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Historical Distribution of the Garden Dormouse *Eliomys quercinus* (Linnaeus, 1766) (Rodentia: Gliridae) in Poland

Jan Cichocki[1], Agnieszka Ważna[1], Krzysztof Klimaszewski[2], Maria Sobczuk[3], Agnieszka Suchecka[3] & Błażej Wojtowicz[4]

[1] Department of Zoology, Institute of Biological Sciences, University of Zielona Góra, Prof. Z. Szafrana 1, 65-516 Zielona Góra, Poland; E-mail: j.cichocki@wnb.uz.zgora.pl, a.wazna@wnb.uz.zgora.pl
[2] Department of Animal Environment Biology, Institute of Animal Science, Warsaw University of Life Sciences, Nowoursynowska 166, 02-787 Warszawa, Poland; E-mail: krzysztof_klimaszewski@sggw.edu.pl
[3] Department of Animal Genetics and Conservation, Institute of Animal Science, Warsaw University of Life Sciences, Nowoursynowska 166, 02-787 Warszawa, Poland; E-mail: maria_sobczuk@sggw.edu.pl, agnieszka_suchecka@sggw.edu.pl
[4] Ogólnopolskie Towarzystwo Ochrony Nietoperzy, Chinów 28E, 26-900 Chinów, Poland; E-mail: mopek@nietoperze.pl

Abstract: For many years, the garden dormouse *Eliomys quercinus* was considered one of the rarest mammal species in Poland. A review of the available literature and museum specimens shows that much of the information about the localities where this species was found is incorrect. In the 19th century, but also in later times, the garden dormouse was confused with the morphologically very similar forest dormouse *Dryomys nitedula*. After checking the data of seven localities of the garden dormouse listed in the literature, three localities in southern Poland can be considered reliable: one locality in Lower Silesia and two in the Carpathians. The last reliable information on the occurrence of the garden dormouse is from the village of Zawoja at the foot of the Babia Góra Massif (Western Carpathians) in 1961. There is no reliable information on the occurrence of this species in Poland since then. Our analyses indicate that the garden dormouse is now extinct in Poland.

Key words: *Eliomys quercinus*, extinct species, Poland

Introduction

The garden dormouse *Eliomys quercinus* (Linnaeus, 1766) is one of the three species in the genus *Eliomys* Wagner, 1840. The closely-related large-eared dormouse *Eliomys melanurus* (Wagner, 1840) occurs in western Asia and northern Africa, while the Maghreb garden dormouse *Eliomys munbyanus* (Pomel, 1856) inhabits northern and northwestern Africa (Wilson & Reeder 2005). The garden dormouse is considered the most threatened species of the genus *Eliomys* (Bertolino et al. 2008). It is listed as Near Threatened (NT) in the IUCN Red List of Threatened Species (Bertolino et al. 2008). It is endemic to Europe and native to the continental part of Western Europe, the Iberian Peninsula, the Apennine Peninsula, France, Switzerland, Germany, the Czech Republic, Austria and the Ural Mountains, which limit its range in the east. The northern limit of its distribution ran through Latvia, Estonia and southern Finland (Bertolino 2017), although it is now considered extinct in Lithuania (Bertolino 2017, Juškaitis 2018).

The population status of the garden dormouse in Central Europe is often unclear, and many records of this species are doubtful. The dormouse population in the Czech Republic has been declining since the 1990s and it is considered a rare and relict species (Anděra 1995, 2011). A small population inhabits the Bohemian Forest in the west of the

Czech Republic (Mikeš et al. 2010). In the 1970s and 1980s, the last garden dormice were observed in neighbouring Slovakia (Krištofík 2012). Similarly, there are no recent observations in Ukraine (Mishta 2022) or Latvia (Taube et al. 2022).

Data on the distribution of the garden dormouse in Poland include only a few sites (Pucek 1983, Jurczyszyn & Wołk 1998, Pucek 2001). The species is listed in the Polish Red Data Book of Animals as Critically Endangered (CR) (Pucek 2001). This status was maintained in the latest edition of the Red List of Polish Vertebrates (Głowaciński 2022) but the updated analysis does not support this. The biggest problem in assessing the credibility of data in the literature is the lack of photographic evidence or collected specimens. Half of the known garden dormouse locations coincide with the range of the morphologically similar forest dormouse *Dryomys nitedula* (Pallas, 1778). Both species have a distinctive black mask around the eyes and that is why they have often been confused. In areas where the two species coexist, identification errors are common.

