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THE EDIBLE DORMOUSE (*GLIS GLIS*), AS A CAVE-DWELLING SPECIES IN ROMANIA

Key words: *Glis glis* occurrence, limestone caves, volcanic caves, Puturosu Mountain, Romania

Introduction

During the chiropterological field researches in the Romanian limestone and volcanic regions in the last two decades, several data were recorded regarding the presence of edible dormouse (*Glis glis*) in the caves and other underground shelters.

Glis glis appears to be a species that can use hypogeic systems as a refuge and for the location of nests, especially in areas where caves are very common and have woodland around. It is always found a few metres from the entrance but it is also possible to find remains, and even living animals, in deeper situations.¹

We noted the presence of living individuals, cadavers and bones from owl pellets in 31 locations from the Romanian Carpathians. According to its frequent occurrence in a cave habitat, the edible dormouse can be classified as a cave dwelling animal.²

The species may be found even in the isolated caves from non-limestone regions, where he performed some adaptations to the local conditions (e.g. carbon-dioxide emanations).

In this paper we tried to include all unpublished data regarding the occurrence of the species in the Romanian caves. Because the biggest part of data was collected in some isolated volcanic caves from Eastern Carpathians (Puturosu Mountain), we present the local patterns of the cave use.

The distribution of the species in the Romanian caves

The ancient presence of large Glirides in cave habitats of the Carpathians was revealed by Topál³ who identified remains of *Glis cf. sackdilligensis* in the early-pleistocene deposits of Șugău Cave, Hăghimaș Mountains. The collection point was revealed deep in the cave, at 70 meters distance from the entrance.

The edible dormouse may occur in caves from all

kind of rocks. We found cave dwelling populations in limestone and volcanic areas at altitudes between 154 and 1118 m a.s.l.

Our observations regarding the living dormice were done mostly at the cave entrances during chiropterological mist nettings. To spot the living individuals of the species, the overnight presence at the cave entrances was essential in most of the cases. The edible dormouse made his appearance in 16 underground locations from about 80, where night survey was developed in the past decade. These places were: Băița Cave, Fănațe Cave, Ferice Cave, din Dealul Prodan Cave, cu Apă din Valea Leșului Cave, Moanei Cave, Lesiana Cave, Vadu Crișului, Țicului Cave, Liliecilor din Cheile Ampoitei Cave, Puculea Cave, Orbán Balázs Cave, Comana Cave, „Galeria de mină de la borna 5.” Mine, Lazului Cave and Mare de la Balta Cave. (The photo nr. 1 represents an individual from Moanei Cave.)

In the daytime we met the species only twice and a third observation is known from the literature.⁴ In one of these cases we found an individual in the Ciungi Cave from the Someșan Plateau, about 100 meters far from the entrance. The ceiling of this cave is very thin and filled with a labyrinth of narrow holes. We presume that the dormouse used shortcut to access this portion of the cave from the outside.

The second case was recorded in the Būdös Cave at the crossing point of the main gallery and a secondary chimney, above the deadly carbon-dioxide level. This individual certainly used that higher situated shortcut to enter the cave.

The other data collected from Puturosu Mountain (seven locations) are based on cadavers, being presented amply in the next chapter.

Dead individuals were found in two limestone caves as well (Fagului Cave and Moanei Cave).

Strix aluco and *Bubo bubo* pellets containing edible dormouse bone remains were collected from five caves (Cave nr. 105 from Vârghiș Gorge, Gura Ponicevei Cave, Vacii Cave from Albioara Gorge,

¹ SCARAVELLI, Dino – BASSI, Sandro 1994.

² POLAK, Slavko 1997.

³ TOPÁL György 1988.

⁴ WILLEMSSEN, Jeroen – THOMASSEN, Erik (eds.) 2009, Ciur-Ponor Cave, 2 individuals at the Cave entrance.

Drăcoia Cave from Sighiștel Gorge and Ungurească Cave from Turzii Gorge).

