

## Biodiversity Record: Floral resource competition between two species of *Amegilla* bees

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**Recommended citation.** Teo RYC & Kong E (2024) Floral resource competition between two species of *Amegilla* bees. Nature in Singapore, 17: e2024002. DOI: 10.26107/NIS-2024-0002

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**Subjects:** Island forest-digger, *Amegilla (Glossamegilla) insularis* (Insecta: Hymenoptera: Apidae);  
Sunda blue-banded digger, *Amegilla (Zonamegilla) andrewsi* (Insecta: Hymenoptera: Apidae).

**Subjects identified by:** Ryuta Yong Chuan Teo and Eunice Kong.

**Location, date and time:** Singapore Island, Windsor Nature Park, Hanguana Trail; 27 October 2023, around 1714 hrs.

**Habitat:** Secondary forest.

**Observers:** Ryuta Yong Chuan Teo and Eunice Kong.

**Observations:** Two *Amegilla (Glossamegilla) insularis* individuals were observed visiting the flowers of *Alpinia aquatica* and foraging separately, with each bee visiting different inflorescences at any one time (Fig. 1).

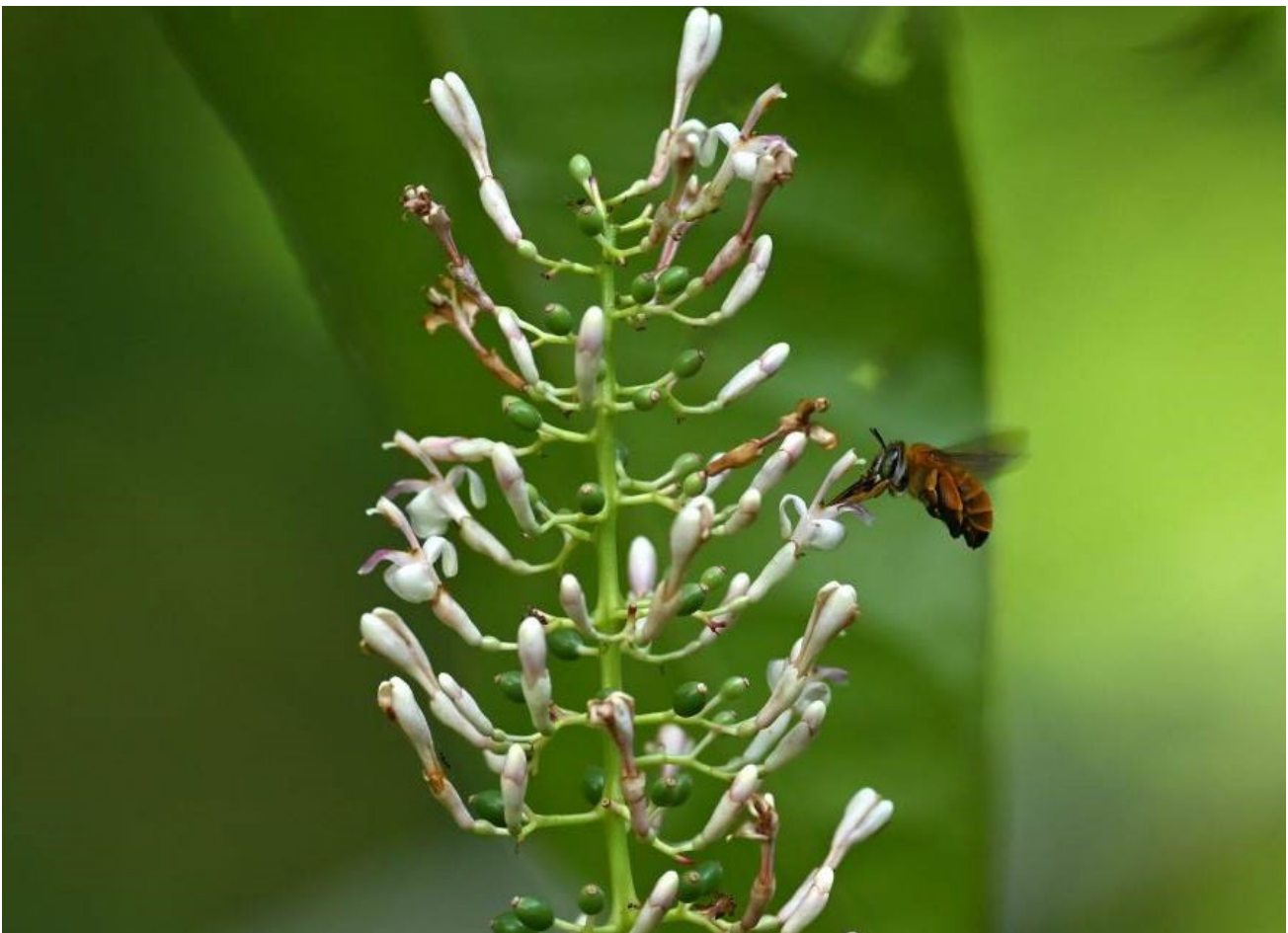


Fig. 1. An *Amegilla (Glossamegilla) insularis* visiting and feeding on an *Alpinia aquatica* flower (Photograph by: Ryuta Teo Yong Chuan).



Fig. 2. An *Amegilla (Zonamegilla) andrewsi* individual attempting to chase a larger *Amegilla (Glossamegilla) insularis* away from the inflorescences (Photograph by: Eunice Kong).

The *Amegilla (Glossamegilla) insularis* individuals and another bee species, *Amegilla (Zonamegilla) andrewsi*, were observed actively competing with each other for access to the *Alpinia aquatica* flowers. The smaller *Amegilla (Zonamegilla) andrewsi* individuals chased away or used various body parts to prevent the *Amegilla (Glossamegilla) insularis* individuals from accessing the *Alpinia aquatica* flowers (Fig. 2).

**Remarks:** *Amegilla (Glossamegilla) insularis* is a forest-associated bee which is locally rare and has a conservation status of ‘Vulnerable’ in Singapore (Ascher et al., 2022). Sightings of this species usually consist of single individuals and are mainly restricted to mature forests such as Central Catchment Nature Reserve and Bukit Batok Nature Park (Soh & Ascher, 2020; Ascher et al., 2022). This is the first documented sighting of *Amegilla (Glossamegilla) insularis* coming out to forage along a less densely vegetated trail located at the fringe of mature secondary forest.

It is interesting to note that despite being larger in size, *Amegilla (Glossamegilla) insularis* appears to be easily intimidated by its floral competitor *Amegilla (Zonamegilla) andrewsi*. The distinctly smaller *Amegilla (Zonamegilla) andrewsi* seems to be more aggressive in disposition (see Fig. 2), actively trying to deny individuals of *Amegilla (Glossamegilla) insularis* access to the flowers. *Amegilla (Zonamegilla) andrewsi* is a locally common bee that also frequents urban parkland (Soh & Ascher, 2020).

**Literature cited:**

- Ascher JS, Soh ZW, Chui SX, Soh EJ, Ho BM, Lee JX, Gajanur AR & Ong XR (2022) The bees of Singapore (Hymenoptera: Apoidea: Anthophila): first comprehensive country checklist and conservation assessment for a Southeast Asian bee fauna. *Raffles Bulletin of Zoology*, 70: 39–64.
- Soh ZWW & Ascher JS (2020) A Guide to the Bees of Singapore. National Parks Board, Singapore, 148 pp.