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RODENTS OF THE FAMILY GLIRIDAE IN THE COLLECTION OF THE MUSEUM OF NATURE AT V. N. KARAZIN UNIVERSITY OF KHARKIV

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Abstract

The family Gliridae is represented in the collection of the Museum of Nature (MNKU) by 39 specimens of 2 species that belong to two subfamilies. The species *Glis glis* is presented by three specimens, whereas *Dryomys nitedula* by 36 specimens. A complete list of specimens with all of their data (except body dimensions) is given. The oldest specimens in the collection are dated to the 19th and early 20th centuries: a mounted specimen of *Dryomys nitedula* was made in 1879; a mounted *Glis glis* specimen was made in 1879; two study skins of *Dryomys nitedula* were prepared in 1904 and 1908, respectively. Most collection specimens of glirids date back to the 1930s and 1940s. The geography of specimens covers the territory from Austria to Kazakhstan, Georgia, and Tajikistan. Most of the samples (33) were collected in Ukraine, of which 31 specimens of *D. nitedula* originates from Kharkiv Oblast and make up a substantial regional comparative sample. Thirteen specimens of *D. nitedula* represent animals born in captivity to two females captured in the wild; all of them are dated, which allows the pace of their development to be studied. The comparison of the Gliridae collection of MNKU with collections of three other museums of Ukraine — zoological department of the National Museum of Natural History NAS of Ukraine in Kyiv (NMNH), Zoological Museum of Lviv University (ZMD), and Zoological Museum of Luhansk University (ZMLU) — is presented. The MNKU collection ranks third after NMNH and ZMD by the number of species and specimens represented, but it is substantially ahead of ZMD by the number of *D. nitedula* specimens (33 against 7). The MNKU collection also includes more specimens of *D. nitedula* (4) from the Central Asian region (2 from Tajikistan and 2 from Kazakhstan); in other museums, there are only 3 specimens from Kyrgyzstan: 2 specimens in NMNH and 1 specimen in ZMD. Specimens of Gliridae dated to the 19th century are present only in the collection of MNKU. The collection material is both exhibited as mounted specimens and stored as study skins in scientific collections. The collection of the family Gliridae is in good condition and it can be used for scientific and educational purposes.

Cite as

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Гризуни родини Вовчкових (Gliridae) у колекції Музею природи Харківського університету імені В. Н. Каразіна

Юрій Ільюхін

Резюме. У колекції родини Gliridae у Музеї природи зберігається 39 зразків, які належать до двох видів з двох підродин. Вид *Glis glis* представлений трьома, а *Dryomys nitedula* 36 зразками. Представлено повний перелік зразків з усіма їх даними (крім розмірів тіла). Найстаріші 4 зразки з цієї колекції були здобуті ще у XIX і на початку XIX ст.: опудало *Dryomys nitedula* виготовлено в 1879 р., а опудало *Glis glis* — у 1884 р., дві тушки *Dryomys nitedula* виготовлено у 1904 і 1908 рр. Більша частина зразків з колекції родини Gliridae походить з 1930–х та 1940–х років. Географія зборів охоплює територію від Австрії до Казахстану, Грузії і Таджикистану. Найбільше зразків (33) походить з України, з них 31 зразок *D. nitedula* походить з Харківської обл., і є гарною регіональною вибіркою для порівнянь. 13 зразків з колекції *D. nitedula* були отримані від тварин народжених у неволі від двох здобутих у природі вагітних самиць, всі вони датовані, що дозволяє вивчати швидкість їх розвитку. Наведено порівняння колекції Gliridae в МПХУ з колекціями трьох інших музеїв України — ННПМ у Києві, Зоологічного музею Львівського університету (ЗМД) та Зоологічного музею Луганського університету (ЗМЛУ). За кількістю видів і зразків колекція МПХУ займає третє місце після ННПМ та ЗМД, але значно випереджає останній за кількістю зразків *D. nitedula* (33 зразки проти 7). Колекція МПХУ налічує також найбільше зразків *D. nitedula* (4) з центрально-азійського регіону (2 з Таджикистану і 2 з Казахстану); в інших музеях є лише 3 зразки з Киргизії: 2 зразки в ННПМ і 1 зразок в ЗМД. Лише у колекції МПХУ є зразки родини Gliridae, що датовані XIX ст. Матеріал колекції виставлений до огляду у вигляді опудал і зберігається у вигляді тушок у наукових фондах. Колекція родини Gliridae знаходиться у належному стані і може використовуватися у наукових і просвітницьких цілях.

Ключові слова: Gliridae, колекції, Музей природи Харківського університету.

