

Observations of Nesting Brown Honeyeaters *Lichmera indistincta* at Willetton, Western Australia

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Summary

Observations were made of the breeding activity of a pair of Brown Honeyeaters *Lichmera indistincta* in Willetton, a suburb of Perth, Western Australia, in December 1999 to January 2000. Incubation and nestling periods were 13 and 17 days respectively. Mention is made of behaviour in nest construction, co-operative nest defence by more than one pair of birds, previously undocumented parental calls, post-fledging re-use of a nest and inter-season re-use of a nest-site. An unusual nest-site (inside a garage) and aggressive behaviour by Singing Honeyeaters *Lichenostomus virescens* toward nesting Brown Honeyeaters are also described.

Introduction

The Brown Honeyeater *Lichmera indistincta* is common and one of the most widespread non-arid-zone honeyeaters in Australia (Longmore 1991, Pizzey & Knight 1997, Schodde & Mason 1999). This species occupies diverse habitats including heathlands, coastal and inland scrubs, mangroves, paperbark swamps, woodlands, forests, rainforest margins and gardens (Pizzey & Knight 1997, Higgins *et al.* 2001). Despite its abundance, its breeding behaviour is not very well known (Higgins *et al.* 2001). This paper reports on detailed observations of the behaviour of a single pair of Brown Honeyeaters during one breeding attempt, with additional notes on other nesting activity.

Methods

In December 1999, frequent visits by a pair of Brown Honeyeaters to a Climbing Fig *Ficus pumila*, which covered one side of our house overlooking a patio, suggested that nesting was imminent. The creeper was hanging from under the eaves, about 60 cm from the family-room window. The adjacent garden was thickly planted with nectar-bearing plants, mainly grevilleas. Two sugar-water bird-feeders, one in the patio area and the other in the garden, attracted New Holland Honeyeaters *Phylidonyris novaehollandiae*, Red Wattlebirds *Anthochaera carunculata*, Singing Honeyeaters *Lichenostomus virescens* and the occasional Western Wattlebird *Anthochaera lunulata*. Brown Honeyeaters were usually chased away by the other species and seldom visited the feeders. The nest was in full view from inside the house, but from the outside was hidden by creeper foliage. By closely observing the nest from the window, and checking the contents whenever the birds vacated the nest, it was possible to determine to within a few minutes when eggs were laid and when they hatched. As Singing Honeyeaters and sometimes New Holland Honeyeaters had destroyed Brown Honeyeater nests, eggs and young in our garden previously, to provide some protection a prawning net was draped from the eaves about a metre from the nest shortly after the eggs were laid.

Results

Nest-building (Days 1–7)

Observations began on 16 December 1999. Nest construction started in the hanging creeper, about 180 cm above the ground, with the placement of a few

pieces of nesting material. The pair spent much of the day sitting in the creeper close to the nest-site. Over the next two days further material was added to the nest and the pair became increasingly territorial, including attacking a Singing Honeyeater coming to the nearby bird-feeder. This feeder was removed, leaving the remaining feeder in the garden about 15 m from the nest-site.

By 19 December the Brown Honeyeaters' nest was taking shape. Several times after returning with nesting material, one Honeyeater sat in the nest and paddled the material with its feet. The Honeyeaters spent much time on the ground and under the guttering, poking into crevices gathering what appeared to be spiders' web. Towards the finishing stages, in shaping the nest the Honeyeater turned on its side in the nest and moved in an anti-clockwise direction while paddling its feet against the side. The next day the pair was very active around the nest, and the male and female were seen to copulate, and to chase each other. They defended their territory by chasing away other honeyeaters combined with a harsh chattering call. They brought lining to the nest, which included spiders' egg-cases.

On 22 December, a Singing Honeyeater attempted to pull the nest apart and was vigorously attacked by the Brown Honeyeaters. Later in the morning the nest was completed, after seven days for construction, but the Honeyeaters then appeared to desert it. They ceased to be territorial in behaviour and for a short time, late in the afternoon, another Brown Honeyeater was observed flying nearby with them.

Egg laying and incubation (Days 8–20)

Just before 0730 h on 23 December, the female went to the nest and sat in it for about 15 minutes before leaving. The nest subsequently contained one egg. The Honeyeaters briefly visited the nest several times during the day but did not sit in it, but they did copulate again. On the next day at about 0945 h the female visited the nest and again sat for 10–15 minutes before leaving; at 1000 h the nest contained two eggs. Incubation began shortly afterward with occasional short breaks. One Honeyeater sat on the nest for most of the day. The weather was hot and windless, and the sitting bird had its beak wide open much of the time.

