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Mykola Sharleman's contribution to the study of bird diversity: an analysis of the collection of the National Museum of Natural History (Ukraine)

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abstract

This article is dedicated to the distinguished Ukrainian scientist Mykola Vasylovych Sharleman (1887–1970), who worked as a research associate at the Zoological Museum of the All-Ukrainian Academy of Sciences from 1921 to 1934 and held managerial positions at this institution in 1934(33)–1937 and 1941–1943. The long-standing scientific contributions of M. V. Sharleman provided the foundation for a collection that covers various regions of Ukraine and offers a valuable resource for analysing changes in the species composition and distribution of birds across Ukraine over the past century. A key milestone in this study was the discovery of the First Inventory Book of the collection from 1919, along with historical journals revised approximately in 1948–1949 that served as the collection's catalogue. These unique documents proved to be vital in researching the history of acquisitions for the collections of the National Museum of Natural History of the National Academy of Sciences of Ukraine. Between 1907 and 1939, as well as in 1943, M. V. Sharleman donated 538 bird skins to the museum, representing 130 species of 13 orders. The most abundant specimens represented the species *Calidris alpina* (51 specimens), *Phylomachus pugnax* (28), *Motacilla flava* (26), and *Dendrocopos major* (19). Additionally, rare bird species listed in the Red Book of Ukraine were also present in the collection, such as *Asio flammeus* (2), *Anarhynchus alexandrinus* (1), *Charadrius hiaticula* (8), *Columba oenas* (1), *Dendrocopos leucotos* (4), *Falco naumanni* (2), *Glareola nordmanni* (2), *Haematopus ostralegus* (1), *Lanius excubitor* (2), *Limosa limosa* (2), *Milvus migrans* (1), *Monticola saxatilis* (1), *Numenius arquata* (2), *Recurvirostra avosetta* (2), and *Sternula albifrons* (3). The primary objective of this work is to study and promote the unique ornithological collection of the National Museum of Natural History (NMNH), which is the largest in Ukraine, encompassing over 40 000 specimens of 950 bird species. In addition to the scientific collection, which comprises bird skins (36 528 storage units) and egg clutches (2 998 units), there is also an impressive exhibition consisting of 1449 units. With its broad scale and scientific importance, this assemblage serves as a unique resource for biodiversity research. The ornithological collection holds not only scientific and cultural significance but also stands as a testament of dedication to the scientists whose meticulous work ensured its formation.

Внесок Миколи Шарлеманя у вивчення різноманіття птахів: аналіз колекції Національного науково-природничого музею (Україна)

Світлана Тайкова, Ганна Клочко

Резюме. Ця робота присвячена видатному українському вченому Миколі Васильовичу Шарлеманю (1887–1970), який у період з 1921 до 1934 р. працював науковим співробітником Зоологічного музею ВУАН, а у 1934(33)–1937 та 1941–1943 рр. обіймав керівні посади в цій установі. Багаторічна наукова діяльність М. В. Шарлеманя стала підґрунтям для формування колекції, що охоплює різноманітні регіони України та є цінним джерелом для аналізу змін у видовому складі та поширенні птахів на території України протягом останнього століття. Ключовим етапом для створення цієї роботи стало знаходження Першої інвентарної книги 1919 р. та старих журналів, виправлених приблизно у 1948–1949 рр., які виконували роль журнального каталогу колекції. Ці унікальні документи стали важливим джерелом для дослідження історії надходжень до фондової колекції Національного науково-природничого музею НАН України. У період з 1907 до 1939 рр., а також у 1943 р. М. В. Шарлемань передав до музею 538 тушок птахів, які представляють 130 видів із 13 рядів. Найбільше представлено такі види, як *Asio flammeus* (2), *Anarhynchus alexandrinus* (1), *Charadrius hiaticula* (8), *Columba oenas* (1), *Dendrocopos leucotos* (4), *Falco naumanni* (2), *Glareola nordmanni* (2), *Haematopus ostralegus* (1), *Lanius excubitor* (2), *Limosa limosa* (2), *Milvus migrans* (1), *Monticola saxatilis* (1), *Numenius arquata* (2), *Recurvirostra avosetta* (2) та *Sternula albifrons* (3). Метою цієї роботи є дослідження та популяризація унікальної орнітологічної колекції Національного науково-природничого музею (ННПМ), яка є найбільшою в Україні та налічує понад 40 000 одиниць зберігання і охоплює 950 видів птахів. Колекція складається з фондової частини — тушок (36 528 од. зб.) та кладок яєць (2 998 од. зб.), а також експозиційної частини, що налічує 1 449 од. зб. Завдяки своєму масштабові та науковій цінності, це зібрання є унікальним ресурсом для вивчення біорізноманіття. Орнітологічна колекція має не лише наукове та культурне значення, а й є символом вдячності вченим, чия кропітка праця й відданість забезпечили її формування.

