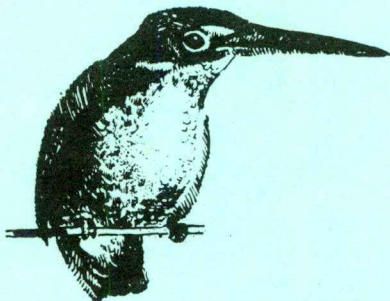


AUSTRALIAN BIRDS



Journal of the
N.S.W. FIELD ORNITHOLOGISTS CLUB

Vol. 18, No. 1

October, 1983

ISSN 0311-8150

THE N.S.W. FIELD ORNITHOLOGISTS CLUB

OFFICE BEARERS

PATRON	A.R. McGill
PRESIDENT	A.E.F. Rogers
SECRETARY	C. MacDonald
TREASURER	K. Lisser
RECORDS OFFICER	T.R. Lindsey
FIELD DAY ORGANISER	A. Lindsey
CONSERVATION OFFICER	R.A. Buchanan
EDITOR OF AUSTRALIAN BIRDS	T.R. Lindsey
EDITOR OF NEWSLETTER	A. McBride
COMMITTEE	E. Hoskin

The object of the Club is to promote the study and conservation of Australian birds and the habitats they occupy.

Annual subscription rates of the Club (due 1st July each year) are:

Adult Member	\$10.00
Junior Member (up to 17 yrs)	\$ 5.00

All members receive a quarterly newsletter and a copy of the quarterly journal "Australian Birds". The price of the journal is \$2.00 plus postage per issue to non-members. Club badges are available to club members at \$1.40 or \$1.70 if posted. The Club holds a meeting and a field excursion each month.

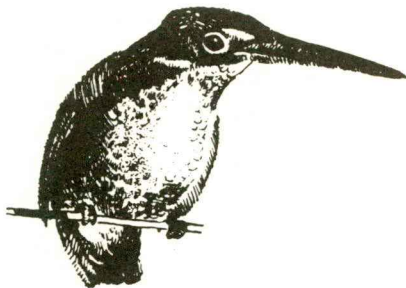
All correspondence should be addressed to the Hon. Secretary and all membership fees should be sent to the Hon. Treasurer at:

P.O. Box C436, Clarence Street, Sydney. N.S.W. 2000.

Manuscripts should be sent to the Editor at:

Dept. of Ornithology, Australian Museum,
6-8 College Street, Sydney 2000.

AUSTRALIAN BIRDS



Vol. 18, No. 1

October, 1983

FORTY YEARS OF CHANGE IN THE AVIFAUNA OF A SYDNEY SUBURB

H. L. BELL

INTRODUCTION

The literature of Australian ornithology is replete with area-lists of species, some of little value to the science. Most amateurs, myself included, concentrated on the 'unusual'; but rarely on what birds did 'usually'. A single vagrant often receives several paragraphs but twenty years of residence by a common species is often dismissed in a single line – usually under the designation of 'common'. If we wait long enough a Papuan Hornbill will accidentally reach Cape York and an albatross will be blown to the coast off Port Moresby, but neither occurrence, however exciting to those that observe them, will be of much biological importance. What we need to know, from long-term resident observers, is the status of those species that really make up the avifauna – the breeding residents and regular visitants.

I resided at Maroubra, a coastal suburb of Sydney, between Botany Bay and Port Jackson, and kept notes on birds from 1940 until leaving the area in 1951. However, subsequent biennial family visits enabled me to note changes in the avifauna over the years. Maroubra, now heavily built over, is commonly thought to be former heath-lands. However, sufficient evidence, from old photographs, historical accounts and old tree stumps, exists to show that the hills were heavily forested, chiefly by *Angophora costata*, with a heathy understorey. The apparent 'heathland' status was the outcome of the area being Sydney town's closest, easily-accessible source of fuel (firewood). The flat areas were probably covered in swamp, *Eucalyptus*

botryoides and *Melaleuca quinquenervia*. The headlands were probably always covered in heath, where the last remnant now occurs, at Long Bay Rifle Range. Extensive wetlands were filled in during the period 1936-1948, only one small pond remaining, near Matraville, close to Anzac Parade.

In 1940 the area was mostly built upon, but extensive patches of heath occurred, mainly at Randwick and Long Bay Rifle Ranges. The local citizens could hardly have been regarded as garden-minded. Everyone knew 'that you couldn't grow gardens in sand', nor can you, if you keep planting the plants of one's ancestral England. Everyone knew 'that trees won't grow in Maroubra' nor will they if they are not well-tended in their earliest years in such sandy soil. Since then, Randwick Rifle Range has gone and the heath at Long Bay is a pitiful remnant, continuously swept by fire and invading grasses. High-rise building has flourished with vast expanses of concrete and car-parks. Against this, affluence and rising interest in native plants have encouraged home gardeners to plant trees and shrubs. Public parks have been planted and are showing reasonable canopies of trees. In particular, Federal funds in the early 1970's induced the local council to undertake a massive planting programme, and, more to the point, look after it once it was planted. Maroubra is still a barren suburb, but compared with the 1940's it is now positively verdant.

Although my list stands at 120 species, most are 'one-time' only chance vagrants. Such common 'bush birds' as Fan-tailed Cuckoos, *Cacomantis pyrrhophanus*, Grey Fantails *Rhipidura fuliginosa* and Red Wattlebirds *Anthochaera carunculata*, each appear on my list as a single occurrence. I doubt if 25 native species bred in the suburb during my time there.

