

SHORT COMMUNICATION:

NOMENCLATURAL NOTES FOR MEGACHILINE BEES
(Hymenoptera: Megachilidae)

Michael S. Engel*

Division of Invertebrate Zoology, American Museum of Natural History, 200 Central Park
West, New York, New York 10024, USA

Received 1 September 2024; accepted 20 September 2024

ABSTRACT

Recent changes to the generic classification of Megachilini necessitate several nomenclatural changes for species of the tribe. Four specific epithets were considered junior homonyms in a retrograde classification of *Megachile* Latreille and were therefore renamed. These epithets are resurrected as they are no longer congeneric with their senior homonyms (ICZN: Art. 59.4), and their former replacements are now considered junior synonyms: *Callomegachile* (*Callomegachile*) *elegans* (Cheesman) (= *Chalicodoma* (*Callomegachile*) *cheesmanae* Michener, new synonymy), *Callomegachile* (*Callomegachile*) *gigas* (Wu) (= *Megachile* (*Callomegachile*) *parornata* Chatthanabun, Warrit, and Ascher, new synonymy), *Chelostomoides* (*Chelostomoides*) *pedalis* Raw (= *Megachile* (*Chelostomoides*) *rawi* Engel, new synonymy), *Megachile* (*Creightonella*) *aurantiaca* Rebmann (= *Megachile* (*Creightonella*) *taftanica* Engel, new synonymy). In addition, four replacement names (*nomina nova*) are established: *Megachile* (*Chelostomoda*) *zyzzyx* Engel (for *Megachile* (*Chelostomoda*) *indica* (Gupta)), *M.* (*Eurymella*) *bakololo* Engel (for *Megachile* (*Eurymella*) *zambesica* Pasteels), *Coelioxys* *silaneg* Engel (for *Coelioxys* *genalis* Pasteels), and *Coelioxys* *qi* Engel (for *Coelioxys* *brevicaudatus* Friese).

Keywords: Apoidea, Megachilinae, Megachilini, nomenclature, taxonomy.

Citation: Michael S. Engel, 2024. Nomenclatural notes for Megachiline bees (Hymenoptera: Megachilidae). *Academia Journal of Biology*, 46(3): 139–143. <https://doi.org/10.15625/2615-9023/21260>

*Corresponding author email: mengel@amnh.org; <https://orcid.org/0000-0003-3067-077X>

INTRODUCTION

The bee tribe Megachilini is a diverse lineage of long-tongued bees, with over 2000 species, found throughout the world and most famous for the diverse clade of leaf-cutting bees. The tribe has been classified into three genera (Michener, 2007): the free-living *Megachile* Latreille, the cleptoparasitic *Coelioxys* Latreille and *Radoszkowskiana* Popov. Among these three, the genus *Megachile* has long frustrated taxonomists as a remarkably heterogenous group out of step with the classification of most other bees. Indeed, several authors have attempted to confine the genus to the leaf-cutting bees and their closes relatives and removing the remainder (Michener, 1962, 1965; Mitchell, 1980). Most of such classifications, however, tried to force the organization of the resin-collecting bees and their relatives into an oversimplified system of one or two genera, usually as *Chalicodoma* Lepeletier de Saint Fargeau and *Creightonella* Cockerell (e.g., Michener, 1962). This invariably left *Chalicodoma* paraphyletic or worse, and the resulting mess lead Michener (2007) to revert to a greatly unsatisfactory retrograde classification, lumping everything back into *Megachile* and making the genus a vast, unwieldy accretion of taxa. Based on a combined morphological and molecular phylogenetic analysis Gonzalez et al. (2019) proposed a new generic classification for the tribe, removing several groups from *Megachile* and restricting that genus to the leaf-cutter bees, while the resin-collecting groups were organized into a series of genera forming a grade to the leaf-cutting clade. By not confining themselves to an artificially reduced number of genera outside of *Megachile*, the system avoided the issues of paraphyly that haunted previous attempts at reclassification. The elevation to the generic rank of these numerous groups formerly included in *Megachile* necessitates some nomenclatural alterations, which are addressed herein. For nomenclatural purposes this work is registered in ZooBank (the official registry of the International Commission on Zoological Nomenclature) with the following LSID: urn:lsid:

zoobank.org:pub:2F034EF6-C2B0-4B2A-9506-0C611694D883.

NOMENCLATURE

Genus *Callomegachile* Michener

Subgenus *Callomegachile* Michener

Callomegachile (*Callomegachile*) *elegans* (Cheesman), resurrected name

Megachile elegans Cheesman, 1938: 245, *nomen praeoccupatum* (*nec Megachile elegans* Friese, 1923).

Chalicodoma (*Callomegachile*) *cheesmanae* Michener, 1965: 191, *nomen novum pro Megachile* (*Callomegachile*) *elegans* Cheesman, 1938 (*nec Megachile* (*Creightonella*) *elegans* Friese, 1922 [= *Megachile* (*Creightonella*) *angulata* Smith, 1853]). **New synonymy.**

Remark: The homonymy with *Megachile* (*Creightonella*) *elegans* Friese (= *M. (C.) angulata* Smith) is negated by the fact that, with the elevation of *Callomegachile* to generic rank, the two epithets are no longer congeneric (ICZN, 1999: Art. 59.4).

