

Case 3504

***Onthophagus rugulosus* Harold, 1886 (Coleoptera, SCARABAEIDAE): proposed conservation of the specific name**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the specific name of the dung beetle *Onthophagus rugulosus* Harold, 1886 (Coleoptera: SCARABAEIDAE), a widespread species from East Asia, by suppressing the senior secondary homonym *Elytridium rugulosum* Heer, 1870, a fragmentary fossil from the Miocene of Spitsbergen, Norway, that was transferred to *Onthophagus* in 1977. A replacement name, *O. spitsbergensis* nom. nov., is proposed for the dubious fossil species.

Keywords. Nomenclature; Coleoptera; SCARABAEIDAE; *Onthophagus*; *Elytridium*; *Onthophagus rugulosus*; dung beetles; Miocene; East Asia; Spitsbergen.

1. Heer (1870, p. 78) described the fossil species *Elytridium rugulosum* from an elytron from the Miocene of Spitsbergen, Norway, which he tentatively classified as a ground beetle (Coleoptera: CARABIDAE).

2. Harold (in Heyden et al., 1886, p. 289) described the extant species *Onthophagus rugulosus* from the surroundings of Beijing, China (Coleoptera: SCARABAEIDAE). The species is distributed from China to Assam, Korea and Vietnam (Löbl et al., 2006). The name has two junior subjective synonyms, *O. expansicollis* Fairmaire, 1891 (synonymised by Boucomont, 1919) and *O. sonani* Miwa, 1930 (synonymised without explanation by Nomura, 1973, p. 49; not listed as a synonym by Kabakov, 2006, p. 308). I am not aware of any use of *O. expansicollis* as a valid name after its description. *O. sonani* has rarely been used as valid (Miwa, 1931, p. 282; Matsumura, 1938, p. 55; as a dubious species by Balthasar, 1963, p. 532; and in the secondary incorrect spelling ‘*Onthophagus sonorni* Miwa’ by Kim, 1960, p. 27 and Anonymous, 1967, p. 198). *Onthophagus rugulosus* is a commonly used name in all standard monographs and frequently included in faunistic papers of the region (e.g. Bates, 1888, p. 371; Reitter, 1893, p. 51; Boucomont, 1914, p. 301; Boucomont & Gillet, 1921, pp. 35, 54; Arrow, 1931, p. 227; Balthasar, 1935, p. 335; 1963, p. 507; Matsumura, 1937, p. 2, 1938, p. 55; Paulian, 1945, p. 125; Cho, 1957, p. 289; Moxey, 1963, p. 26; Nomura, 1973, p. 49; Paik, 1976, p. 154; Kim, 1977, p. 332; 1985, pp. 3, 11; 2000, p. 73; Kabakov, 1979, p. 82; 2006, p. 308; Stebnicka, 1980, p. 226; Kim & Lee, 1991, p. 66; Kim et al., 1991, p. 179; Kabakov & Napolov, 1999, p. 86; Chen, 2002, p. 232; Zhang & Luo, 2002, p. 434; Krajcik, 2006, p. 130; Löbl et al., 2006, p. 166). *O. rugulosus* is the type species of the subgenus *Sinonthophagus* Kabakov, 2006.

3. Birket-Smith (1977, pp. 25–26) reinterpreted Heer's holotype and transferred *Elytridium rugulosum* to the genus *Onthophagus* Latreille, 1802: '*Onthophagus s. lat. rugulosus* (HEER, 1870) comb. nov. (nec. HAROLD in LEYDEN, 1886.)' [sic]. Although Birket-Smith recognised the homonymy with Harold's name, he neither commented nor acted on it. The name has subsequently been used in this combination as valid only by Krell (2007, p. 46), but having overlooked Birket-Smith's paper, I considered this combination doubtful at the time. Judging from the photographic documentation provided by Birket-Smith, the generic placement might well be correct although the species might equally be classified as belonging to another genus of the ONTHOPHAGINI, e.g. *Caccobius*. Since we cannot exclude the possibility that it belongs to *Onthophagus*, there is no justification for changing Birket-Smith's classification, and *Onthophagus rugulosus* (Heer, 1870) is a senior secondary homonym of *Onthophagus rugulosus* Harold, 1886.