The locations, in ten different mountains, are shown on the map (*Fig. 1*). The range of the cave-dwelling edible dormice is surely much bigger.

The cave selection of the edible dormouse in the Puturosu Mountain area and conclusions regarding the ecology of the local population

The Puturosu (Büdös) Mountain (Ciomad-Puturosu Mts., Eastern Carpathians, central Romania)

is very rich in postvolcanic phenomena like the carbon-dioxide emanations and the solphatares. Because the carbon-dioxide is heavier than the air, it forms deadly traps in the bottom of the pits and caves. These places are used in the local monitoring of the terrestrial fauna.⁵

The edible dormice were found in seven caves which are located at altitudes between 1079 and 1118 m a.s.l.. In 1979 Molnár⁶ collected already 17 dead individuals in the Gyilkos Cave. Between 1997 and 2012 we counted 204 dead individuals in the caves, the results of the research from the first two years were already presented in a previous article.⁷

The biggest part of cadavers (148 individuals) were found in the Gyilkos Cave. The other locations were not so popular, 28 individuals were collected from the Büdös Cave, six individuals from the Kis Cave, six individuals from the Damoklész Cave, and few individuals from the Sziklaalámenő-, Bagolytanya- and Akna Caves. The species never appeared in Timsós (cu Alaun) Cave, although this is in the close vicinity of the other caves. The reason might be the special structure of the walls, the highly friable alum crystals doesn't permit climbing on this surface.

Beside the caves, more than 20 pits and other natural traps with carbon-dioxide emanations are known in the area in the same habitat, but these are less attractive for the edible dormouse. In 15 years only 11 dead individuals were found in these locations.

The area around the caves is covered with a mature beech forest (*Lusulo-Fagetum* and *Asperulo-Fagetum*), the age of the canopy is between 40–120 years.

The Gyilkos Cave is situated on the northern slope of the mountain at the end of a short manmade valley, as a result of the former sulfur-mining activity in the late middle age. Perhaps a good part of the cave has antropic origin, too. The carbon-dioxide level on the bottom of the cave usually is higher than

two meters. In hard winters snow can obturate the entrance and the gas level may reach the ceiling of the cave. The length of the main gallery is about 20 meters ending in a five meter high and seven meter wide room.

The Büdös Cave is a little bit smaller and it is situated on the southern slope of the mountain.

Both caves have similar structure with secondary galleries which solve the mystery regarding the remarkable distance assumed to be performed by the dormice under the gas-level. Molnár⁸ presumed that the dormice are looking for hibernaculas and their instinct may be so powerful, that they do 5–6 meters under the gas level before they die. These alternative ways, which lead deep in the cave above the gas level, are used by dormice more often than the main gallery. The crossing points of the galleries are the most dangerous places, where many individuals fall in the lower main gallery. This might be the reason why they reach far points in the cave.

As Molnár⁹ pointed already, the activity of dormice in the caves increase very much in the autumn. Between August and October many subadult and juvenile individuals may be found in the bottom of the caves, but as we observed during night surveys, they are not looking for hibernaculas. Dormice families lead a very intense social life at the entrances of the caves where they are hunting for insects. Some families live in these caves in the whole year.

The best evidence for that are the dropping deposits which can be found in the holes of the cave wall (*photo nr. 2*) and in the secondary galleries above the gas level. At least five caves with secondary hole labyrinths are permanent homes for dormice: the Kis-, Büdös-, Damoklész-, Bagolytanya- and Gyilkos Caves.

At the end of the summer, intruders may appear around the caves. Often the conflicts between adult or subadult males or the chasing plays of juveniles end under the gas level. (The *photo nr. 3* represents the results of an autumn checking.)

From 204 individuals 180 (88.2%) died in the August-October period and only 24 individuals between May and July. Those individuals which were collected during winter and early spring, were there since the autumn and were found later because of different reasons.

