

## New Records of *Proceratium deelemani* Perrault, 1981 (Hymenoptera: Formicidae : Proceratiinae) in Sumatra

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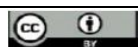
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**ABSTRACT** *Proceratium* Roger, 1863 is a genus of ants that has widely distributed throughout the world, *Proceratium* species rarely collected, their cryptobiotic lifestyle. This condition also occurs on the Sumatra Island, Indonesia. So far, only single species was recorded in this island, namely *Proceratium papuanum* Emery, 1897. We conducted a survey of leaf-litter ants in June 2021 by using Winkler's extraction method in lowland disturbed forest near Tiga Tingkat Water fall Lubuk Hitam, Teluk Kabung Utara, Bungus Teluk Kabung, Padang, West Sumatra, Indonesia. The discovery of *Proceratium deelemani* Perrault, 1981 for the first time in Sumatera Island, Indonesia was increased the total ant fauna in this island. In the present study, we reports new distribution record of *Proceratium deelemani* Perrault, 1981 in Sumatra. Total two species of this genus was recorded in Sumatra: *Proceratium deelemani* Perrault, 1981 and *Proceratium papuanum* Emery, 1897.

**Keywords:** *Ants, Proceratiinae, Proceratium deelemani, Sumatra, new record.*

**ABSTRAK** *Proceratium* Roger, 1863 merupakan genus semut yang tersebar luas di seluruh dunia, namun spesies dari genus ini jarang dikoleksi, karena bersifat kriptobiotik. Kondisi ini juga terjadi di Pulau Sumatera, Indonesia. Sebelumnya hanya satu spesies ditemukan di pulau ini, yaitu *Proceratium papuanum* Emery, 1897. Survei keanekaragaman jenis semut dilakukan pada bulan Juni 2021 dengan menggunakan metode ekstraksi Winkler di hutan terganggu dataran rendah, Air Terjun Tiga Tingkat Lubuk Hitam, Teluk Kabung Utara, Bungus Teluk Kabung, Padang, Sumatera Barat, Indonesia. *Proceratium deelemani* Perrault, 1981 dilaporkan pertama kali di Pulau Sumatera, Indonesia sehingga menambah jumlah fauna semut di pulau ini. Pada penelitian ini, kami melaporkan catatan distribusi baru *Proceratium deelemani* Perrault, 1981 di Sumatera. Total dua spesies dari genus ini tercatat di Sumatera: *Proceratium deelemani* Perrault, 1981 dan *Proceratium papuanum* Emery, 1897.

**Kata kunci:** *Semut, Proceratiinae, Proceratium deelemani, Sumatera, new record.*



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## 1. INTRODUCTION

*Proceratium* Roger, 1863 is a genus contains 86 extant and 6 fossil species (Antwiki, 2023). Although this species is widely distributed throughout the world (Janicki *et al.*, 2016), *Proceratium* species is rarely collected, due its cryptobiotic lifestyle (Baroni Urbani & de Andrade. 2003). This condition also occurs on the Sumatra Island, Indonesia. So far, only single species was recorded in this island, namely *Proceratium papuanum* Emery, 1897 (Menozzi. 1939; Brown. 1958a; Baroni Urbani & de Andrade. 2003).