Callomegachile (*Callomegachile*) *gigas* (Wu), resurrected name

Megachile (*Callomegachile*) *gigas* Wu, 2005: 159, *nomen praeoccupatum* (*nec Megachile* (*Zonomegachile*) *gigas* Schrottky, 1908).

Megachile (*Callomegachile*) *parornata* Chatthanabun, Warrit, and Ascher in Chatthanabun et al., 2020: 122, *nomen novum pro Megachile gigas* Wu, 2005. **New synonymy.**

Remark: The homonymy with *Megachile* (*Zonomegachile*) *gigas* Schrottky is negated by the fact that, with the elevation of *Callomegachile* to generic rank, the two epithets are no longer congeneric (ICZN, 1999: Art. 59.4).

Genus *Chelostomoides* Robertson

Subgenus *Chelostomoides* Robertson

Chelostomoides (*Chelostomoides*) *pedalis* Raw, resurrected name

Chelostomoides pedalis Raw, 1984: 494.

Megachile (*Chelostomoides*) *rawi* Engel, 1999: 2, *nomen novum pro Megachile* (*Chelostomoides*) *pedalis* Raw, 1984 (*nec Megachile* (*Neochelynia*) *pedalis* Fox, 1891). **New synonymy.**

Remark: The secondary homonymy with *Megachile* (*Neochelynia*) *pedalis* Fox is negated by the fact that, with the elevation of *Chelostomoides* to generic rank, the two epithets are no longer congeneric (ICZN, 1999: Art. 59.4).

Genus *Megachile* Latreille

Subgenus *Creightonella* Cockerell

***Megachile* (*Creightonella*) *aurantiaca* Rebmann, resurrected name**

Megachile (*Creightonella*) *aurantiaca* Rebmann, 1972: 3.

Megachile (*Creightonella*) *taftanica* Engel, 2017: 3, *nomen novum pro Megachile* (*Creightonella*) *aurantiaca* Rebmann, 1972 (*nec Megachile* (*Hackeriapis*) *aurantiaca* Friese, 1905). **New synonymy.**

Remark: The homonymy with *Megachile* (*Hackeriapis*) *aurantiaca* Friese is negated by the fact that, with the elevation of *Hackeriapis* to generic rank, the two epithets are no longer congeneric (ICZN, 1999: Art. 59.4).

Genus *Megachile* Latreille

Subgenus *Chelostomoda* Michener

***Megachile* (*Chelostomoda*) *zyzzyx* Engel, new name**

Ashmeadiella (*Neoashmeadiella*) *indica* Gupta, 1990: 56 [species misplaced as to tribe, clearly *Chelostomoda* Michener (*Megachilini*) and not *Ashmeadiella* Cockerell (*Osmiini*)].

Megachile (*Chelostomoda*) *indica* (Gupta, 1990), *nomen praeoccupatum* (*nec Megachile indica* (Gupta, 1988) [= *Cressoniella* (*Cressoniella*) *indica* Gupta, 1988]).

Etymology: The new specific epithet is a euphonious combination of letters treated as a noun in apposition.

ZooBank registration: urn:lsid:zoobank.org:act:A23464BB-52F3-4571-B0DE-595CADBD22FB.

Subgenus *Eurymella* Pasteels

***Megachile* (*Eurymella*) *bakololo* Engel, new name**

Megachile (*Eurymella*) *zambesica* Pasteels, 1965: 160, *nomen praeoccupatum* (*nec Megachile* (*Eutricharaea*) *venustella zambesica* Cockerell, 1937).

Etymology: The new specific epithet is the plural endonym for the Kololo, one of the prominent indigenous peoples living in the region corresponding to Zambia, from where the species originates.

ZooBank registration: urn:lsid:zoobank.org:act:6DF4E809-78CB-4BE4-BA04-739A01A3E7FD.

Genus *Coelioxys* Latreille

***Coelioxys silaneg* Engel, new name**

Coelioxys genalis Pasteels, 1985: 12, *nomen praeoccupatum* (*nec Coelioxys* (*Callosarissa*) *genalis* Cockerell, 1916).

Etymology: The new specific epithet is an anadrome of the original name, treated as a noun in apposition.

ZooBank registration: urn:lsid:zoobank.org:act:DB93D2C0-ACF8-4796-962F-5698E460F03E.

***Coelioxys qi* Engel, new name**

Coelioxys brevicaudata Friese, 1935: 155, *nomen praeoccupatum* (*nec Coelioxys brevicaudata* Friese, 1905).

Etymology: The new specific epithet is taken from Chinese philosophy, where *qi* is the vital force of life. The name is a noun in apposition.

ZooBank registration: urn:lsid:zoobank.org:act:32D89868-6879-430F-9A92-79DB398D3BBC.

Acknowledgements: I am grateful to two reviewers for their kind evaluation of the manuscript and to the Division of Invertebrate Zoology of the American Museum of Natural History for supporting my work.