Ключові слова: орнітологічні колекції, М. В. Шарлемань, Національний науково-природничий музей.

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Introduction

One of the most important aspects of studying collections is to elucidate the contribution of particular collectors, whose work was fundamental in the creation of unique assemblages. Previously, we have already presented reports at conferences dedicated to the ornithological collections that became the basis for the formation of the scientific collection of the National Museum of Natural History, National Academy of Sciences of Ukraine (NMNH), particularly those complied by O. Brauner, V. Karavaev, O. Kistiakivskyi, and M. Sharleman[1].

Materials published by the NMNH staff shed light on the work accomplished by the collectors, allowing to decipher the history of creation of both the scientific collection and the exhibition [Barabanova *et al.* 2019; Dotsenko 2019; Zagorodniuk 2022 *a*], to analyse the changes in biodiversity [Zagorodniuk *et al.* 2014], as well as to reconstruct the life history of scientists whose work was closely linked to the NMNH collections. Among the latter were V. Antonovych, M. Burchak-Abramovych, O. Yatsenia, O. Tsvelykh, and M. Holovushkin [Zagorodniuk 2022 *b–c*, 2024 and others].

The inventory process of museum collections opens up broad prospects of conducting their systematic and historical analysis. The extracted data become an invaluable resource for studying current scientific achievements and a more detailed understanding of the history of formation of the scientific heritage, playing an important role in the development of science and biodiversity conservation.

[1] Reports presented at the conferences 'The Ukrainian fauna at the turn of the 20–21 centuries' (Lviv, 2019), 'Current Issues of the Biological Science VII' (Nizhyn, 2021), and 'Current Issues of the Biological Science IX' (Nizhyn, 2023).

The present work is a study of collections assembled by M. V. Sharleman (1887–1970), who devoted his life to the study of nature and was engaged in the formation and analysis of collections that later became part of the NMNH scientific collection. Such materials are crucial for the analysis of changes in the species composition and distribution of birds in the territory of Ukraine during the 20th century. Some of the works by M. Sharleman are directly linked with the collections [Sharleman 1913, 1928, 1934 *a*–*b*], and part of the species mentioned in his publications, such as in the description of birds of the Koncha-Zaspa Reserve [Sharleman 1930, 1933], have been preserved in the NMNH.

This present work was initiated by a unique find during inventory of the collection—the First Inventory Book, which was started in 1919. Additionally, a number of old journals were found, dated to 1948–1949 and compiled as collection catalogues. This became the basis for further analysis of the history of acquisitions to the NMNH collection.

The aim of this work therefore is to study the ornithological collection of the NMNH that was assembled by M. V. Sharleman as an essential part of national heritage.

Material and Methods

M. V. Sharleman's ornithological collection housed in the NMNH was analysed based on historic journals dated to 1919 and 1948–1949, current inventory books of the auxiliary collection and the card catalogue of the main scientific collection. The inventory numbers in the book from 1919 and in the catalogues do not match, so data from the card catalogue and collection specimens were considered for navigation. The materials collected in 1970–1943 were analysed and the data were arranged by months, with the indication of localities and species.

