

**Case 3483*****Villanyia Kretzoi*, 1956 (Mammalia, Rodentia, ARVICOLIDAE): proposed conservation of usage by designation of a neotype for the type species *Villanyia exilis Kretzoi*, 1956**

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**Abstract.** The purpose of this application, under Article 75.6 of the Code, is to set aside all type fixations for a species of extinct vole *Villanyia exilis* Kretzoi, 1956 prior to that by Terzea (1991) in order to conserve prevailing usage. The lectotype and paralectotype demonstrably belong to two different taxa. The specimen designated as lectotype by Rabeder (1981) is considered to belong to *Dolomys kretzoi* Kowalski, 1958 (currently *Clethrionomys kretzoi*). The paralectotype corresponds to the original species description and represents a taxon uniformly recognised in the current taxonomic and biostratigraphic literature as *Villanyia exilis* Kretzoi, 1956, which usage should be conserved.

**Keywords.** Nomenclature; taxonomy; Mammalia; Rodentia; ARVICOLIDAE; *Villanyia*; *Villanyia exilis*; voles; Europe; Pliocene; Pleistocene; biostratigraphy.

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1. The new genus and species *Villanyia exilis* Kretzoi, 1956 (p. 65 in the Hungarian text; p. 188 in the German text) was described from the Pleistocene of Hungary (locality Villany-5). There were two syntypes, lower first molars, but no holotype was identified. The description was (transl.) 'A very small sized type (M1- Length 2.0–2.1 mm) combining characters of *Mimomys* and *Prometheomys*, with confluent prism-pairs and wide, rounded, re-entrant folds behind the high *Mimomys* anterior loop (without fold or islet)'. There were no illustrations. These specimens are stored at the Hungarian Geological Survey Museum Budapest (MAFI), under numbers V-12702 VT95#1 and V-12702 VT95#2. The descriptions 'high anterior loop' and 'wide, rounded, re-entrant folds' apply to V-12702 VT95#2 and not V-12702 VT95#1 (Mayhew, in press).

2. Kowalski (1958) described the new species *Dolomys kretzoi* from the Pleistocene of Kadzielnia, Poland. It was later recognised that this species belongs to the clade of red-backed voles *Clethrionomys* Tilesius, 1850 (see e.g. Tesakov, 1996). It has been put forward (Carleton, Musser & Pavlinov, 2003) that *Myodes* Pallas, 1811 is the valid senior synonym of *Clethrionomys* Tilesius, 1850. As this is not yet fully incorporated into working practice, and is not the main point of the current case, the name *Clethrionomys* is used here for clarity.

3. The new genus and species *Cseria gracilis* Kretzoi, 1959 was established based on material from the Pliocene locality Csarnota-2, Hungary.

4. Kretzoi (1969, p. 178) further described *Villanyia*: (transl.) ‘The type of this remarkable genus is separated very clearly from [the genus *Mimomys*] by the very long, simple, loop-like anteroconid cap, thick enamel and wide, round re-entrant angles between incompletely separated prisms, and finally by absence of crown cement’. This list of character states serves to clarify the generic and specific description, and applies only to the specimen V-12702 VT95#2 (Mayhew, in press).

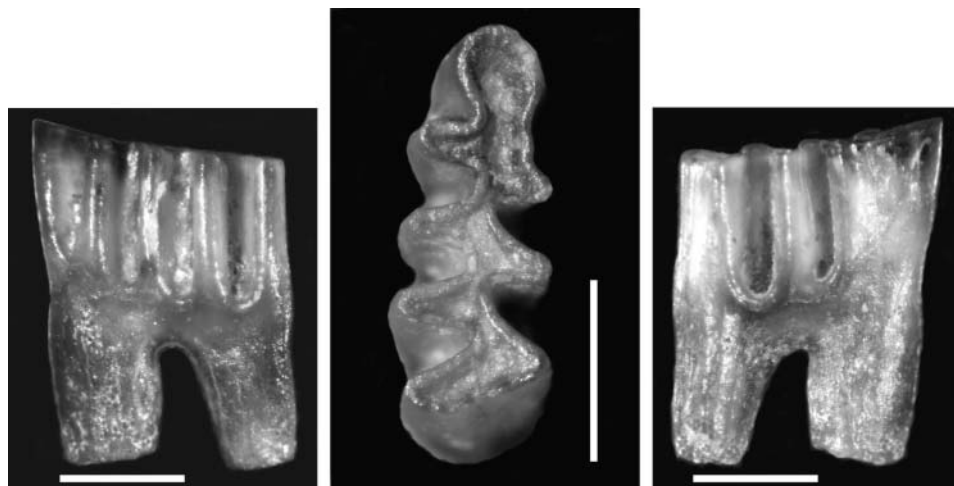
5. The use of the generic name *Villanyia* Kretzoi, 1956 was extended from the type species by some authors to include several taxa of fossil voles with rooted teeth, including species of lagurine voles, as reviewed in Gromov & Polyakov (1977). Currently, the majority of authors include these rooted lagurine voles in the genus *Borsodia* Janossy and van der Meulen, 1975 (reviewed by Tesakov, 1993, 2004) leaving in *Villanyia* only a number of (extinct) small forms from the Late Pliocene and Early Pleistocene of Eastern Europe (synonymy in Mayhew, in press). A number of genus level taxonomic issues will be clarified by the neotype designation proposed here, without causing nomenclatural instability.

