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ARTICLE

# A new species of the bee genus *Ammobates* LATREILLE, 1809 from sub-Saharan Africa (Hymenoptera: Apidae)

Michael KUHLMANN<sup>1</sup> 

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## Abstract

The cleptoparasitic bee *Ammobates* (*Ammobates*) *roggeveldi* n. sp. is described from a female specimen collected in western South Africa. This is only the second species of the genus recorded from sub-Saharan Africa.

**Keywords** | Anthophila • Apoidea • taxonomy • Greater Cape Floristic Region • South Africa

**Une nouvelle espèce d'abeille d'Afrique subsaharienne du genre *Ammobates* LATREILLE, 1809 (Hymenoptera : Apidae)**

## Résumé

Une nouvelle espèce du genre cleptoparasite *Ammobates*, *Ammobates* (*Ammobates*) *roggeveldi* n. sp., est décrite à partir d'un spécimen femelle collecté en Afrique du Sud occidentale. C'est seulement la deuxième espèce de ce genre rapportée pour l'Afrique subsaharienne.

**Mots-clefs** | Anthophila • Apoidea • taxonomie • région floristique de Greater Cape • Afrique du Sud

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## INTRODUCTION

*Ammobates* LATREILLE, 1809 currently includes 50 species (ENGEL, 2009), mostly from the Palearctic, and one each in the Oriental and Afrotropical regions (MICHENER, 2007). The genus is subdivided in three subgenera: *Ammobates* s. str. (41 species, known from Morocco through Europe and North Africa to southern India with a single species in South Africa and Namibia), *Euphileremus* POPOV, 1951 (six species ranging from the Canary Islands eastwards to Uzbekistan) and *Xeramobates* POPOV, 1951 (three species in Tunisia and Turkmenistan) (MICHENER, 2007; ENGEL, 2009).

During fieldwork in western South Africa, a new *Ammobates* species was discovered. The female was collected by sweep net and readily recognizable as



undescribed in the field because it is completely black while in the only other sub-Saharan *Ammobates* species, *A. auster* EARDLEY, 1997, the metasoma and legs are at least partly orangish (EARDLEY & BROTHERS, 1997). Because of its biogeographic significance herein the conspicuous second *Ammobates* species from sub-Saharan Africa and the southern hemisphere is described based on a female specimen collected in the Greater Cape Floristic Region (GCFR) of western South Africa (BORN *et al.*, 2007; LINDER *et al.*, 2010). The new species was found in Mountain Renosterveld vegetation (VAN DER MERWE *et al.*, 2008) along a dry river bed in the northern extension of the Hantam–Roggeveld Centre of plant endemism (CLARK *et al.*, 2011) south of Calvinia (Northern Cape Province), South Africa (figure 1).

## MATERIAL AND METHODS

For morphology, the terminology of MICHENER (2007) was used. Puncture density is characterized by the relationship between puncture diameter (d) and the space between these punctures (i). Body length was measured from the vertex to the apex of the body. Images were taken with a

Keyence VHX-5000 Digital Microscope.

The holotype of the new species will be housed in the Iziko South African Museum, Cape Town, South Africa (SAMC).

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 <https://orcid.org/0000-0003-3664-6922> •  <http://zoobank.org/B99AE0ED-FA89-4DFE-A658-1C8DF37F9FAB>



**Figure 1.** Collecting site (S31°47'35" E19°58'16") of *Ammobates roggeveldi* n. sp. in Mountain Renosterveld vegetation (VAN DER MERWE *et al.*, 2008) along a dry river bed in the northern extension of the Hantam–Roggeveld Centre of plant endemism (CLARK *et al.*, 2011), south of Calvinia, South Africa. Photo M. KUHLMANN (1 September 2017).