The annual number of cadavers has fluctuated very much in the past 15 years (presented on *Fig. 2*). In some years less than five individuals were found in the caves, in other years more than 20. We presume

⁵ BARTI Levente 2011.

⁶ MOLNÁR Lidia 1983.

⁷ BARTI Levente 1999.

⁸ MOLNÁR Lidia 1983.

⁹ MOLNÁR Lidia 1983.

the existence of an irregular gradation phenomena in the local population, which in the past years reached the highest peak in 2003 (38 dead individuals in the caves) and almost collapsed in 1999 (only one cadaver).

Polak¹⁰ deduced, that in Slovenia the majority of caves which reveal the obvious presence of dormice are not accessible to the stone martin. In our study area almost all locations in case are easily accessible to predators, like the stone martin and the pine martin as well, but in the Puturosu Mountain region the stone martin seems to be missing, in 15 years we have not seen the species around the caves and no droppings have been found. Only the pine martin is present in the area but no evidence has been found that it would enter the caves.

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References

- BARTI Levente
1999 Újabb adatok a Torjai Büdöshegy mofettáinak gerinces-áldozatairól, *Acta (Siculica) 1998*, Sepsiszentgyörgy, 103–114.
- MOLNÁR Lília
1983 A Torjai Büdöshegy (Kovászna megye) mofettáinak madár- és emlősáldozatai, *Aluta 14–15.*, Sepsiszentgyörgy, 185–189.
- POLAK, Slavko
1997 The use of caves by the edible dormouse (*Myoxus glis*) in the Slovenian karst, *Nat. Croat., Zagreb*, 6, 3, 313–321.
- SCARAVELLI, Dino – BASSI, Sandro
1994 *Myoxus glis* as a cave dwelling animal, *Hystrix* (n. s.), 6 (1–2), 283 – 285.
- TOPÁL György
1988 Alsó pleisztocén korú denevérelet a Súgó barlangból, *Karszt és Barlang*, 2, 85–90.
- WILLEMSSEN, Jeroen – THOMASSEN Erik (eds.)
2009 Mammal survey, Munții Pădurea Craiului (Transylvania-Romania) – Uitgave van de Veldwerkgroep van de Zoogdiervereniging (Dutch Mammal Society), *Rapport 2009*, 34, Arnhem, oktober 2009, 1–38, Appendices I–VIII.

¹⁰ POLAK, Slavko 1997.

A nagy pele (*Glis glis*) mint barlanglakó faj Romániában

(Kivonat)

Az elmúlt két évtizedben lebonyolított chiropterológiai kutatásaink során számos járulékos adatot gyűjtöttünk a nagy pele (*Glis glis*) barlangi környezetben és más földalatti szálláshelyeken való előfordulásáról. Összesen 31 helyszínen találtunk élő vagy elpusztult példányokat, illetve bagolyköpetekben fennmaradt csontmaradványokat. 16 barlangbejáratban az éjszakai denevérhálózások során találkoztunk élő egyedekkel. A mészkővidékek mellett a faj sikeresen belakja a Csomád-Büdös hegycsoport vulkanikus eredetű grottáit is, bizonyos mértékben alkalmazkodva a mofettagáz jelentette állandó veszélyforráshoz. Mivel a nagy pelék barlangi előfordulása alig adatolt Romániában és a téma a térségben sem túlkutatott, megpróbáltunk egy átfogó képet nyújtani a jelenség hazai elterjedéséről, illetve bővebben tárgyaltuk a legtöbb adatot szolgáltatató Büdös-hegyi populáció barlangi szálláshely-használatát.

