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WILLIE WAGTAILS JETTISON LIVING AND DEAD NESTLINGS

G.J. LEACH and C.G. LLOYD

On 4 January 1992 at 0845 we watched a pair of Willie Wagtails *Rhipidura leucophrys* at a nest in Haigslea Churchyard, South-east Queensland (27°34'S, 152°38'E). The 0.5 ha churchyard has a row of mature Hoop Pine *Araucaria cunninghamii* and several figs *Ficus* spp. along the southern and western boundaries, and mown grass on the remaining area around the church. The typical nest (Beruldsen 1980) was on a 30 mm diameter, near-horizontal, branch of a 24 m tall Hoop Pine, 3 m above ground, 0.5 m from the end of the branch and reasonably well sheltered.

While under observation for 15 minutes, an adult was seen carrying first one, then another, dead nestling to the grass about 5 m away. A living, but apparently weak, nestling was then carried to the ground. The adult spent some time (approximately 1 minute) 'picking' at each nestling before lifting it out of the nest. One live nestling with a few pin feathers remained in the nest. The jettisoned nestlings were essentially naked.

The remaining nestling was standing on the edge of the nest, very close to fledging, when next visited by G.J.L. at 0730 on 12 January. The adults engaged in vigorous distraction activities behind G.J.L. while the nest was observed at about 8 m distance. The nest had been vacated when again visited on 19 January. Willie Wagtails fledge after 13-14 days (Marchant 1974, Schodde & Tidemann 1986), so the nestlings were jettisoned about 4 days after hatching. Main features of the weather at the time (Table 1) were rainfall on 31 December and 1 January, and a drop in minimum air and grass temperatures on the following day. This sequence may have prevented the adults securing adequate food and effectively brooding the clutch.

Removal of dead nestlings is normal nest hygiene (Skutch 1976), but removal of living nestlings is not (J. Kikkawa pers. comm.). There is no mention of the behaviour we observed in a review of 565 RAOU Nest Record Cards of the Willie Wagtail (Marchant 1974), although it is noted that three nests continued to be brooded after the death of all

TABLE 1. Rainfall and temperature at Lawes, 30 km west, at the time of hatching and through the first days as nestlings.

Date	Rain (mm)	Temperature (°C)		
		Max.	Min.	Grass min.
30 December	0.0	30.7	21.5	18.2
31 December	14.4	30.9	21.2	20.0
1 January	34.4	32.0	21.0	20.0
2 January	0.5	32.3	19.0	16.7
3 January	0.0	30.7	23.1	22.0
4 January	0.0	35.3	22.2	19.7

Note: Rainfall for Rosewood (8 km SW) was 9.2 mm on 31 December and 18.8 mm for 1 and 2 January combined, confirming that rains were widespread in the district, but probably less at Haigslea than at Lawes.

nestlings, showing that dead and/or weak nestlings are not always jettisoned. It is possible that the living nestling had become too weak to beg or otherwise respond to parental visits and was therefore 'rejected' (J.D. Macdonald pers. comm.). If this interpretation is correct, the behaviour is no more than usual nest hygiene. If not, it may have important implications in ensuring minimum reproductive success, possibly in response to adverse weather immediately after hatching.

A nest record form has been submitted to the RAOU Nest Record Scheme.

ACKNOWLEDGEMENTS

We thank Prof. J. Kikkawa and Mr. J.D. Macdonald for discussions on the observations; the Division of Tropical Crops and Pastures, CSIRO, for weather reports from Lawes; and the Bureau of Meteorology for rainfall records from Rosewood.

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QUEENSLAND GOULDIAN FINCHES *ERYTHRURA GOULDIAE* AND AIR-SAC MITE *STERNOSTOMA TRACHEACOLUM*

SONIA TIDEMANN, JOHN McCARTNEY and ISABEL SMITH

ABSTRACT

In 1991, Gouldian Finches were found at only one of four sites in central and western north Queensland where they had previously been sighted during bird surveys (1978-81) for the RAOU Atlas. Air-sac Mite was discovered in Gouldian Finches (2 in 7), the first record of it in the wild in Queensland. The most common seed in the crops of the Gouldian Finches was *Sorghum* sp. although this grass appeared to make up less than 10% of the grass layer. Fire regimes in the areas visited differ from those in Gouldian Finch habitat in the Northern Territory and Western Australia.

INTRODUCTION

A comparison of historical and more recent records suggests that the Gouldian Finch *Erythrura gouldiae* has declined in Queensland as well as in the Northern Territory (NT) and Western Australia (WA) (Blakers *et al.* 1984). The most recent sightings reported, in 1991, were in the Georgetown district of central north Queensland (D. Magarry pers. comm.). Studies have been done on NT-WA populations (Evans & Bougher 1987, Woinarski 1990, Tidemann 1990, Woinarski & Tidemann 1992), but little work has been done on Queensland populations.

So far it has not been possible to determine what caused the decline, but it has been suggested that the presence of Air-sac Mite *Sternostoma tracheacolum* is preventing the return of Gouldian Finches to their prior numbers (Tidemann *et al.* 1992). This respiratory parasite was first confirmed in the wild in NT-WA Gouldian Finches, but nothing was known of its status in the wild in Queensland. To test the hypothesis that Air-sac Mite is preventing Gouldian Finch numbers from recovering, particularly in Queensland where the decline has been most marked, it was necessary to confirm that Air-sac Mite is present in Queensland Gouldian Finches. In aviculture, very heavy infestations of Air-sac Mite can be detected in a bird because it wheezes. In the wild (in NT-WA Gouldian Finches), however, these symptoms are uncommon despite nearly two thirds of the birds being affected. Hence, it was necessary to collect some birds and carry out a postmortem.