## TAXONOMY

### *Ammobates (Ammobates) roggeveldi* n. sp.

[ZooBank](http://zoobank.org/AC6C9904-3E15-4CBC-83AD-48B6F0E3E89C) <http://zoobank.org/AC6C9904-3E15-4CBC-83AD-48B6F0E3E89C>

#### Diagnosis

The female can be most readily separated from the only other sub-Saharan *Ammobates* species by the metasomal terga entirely black to dark brown (figure 2a) (in *A. auster* in both sexes metasomal terga are at least partly bright orange to reddish orange). Medial apical emargination of S5 deep (figure 4b) (in *A. auster* shallow; see EARDLEY & BROTHERS, 1997: 411, figure 103). Apical emargination of S6 about twice as broad as in *A. auster* and S6 laterally beset with a row of stout yellowish setae that are about as long as the width of S6 (figure 4b) (in *A. auster* as long or shorter than half of the width of S6; see EARDLEY & BROTHERS, 1997: 411, figure 104).

The new species belongs to subgenus *Ammobates* s. str. based on the following characters (MICHENER, 2007): second submarginal crossvein distal to second recurrent vein, female T6 without median ridge (figure 4a), labrum about twice as long as its basal width (figure 2c), clypeus strongly protuberant (figure 2a) and body length 9.5 mm (species of the other two subgenera < 8.5 mm).

#### Description

##### • Female

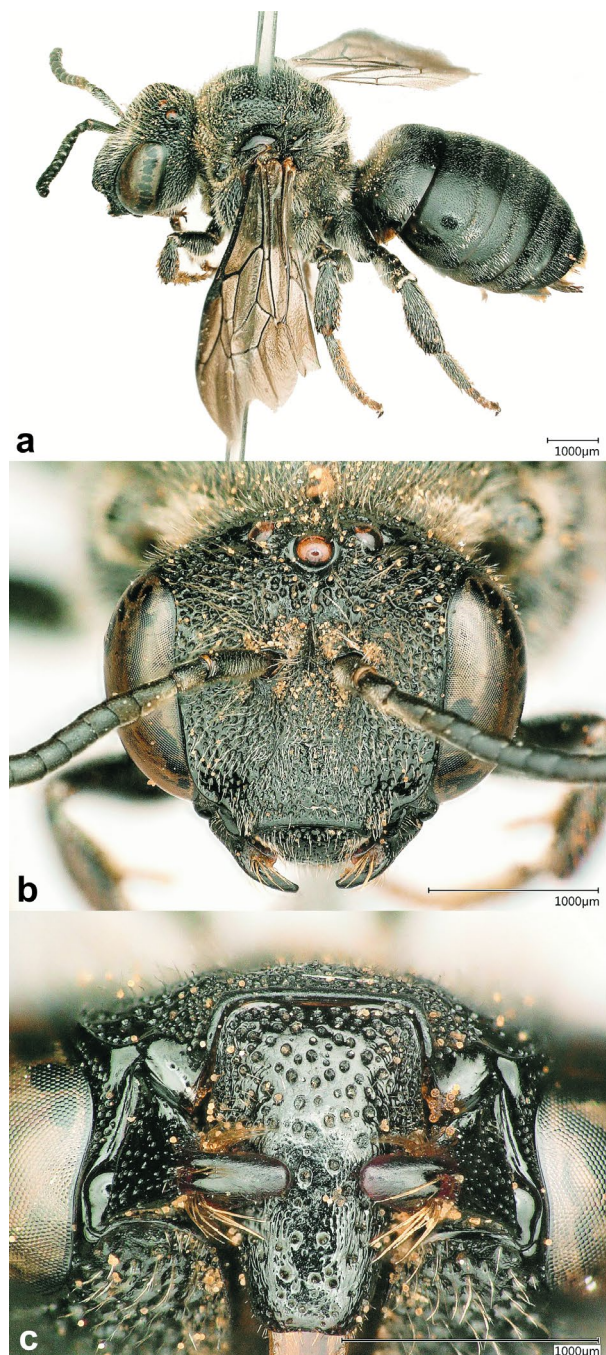
Total body length 9.5 mm. Head wider than long (length 2.20 mm, width 3.50 mm, ratio l:w 0.63). Intertegular distance 2.60 mm.