Pârșul mare (*Glis glis*), ca specie cavernicolă în România

(Abstract)

Cercetările chiropterologice efectuate în ultimii doi decenii au furnizat o serie de date suplimentare referitoare la prezența pârșului mare (*Glis glis*) în peșteri și alte adăposturi subterane. În 31 astfel de locații am identificat specia reprezentată de indivizi vii, cadavre sau oase provenite din ingluvii de strigiforme. La 16 intrări de peșteri am întâlnit pârșul comun în timpul nopții, efectuând campanii de capturare a liliecilor. În afara regiunilor carstice specia a colonizat cu succes și peșterile formate în alte roci, cum ar fi grotele vulcanice de pe Muntele Puturosu (Munții Ciomad-Puturosu), adaptându-se parțial la pericolul permanent al emanațiilor de bioxid de carbon. Deoarece datele autohtone referitoare la prezența pârșului comun în habitatele subterane sunt deficiente, încercăm să sintetizăm toate cunoștințele dobândite referitoare la răspândirea fenomenului în țară. Totodată prezentăm mai detaliat preferințele legate de adăposturi subterane ale populației de pe Muntele Puturosu, populație care a furnizat cele mai multe date utile din țară.

Appendix: The distribution of the cave-dwelling edible dormouse (*Glis glis*) in Romania

Ciomad-Puturosu/Csomád-Büdös Mountains:

Kis Cave: 06. 10. 2001, 1♂ juv. ind., leg. Barti L.; 04. 09. 2002, 1♂ juv. ind., leg. Barti L.; 01. 11. 2003, 1♀ ad. ind., leg. Barti L.; 19.12.2008, 1 ad. ind., leg. Barti L., György K.; 23. 07. 2010, 1 sad. ind., leg. Barti L., Varga Á.; 02. 11. 2012, 1♀ sad. ind., leg. Barti L.;

Büdös/Puturosu Cave: 18. 10. 1998, 3 ind., leg. Barti L. (Barti, 1999); 13. 07. 2001, 1 ind., leg. Barti L.; 23. 08. 2001, 1 ind., leg. Barti L.; 18. 07. 2003, 1 ad. ind., leg. Barti L.; 09. 08. 2003, 1 ad. ind., leg. Barti L., György K.; 18. 09. 2003, 1♂ juv. ind., leg. Barti L.; 30. 09. 2005, 1 ad. ind. alive in the chimney of the cave, obs. Barti L.; 28. 04. 2008, 1 ind., leg. Barti L., György K.; 28. 05. 2008, 1♀ ad. ind., leg. Urák I.; 19. 12. 2008, 1 ad. ind., leg. Barti L., György K.; 23. 07. 2010, 2 ad. ind., leg. Barti L., Varga Á.; 16. 10. 2010, 9 ind. (5 ad, 4 juv.), leg. Barti L.; 09. 07. 2011, 2 ad. ind., leg. Barti L.; 12. 06. 2012, 1♀ ad. ind., leg. Barti L.; 02. 07. 2012, 1♂ ad. ind., leg. Barti L.; 28. 08. 2012, 1♂ juv. ind., leg. Barti L.; 12. 09. 2012, 1♀ juv. ind., leg. Barti L.;

Sziklaalámenő Cave: 13. 07. 2001, 1 ind., leg. Barti L.; 25. 09. 2001, 1 ad. ind., leg. Barti L.;

Damoklész Cave: 09. 09. 2008, 1♂ juv. ind., leg. Barti L., Ambrus Zs., Bartha Á.; 31. 03. 2009, 2 ad. ind., leg. Barti L.; 16. 10. 2010, 1 ind., leg. Barti L.; 17. 11. 2010, 2 ind., leg. Barti L.;

Bagolytanya Cave: 31. 03. 2009, 3 ad. ind., leg. Barti L.;