The purposes of this study were to:
(i) visit four locations in western and central north Queensland where Gouldian Finches were recorded during collection of data for the RAOU

Atlas (Blakers *et al.* 1984) to see if they were still present, as well as any other sites where there had been sightings during 1991;
(ii) collect (under permit issued by Queensland National Parks and Wildlife Service) specimens of Gouldian Finches (maximum of 10) to determine whether Air-sac Mite was present;
(iii) note other aspects, such as grasses present and burning regimes, that may relate to the biology of Gouldian Finches.

METHODS

Copies of data sheets submitted to the RAOU Atlas were obtained for localities where Gouldian Finches had been recorded between 1978 and 1981, or sighted in 1991. The localities were Leichhardt Falls (18°15'S,139°55'E), Cumberland Dam (18°15'S,143°25'E), Brennans Knob (18°30'S,142°30'E) and Lornevale (18°25'S,143°35'E).

During the period 1-9 September 1991, we sat (from first light until 1100 h) at different points varying from 300 m apart (large water body, *e.g.* at Cumberland Dam) to 5 km (separate pools along a creek, *e.g.* Brennans Knob region) to see whether Gouldian Finches, and other finches, came in to drink.

Seven Gouldian Finch specimens were collected. Specimens were preserved in 70% alcohol and later dissected. With the aid of a binocular microscope (x0.8-x64), the numbers of Air-sac Mites present were recorded. Seeds in the crops were identified and counted.

The dominant trees and grasses of each locality were recorded along with the presence or absence of tree hollows. Three station owners provided information on their fire management practices and/or anecdotal observations on changes in grass composition over the last few years.

RESULTS

Bird species

The only records of Gouldian Finch were in the vicinity of Brennans Knob, where they drank at small, shallow, clean waterholes up to 30 m long. They were not present at dams or green, cattle-soiled pools. Masked Finches *Poephila personata*, Black-throated Finches *P. cincta*, Double-barred Finches *P. bichenovii* and Zebra Finches *P. guttata* drank, when present, at any of the water bodies we observed.

Air-sac Mite

Two of the seven Gouldian Finches collected had Air-sac Mite present.

One, a juvenile male, had 20 mites distributed on the anterior and thoracic air-sac membranes, and in the trachea, syrinx, bronchus and lungs. The other, an adult male, had 7 mites in the trachea.

Vegetation

Stands of *Eucalyptus leucophloia*, with hollows apparently suitable for Gouldian Finches, occurred on low, rocky hills about 30 km north-east of Leichhardt Falls. The most common eucalypts throughout the region appeared to be Grey Box *E. tectifica* and Coolibah *E. microtheca*. The predominant grasses in the area were *Chrysopogon* sp. and *Aristida* spp. with occasional clumps of *Sorghum* spp., and spinifex in the rockier areas.

Grey Box was the most abundant tree in the Brennans Knob-Georgetown area. *Aristida* spp. dominated the grass layer, while *Sorghum* spp. made up less than 10% of this layer. Many of the eucalypts appeared to have hollows.

Pastoralists on the properties where observations were made reported that they burnt fire-breaks on their properties after the first substantial rains of the wet season. The pastoralist at Leichhardt Falls considered that the amount of *Sorghum* spp. in that area had decreased during the last five years. He attributed this to a series of very dry years that preceded the high rainfall of the most recent wet season.

Crop contents

Six Gouldian Finches had seeds in their crops, including *Sorghum* sp. which was present in all. Of the total seeds counted, the relative proportions were: *Sorghum* 57%, *Themeda triandra* 28%, *Echinochloa* sp. 6%, *Aristida* sp. 5%, *Panicum* sp. 2% and unknown sp.1 3%. *Aristida* and *Panicum* seeds were about the same size as *Sorghum*, while the others were 0.15-0.25x the size of *Sorghum*. By mass as well as by number, *Sorghum* was the most commonly found seed in the crop.

DISCUSSION

The relatively few sightings of Gouldian Finches despite our careful searches supports the suggestion of Blakers *et al.* (1984) that the decline of these birds in Queensland has been marked. The coincident presence of Air-sac Mite in Queensland Gouldian Finches lends support to the suggestion (Tidemann *et al.* 1992) that it is affecting wild populations across their range. Whether this mite has always been present in Australia is not known and may never be known because of a lack of whole specimens obtained during the early

collections of Australian fauna. Confirmation of the presence of the Air-sac Mite in Queensland, however, suggests that there is a need for continued research on Gouldian Finch-mite interaction.

The practice by pastoralists of burning at the beginning of the wet season may account for the low occurrence of *Sorghum* species in the regions we visited. Burning at this time is a method used in the Northern Territory to reduce the presence of *Sorghum* in certain areas (pers. obs.). The disproportionate amount of *Sorghum* found in the crops of Gouldian Finches relative to the abundance of plants observed, suggests that the finches are seeking out *Sorghum* seed rather than taking it at random *(cf.* Tidemann in press). If *Sorghum* is preferred by Gouldian Finches, a relative shortage of it may be affecting their ability to survive.