6. Rabeder (1981, pp. 63–64, figs. 44/1–2) illustrated the two teeth of the *Villanyia exilis* type series for the first time, concluding that they were so different that they belonged to different taxa. He designated one tooth (fig. 44/1, V-12702 VT95#1) as the lectotype of *Villanyia exilis*, and described the other tooth (fig. 44/2, V-12702 VT95#2) as the holotype by monotypy of the new species *Cseria ultima* Rabeder, 1981. However, the descriptions of *Villanyia* by Kretzoi (1956, 1969), noted in paras. 1 and 4, match the specimen illustrated in fig. 44/2 of Rabeder (1981) (V-12702 VT95#2) but not the tooth designated as lectotype by Rabeder (V-12702 VT95#1). The name *Cseria ultima* was not adopted in the literature.

7. Carls & Rabeder (1988, p. 213) stated that the separation of *Cseria ultima* proposed in Rabeder (1981) was not justified, and that the differences they observed between V-12702 VT95#1 and VT95#2 might be considered to fall within the variability of a single species.

8. Terzea (1991) described, under the name *Villanyia exilis* Kretzoi, 1956, abundant material from the Pleistocene of Betfia-XIII, Romania, which agreed in morphology with the tooth from Villany-5 termed *Cseria ultima* by Rabeder (1981, fig. 44/2), i.e. V-12702 VT95#2, the current paralectotype of *Villanyia exilis*. She also (Terzea 1991, p. 91) discussed the lectotype designated by Rabeder (V-12702 VT95#1) and pointed out that this tooth corresponded the least to the original type description of Kretzoi, and was furthermore from a juvenile animal and damaged and resembled *Clethrionomys*. She proposed instead the paralectotype (V-12702 VT95#2) as a replacement lectotype ‘la M1 d’adulte . . . Rabeder . . . figure 44/2’. Terzea (1991, Fig. 3, C) refigured this tooth with a caption stating that it was the lectotype of *Villanyia exilis* viz: ‘Lectotype d’après Rabeder, 1981, fig. 44/2’. Terzea (1991, p.100) referred in the text to this tooth as being the lectotype ‘calculé sur la fig. 44/2 de Rabeder’.

9. The work of Terzea (1991) is the most complete published description of the teeth of *Villanyia exilis*, covering the entire dentition. Except for Rabeder (1981), the definition of *Villanyia exilis* by Terzea was the basis for the entire current taxonomic and biostratigraphic usage (e.g. Fejfar & Horacek, 1983; Janossy, 1986; Maul, 1990; Kowalski and Nadachowski, 1990; Kordos, 1994; Sala et al., 1994; Aguirre et al.,



**Fig. 1.** *Villanyia exilis* Kretzoi, 1956. Proposed neotype GIH V-12702 VT95#2, Museum of the Hungarian Geological Survey (MAFI), Budapest. Lingual, occlusal, and buccal views. Scale bar 1mm.

1997; Nadachowski, 1998; Tesakov, 2004; Maul & Markova, 2007; Popov & Marinska, 2007; Arvibase <http://quarter.ginras.ru/Arvibase/g15.htm>).

10. Tesakov (2004, p. 173) pointed out the resemblance between the lectotype of *Villanyia exilis* selected by Rabeder (1981) (V-12702 VT95#1) and young teeth of *Clethrionomys kretzoi* (Kowalski, 1958).

