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**Subsequent spelling *ritchiei* for *Mnematium ritchii* Macleay, 1821 (Coleoptera: Scarabaeoidea: Scarabaeidae: Scarabaeini) to be maintained for prevailing usage**

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# Subsequent spelling *ritchiei* for *Mnematium ritchii* Macleay, 1821 (Coleoptera: Scarabaeoidea: Scarabaeidae: Scarabaeini) to be maintained for prevailing usage

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**Abstract.** The specific name in *Mnematium ritchiei* Macleay, 1821 (Coleoptera: Scarabaeidae: Scarabaeini) is an incorrect subsequent spelling—the original spelling is *ritchii*—but, because of its prevailing usage here documented, is to be preserved.

**Key words.** Scarabs, nomenclature, International Code of Zoological Nomenclature.

**ZooBank registration.** urn:lsid:zoobank.org:pub:0380FF7C-FFD4-42D2-9E6E-97EE376C4DF1

## Introduction

After the recent publication of two works (Numa et al. 2020; Krajcik 2020) in which the name of the same species is cited with two different spellings, I had to deal with the nomenclatorial issue of *Mnematium ritchii* Macleay, 1821 and its subsequent spelling *ritchiei*. The topic is much like that of *Copris hispanus cavolinii* (Petagna, 1792) (Ziani 2020), and in this case too, a published act is needed for formalizing the correct nomenclature.

## Materials and Methods

*Mnematium ritchii* was described by Macleay (1821) on a single specimen from “Mourzouk” (Libya). The author dedicated the species to the man who collected the specimen, i.e. Joseph Ritchie (1788?–1819), an English surgeon, poet, naturalist and explorer. The genitive singular case of Ritchie’s latinized name is “*ritchii*”, and this noun is what Macleay correctly used in naming the taxon. In this regard, “examples” in Article 31.1.1. of the International Code of Zoological Nomenclature (ICZN 1999), from here on called the Code, are explanatory. Therefore, “*ritchii*” is grammatically correct and, according to Article 32.1 of the Code (ICZN 1999), is the correct original spelling.

As far as I know, the first who used the subsequent spelling “*ritchiei*” were Bedel (1892) and Reitter (1892). Neither author made a statement of intention in changing the name, which excludes an “emendation” as in Article 33.2 of the Code (ICZN 1999). Therefore, “*ritchiei*” is an incorrect subsequent spelling and cannot be used as a substitute name (Article 33.3 of the Code, ICZN 1999), unless demonstrated to be in prevailing usage and attributed to the publication of the original spelling (Article 33.3.1 of the Code, ICZN 1999).

As stated by Ziani (2020), the Code is not clear about the meaning of “prevailing usage”. Thus, a literature search of primary publications was undertaken for references using both spellings, to determine which was more frequently used. It should be noted that, as can be seen from the remarks between square brackets in the lists, “*ritchii*” and “*ritchiei*” are not the only spellings used, others are most probably misspellings or *lapsus calami*. I reasonably assumed that spellings “*ritschii*” and “*ritchi*” can be referred to the original spelling “*ritchii*”, whilst spellings “*ritschiei*”, “*ritschei*”, “*richiei*” and “*ritchei*” can be referred to the subsequent spelling “*ritchiei*”.

Names of old authors or references of old works are cited according to Bousquet (2016).

Finally, it must be mentioned that such lists do not claim to be exhaustive, but a reasonably accurate representation of the usage rates for both spellings.

## Results

The following is a list of works other than the original publication, in which the original spelling “*ritchii*”, or comparable spellings (see above), are used. The references are listed in chronological order. In square brackets is the spelling of the name/s used and, if needed, some remarks.