Introduction

The amassment of zoological collections is one of the main directions of work of natural history museums. The materials in these collections, which have been accumulated by museums for a long time, allow to study the diversity of fauna, to conduct morphological and genetic studies and other kinds of scientific research [Suares & Tsutsui 2004; Zagorodniuk *et al*. 2014].

This article describes the collection of the family Gliridae, which is stored in the Museum of Nature of V. N. Karazin National University of Kharkiv (MNKU). The work is a continuation of the inventory of the mammal collection of MNKU, part of the results of which are already published by the author: canids [Iliukhin & Krivolapov 2013], felids [Iliukhin & Krivolapov 2015], ursids [Iliukhin 2020], ungulates [Iliukhin 2016], bats [Iliukhin 2018], and dipodoids [Iliukhin 2020].

Material and Methods

The samples of Gliridae in the form of stuffed animals and skins are located in the exposition or stored in the scientific collections of the MNKU, a total of 39 samples. The description of the collection is given in a systematic order, by subfamilies and genera. Scientific and Ukrainian names of taxa are taken from relevant reviews [Pavlinov 2003; Zagorodniuk & Emelianov 2012].

Abbreviations adopted in the text: MNKU — Museum of Nature at V. N. Karazin Kharkiv National University; M — male; F — female; S — gender is not defined; leg. — collector; sk.— skull; gub. — province; reg. — region; district — district; m. — city; vill. — village.

Description of the Collection

In the MNKU collection, the Gliridae family is represented by 39 specimens of two species from two different genera and two subfamilies — Glirinae and Leithiinae (Table 1).

Table 1. Volume of available materials by systematic groups
Таблиця 1. Обсяг наявного матеріалу за систематичними групами

Family	Subfamily	Genus	Species and number of specimens
Gliridae	Glirinae	*Glis*	*Glis glis* (3)
	Leithiinae	*Dryomys*	*Dryomys nitedula* (36)
Total	2 subfamilies	2 genera	2 species, 39 specimens

Genus Glis Brisson, 1762

European edible dormouse — *Glis glis* (Linnaeus, 1766). The species is presented in the collection of MNKU by three specimens, which come from three countries — Ukraine, Georgia, and Austria. The specimen from Ukraine was collected in the forest-steppe zone of Poltava Oblast, whereas the specimen from Georgia originates from the subtropics of the Black Sea coast. The edible dormouse specimen from Austria was collected in the mountains of Tyrol. The specimen from Austria is the oldest and is dated to 1884; it is exhibited in the form of a stuffed animal, while the other two are stored as study skins.

Specimens from Ukraine:
(1) ID 2396/2197, If 594, study skin with skull, M, Poltava Oblast, 'Lubny. Forest, aspen hollow,' 12.06.1936, leg. A. Mankovsky, with measurements (Fig. 1, *b*), scientific collection.

Specimens from other countries:
(2) ID 112, mounted specimen with skull, exhibition, S, Austria (western), 'Tyrol,' 1884 (Fig. 1, *a*). (3) ID 2397/2227, study skin with the front part of the skull and mandible, M, Georgia (west), 'Caucasus, Chakvi, bamboo grove' [see comments], 25.07.1951, leg. Y. P. Zubko, with measurements, scientific collection.

Remarks. Regarding the specimen from Georgia: Chakvi is a village on the Black Sea coast, between the town of Batumi and the village of Kobuleti. In the 1930s, bamboo was planted in this area as raw material for the furniture industry (information from A. Kandaurov).

Genus Dryomys Thomas, 1906

Forest dormouse — *Dryomys nitedula* (Pallas, 1779). This species is represented in the collection of MNKU by 36 specimens originating from four countries: Ukraine (31 specimens), Kazakhstan (2 specimens), Tajikistan (2 specimens), and the Russian Federation (1 specimen).

Among the specimens from Ukraine, there is a mounted specimen dated to 1879, another is exhibited as part of a biogroup (female with 5 young), whereas the other 34 specimens are stored in the scientific collection as study skins. The oldest specimen is from the then Kharkiv Governorate and is dated to 1879; it is probably the oldest specimen of the family Gliridae in Ukraine.

All specimens from Ukraine were collected in the forest-steppe zone of Kharkiv Oblast (30 specimens) and in the steppe zone of Luhansk Oblast (1 specimen). Valuable are the specimens collected in mountainous areas of Central Asia: in the Aksu-Jabagli Reserve, Kazakhstan, which is located in the western part of the Tersky-Alatau mountain range, and in the Varzob Ravine, Tajikistan, which is located on the southern slope of the central part of the Hissar ridge. The specimen from the Russian Federation was collected in 1904 in the steppe zone in the outskirts of Sarepta, former Astrakhan Governorate, which is now located within the city of Volgograd.