11. This conclusion is supported by restudy of the material (Mayhew, in press) indicating that the lectotype designated by Rabeder has crown cement and high enamel free areas. These features have not been noted by previous authors and are not indicated in the only illustration in the literature (Rabeder, 1981, fig. 44/1). They confirm that the tooth belongs to the taxon currently known in the literature as *Clethrionomys kretzoi* Kowalski, 1958 and is a different taxon from the paralectotype, which has low enamel-free areas and lacks crown cement.

12. *Villanyia exilis* is the type species of *Villanyia* Kretzoi, 1956. If Rabeder's lectotype designation were to be followed, *Villanyia* Kretzoi, 1956 would become a junior subjective synonym of *Clethrionomys* Tilesius, 1850, which is contrary to the entire usage in the literature; the name *Clethrionomys kretzoi* (Kowalski, 1958) would have to be replaced by *Clethrionomys exilis* (Kretzoi, 1956), which is contrary to the entire usage in the literature; and the species identified as *Villanyia exilis* Kretzoi, 1956 in the current literature would have no generic name, as a new generic name would be needed for *ultima* Rabeder, 1981 which does not belong to the genus *Cseria* Kretzoi, 1959 (Mayhew, in press). This would destabilise the established concept of *Villanyia* Kretzoi, 1956 and *Clethrionomys kretzoi* (Kowalski, 1958) (more than 75 references are deposited with the Secretariat of the Commission). These taxa are referred to in studies of biostratigraphy of the Plio-Pleistocene, also used by other fields such as palaeoanthropology and palaeoecology.

13. It is therefore desirable in the interests of stability and prevailing usage to set aside the lectotype designation by Rabeder (1981) and designate as neotype the

specimen GIH V-12702 VT95#2 in the Museum of the Hungarian Geological Survey (MAFI), Budapest.

14. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for *Villanyia exilis* Kretzoi, 1956 and designate specimen GIH V-12702 VT95#2, Museum of the Hungarian Geological Survey (MAFI), Budapest as the neotype;
- (2) to place on the Official List of Generic Names in Zoology the name *Villanyia* Kretzoi, 1956 (gender: feminine), type species by monotypy *Villanyia exilis* Kretzoi, 1956;
- (3) to place on the Official List of Specific Names in Zoology the name *exilis* Kretzoi, 1956, as published in the binomen *Villanyia exilis* (specific name of the type species of *Villanyia* Kretzoi, 1956), as defined by the neotype designated in (1) above;
- (4) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *ultima* Rabeder, 1981, as published in the binomen *Cseria ultima* (a junior objective synonym of *Villanyia exilis* Kretzoi, 1956, as defined by the neotype designated in (1) above).

### Acknowledgements

DFM gratefully acknowledges support from the EEC Synthesys program, and thanks L. Kordos (*Hungarian Geological Survey, Budapest*), A. Nadachowski (*Polish Academy of Sciences, Krakow*), A. Tesakov (*Academy of Sciences, Moscow*), L. Maul (*Senckenberg, Weimar*) and J. van Tol (*Naturalis, Leiden*) for advice and discussion.

### References

- Aguirre, E., Vangenheim, E.A., Morales, J., Sotnikova, M.V. & Zazhigin, V.S. 1997. Plio-Pleistocene mammal faunas: an overview. Pp. 114–128 in Van Couvering, J.A. (Ed.), *The Pleistocene Boundary and the beginning of the Quaternary. Final report of the International Geological Correlation Program-Project 41: Neogene/Quaternary Boundary*. University Press, Cambridge.
- Arvibase. <http://quarter.ginras.ru/Arvibase/g15.htm>. Tesakov, A.S. Ed. (Accessed 15 April 2009).
- Carleton, M.D., Musser, G.G. & Pavlinov, I.Ya. 2003. *Myodes* Pallas, 1811, is the valid name for the genus of red-backed voles. Pp. 96–98. in Averianov, A. & Abramson, N. (Eds.), *Systematics, phylogeny and paleontology of small mammals*. Russian Academy of Sciences.
- Carls, N. & Rabeder, G. 1988. Die Arvicoliden (Rodentia, Mammalia) aus dem Ältest-Pleistozän von Schernfeld (Bayern). *Beiträge zur Paläontologie von Österreich*, **14**: 123–237.
- Fejfar, O. & Horáček, I. 1983. Zur Entwicklung der Kleinsäugerfaunen im Villányium und Alt-Biharium auf dem Gebiet der ČSSR. *Schriftenreihe geologische Wissenschaft*, **19/20**: 111–207.
- Gromov, I.M. & Polyakov, I.Ya. 1977. *Fauna SSSR. Mlekopitayushchie*, volume 3, no. 8, Polevki (Microtinae). 502 pp. Nauka, Leningrad.
- Janossy, D. 1986. *Pleistocene vertebrate faunas of Hungary*. 208pp. Akadémiai Kaidó, Budapest.
- Kordos, L. 1994. Revised Biostratigraphy of the Early Man Site at Vertesszöllös, Hungary. *Courier Forschungs-Institut Senckenberg*, **171**: 225–236.
- Kowalski, K. 1958. An early Pleistocene fauna of small mammals from the Kadzielnia hill in Kielce (Poland). *Acta Palaeontologica Polonica*, **3**: 1–47.
- Kowalski, K. 2001. Pleistocene rodents of Europe. *Folia Quaternaria*, **72**: 1–389.

