

BIRD BANDER

A New Guinea Jungle Banding Station

L. W. FILEWOOD

An outline of early New Guinea banding work is presented and details of banding station operation are given. Some of the results of regular banding in recent years, based on earlier experimental banding, are set out; a summary of results for species banded is tabulated.

Introduction

Although most of the New Guinea lowlands are clothed in jungle, Port Moresby lies in a 'rain shadow': it receives only 40 inches of rainfall each year, nearly all in the months December to April. The surrounding country is covered mainly by Kangaroo Grass and Boroko Gum, looking very much like parts of Australia. The birds of this relatively dry zone nearly all occur in Australia as well: of 80 species recorded at my home, only two are not found on the Australian list.

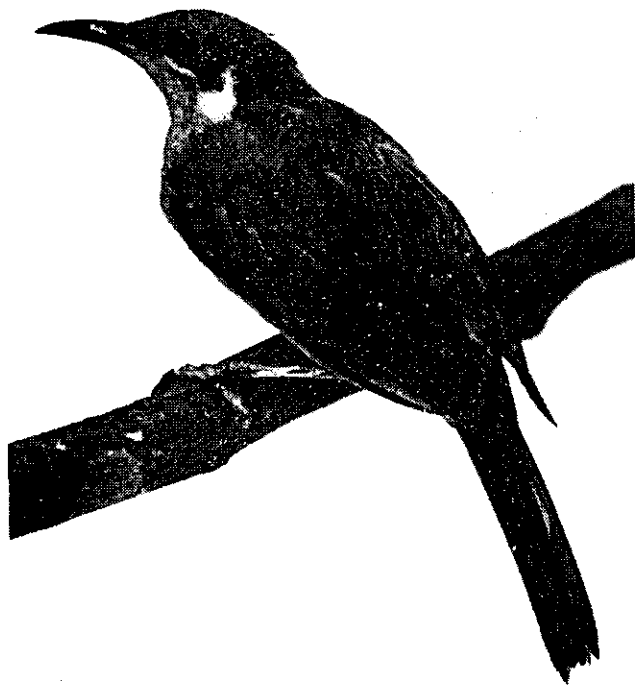
How different is the situation at the Brown River jungle, only 30 miles by road from the town. It has taken me over eight years to accumulate my Kanudi (home) list, but it is possible to see as many species in one day at Brown River: my personal maximum is 108 species. The majority of these are not found in Australia and many belong to the endemic New Guinea genera. For this reason banding has been concentrated in this area.

Dr R. Schodde was one of the pioneer banders of New Guinea, and during visits to the Territory in 1962, he banded a number of birds at Karema Forestry Station on the Brown River. By 1965 there were a few resident banders in the Port Moresby area and they began regular banding at that site. Some interesting results have been obtained there apart from a surprising number of retraps of birds banded by Schodde.

Towards the end of 1967, Mr R. H. Donaghey joined Messrs R. D. Mackay, E. D. Cleland and H. L. Bell at the Forestry Station Project. At that time only local recoveries had been reported from any New Guinea banding station, so Donaghey obtained approval to operate another banding station nearby. He intended to compare the birds caught in the two slightly different habitats, and to study the extent of interchange, if any, between them.

Other local banders had already sampled a number of sites in the vicinity, and recommended the "Three Mile Agricultural Plot". Mackay had banded three birds there in February 1967 during a visit with Dr H. Elliott McClure (of MAPS). This "plot" is one of four located at one-mile intervals on the straight road between the Brown and Vanapa Rivers, north-north-west of Karema. It is planted with coconuts, coffee, cocoa, citrus and other crops for experimental purposes, but is seldom visited. It is a favourite bird watching area, and about 150 species have been recorded there. The jungle adjacent to the "plot" is relatively undisturbed, compared with the Forestry station which is just over three miles away.

In March 1968 Donaghey began banding there. He made 11 visits in 15 months, varying from one to 14 weeks apart, and I accompanied him on several of these trips. When he was transferred from the district, I agreed to carry on his



• Puff-backed Meliphaga.

Photo: W. S. Peckover

project and have managed fairly regular visits since June 1969.

Method

Banding in tropical jungles presents many problems, not always strictly ornithological. To appreciate these, a bander needs to operate in the jungle at least once, preferably single handed in the wet season! Catch rates are low and it is rare to catch more than about 20 birds in a dozen 40 foot nets during a visit. Since the number of nets used on different visits has varied considerably at this site, I habitually reduce results to birds per hundred feet of net, as for fishery studies.