The aim of the present study was to analyse critically the known locations of the garden dormouse in Poland, using both literature data and museum collections.

Materials and Methods

We analysed publications on Polish mammals from the 19th and 20th centuries. We checked whether the author had seen the specimen in person and whether both the garden and forest dormouse were mentioned. We combined the analysis of the historical occurrence of garden and forest dormouse. We included in the literature analysis publications from neighbouring countries that had an influence on the knowledge of the occurrence of the dormouse in Central Europe. Data indicating or excluding the coalescence of garden dormouse populations across the borders of Poland and neighbouring countries were crucial. We verified the accuracy of identification of museum specimens, descriptions in the literature and the indication of hypothetical localities.

Results

Publications on the distribution of the garden dormouse in Poland contain information from the 19th or 20th century on locations near Lublin in the east of the country, in the Pieniny Mountains and the Babia Góra Massif in the south as well as in Mieroszów, Krosnowice and Stanów near Zielona Góra in the west (Pucek 2001) (Fig. 1).

Garden dormouse occurrence in the Lublin and Roztocze Uplands

Taczanowski (1855) reported the occurrence of the garden dormouse in the Lublin and Roztocze Uplands. Information based on Taczanowski's oral communication was mentioned a decade later in another study (Wałecki 1866). Later studies repeated information based on Taczanowski's work (Niezabitowski 1910, Fedorowicz 1928, Lubicz–Niezabitowski 1933, Skuratowicz 1947, 1952, Pucek 1983, Jurczyszyn & Wołk 1998, Pucek 2001) but there is some doubt about the accuracy of his data. Taczanowski was a renowned and valued preparator who worked in the Zoological Cabinet in Warsaw (now the Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw) and deposited many specimens in its collection. However, there was not a single specimen of a garden dormouse. Post-war information from this region also relies on oral communication (Skuratowicz 1948). The forest dormouse is a species occurring in the Roztocze Upland and has been described in many studies (Niezabitowski 1910, Fedorowicz 1928, Lubicz-Niezabitowski 1933, Skuratowicz 1947, Kowalski 1964, Pucek 1983, Jurczyszyn & Wołk 1998); however, Taczanowski (1855) does not mention this species.

Garden dormouse occurrence in the Tatra Mountains

One site for the garden dormouse in Zakopane at the foot of Tatra Mountains is known. It is mentioned in many studies and field guides on mammals published before and after World War II (Niezabitowski 1910, Fedorowicz 1928, Lubicz-Niezabitowski 1933, Skuratowicz 1947, Kowalski 1964). Pucek (1983, 2001) omitted this location for the garden dormouse in his most important publications. The specimen of a garden dormouse from Zakopane was well documented and found in the Dzieduszycki Collection of the Natural History Museum in Lviv (Dzieduszycki 1880, 1895, 1907), now the State Natural History Museum of the National Academy of Sciences of Ukraine in Lviv. Tatarinov (1956) mentioned a specimen from Zakopane after World War II. The museum collection contained specimens of all European species of the family Gliridae from Poland and, therefore, the probability of misidentification is low.

Garden dormouse occurrence in the Babia Góra Massif

In the early 1960s, garden dormice were caught in the village of Zawoja at the foot of Babia Góra Massif (Pucek 1983). The descriptions on the labels of specimens from the collection at the Institute of

