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Paradise gliding snake preying on bamboo bat

Subjects: Paradise gliding snake, *Chrysopelea paradisi* (Reptilia: Serpentes: Colubridae).
Bamboo bat, *Tylonycteris* sp. (Mammalia: Chiroptera: Vespertilionidae).

Subjects identified by: Contributors.

Location, date and time: Singapore Island, Singapore Botanic Gardens; 12 January 2008, 1745-2020 hrs.

Habitat: Public park with ornamental vegetation, on a clump of bamboo.

Observers: Contributors.

Observation: At about 1745 hrs in fading daylight, the snake of about 1 m total length, was first seen with its head inside the hollow bamboo stem. The snake was motionless, its body stretched out along the bamboo, anchored by the tail. Its victim, a bamboo bat, was presumed dead for it was not flapping. In the following 45 minutes, the snake dragged its prey up and down along the slit, attempting to pull the bat out. As it pulled, the snake contorted its body in different positions, including one that placed it perpendicular to the slit. The snake also twisted its head in the attempt to pry its prey out. In the process, skin on the bat was rubbed off the body, exposing muscle and flesh. By around 1900 hrs, the sun had set and it was dark. The snake had succeeded in pulling one-third of the bat out of the slit. As it was obviously hard work, the snake, apparently exhausted, left the bat and climbed up the bamboo, where it stopped for a rest (fig. 4). After at least 15 minutes, and at around 1930 hrs, the snake descended from its resting place. The snake was actively flicking its tongue, an indication that it was locating its prey. Under dim light from a torch used by the observer to see in the dark, the snake took a few seconds to find the bat, and continued in its attempt at tugging it out of the slit (fig. 5 - 20). During subsequent attempts to extricate the bat, the snake had anchored its body in different positions, and a couple of times releasing its bite and re-adjusting its position before biting again. The snake swallowed the exposed part of the bat, then regurgitated the prey, re-positioned itself, and swallowed the bat again. It finally pulled the entire animal out and consumed it at 2020 hrs (fig. 21). The second part of the extrication process took more than an hour to accomplish. After that, the snake moved up the bamboo, only to return shortly and spent the next few minutes searching the slit, apparently looking for its next meal (fig. 22).

Remarks:
The predation of bamboo bats by *Chrysopelea paradisi* has previously been observed (Teo & Rajathurai, 1997). Bamboo bats (*Tylonycteris* spp.) spend most of the day roosting within the stems of bamboo. They enter and exit through narrow longitudinal openings made by beetles. The flat heads and bodies of these small bats enable them to squeeze through these slits. However, a dead bat would not be able to flatten its body to pass through the slit. Therefore it would not have been possible for the snake to extricate the entire bat. It was possible for the snake to have seized the bat when the snake's head was inside the hollow stem. It had most likely caught hold of the wing, for that was thin enough to fit through the slit. If the snake had latched onto the body, it would not be possible for the head of the snake to be outside.
An interesting observation is the dismemberment of prey. The bat's body was badly shredded in the process. However, we believe the snake would have swallowed the bat whole if the entire animal was easily extricated through the slit. The ripping and tearing of the prey was due to the unusual circumstance, and the snake's apparent determination in working its prey loose from an obstruction.
It was noted that the snake left the site to rest only after it had pulled a good amount of the bat out, and that the prey was firmly lodged at the top of the slit. If it had left while the bat was still dangling freely, the bat would have fallen back into the hollow stem, necessitating a troublesome retrieval process. Although we have tried to avoid interfering with the predation process, flashes from the camera could have affected the snake and sent it up to the leaves midway through the predation process. We believe that the snake was not affected by human presence for it returned

to the site to continue what it was doing. It is believed that the period of rest was intended by the snake, most likely due to exhaustion, and not because it was disturbed by the photographer.

The snake apparently searching in the dark for another meal after having swallowed the bat is another interesting observation. The paradise tree snake is generally regarded to be a diurnal species (Baker & Lim, 2012) and this observation suggests that it can be active at night. However, its perceived nocturnal activity could have been stimulated by the torchlight used by the photographer.

References:

Baker, N. & K. K. P. Lim, 2012. *Wild Animals of Singapore. A Photographic Guide to Mammals, Reptiles, Amphibians and Freshwater Fishes*. Reprinted with corrections and updates. Draco Publishing and Distribution Pte. Ltd. and Nature Society (Singapore). 180 pp.

Teo, R. C. H. & S. Rajathurai, 1997. Mammals, reptiles and amphibians in the nature reserves of Singapore – diversity, abundance and distribution. *The Gardens' Bulletin, Singapore*. **49**(2): 353–425.

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Fig. 1. 1841 hrs.

Fig. 2. 1842 hrs.

All photographs by Chan Kwok Wai

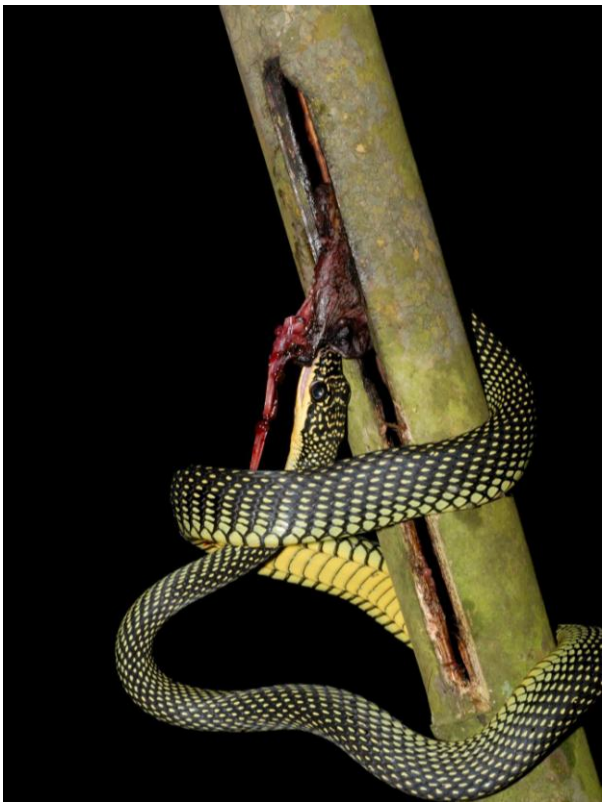

Fig. 3. 1842 hrs.

Fig. 4. Snake resting at 1859 hrs.

Fig. 5. Prey extrication resumed at 1904 hrs.

Fig. 6. 1905 hrs.

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Fig. 7. 1908 hrs.

Fig. 8. 1916 hrs.

Fig. 9. 1919 hrs.

Fig. 10. 1921 hrs.

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Fig. 11. 1925 hrs.

Fig. 12. 1929 hrs.

Fig. 13. 1937 hrs.

Fig. 14. 1947 hrs.

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Fig. 15. 1948 hrs.

Fig. 16. 1955 hrs.

Fig. 17. 2001 hrs.

Fig. 18. 2002 hrs.

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Fig. 19. 2006 hrs.

Fig. 20. 2014 hrs.

Fig. 21. Prey completely swallowed at 2021 hrs.

Fig. 22. Searching for another prey at 2027 hrs.

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