4. The replacement of the widely used name *Onthophagus rugulosus* Harold, 1886 by either a dubious name (*O. sonani* Miwa, 1930) or an unused name (*O. expansicollis* Fairmaire, 1891) just because we cannot exclude the possibility that the fossil *Elytridium rugulosum* Heer, 1870 represents an *Onthophagus* would be likely to cause confusion. The suppression of Heer's name, that has rarely been cited in the literature, would have hardly any destabilising effect. I propose the name *Onthophagus spitsbergenensis* nom. nov. for *Onthophagus rugulosus* (Heer, 1870). The species name is an adjective and derived from the type locality Spitsbergen. Since it is the only *Onthophagus* species recorded from Spitsbergen (Kangas, 1973) it should be obvious from the name that it refers to Heer's fossil species.

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

- (1) to use its plenary power to suppress the specific name *rugulosum* Heer, 1870, as published in the binomen *Elytridium rugulosum*, and all uses of the name before Harold (1886) for the Purposes of both the Principle of Priority and the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *rugulosus* Harold, 1886, as published in the binomen *Onthophagus rugulosus*;
 - (b) *spitsbergenensis* Krell, 2010, as published in the binomen *Onthophagus spitsbergenensis*, the replacement name for *Elytridium rugulosum* Heer, 1870;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *rugulosum* Heer, 1870, as published in the binomen *Elytridium rugulosum* and as suppressed in (1) above.

References

- Anonymous.** 1967. *Natural Conservation Area Sul Ak San (Natural Monument No. 171)*, Report of the Academic Survey of Mt. Sul Ak. Mungyobu Munhwajaw Kwalliguk, [Soul].
- Arrow, G.J.** 1931. *The Fauna of British India, including Ceylon and Burma. Coleoptera Lamellicornia Part III. (Coprinae)*. Taylor & Francis, London.
- Balthasar, V.** 1935. *Onthophagus-Arten Chinas, Japans und der angrenzenden Länder. Folia Zoologica et Hydrobiologica*, 7: 303–353.
- Balthasar, V.** 1963. *Monographie der Scarabaeidae und Aphodiidae der palaearktischen und orientalischen Region. Coleoptera: Lamellicornia. 2: Coprinae (Onitini, Oniticellini, Onthophagini)*. Prag: Verlag der Tschechoslowakischen Akademie der Wissenschaften.

