

Giant resin bee, *Megachile tuberculata*, in an urban community garden

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Subject: Tuberculate giant resin bee, *Megachile (Callomegachile) tuberculata*
(Insecta: Hymenoptera: Megachilidae).

Subject identified by: Zestin W. W. Soh & John S. Ascher.

Location, date and time: Singapore Island, Bukit Panjang near Zheng Hua Park; 26 November 2016; 1150 hrs.

Habitat: Urban community garden near a patch of secondary forest.

Observer: Zestin W. W. Soh.

Observation: A single female bee was photographed visiting and collecting pollen at several flowers of a four-angled bean (*Psophocarpus tetragonolobus*) plant grown within an urban community garden comprising mainly of edible crops.

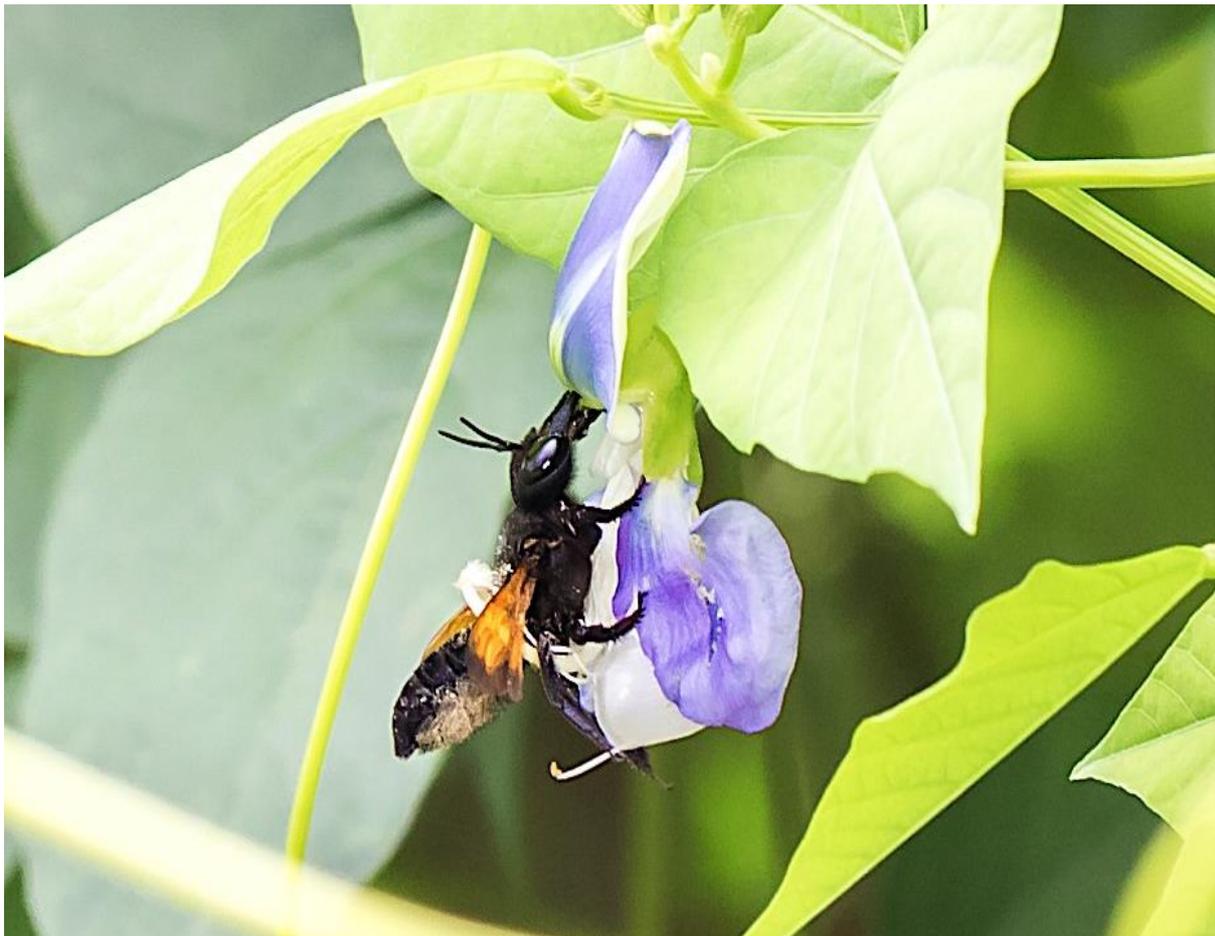


Fig. 1. Lateral view of a female *Megachile tuberculata* visiting and collecting pollen from a flower of the four-angled bean (*Psophocarpus tetragonolobus*). Photograph by Zestin W. W. Soh

Remarks: *Megachile (Callomegachile) tuberculata* is the largest member of the family Megachilidae in Singapore. It is rarely encountered and is closely associated with native forests (Ascher et al., 2016). The species was recorded in Singapore in 1961 by D. H. Murphy on the grounds of the former University of Malaya (now the Bukit Timah Campus of the National University of Singapore and Singapore Botanic Gardens). It was not detected again for over 50 years until specimens were collected in malaise traps at Nee Soon Swamp Forest in 2012, and then by net as visitors to the Tiger Orchid (*Grammatophyllum speciosum*) in Bukit Timah in 2016 (see Ascher et al., 2016).



Fig. 2. Dorsal (right) view of the same bee collecting pollen from a four-angled bean flower. Photograph by Zestin W. W. Soh

This present record is particularly significant as it is 1) a rare recent observation of this charismatic species, 2) the first local record of a pollen host used by the species, and 3) the first published photographs of a live female of the species. The observation also suggests that large, native forest-dwelling bees (e.g. certain *Megachile* and *Xylocopa*) may be able to traverse from forest patches to nearby urban gardens, potentially providing the latter with pollination services. However, similar gardens too distant from forested source areas are not known to be visited by such bees. Further research of bees in local community gardens should be conducted to elucidate the importance of native bees to the pollination of edible fruiting crop plants.

Reference: Ascher, J. S., S. Risch, Z. W. W. Soh, J. X. Q. Lee & E. J. Y Soh, 2016. *Megachile* leaf-cutter and resin bees of Singapore (Hymenoptera: Apoidea: Megachilidae). *Raffles Bulletin of Zoology*. Supplement 32: 33-55.