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A taxonomic revision of the southern African species of dauber bees in the genus *Megachile* Latreille (Apoidea: Megachilidae)

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Abstract

The five dauber subgenera of *Megachile* that occur in southern Africa are revised. They are: *Gronoceras, Maximegachile, Callomegachile, Chalicodoma* and *Pseudomegachile*. This group comprises 43 valid species, nine of which are new to science. They are: *Megachile* (*Callomegachile*) *soutpansbergensis* sp.n., *Megachile* (*Chalicodoma*) *gessorum* sp.n., *Megachile* (*Chalicodoma*) *sarahae* sp.n., *Megachile* (*Chalicodoma*) *richtersveldensis* sp.n., *Megachile* (*Pseudomegachile*) *gessi* sp.n., *Megachile* (*Pseudomegachile*) *namibensis* sp.n., *Megachile* (*Pseudomegachile*) *pseudotaraxis* sp.n., *Megachile* (*Pseudomegachile*) *taraxis* sp.n. and *Megachile* (*Pseudomegachile*) *pseudotaraxis* sp.n. Thirty-four new synonynyms have been recorded. *Megachile simpsoni* race *yapiensis* Cockerell is a junior synonym of *Megachile bombiformis* Gerstaecker; *Megachile combusta* Smith, *Megachile nigrocincta* Ritsema and *Megachile tricolor* Friese are synonyms of *Megachile cincta* (Fabricius); *Megachile cerberus* var. *optima* Cockerell is a synonym of *Megachile felina* Gerstaecker; *Megachile chrysorrhoea* Gerstaecker is a synonym of *Megachile rufipennis* (Fabricius); *Megachile perniciosa* Friese, *Megachile perniciosa* var. *pallipennis* Friese and *Megachile aridissima* Cockerell are synonyms of *Megachile rufiventris* Guérin–Méneville; *Megachile excavata* Cockerell is a synonym of *Megachile demeter* (Cockerell); *Megachile kamerunensis totafusca* Pasteels is a synonym of *Megachile kamerunensis* Friese; *Megachile tritacantha* Pasteels is a synonym of *Megachile sheppardi* (Pasteels); *Megachile musculus* Friese, *Megachile johannis* Pasteels, *Megachile biexcisa* Pasteels and *Megachile johannis fulvosetosa* Pasteels are synonyms of *Megachile karooensis* Brauns; *Megachile insolita* Pasteels, *Megachile reicherti* Brauns, *Megachile acanthura* Cockerell, *Megachile bipunctulata* Pasteels and *Megachile aurulenta* Pasteels are synonyms of *Megachile murina* Friese; *Megachile cinctiventris* Friese, *Megachile albopilosa* Friese and *Megachile lineofasciata* Pasteels are synonyms of *Megachile niveofasciata* Friese; *Megachile congruens* Friese and *Megachile flaviventris* Friese are synonyms of *Megachile schulthessi* Friese; *Megachile empeyi* Pasteels is a synonym of *Megachile cradockensis* Friese; *Megachile torridus* Smith, *Megachile decemsignata* Radoszkowski and *Megachile junodi* Friese are synonyms of *Megachile fervida* (Smith); *Megachile bullata* Friese and *Megachile trisecta* Pasteels are synonyms of *Megachile nasicornis* Friese; *Megachile laminata* Friese and *Megachile armatipes* Friese are synonyms of *Megachile mossambica* Gribodo. The nomenclatorial history of each species is documented, descriptions are given, food plants are recorded and distribution maps are provided. A key to the included subgenera and keys to the species in each subgenus are given.

Key words: bee, pollinator, Afrotropical, *Gronoceras, Maximegachile, Callomegachile, Chalicodoma and Pseudomegachile*

Introduction

The pollen collecting Megachilini (Megachilidae, Megachilinae) are abundant, diverse and speciose. The first major revision (Pasteels 1965) of this group recognized three distinct genera, *Chalicodoma* Lepeletier, *Megachile* Latreille and *Creighonella* Cockerell. Michener (2000), however, placed them all into the nominative genus, which he divided into a number of subgenera. Several of these subgenera use mud in the construction of their nests. They are called daubers. The others mostly use leaves and plant petals, and are known as leaf-cutters. The daubers are morphologically distinct in that the mandibles of the females do not have recessed cutting edges. They are apparently important, as pollinators, for both agriculture and biodiversity conservation, as they are frequently collected visiting plants. However, a number of the daubers are large and conspicuous, which creates awareness of bee, and pollinator, diversity and a need for the identification of these bees. The work of Pasteels (1965) is difficult to use and is inaccurate in many places. It also uses outdated species concepts, mostly recognized based upon color differences and with a limited knowledge of their distribution and variation. Therefore this article is a necessary contribution to our understanding of, and ability to identify the southern African bee fauna.

According to Pasteels (1965) *Chalicodoma* had 13 subgenera. Michener (2000) had five Afrotropical subgenera of *Megachile* that are daubers. They are: *Callomegachile* Michener (8 species), *Chalicodoma* Lepeletier (6 species), *Gronoceras* Cockerell (3 species), *Heriadopsis* Cockerell (1 species), *Maximegachile* Guiglia & Pasteels (1 species) and *Pseudomegachile* Friese (13 species). There are 47 species of megachilid daubers in southern Africa. They all have two submarginal cells in the forewing, the labrum is longer than broad, they do not have an arolium between the pretarsal claws (except *Heriadopsis* that has an arolium on the fore and middle legs) and the pterostigma in the forewing is longer than wide; females have the scopa under the metasoma (none are cleptoparasitic) and males have the seventh metasomal tergum curled under the metasoma (mostly not visible from above). Although the existing classification is not fully agreed here, it is prudent to await the results of a detailed study of the genus by Victor Gonzalez, and tentative changes have therefore not been proposed.