Additional information indicated on the labels can be found in the collection catalogues [Peklo 1997 *a*–*b*, 2002, 2008], although these catalogues were not used in this study. The list of species was arranged alphabetically; Latin species names are indicated following the modern systematics of birds [Gill *et al.* 2021]. The list of specimens does not include type series of taxa that were erected by M. V. Sharleman but collected by other researchers (*Haematopus ostralegus borysthenicus*, *Certhia familiaris gerchneri*, *Lyrurus tetrix fedjuschini*, and *Erythrina erythrina kistjakovskii*).

The terms 'storage unite' (s.u.) and 'collection specimen' (spec.) are used as synonyms.

Biographic details are taken from M. Sharleman's autobiography [Ulyanovsky 2014].

Historical background of the NMNH bird collection

The ornithological collection of the National Museum of Natural History started to develop when the institution was created and today it is the largest in Ukraine comprising over 40 000 specimens. It consists of a scientific collection, which includes study-skins (36 528 s.u.) and egg clutches (2998 s.u.), and an exhibition (1449 s.u.). All of these specimens represent a total of 950 species. Owing to its volume and scientific value, this collection is a unique data source for biodiversity research.

In the basis of the collection are materials gathered by such outstanding ornithologists as Yu. Kostin (2505 spec.), M. Holovushkin (2500 spec.), O. Kistiakivskyi (2043 spec.), O. Peklo (1750 spec.), M. Burchak-Abramovych (1221 spec.), P. Vereshchak (1093 spec.), V. Loskot (1076 spec.), V. Gerkhner (1011 spec.), and others. Their efforts largely contributed to the creation and development of the scientific collections that have a great value in faunal studies [Barabanova *et al.* 2019].

The oldest specimens currently housed in collections of the zoological department date back to the late 19th century. Among the unique materials deposited here are the type series of six subspecies described by both Ukrainian and foreign ornithologists. In total, the bird collection includes 44 type specimens, of which 1 is a holotype, 20 are syntypes, and 23 are paratypes [Mlikovsky & Peklo 2012].

The Museum has gone through a difficult and thorny path of development, accompanied with changes of location, numerous re-organisations, changes of leadership and areas of activity. During its long history, the Museum has had various statuses and has been subordinated to different scientific and state institutions. However, despite all challenges and difficulties, it has not only preserved its unique heritage, but also continuously enriched its collection, strengthened its scientific authority,

and played a key role in the development of natural sciences in Ukraine [Zagorodniuk & Ocheretna 2019]. One of the leaders of the Museum in the early 20th century was Mykola Vasylovych Sharleman. The materials he collected not only have historical value, but also are important in modern studies of the avifauna.

Biography

Biographic data are presented for a better understanding of the geography of M. Sharleman's collections.

Mykola Vasylovych Sharleman [also as 'Nikolay Charlemagne', 'Eduard Sharlemann', etc.] was born on 5 February (24 January O.S.) 1887 in the city of Kremenchuk (Poltava Province). In 1898–1905/06, he was a student of the First Real School in Kyiv. From 1902, he carried out phenological observations of the nature and published in the newspaper 'Kyivska Dumka'. In 1907, M. Sharleman became a non-matriculated student of the agricultural department of the Kyiv Polytechnic Institute, while also working as an entomological assistant. In the same year, he was appointed secretary of the K. Kessler Ornithological Society of Kyiv [Vasyliuk 2017; Parnikoza & Zagorodniuk 2022].

From 1908 until 1913, M. Sharleman actively studied the birds of coniferous forests in Pushcha-Vodytsia, together with P. Vereshchak and O. Shummer [Ulyanovsky 2014]. In 1914, he took part in an expedition to the Caucasus, passing along the Sukhumi Military Road. During this expedition, he fully devoted all of his attention to birds [Sharleman 1915]. In July–August 1926, M. Sharleman together with A. Shepe studied the bird fauna of the newly established Kaniv Reserve [Sharleman & Shepe 1928]. In the autumn of 1931, he continued these studies collaborating with S. Lubkin, and a checklist of the avifauna was compelled based on the results of two expeditions, which included 129 species [Sharleman 1933; Grishchenko 2008].

