

## Biodiversity Record: Lim's black-spotted sticky frog breeding in a tree hollow

James Donnelly

Email: [jdonne1992@gmail.com](mailto:jdonne1992@gmail.com)

**Recommended citation.** Donnelly J (2024) Biodiversity Record: Lim's black-spotted sticky frog breeding in a tree hollow. Nature in Singapore, 17: e2024067. DOI: 10.26107/NIS-2024-0067

---

**Subjects:** Lim's black-spotted sticky frog, *Kalophrynus limbooliati* (Amphibia: Anura: Microhylidae).

**Subjects identified by:** James Donnelly.

**Location, date and time:** Singapore Island, Bukit Timah Nature Reserve; 4 December 2022 at around 0950 hrs and 9 December 2022 at around 1740 hrs.

**Habitat:** Primary forest.

**Observer:** James Donnelly.

**Observations:** On 4 December 2022 at around 0950 hrs, two examples were found in amplexus (Fig. 1) in a small water filled tree hollow. The hollow was about 15 × 8 cm in floor area filled with water around 3 or 4 cm depth. It was approximately 0.5 m above the ground at the base of a large tree adjacent to a walking trail. The snout-vent length of the male was about 4.5 cm, the female was around 5.5 cm. The pair was almost fully submerged with only their snouts protruding out of the water. The male held on to the back of his partner with his forefeet pressed against her sides above her forelimbs.

Returning to the same tree hollow on 9 December 2022 at around 1740 hrs, the observer counted 31 tadpoles in the pool (Figs. 2 & 3). The tadpoles, presumably the offspring of the mating pair of *Kalophrynus limbooliati* observed five days before, were grey with a distinct white abdomen.

**Remarks:** *Kalophrynus limbooliati* was described by Matsui et al. (2012) and is known to occur in southern Peninsular Malaysia. Matsui et al. (2012) were of the opinion that frogs in Singapore identified as *Kalophrynus pleurostigma* are *Kalophrynus limbooliati*. This identification was adopted by Baker & Lim (2012). In 1990, tadpoles of this species were documented for the first time inhabiting the cups of *Nepenthes ampullaria* (Lim, 1991 as *Kalophrynus pleurostigma*). The larvae, described by Leong & Chou (1999 as *Kalophrynus pleurostigma*), took slightly more than 15 days to complete metamorphosis and jump out of the cups. In Singapore, *Kalophrynus limbooliati* is locally common but restricted to the Bukit Timah and Central Catchment Nature Reserves, as well as adjacent parks and forests (Figueroa et al., 2023). The featured images are a rare in-situ illustration of *Kalophrynus limbooliati* breeding in a phytothelm that is not a pitcher plant cup.

### Literature cited:

- Baker N & Lim KKP (2012) Wild Animals of Singapore. A Photographic Guide to Mammals, Reptiles, Amphibians and Freshwater Fishes. Updated edition. Draco Publishing and Distribution Pte. Ltd. and Nature Society (Singapore). 180 pp.
- Figueroa A, Low MEY & Lim KKP (2023) Singapore's herpetofauna: updated and annotated checklist, history, conservation, and distribution. Zootaxa, 5287: 1–378.
- Leong TM & Chou LM (1999) Larval diversity and development in the Singapore Anura (Amphibia). Raffles Bulletin of Zoology, 47: 81–137.
- Lim KKP & Ng PKL (1991) Nepenthophilous larvae and breeding habits of the sticky frog, *Kalophrynus pleurostigma* Tschudi (Amphibia: Microhylidae). Raffles Bulletin of Zoology, 39: 209–214.
- Matsui M, Nishikawa K, Belabut DM, Norhayati A & Yong HS (2012) A new species of *Kalophrynus* (Amphibia, Anura, Microhylidae) from southern Peninsular Malaysia. Zootaxa, 3155: 38–46.



Fig. 1. A pair of *Kalophrynus limbooliati* in amplexus on the 4 December 2022 (Photograph by: James Donnelly).



Figs. 2 & 3. In-situ dorso-lateral views of tadpoles in the water-filled tree hollow on 9 December 2022 (Photographs by: James Donnelly).