The infrequent sightings of Gouldian Finches at previously recorded sites in Queensland relative to those in the Northern Territory and Western Australia (Woinarski & Tidemann 1992, Evans & Bougher 1987) suggests that there is a need to increase the amount of systematic searching in Queensland. Other possible areas of study are the identification of breeding sites, determining the effects of different fire regimes on the availability of seeds, and the result of excluding cattle from favoured drinking sites.

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FURTHER OBSERVATIONS ON NESTS OF THE BUFF-BREASTED PARADISE-KINGFISHER NEAR MACKAY

MARJORIE ANDREWS

Observations in 1992 continue a study previously reported (Andrews *et al.* 1991) on the Buff-breasted Paradise-Kingfisher *Tanysiptera sylvia*, near its southern breeding limit.

On 12 January 1992, at Mt Ossa, 43 km north-west of Mackay (21°08'S, 149°11'E), Queensland, six terrestrial termite mounds were examined on the west/south-west slope of a hill beside the Mt Charlton Road, approximately 3 km from the junction of this road and the Bruce Highway. Four mounds showed no evidence of tunnelling. One mound had been tunnelled to a length of 15 cm, and another mound (D) was sited at the edge of an animal track running across the slope. The observer was within 0.5 m of mound D when an adult bird flew from the entrance. This bird perched in a nearby tree and it was noted that the two white central tail feathers were misshapen, the ends curving sideways and upwards, each looking rather like an elongated 'j'. Immediately, this bird and another close by began calling.

Mound D was in the general vicinity of a mound observed in 1987 and recorded as mound B in the 1991 paper, which listed three mounds observed in 1987: A at Proserpine, B at Mt Ossa, and C at The Leap. Approximately 100 m from mound D, and at a slightly lower altitude, two birds were observed within 20 m of each other. They called almost continuously for fifteen minutes. No tunnelling was evident in a mound in the vicinity. On 8 February, two well-feathered nestlings were observed in mound D. They did not call. Several calls of adult birds were heard in the region of the mound and lower down the slope close to the Mt Charlton Road. On 10 February there were no nestlings in the mound. Calls were heard in the vicinity but no birds were sighted.

Several birds were heard and sighted at a new locality on 10 February. They were noted at intervals in lowland rainforest bordering the Mirani-Mt Charlton-Calen Road, 50 km north-west of Mackay. On 14 February, a nest was found in a mound (E) situated on a level part of the bank of a very shallow stream on the downhill side of the road. This nest contained two nestlings, quite large and well-feathered and calling loudly. Adult birds were heard and seen close by. Nine kilometres further on, where the road runs through a larger area of rainforest, two mounds were found to contain nestlings. Mound F, on a rocky hillside 30 m above the road, contained two nestlings, well-feathered and noisy. No adult was heard or sighted. Mound G was approximately 250 m distant from mound F, among a jumble of large

TABLE 1

Measurements (cm) of four terrestrial termite mounds used for nesting by the Buff-breasted Paradise-Kingfisher in the Mackay district, Queensland, January-February 1992

Mound	Height	Circumference	Tunnel			Chamber	
			height[a]	diameter	length	diameter	orientation
D	51	150	17	5	15	15	220°
E	43	152	14	5	20	15	090°
F	55	135	20	5	14	16	030°
G	33	132	13.5	5	14	13	040°

[a] height above ground

rocks 40 m above the road. Three well-feathered nestlings called vigorously. Two adults maintained a position in trees very close to the mound, and trilled and scolded constantly. At no time did they give the usual *chuga-chuga-chuga* call. They continued to call after the observer left the mound and returned to the road.

On 20 February there were no nestlings in mound E. Short (2-4 cm) lengths of fine, dry grass were found in the chamber, the tunnel and on the ground below the entrance. One adult was sighted near the mound, flying back and forth and calling almost constantly. After watching the mound area for ten minutes, the observer sighted a juvenile fluttering between low trees within 10 m of the mound. There were no birds in or near mound F. The chamber in mound G was very crowded and the young called loudly. The only adult call was a faint trill further up the hillside. Measurements of these terrestrial termite mounds in Table 1 approximate those detailed in Andrews *et al.* (1991).

Other sightings in the Mackay region in 1992 were: Cape Hillsborough National Park (728 ha), 45 km north-west of Mackay, adults on both the northern and southern sides of the Cape, successful nesting on the southern side reported by Peter Taylor, a local wildlife photographer; Finch Hatton Gorge (part of Eungella National Park), adults sighted from the walking trail leading uphill from the Finch Hatton Gorge car park; Mt Mandurana-The Leap National Park (103 ha), 11 km north-west of Mackay, adults on the western side of The Leap above the park entrance at the end of Westlake Drive; Mt Blackwood National Park (1060 ha), 31 km north-west of Mackay, adults and a large number of mounds bordering the access road for the last 1.5 km to the Telecom tower at the summit; Cathu State Forest adjoining Eungella National Park, with access only from the Bruce Highway 72 km north-west of Mackay, one juvenile on 22 March less than 1 km from the camping area at the entrance to the forest.

Considering the number of birds sighted and/or heard in the small number of areas visited, and the limited size of the ground search in each, it is clear that the Mackay area supports an important breeding population close to the southern extremity of the species' range.

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NOTES ON BIRDS FOUND NESTING AT IRON RANGE, CAPE YORK PENINSULA, NOVEMBER-DECEMBER 1990

CLIFFORD B. FRITH and DAWN W. FRITH

ABSTRACT

Nesting activity of 37 species at Iron Range was observed during the period 1 November to 8 December 1990, and data are detailed in an annotated list of 41 species that includes 13 species and 3 subspecies endemic to northern Cape York vine forests.

