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WATER BIRDS RECORDED FROM FIVE ARTIFICIAL LAKES IN NORTH-WESTERN QUEENSLAND

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SUMMARY

The lakes of this area, in particular Lake Moondarra, as well as being valuable water supply and recreational assets, appear to be important sanctuaries for water birds, and possibly breeding grounds for some species in an otherwise arid region. The vegetation associations are major influences on the bird-life with both the fringing and aquatic plants being important. Lake Julius may develop into a more important sanctuary if the vegetation around its shoreline develops to the extent it has in the older lakes. The major bird species present in the lakes included the Pacific Black Duck, Australian Pelican, Eurasian Coot, Glossy Ibis and Little Cormorant. A total of forty species was observed with only one, the Comb-crested Jacana, appearing to have taken advantage of the recent introduction of the floating plant *Salvinia molesta* into Lake Moondarra.

INTRODUCTION

The wetter regions of northern Queensland are part of the northern waterfowl region (Frith 1977). This region contains very large numbers of birds and provides a valuable drought refuge for birds from the inland region. Mount Isa, which has a mean annual rainfall of 378 mm (Farrell *et al* 1979), is located to the south of the 500 mm (c. 20 inches) isohyet used by Frith (1977) to separate the arid inland from the northern region. The construction of artificial lakes in such a region can have a profound effect on the riverine systems that were originally characterised by ephemeral pools and intermittent streams. The establishment of permanent water near Mount Isa has encouraged and maintained a larger population of both water and bush birds in the region (Horton 1975). This paper presents the results of a number of surveys of the water birds observed on Lake Moondarra, and to a lesser extent four other lakes in the region, during 1977-78.

Habitat Description

The principal projects for conserving water in the vicinity of Mount Isa are located on the Leichhardt River, along with one dam on the Corella River (Fig. 1). Unlike rivers such as the Diamantina and Georgina that eventually drain into Lake Eyre, the Leichhardt and the Corella (which forms part of the Cloncurry River system) drain into the Gulf of Carpentaria. They are, however, intermittent rivers that flow for a limited period only during and immediately following heavy rainstorms. The size of the lakes varies from the 9,448 ML of Rifle Creek constructed in 1929 to the 123,348 ML of Lake Julius constructed in 1976 (Table 1). The mean depth of the lakes varies greatly with Lake Mary Kathleen being relatively shallow and Lake Julius relatively deep (Table 1). Except for Lake Julius, however, they contain extensive shallow areas where aquatic vegetation can grow and develop.

The submerged vegetation in the lakes is dominated by the native *Hydrilla verticillata* (Hydrocharitaceae) with smaller amounts of *Potamogeton crispus* (Potamogetonaceae), *Myriophyllum verrucosum* (Haloragaceae), *Vallisneria spiralis* (Hydrocharitaceae) and *Najas tenuifolia* (Najadaceae). The submerged vegetation is widespread in Lake Moondarra, Lake Corella and Lake Mary Kathleen but is more restricted in Rifle Creek and in Lake Julius where the banks are steeper. The emergent vegetation in the lakes is not as widely distributed but contains important food and shelter species such as *Polygonum attenuatum* (Polygonaceae), *Pseudoraphis spinescens* and *Cynodon dactylon* (Gramineae) with smaller amounts of *Typha domingensis* (Typhaceae) and several species from the Cyperaceae. These species are also common around the gently sloping margins of the lakes. The floating vegetation provides the greatest difference between the lakes. Lake Moondarra contains a large infestation of the introduced fern *Salvinia molesta*. This species has been present in the lake since 1975 and now occupies a large area in the southern section of the lake (Farrell 1978; Finlayson 1980). Isolated patches have been recorded in Lake Julius but it is not widespread and has not been recorded in the other lakes. The only other locality where the floating plants are an important part of the vegetation is Lake Mary Kathleen where the water lilies *Nymphaea gigantea* and *Nymphoides indica* are found. These species are not, however, as plentiful as the *Salvinia* is in Lake Moondarra.

The terrestrial vegetation around the lakes consists of open woodland and semi-arid grassland species. Along the riverine section of Lake Moondarra and Rifle Creek reservoir dense stands of young river red-gums *Eucalyptus camaldulensis* have developed. The addition of 1.5 m to the spillways of both dams has flooded the area originally occupied by this belt of trees, though a new belt is developing further up the bank. Lake Julius is characterised by steep, barren slopes that are not as conducive to the development of either terrestrial or aquatic vegetation as those of Lake Moondarra and Rifle Creek reservoir. Both *Tristania grandiflora* and *Livistonia inermis* grow on the few gently sloping areas in the upper reaches of the lake.