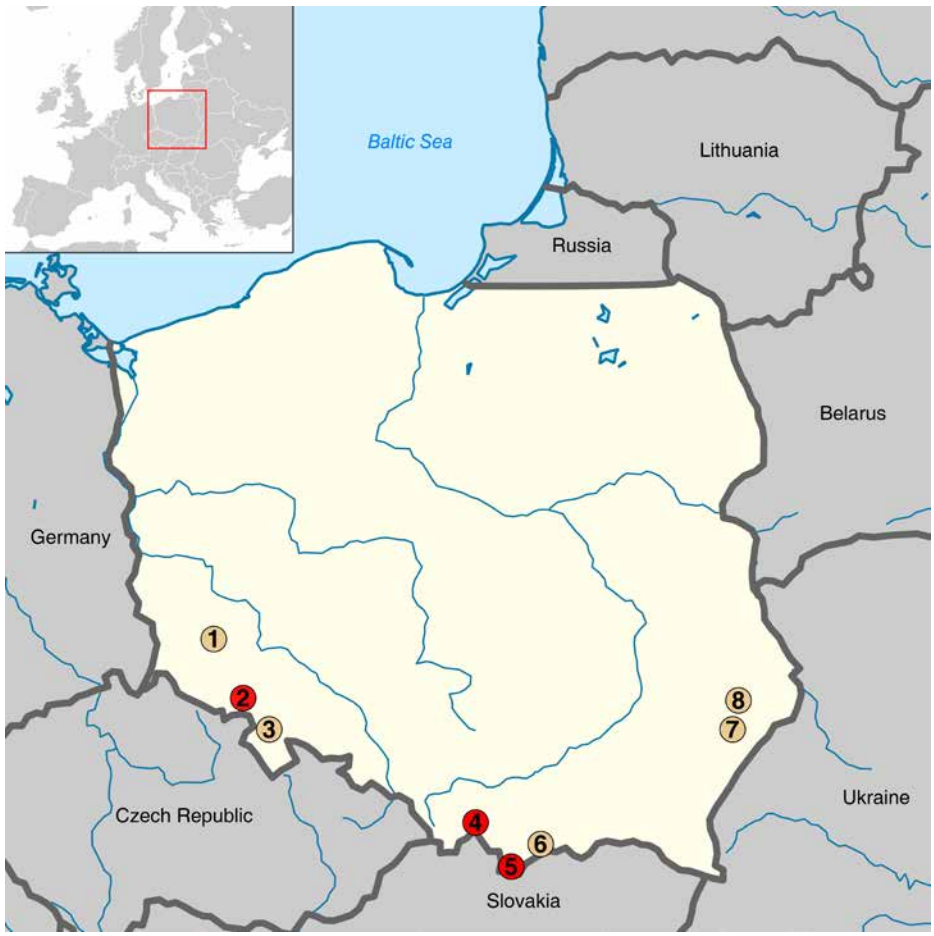

Fig. 1. Garden dormouse *Eliomys quercinus* occurrence in Poland: Lowland Silesia – (1) Stanów, (2) Mieroszów, (3) Krosnowice; Babia Góra Massif – (4) Zawoja; Tatra Mountains – (5) Zakopane; Pieniny Mountains (6); Lublin and Roztocze Uplands – (7), (8). Confirmed locations marked with red colour, unconfirmed with beige.

Systematics and Evolution of Animals of the Polish Academy of Sciences in Cracow confirm this (Fig. 2). In the well-known monograph of Babia Góra that contained information about the occurrence of this species in the forests of the lower montane zone (Kowalski & Sych 1963). However, the description of the locations where the animals were caught indicated that they occurred in meadows and trees typical of rural mountain regions. A total of five specimens were captured between 1960 and 1961 (four are in the collection of the Institute of Systematics and Evolution of Animals of the Polish Academy of Sciences in Cracow and one is part of the collection of the Babia Góra National Park in Zawoja). However, there is no evidence that the species occurred in forest areas.

In the Polish Red Book of Animals (Pucek 2001), there is a 1998 observation of a garden dormouse nest with young in the mountain pine in Babia Góra Massif. The habitat described in this publication does not match the habitat requirements of the species. The garden dormouse does not inhabit such high mountainous regions in Central Europe (Anděra 2011). There is a lack of photographic evidence, the habitat is unusual and the person who made the observation was not a mammal specialist. Verification of these data indicated that it was most likely a hazel dormouse (*Muscardinus avellanarius*). This species is regularly found in the mountain pine zone (Ważna et al. 2012).

Garden dormouse occurrence in the Pieniny Mountains

The laconic information on the occurrence of the garden dormouse in Pieniny came from the study by Sitowski (1948). This record is uncertain due to the lack of specimens. It is possible that the observed mammal was, in fact, a forest dormouse. The species has been recorded on the Slovakian slopes of the Pieniny Mountains (Krištofík et al. 2012).

Garden dormouse occurrence in Lowland Silesia

The locations given by Pucek (1983, 2001) from Krosnowice in the Kłodzko Valley and Stanów near

Fig. 2. Garden dormouse *Eliomys quercinus*. Specimen from the collection of the Institute of Systematics and Evolution of Animals (Polish Academy of Sciences), Kraków.

