

## Observations of a Jungle Striped Squirrel *Funambulus tristriatus* nest predated by a Nilgiri Marten *Martes gwatkinsii* in Kadamane Estate, Sakleshpura, India

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### Abstract.

We saw a Nilgiri Marten *Martes gwatkinsii* raiding the nest of Jungle Striped Squirrels *Funambulus tristriatus* in Kadamane Estate in the Western Ghats, India. These are the first observations of this feeding behaviour for this poorly understood species. Our detailed observations are documented in this note.

**Keywords:** *Martes gwatkinsii*, *Funambulus tristriatus*, rainforest, Western Ghats, endemic

Nilgiri Marten *Martes gwatkinsii* is a rare and poorly known mustelid, endemic to the evergreen and moist deciduous forests of the Western Ghats in South India (Wirth & Van Rompaey 1991). Its range extends from the southern tip of the Western Ghats in Kerala to South-Central Karnataka (up to 13°N; Wirth & Van Rompaey 1991, Mudappa 2002, Krishna & Karnad 2010, Jathanna 2014). Little is known about its behaviour and diet, and our current understanding of the species is from a few scattered (and often very brief) opportunistic sightings across its range (Krishna & Karnad 2010, Jathanna 2014). Nilgiri Martens are known to feed on both plant and animals (Balakrishnan 2005) but are largely carnivorous (Jathanna 2014). They have been seen chasing (and feeding on) Indian Chevrotain *Moschiola meminna*, Indian Giant Squirrel *Ratufa indica*, and Indian Monitor Lizard *Varanus bengalensis* (Hutton 1949, Christopher & Jayson 1996, Kurup & Joseph 2001, Mudappa 2002). They have also been observed probing fallen trees and rotting wood (Kurup & Joseph 2001) and feeding on honey and perhaps bee larvae (Christopher & Jayson 1996, Jathanna 2014). In this paper, we document the process of a Nilgiri Marten raiding a Jungle Striped Squirrel *Funambulus tristriatus* nest.

AV was observing birds at 7h30 in the Northern part of Kadamane Tea Estate (approximately 960 m, 12°51'40" - 12°56'30" N to 75°38'0" - 75°41'0" E) in Karnataka,

India, on 24 April 2016. Something that sounded like a woodpecker drumming in the distance was heard at 7h40. At the place the sound was heard, a stream cuts across the road, feeding marshy areas on either side. A 10–15 m tall *Ficus beddomei* with a dead central trunk but a complete canopy stands in one of the marshy parts. Its trunk is surrounded by *Calamus* sp. that almost reaches the canopy and is also surrounded by *Pandanus* sp. at the base. One 6–8 m tall *Hopea canarensis* grows right next to the trunk of the *F. beddomei*. The dead trunk had at least four visible hollows, approximately 5 cm in diameter, 7–8 m from the ground. Although the pecking seemed distant, AV scanned the dead central trunk for the bird; instead a Nilgiri Marten was observed on the fork of a branch, adjacent to the hollows. It was licking its paws and possibly cleaning its face. It appeared unperturbed by AV's presence less than 15 m away. In a few minutes, the marten went up to the highest of the four visible holes on the dead trunk. It started digging and widening the hole with its paws. Small pieces of wood were flying down and around. It tried to reach inside with its snout every once in a while, but seemed to come out with some discomfort like it had been stung by bees, wasps or ants. However, no bees or wasps were seen flying near the cavity. It dug at the hole from several angles with its whole body sprawled on the trunk which was much wider than itself. It glanced in AV direction a few times but did not react.

After digging for 10–15 minutes, the marten took a break for a minute or so before resuming. At approximately 8h15, after two more short breaks, it suddenly pulled something out of the hole with its snout. The animal pulled out made a squeaky sound and AV only saw that it had a furry greyish tail that was perhaps 10–20 cm long. The marten then lost its grip on the animal which fell through the *Calamus* sp. and *Pandanus* sp. to the ground. The marten did not go after it. Instead, it continued digging at the hole and shortly pulled out another animal with a similar greyish tail. This time both the marten and its prey fell down the tree and AV lost sight of both temporarily. The marten then emerged and went up the tree one more time to look inside the hole. Possibly satisfied that there were no more animals inside, it descended and disappeared in the undergrowth. The process, while AV was watching, took around 35 minutes and it was then unclear what the prey was and whether the marten successfully made off with either or both animals. AV assumed then that the animals were young Indian Giant Flying Squirrels *Petaurista phillipensis* or Travancore Flying Squirrels *Petinomys fuscocappilus*, given flying squirrels live and nest in tree cavities. The entire process had possibly taken longer than the observed period as the lowest cavity had also been slightly enlarged. Although three people (who work locally) conspicuously walked by twice (they were asked to stay quiet in time), the marten remained unperturbed.

The next morning, after assuming that 24 hours was sufficient time for the marten to return and take away any remaining squirrels, we went to the tree to look at the cavities. GH climbed up the tree to look inside and photograph the cavities (Fig. 1A and Fig. 1B). Meanwhile, two dogs which had followed us immediately picked up a smell in the vicinity.

They searched for a short while and came back with a Jungle Striped Squirrel that had died very recently. It had clear bite marks and we assumed that this must be the first squirrel that the marten had caught (Fig. 1C). The dogs did not find any more squirrels possibly indicating that the marten had successfully carried away the second squirrel. The dead squirrel weighed 51.76 g (adult weight: ~140 g). Its head and body length was between 12 and 13 cm (adult HBL: ~15 cm) and its tail measured between 10 and 11 cm (adult TL: ~14 cm). We concluded that the animal may be a juvenile, and that the cavity housed a Jungle Striped Squirrel nest. The adults had perhaps fled as soon as the marten arrived.



**Figure 1.** (A) The Ficus tree with the nest, (B) the nest opening that was enlarged and (C) The dead Jungle Striped Squirrel *Funambulus tristriatus*.

Nest predation is a new, but not unexpected, addition to the feeding behaviour of a Nilgiri Marten. Other species of martens are known to raid nests of birds and mammals (Sonerud 1985, Parr & Duckworth 2007). If the young of cavity nesting animals does constitute a large part of its diet (there is however no reason to believe so with our current understanding), healthy densities of cavity nesting animals may be important to ensure healthy populations of Nilgiri Martens.

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