

***Spermophilinus* and *Csakvaromys*, two names for the same genus of ground squirrel (Tamiini, Sciuridae, Rodentia, Mammalia) from the Neogene of Europe**

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Abstract

Spermophilinus and *Csakvaromys* are shown to be valid names for the same genus of common Miocene European ground squirrel. Although *Csakvaromys* has priority it is argued that maintaining *Spermophilinus* is in the interest of the stability of the nomenclature.

Keywords: *Spermophilinus*, *Csakvaromys*, taxonomic synonymy, Sciuridae, Neogene, Europe.

Zusammenfassung

Spermophilinus und *Csakvaromys* sind valide Namen für dieselbe Gattung Europäischer Sciuridae. Obwohl *Csakvaromys* Priorität hat schlagen wir vor aus Gründen der Stabilität der Nomenklatur am Namen *Spermophilinus* festzuhalten.

Schlüsselwörter: *Spermophilinus*, *Csakvaromys*, Synonymie, Sciuridae, Neogen, Europa.

The re-introduction in 2004 of the obsolete generic name *Csakvaromys* KRETZOI, 1951 by KRETZOI & FEJFAR to replace *Spermophilinus* DE BRUIJN & MEIN, 1968, induced us to compare the dental morphology of the genera *Palaeosciurus* POMEL, 1853 and *Spermophilinus* (= *Csakvaromys*) from Europe and western Asia, *Sciurotamias* MILLER, 1901 from Asia, and *Protospermophilus* GAZIN, 1930 and *Miospermophilus* BLACK, 1963 from North America. The dentitions of all these unspecialized Tamiini share characters such as a shallow diastema between i and p4, a protoloph and metaloph in the M1–2 that converge towards the protocone, a strong protocone in the M1–2 that occupies most of the lingual border of the occlusal surface, a metaloph in the M1–2 that is often constricted near the protocone, the absence of a metaloph in the M3, and a slanting postero-internal

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corner of the m1–2 caused by the incorporation of the entoconid into the posterolophid. The differences between the dentitions of species allocated to these genera are restricted to crown height, degree of expansion of the talon(id) of the M3/m3, and degree of development of the entoconid in the m1–2. The generic allocation of cheek teeth of this type of ground squirrels from the various geographical areas seems to follow local tradition rather than that it is based on differences in dental morphology. The trend set by KRETZOI & FEJFAR (2004) and recently followed by other colleagues from central and eastern Europe to regard *Spermophilinus* as a junior synonym of *Csakvaromys*, is in our opinion unfortunate, and will be disputed below.

In a publication on the *Hipparion* fauna from Csákvár (Hungary), KRETZOI (1951: 406) described (but did not figure) under the heading (?)Sciuridae and *Csákváromys* nov. gen.: ‘*Csákváromys sciurinus* n. sp. (Holotype: F.I.V. 6003. Corpus of the right mandible without ramus, with fairly worn molars.) A Sciuriform rodent of the size of a *Citellus*, with elongated mandible, wide masseteral impression, with right lower border. Enamel surface of the I with longitudinal ribs, molars strongly brachyodont. Dimensions: length of mandible 28–28,5 mm, height under P₄ 5,8 mm, length of P₄–M₃ 8 mm, transversal diameter of I: 1,4 mm, sagittal diameter of the same 2,4 mm.’ It is clear from this description of the type, and at the time only, specimen that the author was not sure whether or not it represented a sciurid. At the same time he did not differentiate his new taxon from other rodents.

In a subsequent overview of material from Csákvár, KRETZOI (1954: 62) mentioned the discovery of another specimen: ‘*Csákváromys sciurinus* KRETZOI. – Une prémolaire inférieure correspond entièrement dans ses dimensions et proportions à la P₄ tout à fait usée de la mandibule trouvée en 1951. La dent bien conservée – abstraction faite de ses dimensions plus médiocres (1,8–1,5 mm) – correspond entièrement à la taille du *Sciurus* et en conséquence nous pouvons considérer comme certain, que le *Csákváromys* est un Sciuridé véritable, mais la forme de sa mandibule l’isole dans le système.’ The new p4 convinced the author that *Csakvaromys sciurinus* is a sciurid, but again he made no effort to differentiate it from other squirrels and gave no figures.

GROMOV et al. (1965), in their Russian textbook on the Marmotinae, figured and described KRETZOI’s mandible of *Csakvaromys sciurinus*, recognized its ground squirrel characteristics, and tentatively regarded *Csakvaromys* as a subgenus of *Sciurotamias*, stating that they expected *Csakvaromys* to be an independent genus if more material would become available.

DE BRUIJN & MEIN (1968) described and figured the extensive material of *Sciurus bredai* VON MEYER, 1848 (= *Sciurus spermophilinus* DEPÉRET, 1887) from La Grive (France), and, considering it a ground squirrel, defined the genus *Spermophilinus* (type species *Sciurus bredai*), choosing the name *Spermophilinus* as a tribute to Depéret. Since that time the animal has generally been referred to in the literature as *Spermophilinus bredai* (VON MEYER, 1848). KRETZOI & FEJFAR (2004) listed *Csákváromys sciurinus* as a junior synonym of *Sciurus bredai*, which implies that these authors considered that species as

the type of *Csakvaromys*. Since *Csakvaromys* and *Spermophilinus* are based on the same type species, they are synonyms by definition.

