

Nest Structure of the Purple-naped Spiderhunter *Kurochkinogramma hypogrammicum* in Peninsular Malaysia

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On 1 May 2023, while bird watching in primary forest at a section of the Kledang Saiong Forest Reserve, Ipoh, Perak, Malaysia, I observed a pair of Purple-naped Spiderhunters *Kurochkinogramma hypogrammicum* visiting the same location a few times. I suspected nesting activity, so I withdrew and decided to go back to my vehicle for my tripod. I then positioned myself about 8 to 10 m away from the site and used videography to assist with documentation. I focused on a large, fallen, dead leaf – a fallen Giant Macaranga *Macaranga gigantea* leaf. I observed the birds entering that location with nesting material. They appeared comfortable with my presence at that distance. I continued intermittent observations until 5 June 2023 when the nest was harvested for detailed examination.

Timeline of Nesting Observations

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|-----------------------|---|
| 1 May 2023 | Nest first identified; birds had almost completed nest construction, with both the male and female seen to be involved. |
| 4 May 2023 | Incubation in progress, which may have started on 2 or 3 May 2023. When the female was incubating, the male was often seen about 2 to 10 m from the nest, possibly on 'security' detail looking out for threats. Once the male was seen consuming two ants while perched on a branch near the nest. |
| 9th May 2023 | Confirmation that both female and male involved in incubation. Long periods between adults changing incubation responsibilities. |
| 11 May 2023 | Incubation. No threat-response from the nesting birds to other birds that foraged near the nesting site. |
| 15 May to 1 June 2023 | Visited the nesting site six times (twice a week). Hours of remote videography confirmed that the nesting had failed. |
| 5 June 2023 | Nest harvested for examination as the <i>Macaranga gigantea</i> leaf was already cracking. There were no remains of eggs or juveniles in the nest. |

It is uncertain why the nesting had failed. The nest site had not been disturbed and human interference had been minimal with observations from a distance; often using remote videography. Perhaps egg laying had failed.

Description of Nest Location/Site and Nest Building Activities

The nest was located under a dead leaf, 1.3 m above the ground, on the branch of a young sapling that was overhanging a small stream (see Plate 1). The location was in primary forest adjacent to a forest trail. Birds entered and left the nest from below, at great speed. Despite videography, it was difficult to always determine the sex of the bird or nature of nesting material in most cases. I am however certain that both the female and male were involved in nest building and that spider webs and dead leaves were collected for nest construction (see Plate 2).

Nest building was very active from 0830 to 0930. Data from video recordings showed that durations between nest building visits was on average 71 seconds (range 47-112 seconds). The duration of nest building activities, when a bird entered and I could see them leave, was on average 37 seconds (range 13-116 seconds; mode 20-35 seconds).

At times the male was present at 3-5 m from the nest while the female was inside completing nest construction. No calls were made on entering or leaving the nest. A short video clip to showing two nest building visits may be seen here: <https://youtu.be/MWwSpiwsEYM>