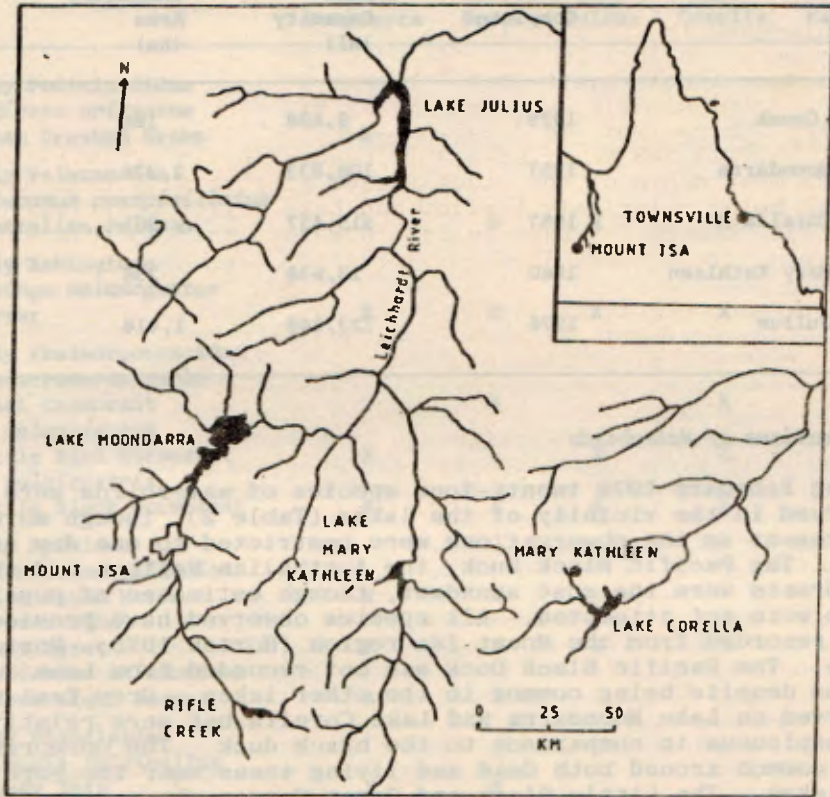


Figure 1. Map showing the position of the reservoirs in the Mount Isa region of Queensland. Inset shows the location of Mount Isa in north-western Queensland.

Table 1. Morphometric details of five major water storages in north-western Queensland

	Date Completed	Full Capacity (ML)	Inundated Area (ha)	Mean Depth (m)
Rifle Creek	1929	9,488	186	5.1
Lake Moondarra	1957	106,833	2,376	4.5
Lake Corella	1957	15,457	261	5.9
Lake Mary Kathleen	1960	13,638	236	1.5
Lake Julius	1976	123,348	1,416	8.7

Observations of Waterbirds

During February 1978 twenty-four species of waterbirds were observed in the vicinity of the lakes (Table 2), though more may be present as the observations were restricted to one day at each lake. The Pacific Black Duck, the Australian Pelican and the cormorants were the most abundant, though estimates of population sizes were not attempted. All species observed have previously been recorded from the Mount Isa region (Horton 1975; Horton 1976). The Pacific Black Duck was not recorded from Lake Julius despite being common in the other lakes. Grey Teal were observed on Lake Moondarra and Lake Corella but were relatively inconspicuous in comparison to the black duck. The cormorants were common around both dead and living trees near the edge of the lakes. The Little Black and Great Cormorants were common or conspicuous species, whereas the Pied Cormorant was uncommon. The former two species had nests of sticks and other debris in the trees but no young were seen. The Australian Pelican, the Glossy Ibis and the Eurasian Coot were present in the lakes throughout most of the year though they were more numerous during the dry season. As with the Pacific Black Duck and the cormorants these species were usually found in the shallower regions of the lakes. This was especially evident in Lake Moondarra where the deeper northern section of the lake did not contain a large population of birds. Rather the main populations were found in the shallow north-west or southern sections of the lake. These areas contained extensive areas of submerged aquatic plants and both dead and alive trees. The Pelicans were usually seen on the small islands that were exposed as the water level drops whereas the other two species were more prevalent on the open water.

There appeared to be a permanent population of approximately twelve Black Swans found on Lake Moondarra though no evidence of breeding was observed. A smaller number were seen on Lake Mary Kathleen at this time but it is not known if they were