Other species currently included in *Spermophilinus* are *S. turolensis* DE BRUIJN & MEIN, 1968, *S. giganteus* DE BRUIJN et al., 1970, and *S. besanus* CUENCA BESCÓS, 1988. We consider the taxonomic position of the small *Sciurotamias* (*Csakvaromys*) *gromovi* TOPACHEVSKY, 1971, which is based on a mandible with *i* and *m1* and *m2*, as uncertain. The name *Csakvaromys* has been used by GROMOV et al. (1965), TOPACHEVSKY (1971), KRETZOI et al. (1976), LUNGU (1981), KRETZOI & FEJFAR (2004), HULVA et al. (2007), NICOARA (2011) and SINITSÁ (2011).

The type material of *Csakvaromys sciurinus* is obviously too poor for identification at the species level: LUNGU (1981) and NICOARA (2011) consider *C. sciurinus* to be synonymous with *Spermophilinus turolensis*, whereas KRETZOI & FEJFAR (2004) see *C. sciurinus* as a synonym of *Spermophilinus bredai* (see also BERNOR et al. 2002). The similarity between the shape of the type mandible of *C. sciurinus* and the one of *S. bredai* leaves no doubt as to their generic identity.

Summarizing we conclude that 1) *Spermophilinus* as well as *Csakvaromys* are valid names, because their definition meets the requirements of article 13.1.1. of the International Code of Zoological Nomenclature, which states that a name should be ‘accompanied by a description or definition in words that are purported to differentiate the taxon’, 2) *Spermophilinus* and *Csakvaromys* share the same type and are thus synonyms, 3) *Csakvaromys* has priority over *Spermophilinus*, but its type material is too poor to allow identification at the species level.

We therefore consider the revival of the obsolete name *Csakvaromys* not to be in the interest of the stability of the nomenclature and recommend to maintain the name *Spermophilinus*. We are aware that this conclusion may be disputed. If so, we think that this case should be referred to the International Commission on Zoological Nomenclature.

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References

- BERNOR, R.L., KORDOS, L., ROOK, L. (et al.) (2002): Recent advances on multidisciplinary research at Rudabánya, Late Miocene (MN9), Hungary: a compendium. – *Palaeontographia Italica*, **89**: 3–36.
- BRUIJN, H. DE & MEIN, P. (1968): On the mammalian fauna of the Hipparion-beds in the Calatayud-Teruel Basin (Prov. Zaragoza, Spain). Part V. The Sciurinae. – *Proceedings of the Koninklijke Nederlandse Akademie van Wetenschappen, Series B*, **71**: 73–90.

- BRULIN, H. DE, DAWSON, M.R. & MEIN, P. (1970): Upper Pliocene Rodentia, Lagomorpha and Insectivora (Mammalia) from the isle of Rhodes (Greece). III. The Rodentia, Lagomorpha and Insectivora. – Proceedings of the Koninklijke Nederlandse Akademie van Wetenschappen, Series B, **73**: 568–584.
- CUENCA BESCÓS, G. (1988): Revisión de los Sciuridae del Aragoniense y del Ramblense en la fosa de Calatayud-Montalbán. – *Scripta Geologica*, **87**: 1–116.
- GROMOV, I.M., BIBIKOV, D.I. & KOLABUCHOV, N.I. (1965): Nazemnye belichi (Marmotinae). Fauna SSSR. Mlekopitajuščie **3/2**: 467 p. – Zoologičeskij institut, Akademija nauk SSSR. N.S. (Moscow), No. 92 (in Russian).
- HULVA, P., HORÁČEK, I. & BENDA, P. (2007): Molecules, morphometrics and new fossils provide an integrated view of the evolutionary history of Rhinopomatidae (Mammalia: Chiroptera). – *BioMed Central Evolutionary Biology*, **7**: 165 (28pp).
- International Commission on Zoological Nomenclature, International Code of Zoological Nomenclature, online version, 4th edition. <http://iczn.org> (2000).
- KRETZOI, M. (1951): The Hipparion-fauna from Csákvár. – *Földtani Közlöny* (Budapest), **81**: 384–417 (in Hungarian and English).
- KRETZOI, M. (1954): Rapport final des fouilles paléontologiques dans la grotte de Csákvár. – *Magyar Állami Földtani Intézet Évi Jelentése 1952*: 37–69 (in Hungarian and French).
- KRETZOI, M. & FEJFAR, O. (2004): Sciurids and cricetids (Mammalia, Rodentia) from Rudabánya. – *Palaeontographia Italica*, **90**: 113–148.
- KRETZOI, M., KROLOPP, E., LÖRINCZ, H. & PÁLFALVY, I. (1976): Flora, Fauna und stratigraphische Lage der Unterpannonischen Prähominiden-Fundstelle von Rudabánya (NO-Ungarn). – *Magyar Állami Földtani Intézet Évi Jelentése 1974*: 365–394 (in Hungarian and German).
- LUNGU, A. (1981): Gipparionovaia fauna srednego Sarmata Moldavii (Insectivora, Lagomorpha, Rodentia). Izdatelistvo Shtiintsia. Kisinev. 140 p. (in Russian).
- NICOARA, I. (2011): Upper Turolian Sciuroidea (Rodentia, Mammalia) from the Republic of Moldova. – *Acta Palaeontologica Romaniae*, **7**: 257–265.
- SINITSIA, M.V. (2011): Pliopetaurista (Mammalia, Rodentia) from the Neogene of Ukraine. – *Vestnik zoologii*, **45**: 19–33 (in Russian, with summary in English).
- TOPACHEVSKY, V.A. (1971): Remains of *Sciurotamias gromovi* (Rodentia, Sciuridae) from the Upper Miocene deposits of the Black Sea area in the Ukraine. – *Vestnik zoologii*, **4**: 46–50 (in Russian, with summary in English).