During the next six days the parents continued to defend the nest by flying at and harshly chattering at intruding and increasingly aggressive Singing and New Holland Honeyeaters. One or sometimes two Singing Honeyeaters were persistent in their attacks on the nest. At this time the prawn net was draped around the nest from beneath the eaves. The Brown Honeyeaters continued to access their nest over the top of the net.

Hatching–fledging (Days 21–39)

The first chick hatched at about 1045 h on 5 January. At that time a parent was observed perched on the edge of the nest, with its head reaching down into the nest, and giving soft twittering, almost mewling sounds. I did not record whether the parent was male or female. The first chick hatched 13 days after the start of incubation; the broad end of the eggshell was later found beneath the nest. The remaining egg hatched sometime between 1830 h on 5 January and 0700 h on 6 January; there was no trace of this eggshell. Both adults frequently fed the nestlings.

On 14 January, there were severe thunderstorms with heavy rain and hail, gutters overflowed, and water poured for about ten minutes over the Honeyeater

that was sitting on the nest protecting the chicks. Although drenched, the bird stayed on the nest. For the next hour further showers caused more water to overflow onto the sitting bird. At about 1000 h, the parents left the nest in cold, wet conditions. One Honeyeater returned two hours later but only perched in the nearby shrubbery, neither approaching the nest nor attempting to feed the nestlings. At about 1400 h this bird flew to the nest and examined it, and shortly after began to bring food to the nest at intervals of up to half an hour. Just before 1700 h the other parent suddenly reappeared and immediately resumed bringing food, mostly insects, to the chicks and, along with its mate, vigorously defended the territory. However, by the next day one nestling had died in the nest.

By 20 January, the remaining chick spent most of the day perching on the edge of the nest, sometimes stretching its wings and preening. Occasionally it returned into the nest. The adults removed faecal sacs from the nest and swallowed them. The juvenile left the nest the following day and perched about a metre away, occasionally flexing its wings and stretching. It sat without moving for long periods and was occasionally induced by a parent back into the nest, where it remained from late afternoon.

On 22 January, which was unseasonably cold with high winds and heavy rain, the chick fluttered about 7 m from the nest and came to rest perched about 30 cm above the ground in a bed of ferns. The parents were busy all day bringing food, and occasionally perched against the juvenile, possibly to provide warmth. At about 1730 h the parents flew to a perch under the eaves of the house and appeared to be calling the young bird to join them. After several failed attempts the chick finally managed to flutter up to them and was immediately rewarded with food. Approximately half an hour later a parent flew about 6 m to the nest and again called, coaxing the fledgling to return to the nest. Within a few minutes the young bird fluttered to the nest and perched on the outside edge until dark, when it entered the nest and remained all night. Early in the morning of 23 January the fledgling left the nest for the last time. The nestling period was 17 days.

Throughout the first 14 days post-hatching, both Singing and New Holland Honeyeaters continued to show interest in the nest by flying at the prawn net surrounding it. On 7 January when both parents were giving harsh alarm calls in response to an intruding Singing Honeyeater, two other Brown Honeyeaters unexpectedly arrived and vigorously helped defend the nest in much the same manner as the parents. For several days these other two Brown Honeyeaters helped defend the nest but, although they were tolerated nearby, they were still excluded from very close proximity to the nest. The breeding pair continued to be reactive to all honeyeater species close to the nest.

Other breeding attempts

After the nest described above had been abandoned it stayed intact. Nine months later, on 2 November 2000, a pair of Brown Honeyeaters inspected it. Seven days later they began to be aggressive towards encroaching honeyeaters and on 10 November fine grasses and spiders' web were added to the old nest, and by 13 November a completely new nest had been built within the old one. However, it was abandoned the next day, possibly due to increasing aggressiveness from Singing Honeyeaters. The Brown Honeyeaters subsequently built another nest in a more protected section of the garden and reared two young.

Earlier, in December 1998, a pair of Brown Honeyeaters had built a nest in the same Climbing Fig, about 10 m from the nest of December 1999. Shortly

after completion, however, this nest had been partly torn apart by a Singing Honeyeater and was abandoned by the Brown Honeyeaters; it is not known if eggs were in the nest. Within a few days the pair of Brown Honeyeaters began building another nest, in the Climbing Fig under the patio and about 2 m from the nest built in December 1999. On the day the first egg was laid a Singing Honeyeater attacked the nest, pulling some nesting material from it. During the attack, the Singing Honeyeater lifted the freshly laid egg from the nest in its beak and dropped it to the ground, then flew down to inspect the smashed remains before flying off. The Singing Honeyeaters carried no nesting material away from either nest in 1998 nor showed any further interest once the Brown Honeyeaters abandoned them.