- Kowalski, K. & Nadachowski, A.** 1990. Review of fossil arvicolid faunas of Poland. Pp. 297–304 in Fejfar, O. & Heinrich, W-D. (Eds.), *International symposium evolution, phylogeny and biostratigraphy of arvicolids*. Geological Survey, Prague.
- Kretzoi, M.** 1956. Die Altpleistozänen Wirbeltierfaunen des Villányer Gebirges. *Geologica Hungarica, series Paleontologica*, **27**: 1–264.
- Kretzoi, M.** 1959. Insectivoren, Nagetiere und Lagomorphen der jüngstpliozänen Fauna von Csarnóta im Villányer Gebirge (Südungarn). *Vertebrata Hungarica Musei Historico-Naturalis Hungarici*, **1**: 237–246.
- Kretzoi, M.** 1969. Skizze einer Arvicoliden Phylogenie-Stand – Stand 1969. *Vertebrata Hungarica Musei Historico-Naturalis Hungarici*, **11**: 155–193.
- Maul, L.** 1990. Überblick über die unterpleistozänen Kleinsäugerfaunen Europas. *Quartärpaläontologie*, **8**: 153–191.
- Maul, L. & Markova, A.** 2007. Similarity and regional differences in Quaternary arvicolid evolution in Central and Eastern Europe. *Quaternary International*, **160**: 81–99.
- Mayhew, D.F.** (in press). The type material and the enamel structure of *Villanyia exilis* Kretzoi, 1956 (Arvicolidae, Rodentia). *Acta Zoologica Cracoviensia*.
- Nadachowski, A.** 1998. Faunal succession of small mammal assemblages at the Pliocene-Pleistocene boundary in Poland. *Mededelingen Nederlands Instituut voor Toegepaste Geowetenschappen TNO*, **60**: 281–286.
- Popov, V.V. & Marinska, M.** 2007. An almost one million year long (Early to Late Pleistocene) small mammal succession from the archaeological layers of Kozarnika Cave in Northern Bulgaria). *Courier Forschungs-Institut Senckenberg*, **259**: 79–92.
- Rabeder, G.** 1981. Die Arvicoliden (Rodentia, Mammalia) aus dem Pliozän und dem älteren Pleistozän von Niederösterreich. *Beiträge zur Paläontologie von Österreich*, **8**: 1–373.
- Sala, B., Masini, F. & Torre, D.** 1994. Villanyian arvicolids from Rivoli Veronese, a karst fissure in the Adige valley. *Bolletino della Societa Paleontologica Italiana*, **33**: 3–11.
- Terzea, E.** 1991. Le genre *Villanyia* Kretzoi dans le Pléistocène inférieur de Bétfia-XIII (Dép. de Bihor, Roumanie). *Travaux Institute Spéologie Emile Racovitza*, **30**: 89–105.
- Tesakov, A.S.** 1993. Evolution of *Borsodia* (Arvicolidae, Mammalia) in the Villanyian and in the Early Biharian. *Quaternary International*, **19**: 41–45.
- Tesakov, A.S.** 1996. Evolution of bank voles (*Clethrionomys*, Arvicolinae) in the late Pliocene and early Pleistocene of eastern Europe. *Acta Zoologica Cracoviensia*, **39**: 554–547.
- Tesakov, A.S.** 2004. Biostratigraphiya srednego pliocena–Eopleistocena Vostochnoi Evropy (po melkim mlekopitayushchim), *Trudy Geologicheskogo Instituta, Rossiiskaya Akademiya Nauk*, **554**: 1–247.

Acknowledgement of receipt of this application was published in BZN **66**: 1.

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