In 1924, Mykola Vasylovych became director of the Koncha-Zaspa Reserve [Parnikoza & Zagorodniuk 2022]. In the same year, he started working in the Zoological Museum, while in 1933 he was mentioned in the First Inventory Book as interim director (Fig. 1). In 1936, M. Sharleman defended his doctoral dissertation titled 'Zoogeography of the Ukrainian SSR' and earned the title of professor. In 1941, he worked in the Institute of Zoology, whereas in 1942 he was employed in the Institute of Agricultural Pest Control, which was created on the basis of the former [Ulyanovsky 2014]. In September 1943, Mykola Vasylovych left for Poznań. According to his own words, his large private bird collection, which he brough to Poznań, was irretrievably lost as a result of the bombings of the city [Ulyanovsky 2014]. After that, he did not return to collecting, but what he had assembled before became an important scientific heritage that is now part of the NMNH collection.

In 1946, he returned to Kyiv and was appointed professor of the Kyiv Institute of Forestry reading lectures in the biology of forest birds and mammals. At the same time, he worked as a consultant of the Kyiv Station of Plant Protection and from 1946 to 1951 held the position of chief inspector of hunting and game management at the Council of Ministers of the Ukrainian SSR. Mykola Vasylovych Sharleman died in 1970.

Mykola Sharleman's ornithological collection

M. Sharleman's collection assembled in the period from 1970 to 1943 is currently housed in the NMNH. Due to the detailed analysis of the First Inventory Book from 1919 (where the respective date is noted with Sharleman's signature as interim director), the historical card catalogue and the journal-type collection catalogues corrected in ca. 1949 (based on documents from 1948–1949 attached to the journals), we were able to identify 463 specimens of birds that were collected by M. Sharleman before the Second World War.

In our opinion, the private part of the collection was taken by Sharleman when he left for Poznań in September 1943. At the same time, he indicates in his autobiography that this collection was lost in the same year [Ulyanovsky 2014].

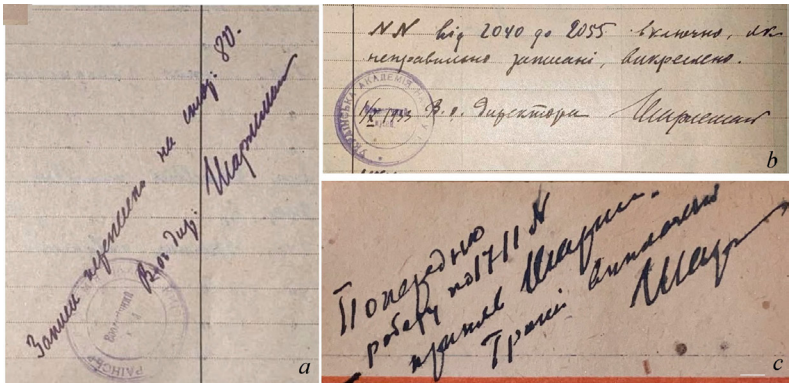

Fig. 1. Examples of M. V. Sharleman's signatures: (*a*–*b*) M. Sharleman's signature in the First Inventory Book as interim director, 01.10.1933; (*c*) M. Sharleman's signature in the collection catalogue.

Рис. 1. Приклади підпису М. В. Шарлеманя: (*a*–*b*) підпис М. Шарлеманя у Першій інвентарній книзі, як в.о. директора, 01.10.1933; (*c*) підпис М. Шарлеманя у журналі-каталозі

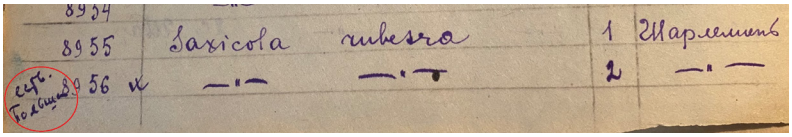

Fig. 2. An entry in the collection catalogue about bird specimens from M. V. Charleman's collection having been discovered in Poland.