Therefore, I intend to present information only on those species which are/were resident or occurred in substantial numbers.

SPECIES THOUGHT TO HAVE BECOME LOCALLY EXTINCT

Haliaeetus leucogaster White-bellied Sea-eagle

Occurred at least monthly during the 1940's; I have not seen this species for many years. Possibly the destruction of nesting habitat by industrial development on the nearby Kurnell Peninsula has been responsible for the species' demise.

Centropus phasianinus Pheasant Coucal

Last seen in 1943 but heard at Long Bay Rifle Range as late as 1950. Destruction of habitat was no doubt the cause.

Alauda arvensis Skylark

Once very abundant on wastelands to the west of Maroubra but disappeared in the 1950's along with building of houses in that area.

Stipiturus malachurus Southern Emu-wren

A great survivor; the first species to re-occupy burnt-out heaths and the last to survive in tiny patches of heath on isolated suburban blocks. I recall the late K. A. Hindwood telling me that it persisted in Centennial Park until well into this century. A colony survived in a patch of heath, of only one hectare or less, near the Maroubra ocean baths until the 1960's, when the spot was bulldozed for a car-park. The patch would have been cut-off from other heathlands, by

extensive building, since about 1930. Last seen, on Long Bay Range in 1971, but because I have not really searched for it I feel that it may still be present in the area behind the stop-butts of the Range.

Hylacola pyrrhopygia Chestnut-rumped Heath-wren

First seen in 1941 at the old Randwick Rifle Range. The cocked tail and bright rufous rump made it unmistakable. A pair was seen at Long Bay Range in 1943, and in 1944 a nest was found which I later realised was of this species. Firing of the heath, and reduction of habitat no doubt extirpated it.

Phylidoniris melanops Tawny-crowned Honeyeater

Originally very common but a visit in 1968 revealed only a few pairs at Long Bay Range. The habitat, at that stage, would probably have supported only two or three pairs. By 1971 none were present, in spite of a diligent search for them. This abrupt dive to local extinction illustrates the 'island' effect, where isolated populations become too small to sustain themselves indefinitely. The classic example of this is Barro Colorado Island in Panama, when after the isolation of the island (originally a mountain) by the rising waters of Gatun Lake, those species of birds with small populations tended to eventually die out (Willis 1974). Thus, the frequent sighting of a bird species, in a local area, is no guarantee of its future existence, unless the population is large enough for viability.

Emblema pulchella Beautiful Firetail

Only seen in 1942, at Long Bay Range, in the last large area of *Banksia ericifolia* swamp. Either the species had gone previously unnoticed, or it has the capacity to move between isolated areas of suitable habitat.

TEMPORARY COLONISTS

The extraction of sand for industrial purposes left a huge area of bare sand on the present site of Coral Sea and Heffron Parks during the 1940's. This sand was used by two species, plus a species of wader, probably the Curlew Sandpiper *Calidris ferruginea*, roosting during high tide at Botany Bay, some four kilometres distant.

Charadrius alexandrinus Red-capped Plover

Nested at least twice, 1941 and 1946 on the sand-wastes, although no surface water of any kind existed there. Up to twelve birds were seen, throughout these years. The habitat disappeared in 1947.

Sterna albifrons Little Tern

Nested twice, with a single pair each time, in 1942 and again in 1943. Young were reared despite the nearest available source of food being at least three kilometres distant.

TEMPORARY INVASIONS

Cuculus pallidus Pallid Cuckoo

In 1946 large numbers of this species occurred all over the suburb throughout the whole of late spring and December. No evidence of breeding was obtained but behaviour suggested that it had taken place. I never recorded this species on any other occasion.

Cinclorhamphus cruralis Brown Songlark

In 1957 large numbers frequented the fields of Long Bay Rifle Range and from their behaviour were probably breeding. This was at a period of serious drought inland and many other inland species were recorded at Sydney around that period.

Lichenostomus chrysops Yellow-faced Honeyeater

In April-May 1946 large numbers frequented Maroubra, then suddenly left. These were no doubt part of the north-bound migratory population of this species. I otherwise never recorded them.

SPECIES THAT HAVE APPEARED TO DECLINE IN NUMBERS*Streptopelia chinensis* Spotted Dove

I am certain that this species is much less abundant than it was in the 1940's. My guess is that numbers are down by two-thirds or more. Destruction of nest-sites in former patches of heath, and competition from Currawongs and Galahs may be contributory reasons.

Malurus cyaneus Superb Fairy-wren

My notes record an abundance in 1954 noticeably greater than in previous years. The part of Maroubra Junction where I lived, and later visited, was built on about 1938-39, so perhaps the maturing of such gardens as existed accounted for the abundance. Now dramatically reduced and all but extinct in house gardens where it was formerly abundant. Household insecticides may be the cause and also the reduction in the dog population, following more stringent municipal by-laws, may have led to an increased, or less inhibited, population of domestic cats.

Zosterops lateralis Silvereye

Much less abundant than before, when it was the commonest native bird in both heathlands and house gardens. Possibly the Red-whiskered Bubbler *Pycnonotus jocosus* has proved too competitive, but I suggest that the retreat of patches of nearby heathlands removed a large reservoir of silvereyes that used to enter house gardens.

Acridotheres tristis Common Myna

Has fallen away tremendously in numbers. I believe that Silver Gulls and Currawongs are occupying the scavenging role of this species, particularly in parklands.