Gyilkos/Ucigașa Cave: 02. 1978 – 01. 1979, 17 ind., leg. Molnár L. (Molnár, 1983); 01. 11. 1997, 7 ind., leg. Barti L. (Barti, 1999); 18. 10. 1998, 1 ind., leg. Barti L. (Barti, 1999); 08. 05. 1999, 1 ind., leg. Barti L. (Barti, 1999); 14. 05. 2000, 2 ind., leg. Barti L., Kovács I.; 09. 07. 2000, 1♂ ind., leg. Barti L.; 10. 08. 2000, 2 ind. (1 ad., 1 juv.), leg. Barti L., Varga Á.; 21. 09. 2000, 1 ind., leg. Barti L.; 26. 07. 2001, 1 ind., leg. Barti L., Varga Á.; 23. 08. 2001, 2 ind. (1♂ ad, 1?), leg. Barti L.; 30. 08. 2001, 1♂ ad. ind., leg. Barti L.; 14. 09. 2001, 9 ind. (4 ad., 5 juv.), leg. Barti L., Varga Á., Ambrus Zs.; 25. 09. 2001, 3 ind. (1♀ ad., 2 juv.), leg. Barti L.; 06. 10. 2001, 3 ind. (1♀ ad., 2 juv.), leg. Barti L.; 26. 10. 2001, 4 ind., leg. Barti L.; 12. 07. 2002, 1 ind., leg. Barti L.; 05. 08. 2002, 1♀ ad. ind., leg. Barti L.; 04. 09. 2002, 5 ind. (1♀ ad., 2♂♂ sad., 2♀♀ sad.), leg. Barti L.; 23. 09. 2002, 2 ind. (1♀ ad., 1♂ juv.), leg. Barti L.; 09. 06. 2003, 1♂ ad. ind., leg. Barti L.; 18. 07. 2003, 1♂ ad. ind., leg. Barti L.; 27. 08. 2003, 8 ind. (3♂♂ ad., 5 juv.), leg. Barti L., György K.; 09. 09. 2003, 7 ind. (3 ad., 4 juv.), leg. Barti L., Varga Á., Pieldner M.; 18. 09. 2003, 4 ind. (2♂♂ ad., 1♀ ad., 1♂ juv.), leg. Barti L.; 03. 10. 2003, 12 ind. (4♂♂ ad., 7♀♀ ad., 1 juv.), leg. Barti L.; 01. 11. 2003, 1♀ juv. ind., leg. Barti L.; 28. 06. 2004, 1 ind., leg. Barti L.; 20. 07. 2004, 1 ad. ind., leg. Barti L., Varga Á.; 06. 08. 2004, 1♂ ad. ind., leg. Barti L., György K.; 02. 05. 2005, 1♂ ad. ind., leg. Barti L.; 16. 09. 2005, 3♂♂ ad. ind., leg. Barti L.; 21. 10. 2005, 2 ind. (1♂ sad, 1♀ sad.), leg.

Barti L.; 20. 08. 2006, 1 ind., leg. Hegyeli Zs.; 29. 01. 2007, 5 ind., leg. Barti L.; 09. 09. 2008, 5 ind. (2♂ ad., 2♀ ad., 1 ?), leg. Barti L., Ambrus Zs., Bartha Á.; 19. 12. 2008, 11 ad. ind., leg. Barti L., György K.; 31. 03. 2009, 3 ad. ind., leg. Barti L.; 03. 07. 2009, 1 ad. ind., leg. Barti L.; 10. 07. 2009, 10 ind., leg. Barti L.; 23. 11. 2009, 3 ind. (1♂ ad., 2♀ sad.), leg. Barti L.; 16. 10. 2010, 9 ind., leg. Barti L.; 17. 11. 2010, 1 ind., leg. Barti L.; 29. 04. 2011, 1 ind., leg. Barti L.; 14. 06. 2011, 1♂ ad. ind., leg. Barti L.; 31. 08. 2011, 1 ad. ind., leg. Barti L., György K.; 14. 10. 2011, 1 ad. ind., leg. Barti L.; 12. 09. 2012, 3♂ ad. ind., leg. Barti L.; 26. 09. 2012, 6 ind. (1♂ ad., 2♂ sad., 2♀ sad., 1♀ juv.), leg. Barti L.; 10. 10. 2012, 5 ind. (1♂ ad., 2♂ sad., 1♀ sad., 1♀ juv.), leg. Barti L.; 02. 11. 2012, 1♀ sad. ind., leg. Barti L.;