Рис. 2. Позначка в журналі обліку про виявлення зразків птахів, зібраних М. В. Шарлеманем, у Польщі.

The history of Sharleman's collection housed in the NMNH remains controversial: notes can be found on several pages of the catalogues stating that part of the specimens were in Poland, but later they were indicated to be present in the NMNH collection (Fig. 2). Some pages of the catalogue were removed, and there is also an entry about the loss of 2428 bird specimens. Mykola Vasylovych's surname is used in two formats in these documents, as 'Шарлемань' and 'Шарлеман' [Zagorodniuk 2021]. The differences may indicate that the original entries and the corrections were made in different years.

The collection currently housed in the NMNH comprises 538 bird specimens (518 with full labels), of which 75 specimens were added considerably later. Most specimens (90%, 467 spec.) were collected in the territory of Kyiv and Kyiv Oblast, while the rest come from Chernihiv (33 spec.), Kherson (22 spec.), Cherkasy (8 spec.), Donetsk (4 spec.), and Volyn (1 spec.) oblasts. The most abundantly represented species include *Calidris alpina* (51 spec.), *Calidris pugnax* (28 spec.), *Motacilla flava* (26 spec.), *Dendrocopos major* (19 spec.), *Bombycilla garrulus* (16 spec.), *Vanellus vanellus* (15 spec.), *Calidris falcinellus* (15 spec.), *Sturnus vulgaris* (14 spec.), *Eremophila alpestris* (13 spec.), *Phylloscopus trochilus* (10 spec.), *Hydrocoloeus minutus* (10 spec.), and *Calidris minuta* (10 spec.).

There are also specimens of rare species now listed in the Red Data Book of Ukraine: *Asio flammeus* (2 spec.), *Anarhynchus alexandrinus* (1 spec.), *Charadrius hiaticula* (8 spec.), *Columba oenas* (1 spec.), *Dendrocopos leucotos* (4 spec.), *Falco naumanni* (2 spec.), *Glareola nordmanni* (2 spec.), *Haematopus ostralegus* (1 spec.), *Lanius excubitor* (2 spec.), *Limosa limosa* (2 spec.), *Milvus migrans* (1 spec.), *Monticola saxatilis* (1 spec.), *Numenius arquata* (2 spec.), *Recurvirostra avosetta* (2 spec.), and *Sternula albifrons* (3 spec.). The only evidence of collecting during the Second World War is a common swift specimen, *Apus apus*, dated to 1943 (Fig. 3).

As for Sharleman's research in the Caucasus, only two specimens collected in 1914 have been preserved—*Dendrocopos major* and *Eremophila alpestris*.

On the example of birds that were collected in Kyiv Oblast, Sharleman's responsible approach to collecting becomes evident. He enriched the collection all year round, but most actively during the spring and autumn migrations (Fig. 4).

Fig. 3. Collection specimen No. 17072/23 of the common swift (*Apus apus*) collected by M. V. Sharleman in 1943.

Рис. 3. Колекційний екземпляр № 17072/23 серпокрильця чорного (*Apus apus*), зібраний М. В. Шарлеманем у 1943 р.