INTRODUCTION

The following qualitative observations were made during a visit to Iron Range to photograph birds of that area. Between 1 November and 8 December 1990 we camped in the vine, or rain, forest (vine forest hereafter) on the West Claudie River and, with the exception of work at a Palm Cockatoo nest hole and a Northern Scrub-robin nest, the following observations were made within walking distance of the camp site. During the period 1-27 November we were accompanied by John Young, an extraordinary bushman-ornithologist whose ability to find and access birds' nests is already widely acclaimed (Frith & Frith 1991, Hollands 1991). The majority of observations we were able to make at nests were as a result of John Young's remarkable knowledge and ability. The purpose of our field work was exclusively intensive bird photography and, whilst observations at nests were restricted in time and limited in scope, very little is known or recorded on the breeding of these northern vine forest endemic birds. Our work was, with few exceptions, carried out in riverine vine forest about the West Claudie River and in immediately adjacent *Melaleuca*/eucalypt woodland.

Southern Cassowary *Casuarius casuarius*

We saw no sign of this ratite, although apparently it was never known to be abundant here. The status of this northern population should be studied in the near future.

Grey Goshawk *Accipiter novaehollandiae*

A nest containing two nestlings was seen at a height of c. 45 m in the crown of the well-known roadside *Ficus albifola* or "spiked tree" near the West Claudie River crossing. This tree also contained at least two active Eclectus Parrot and two Sulphur-crested Cockatoo nests and a colony of one to two hundred nesting Metallic Starlings (see below). The starlings ignored the goshawks at their nest, but performed instantaneous flock escape flight each time an adult goshawk appeared

in flight. The entire colony population of adult starlings dropped near-vertically out of the tree, wheeling away into the forest, to return with the departure or perching of the predator. On 19 November the goshawk nest was found on the road, having been blown down together with large tree boughs and numerous starling nests, by a severe squall. The two large and well-feathered young goshawks were killed.

This goshawk species has been observed nesting atop trees containing nesting Metallic Starlings elsewhere (pers. obs., J. Young pers. comm.).

Orange-footed Scrubfowl *Megapodius reinwardt*

Birds were vocal and active at numerous mounds in our area throughout our period of field work. Whilst in a hide, at a Magnificent Riflebird nest, directly above a mound on 8 November, CBF watched one bird, presumed to be male, vigorously digging a hole directly and deeply into the heart of his mound for two hours during the afternoon. He was then joined by a second bird, presumed to be female. The male, deep in the excavated hole, kicked earth and debris out behind him and into the female, who then scratched this material further from the hole, toward the mound edge; the two birds frequently giving a (unrecorded) soft contact note to each other. The birds would quickly swap positions and then continue the excavation in this cooperative fashion, which was still in progress at 1700 when CBF left. One mound we observed has been known to be used for seventeen consecutive years.

Superb Fruit-Dove *Ptilinopus superbus*

Two nests were found in vine forest on 5 November, one containing a one or two day old nestling and the other a single egg; both being 3.5 m above ground. Three other nests, each containing a single egg, were found in vine forest on 16, 17 and 30 November.

Rose-crowned Fruit-Dove *Ptilinopus regina*

On 5 November a nest containing a large nestling, which flew the following day, was found c. 5 m high in a roadside *Melaleuca* tree in woodland 50 m from the vine forest edge.

Brown Cuckoo-Dove *Macropygia amboinensis*

A nest 1 m above ground was found built into the base of fronds of a *Pandanus* tree crown on 5 November. It contained a single nestling approximately two days old. This nest was not in vine forest, but was in denser *Melaleuca*/eucalypt woodland with *Pandanus* trees, close to a vine forested dry creek bed.

Bar-shouldered Dove *Geopelia humeralis*

A nest found on 10 November, 2 m above ground on a leaning sapling trunk fork in *Melaleuca* woodland, contained two eggs.

Emerald Dove *Chalcophaps indica*

A newly constructed but empty nest was found by J. Young, atop accumulated twigs and litter in vine forest, 2.5 m above ground on 24 November.

Palm Cockatoo *Probosciger aterrimus*

During our first two weeks in the area we examined numerous known and potential tree nest cavities, but the mixed woodland environs of many of these nest sites had been burnt by recent fires; and in two nests the clutches, and in another a brood, had apparently been destroyed as a direct result.

During 19-20 November we found several hollow limbs clearly showing signs of potential future use (chewed wood chips in and about the cavity and dropped sprigs of foliage about the tree area). On 25 November a bird was flushed from a 13 m high tree hole that proved to contain some new nest material, so a well-concealed hide was placed in an adjacent tree at the same height. CBF spent much of the period 26-28 November in the hide observing the potential nest hollow but, whilst he frequently heard a Palm Cockatoo loudly calling and obviously drumming a tree hollow with a stick (*cf.* Wood 1984, 1987) some 100 m behind him, he did not see a bird. On 29 November, however, a bird flew to the nest hole at 0843 h following one hour of calling and drumming (as and where previously) and remained on or in the tree hole for exactly one hour during which it was photographed. The size and shape of this bird's upper mandible suggested it was probably male.