Akna Cave: 25. 09. 2001, 1 juv. ind., leg. Barti L.;

Perşani/Persány Mountains:

Orbán Balázs/Mereşti Cave: 21. 08. 2003, 1 ad. ind., obs. Jéré Cs., Dóczy A., Barti L., Szántó L., Szodoray – Parádi F.; 21. 08. 2009, 1 ind., obs. Jéré Cs., Dóczy A., Barti L., Szodoray – Parádi F., Mărginean G., Szántó L.

Cave nr. 105. from Vârghiş/Vargyas Gorge: 19. 08. 2001, bones from old *Strix aluco* pellets, leg. Barti L., Varga Á.

Comana/Kománai Cave: 2012. 09. 20., 1 ad., obs. Barti L., Bartha Cs.

Someşului Plateau:

Ciungi/Kisnyíresi Cave: 14. 10. 2001, 1 ad., obs. Barti L., Varga Á., Zsók I.

Pădurea Craiului/Királyerdő Mountains:

Vadu Crişului/Zichy Cave: 03. 09. 2010, 1 ad. ind., obs. Barti L., Bücs Sz., Mărginean G., Jakab E., Ianc R., Szabó D.Z.

Moanei/Bíró Lajos Cave: 13. 07. 2003, 1 ind. alive, 1 dead ind., obs. Barti L., Szántó L., Jéré Cs., Szodoray – Parádi F., Szodoray – Parádi A., Bücs Sz., Varga Á.; 04. 09. 2011, 1 ad. ind., obs. Barti L., Jéré Cs., Hoffmann R.

Lesiana Cave: 13. 07. 2003, 4–5 ind., obs. Barti L., Szántó L., Jéré Cs., Szodoray – Parádi F., Szodoray – Parádi A., Bücs Sz., Varga Á.

Din Dealul Prodan/Táskás Cave: 01. 09. 2012, 1♀ ad., 4 juv. ind., obs. Barti L., Bücs Sz., Kiss I.

Țiclului Cave: 23. 08. 2012, 1 ad. ind., obs. Jéré Cs., Bücs Sz., Barti L.

Vacii Cave from Albioara Gorge: 03. 08. 2008, bones from *Strix aluco* pellets (Willemsen – Thomassen, 2009); 14. 07. 2011, bones from *Strix aluco* pellets, leg. Barti L., Bücs Sz., Jéré Cs.

Ciur-Izbuc Cave: 03. 08. 2008, 2 ind. in the cave entrance (Willemsen – Thomassen, 2009)

Cu Apă din Valea Leşului/Tutajos Cave: 21. 08. 2012, 1 ad. ind., obs. Jéré Cs., Bücs Sz., Barti L., Csősz I., Szodoray – Parádi F., Szabó D. Z., Gábos E.

Bihor/Bihar Mountains:

Ferice/Páfrányosi Cave: 22. 08. 2012, 1 ad. ind., obs. Jéré Cs., Bücs Sz., Barti L., Csősz I., Szabó D. Z., Gábos E.

Drăcoia Cave from Sighiştului/Szegyesd Gorge: 02. 07. 2001, bones from *Bubo bubo* pellets, leg. Barti L.

Fânaţe/Fonáczi Cave: 14. 09. 2012, 1♀ ad., 4 juv. ind., obs. Jéré Cs., Csősz I., Kiss I., Gönczi-Vass I.

Fagului Cave: 07. 1997, 1 cadaver at the crossing of the mine gallery and the cave, obs. Barti L.

Băiţa Cave: 06. 09. 2011, 1 sad. ind., obs. Barti L., Kiss I.