Specimens from Ukraine (collected before 1920):
(1) ID 111, mounted specimen, S, former Kharkiv Governorate, 1879, exhibition (Fig. 2, *a*). (2) ID 2398/2228, study skin and mandible (as '*Myoxus glis* Shreb'), scientific collection, S, vicinity of Kharkiv, 09.1908, leg. L. Mandzos (Fig. 2, *b*).

Specimens from Ukraine (collected in 1920–1940):
(3) ID 2406/2212, If 612, study skin with skull, with body measurements, scientific collection,

M, Kharkiv, ‘Sarzhyn Yar, Sarychiv Forest,’ Pomirky, 07.05.1931, leg. A. Mankovsky; (4) ID 2399/2210, study skin with skull, with body measurements, scientific collection, F, Kharkiv Oblast, Ostroverkhivka, forest, 17.10.1931, leg. A. Mankovsky; (5) ID 2401/2211, If 613, study skin with skull, F, Kharkiv, Pomerky, pear hollow, 16.07.1932, leg. A. Mankovsky, with measurements, scientific collection; (6) ID 2415/2216, If 597, study skin without skull, scientific collection, M, Kharkiv, Pomirky, 26.05.1933; (7) ID 2421/2213, M, study skin with skull, scientific collection, with measurements; Kharkiv, Sokolnyky, Verkhny Forest, hollow, 11.09.1933; (8) ID 2208, If 607, study skin with skull, scientific collection, with body measurements, F, Kharkiv, Pomirky, near Petrovsky dacha, hollow tree, 24.07.1935, leg. M. Kovalev; (9–21) study skins and skulls with measurements of specimens born in captivity in 06.1935 and on 31.06.1936 to two females caught pregnant in Pomirky (Kharkiv) by M. Kovalev; stored in the scientific collection: (9) ID 2200 If 608, M, 24.06.1935; (10) ID 2201 If 609, F, 19.09.1935; (11) ID 2202 If 601, F, 24.06.1935; (12) ID 2204, If 604, M, 19.09.1935; (13) ID 2205, If 599, F, 19.09.1935; (14) ID 2206, If 603, M, 19.09.1935; (15) No. 2207, If 606, F, 19.09.1935; (16) ID 2209, If 598, M, 19.09.1935; (17) ID 2214, If 610, F, 19.09.1935; (18) No. 2411/2218, If 609, Fjuv 18.07.1936; (19) ID 2416/2219, Mjuv, 24.06.1936; (20) ID 2424/2217, If 600, Mjuv, 28.07.1936; (21) ID 2426/2215, If 605, F juv, 24.06.1936;

Fig. 1. Specimens of *Glis glis* in the museum collection: *a*, mounted specimen from 1884; *b*, study skin from 1936.

Рис. 1. Зразки *Glis glis* у колекції музею: *a*) опудало *Glis glis*, експонат 1884 року; *b*) тушка *Glis glis*, експонат 1936 р.

Fig. 2. Specimens of *Dryomys nitedula* in the museum collection: *a*, mounted specimen from 1879; *b*, study skin from 1908. Photo by A. Luniachek.

Рис. 2. Зразки *Dryomys nitedula* у колекції музею: *a*) опудало, експонат 1879 р.; *b*) тушка, експонат 1908 р. Фото А. Лунячека.

(22) ID 2413/2203, If 615, study skin with skull, with body measurements, M, scientific collection, Kharkiv Oblast, Zmiiv Raion, biostation, 'young forest with good undergrowth,' 19.08.1936, leg. M. Kovalev; (23) ID 2404/2222, If 935, study skin with skull, scientific collection, F, Kharkiv, Pomirky, deciduous forest, 17.07.1937, with measurements; (24) ID 2224, If 934, study skin with skull, scientific collection, with body measurements, M, Kharkiv 'Pomerky' forest, in a hollow, 06.10.1938; (25) ID 2406/2221, If 933, study skin with skull, scientific collection, with body measurements, M, Kharkiv, Pomirky, forest, 06.06.1940; (26) ID 2408/2223, If 936, study skin with skull, scientific collection, with body measurements, M, Kharkiv, Pomirky forest, in a hollow of a pear, 26.05.1940; (27) ID 2407/2225, If 950, study skin with skull, scientific collection, with body measurements, F, Kharkiv, Pomirky, 'Cherk.' Pond, 06.06.1940, leg. V. Prykhodko.