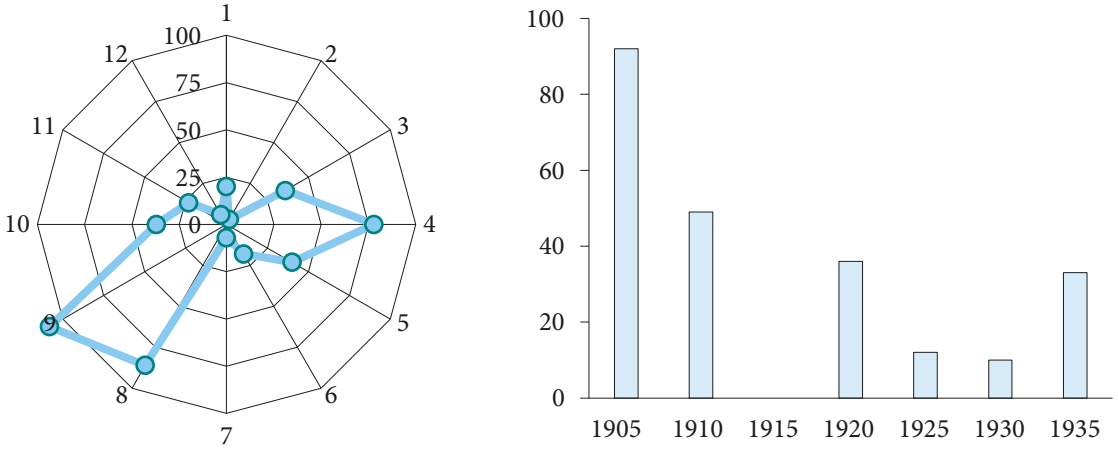

Fig. 4. The distribution of bird specimens collected by M. V. Sharleman in Kyiv Oblast by months and years.

Рис. 4. Розподіл колекційних екземплярів птахів, зібраних М. В. Шарлеманем у Київський області, за місяцями й роками.

The list of bird species by regions

Kyiv Oblast (without the city of Kyiv). With no detailed geographic reference—*Linaria cannabina*: 3; *Acrocephalus schoenobaenus*: 1; *Alauda arvensis*: 3; *Apus apus*: 1; *Charadrius dubius*: 1; *Dendrocopos major*: 1; *Falco tinnunculus*: 1; *Gallinago gallinago*: 1; *Garrulus glandarius*: 1; *Motacilla alba*: 1; *Numenius arquata*: 1; *Pica pica*: 1; and *Pluvialis squatarola*: 11. **Nearby to Kozyn**—*Linaria cannabina*: 1; *Anas platyrhynchos*: 1; and *Chroicocephalus ridibundus*: 1. **Nearby to Danylivka**—*Podiceps cristatus*: 2; *Podiceps nigricollis*: 1; and *Regulus regulus*: 1. **Nearby to Novi Petrivtsi**—*Charadrius dubius:* 1; *Chroicocephalus ridibundus:* 1; *Podiceps cristatus:* 3; *Tringa glareola:* 1; and *Tringa ochropus:* 4. **Nearby to Yasnohorodka**—*Pluvialis squatarola*: 1. **Nearby to Koropie**—*Regulus regulus*: 2. **Nearby to Kyiv** (without detailed geographic reference)—*Linaria cannabina:* 1; *Acrocephalus schoenobaenus*: 3; *Alauda arvensis*: 2; *Spatula querquedula*: 1; *Anthus trivialis*: 1; *Ardea cinerea*: 1; *Calandrella cinerea*: 1; *Calidris ferruginea*: 3; *Calidris minuta:* 8; *Certhia familiaris*: 1; *Anarhynchus alexandrinus*: 3; *Charadrius dubius*: 3; *Charadrius hiaticula*: 8; *Chlidonias niger*: 1; *Columba oenas*: 1; *Corvus cornix*: 12; *Coloeus monedula*: 6; *Dendrocopos leucotos*: 1; *Dryocopus martius*: 2; *Emberiza calandra*: 1; *Emberiza hortulana*: 1; *Falco naumanni*: 1; *Falco subbuteo*: 2; *Falco vespertinus*: 1; *Gallinula chloropus*: 2; *Hirundo rustica*: 1; *Lanius collurio*: 2; *Lanius minor*: 1; *Limosa limosa*: 1; *Lullula arborea*: 2; *Luscinia svecica*: 1; *Milvus migrans*: 1; *Motacilla alba*: 2; *Motacilla flava*: 1; *Podiceps cristatus*: 1; *Podiceps nigricollis*: 2; *Zapornia parva*: 1; *Prunella modularis*: 3; *Regulus regulus*: 2; *Curruca communis*: 1; *Tringa glareola*: 2; *Tringa ochropus*: 1; *Tringa totanus*: 2; and *Turdus pilaris*: 1.