Zielona Góra are his misinterpretations of the location of Rengensdorf mentioned by Herold (1916). These villages, which are now in Poland, belonged to Germany at that time and their names were also German. The new Polish names introduced after World War II were not necessarily derived from the original German names. Almost immediately after publication, these records were challenged. Pax (1925), a renowned naturalist, found these findings implausible and gave the correct localisation as "Ober-Rengersdorf", a village north of Görlitz in former Lower Silesia. The specimen confirming this observation is a part of the collection of the Senckenberg Museum of Natural History in Görlitz (Büchner 2009). Pax (1925) gave a reliable statement about the garden dormouse from the Lower Silesia area, located in Mieroszów (Friedland in Niederschlesien), in the Kamienne Mountains, which is a region close to the border with the Czech Republic (Fig. 1).

Discussion

There are 28 specimens of the garden dormouse in Polish museum collections, most of which come from countries outside borders of Poland. Most of them come from countries where this species was more common (Germany and Switzerland). There were also misinterpretations of the available materials written in German due to the change of Polish borders after World War II (Pucek 1983, 2001).

Many studies from the first half of the 19th century in Central Europe, including Poland, mentioned garden dormouse (Jundziłł 1807, Stronczyński 1839, Zawadzki 1840, Pietruski 1853). The occurrence of the forest dormouse, the second species with a characteristic black mask, was overlooked. This species was even considered absent in the country for many years (Belke 1848, Wałecki 1866). Tyzenhaus (1844, 1848, 1850) considerably influenced the interest in this group of mammals (Domaniewski 1931). At that time, he described dormice from Lithuanian territory (now in Belarus). In earlier studies from 1844 and 1848, the author very accurately described the three species of dormouse, including the garden dormouse. Tyzenhaus (1850) was the first author to describe the forest dormouse in the fauna of Europe. The Volga Basin and Georgia were identified as the area where the forest dormouse occurred and it was generally assumed that it did not occur in Europe (Belke 1848). Tyzenhauz was the first author presenting reliable information on the common range of the garden and forest dormouse. He noted the similarity between the habitus of these two dormice species. Based on this information, we can assume that most previous reports of dormice with black masks, noted as sightings of garden dormouse, should concern both species. Attention to the presence of two similarly coloured species of dormice increased in the second half of the 19th century (Plater 1852). The publication of Tyzenhauz (1850) had limited impact for many years and later works (e.g., Wałecki 1866) were more frequently cited.

Kocyan (1887/1888), in a publication summarising his long-term work as a preparator and naturalist in the Tatra Mountains, mentioned only two garden dormouse specimens. Probably one of them, from Oravice (Slovakia), was included in the museum collections in Poprad in Slovakia (Danhauser 1889). It is substantiated that Kocyan observed both dormouse species and had them in his collection. In his publication (Kocyan 1887/1888), he pointed out the rarity of the garden dormouse. His work had a great influence on the popularisation of knowledge

about both dormouse species and influenced the inclusion of the forest dormouse in the list of animals in Poland (Wałecki 1881).

The only confirmed present-day site for the garden dormouse in Poland is the village of Zawoja at the foot of the Babia Góra Massif. During faunistic research in the early 1960s, garden dormouse specimens were collected and originally misidentified as forest dormouse. The error only became apparent in the following years. This indicates significant problems with the correct identification of garden and forest dormouse in areas where these species share a common habitat. Garden dormice were captured near the rural buildings of Zawoja village as indicated by the description on the specimen labels. According to Anděra (1995), the optimal habitat of this species in mountainous regions is grassland with bushy vegetation. One of the hypotheses concerning the decline of this species is related to the disappearance of agricultural activities, especially grazing by domestic animals (Anděra 1995).

A critical analysis of the available material showed that the population of the garden dormouse has disappeared in Central and Eastern Europe. It has been confirmed in Lithuania (Juškaitis 2018) and in the Ukrainian Carpathians (Barkaszi 2018) as well as in the rest of Ukraine (Mishta 2022). The species has probably disappeared from Latvia (Taube et al. 2022). There is no clear evidence of its occurrence in Romania either in the past or in the present (Hegyeli 2022). Contemporary (but uncertain) published records of the species maintains the myth of its occurrence in countries, from which it has disappeared many years ago. A characteristic feature of the reports is the lack of evidence, photos or camera trap videos. Against this background, Poland is no exception.