The bird climbed head first into the cavity several times during the hour, sometimes remaining out of sight for several minutes, sometimes peering out of the hole for several minutes at a time (see Frith & Frith 1991, p. 45). Its most frequently performed behaviour, and its initial one upon arrival, was to press its body length into the entrance aperture with head and bill pointing upward in a static and ritualized pose (Fig. 1), which CBF considered may be a display normally given to a mate to entice it to inspect or accept the nest hollow. The restricted view from the hide prevented CBF from confirming the presence or absence of another bird in the area.

Fig. 1. Static ritualized posture performed by a Palm Cockatoo inspecting a potential nest tree cavity at Iron Range.

The individual inspecting the tree hollow also performed a display with fully expanded open wings and erect crest, on one occasion hanging almost fully inverted. The display also included foot drumming (quite audible for some distance) during which a foot was stamped repeatedly down onto the rim of the cavity entrance and larger limbs of other immediately adjacent trees. Calls included a loud clear *whew-ooo* whistle, which is presumably the "disyllabic whistle" of Forshaw (1991), and a surprisingly human-like and humorous, questioning, *hallo* or, more correctly, *howlloww* given in a high-pitched voice. The latter may be the call described by Forshaw (1991) as a "mournful, drawn-out, wailing cry", and by Wood (1968) as "reminiscent of that of the Spotted Catbird *Ailuroedus melanotis*".

Interestingly, the bird once flew from the tree hollow to an adjacent fruiting tree, picked a fruit, mashed it up in the mandibles, and then returned to the hole entrance to "feed" an imaginary young bird. Behaviour at the entrance involved lowering its bill, with fruit pulp in

it, into the nest hollow and holding it there briefly before repeating the action several times.

Sulphur-crested Cockatoo *Cacatua galerita*

Several pairs were found nesting in two trees in which Eclectus Parrots were simultaneously nesting.

A giant emergent tree in vine forest, most of its upper large branches defoliated and possibly dead or dying, was used throughout our stay as a nightly roost by approximately five hundred birds that could be seen flying toward it from all directions each evening. This tree roost has been known to be used at this time of the year for more than seventeen consecutive years (J. Young pers. comm.).

Eclectus Parrot *Eclectus roratus*

Numerous nest trees (predominantly *Lophostemon suaveolens*) were found to be actively in use. Each had several occupied nest holes, with most of these appearing to contain nestlings. From a 20 m high tree platform hide, CBF photographed birds at a nest tree containing two active nests. At one nest the male conspicuously enticed his nervous mate to the nest tree and hole by perching and calling at and close to the entrance hole, and performing a raised wing display that exposed the lovely underwing colouration (see Frith & Frith 1991, p. 48). The male at the other nest was the more nervous of the pair and did not approach the nest tree closely. He often called the female to him in an adjacent tree canopy, and there performed a display to her as she perched immediately in front of him, which involved turning his head rapidly from side to side to show either side of it in full profile to the female, prior to feeding her.

We saw no evidence of birds other than the breeding pair attending the two nests observed (cf. Forshaw 1991). Geeves & Horton (1990) record females in nesting hollows in mid-July.

Red-cheeked Parrot *Geoffroyus geoffroyi*

A number of recently used nest holes were found within and at the edge of vine forest. John Young informs us that the female of this species is entirely responsible for excavating the nest hollow. Forshaw & Muller (1978) removed three chicks about three weeks old from a nest on 31 October. They also saw birds inspecting potential nest sites during October. Forshaw (1991) states that nesting activity has been recorded in Australia during August to December.

On 11 November a nest was located by John Young, excavated into a vertical bough "spout" 20 m high in a vine forest tree, with an adult female in attendance and a male perching in the upper branches of adjacent trees. The male was seen to feed the female, in adjacent trees, before she flew to the nest cavity to feed young. On 12 November the female was feeding a well-feathered nestling that was perched precariously on the nest entrance (see Frith & Frith 1991, p. 48), but it later returned to the nest cavity interior and remained there for several more days. Two other birds, thought to be young of the previous breeding season, were clearly associating with this nesting pair of adults; these birds often perched quietly close to the male and/or female in trees adjacent to the nest tree, and often joined the male in his loudly screaming, roughly circular, flights above the forest canopy and around the nest site. During these calling flights, the repetitive *kik-kik-kik-kik* call described by Forshaw (1991) is given.

Double-eyed Fig-Parrot *Psittaculirostris diophthalma*

We found numerous nest holes in thin *Melaleuca* trunks and branches, in *Melaleuca* woodland and at the vine forest edge. These were obviously recently used but no longer active. Geeves & Horton (1990) observed a pair "nest building" in mid-July. Johnson & Hooper (1973) report females going in and out of nest holes at Iron Range in August 1970. Forshaw & Muller (1978) report birds nesting here in October and young leaving the nest at the end of the month.

On 19 November we found a female peering out from a 7.5 m high nest hole in a roadside mango tree at the edge of vine forest. Her behaviour then, and on subsequent days, suggested she was completing nest hole excavation, and we think she laid her eggs shortly thereafter. The male would return to the nest tree after long absences and call to the sitting female, once or twice hanging inverted from directly above the nest entrance hole to peer in at her whilst calling. He then escorted her away, to return with her after what we assume was a feeding period.

Papuan Frogmouth *Podargus papuensis*

A bird, presumed to be incubating, was found on its nest c. 18 m high on a horizontal *Melaleuca* branch fork in a *Melaleuca*/eucalypt and vine forest ecotone on 10 November. It was photographed there on 15 November.