Table 2. Waterbirds recorded from the five lakes during February 1979

	Lake Moondarra	Rifle Creek	Lake Julius	Lake Corella	Lake Mary Kathleen
Family Podicipedidae					
<i>Podiceps cristatus</i>					
Great Crested Grebe	X				
Family Pelecanidae					
<i>Pelecanus conspicillatus</i>					
Australian Pelican	X	X	X	X	X
Family Anhingidae					
<i>Anhinga melanogaster</i>					
Darter	X	X	X	X	X
Family Phalacrocoracidae					
<i>Phalacrocorax carbo</i>					
Great Cormorant		X		X	
<i>P. melanoleucos</i>					
Little Pied Cormorant	X		X	X	X
<i>P. sulcirostris</i>					
Little Black Cormorant	X	X	X	X	
Family Ardeidae					
<i>Ardea novaehollandiae</i>					
White-faced Heron	X	X			
<i>Egretta alba</i>					
Great Egret	X	X	X	X	X
<i>Nycticorax caledonicus</i>					
Rufous Night Heron	X	X			
Family Plataleidae					
<i>Plegadis falcinellus</i>					
Glossy Ibis	X	X			
<i>Threskiornis aethiopica</i>					
Sacred Ibis	X				
Family Anatidae					
<i>Cygnus atratus</i>					
Black Swan	X				X
<i>Anas superciliosa</i>					
Pacific Black Duck	X			X	X
<i>A. gibberifrons</i>					
Grey Teal	X			X	X
<i>A. rhynchotis</i>					
Australasian Shoveler				X	
<i>Aythya australis</i>					
Hardhead		X			
Family Accipitridae					
<i>Haliaeetus leucogaster</i>					
White-bellied Sea-eagle	X				
Family Rallidae					
<i>Gallinula ventralis</i>					
Black-tailed native hen	X	X			

Table 2 (contd)

	Lake Moondarra	Rifle Creek	Lake Julius	Lake Corella	Lake Mary Kathleen
<i>Porphyrio porphyrio</i>					
Purple Swamphen	X	X			X
<i>Fulica atra</i>					
Eurasian Coot	X	X		X	X
Family Jacanidae					
<i>Irediparra gallinacea</i>					
Comb-crested Jacana					X
Family Laridae					
<i>Larus novaehollandiae</i>					
Silver Gull	X			X	
<i>Hydroprogne caspia</i>					
Caspian Tern	X				
Tern (not identified)	X				

vagrants or a permanent population. The Purple Swamphen and the Black-tailed Native Hen were restricted to areas occupied by the emergent aquatic plant *Typha domingensis* (cumbungi or bulrush). These areas were not very extensive but were found at Lake Moondarra, Rifle Creek and Lake Mary Kathleen. The Reed Warbler was also found in these locations, though it was more common later in the year. The Rufous Night Herons were generally confined to areas of trees along the riverine sections of Lake Moondarra and Rifle Creek. They were not sighted during this survey at similar locations around the other lakes. The Great Crested Grebe was common on Lake Moondarra and was observed to act out its elaborate courtship display, but no evidence of nesting was found. About six Comb-crested Jacana were sighted in Lake Mary Kathleen in an area occupied by a large number of the waterlily *Nymphaea gigantea*. They were not seen during February near the extensive areas of floating vegetation in Lake Moondarra. The Silver Gull and Caspian Tern were present in Lake Moondarra but were not common species and no evidence of nesting was found.

A further sixteen species of waterbirds were periodically sighted in the vicinity of Lake Moondarra (Table 3). Recordings were made during twelve trips to Mount Isa during 1977-78. Several of these species were very common in the lake. This particularly applies to the Australasian Grebe which was a common or conspicuous species throughout most of the year. Similarly, the Pacific and the White-faced Herons were common around the edge of the lake and near pools in the tributary streams for most of the year. The Comb-crested Jacana was one species that appeared to be restricted to the areas of the lake occupied by the floating vegetation. Approximately 10 to 15 were regularly seen throughout 1977-78. Occasional Brolgas and Jabirus, either in pairs or solitary, were seen late in the wet season of both years. They were generally seen amongst or near the small trees around the shallow southern section of the lake. The two spoon-bill species and four duck species were moderately common late in the dry season but were not as conspicuous as the Pacific

Black Duck, the Glossy Ibis, or the Eurasian Coot. These species were all more common in the shallow regions of the lake, or in the case of the Plumed-whistling Duck and Maned Duck, in amongst the trees along the edge of the lake. The Black-winged Stilts were seen throughout the year but were never particularly common. They were invariably seen feeding near the edge of the lake.