Grallina cyanoleuca Magpie-lark

Almost gone from the area whereas in the 1940's one could see it in about every fourth or fifth street. The disappearance of wetlands and possible pollution of water-snails (a major item of diet) may be the reasons. As a school boy at Sydney High School, Moore Park, I recall seeing, in winter, hundreds of Magpie-larks streaming to roosts in the Moreton Bay Fig trees, many coming from the direction of Maroubra and the Lachlan Swamps.

SPECIES THAT HAVE INCREASED*Larus novaehollandiae* Silver Gull

Incredible as it may sound to present-day cricket spectators, there was hardly a Silver Gull to be seen on a Sydney park or playing field in the 1940's. (While not an habitue of sporting

fields I think I can say that I never saw it at such places up to the time I left in 1951.) Certainly I twice noted seeing them at Maroubra Junction (ca. two kilometres inland) suggesting that such occasions must have been rare. The explosive population increase of this species over the last 30 years has led to it becoming an urban bird in direct scavenging competition with mynas, doves and feral pigeons, who appear to be losing the battle. Maroubra is no exception to this pattern.

Cacatua roseicapilla Galah

Seen twice, as overhead transients in 1940 and 1944, but by 1983 a small flock had established itself as resident in the parks and playing fields.

Coracina novaehollandiae Black-faced Cuckoo-shrike

Only a very rare vagrant in the 1940's but by 1983 constantly present for which the increased cover of trees is no doubt the cause.

Specothes viridis Figbird

Present in 1983. A possible reason for its presence is that the local council no longer prunes back the Hill's Figs *Ficus hillii*, which are now able to provide more cover and, more importantly, to set fruits. As Hindwood and McGill (1958) point out, it became resident in Sydney in about 1946.

Gymnorhina tibicen Australian Magpie

Never seen until 1983 but a few pairs now established in parks where playing fields are regularly watered. In January 1983 I noted a pair, apparently resident, in the gardens of St. Vincent's Hospital, Darlinghurst – a tiny patch of habitat inside the city.

Strepera graculina Pied Currawong

Not seen until 1983, when a small population observed. This is in keeping with its transition to an urban bird in Sydney over the last 30 years or so.

Corvus coronoides Australian Raven

In the 1940's seen perhaps once monthly, always merely as an overhead transient, but now occurs daily as a resident species, in small numbers, feeding on refuse in parks. I had recorded previously nesting on telegraph poles near the abandoned gun emplacements on Malabar Headland, to which there is no public access.

CONCLUSION

This paper would have been more useful had some quantified evidence been available, to transform unsupported opinion into scientific evidence. However, I hope that three points are made. One is that bird communities are dynamic, and change there will always be. Secondly, the 'villains' of the bird world are not necessarily exotic species and that native species, too, may attain pest status and drive out others in their turn. Thirdly, let us not place too much reliance on the frailties of human memory. Just one census each month, over say, 30 years, may have told us if the demise of the Jacky Winter, considered by Chisholm (1934) as Sydney's typical urban bird, correlated with the arrival of the Currawong. I urge all those interested to involve themselves in long-term counts of birds, of common, and introduced, species. For

Maroubra, my guess for the future is that as eucalypts mature, more species, in particular, honeyeaters and pardalotes, will colonize.

REFERENCES

- Chisholm, A.H. 1934. Bird wonders of Australia. Sydney, Angus and Robertson.
- Hindwood, K. A., and A. R. McGill 1958. The birds of Sydney. Sydney, RZS of NSW.
- Willis, E. O. 1974. Populations and local extinctions of birds on Barro Colorado Island, Panama. Ecol. Monogr. 44: 153-169.

NESTING OF THE SQUARE-TAILED KITE IN SOUTH-EASTERN NEW SOUTH WALES

MARTIN SCHULZ

The Square-tailed Kite *Lophoictinia isura* is regarded as an irregular visitor to south-eastern Australia, and most standard references do not show it as occurring in the far south of New South Wales (eg, Readers' Digest 1976, but see Morris *et al* 1981). In the course of field-work for the Department of Terrestrial Vertebrate Ecology at the Australian Museum, Sydney, I saw this species several times in and near Bondi State Forest (37° 07'S, 149° 08'E) near Bombala in southern New South Wales. In late 1981, a nesting pair was located on one of the study areas (Woodlot 2) at Bondi State Forest.

METHODS

Observations on the kites and their nest were made with 12x50 and 8x50 binoculars and a telescope, mostly from the ground upslope from the nest site, at a point almost level with the nest. On several occasions, I climbed trees upslope to about four metres off the ground, which enabled a good view of the nest platform. I watched the nest at irregular intervals over a period of two months, from 8 November 1981 to 1 January 1982. The ground below the nest was covered with plastic sheeting, and was checked regularly for remains of prey.

HABITAT

The nest was in a patch of open forest dominated by Narrow-leaved Peppermint *Eucalyptus radiata*, Mountain Gum *E. dalrympleana*, Snow Gum *E. pauciflora* and Manna Gum *E. viminalis*. During the same period I also saw Square-tailed Kites at Coolangubra State Forest (in tall open forest dominated by Brown Barrel *E. fastigata*, Manna Gum, and Messmate *E. obliqua*), Nadgee Nature Reserve (in regenerating coastal woodland following the 1980 wildfire), and at Mount Tennyson Flora Reserve (in tall open forest dominated by Monkey Gum *E. cypellocarpa*). Also, in April 1983, I saw single open kites on several occasions at Bellbird in East Gippsland, Victoria; all were over coastal open forest dominated by the stringybarks *E. globoides*, *E. obliqua*, *E. sieberi* and *E. baxteri*.