Marbled Frogmouth *Podargus ocellatus*

On 10 November, an adult was found sitting on a nest, containing a clutch of two eggs, 6.5 m above the ground within a major forking of branches from a *Melaleuca* tree trunk. These branches supported

several immediately adjacent *Myrmecodia beccarii* ant plants. The bird was photographed there on 15 November.

Australian Owlet-nightjar *Aegotheles cristatus*

One bird peered at us from a small tree hole c. 11 m above ground at roadside vine forest edge on 13 November. Thought to be a plentiful species in the area by Forshaw & Muller (1978).

Large-tailed Nightjar *Caprimulgus macrurus*

During daylight on 10 November an adult was flushed from the ground (in *Melaleuca* woodland very close to the edge of vine forest) leaving behind a down-covered young. The adult performed a distraction display flight, lightly flapping just above the ground and landing several times immediately about us. Another adult was also flushed this day from its nest depression and two eggs (which were unhatched on 15 November) on a leaf litter-covered vehicular track through vine forest.

On 11 November we flushed another adult from a nest containing a single egg just beyond the edge of vine forest, but did not re-examine it; and on 15 November found yet another similarly located nest, containing two eggs. On 3 December two adults were flushed from leaf litter immediately adjacent to the vine forest edge, and one of them exposed a nest depression containing a single egg, which contained two eggs the next day.

Yellow-billed Kingfisher *Syma torotoro*

We particularly wished to photograph this species, and were therefore sensitive to its calling and activity. No significant calling or pairing activity was apparent until immediately following the first rain showers of the season, which is apparently typical of this and several other northern Cape York Peninsula vine forest-dwelling bird species (J. Young pers. comm.). On 6 November a freshly excavated nest hole was seen in an arboreal termitarium 13 m above ground, and a pair of birds was seen to commence excavation in another termitarium 21 m high over the camp during the period 7-11 November. The excavation activity of this latter pair continued until they became excitedly vocal on 3-4 December, when we think egg-laying commenced.

Buff-breasted Paradise-Kingfisher *Tanysiptera sylvia*

On 14 November the calling male of a pair of birds was seen to chase the female in circles of c. 20-30 m radius and 2-3 m above ground for nine roughly circular circuits about a potential nesting termitarium

3.5 m high in a tree. Another flight chase of eight circuits followed this activity. This species rarely uses termitaria above the ground.

On 26 November a pair of birds, distant from the above pair, was seen to perform the same flight chase, 2 m above ground, around a large terrestrial termite mound for three circuits, with the pursuing male calling. Both birds stopped to perch by the mound, called together, and then repeated the flight chase display.

Johnson & Hooper (1973) and Forshaw & Muller (1978) do not mention this species as seen during their respective field work of the first half of August and October. Roberts (1975) did note at least three birds in the vicinity of the Wenlock Road turn-off between 30 January and 10 February. Kikkawa (1976) and Blakers *et al.* (1984) note that birds arrive in the Iron Range area later (December) than in the Atherton Region (November).

Northern Scrub-robin *Drymodes superciliaris*

On 22 November we were informed by Mark Geyle, then Ranger of Iron Range National Park, of a bird sitting on a nest on the ground in vine forest close to a road. This bird had been banded only a few days previously with an aluminium CSIRO band by a large group of visiting bird banders. We photographed an adult on the nest on 24 November from a hide (see Frith & Frith 1991, p. 52) and noted that both parents shared incubation duties. On 30 November the nest was re-examined in passing and was found to have been predated.

Yellow-legged Flycatcher *Microeca griseoceps*

Whilst in a hide 22 m high in the forest canopy CBF watched, and photographed (poorly), a pair obviously inspecting potential bare branch nest sites at that height in the forest structure.

On 10 November, JY and DWF watched another pair examining potential nest sites c. 8 m high in the *Melaleuca* woodland/vine forest ecotone.

White-faced Robin *Tregellasia leucops*

During the period 1-4 November a pair was observed nest building c. 10 m from our camp tent and 5 m high in a tree growing on the edge of a creek in vine forest. On 24 November we noted that this nest contained a single egg, and on 27 November a hatchling, but it was empty on 2 December.

On 6 November, a nest with two eggs 1.75 m above ground in a vine forest sapling was found, and an adult was photographed at it on 11 November (see Frith & Frith 1991, p. 52). On 13 November this nest was empty. Another nest with a single egg was found in a vine forest sapling atop a creek bank on 30 November.

Little Shrike-thrush *Colluricincla megarhyncha*

A nest 0.5 m above ground in a low sapling at the edge of a walking track through vine forest contained two eggs on 26 November.

Yellow-breasted Boatbill *Machaerirhynchus flaviventer*

On 2 November we noted a bird sitting in a partly constructed nest 7.5 m above ground, directly over our vine forest camp site; but during the next day, Graceful Honeyeaters damaged the frail nest by stealing materials from it. On 5 November, however, both the male and female boatbills were observed incubating two eggs in the then completed nest. On 6 November the nest was in tatters and contained a single egg, which was nevertheless being incubated, but on 7 November the nest was empty and deserted thereafter.

On 24 November, John Young found another nest with one nestling 5 m high in vine forest which contained abundant *Lophostemon* trees. Photography was performed at this nest from a hide atop an adjacent tower. The nestling was present when the nest was last inspected on 30 November. Both parents provisioned the young. See Frith & Frith (1991, p. 53) for a photograph of the adult male, nestling and nest.

Another nest with a sitting adult was seen by DWF 8 m high on 24 November, but the nest contents were unknown.

