

CO-OPERATIVE BREEDING IN ROBINS OF THE GENUS *EOPSALTRIA*

In September 1978 we set up a hide at a nest of White-breasted Robins *Eopsaltria georgiana* and, after the eggs hatched, caught and colour-banded the adult pair. The day after we had marked the adults, we saw the female at the nest; another unbanded bird coming to the nest was caught and marked. We then saw the female, two other marked birds and yet another unbanded bird feeding the nestlings. Before the two nestlings fledged, we watched four colour-banded birds as well as the female, feeding them. The female brooded but we saw no attempts to do so by the other four birds at the nest. We have had no previous experience of co-operative breeding in this species and Rowley (1976, Proc. XVI Int. orn Congr.: 657-666) and Dow (in press, Emu) do not report White-breasted Robins as doing so.

We marked birds and watched them at three other nests of White-breasted Robins. At one, besides the female, there were three other colour-banded birds, and another that we could not catch attending the young. At another, there were two birds besides the female. The third had a simple pair and a clutch of one egg instead of two, as is usual. All young from these nests fledged.

We have banded 240 White-breasted Robins locally, using bands supplied by the Australian Bird Banding Scheme, CSIRO. Measurements of wings of adults have ranged from seventy-two to eighty-four millimetres, maximum chord. Females, identified by an obvious brood patch or by cloacal examination, all measured seventy-two to seventy-seven millimetres. Of the nests mentioned above, the females measured seventy-five millimetres twice and seventy-seven millimetres twice; those of the nine birds associated with them from eighty to eighty-three millimetres. Of the total sample, forty per cent ranged from seventy-two to seventy-seven millimetres, the rest being between seventy-eight and eighty-four millimetres. Thus males

may predominate in the population.

Jenkin and Waterman (S. Aust. Orn. 24: 45-48) observed three individuals of the Western Yellow Robin *Eopsaltria griseogularis* feeding nestlings in a nest at Ceduna, SA. We have also watched nests of this species. The first contained two nestlings so near to fledging that we refrained from watching them closely for fear of disturbing them but we did determine that three adults were feeding them. After the young fledged we caught them and the adults and marked them. Twenty days later the female was building again, ten metres from the ground in a slender sapling, too high to inspect. We did not know the clutch size but only one nestling fledged. The female with three colour-banded birds, none juvenile, attended it. Western Yellow Robins are not numerous in this area and we have banded too few to provide a sample for determining the sizes of the sexes. Dow (op. cit) records co-operative breeding in Eastern Yellow Robins *Eopsaltria australis*, which, if not conspecific with *Eopsaltria griseogularis* (Ford, Emu 79: 103-106), is certainly very closely related to it.

It is worth mentioning that co-operatively breeding White-breasted Robins nested in remnant forest of Karri *Eucalyptus diversicolor* with understorey of Karri-hazel *Trymalium spathulatum*, a dense shrub-layer and permanent water, whereas the simple pair with one nestling was on higher ground without water, where Karri gave way to Marri *Eucalyptus calophylla* and Jarrah *Eucalyptus marginata*. On the other hand, we found only one pair of Western Yellow Robins alongside the co-operatively breeding White-breasted Robins and two groups of Western Yellow Robins alongside the single pair of White-breasted. The habitats of the two species seemed to complement one another.

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SOME OBSERVATIONS ON BIRDS IN IRIAN JAYA, NEW GUINEA

The avifauna of Irian Jaya has been rather little studied, the most recent observations being by Hoogerwerf (1964), King (1979), Ripley (1964), Schodde *et al.* (1975) and Yamashina (1970). The following notes are based on observations made in Irian Jaya between 9 March and 9 April 1976 by D. Bradford, T. H. Fisher, F. O. P. Hechtel, R. J. Isherwood and D. Melville.

Observations were made round Biak town (1°12'S, 136°08'E) on Biak Island, Nabire (3°22'S, 135°30'E) at the head of Teluk Sarera (Geelvink Bay), and Enarotali (3°55'S, 136°23'E) at 1,735 metres on Danau Paniai (Wissel Lakes). Observations at Biak were made close to

the town in a mixture of suburbia, cultivated land, coconut groves and secondary forest, with small areas of mangrove growing on uplifted coral. At Nabire we camped in the town and also in the primary forest about six kilometres south. A visit was made to the Boemi River about five kilometres west of Nabire. In the highlands we stayed at Enarotali and in the moss forest at about 2,000 metres near Dauwagu, some twenty-four kilometres east of Enarotali.

In the following list nomenclature follows the standard of the journal for birds on the Australian list; otherwise, Rand and Gilliard (1967).