Trascăului/Torockói Mountains:

Puculea/Kőközi Cave from Aiudului/Kőközi Gorge: 01. 07. 2010, 1 ind., obs. Jéré Cs., Barti L.; 06. 09. 2012, 1 ind., obs. Bücs Sz., Jéré Cs., Csősz I.

Ungurească/Porlik Cave: 08. 04. 2005, bones from *Strix aluco* pellets, leg. Barti L.

Metaliferi/Érc Mountains:

Liliecilor Cave from Ampoitei Gorge: 04. 04. 2004., bones from old *Strix aluco* pellets, leg. Barti L., Hegyeli Zs.; 04. 09. 2012, 1 ind., obs. Jéré Cs., Bücs Sz., Csősz I., Jakab E.

Vâlcănu/Vulkán Mountains:

„Galeria de mina de la borna 5.” Mine: 1 ind., 02. 09. 2011, obs. Dragu A.

Mehedinţi/Mehádiai Mountains:

Lazului Cave: 08. 08. 2008, 1 ind., obs. Dragu A.

Mare de la Balta Cave: 23. 09. 2012, 1♀ ad., 4 juv. ind., + 1 ind., obs. Dragu A.

Almăjului/Almás Mountains:

Gura Ponicovei Cave: 11. 08. 2010, bones from *Strix aluco* pellets, leg. Jéré Cs., Csősz I.