Spectacled Monarch *Monarcha trivirgatus*

A newly-commenced nest was found 2 m high in a sapling on the bank of the West Claudie River in vine forest on 21 November, and building continued up to our departure.

Frilled Monarch *Arses telescophthalmus*

A nest containing one egg was found 4 m high, in vine forest, suspended between two vertically hanging vine stems on 7 November, and two eggs were present on 11 November. Two eggs were still present on 20 November, but on 29 November there were two nestlings perhaps 5-6 days old (judged by their appearance). Photography was performed at this nest from an elevated hide (see Frith & Frith 1991, p. 53), during which it was established, apparently for the first time

(Boles 1988), that both sexes incubate and provision the young. When examined on 5 December the nest was empty.

Shining Flycatcher *Myiagra alecto*

A pair was seen nest building 5 m above ground on a tree branch beside West Claudie Creek during the period 7-12 November, but the structure was pulled apart by a predator on 19 November. Nearly completed but empty nests were also found on 19 and 21 November.

Northern Fantail *Rhipidura rufiventris*

John Young found a nest containing two nestlings in a *Melaleuca* tree on 24 November, and on 2 December a pair elsewhere was feeding well-developed fledglings in *Melaleuca*-dominated woodland close to vine forest.

Lovely Fairy-wren *Malurus amabilis*

A newly completed nest found at the edge of a grassy roadside area in vine forest on 10 November was still empty on 15 November. Another nest containing two nestlings, 35 cm above ground in *Melaleuca/Pandanus* woodland immediately adjacent to riverbank vine forest, was found on 18 November.

Tropical Scrubwren *Sericornis beccarii*

Whilst three different newly-constructed nests were found between 4 and 23 November, none of these was laid in during our time in the area, and it would appear that the onset of the wet season proper was required to bring about egg-laying in this species (J. Young pers comm.).

Fairy Gerygone *Gerygone palpebrosa*

We found an old nest on 2 November and a newly completed one on 5 November, both having been built within 30-50 cm of an active wasp (*Rhopalidea* sp.) nest, and at 2 and 2.25 m above ground in rather open vine forest. John Young informed us that all nests he had previously found in this area were closely associated with these insect nests in this way.

On 9 November we located a young bird, just out of the nest, begging on the forest floor and being attended and fed by its parents. It was still in the area on 11 November when we photographed it and its parents (Frith & Frith 1991, p. 55).

Tawny-breasted Honeyeater *Xanthotis flaviventer*

A nest found by John Young was 7.5 m above ground in the outer foliage of a vine forest roadside tree. The foliage immediately above and about the nest was particularly dense due to the presence of a leafy vine. The nest contained two young. The photographs of an adult at this nest, believed to be the first, taken on 9 November, clearly show the nest form (Frith & Frith 1991, p. 56). Nest building by this species was recorded at Iron Range in early August by Johnson & Hooper (1973).

Graceful Honeyeater *Meliphaga gracilis*

A nest 2 m high in a leaning *Acacia* sapling, within *Melaleuca* woodland near the vine forest edge, was found on 6 November to contain two eggs. When next examined on 14 November the eggs had just hatched. On 20 November the nest was found to be empty.

Brown-backed Honeyeater *Ramsayornis modestus*

On 5 November two nests, typical of the species, were found at c. 2 m above ground in *Melaleuca*/eucalypt woodland. One contained two young nestlings and the other a hatchling and one egg.

Yellow-bellied Sunbird *Nectarinia jugularis*

A nest 1.5 m above ground was found in a sapling tree at the edge of a road through the ecotone between vine forest and *Melaleuca* woodland on 24 November. The nest contained a single egg, which hatched the following day.

Metallic Starling *Aplonis metallica*

Activity at the "spiked tree" nesting colony was extremely animated throughout our stay. A number of nests blown down during the squall of 19 November were empty or contained eggs only.

Yellow Oriole *Oriolus flavocinctus*

An empty new nest of this species, suspended hammock-like by a branch fork in foliage over the West Claudie River on our arrival, was seen to have large young in it on 2 December.

Fawn-breasted Bowerbird *Chlamydera cerviniventris*

No nest was found. On 7 December (between 0800 and 1315 h), however, CBF photographed a male at his well-decorated bower

displaying and copulating. As copulation in this species has not been described we provide details here.

The male was perched, loudly advertisement-calling, in the tree crown above his bower when, at 0922 h, another Fawn-breasted Bowerbird entered his bower avenue quickly and silently. The male immediately flew to the north-eastern end of the bower avenue and displayed to the visitor. Adopting a typical *Chlamydera* nape-presentation posture (see Frith & Frith 1991, p. 61), he infrequently swung and then held his tail toward the side of his lowered head, as if about to peck his tail tip. When not holding a bower decoration in his mandible tips during this display, he occasionally opened his mouth a little, but did not gape widely or shake the head or tongue vigorously as we have seen displaying male Lauterbach's *C. lauterbachi*, Great *C. nuchalis* and Spotted Bowerbirds *C. maculata* sometimes do.

Throughout this courtship display the male continuously uttered soft but harsh vocalizations typical of displaying male *Chlamydera* spp., together with a limited amount of avian vocal mimicry. This constituted the only courtship display, before the male quickly ran from his display position down the outside length of the bower to mount the female from behind, at 0929 h, and briefly copulated with his mouth open. Following copulation the male quickly returned to the north-eastern end of the avenue to repeat the nape-presentation posture, whilst the female vigorously shook her wings rather like a bathing bird would do. The female flew up and away at 0931 h, as the male picked up a large bower stick from the floor and ran briefly and excitedly about his bower prior to flying up above the bower to recommence advertisement-calling.