Kyiv City, Kurenivka—*Pluvialis squatarola*: 3; *Podiceps cristatus*: 1. **Obolon, Natalka tract**—*Acrocephalus palustris*: 1; *Anas platyrhynchos*: 9; *Gallinula chloropus*: 1; *Sterna hirundo*: 1; and *Turdus merula*: 1. **Pochaina River**—*Chroicocephalus ridibundus*: 1. **Syrets**—*Turdus pilaris*: 1. **Koncha-Zaspa**—*Charadrius dubius*: 1;

Chroicocephalus ridibundus: 1; *Pluvialis squatarola*: 3; *Sylvia atricapilla*: 1; and *Tringa ochropus*: 1. **Pushcha-Vodytsia**—*Falco naumanni*: 2; *Gallinula chloropus*: 2; *Regulus regulus*: 1; and *Tringa glareola*: 1. **Desna River**—*Spatula querquedula*: 1. **Dnipro River**—*Linaria cannabina*: 1; *Acrocephalus palustris*: 1; *Acrocephalus schoenobaenus*: 8; *Calidris alba*: 2; *Dryobates minor*: 1; *Limosa limosa*: 7; *Motacilla alba*: 13; and *Tringa erythropus*: 4. **Dnipro River, mouth of the Desna**—*Calidris alba*: 6; *Calidris alpina*: 1; *Calidris ferruginea*: 2; and *Hirundo rustica*: 1. **Nearby to Osokorky**—*Hirundo rustica*: 2.

Chernihiv Oblast, Desna River—*Tringa glareola*: 1. **Kladkivka**—*Charadrius dubius*: 1; *Chroicocephalus ridibundus*: 1; *Motacilla flava*: 1; and *Pluvialis squatarola*: 2. **Makoshyne**—*Calidris alba*: 1; *Charadrius hiaticula*: 1; *Gallinago gallinago*: 1; *Regulus regulus*: 1; and *Tringa glareola*: 5.

Kherson Oblast, Black Sea Reserve, Solenoozerna area—*Pluvialis squatarola*: 1.

Volyn Oblast, Smoliary—*Gallinula chloropus*: 1.

Donetsk Oblast, Khomutove—*Calidris minuta*: 4.

Georgia, Çürüksu [Kobuleti]—*Turdus merula*: 1. **Abkhazia**, **Marukh Pass**—*Aegithalos caudatus*: 1.

Discussion

The ornithological collection of Mykola Vasylovych Sharleman housed in the National Museum of Natural History, NAS of Ukraine is an important data source for the reconstruction of not only the biodiversity of Ukraine's fauna, but also the history of zoological science. Despite the loss of part of the collected materials, the specimens that have been preserved even after the two world wars have a significant scientific, historical, and cultural value (Fig. 5).

The geography of origin of these specimens deserves special attention—it covers various regions of Ukraine, including Podillia, Zhytomyr, Kyiv, and Poltava oblasts, as well as the south of Ukraine and Crimea. This allows considering this collection a valuable data source for the analysis of changes in species diversity of birds during the past century.

Some specimens come from the time when the anthropogenic impact on the natural environment was not as significant, which allows comparisons to be made with current data and evaluate the dynamics of changes in the avifauna. Special scientific value have the materials collected in Kyiv Oblast, particularly nearby to Kyiv. The Kyiv Reservoir had not yet existed at the time of collecting (it was created in 1964–1966), whereas the left (eastern) bank of the Dnipro was a vast wetland providing an important habitat for many species of aquatic and semi-aquatic birds.

Fig. 5. Collection specimens and their original labels: (*a*) specimen No. 3888/14 of the short-eared owl (*Asio flammeus*) obtained by M. V. Sharleman on 27.08.1910; (*b*) original label No. 3888/14 of the short-eared owl (*Asio flammeus*) with M. V. Sharleman's signature; (*c*) specimen No. 6737/116 of the common starling (*Sturnus vulgaris*) obtained by M. V. Sharleman on 19.08.1933; (*d*) original label of the common starling (*Sturnus vulgaris*) with the M. V. Sharleman's signature.