The sites mentioned from Lower Silesia (Mieroszów) as well as the observations from the vicinity of the Babia Góra Massif or Zakopane were probably historically connected with populations from neighbouring countries. The Lower Silesian population was in contact with its counterpart from the Czech Republic and the observations from Babia Góra and Zakopane referred to garden dormouse sites in Slovakia. Slovak sources contained information about its occurrence in Orava, a region on the southern slopes of the Babia Góra Massif (Krištofík et al. 2012). The sites identified in Zawoja were most probably the northernmost edge of the population centred in Slovakia. Today, these sites should be considered historical. Moreover, in the absence of reliable data on new locations, the garden dormouse in Poland should be treated as an extinct species and given IUCN status Extinct (EX). Relying on material based on observations of dubious quality leads to incorrect categorisation of the species' status (Głowaciński 2022) and distorts the real data on the extinction of the population. Incorrect information complicates the management of the species and misleads state management authorities. An illustrative example is a law introduced in Poland in 2014 (Regulation of the Minister of Environment 2014). According to this regulation, a protection zone of 25 hectares is to be established around each observation site of the garden dormouse, even though the last reliable observation of the species in Poland was half a century ago.

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References

Anděra M. 1995. The present status of dormice in the Czech Republic. Hystrix 6(1–2): 155–159.

Anděra M. 2011. Current distributional status of rodents in the Czech Republic (Rodentia). Lynx 42: 5–82.

Barkaszi Z. 2018. Changes in the rodent fauna (Mammalia, Glires) of the region of the Ukrainian Carpathians during the XIX–XXI centuries. GEO&BIO 16: 48–62.

Belke G. 1848. Mastologia czyli historya naturalna źwierząt ssących. [Mastology, or the natural history of mammals] Tom II. Wilno: Published and printed Józef Zawadzki. 575 p. (In Polish).

Bertolino S., Amori G., Henttonen H., Zagorodnyuk I., Zima J., Juškaitis R., Meinig H. & Kryštufek B. 2008. *Eliomys quercinus*. The IUCN Red List of Threatened Species 2008:e.T7618A12835766.https://dx.doi.org/10.2305/

IUCN.UK.2008.RLTS.T7618A12835766.en. Downloaded on 20 February 2021

Bertolino S. 2017. Distribution and status of the declining garden dormouse *Eliomys quercinus*. Mammal Review 47 (2): 133–147.

Büchner S. 2009. Gartenschläfer, *Eliomys quercinus* (Linnaeus, 1766). In: Hauer S., Ansorge H., Zöphel U. (Eds.): Atlas der Säugetiere Sachsens. Dresden: Sächsischen Landesamt für Umwelt, Landwirtschaft und Geologie, pp. 265–267. (In German).

Danhauser R. 1889. Verzeichniss der im Vereinsnmseum be findlichen Gegenstände. Jahrbuchdes Ungarischen Karpathen-Vereines 16: 9–146. (In German).

Dzieduszycki W. 1880. Muzeum imienia Dzieduszyckich we Lwowie. [Dzieduszycki Museum in Lviv]. Lwów. 292 p. (In Polish).

Dzieduszycki W. 1895. Przewodnik po Muzeum im. Dzieduszyckich we Lwowie. [Guide to the Museum of Dzieduszycki in Lviv]. Lwów. 273 p. (In Polish).

Dzieduszycki W. 1907. Przewodnik po Muzeum im. Dzieduszyckich we Lwowie. [Guide to the Museum of Dzieduszycki in Lviv]. Lwów. 112 p. (In Polish).

Domaniewski J. 1931. Über Tyzenhauz's Katalog der in Polen vorkommenden Vögel und Säugetiere. Fragmenta Faunistica Musei Zoologici Polonici 1 (10): 209–288. (In Polish).

Fedorowicz Z. 1928. Krajowe zwierzęta ssące, ze 108 rysunkami w tekście. [National mammals, with 108 drawings in the text]. Wilno: Published and printed Józef Zawadzki. 210 p. (In Polish).