The central area of the inner bower walls was conspicuously painted a dull tea-brown up to within 50 mm of the top of the walls. The bower was placed some 5 m into vine forest from the edge of extensive open grassland.

Spotted Catbird *Ailuroedus melanotis*

A nest containing two eggs was found 3.5 m above ground in a *Melaleuca* woodland/vine forest ecotone on 10 November.

Magnificent Riflebird *Ptiloris magnificus*

Five newly constructed and apparently complete but empty nests were located in vine forest; all were built between the bases of living fronds of *Pandanus* tree crowns at heights of 2, 3.5, 3.75, 5 and 6 m above ground during the period 2-12 November. As another nest, found 6 m above ground atop a broken off and shooting tree trunk on 2 November,

contained a female-plumaged bird incubating two eggs, other nests were not re-examined or sought. On 14 November the latter nest was found to contain two naked dark-skinned nestlings which had certainly not hatched before 13 November. Photographic work, from a hide atop a timber tower adjacent to and level with the nest, was carried out irregularly until 28 November. The first pictures of the species at the nest were obtained (Frith & Frith 1991, p. 59) during this period.

Only a lone bird in female plumage attended this nest, and CBF gained the distinct impression that it was always the same, extremely timid individual. All nestling meals were regurgitated by the parent.

Trumpet Manucode *Manucodia keraudrenii*

Pairs of this bird of paradise were vocal throughout our visit. On 6 November, JY & DWF found a nest under construction in a tree fork 0.5 m below the canopy apex of a 16 m tall tree, whose trunk was 15 cm in diameter at its base, within vine forest atop a river bank. The male was watched plucking a dry tendril from a vine in the forest canopy and adding it to the nest. This nest was not laid in by 14 November, when we found another containing two eggs.

Both of these nesting manucode pairs had a pair of Black Butcherbirds *Cracticus quoyi* resident, presumed nesting, in the immediate vicinity; a situation John Young (pers. comm.) has noted to be invariably the case with at least ten nesting manucode pairs in the Iron Range forest. Barnard (1911) reported finding this nesting association with the Black Butcherbird at six different Trumpet Manucode nests in the Lockerbie forests, but his significant discovery appears to have been overlooked or unaccepted (Gilliard 1969, Cooper & Forshaw 1977).

The nest containing two eggs was 1 m below the canopy apex of a well-foliaged (and additionally much covered by leafy vines) slim tree 22 m above ground in tall vine forest. A platform and hide was built in an adjacent tree at the same height in order to obtain the first colour photographs of this species at the nest (see Frith & Frith 1991, p. 60). Both sexes shared incubation duties, the arriving bird giving a call some distance from the nest, to which the sitting bird would usually respond by dropping silently down and away from the nest. Sometimes the relieving bird would simply arrive silently below the nest, hop up through the nest tree foliage to perch beside it, and so cause the sitting bird to depart. When alarmed, by CBF climbing to the hide platform, birds gave a brief, strong call note sounding like a loudly creaking door (rather cicada-like in quality but deeper). The contact call note typically given away from the nest, and when arriving/departing, was notated as a sharp *skowlp*. This note was also infrequently given by the

sitting bird, usually in reply to its mate's call. Also in reply to the male, the female gave a brief sharp *keow* note.

Eleven timed incubation periods lasted on average 27.5 minutes, and the sitting bird frequently rolled the eggs. The tendril nest was deeply cupped, the back of the incubating bird being just below the nest cup rim. The elongate feathers of the male's "ear tufts" (see Frith & Frith 1991, p. 60) were obviously longer than those of his mate. On one occasion an arriving parent was noted to have much yellow flower pollen dusted about its bill and fore-crown.

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AN EXHAUSTED WHITE-HEADED PETREL ON CAPE YORK PENINSULA

BRIAN VENABLES

The White-headed Petrel *Pterodroma lessonii* has a circumpolar distribution in the southern oceans, rarely north of 30°S (Harrison 1983). The few Queensland records detailed by Marchant & Higgins (1990) involve single birds at localities close to the border with New South Wales, either beachcast or sighted close to the edge of the continental shelf. The most northerly records from Australian waters are at 20°S in the Dampier Archipelago in Western Australia (Marchant & Higgins 1990) and at 25°S off Fraser Island, Queensland, where ten were sighted on 8 July 1985 (Niland 1986).

At 0500 h on 25 July 1991, I was disturbed by a noise outside my residence at Cape Weymouth (12°37'S, 143°26'E) on the north-eastern coast of Cape York Peninsula. Examination with a torch revealed a large grey and white seabird flapping exhaustedly under some bushes. I placed the bird in a cardboard box and let it rest all of that day. The prevailing winds at the time were very strong south-easterlies.

The following day the bird was still alive and looking much healthier. It was taken out of the box and placed on a wide railing of the house which faces out to sea. The accompanying photographs were taken while it was in this position. Perusal of field guides convinced me that it was a petrel and most probably a White-headed Petrel. The bird would not take food or drink and remained motionless on the railing until about 1700 h when it turned around. About an hour later, when it was just on dusk, it took off in an easterly direction.

Photographs taken were later examined by various experienced observers in Brisbane, who confirmed my tentative identification. This record is of considerable interest, especially at this latitude in the tropics, where it can be no more than an exceptional winter straggler.

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