

Wrestling behaviour of black-eyed litter frogs

Subjects: Black-eyed litter frog, *Leptobrachium nigrops* (Amphibia: Anura: Megophryidae).

Subjects identified by: Contributors.

Location, date and time: Singapore Island, Central Catchment Nature Reserve, Upper Peirce area; 19 November 2016; 2313 hrs.

Habitat: Freshwater swamp-forest. On leaf litter substrate.

Observers: Contributors.

Observation: Two adult male frogs of similar size (around 5 cm snout-vent length) were observed engaging in what appears to be a bout of wrestling. Positioning themselves face-to-face or face-to-flank (see Fig. 1), taking turns to call with throats inflated and bodies elevated on stretched out limbs (Figs. 2 to 5), they repeatedly hurled themselves at each other (Figs. 6 to 7). The aim of this move was apparently to push or knock the opponent off his feet and flip him over onto his back. If the attacker was successful, both frogs often tumbled over each other (Figs. 7 to 13) and landed on their backs, but they quickly re-positioned themselves for another round of attack. If the attacking frog fails to flip his opponent, both frogs may remain still for some time (Figs. 14 to 17) before going at each other again.

A video recorded by Law Ing Sind of this interaction, which includes the audio of the frogs' calls, can be viewed at: <https://www.youtube.com/watch?v=iQh-cWRbJRE>. This one minute seven second sequence shows the two frogs repeatedly lunging at each other and tumbling over. Figs 2 to 17 have been extracted at intervals from the video footage.



Fig. 1. The frog on the right pushing against the side of his opponent in an attempt to flip the other frog over. Photograph by Serin Subaraj



Fig. 2. Upper frog calling.



Fig. 3. Lower frog calling in response.



Fig. 4. Lower frog rotating his body.



Fig. 5. Lower frog turns around to face upper frog.



Fig. 6. Upper frog turns to face lower frog.



Fig. 7. Upper frog lunges at lower frog.



Fig. 8. Lower frog lunges back, flipping his opponent.



Fig. 9. They quickly reposition themselves upright.

Still images from video by Law Ing Sind



Fig. 10. In an attack, the frogs tumble over each other.



Fig. 11. Repositioning themselves for another round.



Fig. 12. And another tumble.



Fig. 13. Frog in front going for his opponent.



Fig. 14. But does not succeed in flipping his rival over.



Fig. 15. Both frogs pause for a break.



Fig. 16. And do not move for some time.



Fig. 17. The frog at the rear begins to call.

Still images from video by Law Ing Sind

Remarks: The observed behaviour appears to be an aggressive interaction between two male frogs. Each frog appeared to be trying to shove or push his opponent out of a favoured area. Intra-specific fighting is known to be practised by a number of frog species from other parts of the world, apparently for settling disputes over territory, particularly if vocalisations fail to deter rival frogs (see for example: Tapley & Purushotham, 2011; Martins et al., 1998).

The calls of the frogs during the featured interaction resemble a series of short croaks, which are unlike the drawn-out ‘rattling gurgle’ (Baker & Lim, 2012: 55) that is recognised as the species’ advertisement call.

The featured observation may be the first published record of fighting frogs in Singapore, and apparently the first time this behaviour is observed in *Leptobrachium nigrops*.

References:

- Baker, N. & K. K. P. Lim, 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.
- Martins, M., J. P. Pombal & C. F. B. Haddad, 1998. Escalated aggressive behaviour and facultative parental care in the nest building gladiator frog, *Hyla faber*. *Amphibia-Reptilia*. 19: 65-73.
- Tapley, B. & C. B. Purushotham, 2011. Fighting behaviour in the bicoloured frog *Clinotarsus (Rana) curtipes* Jerdon, 1854. *Herpetology Notes*. 4: 353-355.

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