

Observation of a changeable lizard laying eggs

Wee Yeow Chin

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Subject: Changeable lizard, *Calotes versicolor* (Reptilia: Squamata: Agamidae).

Subject identified by: Wee Yeow Chin.

Location, date and time: Singapore Island, Bukit Timah, Sian Tuan Avenue; 13 May 2018; between 1700 and 1730 hrs.

Habitat: Suburban housing estate.

Observers: Tinny G. Unciano & Wee Yeow Chin.

Observation: Tinny G. Unciano was sweeping the garden when she came across a female changeable lizard laying eggs. The lizard had dug a small hole in the bare patch of grassy area under a tree and laid about half a dozen white eggs. By the time Wee Yeow Chin managed to assemble his video camera, the lizard had completed laying her eggs. She was lying on the ground with her hind limbs across the hole, the exact position she was in when she was laying her eggs (see accompanying picture). There she remained still for about 3 or 4 minutes. The lizard was dark greyish-brown with dull yellowish green smudges behind the eyes and over the back. There was a blackish patch on the neck above the shoulders (see accompanying picture), and a patch of orange on the throat (not visible in the picture). Then, turning around, she directed her head downwards and began compacting the soil that was earlier scraped over the eggs. This she did by thrusting her head into the soil so that her snout did the compacting. Following this, she started scraping the surrounding soil, first with the claws of one forelimb, then with those of the other. After a short rest, she used her snout to compact the soil again. Turning around clockwise and anti-clockwise, she repeated scraping the soil, resting, compacting the soil and resting again for a total of 13 cycles until the hole was covered. The surface was meticulously flattened with her claws with compacting where necessary until there was no evidence that a hole had previously been dug. Initially Wee Yeow Chin was slightly more than a metre away from the lizard before leaving the video camera to complete the documentation in his absence. When she was levelling the surface, a pair of Javan mynas (*Acridotheres javanicus*) approached her. The lizard responded by flashing her small orange throat flap (not visible in the attached pictures) and later raising her body as well as puffing her neck when one of the inquisitive birds came too close. The entire exercise took about half an hour before the lizard scampered away from the nest.

The process of the lizard covering up her nest hole can be viewed on the following videos on You Tube:

- 1) Edited, normal speed: <https://www.youtube.com/watch?v=GcNemtQZ3u0&t=124s>
- 2) Edited, fast forward 4x: https://www.youtube.com/watch?v=uR4Oxwnkv_Q&t=4s

Remarks: The colour pattern of the egg-laying female *Calotes versicolor* seems to be scarcely mentioned in literature. It is apparently different from females that are not nesting, which may be plain greenish, grey or light brown with blackish irregularly shaped transverse bands and sometimes with a pair of whitish or yellowish dorso-lateral stripes from the head to the base of the tail. The throat is whitish and there is no large black patch on the neck (see Diong et al., 1994; Grismer, 2011: 151). In the featured example, the black patch on the neck and orange throat appear to be associated with mature breeding males (see Diong et al., 1994; Grismer, 2011: 151). It remains to be seen if this colour pattern is consistent with other egg-laying changeable lizards in the region.

Elsewhere, an egg-laying female in Ahmedabad in Gujarat State, India, was noted as having ‘the colour of her forefeet and that of 1½ inches length of the spine-bearing ridge on the dorsum just behind the occiput... dull crimson or brick red’ (Asana, 1942). Amarasinghe & Karunarathna (2007, fig. 1) show an egg-laying female from Sri Lanka that has a black patch on the neck above the forelimbs, an area of red around the eyes and on the throat, and some red areas on the dorsum. The difference in colouration is likely due to the lizards belonging to different populations of this apparently widespread species.

References:

- Amarasinghe, A. A. T. & D. M. S. S. Karunaratna, 2007. Beobachtungen zum Eiablageverhalten der Indischen Schönechse *Calotes versicolor* (Daudin, 1802) (Reptilia: Agamidae) in einem anthropogenen biotop in Sri Lanka. *SAURIA*. 29 (3): 27-30.
- Asana, J. J., 1942. Further observations on the egg-laying habits of the lizard, *Calotes versicolor* (Boulenger). *The Journal of the Bombay Natural History Society*. 42 (3&4): 937-940.
- Diong C. H., L. M. Chou & K. K. P. Lim, 1994. *Calotes versicolor*. The changeable lizard. *Nature Malaysiana*. 19 (2): 46-54.
- Grismer, L. L., 2011. *Lizards of Peninsular Malaysia, Singapore, and their Adjacent Archipelagos. Their Description, Distribution, and Natural History*. Edition Chimaira, Frankfurt am Main. 728 pp.



Female changeable lizard over her nest hole and eggs. Photograph by Wee Yeow Chin