Specimens from Ukraine (collected after 1945):

(28) ID 2425/2220, study skin with skull, scientific collection, F, Kharkiv Oblast, Zmiiv Raion, biostation, western slope towards the village of Gaidary, deciduous forest, 17.08.1948, leg. N. Ladygina; (29) ID 2405/2226, F, study skin with mandible, with body measurements, scientific collection, Kharkiv Oblast, Chuguiv Raion, near the village of Martove, forest on the left bank of the Donets River, 26.06.1952; (30) ID 6481, mounted specimen, F with 5 young, biogroup, exhibition, Kharkiv Oblast, Chuguiv Raion, Pechenigy Nature Reserve, 1954, leg. ?, prepared by V. M. Grubant and N. Ya. Ruzhinsky; (31) ID 2229, study skin with skull, with body measurements, scientific collection, F, Luhansk Oblast, Provalsky Steppe, 24.07.1947, leg. Uman..?..

Specimens from other countries:

(32) ID 2427/2230, 423, study skin without skull, scientific collection, S, as '*Myoxus dryae*, vicinity of Sarepta, from Khlebnikov,' now within the city of Volgograd, Russian Federation, 23.04.1904, leg. V. Khlebnikov; (33) ID 2402/2139, 178, study skin with skull, scientific collection, with body measurements, F, Kazakhstan, Aksu-Jabagli Reserve, Darbaza tract, forest zone, juniper thickets, 13.08.1939, leg. P. Januszko; (34) ID 2403/2198, 224, study skin with skull, scientific collection, M, Kazakhstan, Aksu-Jabagli Reserve, Aksu Canyon, lowland steppes, birch thickets, with measurements, 11.09.1939, leg. P. Januszko; (35) ID M–1914, study skin with skull, scientific collection, M, Tajikistan, Varzob Ravine, 59 km, 04.1979, leg. V. Krivolapov; (36) ID M–1915, study skin with skull, scientific collection, F, Tajikistan, Varzob Ravine, 59 km, 28.04.1979, leg. V. Krivolapov.

Analysis of the Composition of the Collection

At present, four species of the family Gliridae are known in the fauna of Ukraine — *Glis glis*, *Muscardinus avellanarius*, *Dryomys nitedula*, and *Eliomus quercinus* [Zagorodniuk & Emelianov 2012], of which one species (*E. quercinus*) is listed in the Red Book of Ukraine [Akimov 2009].

The volume and condition of the collection

In the MNKU collection, this family is represented by 39 specimens of only two species, but the available materials have significant scientific value. Most of the specimens in the collection of MNKU belong to the species *Dryomys nitedula* (36 specimens) and three specimens represent the species *Glis glis*. Of all specimens of dormice, three are exhibited as mounted specimens and 36 are stored in the scientific collection as study skins in a separate wooden box.

There are no faded or damaged specimens, but 10 study skins have broken or missing tails (probably due to frequent rearrangements in the past and because of the considerable age of the specimens themselves). The specimens of the collection do not require additional gluing or chemical treatment. In general, the collection of the Gliridae family in MNKU is in good condition and can be used for scientific and educational purposes.

Geography of finds

Collecting localities are indicated on the labels for all samples. Most specimens come from Ukraine (33 specimens). Of them, one specimen of *Glis glis* was collected in Poltava Oblast and one specimen of *Dryomys nitedula* in Luhansk Oblast, the rest of the specimens coming from the territory of Kharkiv Oblast. The entire collection of *Dryomys nitedula* from Kharkiv Oblast consisting of 31 specimens is a substantial regional sample for further descriptions and comparisons.

Two specimens of *Dryomys nitedula* were collected in Kazakhstan and Tajikistan, respectively, and another one in the Russian Federation. Two specimens of *Glis glis* come from Georgia and Austria, respectively.

Old and valuable specimens

The collection of the Gliridae family contains some quite old specimens. Two of them are exhibited and dated to the 19th century, namely a mounted specimen of *Dryomys nitedula* from the then Kharkiv Governorate, collected in 1879, and a mounted specimen of *Glis glis* from 'Tyrol,' west of Austria, collected in 1884.

The scientific collected also contains some quite old specimens, particularly study skins of *Dryomys nitedula* prepared in 1904 and 1908, while most of the specimens were collected in the 1930s and 1940s.

Particularly interesting specimens come from M. Kovaliv: 15 specimens stored in the collection of MNKU, 13 specimens of dormice born in captivity to two females, which were caught in the wild pregnant in 1935 and 1936. All specimens have detailed labels and thus it is possible to study the pace of development of these dormice.