Phalacrocorax carbo Great Cormorant

One adult in breeding plumage showing white thigh patch and one immature on Danau Paniai, 4 April; few previous records for this species from New Guinea, e.g. Alkmaar, Noord River (Mayr 1941) and Balimo.

Spizaetus gurneyi Gurney's Eagle

Up to three, including one probable immature, over coastal forest at Biak and one over the forest near Nabire. The birds were always seen low over the forest and had the general appearance of an *Aquila* eagle. The tail was slightly wedge-shaped but not nearly as much as indicated in the literature for *Aquila audax* and there was no trace of rufous as in that species. Wings almost parallel-sided. Rand and Gilliard (1967) recorded the species 'from the islands of Geelvink Bay (Japan), western and central New Guinea (Sorong, Huon Gulf, Gaima)'. These appear to be the first records for Biak and the mainland coast of Teluk Sarera.

Tringa glareola Wood Sandpiper

A single bird on Danau Paniai, 24 March. Although there are a number of records for this species in Irian Jaya (Gyldenstolpe 1955; Mayr 1941) and Hoogerwerf (1964) saw it repeatedly at Manokwari and found it to be a regular visitor to Kurik, this appears to be the first record from the highlands (Heron 1978).

Calidris canutus Red Knot

Three in partial breeding plumage seen with about fifteen *C. tenuirostris* on the Boemi River, 8 April. Although Rand and Gilliard (1967) state that, 'though not recorded from New Guinea, it surely occurs', Hoogerwerf (1964) recorded 'huge flocks' round Kurik. The species has also been recorded from Papua New Guinea (Heron 1977).

Stercorarius sp Jaegers

Thirty-six seen between Nabire and Japen Island, 7 April. One light-phased and two dark-phased birds definitely identified as *Stercorarius pomarinus*. The others were five light-phased, thirteen dark-phased, one intermediate, six immatures and eight not observed closely. All birds were heavily built and most, if not all, were probably *pomarinus*. Rand and Gilliard (1967) do not list any jaegers but there have been a few later records of *pomarinus* from Papua New Guinea (Anon 1970 a, b) and King (1979) recorded unidentified jaegers off Biak. Mörzer Bruyns (1965) states that *pomarinus* 'regularly migrates through the Philippines to winter . . . on the north coast of New Guinea.' In *S. parasiticus* dark-phased birds usually predominate in southern waters (Shuntov 1974; Vaurie 1965); however comparable data seem to be lacking for *pomarinus*.

Chlidonias leucoptera White-winged Tern

At least fifty seen on the Boemi River, 8 April, many in partial or complete breeding plumage. Recorded from the Kurik region (Hoogerwerf 1964) and Papua New Guinea (Hansen 1976) but this appears to be the first record from the northern coast of New Guinea.

Halcyon sancta Sacred Kingfisher

Several on the forest edge Nabire, 7 April; none in March. Several on the Boemi River, 8 April. One at Biak, 9 April; none in March. Winters in New Guinea from April to October (Rand and Gilliard 1967).

Merops ornatus Rainbow Bee-eater

Ten (adults and immatures) on forest edge Nabire, 7 April; none in March. Several on the Boemi River, 8 April. Winters in New Guinea from April to October (Rand and Gilliard 1967).

Eurystomus orientalis Dollarbird

Many on forest edge Nabire, 7 April; none in March. Many on the Boemi River, 8 April. One at Biak, 9 April; none in March. The appearance of these birds in early April at a time when winter migrants (*H. sancta*, *M. ornatus*) were arriving from Australia suggests that they were the Australian subspecies *pacificus* rather than the resident New Guinea form *waigiouensis*, which is 'very scarce' in the north of New Guinea (Schodde *et al.* 1975).

Motacilla flava Yellow Wagtail

A single bird on the shore of Danau Paniai, with *M. cinerea* on 23 March and again in early April. Hoogerwerf (1964) recorded it as regular visitor to the rice fields of Kurik and Manokwari and also recorded it at about 500 metres in the Kebar Valley, Vogelkop, and Schodde *et al.* (1975) recorded one at 3,980 metres at Lake Larson.

Monarcha rubiensis Rufous Monarch

Two seen in the middle canopy and lower storey of the swamp forest at Boemi River, 8 April; associated with a mixed flock of foraging birds, which included *Pitohui kirrhocephalus*, *Anses telescopthalmus*, *Rhipidura rufidorsa* and *Melanocharis nigra*. The birds were gleaning for insects among the foliage and were not seen to hawk from a perch. The male had a brown bill but that of the other bird, which lacked a black throat and chin, was darker, almost black. Rand and Gilliard (1967), who never saw the species in the field, record bill colour as 'slate blue'.