- Dejean PFMA. 1821.** Catalogue de la collection de coléoptères de M. le Baron Dejean. Crevot; Paris. viii + 136 p. [“*ritchii*”. Its authorship is attributed to L. J. Reiche]
- Dejean PFMA. 1833.** Catalogue des coléoptères de la collection de M. le Comte Dejean. Méquignon-Marvis; Paris. 443 p. [“*ritchii*”. Its authorship is attributed to L. J. Reiche]
- Dejean PFMA. 1836.** Catalogue de coléoptères de la collection de M. le Comte Dejean. Troisième édition, revue, corrigée et augmentée. Méquignon-Marvis; Paris. xiv + 503 p. [“*ritchii*”. Its authorship is attributed to L. J. Reiche]
- Reiche LJ. 1842.** Essai d’une classification méthodique de la tribu des Coprophages, famille des Lamellicornes, division des Scaraboeides, Coléoptères, Pentamères. Annales de la Société entomologique de France 11: 59–94. [“*ritchii*”]
- Erichson WF. 1848.** Naturgeschichte der Insecten Deutschlands. Erste Abtheilung. Coleoptera. Dritter Band. Nicolaische Buchhandlung; Berlin. vi + 968 p. [“*ritchii*” in the index of the book, “*ritschii*” in the text]
- Lacordaire JT. 1855.** Histoire naturelle des insectes. Genera des Coléoptères ou exposé méthodique et critique de tous les genres proposés jusqu’ici dans cet ordre d’insectes. Tome troisième contenant les familles des pectinicornes et lamellicornes. Roret; Paris. 594 p. [“*ritchii*”]
- Marseul SA. 1866.** Catalogue des Coléoptères d’Europe et des pays limitrophes. L’Abeille 4: 1–131. [“*ritchi*”]
- Lansberge JW. 1874.** Observations sur la classification des Lamellicornes coprophages. I. Ateuchides. Annales de la Société entomologique de Belgique 17: 177–193. [“*ritchii*”]
- Heyden L. 1890.** Aufzählung von Käfer-Arten aus Tunis und Tripolis aus Loosen von M. Quedenfeldt. Deutsche Entomologische Zeitschrift 1: 65–75. [“*ritchii*”, but Heyden pointed out “So schreibt der Autor mehrfach, obgleich die Art nach Ritchie benannt ist, der sie aus Mourzouk sandte” (so writes the author several times, although the species is named after Ritchie, who sent it from Mourzouk)]
- Arrow GJ. 1919.** A remarkable new ball-rolling beetle (Family Scarabaeidae). Annals and Magazine of Natural History, including Zoology, Botany and Geology 9 (3): 433–435. [“*ritchii*”]
- Krajcik M. 2006.** Checklist of Scarabaeoidea of the World. 1. Scarabaeinae (Coleoptera: Scarabaeidae: Scarabaeinae). Animma.X (supplement) 3: 1–189. [“*ritchii*”]
- Krajcik M. 2012.** Checklist of the world Scarabaeoidea. Animma.X (supplement) 5: 1–278. [“*ritchii*”]
- Krajcik M. 2013.** Addenda to checklist of world Scarabaeoidea 2012. Animma.X 49–54: 1–299. [“*ritchii*”]
- Ziani S, Gudenzi I. 2013.** Commenti sulla sistematica generica degli Scarabaeini del bacino del Mediterraneo con una chiave dicotomica per il loro riconoscimento (Insecta Coleoptera Scarabaeidae: Scarabaeinae). Quaderno di Studi e Notizie di Storia Naturale della Romagna 36(2012): 115–158. [“*ritchii*”]
- Krajcik M. 2020.** Hmyz jako předloha význačných uměleckých děl (speciální výběr). I. Posvátní brouci starověkého Egypta - Insects in famous artworks (special selection). I. Sacred beetles of ancient Egypt. Animma.X 82: 1–20. [“*ritchii*”]

The following is a list of works in which the subsequent spelling “*ritchiei*”, or comparable spellings (see above), are used. The references are listed in chronological order. In square brackets is the spelling of the name/s used and, if needed, some remarks.

