

Biodiversity Record: The bracket fungus, *Ganoderma zonatum*, at Chestnut Nature Park

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Subject: *Ganoderma zonatum* (Fungi: Basidiomycota: Agaricomycetes: Polyporales: Ganodermataceae).

Subject identified by: Jian Hui Low.

Location, date and time: Singapore Island, Chestnut Nature Park, Southern Loop (1.371024°N, 103.781553°E); 29 December 2023, around 1730 hrs.

Habitat: Secondary rainforest.

Observer: Daisy Lam Chi Ki.

Observation: A single specimen of around 100 mm diameter was observed on a decaying palm log (Fig. 1a). Its cap is reddish-brown with a thin growth margin. The undersides are white (Fig. 1b), indicating that the specimen is mature. Pores are present on the underside of the fungus with numerous basidiospores (Fig. 1b). The horizontal orientation of the basidiocarp suggests that it emerged after the log had fallen.



Fig. 1. *Ganoderma zonatum* on a log. a) Dorsal view of the fungus relative to the surrounding habitat. b) Ventral view of the fungus (Photographs by: Daisy Lam Chi Ki).

Remarks: *Ganoderma zonatum* can primarily be identified by a structure known as a basidiocarp or conk growing out of a tree or log. The presence of a basidiocarp indicates that there is already fungal colonization within the trunk of the tree. This species is known to specifically infect palms, causing basal stem rot or butt rot, which is a lethal disease to these trees (Elliot & Broschat, 2018). When such an infection occurs, it may be observed in the form of the wilting of the majority of the leaves on the palm. There is currently no viable method to detect infected palms, and the presence of *Ganoderma zonatum* can only be confirmed by the observation of basidiocarps as described above.

In Singapore, *Ganoderma zonatum* and *Ganoderma orbiforme* are the two main species observed parasitising common palms (Fong, 2008). While these fungi are common, their invasive nature towards palms necessitates closer investigation and monitoring. *Ganoderma zonatum* is distinguished from its congener in having more vibrant colours, larger basidiospores and lacking melanoid bands (Xing et al., 2018). This species is not treated by Lee & Choong (2023) in their guide to macrofungi of Singapore, nor was it described by Hong et al. (2023) in their recent publication describing metagenomic sampling of tree root or trunk rot in Singapore.

Note: This observation was made during a field survey for fungal biodiversity under NParks permit NP/RP23-091.

Literature cited:

- Lee SML & Choong AMF (2023). A Guide to Macrofungi in Singapore. National Parks Board, Singapore, 229 pp.
- Hong Y, Tan JY, Xue H, Chow ML, Ali M, Ng A, Leong A, Yeo J, Koh SM, Tang MSY, et al. (2023) A metagenomic survey of wood decay fungi in the urban trees of Singapore. *Journal of Fungi*, 9: 460.
- Fong YK (2008) NParks Research Technical Notes 03/2008. <https://www.nparks.gov.sg/cuge/resources/publications/research-technical-notes/how-to-identify-ganoderma-basal-stem-rot-in-palms> (Accessed 6 January 2024).
- Elliott ML & Broschat TK (2018) *Ganoderma* butt rot of palms. <https://edis.ifas.ufl.edu/publication/PP100> (Accessed 6 January 2024)
- Xing J, Sun Y, Han Y, Cui B & Dai Y (2018) Morphological and molecular identification of two new *Ganoderma* species on *Casuarina equisetifolia* from China. *MycKeys*, 34: 93–108.