NEST SITE AND CONSTRUCTION

The nest consisted of a platform of large sticks placed in the fork of a Narrow-leaved Peppermint *E. radiata*, 15 metres above the forest floor and five metres below the top of the canopy. The platform was built on the nest of a Brown Goshawk *Accipiter fasciatus* which had successfully bred in the summer of 1980-81. The nest was near completion when I first visited the site on 8 November. Both birds brought large sticks of unidentified eucalypts, some of which were green and thick with foliage, to the nest site. I did not observe how the kites managed to break off the sticks.

INCUBATION

The incubation period was not determined since incubation had apparently begun before the first visit to the site, even though the kites were still adding material to the nest platform.

The incubating bird spent most of its time motionless in an alert state, but occasionally seized dead birds that had been left on the nest platform, and ate part of the carcass. Often for periods of 30 minutes or more, one bird sat on the nest and the other perched in a eucalypt adjacent to the nest tree, both without moving.

Both adults incubated, since several exchanges of duty were observed. On these occasions the non-brooding individual flew in with a bird in its talons and landed on the nest platform. It then ate the prey, tearing off pieces, while the incubating bird took no part. The feeding bird then flew to a nearby perch and either cleaned its bill, preened or just sat, for about three to ten minutes. During this time the incubating bird flew off without any sign of display. The remaining bird then flew to the nest, and with a shuffling motion crouched down into a sitting position where it remained for a varying amount of time (which was not measured). The birds seemed to scare easily, and left the nest upon any human activity within 30 metres of the nest tree.

NESTLINGS

I do not know when hatching occurred, but two chicks were first seen on 7 December. They were covered in snowy white down, the eyes and bill were dark, and the cere was yellow. By 1 January the nestlings were more developed, calling loudly, and very active – continually flapping their wings and moving about the nest platform. At this stage the downy white appearance had been lost and the birds had well developed feathers in the wings. They were chocolate brown on the back with darker flecks and patches, and chocolate brown on the upper breast.

Both adults apparently fed the nestlings. Usually one adult at a time flew on to the nest with a small bird in its talons, or appeared to pick up a carcass from the nest floor. On alighting on the nest, the adult tore up the carcass and fed the fleshy parts to the chicks, and then ate the remains. After feeding the chicks, the adult gathered them under it by a settling motion. The adults spent long periods brooding the chicks when they were small.

DIET AND HUNTING BEHAVIOUR

From my observations it appeared that the young birds were an important part of the kite's diet. Few carcasses brought to the nest could be identified with any certainty. The only definite identifications were of a nest of a White-naped Honeyeater *Melithreptus lunatus*, and a fledgeling Rufous Whistler *Pachycephala rufiventris*, both found below the nest site. Several rabbit remains (age undetermined) were also found under the nest, as were many insect remains – principally crickets (family Gryllidae) and beetles (including the families Carabidae, Curculionidae, Elateridae and Tenebrionidae). Incubating birds were also seen to snap at blowflies.

No direct observations were made of the techniques used by the kites to capture prey. They showed great agility in flying through the foliage of trees, and did not soar to great heights, but were usually seen flying low over the canopy or over surrounding grazing country. The kites were not seen to scavenge on numerous dead macropods, wombats and rabbits on adjoining roads.

HARASSMENT

A number of birds persistently harassed the nesting kites, especially Grey Currawongs *Strepera versicolor* and Dusky Woodswallows *Artamus cyanopterus*, both of which were breeding in the vicinity. Similarly, a pair of Brown Goshawks which was nesting less than 100 metres away were involved in occasional aggressive encounters with the kites. A typical interaction occurred as follows: the female goshawk swooped and made a passing contact on an approaching kite. The latter uttered a warning call and the goshawk retreated by flying to an adjacent tree, where it called loudly for one or two minutes before leaving the area.

ACKNOWLEDGEMENTS

I would like to thank Mr Jack Caldwell for permission to work on his property, and the Forestry Commission of New South Wales for the use of their facilities at the Bondi State Forest work-camp. The study was supported by a grant from Harris-Daishowa Pty Ltd to the Australian Museum. I would also like to thank Mr S.J. Debus for his critical comments and encouragement.

REFERENCES

- Morris, McGill & Holmes. 1981. Handlist of birds in New South Wales. NSWFOC: Sydney.
Readers Digest. 1976. Complete book of Australian birds. Readers Digest Services Pty Ltd: Sydney.

Martin Schulz, 37 Halifax Street, Middle Brighton, Vic. 3186.

OBSERVATIONS OF FORAGING BEHAVIOUR OF A MANGROVE HERON

WILLIAM E. DAVIS, JR

Kushlan (1978) described 34 feeding behaviours for herons, three of which he defines (p. 251) as forms of diving: (1) Plunging – dives head first from air, (2) Diving – dives head first from perch, (3) Feet-first diving – alights on water feet first. Recher *et al* (in press) listed the occurrence of the various feeding behaviours among Australian herons and added the behavioural category Scanning – “. . . a behaviour in which a foraging heron will pause in an upright posture and fully extend its neck to the vertical, appearing to look for prey”. Although Mangrove Herons *Butorides striatus* (including *B. virescens*, e.g. Kushlan 1978) have been observed Feet-first Diving (Hawbecker 1949; Hindwood, 1933) and Diving (Barker, 1901; Brooks, 1923; Brown, 1949), I was unable to find any unambiguous records for the behaviour of Plunging.