- Bedel L. 1892.** Revision des *Scarabaeus* paléarctiques. L’Abeille 27: 281–288. [“*ritchiei*”]
- Reitter E. 1892.** Bestimmungs-Tabelle der Lucaniden und coprophagen Lamellicornen. XXIV. Heft. Verlag des Verfassers; Brünn. 230 p. [“*ritchiei*”]
- Reitter E. 1894.** Nachträge und Berichtigungen zu meiner Bestimmungs-Tabelle der coprophagen Lamellicornen. Entomologische Nachrichten 12: 183–190. [“*ritschier*”]
- Felsche C. 1907.** Coprophage Scarabaeiden. Deutsche Entomologische Zeitschrift 3: 273–296. [“*ritchiei*”]
- Gillet JJE. 1911.** Scarabaeidae: Coprinae I. Pars 38, vol. 19(2). In: Schenkling S (ed.). Coleopterorum Catalogus. W. Junk; Berlin. 100 p. [“*ritchiei*”]
- Holdhaus K. 1919.** Koleopteren aus Mesopotamien. Annalen des Naturhistorischen Museums in Wien 33: 39–58. [“*ritchiei*”]
- Winkler A. 1929.** Catalogus Coleopterorum regionis palaearticae (1924–1932). Scarabaeidae. Wien 9: 1009–1136. [“*ritchiei*”]
- Gridelli E. 1930.** Risultati zoologici della Missione inviata dalla R. Società Geografica Italiana per l’esplorazione dell’oasi di Giaraabub (1926–1927). Coleotteri. Annali del Museo civico di Storia naturale 54: 1–486. [“*ritchiei*”]