- Bates, H.W.** 1888. On a collection of Coleoptera from Korea (tribes Geodephaga, Lamellicornia, and Longicornia), made by Mr. J.H. Leech, F.Z.S. *Proceedings of the Scientific Meetings of the Zoological Society of London*, **1888**: 367–380.
- Birket-Smith, S.J.R.** 1977. Fossil insects from Spitsbergen. *Acta Arctica*, **19**: 1–58.
- Boucomont, A.** 1914. Les coprophages de l'archipel malais. *Annales de la Société Entomologique de France*, **83**: 238–350.
- Boucomont, A.** 1919. Sur quelques coprophages asiatiques de la collection entomologique du Muséum. *Bulletin du Muséum d'Histoire Naturelle, Paris*, **25**: 601–605.
- Boucomont, A. & Gillet, G.** 1921. *Faune entomologique de l'Indochine Française*, 4: Fam. Scarabaeidae Laparosticti (Coleoptères). Imprimerie Nouvelle Albert Portah, Saigon.
- Chen Kemin.** 2002. *An introduction to Scarabaeinae of the world*. 303 pp. Mao tou ying chu ban she, Taibei Shi.
- Cho, P.-S.** 1957. A systematic catalogue of Korean Coleoptera. *Humanities and Sciences*, **2**: 173–338.
- Fairmaire, L.** 1891. Coléoptères de l'intérieur de la Chine (Suite: 7^e partie). *Bulletin ou Comptes-Rendus des Séances de la Société Entomologique de Belgique*, **1891**: 187–219.
- Heer, O.** 1870. Die miocene Flora und Fauna Spitzbergens. *Kongliga Svenska Vetenskaps-Akademiens Handlingar*, **8**(7): pp. 1–98, pls. 1–16.
- Heyden, L. von, Harold, [E.] von & Kraatz, G.** 1886. Beiträge zur Coleopteren-Fauna von Pecking in Nord-China. *Deutsche Entomologische Zeitschrift*, **30**: 281–292.
- Kabakov, O.N.** 1979. Obzor plastinchatousykh zhukov podsemeistva Coprinae (Scarabaeidae, Coleoptera) dal'nego vostoka SSSR i sopredel'nykh territorii. Pp. 58–98 in *Zhuki Dal'nego Vostoka i Vostochnoi Sibiri (Novye Dannye po Faune i Sistematike)*. Akademiya Nauk SSSR, Vladivostok.
- Kabakov, O.N.** 2006. *Plastinchatousye zhuki podsemeistva Scarabaeinae (Insecta: Coleoptera: Scarabaeidae) fauny Rossii i sopredel'nykh stran*. 374 pp. Tovarishchestvo Nauchnykh Izdanii KMK, Moskva.
- Kabakov, O.N. & Napolov, A.** 1999. Fauna and ecology of Lamellicornia of subfamily Scarabaeinae (Scarabaeidae, Coleoptera) of Vietnam and some parts of adjacent countries: South China, Laos and Thailand. *Latvijas Entomologs*, **37**: 58–96.
- Kangas, E.** 1973. Über die Coleopterenfauna in Spitzbergen. *Annales Entomologici Fennici*, **39**: 68–70.
- Kim, C.-W.** 1977. *Distribution atlas of insects of Korea, Series 2 Coleoptera*. 414 pp. Korea University Press, Seoul.
- Kim, H.-K.** 1960. Insect list of Solak Mountain. *Journal of Applied Zoology*, **3**: 21–29.
- Kim, J.I.** 1985. Taxonomic study on the Korean Laparosticti (Scarabaeoidea) III. Scarabaeidae (3. genus *Onthophagus*). *Korean Journal of Entomology*, **15**: 1–13.
- Kim, J.I.** 2000. Coleoptera (Scarabaeoidea). *Economic Insects of Korea*, **4** (*Insecta Koreana Supplement*, **11**): 1–151.
- Kim, J.I. & Lee, O.J.** 1991. Changes in insect fauna due to urbanization of Suwon city. *Bulletin of the Korean Association for Conservation of Nature*, **11**: 49–105.
- Kim, J.I., Byung, J.K., Ok, J.L. & Hae, H.C.** 1991. Faunistic study on the insect from Mt. Songni. *Report of the Korean Association for Conservation of Nature*, **29**: 163–193.
- Krajcik, M.** 2006. Checklist of Scarabaeoidea of the World. 1. Scarabaeinae (Coleoptera: Scarabaeidae: Scarabaeinae). *Animma. x, Supplement*, **3**: 1–189.
- Krell, F.-T.** 2007. Catalogue of fossil Scarabaeoidea (Coleoptera: Polyphaga) of the Mesozoic and Tertiary. Version 2007. *Denver Museum of Nature & Science Technical Report*, **2007–8**: 1–79.
- Löbl, I., Krell, F.-T., Ziani, S. & Král, D.** 2006. Onthophagini. Pp. 159–176 in Löbl I. & Smetana, A. (Eds.), *Catalogue of Palaearctic Coleoptera*, vol. 3. Apollo Books, Stenstrup.
- Matsumura, S.** 1937. The onthophagid-insects from Korea with descriptions of new species. *Insecta Matsumurana*, **12**: 1–7.
- Matsumura, S.** 1938. Onthophagid-insects from Formosa. *Insecta Matsumurana*, **12**: 53–63.
- Miya, Y.** 1930. An enumeration of the coprophagid-Coleoptera from Formosa, with a table of the geographical distribution. *Insecta Matsumurana*, **4**: 163–180.

- Miwa, Y.** 1931. A systematic catalogue of Formosan Coleoptera. *Report, Department of Agriculture, Government Research Institute, Formosa, Japan*, **55**: I–XI, A–B, 1–359.
- Moxey, C.F.** 1963. Two new species of Coleoptera (Scarabaeidae: Coprini). *Entomological News*, **74**: 24–26.
- Nomura, S.** 1973. Notes on the coprophagous Lamellicornia from Taiwan. *Entomological Review of Japan*, **25**: 37–52, pls. 7–8.
- Paik, W.H.** 1976. Biology of the dung beetles in Korea. *Seoul National University, College of Agriculture Bulletin*, **1**(2): 153–194.
- Paulian, R.** 1945. *Faune de l'Empire Français III. Coléoptères Scarabéides de l'Indochine. Première partie*. 239 pp. Librairie Larose, Paris.
- Reitter, E.** 1893. Bestimmungs-Tabelle der Lucaniden und coprophagen Lamellicornen des palaearctischen Faunengebietes. *Verhandlungen des Naturforschenden Vereins in Brünn*, **31**: 3–109.
- Stebnicka, Z.** 1980. Scarabaeoidea (Coleoptera) of the Democratic People's Republic of Korea. *Acta Zoologica Cracoviensia*, **24**: 191–298.
- Zhang You-wei & Luo Xiao-nan** 2002. Scarabaeidae in: Huang Bang-kan: *Fauna of insects in Fujian Province of China*, 6. Pages 428–436. Fu jian ke xue ji zhu chu ban she, Fu zhou.

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