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Two new species of the South African endemic bee genus *Rediviva* Friese (Hymenoptera: Apoidea: Melittidae)

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Abstract

Two new species of the genus *Rediviva* from South Africa are described to facilitate further research on this iconic group of oil-collecting bees: *R. steineri* sp. nov. ♀ and *Rediviva whiteheadi* sp. nov. ♀♂. *Notomelitta tropicalis* Cockerell 1934 syn. nov., that was erroneously transferred to the genus *Rediviva*, is recognized as a new junior synonym of *Andrena africana* Friese 1909.

Key words: South Africa, Afrotropical region, oil-collecting bees, synonymy, taxonomy

Introduction

The bee genus *Rediviva* belongs to the family Melittidae and the subfamily Melittinae (Michener 2007). Within the Melittinae Michez *et al.* (2009), based on a phylogenetic study, recognize two tribes, the Macropidini including five genera (two of them fossil) with two submarginal cells in the forewing, and the Melittini comprising three genera including *Rediviva* with three submarginal cells. Within the Melittini female *Rediviva* can easily be recognized by their broadened hind tibia and basitarsus with the scopa consisting of densely plumose, velvety pubescence for transporting floral oil while the elongate fore tarsi (extreme in some species) are a synapomorphy of *Rediviva*. The males are characterized by the apex of the seventh sternum being deeply bifid or with two long, slender apical processes (Michener 1981, 2007).

Rediviva bees are ground nesters and females collect floral oil from a range of oil-producing flowers of Iridaceae, Orchidaceae and Scrophulariaceae with *Diascia* (Scrophulariaceae) as their principal floral host (Manning & Brothers 1986, Whitehead & Steiner 2001, Manning & Goldblatt 2002, Pauw 2006, Whitehead *et al.* 2008) but beside their specialized oil-collecting habits, they are fairly generalized regarding pollen collecting (Kuhlmann & Eardley 2012). *Diascia* flowers have twin spurs, in some species extremely long, containing oil that female *Rediviva* collect with their forelegs. In several species the forelegs are elongate, sometimes longer than the entire body, and the lengths of spurs and legs in some cases show co-variation at the population level, suggesting co-evolution (Steiner & Whitehead 1990, 1991). Thus, *Rediviva* and their host plants are an ideal model for studying evolutionary processes in plant-pollinator interactions and might help to understand the origin of the unusual bee diversity in the Greater Cape Floristic Region (Kuhlmann 2009).

So far 24 *Rediviva* species have been described, all of them endemic to South Africa and Lesotho, with 15 species exclusively known from the winter rainfall region in western South Africa (Whitehead & Steiner 2001) and nine species only occurring in the summer rainfall region of eastern South Africa and Lesotho (Whitehead *et al.* 2008). Despite these excellent recently published taxonomic revisions two undescribed *Rediviva* species from the summer rainfall region remained in the collection of the South African Museum, Cape Town. To facilitate further ecological and phylogenetic research on these iconic bees and the evolution of oil-collecting in Melittidae, these two *Rediviva* bee species are here described to make their names available.

Additionally, Michener (1981: 47) and Eardley & Urban (2010: 197) tentatively include *Rediviva tropicalis* (Cockerell) from the Democratic Republic of the Congo. This species was found far outside the known range of the