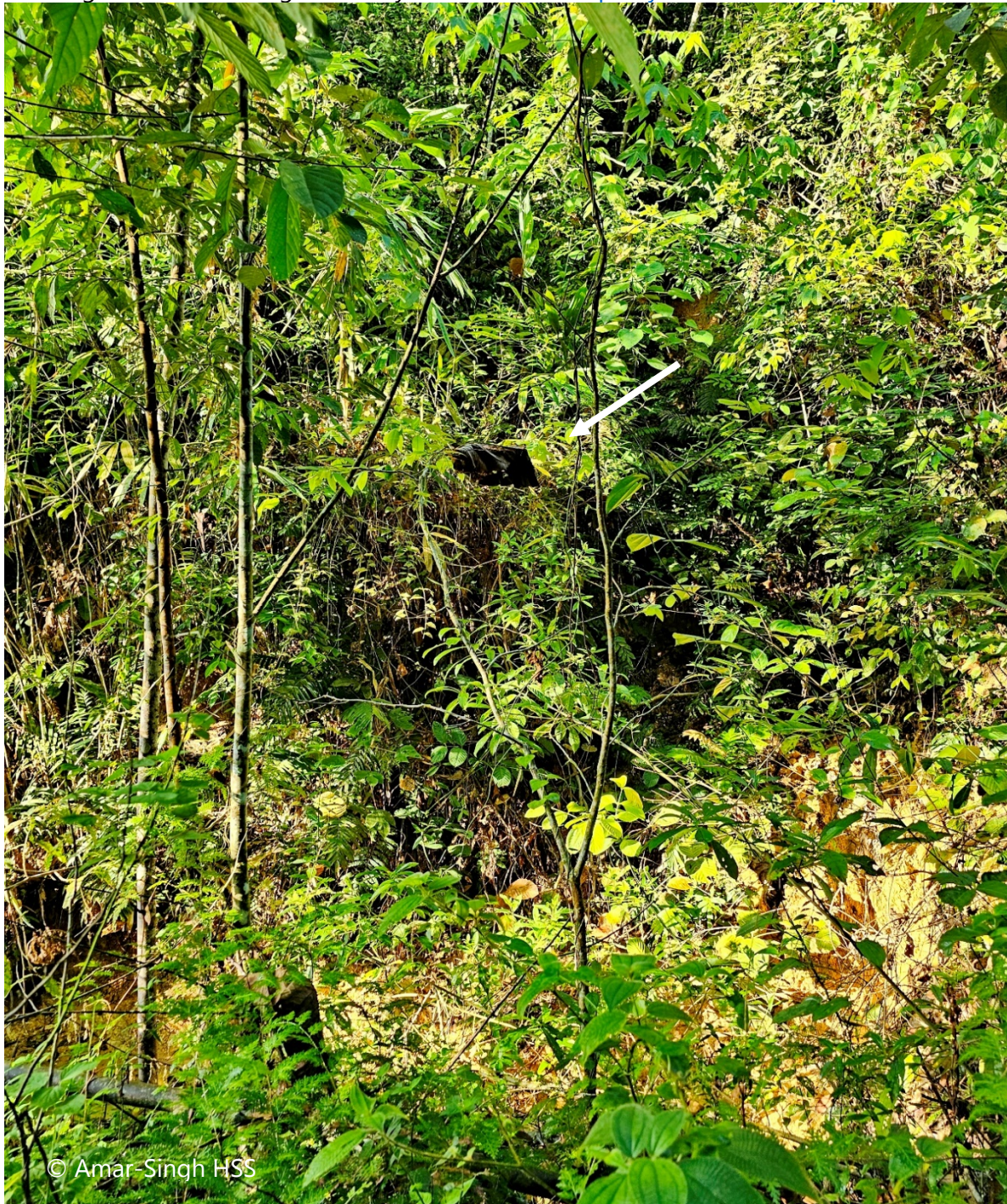


Plate 1: Overview of nesting location of Purple-naped Spiderhunter; (see arrow).



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Plate 2: Female Purple-naped Spiderhunter with spiderwebs collected for nest construction.

Description of Nest Structure

The nest was located under a dead Giant Macaranga leaf that was resting on the branches of a young sapling at the location of a fork. The sapling species that housed the leaf/nest is unknown. One end of the nest was blocked by leaves and other nesting material. The nest entry was on the other side with entry from the side and below. The nest itself was located at the middle and upper part of the leaf. Although the fallen leaf was resting on a fork in the tree sapling branches, the nest did not rest on the branches.

The nest was 8 cm wide, 11 cm long and 7 cm in height (nest base to leaf roof). The nest material thickness was 4 cm at its widest (at entrance). The nest base was dead leaves anchored by spiderweb 'cables' on two sides. "Pop-rivets" of spiderweb silk that were used to anchor the nest were clearly seen on the outside (see Plates 3, 4 and 5). The nest was filled extensively with cotton but I am unsure of the source(s). There was a depression in the centre of the nesting cavity. The front entrance was wide and open. The back end of the nest was almost closed by leaves.

My observations suggest that the nest was slung under the fallen leaf using strands of spiderweb silk that was anchored to the leaf and the base of the nest (dried leaves). The nest was then filled predominantly with cotton, mixed with some dead leaves.



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Plate 3: External view of Purple-naped Spiderhunter nest under a dead *Macaranga gigantea* leaf, seen from both sides.



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Plate 4: View of Purple-naped Spiderhunter nest from below.



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Plate 5: View of Purple-naped Spiderhunter nest from the front; note spiderweb 'cables' (arrow).

Discussion

Wells (2007) states that there has been no description of nests in the review area of the Thai-Malay Peninsula. Cheke and Mann (2001) describe two nests, one of which is described from Sabah, Borneo (Davison 1999). One nest was described as "*pear-shaped, made of grass, rootlets, hair and bark, suspended from underside of plantain leaf.*" The second nest was described as "*a pendant ball, untidy, a little prolonged and very narrow at the top end, composed of scraps of bark, lichen, dry moss, leaves, bound with cob-webs and adorned with oddments hanging fluttering some 150 mm below the bottom of the nest. Lining of cotton down. No porch. Attached to betel palm over 6 m from ground.*" I reviewed online images, including the Macaulay Library, but was not able to find any images of a nest.

The nest site and structure I observed were vastly different from the two previously described, and are unexpected. It raises the question of whether different subspecies of Purple-naped Spiderhunters have different nesting structures. It is possible that the nesting structure of *K. h. nuchale* on the Peninsula is different from that of *K. h. hypogrammicum* in Borneo. A second possibility is that the species as a whole has variable nesting behaviours. A third possibility is that the paucity of nesting observations may mean that some nests were mistakenly attributed to the Purple-naped Spiderhunters. A final possibility is perhaps that the birds took over another species of spiderhunter's nest, occupied it and added nesting material.

There is controversy about whether *K. hypogrammicum* should be considered a Sunbird or a Spiderhunter; see the article discussing this issue on pages 51-52 of this publication (Cheke 2023). This nesting structure I observed resembled a spiderhunter's nest more than a sunbird's. However, note that the Yellow-eared Spiderhunter *Arachnothera chrysogenys* nest resembles that of a sunbird (Amar-Singh 2020). More work is required to better delineate the nest structure of this species.

Acknowledgement

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References

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