Despite the problems and the numerically low rewards, some very fine and interesting birds are netted, including hard-to-see denizens of the jungle floor and understorey. Retrap rates are high, as many species appear to be sedentary in the broadest sense. Furthermore, since little is known about New Guinea birds, there are real opportunities for ornithological research from a relatively small turnover.

I find it convenient to set up my nets on Saturday afternoons ready for an early start the

next morning. Some birds may be caught in the late afternoon, but very few during the hot hours before 17:00. The nets are furled overnight to avoid massive damage by the numerous pigs and occasional wallabies; but beetles and bats are more troublesome.

First light is close to 06:00 throughout the year, and if all goes well, all nets are open within half an hour of this time. I am uncertain yet what governs the morning movements of jungle birds, but results are inconsistent so far. The first hour is especially variable, sometimes highly productive, at other times merely average, and occasionally completely birdless. The next three hours tend to be more consistent: 12 nets generally yield a steady four to six birds per hour in this period. Although there is sometimes a minor peak of activity about 11:00 or 12:00, this is not reliable, and frequently few birds, if any, are caught after 10:00. Consequently I usually begin pulling down the nets soon after 11:00. On a recent long weekend visit I netted from Saturday afternoon to Monday morning; only five birds were caught between 11:00 and 15:00 on the Sunday.

All birds banded at the station were caught in mist nets.

Banding Results

Table 1 summarises basic banding data obtained so far. Apart from the species listed in the table, three others have been banded subsequently: they are Buffy-faced Pygmy Parrot *Micropsitta pusio*, Rufous Babbler *Pomatostomus isidori* and [Papuan] Brown Honeyeater *Pycnopygius ixoides*. A further three species netted, were taken for study purposes: they were the Glossy-mantled Manucode *Manucodia atra* Magnificent Rifle Bird *Craspedophora magnifica* and King Bird of Paradise *Cicinnurus regius*.

Part of the satisfaction of working this station is the high retrap rate. So far the overall average retrap rate is 30.8 per cent, and the moving point average has fluctuated very little over the last year which suggests strong stabilising factors. Recurrence rates are also high, averaging 1.94 times per retrapped individual, while 46.5 per cent of retrapped individuals have been caught again, up to six more times each.

Despite a low banding rate, 1 to 25 birds per visit (mean 9.4), individuals have been re-trapped from all but two visits. One of these visits was a day when only one bird was banded—

TABLE 1
Summary of banding results at the Three Mile Agricultural Plot at Brown River

Species	Number Banded	Number Retrapped	Number Retrapped More than Once	Total Times Retrapped	Weeks Since First Banded	Maximum Longevity
Dwarf Kingfisher <i>Ceyx lepidus</i>	2	1	1	2	8	8
Lesser Yellow-billed (Yellow-billed) Kingfisher <i>Halcyon (=Syma) torotoro</i>	3				93	
Common Paradise Kingfisher <i>Tanysiptera galatea</i>	23	6	4	12	174	88
Blue-breasted Pitta <i>Pitta erythrogaster</i> (= <i>P. macklotii</i>)	2				111	
Black-headed Pitta <i>Pitta sordida</i>	4				69	
Scrub Robin (=Northern) <i>Drymodes superciliaris</i>	1				50	
Lowland Eupetes <i>Eupetes caeruleescens</i>	5	2	1	3	111	81
Blue Wren Warbler <i>Todopsis cyanocephala</i>	4	2	1	8	115	115
Yellow-bellied Gerygone Warbler <i>Gerygone chrysogaster</i>	15	3	1	4	109	43
Sooty Thicket Fantail <i>Rhipidura threnothorax</i>	5	1		1	5	115
Black Thicket Fantail <i>Rhipidura maculipectus</i>	4	2	1	4	115	115
White-breasted Thicket Fantail <i>Rhipidura leucothorax</i>	2				109	
Grey-breasted Rufous Fantail <i>Rhipidura rufidorsa</i>	10	1	1	3	174	149
White-throated (=Northern) Fantail <i>Rhipidura rufiventris</i> (= <i>R. setosa</i>)	4	3		3	98	60
Shining Monarch (=Shining) Flycatcher <i>Monarcha</i> (= <i>Piezorhynchus</i>) <i>alecto</i>	2	1			50	3
Grey-winged Monarch (=Black-faced) Flycatcher <i>Monarcha melanopsis</i>	3				111	
Spot-wing Monarch Flycatcher <i>Monarcha guttula</i>	17	8	2	13	115	115
Black and Yellow Monarch Flycatcher <i>Monarcha chrysomela</i>	3				16	
Frilled (=Frill-necked) Flycatcher <i>Arses telescopthalmus</i>	9	2	1	3	86	86
Yellow-breasted Flatbill (=Boat-billed) Flycatcher <i>Machaerirhynchus flaviventer</i>	2				16	
Olive Microeca Flycatcher <i>Microeca flavovirescens</i>	3	1	1	2	30	30
Black and White Flycatcher <i>Poecilodryas hypoleuca</i>	8	4	2	7	101	76
Grey-headed Whistler <i>Pachycephala griseiceps</i>	7				38	
Brown Shrike-Flycatcher (=Rufous Shrike-Thrush) <i>Myiolestes</i> (= <i>Colluricincla</i>) <i>megarhynchus</i>	25	12	6	28	115	115
Rusty Pitohui <i>Pitohui ferrugineus</i>	5				69	
Spangled Drongo <i>Dicrurus hottentottus</i> (= <i>Chibia bracteata</i>)	1				25	
White-eared Catbird <i>Ailuroedus buccoides</i>	1				55	
Red-spot Myzomela <i>Myzomela eques</i>	1				69	
Grey-bellied Longbill <i>Toxorhampus uliophus</i>	16	9	4	19	115	99
Long-billed Honeyeater <i>Meliphaga megarhynchus</i>	11	3	2	8	115	112
Brown Xanthotis (=Tawny-breasted Honeyeater) <i>Xanthotis chrysotis</i> (= <i>X. flaviventer</i>)	3				69	
Puff-backed Meliphaga <i>Meliphaga aruensis</i>	7	2	1	6	115	112
Slender-billed Meliphaga (=Graceful Honeyeater) <i>Meliphaga gracilis</i>	4				38	
Mimic Meliphaga <i>Meliphaga analoga</i>	8	3	1	4	102	102
Black Berrypecker <i>Melanocharis nigra</i>	14	5	2	8	111	109
Total: 35 species	234	71	32	138		