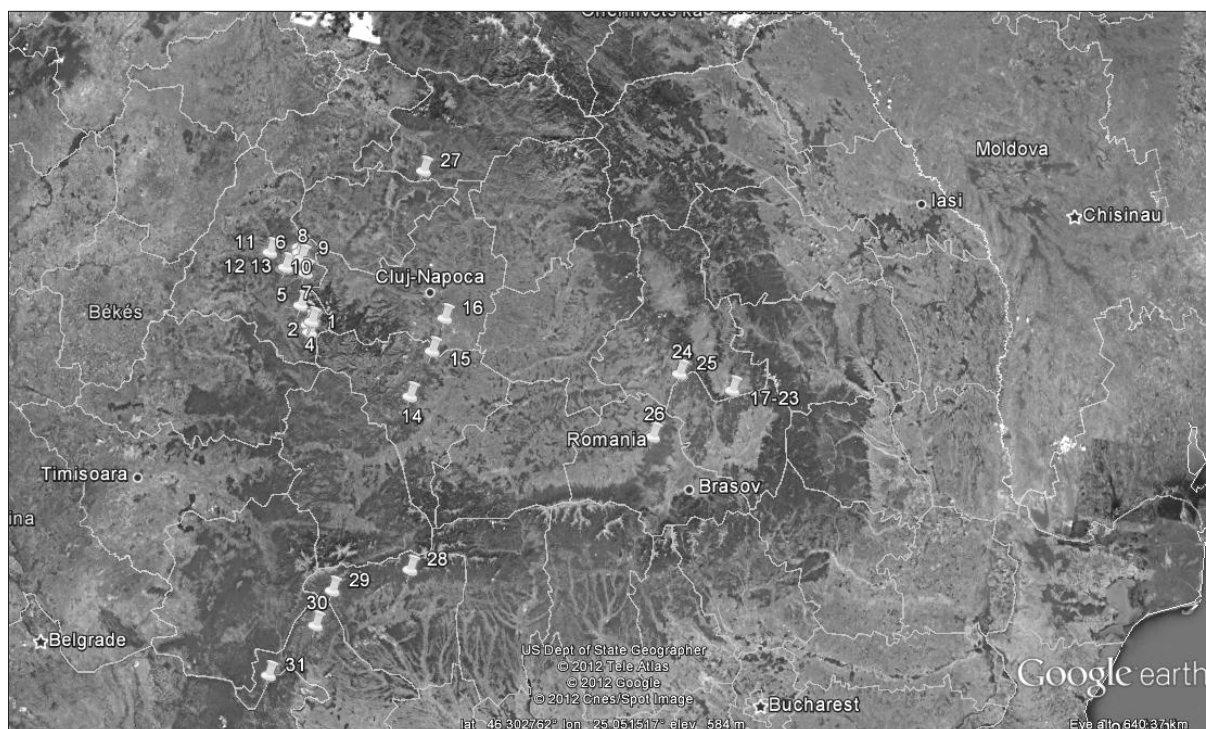


Fig. 1. The cave-dwelling edible dormouse (*Glis glis*) occurrences in Romania. (The locations: Bihor Mountains: 1. Băița Cave, 2. Fagului Cave, 3. Fănațe Cave, 4. Drăcoia Cave, 5. Ferice Cave; Pădurea Craiului Mountains: 6. din Dealul Prodan, 7. cu Apă din Valea Leșului, 8. Moanei Cave, 9. Lesiana Cave, 10. Vadu Crișului Cave, 11. Țicului Cave, 12. Vacii din Cheile Albioara Cave, 13. Ciur-Ponor Cave; Metaliferi Mountains: 14. Liliecilor din Cheile Ampoiței Cave; Trascăului Mountains: 15. Puculea Cave, 16. Ungurească Cave; Ciomad-Puturosu Mountains: 17–23. Kis Cave, Būdös Cave, Sziklaalámenő Cave, Damoklész Cave, Bagolytanya Cave, Gyilkos Cave, Akna Cave; Perșani Mountains: 24. Orbán Balázs Cave, 25. Cave nr. 105. from Vărghiș Gorge, 26. Comana Cave; Someșului Plateau: 27. Ciungi Cave; Vâlcân Mountains: 28. „Galeria de mina de la borna 5.” Mine; Mehedinți Mountains: 29. Lazului Cave, 30. Mare de la Balta Cave; Almăjului Mountains: 31. Gura Ponicevei Cave)

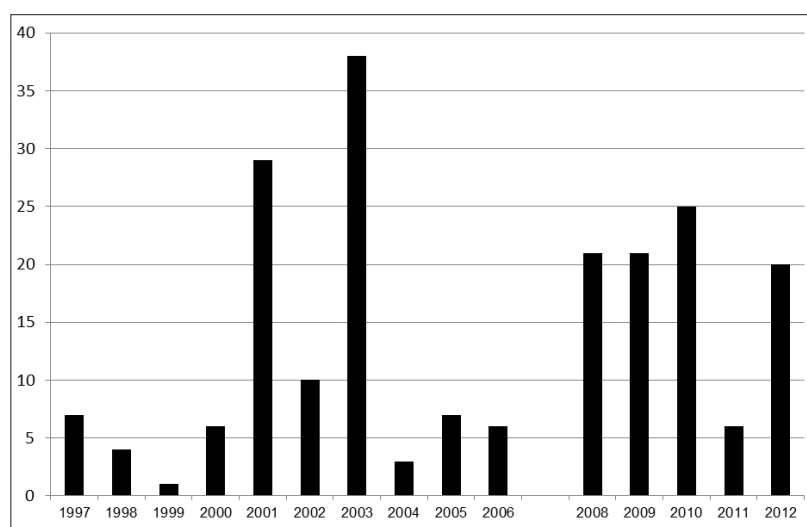


Fig. 2. The multiannual abundance of the edible dormouse (*Glis glis*) in the caves of Puturosu Mountain, based on dead found individuals.



Photo 1. Edible dormouse (*Glis glis*) in the Moanei/Bíró Lajos Cave, Pădurea Craiului Mountains (photo: Levente Barti)



Photo 2. Edible dormouse dropping heaps in the holes of the Kis Cave, Puturosu Mountain (photo: Levente Barti)



Photo 3. Victims of the carbon-dioxide from the Gyilkos/Ucigaşa Cave, Puturosu Mountain – edible dormice, fire salamander, brown long-eared bats (photo: Levente Barti)