This note reports on an observation of Scanning behaviour followed by Plunging by a Mangrove Heron. On 21 May 1982, I made timed foraging observations on Mangrove Herons at Patonga Creek, approximately two kilometres from the Hawkesbury estuary. I watched a Mangrove Heron fishing from oyster racks for several hours, during which time the bird caught several fish. At approximately 13:00 hrs the bird was standing on a stake about 15 cm above the water. My tape-recorded comments on the bird's subsequent behaviour are as follows: “. . . it stuck its neck way up into the air before it flew, straight up, stretched itself way up – may have been looking for fish. My impression was that it was just flying away, but then it flew four or five feet and into the water . . . it dove into the water head-first and apparently missed its prey, then flew back up to a post about three feet above the water”. The bird's bill was held parallel to the water during Scanning, and the flight and attack followed immediately. This immediacy of the prey attack is consistent with the hypothesis that the scanning behaviour was involved in prey search, perhaps reducing glare.

REFERENCES

- Barker, S.H. 1901. Does the Green Heron fish in deep water? *Bird-Lore* 3: 141.
- Brooks, W.S. 1923. An interesting adaptation. *Auk* 40: 121-122.
- Brown, A.G. 1949. Notes on some birds of the Whitsunday Group, Queensland. *Emu* 49: 44-49.
- Hawbecker, A.C. 1949. Green Heron feeds on goldfish. *Auk* 66: 78-79.
- Hindwood, K.A. 1933. The Green-backed Mangrove-heron, Part I. *Emu* 33: 27-43.
- Kushlan, J.A. 1978. Feeding ecology of wading birds. in, *Wading Birds*. New York: National Audubon Society.
- Recher, H.F., R.T. Holmes, W.E. Davis, and S. Morton (in press). Foraging behaviour of Australian herons. *Wading Birds*.

William E. Davis, Jr. College of Basic Studies, Boston University, Boston, Massachusetts 02215, USA.

CALLING AND RESOURCE DEFENCE BY LITTLE WATTLEBIRDS *Anthochaera chrysoptera*

D. C. McFARLAND

INTRODUCTION

Bird calls have many functions including courtship, group contact, begging for food, as alarms and in threat behaviours (see reviews by Armstrong 1965 and Hinde 1969). Many species also use calls or songs of a specific nature to advertise the occupation of a territory (Krebs 1977). A number of Australian honeyeaters (Meliphagidae) are recorded as being territorial in defending breeding sites (Recher 1971), food resources (Ford 1981) or sometimes both (Paton 1979). Usually this defence is noted by the obvious chases that occur between owners and intruders; however, little attention has been drawn to the role that calling may take in maintaining exclusive use of some resource.

METHODS

Little Wattlebirds *Anthochaera chrysoptera* and New Holland Honeyeaters *Phylidonyris novaehollandiae* were studied in the Royal National park near Sydney, NSW from 28 February to 22 August 1980. The study area was a combination of dry sclerophyll forest dominated by *Eucalyptus haemastoma* and *E. globoidea*, and heath composed primarily of various species of *Banksia*, *Hakea* and *Casuarina*. Each month 40 birds of each species were observed (New Holland Honeyeaters \bar{x} = 6990 seconds and Little Wattlebird \bar{x} = 7602 seconds of observation per month), with details being kept of where the birds were feeding, the percentage of time spent calling and the number of chases that occurred.

RESULTS

In each of the first four months the percentage of time spent calling by the Little Wattlebirds was significantly greater than that of the New Holland Honeyeaters (Figure 1; Analysis of Variance: $F_{5,456} = 5.59$, $p < 0.01$, Student Newman Keuls test $p < 0.05$ in all four cases). There were no significant differences in the following two months.

No distinction was made between the different types of calls given by the honeyeaters. The majority of the wattlebird vocalisations were the repetitive "yekop" and harsh barking calls. The New Holland Honeyeater calls were predominately a high pitched "tu" and bursts of chattering.

A comparison of the calling (Figure 1) and the chasing results (Table 1) for the wattlebirds revealed a correlation that although positive was not significant ($r = 0.41$, $n = 6$, $p > 0.4$). A correlation between New Holland Honeyeater calling and chasing activity was even less significant ($r = 0.17$, $n = 6$, $p > 0.5$). However if one compares the level of calling and chasing involving only conspecifics, the correlation for wattlebirds becomes more positive ($r = 0.61$, $n = 6$, $p > 0.1$) while that for New Holland Honeyeaters becomes less so ($r = 0.05$, $n = 6$, $p > 0.5$).

TABLE 1

*Number of chases by New Holland Honeyeaters and Little Wattlebirds
(number of chases of conspecifics in brackets).*

species	month					
	Feb-Mar	Apr	May	Jun	Jul	Aug
Little Wattlebird	3 (0)	12 (3)	2 (2)	12 (5)	6 (2)	18 (4)
New Holland Honeyeater	9 (5)	20 (19)	21 (15)	28 (17)	18 (13)	22 (11)

Although these results are statistically inconclusive, what suggests more than just a coincidental relationship between Little Wattlebird calling and aggression is that the peaks of both behaviours coincide with those times when the wattlebirds were shifting attention from one nectar source onto a new one. In April the change-over was from eucalypts and *Banksia serrata* to *B. marginata*; in June it was from *B. marginata* to *B. ericifolia*, and in August the birds were found mostly in five flowering *Erythrina* trees.

