

## Visits to extrafloral nectaries of an exotic plant by Geissler's stingless bee

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**Subjects:** Geissler's stingless bee, *Tetragonula (Tetragonula) geissleri* (Insecta: Hymenoptera: Apidae); Dark-eyed Turnera, *Turnera subulata* (Magnoliophyta: Turneraceae).

**Subjects identified by:** John Ascher, Chui Shao Xiong & Zestin W. W. Soh (bee); Zestin W. W. Soh (plant).

**Location, date and time:** Singapore Island, Jalan Pelatina; 19 July 2018; 1145 hrs.

**Habitat:** Urban housing estate, near a patch of secondary forest.

**Observers:** Zestin W. W. Soh & Ryuta Teo.

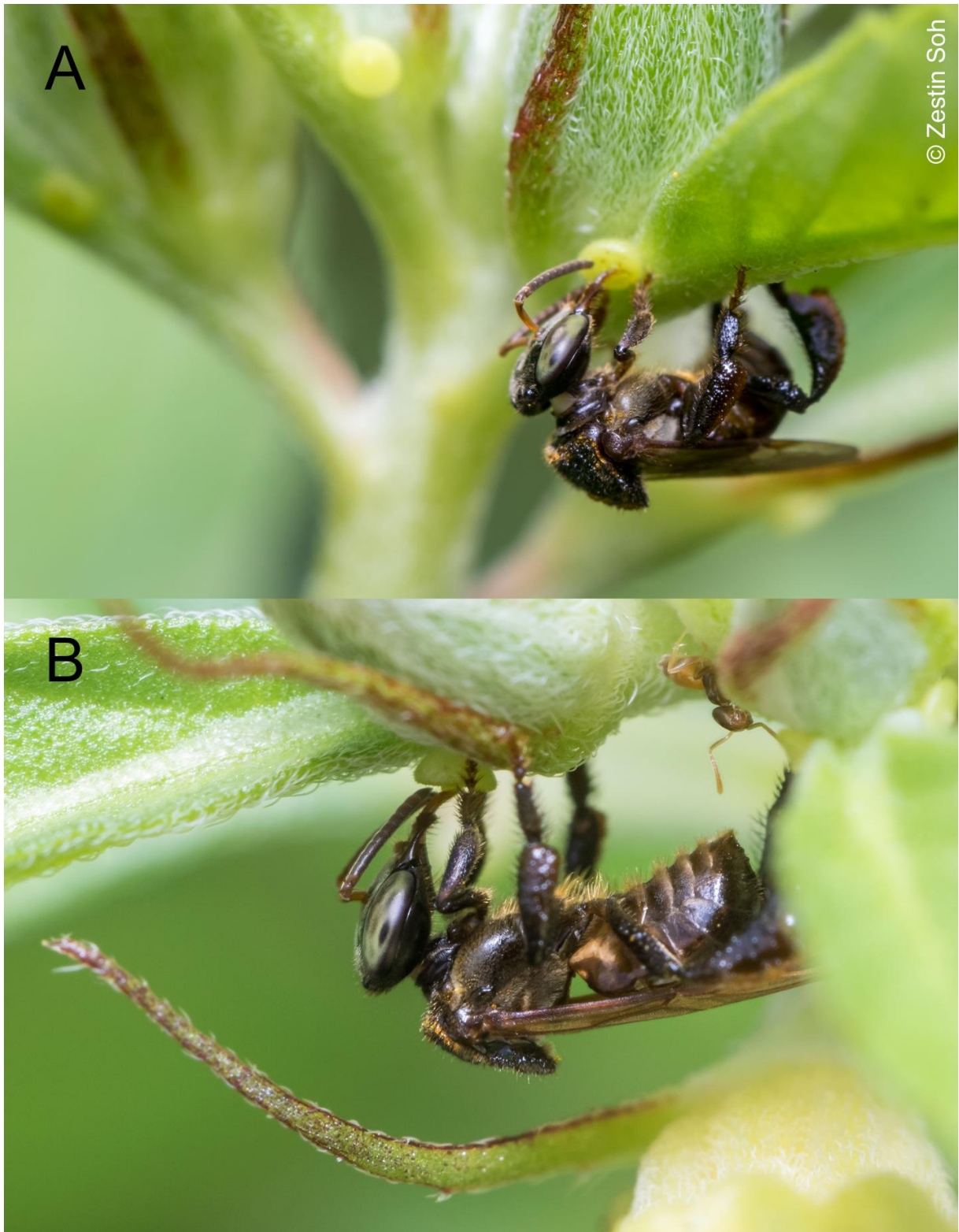
**Observation:** Two workers of *Tetragonula geissleri* were seen making multiple visits to extrafloral nectaries of a cultivated *Turnera subulata* growing in the housing estate (Fig. 1A&B).

**Remarks:** Extrafloral nectaries (EFN) occur in a diverse range of plants (Oliveira & Leitao-Filho, 1987) and largely serve to recruit ants into defending the plant against herbivores by providing them with a reliable source of carbohydrates (Bentley, 1977; Nascimento & Del-Claro, 2010). While EFN are principally visited by ants, they are also sometimes exploited by nectar-thieving wasps (Cuautle & Rico-Gray 2003; Röse et al. 2006) and bees (Bohart & Nye, 1956; Hespenheidel 1985; Agarwal & Rastogi, 2010). However, there appears to be little, if any, published literature of this occurring in Southeast Asia.

It is noteworthy that the featured interaction occurs between a native forest-associated bee and the EFN of an exotic plant introduced from tropical America (Fig. 1A-B). While the nutritional benefit of the EFN nectar to the bee has not been evaluated, this observation may attest to the ability of some native bee species to adapt behaviorally in unusual ways in response to modified ecosystems.

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Fig. 1A&B. Lateral views of *Tetragonula geissleri* workers collecting nectar from extrafloral nectaries of *Turnera subulata* at Jalan Pelatina estate. Photographs by Zestin W. W. Soh