

Because the ♂ also incubated, the demands of mate-guarding would obviously conflict with his attendance at the nest. Further, the ♂ may have stopped guarding because of physiological changes associated with his role in incubation. Once the clutch was complete, there may have been no advantage in mate-guarding. Certainly the male's pursuit of the female was a striking aspect of the late stages of building, suggesting that such behaviour is advantageous then.

Although the period of our observations, nine hours over 8 days, is meagre and possibly insufficient to establish the roles of the sexes, it is clear that the male's participation was considerable. Building and incubation by males is thought to be relatively uncommon among honeyeaters (S. Marchant pers. comm.). Considering this, observers of sexually monomorphic honeyeaters may be tempted to deem as female every bird that builds or incubates. Care should be taken when assigning sex to a bird based solely on such behaviour, particularly if little is known of its breeding.

It seems unusual to us that vocalizations at the nest were so commonplace. They probably made the nest more conspicuous, but also seemed to solicit nest-relief, resulting in the nest being almost always occupied. Yet this did not deter the Spiny-cheeked Honeyeater, a larger bird and a known predator on eggs and young (Anon 1976). Its attack on the nest was persistent and the defence of the Painted Honeyeaters was ultimately

ineffectual. We know of no other records of Spiny-cheeked Honeyeaters dismantling the nests of other species, but some meliphagids do. We suspect that the Spiny-cheeked Honeyeater also destroyed the eggs of the Painted Honeyeater.

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COMMUNAL BREEDING BY STRIPED HONEYEATERS

The breeding systems of the Australian honeyeaters (Meliphagidae) are diverse and range from reproduction by simple pairs in several species (Eddy 1961; Immelmann 1961; Recher 1977) to the highly communal system of the Noddy Miner *Manorina melanocephala* (Dow 1970, 1977). Communal breeding has been reported in at least eleven species in the family (Dow 1980). Most of these reports are based on limited observations, but they nevertheless contribute to our knowledge of the breeding biologies of this group. Our limited observations at a nest of Striped Honeyeaters *Plectorhyncha lanceolata* suggest that this species also breeds communally.

On 15 November 1981 MJW found a nest of Striped Honeyeaters at The Dell, a property 8 km southeast of

Meandarra, Qld. The nest was about 3.5 m above the ground and contained two naked nestlings, estimated to be three days old on 17 November. We observed this nest from a distance of approximately 15 m for 7 h (2 h on 17 November, 1 h on 18 November, and 4 h on 21 November) using a 20 - 45X telescope. We noted the identities of birds that visited the nest, the time of their arrival and departure, whether they fed or brooded and any other significant behaviour they displayed.

At least three birds visited the nest. Though they were not banded, differences in plumage allowed us to distinguish individuals confidently: 'R' had a rounded, worn tail and short, rounded undertail coverts; 'S' had a straighter tip to the tail with only light wear, a slight flair to the outer rectrices and more obviously striped

and pointed undertail coverts; 'F' has an unworn tail that flaired broadly at the tip when the tail was closed. We refer to the birds by these codes below. Each bird approached the nest by a distinctive path so we could guess the identity of a visitor before it entered the field of view of the telescope. This further suggested that we were consistently distinguishing three individuals.

We observed seventy-one visits to the nest. The attendant fed the young on sixty-one of these visits. On six feeding visits the bird was not identified. Of the remaining fifty-five visits, R made twenty-five, S made twenty-five and F made five. Ten non-feeding visits were divided equally between R and S.

The least active feeder, F, always approached the nest alone or immediately after S. Following one visit by F, and while S brooded, we observed one bird chasing and supplanting another in a nearby tree. On another occasion, again while S brooded, two birds countersang from nearby trees. These observations could indicate a degree of hostility between R and F.

All brooding was done by the two principal feeders, who sat for periods ranging from 28 seconds to 26 minutes. S brooded on twenty-four visits (80%) while R brooded on seventeen (57%). S accounted for 57% of the total time spent brooding and R for 43%. Overall, the young were brooded for 75% of the period of observation; this figure reached 86% on 18 November. On the few occasions when the nest was unoccupied for more than a few seconds, an adult often perched near it. Brooding and feeding at the nest and vigilance near it meant that the young were unattended less than 20% of the time.

The weather during our observations was warm and partly overcast and the nest was well sheltered; it is unlikely that the weather necessitated such close attention to the young. One possible reason for the seemingly excessive vigilance was the presence of potential predators. Spiny-cheeked Honeyeaters *Acanthagenys rufogularis* frequented the area and approached the nest several times. On 17 and 21 November, R terminated bouts of brooding to chase a Spiny-cheeked Honeyeater that had been nearby for several minutes. A Spiny-cheeked Honeyeater was very attentive of our actions when we checked the contents of the nest on 17 November. On 18 November, a Spiny-cheeked Honeyeater approached the nest several times in an hour, once singing less than 1 m from it. This was the day of most attendance by the Striped Honeyeaters. Although we lack any direct evidence to support such a

hypothesis, improved surveillance for, or detection of predators might be one advantage of having extra birds attending a nest.

We are not aware of any other published account of communal breeding in this species. Our observations indicate that the breeding system for Striped Honeyeaters may differ from those described for other meliphagids. Although we could not sex the birds we observed, it is probable that the two most active birds were the parents of the nestlings. S brooded the most and was presumably the female. R sang and engaged in several aggressive interactions, behaviour that is typical of many male honeyeaters. Male Striped Honeyeaters may, therefore, take a very active role in the care of nestlings other than the provision of food. In the only other communally breeding honeyeaters studied in detail, Nosiy Miners and Bell Miners *Manorina melanophrys*, males take no part in incubation or brooding (Dow 1977; Swainson 1970; Smith & Robertson 1977).

A detailed study of the behaviour and natural history of the Striped Honeyeater could reveal more clearly yet another variation of communal social organization within the Meliphagidae, and would thus be of considerable interest in the development of theories about communal breeding in general.

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