REFERENCES

- Chatthanabun N., Ascher J. S., Pinkaew N., Thanosing C., Traiyasut P., Warrit N., 2020. Resin bees of genus *Megachile*, subgenera *Callomegachile* and *Carinula* (Hymenoptera, Megachilidae) from Thailand with description of a new species. *ZooKeys*, 997: 95–144. <https://doi.org/10.3897/zookeys.997.34935>
- Cheesman L. E., 1938. Megachiline bees of New Guinea. *Annals and Magazine of Natural History*, 11th Series, 1(3): 241–246.
- Cockerell T. D. A., 1916. New and little-known bees. *Entomologist*, 49(638): 156–160.
- Cockerell T. D. A., 1937. African Bees of the Genera *Ceratina*, *Halictus* and *Megachile*. London: British Museum, pp. xvi+254.
- Engel M. S., 1999. *Megachile glaesaria*, the first megachilid bee fossil from amber (Hymenoptera: Megachilidae). *American Museum Novitates*, 3276: 1–13.
- Engel M. S., 2017. Replacement names for bees in the tribe Megachilini (Hymenoptera: Megachilidae). *Journal of Melittology*, 70: 1–5. doi: 10.17161/jom.v0i70.6558
- Fox W. J., 1891. On a collection of Hymenoptera made in Jamaica during April, 1891. *Transactions of the American Entomological Society*, 18(10): 337–348.
- Friese H., 1905. Neue Bienenarten aus Chile (Hym.). *Zeitschrift für Systematische Hymenopterologie und Dipterologie*, 5(3): 137–141.
- Friese H., 1935. Contribution a l'apifaune des *Coelioxys* de Chine. *Notes d'Entomologie Chinoise*, 2(7): 141–160.
- Gonzalez V. H., Gustafson G. T., Engel M. S., 2019. Morphological phylogeny of Megachilini and the evolution of leaf-cutter behavior in bees (Hymenoptera: Megachilidae). *Journal of Melittology*, 85: 1–123. doi: 10.17161/jom.v0i85.11541
- Gupta R. K., 1988. A new species of genus *Cressoniella* Mitchell from South India (Insecta, Hymenoptera, Apoidea: Megachilidae). *Reichenbachia*, 26(12): 67–69.
- Gupta R. K., 1990. On a new subgenus *Neoashmeadiella* and two new species of genus *Ashmeadiella* Cock. from India (Insecta, Hymenoptera, Apoidea: Megachilidae). *Reichenbachia*, 28(10): 55–58.
- ICZN [International Commission on Zoological Nomenclature], 1999. International Code of Zoological Nomenclature [4th edition]. London: International Trust for Zoological Nomenclature, pp. xxix+306.
- Michener C. D., 1962. Observations on the classification of the bees commonly placed in the genus *Megachile* (Hymenoptera: Apoidea). *Journal of the New York Entomological Society*, 70(1): 17–29.
- Michener C. D., 1965. A classification of the bees of the Australian and South Pacific regions. *Bulletin of the American Museum of Natural History*, 130: 1–362, +15 pls.
- Michener C. D., 2007. The Bees of the World [2nd edition]. Baltimore: Johns Hopkins University Press, pp. xvi+[i]+953, pls. 1–20.
- Mitchell T. B., 1980. A Generic Revision of the Megachiline Bees of the Western Hemisphere. Raleigh: North Carolina State University, pp. [ii]+95.
- Pasteels J. J., 1965. Revision des Megachilidae (Hymenoptera Apoidea) de l'Afrique Noire. 1. Les genres *Creightoniella* [sic], *Chalicodoma* et *Megachile* (*s.str.*). *Annales du Musée Royal de l'Afrique Centrale, Série In-8° [Série in octavo]*, *Sciences Zoologiques*, 137: i–ix+1–579.
- Pasteels J. J., 1985. Espèces nouvelles ou mal connues de Megachilinae (Hymenoptera, Apoidea, Megachilidae) de l'Afrique subsaharienne. *Revue de Zoologie Africaine*, 99(1): 5–15.
- Raw A., 1984. Four new species of bees from Jamaica (Hymenoptera). *Revista Brasileira de Entomologia*, 28(4): 491–495.

- Rebmann O., 1972. 6. Beitrag zur Kenntnis der Gattung *Megachile* Latr. (Hym. Apidae). Neue Arten der Untergattungen *Pseudomegachile* Friese und *Metamegachile* Tkalcu [sic]. *Stuttgarter Beiträge zur Naturkunde*, 248: 1–4.
- Schrottky C., 1908. Nuevos himenópteros. *Anales de la Sociedad Científica Argentina*, 65(4): 225–239.
- Smith F., 1853. Catalogue of the Hymenopterous Insects in the Collection of the British Museum. Part 1. Andrenidae and Apidae. London: British Museum, pp. [i]+198, pls. i–vi.
- Wu Y. -R., 2005. A study on the genus *Megachile* Latreille from China with descriptions of fourteen species (Apoidea, Megachilidae). *Acta Zootaxonomica Sinica*, 30(1): 155–165.