NOTE: This Journal generally follows *The Official Checklist of the Birds of Australia* (Second Edition), 1926, with subsequent amendments. Ornithologists in New Guinea use the *Handbook of New Guinea Birds*, 1967, by Rand and Gilliard as their "checklist", and this reference will be used for papers of that area. When the species also occurs in Australia and the *Handbook* name differs, the *Official Checklist* name is given in parenthesis.

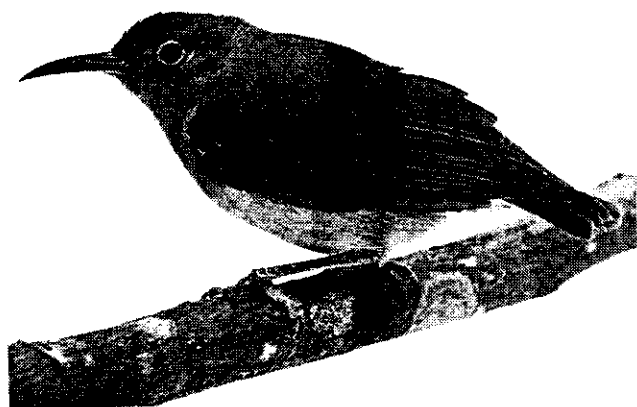
—Hon. Editor.

five other birds caught were retraps; the other was a recent visit with the chance of retraps in the future very probable.

All three birds banded on Mackay's first visit have been retrapped, two of them twice, despite a lapse of 13 months before regular netting commenced. Of 83 birds banded by Donaghey, 40 have been recaptured, 21 of them more than

once (a total of 88 times). Nine of 14 birds banded on his first visit have now been retrapped, two recently for the first time, 27 months after banding.

Three cases of apparent associations have been noted. They refer to birds caught in the same or adjacent nets simultaneously or in the same net within one hour.



• Grey-bellied Longbill.

Photo: W. S. Peckover

Blue Wren Warbler

Todopsis cyanocephala

Date	010-55708* (Adult male)	012-23911 (Adult female)
31. 3.68	banded	—
25.10.69	retrapped	banded
25. 1.70	retrapped	retrapped

Common Paradise Kingfisher

Tanysiptera galatea

Date	050-61018 (Adult)	050-61019 (Adult)
10. 2.67	banded	banded
1. 9.68	retrapped	—
20.10.68	retrapped	retrapped

Long-billed Honeyeater

Melilestes mcgarhynchus

Date	050-57003* (Adult)	050-16222 (Adult)	050-16224 (Adult)
31. 3.68	banded	—	—
22. 2.70	—	banded	banded
21. 3.70	retrapped	retrapped	retrapped
24. 5.70	retrapped	—	retrapped

* Other retrap data omitted.