Głowaciński Z. 2022. Red List of Polish Vertebrates – updated version (1st and 2nd decade of the 21st century). Chrońmy Przyrodę Ojczystą 78(2): 28–67. (In Polish with English summary).

Hegyeli Z. 2022. Perpetuating ambiguity: a review of Garden Dormouse (*Eliomys quercinus*) records from Romania. ARPHA Conference Abstracts 5: e82838. https://doi.org/10.3897/aca.5.e82838

Herold W. 1916. Die Verbreitung der Schlafmäuse (Myoxidae) in Deutschland. Helios - Abhandlungen und Mitteilungen aus dem Gesamtgebiete der Naturwissenschaften 28: 69–106. (In German).

Jundziłł S.B. 1807. Zoologia krótko zebrana. Część pierwsza Zwierzęta ssące. [Zoology briefly collected. Part one Mammals]. Wilno. 277 p. (in Polish).

Jurczyszyn M. & Wołk K. 1998. The present status of dormice (Myoxidae) in Poland. Natura Croatica 7 (1): 11–18.

Juškaitis R. 2018. Dormouse (Gliridae) status in Lithuania and surrounding countries: a review. Folia Zoologica 67 (2): 64–68.

Kocyan A. 1887/1888. Die Säugethiere der Nord Tatra. Termeszetrajzi fuzetek 11 (1): 41–50. (In German).

Kowalski K. 1964. Klucze do oznaczania kręgowców Polski. Część V. Ssaki Mammalia. [Keys to the identification of vertebrates of Poland. Part V. Mammals Mammalia]. Warszawa: PWN. 280 p. (In Polish).

Kowalski K. & Sych L. 1963. Ssaki [Mammals]. In: Szafer W. (Ed.): Babiogórski Park Narodowy [Babia Góra National Park]. Kraków: Zakład Ochrony Przyrody PAN, pp. 181–184. (In Polish).

Krištofík J., Fenda P., Stanko M., Hanzelová V., Špakulová M. 2012. Plch lesný – *Dryomys nitedula*. In: Krištofík J., Štefan D. (Eds.): Mammals of Slovakia distribution, bionomy and protection. Bratislava: Veda – Slovak Academy of Sciences Publishing House, pp. 62–66. (In Slovak).

Lubicz–Niezabitowski E. 1933. Klucz do oznaczania zwierząt ssących Polski. [The key to the determination of Polish mammals]. Kraków: Nakładem Koła Przyrodników Uczniów Uniwersytetu Jagiellońskiego. 124 p. (In Polish).

Mikeš V., Hedrich J. & Sedláček F. 2010. Syntopic occurrence of the Garden Dormouse (*Eliomys quercinus*) and the Edible Dormouse (*Glis glis*) in a montane climax spruce forest (Rodentia: Gliridae). Lynx 41: 193–200.

Mishta A. 2022. Dormice (Mammalia, Gliridae) in Ukraine: current state of knowledge and perspectives of investigations. 11th International Dormice Conference 9-13 May 2022. Svilengrad. Bulgaria

Niezabitowski E. 1910. Klasa: Ssawce – Mammalia. [Class: Suckers – Mammalia]. In: Hoyer H. (Ed.): Klucz do oznaczania zwierząt kręgowych ziem Polskich. [The key to the identification of vertebrate animals in Poland]. Kraków: Nakładem Kółka Przyrodników Uczniów Uniwersytetu Jagiellońskiego, pp. 266–307. (In Polish).

Pax F. 1925. Wirbeltierfauna von Schlesien. Berlin: Verlag von Gebrüder Borntraeger. 557 p. (In German).

Pietruski S.K. 1853. Historya naturalna zwierząt ssących dzikich galicyjskich. [Natural history of wild Galician mammals]. Lwów. 98 p. (In Polish).

Plater A. 1852. Spis zwierząt ssących, ptaków i ryb krajowych systematycznie ułożony na oddziały, rzędy, pokrewieństwa, rodzaje i gatunki. [List of domestic mammals, birds and fish systematically arranged into branches, orders, relationships, genera and species]. Wilno. 41 p. (In Polish).

Pucek Z. 1983. *Eliomys quercinus* Linnaeus, 1760. In: Pucek Z, Raczyński J. (Eds.): Atlas of Polish Mammals. Warszawa: PWN, pp. 134.