Collectors and dates

In total, there are 28 specimens with names of collectors indicated on the labels. Most of the dormouse specimens in the collection of MNKU were obtained in 1935–1936 by M. Kovalev (15 storage units). Other collectors provided 1 to 4 specimens each: A. Mankovsky in 1931–1936 collected 4 specimens, P. Yanushko (1939) and V. Kryvolapov (1979) collected 2 specimens each, whereas V. Khlebnikov (1904). L. Manzhos (1908), V. Prykhodko (1940), N. Ladygina (1948), and J. Zubko (1951) collected only one specimen each.

The very first collectors. Veniamin Khlebnikov was the son of the founder of the Astrakhan Reserve. The MNKU collection also contains a bat study skin and numerous study skins of birds from the then Astrakhan Governorate, which were collected by him in the early 1900s. L. F. Manzhos in the early 20th century worked as a taxidermist in the zoological cabinet of the Kharkiv Imperial University, which eventually transformed into the modern MNKU. Many specimens of rodents and bats collected by M. Kovaliv and A. Mankovsky in the 1930s are preserved in the MNKU collection. Most likely, they were students at that time.

Collectors of the period 1940–1950. The MNKU collection contains a series of rodent specimens collected by N. Ladygina in the 1940s. At that time, she was a student at the Faculty of Biology of KhNU and later she worked at the Biological Institute of KhNU, where in the 1960s she defended her PhD thesis devoted to the species *Mus spicilegus*. Yakiv Panteleimonovych Zubko (1899–1968), a well-known Ukrainian theriologist and associate professor at the Kharkiv and Luhansk Pedagogical Institutes, travelled to Georgia in the 1950s to study rodents. Unfortunately, there is no information about the collector V. Prykhodko (collections of 1940s). Theriologist P. A. Yanushko worked in 1943–1946 as a researcher at the Aksu-Jabagli Reserve.

The name of the collector of the specimen from the Provalsky Steppe of 1947 remains unknown (the signature is similar to 'Uman...,' but we know that in the summer of that year there was an expedition from the Kharkiv University led by Prof. I. Volchanetsky. There are two more specimens in the MNKU collection with the same signature, but of a different species — *Sylvaemus tauricus* — collected in 1952 in Gaidary, Zmiiv Raion, Kharkiv Oblast (the name 'Khristenko' is additionally given on one of their labels).

Collectors of the latest period. Volodymyr Pavlovych Kryvolapov (1951–2015) had been the main curator of the MNKU for a long time. The two specimens he collected were obtained during the MNKU expedition to Tajikistan in the summer of 1979.

Comparison with other collections

It is interesting to compare the described collection of the MNKU with other collections of Gliridae stored in other museums of Ukraine, particularly the Zoological Museum of the National Academy of Sciences of Ukraine (NMNH) and zoological museums of Ivan Franko National University of Lviv (ZMD) [Zatushevsky 2012] and T. H. Shevchenko National University of Luhansk (ZMLU) [Zagorodniuk & Filipenko 2015].

The family Gliridae is the most fully represented in the collection of the NMNH (Kyiv): all four species that occur in Ukraine are represented, as well as another species of dormouse that occur the the Koped-Dag region of Turkmenistan. In this collection, the total number of dormouse specimens is 290, of which *Glis glis* is represented by 68 specimens and *Dryomys nitedula* is represented by 152 specimens. The collection of ZMD (Lviv) contains 42 specimens of the four species that occur in Ukraine, of which *Glis glis* is represented by 26 specimens and *Dryomys nitedula* is represented by 7 specimens. The collection of ZMLU (Luhansk) includes only four specimens of one 'local' species — *Dryomys nitedula*.

When comparing the above samples of these museums with the collection of the Gliridae family stored in the MNKU, we see that the MNKU collection ranks third by the number of specimens and the number of species after the museums of Kyiv and Lviv, but significantly exceeding ZMD by the number of *Dryomys nitedula* specimens (36 vs 7).

Of particular interest are four specimens of *Dryomys nitedula* from the collection of MNKU, which were collected in mountainous regions of Tajikistan and Kazakhstan. This species is quite common in forest habitats of Central Asia [Airapetiants 1983; Sokolov & Syroechkovsky 1990], but it is little represented from this region in the collections of Ukrainian museums. There are only three specimens of this species from Kyrgyzstan, namely from Osh Oblast, in the collection of NMNH and one specimen from Talas Alatau in the collection of ZMD. It should be noted that only the collection of MNKU contains dormouse specimens dated to the 19th century, which, in our opinion, is of significant historical importance.

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