



A taxonomic revision of the southern African species of the subgenus *Creightonella* Cockerell (Apoidea: Megachilidae: *Megachile* Latreille)

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Abstract

The southern African species of *Megachile* (*Creightonella*) are revised. Twelve valid species are recognised, one of which is new, *Megachile serrula* sp. n., and four are only known from the female. Ten new synonymies are recorded. *Megachile cognata* var. *claripennis* Friese, *Megachile natalensis* Friese are synonymized with *Megachile cognata* Smith. *Megachile consanguinea zamelaena* Cockerell is synonymized with *Megachile ianthoptera* Smith. *Megachile hopilitis* Vachal, *Megachile vanderysti* Cockerell, *Megachile triangulifera kivuicola* Cockerell, and *Megachile heptadonta* Cockerell are synonymized with *Megachile angulata* Smith. Four new lectotypes were designated; they are *Megachile natalensis* Friese, *M. discolor* Smith, *M. cornigera* Friese and *M. braunsiana* Friese. The nomenclatorial history of each species is documented, diagnoses are given, food plants are recorded and distribution maps are provided.

Key words: bee, pollinator, Afrotropical

Introduction

Megachile is the nominative genus of the bee family Megachilidae. They are all pollen collecting bees that have the scopa on the ventral surface of the metasoma. *Creightonella* Cockerell, a subgenus of *Megachile* Latreille *sensu lato* (Michener 2007), is an Old World taxon with its greatest diversity in Africa (Michener 2000). O'Toole and Raw (1991) describe them as using leaves, mud and resin for lining the cells in the nests that they burrow into the ground. This makes them distinct from the *Megachile* that are known as leaf-cutters and daubers. The taxon does not have a common name. *Creightonella* are mostly large conspicuous bees and there is frequently a need for their identification.

The Afrotropical species of *Creightonella* were last revised by Pasteels (1965), who considered them to be a distinct genus, as with *Chalicodoma* Lepeletier and *Megachile sensu stricto* that were also revised by Pasteels (1965). *Creightonella* was not divided into subgenera by Pasteels (1965). Michener (2000) divided *Megachile sensu lato* into 16 subgenera, one being *Creightonella*, and provided keys for the identification of all the subgenera. Subsequently Eardley et al (2010) provided keys to the Afrotropical bee genera and subgenera. Eardley and Urban (2010) provided the detailed chronological history of the species in *Creightonella*. Eleven *Creightonella* species occur in southern Africa. This is the area south of the Cunene and Zambezi rivers.

Creightonella belongs to the family Megachilidae, subfamily Megachilinae, tribe Megachilini. This tribe is characterized by having two submarginal cells in the forewing, the labrum longer than broad, no arolium between the tarsal claws (except *Heriadopsis* Cockerell and *Matangapis* Baker and Engel that have arolium) and the pterostigma in the forewing is longer than wide; females have the scopa under the metasoma (no *Creightonella* are cleptoparasitic) and males have the seventh metasomal tergum curled under the metasoma (mostly not visible from above). In *Creightonella* the female mandible has five teeth and is consistently broad, males have a plate-like sixth metasomal tergum.

Apart from Pasteels (1965) revision and key being difficult to use, his identification of museum specimens was highly inaccurate. That said, Pasteels' work was a huge help in preparing this article. Instead of starting from scratch, this study mostly involved ironing out past published errors and producing more accurate text. During this study the entire collections of the Agricultural Research Council and the Ditsong National Museum of Natural History, both in Pretoria, Iziko South African Museum, in Cape Town, Albany Museum, in Grahamstown, Natural History Museum, in London, Museum Nationale de Histoire Naturelle, in Paris, Musée Royal de Afrique Centrale, in Tervuren, Royal Belgian Institute for Natural Sciences, in Brussels, Museum Naturkunde für Humboldt–Universität, in Berlin, and Deutsches Entomologisches Institut, in Müncheberg, Cornell University, in Ithaca, York University, in Toronto, Royal Alberta Museum, in Edmonton, the USDA collection in Logan and Michael Kuhlmann's private collection were studied, as well as the types from a number of other museums that are recorded in the text and in the Acknowledgements. Much of the material studied was not collected in southern Africa, but examination thereof was needed to understand the group, provide reliable descriptions and obtain the oldest available name for each species. There was, however, insufficient time during museum visits to record all the southern African specimens data in each museum, so they are not reflected in the material examined. Records of material in the Albany Museum was from their database, after studying the collection, that did not give the gender of each specimen and