Pucek Z. 2001. *Eliomys quercinus* (Linne, 1766), żołędnica, Garden dormouse. In: Głowaciński Z. (Ed.): Polish Red Data Book of Animals. Verterbrates. Warszawa: PWRiL, pp. 75–77. (In Polish).

Regulation of the Minister of Environment. 2014. Rozporządzenie Ministra Środowiska w sprawie ochrony gatunkowej zwierząt z dnia 7 października 2014 r. Poz. 1348. Dziennik Ustaw Rzeczypospolitej Polskiej, Warszawa. (In Polish).

Sitowski L. 1948. Przyczynki do znajomości fauny Parku Narodowego w Pieninach. [Contributions to the knowledge of the fauna of the Pieniny National Park] Ochrona Przyrody 18: 133–135. (In Polish).

Skuratowicz W. 1947. Klucz do oznaczania krajowych zwierząt ssących. [The key to the identification of national mammals] Poznań: Księgarnia Akademicka. 68 p. (In Polish).

Skuratowicz W. 1948. Badania nad fauną ssaków Zamojszczyzny. [Research on the mammal fauna of the Zamość Region]. Fragmenta Faunistica Musei Zoologici Polonici 5: 233-292. (In Polish).

Skuratowicz W. 1952. Krajowe zwierzęta ssące, klucz do oznaczania. [National mammals, the key to identification]. Warszawa: PZWS. 87 p. (In Polish).

Stronczyński K. 1839. Spis zwierząt ssących kraju polskiego i pogranicznych. [List of suckling animals of Poland and borderlans]. Warszawa. 33 p. (In Polish).

Taczanowski W. 1855. Spis zwierząt ssących guberni lubelskiej. Biblioteka Warszawska 57 (1): 311–331. (In Polish).

Tatarinov K.A. 1956. Zviri zahidnykh oblastej Ukrainy [The

mammals of western provinces of Ukraine]. Lviv: AN URSR Publisher. 254 p. (In Russian).

Taube L., Pilāts V., Pilāte D., Segliņa Z. & Kivleniece I. 2022. The contribution of dormice monitoring to the assessment of the conservation status of species in Latvia in accordance with IUCN criteria. ARPHA Conference Abstracts 5: e84560. https://doi.org/10.3897/aca.5.e84560

Tyzenhauz K. 1844. Catalogus avium et mammalium quae habitant in regionibus Europae, positis inter gradum 46–57 latitudinis septentrionails 35–55 longitudinis a Ferro. Riga. (Manuscript).

Tyzenhauz K. 1848. Koszatki w lasach litewskich. [Forest dormice in Lithuanian forests] Biblioteka Warszawska 30 (2): 158–166. (In Polish).

Tyzenhauz K. 1850. Notice sur le *Myoxus dryas*, reconnu comme espèce européenne, suivie de quelques observations sur les Loirs d'Europe à l'état de domestication. Revue et Magasin de Zoologie Pure et Appliqué 2 (2): 559–569. (In French)

Wałecki A. 1866. Przegląd zwierząt ssących krajowych. [Review of national mammals] Biblioteka Warszawska 2: 413–457. (In Polish).

Wałecki A. 1881. Fauna zwierząt ssących Warszawy i jej stosunek do fauny całego kraju. [The mammal fauna of Warsaw and its relation to the fauna of the whole country] Pamiętnik Fizjograficzny 1: 268–291. (In Polish).

Ważna A., Cichocki J., Mierczak Z., Zwijacz-Kozica T. & Owca M. 2012. The occurrence and distribution of the common dormouse *Muscardinus avellanarius* in the Tatra Mountains and the Sub-Tatra region. Chrońmy Przyrodę Ojczystą 68 (2): 91–99. (In Polish, with English summary).

Wilson D.E. & Reeder D.M. (Eds.). 2005. Mammal Species of the World. A Taxonomic and Geographic Reference (3rd ed). Baltimore: Johns Hopkins University Press. 2142 p.

Zawadzki A. 1840. Fauna der galizisch-bukowinischen Wirbelthiere: eine systematische Uebersicht der in diesen Provinzen vorkommenden Säugethiere, Vögel, Amphibien und Fische mit Rücksicht auf ihre Lebensweise und Verbreitung. Stuttgart. 195 p. (In German).