DISCUSSION

Little Wattlebirds are known to establish feeding territories in areas of abundant nectar (Reader's Digest 1976; Paton 1979). During their initial period of occupation of a new nectar source it appears that the birds become more aggressive and more vocal. The increased calling would serve to inform other honeyeaters that new territories are being established and should be avoided. The calls would be aimed particularly at other wattlebirds as these, having almost identical food requirements, would be a territory owner's main competitors. Territorial birds once settled would theoretically only need to expend energy in displacing smaller intruders e.g. Eastern Spinebills, *Acanthorhynchus tenuirostris*, and in maintaining a certain level of calling to advertise occupation to other Little Wattlebirds.

New Holland Honeyeaters have also been observed defending territories (Recher 1971; Paton 1979; pers. obs.), but among them calling seems to play a different role. Although aggressive in nearly all months, the percentage of time spent in calling followed a more seasonal pattern. As the main breeding period approached (July-September, Recher 1977) there was an increase in the amount of calling. Therefore much of the New Holland vocalisations may be involved in the establishment of nest site territories and/or in the attraction of mates.

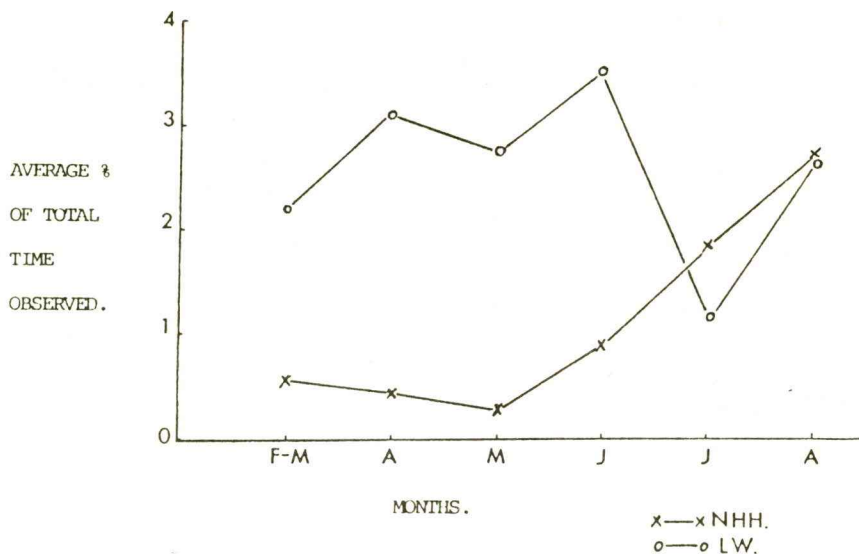


Figure 1. Changes in percentage of time spent calling by New Holland Honeyeaters and Little Wattlebirds.

The limited data presented here suggest that for Little Wattlebirds at least, calling plays a definite role in the defence of nectar resources by advertising the aggressive intent of the caller. In energetic terms, calling is a favourable strategy, being a more economical means, compared to chasing, of holding a territory.

REFERENCES

- Armstrong, E.A. 1965. A study of Bird Song. London: Oxford University Press.
- Ford, H.A. 1981. Territorial behaviour in an Australian nectar-feeding bird. *Aust. J. Ecol.* 6: 131-134.
- Hinde, R.A. 1969. Bird Vocalizations. London: Cambridge University Press.
- Krebs, J.R. 1977. Song and territory in the Great Tit *Parus major*. In *Evolutionary Ecology* (Ed. B. Stonehouse & C. Perrins). London: MacMillan Press Ltd.
- Paton, D.C. 1979. The behaviour and feeding ecology of the New Holland Honeyeater *Phylidonyris novaehollandiae* in Victoria. unpubl. Ph.D. thesis, Monash University.
- Reader's Digest. 1976. The complete book of Australian birds. Sydney: Reader's Digest Services Pty. Ltd.
- Recher, H.F. 1971. Sharing of habitat by three congeneric honeyeaters. *Emu* 71: 147-152.
- 1971. Ecology of co-existing White-cheeked and New Holland Honeyeaters. *Emu* 77: 136-142.

D.C. McFarland, Department of Zoology, University of New England, Armidale NSW 2351.

OBSERVATIONS OF MASKED OWLS IN THE GLOUCESTER AREA, NEW SOUTH WALES

GREG J. ROBERTS

From 23 March to 14 June 1982, I observed a pair of Masked Owls *Tyto novaehollandiae* at Gloucester Tops, approximately 30 km south-west of Gloucester in the New South Wales mid-north coast hinterland.

The pair resided in an area of wet sclerophyll (tall open) forest dominated by Brown Barrel *Eucalyptus fastigata* and Messmate *E. obliqua*, with a medium-dense understorey. Within the owls' territory was a large stand of cool temperate (or beech) rainforest consisting mostly of Negrohead Beech *Nothofagus moorei*. The area was at about 1 300 m asl, and nearby were extensive areas of sub-alpine woodland in which Snow Gum *E. pauciflora* was prevalent. The owls nested in a large hollow located about five metres above the ground in a Ribbon Gum *E. viminalis*.