Рис. 5. Колекційні екземпляри та їхні оригінальні етикетки: (*a*) колекційний екземпляр № 3888/14 сови болотяної (*Asio flammeus*), добутий М. В. Шарлеманем 27.08.1910 р.; (*b*) оригінальна етикетка № 3888/14 сови болотяної (*Asio flammeus*) з підписом М. В. Шарлеманя; (*c*) колекційний екземпляр № 6737/116 шпака звичайного (*Sturnus vulgaris*), добутий М. В. Шарлеманем 19.08.1933 р.; (*d*) оригінальна етикетка шпака звичайного (*Sturnus vulgaris*) з підписом М. В. Шарлеманя.

Also, such settlements as Svaromie had not yet been flooded by the waters of the Kyiv Reservoir, and the village of Osokorky and the Koncha-Zaspa neighbourhood had not yet been part of Kyiv. Obolon and the Natalka tract were then floodplain meadows with numerous lakes, which provided favourable conditions for a large number of birds characteristic of wetland ecosystems.

The information recorded on the museum labels—including dates and collecting localities—together with the journal and card catalogue documentation allows us to reconstruct the routes of Mykola Sharleman's field research. Each expedition was not only documented in his publications, but all significant finds were carefully taken into the collection [Sharleman 1930]. The analysis of these materials provides ground to hypothesise that the collection was formed based on a systemic approach. It includes specimens of not only common, widely distributed species, such as *Parus major* and *Passer domesticus*, but also rare and threatened taxa, including *Asio flammeus*, *Anarhynchus alexandrinus*, *Charadrius hiaticula*, *Columba oenas*, *Dendrocopos leucotos*, *Falco naumanni*, *Glareola nordmanni*, *Haematopus ostralegus*, *Lanius excubitor*, *Limosa limosa*, *Milvus migrans*, *Monticola saxatilis*, *Numenius*, *Recurvirostra avosetta*, and *Sternula albifrons* (3 spec.).

In addition, unique morphological variations are also represented in the collection: full albino—*Hirundo rustica* (9474/42) and *Motacilla flava* (2193/173); chromic— *Passer domesticus* (8241/140); and partly albino—*Passer domesticus* (8230/129). In an article published in 1936 [Sharleman 1936], Sharleman noted that he added two albino specimens of *Hirundo rustica* to the collection, as well as two those of *Accipiter nisus*, which were hunting them. However, only one specimen of *Hirundo rustica* has been preserved; it was collected by M. V. Sharleman on 5 September (23 August O.S.) 1908 in the vicinities of Kyiv.

As for the sex–age composition of the collection materials, 39% of the specimens are males, 21% are females, 39% have indeterminate sex, and 43 specimens are juveniles. This suggests a systemic scientific approach to the enrichment of the collection, which was in line with the scientific trends of the day.

The collection is also an important source for research into M. V. Sharleman's biography. Its analysis allows tracking the key stages of his scientific activity for a better understanding of his contribution to the development of ornithology, museology, and popular science.

Therefore, further studies of M. V. Sharleman's collection, its systematisation and digital inventory will not only broaden the horizons of ornithological research, but will also play a crucial role in preserving the historical and scientific heritage of Ukraine. In our next work we aim to analyse the type series described by M. V. Sharleman and which are also part of the national heritage.

Conclusions

The National Museum of Natural History houses the collection of M. V. Sharleman that was assembled in 1907 to 1943 and which reflects his significant contribution to the development of ornithology. The specimens collected in Kyiv Oblast indicate M. V. Sharleman's highly scientific approach to collecting the materials. He enriched the collection with bird specimens during different seasons, the largest numbers being collected in September, August, and April, which indicates his methodical and systemic approach.

The collection comprises specimens of bird species from various regions of Ukraine, including rare species that are now listed in the Red Data Book of Ukraine. These specimens have particular scientific value.

M. V. Sharleman's museum heritage is an important data source for scientific research and his work is a symbol of dedication to science in spite of the difficulties and challenges related to the turbulent historical events in which he worked.

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