout most of his career, Honza was simultaneously a researcher, organizer, administrator and decision maker, as well as university teacher and supervisor of MSc and PhD projects. Active research, however, was at all times in front of other matters. Comparative and evolutionary cytogenetics of mammals captured his interest while still an undergraduate student and some of his very last papers were still in karyology. Honza certainly had a deep knowledge in cytogenetics and an ample first-hand experience in the topic. His real interest, however, lay in mammals. In his eyes, chromosomal information was useful in defining mammalian taxa as objectively as possible and in allowing deeper insight into phylogenetic relationships at different levels of taxonomic organization. One should keep in mind that Honza started his career long before the advent of PCR amplifications and genome sequencing. In early 1970s, cytogenetics was among the few research methods available for detecting cryptic species and hybrid zones. Unsurprisingly, Honza was particularly attracted by chromosomal polymorphism in a common shrew *Sorex araneus*, taxonomic diversity among morphologically similar *Microtus* voles, and the presence of supernumerary (*B*) chromosomes in *Apodemus* mice. Chromosomal variation in common shrew was at those times a topic of immense interest among mammalogists. Shrews provide and early evidence that morphologically similar mammals can be profoundly different genetically. Or to put

**Jan Zima** with his wife Irena during the conference "Zoological Days" (Zoologické dny). Brno, February 2011. Photo: Jaroslav Červený

it differently, it became clear that there were more species of mammals that traditional taxonomy, based on morphology and museum vouchers, was capable to detect. It was the time that put an end to the "taxonomic inertia", personified in the influential synthesis on the Palaearctic Mammals by Ellerman & Morrison-Scott (1951). Mammalogists simply had to start thinking differently and chromosomal research was opening new horizons. Through a study of chromosomes we were gaining a more realistic perception of mammalian diversity at the species level. In those dynamic years, Honza was a prominent actor in research. He actively worked on the karyology of nearly every genus of European mammals, described for the first time the karyotype in about 20 species of mammals, and participated in the descriptions of nine new chromosomal races of the common shrew. As an excellent field biologist, Honza trapped a significant proportion of small mammals which he karyotyped. He attended a number of expeditions to various parts of Europe (besides Czech Republic and Slovakia, also to Romania, former Yugoslavia, Poland, and Ukraine), Central Asia (Kirghizstan, Tian Shan and Pamir Mts), Siberia (a journey from the Ural Mts to Lake Baikal), and Mongolia. He karyotyped animals in the field, employing the so-called direct method which was a smart modification (actually a simplification) of a protocol developed in American laboratories in the 1950s. All the steps were made as simple as possible and the most sophisticated part of field equipment was a hand-powered centrifuge. The entire field laboratory fitted into a not very voluminous Honza's grey back-pack, still leaving just enough space for a shirt or two, some underwear, few socks, basic personal necessities, a few wooden live-traps (domestic Chmela type) and a meat can for the just in case. With that grey back-pack, Honza left his home in Brno many times, not returning for weeks or even months. *Omnia mea mecum porto* was his maxim and on one occasion he walked, loaded with that grey back-pack, all the way from Novosibirsk to Akademgorodok, a distance of about 30 km.

Honza never had time in excess. I remember our conversation in November 1989 at his home in Brno when Honza was already a Scientific Secretary. He told me how the mornings were spent for administration and meetings, afternoons for laboratory work, and evenings for writing papers. Since then his responsibilities multiplied and it is a mystery how he managed to draft such an impressive array of textbooks, manuals, monographs and research papers. His younger colleagues from the Institute in Brno compiled bibliographic list at the occasion of Honza's 60th anniversary of birth. The list, attached to the Preface to Honza's festschrift which I was invited to

**Jan Zima** loved simple, nomadic life in the field. Here he is preparing a meal between two field sessions. Mersin Province, Turkey, October 1993. Photo: Boris Kryštufek

draft (Kryštufek 2012), contains titles of 13 books and monographs, 23 book chapters, 7 edited proceedings, 103 research papers in journals indexed in the Web of Science, and 66 papers in other journals and conference proceedings. Honza co-authored papers with almost 300 researchers from at least 20 different countries (alphabetically): Austria, Czech Republic, France, Germany, Great Britain, Israel, Italy, Japan, Macedonia, Poland, Russia, Slovakia, Slovenia, South Africa, Sweden, Switzerland, The Netherlands, Turkey, Ukraine, and the United States. His research papers appeared in many respected journals, e.g. Annales Zoologici Fennici, Biological Journal of the Linnean Society, Canadian Journal of Biology, Caryologia, Comparative Cytogenetics, Cytogenetics and Cell Genetics, Evolution, Folia Zoologica, Hereditas, Journal of Mammalogy, Journal of Zoological Systematics and Evolutionary Research, Journal of Zoology (London), Mammalia, Mammalian Biology, Molecular Phylogenetics and Evolution, Proceedings of the National Academy of Sciences, and Proceedings of the Royal Society London. Some of his books and monographs are legendary. Mammals of Europe, North Africa and the Middle East (Aulagnier et al. 2008 and subsequent editions), reprinted many times in six European languages, is one of the most popular field guides. Highly influential were reviews on Karyotypes of European Mammals (Zima & Kràl 1984) published in three volumes and covering all mammals on the continent to the west of Ural Mts. This remains a standard work on the topic and is still widely cited.