Pachycephalopsis hattamensis Green Thicket-Flycatcher

This species was reasonably common in the primary moss forest at Dauwagu, at 2,000 metres, where up to three birds were regularly seen along three kilometres of forest trail. Birds were always seen singly, perched on the ground or on some low boulder or tree stump. Usually found in fairly thick vegetation but towards dusk they became more active and perched in the open. Three other birds were mist-netted at 0.6, 1.5 and 1.2 metres above the ground and one had a leech attached under the upper left eyelid. In the field and in the hand these stocky birds recalled whistlers *Pachycephalinae*. Rand and Gilliard (1967) record the species up to about 1,640 metres.

Aplonis cantoroides Singing Starling

Several observed in isolated *Casuarina* trees by Danau Paniai, at 1,735 metres. This is usually a lowland species (up to 300 m, Mayr 1941) but there are a number of records from the highlands. Diamond (1972) found the species at Goroka (1,560 m), Ripley (1964) saw it near Wamena, Baliem Valley, and it was recorded at Nondugl (1,580 m) by Gyldenstolpe (1955) and Mayr and Gilliard (1954).

Aplonis magna Long-tailed Starling

Common singly or in pairs on the forest edge and in mature trees among secondary growth at Biak; in general appearance and habits, reminiscent of a drongo (*Dicuridae*). It was conspicuous, perching in open positions on tall trees, and once a pair was seen on a tall dead tree down which they walked head-first like *Sitta europea*. Fairly noisy, the most common call being a harsh warble. Birds were seen to cock and fan the tail.

Mino dumonti Yellow-faced Mynah

One in scrub near Mokmer Airport, Biak, 12 March, and again in the same area, 13 March. This species is found in the lowland areas of New Guinea and on a number of islands, e.g. Salawati, Batanta, Waigeu and Japen but has not previously been recorded from Biak (Mayr 1941; Rand and Gilliard 1967). Because Biak is a centre for the bird trade, this individual may have escaped from captivity.

One pair nesting in a tree hole about twelve metres above the ground by the Boemi River. Rand and Gilliard (1967) did not know of any nest of this species; however Bell (1972) found nests in a tree trunk thirteen metres high and in the base of a tree-fern *Asplenium* sp thirty metres high.

Corvus orru Torresian Crow

Common on Biak and at the Boemi River. This species frequently gave a dying call 'caw caw caw caw caawwww', which is not recorded by Rand and Gilliard (1967), who state that the 'voice is a weak "caw" or "ka"', and Hoogerwerf (1971) notes that 'the call resembles those of other corvids, "kaaaa-kaaaa", often quickly repeated'. Ripley (1964) notes that 'this species has a dull, low rattling croak in the nesting season, as well as the deep, harsh raven-like caw of the species'. The only record of a call similar to that recorded by us is given by Goodwin (1976) who states that Heinroth, who kept a hand-reared individual of *C.o. insularis*, noted that 'the usual call resembled the native name for this species, "kottkott"', but it also offered a kind of song, "krah, krah, kraaaaa" with a comical emphasis on the drawn out final syllable.'

Ptiloprora erythropleura and **P. perstriata** Red-sided and Black-backed Streaked Honeyeaters

Several specimens of both species were seen on the forest edge at Enarotali and one specimen of *P. perstriata* was mist-netted at Dauwagu, near the lower limit of the moss forest. The capture is of particular interest in relation to the question of the status of *P.p. incerta*, which is known from only one specimen in the area of the Wissel Lakes. It has been suggested that this form may be a hybrid between *P.p. perstriata* and *P. erythropleura dammermani*; on the other hand Junge (1953) pointed out that specimens of *P.e. dammermani* but not of *P.p. perstriata* were taken in the Wissel Lakes. *P.p. perstriata* is known to occur west of the Wissel Lakes in the Weyland Mountains (Stein 1936 in Diamond 1969) and is common to the east in the Snow Mountains; however, this appears to be the first record from the area of the Wissel Lakes.

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PRIMITIVE WEAPONRY IN BIRDS: THE AUSTRALIAN BRUSH-TURKEY'S DEFENCE

Many writers, even recent ones, give the impression that the Australian Brush-turkey *Alectura lathami* is restricted to rainforest. This is not so. Brush-turkeys were once common at least as far as the western edge of the Darling Downs in southern Queensland and seem to have been eradicated there by man's destruction of their habitat. Even today, remnants of incubation mounds can be found in these western districts. Although

presumably always common in the foothills just west of Brisbane, in the past few years numbers of Brush-turkeys have been increasing in suburban regions such as St Lucia and Indooroopilly, where they are often mentioned in the local press. In fact, the species has become a pest in many gardens.

I have been studying Brush-turkeys at my home in Upper Brookfield where the dry sclerophyll woodland is