I visited the territory twelve times during this period in the company of various other observers. Observations always began at dusk and the birds were kept under observation for periods of from two to eight hours. A Masked Owl was first seen in this locality by Simon Ferrier in July 1981.

Up until 8 May, only a single bird was seen or heard. The nesting tree was not discovered at that time, and the bird was evidently roosting in a number of different localities, none of which was within 80 m of the nesting tree. The bird would be first heard calling in the distance about 30 minutes after sunset, and would fly into the vicinity of the nesting tree soon afterwards.

The owl typically called at half-hour intervals from a number of nearby vantage points in both the eucalyptus and nothofagus forests. The call is loud, and perhaps better described as a scream, combining the raspy screech of the Barn Owl *Tyto alba* with the more musical and high-pitched notes of the Sooty Owl *T. tenebricosa*. Hyem (1979) describes the principal call as a "drawn out, harsh squawk". I sometimes succeeded in attracting the owl close by with a rather poor imitation of the call.

On 8 May, two Masked Owls were seen together. The single bird flew in as was its usual habit, and was quickly joined by a much larger and paler-coloured bird. The latter was seen to enter the nesting hollow. From its size I assumed it was the female. It was seen at the hollow on a number of subsequent occasions and evidently roosted there.

When both birds were together, a large variety of call-notes were heard. One such call was a series of chattering "cak" notes, while other calls varied considerably in pitch and frequency. There were occasions when neither bird would call for several hours, and other times both birds could be heard calling regularly and frequently. Strong moonlight appeared to greatly inhibit calling.

The female was far more cautious and shy than her mate. When first discovered she was probably incubating eggs, as a fully fledged young bird was located on 14 June. The fledgeling was roosting high in the nest-tree and frequently emitted the high-pitched rasping calls typical of juvenile *Tyto* owls. Rasping calls had been heard from within the hollow on previous occasions, although this could have been either the young or the female bird.

On one occasion, the male owl was seen to deliver a dead Bush-rat *Rattus fuscipes* to the chick. The rat was held by its head in the chick's bill for over an hour when observations ceased. A search for pellets below the nest-hole was unsuccessful.

Hyem (loc. cit.) states that the species leaves the heavy timber to feed in cleared or partially-cleared areas. However, in the case of the birds I studied, the nearest cleared land to the nesting tree was some 15 km away. As the owls were heard at all times of the night at regular intervals, it is probable that the birds hunted entirely in surrounding forest. In this area, *R. fuscipes* would probably have constituted a major portion of their diet.

The two adults under observation differed greatly in appearance. The upperparts of the (presumed) male were very dark grey with paler edges to the secondaries. The colour was as dark as that of a Sooty Owl. The facial disc was broad and dark, and the entire breast and upper belly were golden-buff with darker flecks, while the lower belly was white with similar flecks. In contrast, the female had no buff on the underparts which were wholly white with darker flecks. The upperparts were a rich buffy-brown with dark grey blotching. The juvenile was intermediate, showing dark upperparts like the male and pale underparts like the female.

Further personal observations were not possible after 14 June. Other observers failed to find any trace of the birds on 20 September (C.J. Corben, pers. comm.), but a bird was heard on 2 October (A.P. McBride, pers. comm.). At that time, Masked Owls had been present at the locality for at least 15 months.

The only other owl recorded in the vicinity was a Powerful Owl *Ninox strenua* heard on one occasion. A pair of Sooty Owls held a territory approximately six kilometres south of where the Masked Owls resided.

The Masked Owl is considered uncommon in New South Wales (Morris, McGill & Holmes, 1981) and rare in the nearby Upper Manning River district (Hyem loc. cit.). During eight months residence near Gloucester, the only other Masked Owl I recorded was a single bird heard approximately 1.5 km south of this locality. It is possible that this bird was one of the pair under observation.

REFERENCES

- Hyem, E.L. 1979. Observations on owls in the Upper Manning district, N.S.W. *Corella* 3: 17-25.
Morris, A.K., A.R. McGill & G. Holmes. 1981. Handlist of birds in New South Wales. Sydney: NSWFOC.

Greg J. Roberts, 21 Kensington Avenue, Seven Hills, Qld 4170.

WHITE-BROWED WOODSWALLOWS AND WHITE-WINGED TRILLERS AS NECTAR FEEDERS AND POLLINATORS

D. LARKINS

On 18 November 1982 large flocks of White-browed Woodswallows *Artamus superciliosus* were present in the Hawkesbury district, NSW. At nearby Wilberforce Park, Wilberforce, where many Silky Oaks *Grevillea robusta* were blooming, there was constant coming and going of these woodswallows. The birds were actively feeding among the abundant florescence, but I could not determine whether the food was nectar, pollen or insects.

On 21 November many White-browed Woodswallows had arrived at Hoxton Park near Liverpool, NSW where only a few had been the previous week. The birds were so widespread that numbers could not be estimated. Here also there was constant activity of the birds at Silky Oaks. A vantage point 4m from the base of a 6m flowering tree allowed detailed observation of the behaviour of a male White-browed Woodswallow. This bird visited the flower spikes from above and dipped its bill deep into the flower, very rapidly moving from one to another. Its chin and throat feathers were heavily dusted with pollen.

A female White-winged Triller *Lalage sueurii* also feeding in this tree was chased away by woodswallows. There was not time to observe this bird's behaviour closely apart from noting that the source of food was at the flower spikes. Ford, Paton and Forde (1979) record trillers and woodswallows taking nectar.