Besides his active engagement in research, Honza was highly effective organizer and scientific administrator. He managed to navigate two institutes of the Academy of Science through troublesome transitional years. As Director of the Institute of Vertebrate Biology, Honza ensured its scientific excellence through setting research priorities, a skilful and far-sighted support for young scientists and investment into research infrastructure. During the last ten years of life, Honza acted as a member of the Academy Council, and therefore effectively co-supervised and directed Czech Science. Simultaneously, Honza has been a member of scientific councils at eight universities and faculties and at four research institutions in the Czech Republic. He also served as a chairman or a member of supervisory boards at other six research institutes of the Academy of Sciences. Between 1978 and 2011, Honza was active in organising 17 international scientific meetings, either as a (co)organiser, member of organising or scientific committees, or convener of thematic sessions. One of the most prominent events was the organization of the 4th European

**Jan Zima** was particularly interested in chromosomes of shrews. These tiny mammals die quickly in traps, hence trap lines have to be visited during the night. Here Jan is checking a Rödl live trap (nicknamed Rédlovka) which was widely used in former Czechoslovakia. Meryemana above Trabzon, Turkey, October 1993. Photo: Boris Kryštufek

Congress of Mammalogy in 2003. At the faculties of science of the Charles University and the Masaryk University in Brno Honza has been lecturing vertebrate zoology, biological diversity, evolutionary biology, and genetic methods in zoology. He advised 27 students for final MSc or PhD theses at three universities in the Czech Republic, and served as a reviewer or external examiner for PhD theses at various universities in Switzerland, Sweden, UK, Ukraine, France, Germany, and India. He also co-authored several excellent textbooks in Czech language, most notably the "Vertebrate Zoology" (Gaisler & Zima 2007; 3rd edition was released in 2018) and "Genetic methods in systematic zoology" (Zima et al. 2004). Besides, Honza was the Editor in Chief of the international journal Folia Zoologica. At each of these numerous positions, he was willing to give support beyond the call of his duties. The responsibilities put great pressures upon Honza although, characteristically, he never complained or talked much about problems and the stress to which he was exposed. Although he always fully controlled his emotions, the exhaustion was plainly visible. During winter months Honza, tired as he was, was looking forward to summer holidays which he always spent with the entire family. This was evidently the most joyful event keeping him up for the rest of the year.

I met Honza in summer 1987 during the 4th European Bat Conference in Prague. It was in the welcome party, hosted by Professor Vladimír Hanák, the Chairman of the organizing Committee. The environment of the ancient Karolinum and the excellent service were promising an enjoyable evening, however, they proved to be much more to me. During that evening I established life-long contacts with several Czech mammalogist of my age and Honza was one of them. After a few introductory sentences we quickly found points of common interest and communicated with ease. This was the beginning of a friendship which deeply influenced my life, career and way of thinking. We regularly met during my frequent visits to Brno and Prague, and occasionally Honza appeared in Ljubljana. In those days we also organized several memorable field trips to the Balkans and Asia Minor. We were staying in the field for up to a month, all the time wandering from one place to another in search of mammals. We stayed together days and nights, sharing pleasures of evenings around a campfire, simple self-made meals from the same pot, and shivering in long chilly nights under the open sky. This simple nomadic life, more than worth of living it, additionally strengthened our friendship. Conversations with Honza were far beyond purely zoological issues. Among others, Honza had deep knowledge in history, particularly of the Czech

**Hundreds of** small mammals were karyotyped in this kind of improvised field laboratory. Jan Zima at work in October 1993 near Zonguldak, Turkey. Photo: Boris Kryštufek