**Sculpture.** Head smooth and shiny, with dense small punctures separated by half puncture width or less (figure 2b). Labrum smooth and superficially shagreened with scattered punctures separated by 1–3 times puncture width on disc and gradually more tightly packed until separated by less than puncture width towards its base (figure 2c). Mesosoma smooth and shiny, with small to medium punctures separated by 1–2 times puncture width less on mesoscutum, slightly more narrowly spaced on other parts. Mesoscutellum, postscutellum and propodeum rugoso-punctate. Metasoma with anterior-facing surface of first metasomal tergum densely and finely punctuate, punctures separated by puncture width or less, punctures on apical depression gradually more dispersed and apical margin impunctate. Following terga with similar pattern (figure 3b). Metasomal tergum six medially coarsely rugoso-punctate (figure 4a). Metasomal sterna five and six as in figure 4b.

**Coloration.** Head black except dark reddish-brown on medial part of mandible. Antenna black (figure 2b, c). Mesosoma black. Tegula dark reddish-brown at outer margin. Legs black, except reddish-brown spot at outer apices of tibiae I and II, tarsi 3-5 dark to light brown. Membrane of forewing fuscous, hindwing more hyaline; veins dark blackish-brown (figure 2a). Metasomal terga black (figure 3b). Metasomal sterna black, except apical margins hyaline dark brown.

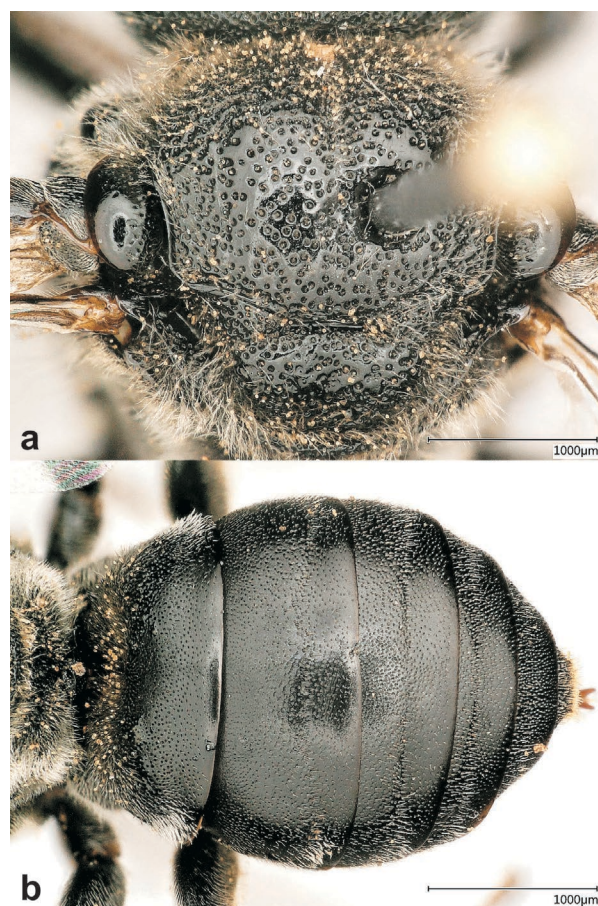
**Pubescence.** Pubescence silvery white. Head loosely covered with long erect setae. Labrum with scattered, erect, minute to short, simple setae. Mesosoma with





**Figure 2.** Female holotype of *Ammobates roggeveldi* n. sp.  
**a.** Lateral view. **b.** Head. **c.** Labrum and mandibles.  
 Photos M. KUHLMANN.

pubescence similar to head except setae plumose and more densely covering this part of the body (figure 3a); posterior and lateral surface of propodeum laterally more densely covered with shorter suberect hair. Metasoma with scattered simple short subappressed to suberect setae (figure 3b); first metasomal tergum with scattered very short, erected, simple setae on disc, such setae dense laterally on dorsal-facing surface and plumose setae forming apicolateral hair patch; following terga with



**Figure 3.** Female holotype of *Ammobates roggeveldi* n. sp.  
**a.** Scutum and scutellum. **b.** Metasoma (dorsal view).  
 Photos M. KUHLMANN.

similar but less developed pilosity pattern (figure 3b); metasomal sterna with hardly visible scattered and short setae.