The lower flowers of this tree were examined at close hand and the higher levels through binoculars. No insects were seen in the tree or on the trunk. The flowers were at different stages of development and many held nectar. I noted that as the woodswallows probed the nectaries the length of the bill made it necessary to reach down over the anthers, and the chin and the throat were thus dusted with pollen.

By 26 November most of the woodswallows had left the area. There was little blossom on the Silky Oaks but a female White-browed Woodswallow was seen dusted with pollen on the chin and throat. There are no orchards in this district and no other native trees were in blossom in the locality. *Duranta repens* was flowering in the garden but woodswallows were not attracted to this tree, although trillers had been known to visit and sing from it in previous years.

White-browed Woodswallows have brush tongues and are known to feed on nectar at times (Chisholm 1971; Pizzey 1980); Lowe & Lowe (1972) were familiar with this behaviour in their citrus orchard and thought it commonplace. Paton and Ford (1977) showed that the birds visit flowers regularly, probing the flowers "in such a way as to brush against anthers and stigmas and carry pollen so as to deposit it on receptive stigmas in several species of native plants in South Australia".

It is interesting that Florence Sulman (1914) in describing *Grevillea robusta*, noted that in this species the nectar is not produced until the pollen is ripe. Further, McLuckie and McKee (1954) and Carolin (1961) mention that in many species of the family Proteaceae pollen is

produced before the stigma of the same flower is receptive, preventing self-pollination at this stage. They do not specifically refer to Silky Oaks.

White-browed Woodswallows and White-winged Trillers would appear to be effective as pollinators of *Grevillea robusta* in the manner described by Sulman: "The colour and abundance of honey attract the birds who visit the spike from above, and brush over the surface of the flowers which are in different stages of development.

ACKNOWLEDGEMENTS

I am indebted to Ian McAllan, my companion in making the observations at Wilberforce, and to Dr David Paton who generously gave time to discuss birds as pollinators and to provide some references.

REFERENCES

- Carolin, R. 1961. Pollination of the Proteaceae. Aust. Nat. Hist. 13: 371-374.
- Chisholm, A.H. 1971. Various bird notes. Aust. Bird Watcher 4: 41-43.
- Ford, H.A., D.C. Paton and N. Forde. 1979. Birds as pollinators of Australian plants. N.Z. J. Botany 7: 509-519.
- Lowe, V.T. and T.G. Lowe. 1972. Wood-swallows in mid-northern Victoria. Aust. Bird Watcher 4: 205-210.
- McLuckie, J. and H.D. McKee. 1954. Australian and New Zealand Botany. Sydney: Horowitz.
- Paton, D. and H.A. Ford. 1977. Pollination by birds of native plants in South Australia. Emu 77: 73-85.
- Pizzey, G. 1980. A Field Guide to the Birds of Australia. Sydney: Collins.
- Sulman, F. 1914. Wild Flowers of N.S.W. Sydney: Angus and Robertson.

Daniel Larkins, 225 Kissing Point Road, Turrumurra NSW 2074.

NOTICE TO CONTRIBUTORS

Contributors are requested to observe the following points when submitting articles and notes for publication.

1. Species, names, and the order in which they occur are to be in accordance with "Handlist of Birds in New South Wales". A.K. Morris, A.R. McGill and G. Holmes 1981 Dubbo: NSWFOC.
2. Articles or notes should be typewritten if possible and submitted in duplicate. Double spacing is required.
3. Margins of not less than 25mm width at the left hand side and top, with similar or slightly smaller at the right hand side of pages.
4. No underlinings and no abbreviations except as shown in the examples.
5. Photographs should be glossy finish and not too small.
6. The *Style Manual*, Commonwealth Government Printing Office, Canberra (1966) and subsequent editions will be the guide for this Journal.
7. Diagrams should be on plain white paper drawn with india ink. Any lettering is to be 'professional style' or lightly pencilled.
8. Dates must be written "1 January 1975" except in tables and figures where they may be abbreviated.
9. The 24-hour clock will be used, times being written 06:30, 18:30 for 6.30 a.m. and 6.30 p.m. respectively.
10. Mr, Mrs, Dr are not followed by a full stop.
11. In text, numbers one to ten are spelt; numbers of five figures or more should be grouped in threes and spaced by a thin gap. Commas should not be used as thousands markers.
12. References to other articles should be shown in the text—'...B.W. Finch and M.D. Bruce (1974) stated...' and under heading

REFERENCES

Finch, B.W. and M.D. Bruce 1974 The Status of the Blue Petrel in Australian Waters
Aust. Birds **9**, 32-35

13. Acknowledgements to other individuals should include Christian names or initials.

AUSTRALIAN BIRDS

CONTENTS

Bell, H.L.	Forty years of change in the avifauna of a Sydney suburb.	1
Shultz, Martin	Nesting of the Square-tailed Kite in south-eastern New South Wales.	6
Davis, W.E., Jr.	Observations of foraging behaviour of a Mangrove Heron.	9
McFarland, D.C.	Calling and resource defence by Little Wattlebirds <i>Anthochaera chrysoptera</i>	10
Roberts, Greg J.	Observations of Masked Owls in the Gloucester area, New South Wales.	13
Larkins, D.	White-browed Woodswallows and White-winged Trillers as nectar feeders and pollinators	15

Registered by Australia Post — Publication No. NBH0790