Lands. Bohemia abounds with historical places and I experienced many of them in company of Honza. This gave visits a species flavour, like dinners in the restaurant "Napoleon" in Brno where Napoleon allegedly stayed before the battle at Slavkov (Austerlitz). Of course, Honza took me to this battle place not far from Brno, and from one of the hills explained in great detail how Napoleon achieved his greatest victory in the Battle of the Three Emperors on 2 December 1805. There were other memorable experiences with historic taste as well. In the1980s, the Academy of Sciences still maintained an apartment for visiting scientists in the former Augustinian monastery where Gregor Mendel lived and worked. I had a privilege to stay in the monastery during my visits to Brno, and hiking through the gardens where Mendel performed his experiments which founded modern genetics. One chilly morning, it was 28 November 1989, I left Mendel's monastery, shook hands with Honza in front of the Institute of Systematic and Ecological Biology (as the Institute of Vertebrate Zoology was called at that time), and the driver of the Institute took me to the Prague airport. That same evening the news broadcasted that the Czechoslovak Communist Party announced to hand over the power and dismantle the single party state. The velvet revolution started a week earlier and I witnessed those turbulent days as Honza's guest. A year and a half later, in June 1991, Honza and Miloš Macholán accompanied me at a collecting trip to Macedonia. In a late morning of June 27, while camping in a magnificent molika (*Pinus peuce*) forest on a slope of Mt Pelister, we heard from our car radio that hostilities erupted in Slovenia. It was the first day of the armed conflict which brought down Yugoslavia at the end of the decade. Much has changed during our lifetime.

We were born and raised up in a world very different from the current one and Honza was well aware of this. In 2016, he shared his reminiscences on the changes in a popular article "Od šuplery ke genomu" (From a calliper to a genome) published in the Czech popular journal *Vesmir*. To him, a calliper symbolized an obsolete tool of traditional mammalian taxonomy which was replaced by genomics during our lifetime. Honza pointed at other changes as well in information revolution, funding research, evaluation of scientific production, animal welfare issues, collecting permits, ever expanding human population and rapidly shrinking biodiversity. Changes affected also his favourite field, the karyology. Still providing ground shaking evidence in the 1970s, it became largely obsolete at the turn of the millennium. It was time for synthesis and Honza knew it. His last works were drafted and co-edited with colleagues on the karyology of Turkish mammals (Arslan

& Zima 1994), mole rats (Spalacinae; Arslan et al. 2016), and on shrews (Searle et al. 2019). During our meeting in Prague in 2018 – it was the last one – Honza told with obvious satisfaction that the book "Shrews, Chromosomes and Speciation" was ready for the publisher. He lived just long enough to see the production of the book finished. The Steering Committee of the Atlas of European Mammals (Honza was its member from the very start) unanimously agreed to honour Honza posthumously and dedicate the forthcoming edition of the Atlas to his memory. Honza co-edited and co-authored already the 1st edition of the Atlas (Mitchell-Jones et al. 1999).

Honza was a member of the Advisory Board of Scopolia, the journal of the Slovenian Museum of Natural History (PMS), since 2009. In 1997, he co-authored a paper in Scopolia, reporting on the results of karyological survey conducted during two field trips (September 1990 and June 1991) in the Republic of Macedonia (Zima et al. 1997). Resulting from this survey are 99 individuals of 14 species of shrews, moles and rodents with known karyotypes, preserved as museum vouchers and deposited in PMS. The way the material has been collected and processed was a standard in all field trips we performed with Honza. All the participants were setting traps in the evening and the next morning Honza was karyotyping the animals, while I processed the carcasses as museum vouchers. The museum specimens usually outnumbered the karyotyped material because not all individuals were screened for chromosomes. Huge collections resulted from our collaboration. Voucher specimens were invariably deposited in PMS, while chromosomal slides travelled to Brno. Mammal collection in PMS therefore holds hundreds of small mammals collected in collaboration with Jan Zima in Turkey in October-November 1993 and July 1994, and in Slovenia in May 1988. PMS vouchers karyotyped by Honza hold field numbers with acronyms JZ (Jan Zima) or MM (Miloš Macholán). Specifically, since 1993 Honza was recording his specimens into field catalogue of Miloš. Honza also analysed slides brought to him from my work in Turkey after 2000 and from South Africa and, again, with museum vouchers deposited in PMS. Part of this material was published in various journals. Furthermore, Honza donated to PMS 172 skulls of shrews, bats and rodents collected by him in September-October 1992 in Kirgizstan. This is the only comprehensive collection of mammals from Central Asia in PMS. It also contains six species (*Crocidura suaveolens, Rattus pyctoris, Microtus ilaeus, Clethrionomys centralis, Blanfordimys yuldaschi, Alticola argentatus*) which are otherwise not represented in PMS. The obvious results of collaboration between Honza and PMS would be important for a mammal collection in any natural history museum. In the appalling financial and conceptual deadlock of PMS, Honza was among few external collaborators who helped maintaining a sort of normality in the mammal collection in Ljubljana. He will be deeply missed as a long-standing collaborator and supported of PMS. Those of us, who knew Honza personally, in Ljubljana and abroad, mourn a loss of a great man and a loyal friend, knowing that for our lives we won't meet another like him.

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*Boris Kryštufek*

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