• **Male**  
 Unknown.

**Etymology**  
 The specific epithet refers to the Roggeveld Mountains where the species was found.

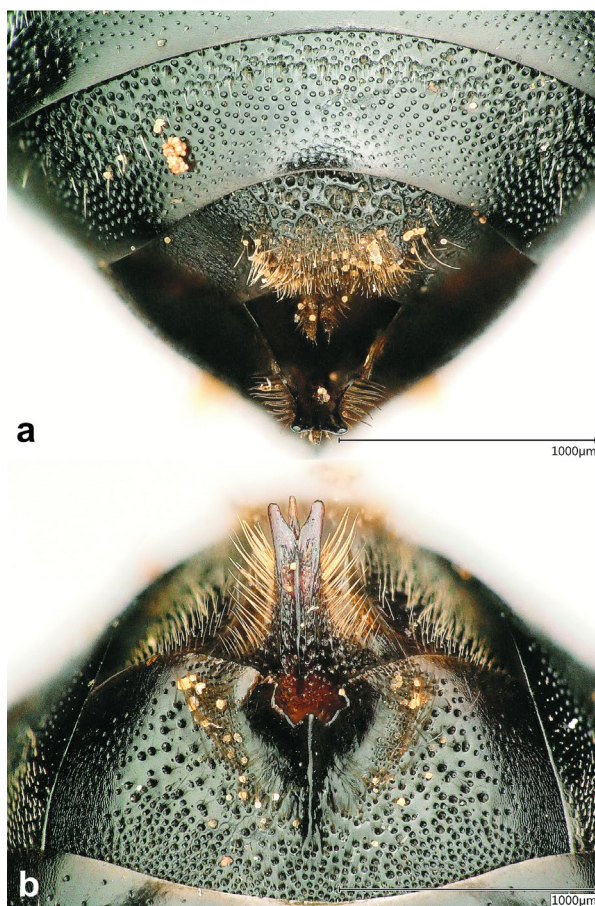
**Type material**  
 Holotype female “S.Afr., Roggeveld Mts., 2 km S Farm Perdekloof, rivier (= Afrikaans for river), dolerite, S31°47’35” E19°58’16”, 1220 m, M. KUHLMANN leg. 2.IX.2017” (SAMC).

**Key to females of sub-Saharan  
*Ammobates* species**

(Male of *A. roggeveldi* n. sp. unknown)

1. Metasomal terga at least partly orange to reddish orange ..... **A. auster** EARDLEY, 1997
- Metasomal terga entirely black to dark brown ..... **A. roggeveldi** n. sp.





**Figure 4.** Female holotype of *Ammobates roggeveldi* n. sp.  
**a.** Metasomal tergum T6. **b.** Metasomal sternum S5 and S6.  
 Photos M. KUHLMANN.

## DISCUSSION

The record of a second *Ammobates* species in the southwest of the African continent underpins the outstanding biogeographic position of the GCFR as a center of wild bee diversity and endemism (KUHLMANN, 2005, 2009). The region is particularly vulnerable to climate change induced range shifts of bees and their host plants which increase their risk of extinction (KUHLMANN *et al.*, 2012).

Probable hosts of *Ammobates* species are *Ancyla* LEPELETIER DE SAINT-FARREAU, *Tetraloniella* ASHMEAD and *Anthophora* LATREILLE (WARNCKE, 1983; MICHENER, 2007; ENGEL, 2009).

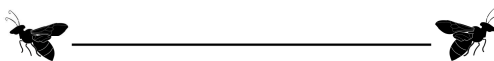
Species of the latter two genera can be locally abundant in the area and are the only suitable hosts with respect to their body size (KUHLMANN, unpubl.). However, the surprisingly few records of the two relatively large and conspicuous *Ammobates* species in southern Africa suggest that the unknown host(s) might be rare, too. The geographical spread of *A. auster* records ranging from the Namib Desert to Karoo and Fynbos biomes (EARDLEY & BROTHERS, 1997) indicate that more than a single host species is likely used so the reasons for the rarity of the cleptoparasites remain unknown.

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