Subsequently, the pair of Brown Honeyeaters built a nest in the garage between the tips of two fishing rods lying along rafters, 7 m from the door. For the Honeyeaters' protection, the doors were kept almost closed (except during vehicle movement and work maintenance), allowing only a small access gap for the Honeyeaters. Although the light within was dim they successfully reared two young.

Discussion

Although the use of feet and wings to shape nests has been noted for Eastern Spinebills *Acanthorhynchus tenuirostris* and White-gaped Honeyeaters *Lichenostomus unicolor* (Higgins *et al.* 2001), there appears to be no record of a Brown Honeyeater shaping a nest with its feet while lying on its side and rotating within the nest. Similarly, Higgins *et al.* (2001) made no mention of the soft twittering, almost mewling, sounds, made by one of the parents as it perched above a newly hatched chick, which may have been bonding behaviour. The nest-construction period of seven days is below the average (14 days, Higgins *et al.* 2001) but within the known range of 5–21 days (Longmore 1991, Higgins *et al.* 2001).

Although nest destruction by medium-sized honeyeaters, such as Singing and New Holland Honeyeaters, does not appear to be well recorded, some of the larger honeyeaters destroy nests of other birds. Noisy Miners *Manorina melanocephala* destroyed a Regent Honeyeater *Xanthomyza phrygia* nest at Chiltern, Victoria, in 1999 (Higgins *et al.* 2001), and Helmeted Friarbirds *Philemon buceroides* frequently destroy nests of other species (Higgins *et al.* 2001).

During the storm on 14 January 2000 it was surprising to see the parent bird continue to sit protectively on the nest as water poured over it, only to then abandon (temporarily) the nest and nestlings. It seemed an inordinately long time for the parents to be away from the nest (2–7 hours). I am not aware of a previous instance of this type of behaviour but suspect that the stress of trying to incubate under such extreme conditions took such a toll on the parents that they were forced to spend some time recuperating.

Egg laying took place less than 24 hours after the completion of the nest, and the eggs were laid on consecutive mornings. In northern Australia Brown Honeyeaters were observed to lay eggs between evening and morning (Franklin & Noske 2000). In the present study there was an interval of 26 hours 15 minutes (plus or minus a few minutes) between the two eggs being laid, which fits into the time frame of 24–48 hours reported by Franklin & Noske (2000) and Higgins *et al.* (2001).

The incubation time of almost exactly 13 days agrees with times quoted in the literature of 12 to 14 days (Longmore 1991, Higgins *et al.* 2001). Franklin & Noske (2000) gave their most precise estimate as 13 days 5 hours \pm 5 hours. The 18 days from hatching to when the young bird finally departed from the nest is significantly longer than the 12–15 days given by Higgins *et al.* (2001), possibly because of the adverse weather conditions midway through and toward the end of the nestling period. The enticement by the parents of the fledgling back to the nest after an absence could also have been because of the weather conditions.

Throughout the nestling period the young were fed by both parents. This is in agreement with Ford (1998), but differs from Cassels (1961), who described only the female as feeding the young.

Alarm calls sometimes attracted two additional Brown Honeyeaters that helped defend the nest during incubation, although the parents prevented these 'helpers' from approaching too close to the nest. Although not previously recorded for Brown Honeyeaters, similar behaviour has been noted for Rufous-throated Honeyeaters *Conopophila rufogularis* (Higgins *et al.* 2001), where alarm calls induced other pairs of Rufous-throated Honeyeaters to co-operate and help defend nests other than their own.

Use of an old nest by Brown Honeyeaters, as formwork in which to build a new nest, does not appear to be widespread, although this species has been recorded building a nest inside the disused nest of a Splendid Fairy-wren *Malurus splendens* (Higgins *et al.* 2001). During the present observations, I suspect that the same individuals were responsible for building the earlier nests under the patio area, as well as building the nest inside the disused nest after nine months, but as these birds were not banded there is no proof of this. However, I base my suspicions on their tolerance of humans passing in very close proximity compared with the behaviour of other Brown Honeyeaters in the area. Brown Honeyeater pairs probably occupy the same territory each year and build near the site of previous nests (Higgins *et al.* 2001).

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