Netting mortality has been low, with only one death in 370 handlings.

Comments and Discussion

I have found eight species breeding at or near the station, but I have been unable to band nestlings. Breeding failure appears to be high even without interference from me: of ten nests observed, eggs or young were lost in at least seven. Two breeding species, the Little Coronated Fruit Dove *Ptilinopus coronulatus* and Magnificent Fruit Dove (= Wompoo Pigeon) *Megaloprepia magnifica* have not yet been netted. The other species found breeding were the Buffy-faced Pygmy Parrot, Lesser Yellow-billed Kingfisher, Yellow-bellied Gerygone Warbler, Spotted-wing Monarch Flycatcher, Frilled Flycatcher and Olive Microeca Flycatcher. The Common Paradise Kingfisher has been caught with heavily vascularised brooding patches, and the Black Berrypecker has been netted while carrying putative nesting material. Most of the other species are known to nest in the general area; the only exception is the Grey-winged Monarch Flycatcher which appears to be entirely migratory in Papua.

TABLE 2

Monthly summary of numbers caught, catch-rates and other information on banding operations at the Three Mile Agricultural Plot.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Number of visits	2	3	2	2	3	3	2	1	3	2	1	1	25
100s feet of mist net	7.4	8.6	5.6	7.7	9.9	19.8 ¹	5.2	3.0	9.8	6.0	3.4	4.8	91.6
Birds banded in month	15	28	17	23	32	33	9	6	19	30	14	8	234
Birds retrapped for first time in month	6	4	5	0	11	24	3	0	5	9	1	3	71
Number retrapped more than once	6	6	4	4	10	17	1	2	6	5	3	2	66
Average catch-rate ²	3.7	4.5	4.8	3.6	5.4	3.9	2.5	2.7	3.1	6.9	5.3	2.7	4.1
Retraps of birds banded in same month	3	8	9	6	10	5	6	3	6	10	3	2	71
Rainfall average ³	9.1	8.0	8.5	6.9	4.2	2.3	1.5	1.1	3.2	2.8	5.1	7.0	59.7

¹ adjusted to effective mist net days to allow for long weekend in June 1970.

² birds per 100 feet of net per mist net day.

³ inches: average of seven years (1959-1966) at Brown River D.A.S.F. Station.

Many of the species are wary and individuals are rarely caught twice in one day, even in different nets. However an adult male Blue Wren Warbler was caught three times in one day, and a Grey-bellied Longbill seven times.

As might be expected, there is some seasonal variation in the species caught. The overall catch-rate is fairly constant except for a distinct peak in spring. This corresponds to a definite increase in activity, associated with a breeding maximum.

Table 2 summarises numbers caught and the catch-rate on a monthly basis. It may be significant that in the driest months of the year (July-August) few birds are banded (an average of 5.0 per trip), and a relatively high proportion of these (60%) has been retrapped. However, little work has been done in that period, and it is too soon to be sure if it is consistent. The high retrap rate for birds banded in March (52.9%) reflects Donaghey's first visit which accounts for 14 of the 17 banded and all the recoveries. It was expected that the first birds caught would include a higher proportion of birds most susceptible to capture.

It is interesting to speculate how many birds are available for capture. The "Lincoln Index" has been used to estimate populations from the proportion of marked individuals subsequently recaptured. This method is not strictly valid here, and there is certainly not enough information for each species. However, it does serve as a rough guide, which suggests an original total catchable population of some 150 birds. If this is so, and if this is a reasonable figure for the number of birds available at any time, each visit yields only about 10 per cent. This is probably enough to anticipate useful results: fisheries workers have to estimate from much smaller samples.

The species caught at this location are very similar to those banded at Karema and although only about three miles apart, no interchange has been recorded between the two banding stations. In fact, New Guinea banders are still looking forward to their first "distant" recovery. To date only one bird has been recovered away from the banding site in New Guinea and that one, a Darter, was banded by a visitor, Mr A. Wolfe.

*L. W. (Winston) Filewood,
Kanudi Fisheries Research Station,
D.A.S.F., Konedobu, T.P.N.G.*



- *Lowland rainforest just south of banding site at the Three Mile Agricultural plot, Brown River. Note the completely closed canopy and heavy creeper growth on the secondary vegetation (bottom right-hand corner). Mist nets are set in narrow swathes cut from access roads or native walk-tracks.*

Photo: Department of Information & Extension Services, T.P.N.G.