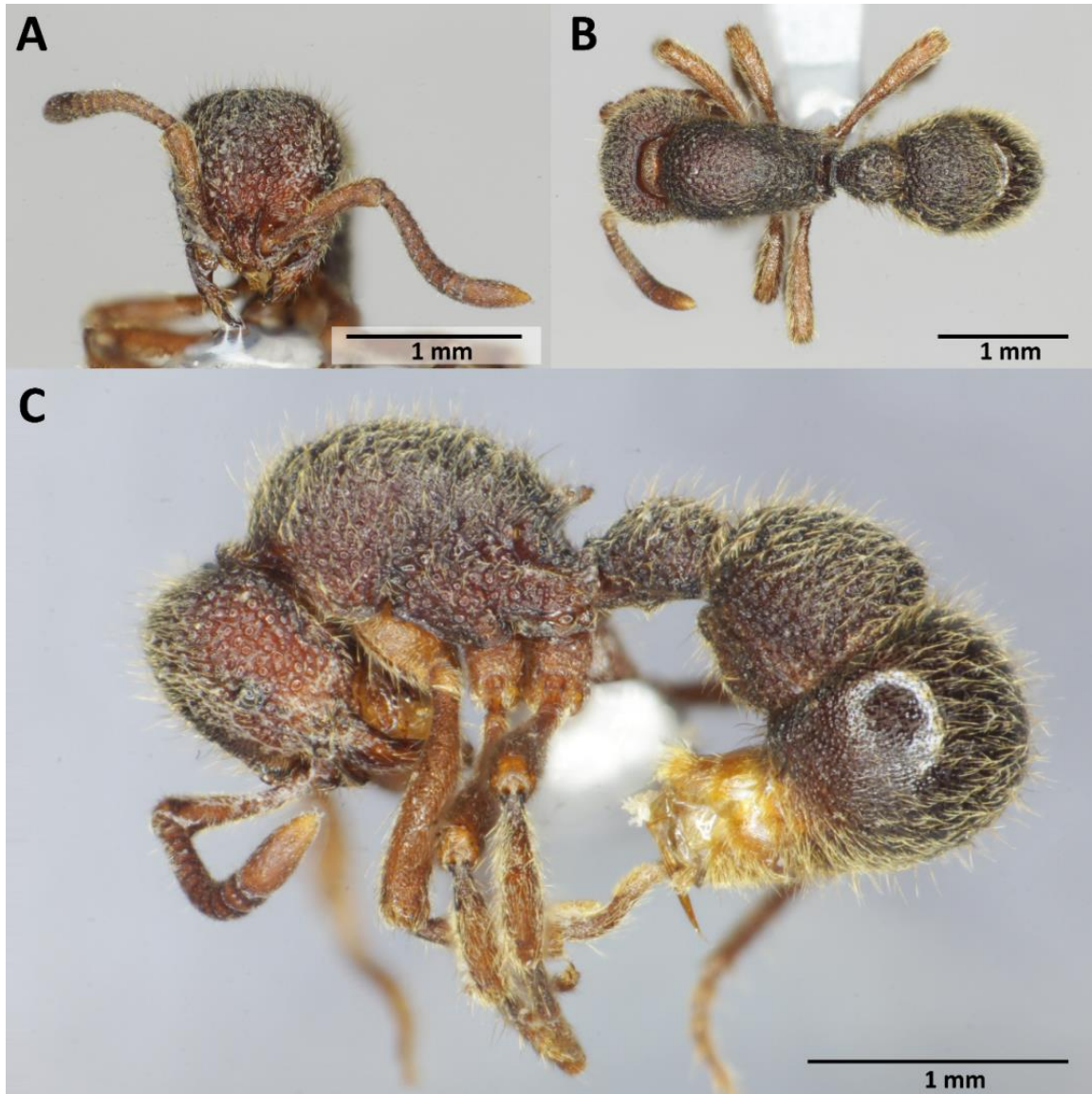
In Sumatra, we are studying the diversity of ants, then reported some genera of ants (Satria *et al.*, 2015; Satria *et al.*, 2017; Satria & Yamane. 2019; Satria & Herwina. 2020; Satria & Jannatan. 2021; Musfira *et al.* 2022; Satria *et al.*, 2022; Satria & Eguchi. 2022; Fitri & Satria. 2022; Anggraini *et al.*, 2022., Satria *et al.*, 2023), including the genus *Proceratium*. Then we reported in the present study, the new distribution record of *Proceratium deelemani* Perrault, 1981 in Sumatra.

## 2. MATERIALS AND METHODS

*Proceratium deelemani* were collected by using Winkler's extraction method in lowland disturbed forest near Tiga Tingkat Water Fall Lubuk Hitam (1°03'09.1"S 100°25'29.4"E), Teluk Kabung Utara, Bungus Teluk Kabung, Padang, West Sumatra, Indonesia, we collected five workers *Proceratium deelemani*. The original species description of *Proceratium deelemani* was used to identify our specimen (Perrault. 1981). Including Baroni Urbani & de Andrade (2023) which is provided in Antwiki (Antwiki, 2023). The type material image of worker of *Proceratium deelemani* (Individual code: CASENT0915370, Holotype, worker) provided was examined (Antweb, 2023).

## 3. RESULTS AND DISCUSSIONS

We updated and reported the ant genus *Proceratium* in of Sumatra Island in the present study. Total two species of this genus was recorded in Sumatra Island. They are *Proceratium deelemani* Perrault, 1981 (Fig. 1) that is recorded for the first time in the present study, and *Proceratium papuanum* Emery, 1897.



**Figure 1.** Worker of *Proceratium deelemani* Perrault, 1981 (individual code: SEMUT9vi2021C): A, head in full-face view; B, body in dorsal view; C, body in lateral view

Baroni Urbani & de Andrade (2003) reported that *Proceratium deelemani* seem to be have some morphological variations. This statement is reinforced by Hita Garcia *et al* (2015). The additional specimens are needed to confirm the intra- and interspecific variation of the species in the genus *Proceratium*. However, our specimen from Sumatra also shown slight morphological variation when compared to the high quality image of the holotype specimen of *Proceratium deelemani* (CASENT0915370 provided in (Antweb, 2023). The following morphological variations of Sumatran specimens compare to the holotype of *Proceratium deelemani*: mesosoma in lateral view slightly shorter than the latter; and dorsal margin of mesosoma more convex than the latter.

According to the previous studies, the genus *Proceratium* was reported nesting in the soil, below leaf litter, in rotten wood, under stones, or more rarely in tree branches (Brown. 1958b; Baroni Urbani & de Andrade. 2003; Fisher. 2005; Hita Garcia *et al.*, 2015). We collected *Proceratium deelemani* in leaf litter of lowland disturbed forest (ca. 130 m asl.) near Tiga Tingkat Water fall Lubuk Hitam, Padang, West Sumatra. The collecting site have been used by local people as tourism area, and visit by local tourists in certain time. The diversity of Sumatran ants seems to be underestimated, in this study we still found many species in the location which had been disturbed by human activities, and we assumed that the diversity of ant would be higher in natural habitats and undisturbed by human activities. We predict that many other species of this genus will be found in Sumatra with intensive sampling.

#### 4. CONCLUSION

The discovery of *Proceratium deelemani* Perrault, 1981 in Sumatra Island was report in the present study. This species inhabits in the lowland disturbed forest in Padang, West Sumatra Province.

#### 5. ACKNOWLEDGMENTS

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