- Zavattari E.** 1934. Prodrómo della fauna della Libia. Tipografia già Cooperativa; Pavia. 1234 p. ["*ritchiei*"]
- Balthasar V.** 1935. Scarabaeidae des paláarktischen Faunengebietes. Monographische Bestimmungstabelle. I. Coprinae I. Teil. Scarabaeini, Sisyphini, Panelini, Coprini, Onitini, Oniticellini. Bestimmungstabelle der europäischen Coleopteren 115: 1–112. ["*ritschei*"]
- Schatzmayr A.** 1937. Gli Scarabaeidae della Tripolitania. Aggiunte al "Prodrómo della Fauna della Libia" di E. Zavattari. Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale in Milano 76: 389–402. ["*ritchiei*"]
- Janssens A.** 1938. Exploration du Parc National Albert. Mission G. F. de Witte (1933-1935). Scarabaeini. Coleoptera Lamellicornia. Fam. Scarabaeidae. Institut des Parcs Nationaux du Congo Belge 21: 1–76. ["*ritchiei*"]
- Schatzmayr A.** 1938. Coleotteri raccolti dal dott. Edgardo Moltoni durante le sue missioni ornitologiche in Libia. Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale in Milano 77: 159–190. ["*ritchiei*"]
- Stolfa E.** 1938. Revisione delle specie paleartiche del sottogenere *Scarabaeus* s. str. Atti del Museo Civico di Storia Naturale di Trieste 13(7): 141–155. ["*ritchiei*"]
- Schatzmayr A.** 1946. Gli Scarabeidi coprofagi della Libia e dell'Egitto. Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale in Milano 85(1–2): 40–84. ["*ritchei*"]
- Ferreira MC.** 1961. Catálogo dos Escarabídeos da região etiópica. Tribos Scarabaeini, Gymnopleurini e Oniticellini. Boletim da Sociedade portuguesa de Ciências naturais 2(7): 225–236. ["*ritchiei*"]
- Ferreira MC.** 1961. Catálogo dos Escarabídeos da região etiópica. Tribos Scarabaeini, Gymnopleurini e Oniticellini. Boletim da Sociedade Portuguesa de Ciências Naturais 2(8): 17–156. ["*ritchiei*"]
- Balthasar V.** 1963. Monographie der Scarabaeidae und Aphodiidae der palaearktischen und orientalischen Region. Coleoptera: Lamellicornia. Band 1. 1. Scarabaeinae. 2. Coprinae. Tschechoslowakischen Akademie der Wissenschaften; Prague. 391 p. ["*ritchiei*" in the text, "*ritschiei*" in the index]
- Halfiter G, Matthews EG.** 1966. The natural history of dung beetles of the subfamily Scarabaeinae (Coleoptera, Scarabaeidae). Folia Entomologica Mexicana 12–14: 1–312. ["*ritchiei*"]
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- Cambefort, Y, Lecumberry M, Blanc R.** 1979. Coléoptères Scarabaeidae. *Scarabaeus* et genres voisins. Région paléarctique occidentale. Iconographie entomologique, pl. 9. ["*ritchiei*"]
- Holm E, Scholtz CH.** 1979. A revision of the genus *Pachysoma* M'Leay with an evaluation of the subtribe Pachysomina Ferreira and its genera (Coleoptera: Scarabaeidae). Journal of the entomological Society of southern Africa 42: 225–244. ["*ritchiei*" in the text, "*richiei*" in the drawing caption and in a table]
- Mostert LE, Holm E.** 1982. Notes on the flightless Scarabaeina (Coleoptera: Scarabaeidae) with a description of a new species. Cimbebasia 5(10): 274–284. ["*ritchiei*"]
- Zunino M.** 1984. Note sul brachitterismo di *Mnematium ritchiei* Mac Leay. Bollettino della Società Entomologica Italiana 116 (4–7): 96–101. ["*ritchiei*"]
- Baraud J.** 1985. Coléoptères Scarabaeoidea, Faune du Nord de l'Afrique, du Maroc au Sinaï. Éditions Lechevalier; Paris. 650 p. ["*ritchiei*"]
- Baraud J.** 1987. Coléoptères Scarabaeoidea, Faune du Nord de l'Afrique: addenda et corrigenda. Annales de la Société entomologique de France (N. S.) 23(4): 351–366. ["*ritchiei*"]
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- Forgie SA, Philips TK, Scholtz CH.** 2005. Evolution of the Scarabaeini (Scarabaeidae: Scarabaeinae). Systematic Entomology 30: 60–96. ["*ritchiei*", once "*ritchei*"]
- Ocampo FC, Philips TK.** 2005. Food relocation and nesting behavior of the Argentinian dung beetle genus *Eucranium* and comparison with the southwest African *Scarabaeus* (*Pachysoma*) (Coleoptera: Scarabaeidae: Scarabaeini). Revista de la Sociedad Entomológica Argentina 64 (1–2): 53–59. ["*ritchiei*"]
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The definition of “prevailing usage” is, according to the glossary of the Code (ICZN 1999), “...that usage of a name which is adopted by at least a substantial majority of the most recent authors concerned with the relevant taxon, irrespective of how long ago their work was published”. The original spelling “*ritchii*” has been used by 10 first authors in 15 works, nine of these works published in the 19<sup>th</sup> century, one in the 20<sup>th</sup> century and five in this century. The subsequent spelling “*ritchiei*” has been used by 29 first authors in 41 works, three of these works published in 19<sup>th</sup> century, 24 in 20<sup>th</sup> century and 14 in this century. Therefore, a substantial majority of the most recent authors adopted the subsequent spelling. In light of these data, I believe the definition of the glossary (ICZN 1999) is fulfilled and, following Article 33.3.1. of the Code (ICZN 1999), the subsequent spelling “*ritchiei*”, which is in prevailing usage and attributed to the publication of the original spelling, is to be maintained.

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- Reitter E. 1892.** Bestimmungs-Tabelle der Lucaniden und coprophagen Lamellicornen. XXIV. Heft; Brno, Czech Republic. 230 p.

**Ziani S. 2020.** Subsequent spelling *cavolinii* for *Scarabaeus cavolini* Petagna, 1792 (currently *Copris hispanus cavolinii*) to be maintained as prevailing usage (Coleoptera: Scarabaeoidea: Scarabaeidae: Coprini). *Insecta Mundi* 0777: 1–5.

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