Table 3. Further species of waterbirds recorded from Lake Moondarra, 1977-78

Family Podicipedidae		
<i>Podiceps novaehollandiae</i>	. . .	Australasian Grebe
Family Phalacrocoracidae		
<i>Phalacrocorax varius</i>	. . .	Pied Cormorant
Family Ardeidae		
<i>Ardea pacifica</i>	. . .	Pacific Heron
Family Plataleidae		
<i>Threskiornis spinicollis</i>	. . .	Straw-necked Ibis
<i>Platalea regia</i>	. . .	Royal Spoonbill
<i>P. flavipes</i>	. . .	Yellow-billed Spoonbill
Family Anatidae		
<i>Aythya australis</i>	. . .	Hardhead
<i>Chenonetta jubata</i>	. . .	Maned Duck
<i>Dendrocygna eytoni</i>	. . .	Plumed Whistling-Duck
<i>Malacorhynchus membranaceus</i>	. . .	Pink-eared Duck
Family Rallidae		
<i>Gallinula tenebrosa</i>	. . .	Dusky Moorhen
Family Giruidae		
<i>Arus rubigunda</i>	. . .	Brolga
Family Jacanidae		
<i>Irediparra gallinacea</i>	. . .	Comb-crested Jacana
Family Recurvirostridae		
<i>Himantopus himantopus</i>	. . .	Black-winged Stilt
Family Ciconiidae		
<i>Xenorhynchus asiaticus</i>	. . .	Jabiru

DISCUSSION

The artificial water bodies in this region of north-western Queensland provide a dry season refuge for a large number of water birds. During the wet season, when many billabongs exist in the river beds, the bird population disperses, returning to the lakes or coastal swamps as the water level falls and the pools eventually dry out. The migration of Australian waterfowl, particularly those of the arid inland region, is erratic depending on the suitability of habitats (Frith 1977). As the waterholes dry out the birds congregate on the few remaining pools and eventually move to the productive coastal wetlands or the shallow areas provided

by the artificial lakes. Lake Julius is considerably deeper than the other lakes and has not, in its short history, developed the aquatic or surrounding terrestrial vegetation necessary to support large populations of birds.

The majority of the birds were found in the shallow regions of the lakes and near the trees that have developed around the edge. The shallow areas contain extensive amounts of submerged vegetation that either serves as a food supply or harbours other sources of food. The trees, both dead and alive, provide nest-sites for many species. The cormorants have obviously taken advantage of this change to the habitat. Although the construction of the dams has provided permanent water, it is the development of the vegetation around the lakes that has been of great benefit to the water birds. The increase in water level caused by a 1.5 m addition to the spillway height of both Lake Moondarra and Rifle Creek in 1971 inundated the belt of trees that had developed around parts of the shoreline. Since then, however, a new belt of trees has developed along the new shoreline. The trees in the original belt that have died, owing to water logged conditions, are still a valuable part of the water birds' habitat as they provide roosting and nesting areas. The Plumed-whistling Duck and the Maned Duck were two species that were not seen outside these belts of trees. The increased water levels may also have wiped out the remaining breeding areas for Caspian Terns and Silver Gulls reported by Horton (1973).

The extensive areas of submerged vegetation are also an important feature of the lakes. Many of the species present are important food sources and also shelter other food sources. The extensive areas of submerged vegetation support large populations of both ducks and waders. The emergent vegetation is less widespread but does support the majority of the Purple Swamphen, Black-tailed Native Hen and Reed Warbler populations. With the extension of this habitat, as is occurring around part of Lake Moondarra, these species may become more numerous.

The lack of significant areas of aquatic vegetation in Lake Julius is undoubtedly a major restriction on the bird population in this lake. If more vegetation develops the areas suitable for habitation by birds may increase. The development of artificial lakes in this area has undoubtedly been beneficial to the water-birds when the present populations are compared to those observed by Carruthers (1964), Liddy (1955) and Marshall (1933). Lake Julius may not contain enough shallow areas suitable for the development of aquatic vegetation to be as beneficial as the other lakes are to the bird-life. The vegetation will, however, be greatly influenced by the natural variability in water levels that occurs between seasons and between years.

The bird species recorded in Lake Moondarra have all, except for the Comb-crested Jacana, been recorded in previous surveys (e.g. Horton 1975). The appearance of the Jacana may be associated with the development of an extensive area of floating vegetation in the lake. The floating fern (*Salvinia*) was first noticed in October 1975 (Farrell 1978) and has developed to cover over 300 ha (Finlayson 1980). The only other sighting of the Jacana during this survey was in Lake Mary Kathleen where it was assoc-

iated with the floating water lilies. The further spread of *Salvinia* may enhance the distribution of this bird species in this region. A large increase in the Jacana population was noticed in Lake Kariba, Zimbabwe when this plant species underwent a massive population explosion (Mitchell pers. comm.).

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REFERENCES

- Carruthers, R.K. 1964. Breeding of water birds near Mount Isa, Queensland. *Emu* 63: 306.
- Farrell, T.P. 1978. The spread and control of *Salvinia molesta* in Lake Moondarra, Mount Isa, Queensland. *Proc. First Conf. of the Council of Aust. Weed Sci. Soc.* (Melb. April 1978) pp. 1979-87.
- Farrell, T.P., Finlayson, C.M. and Griffiths, D.J. in press. Studies of the hydrobiology of a tropical lake in north-western Queensland. 1. Seasonal changes in chemical characteristics. *Aust. J. Mar. Fresh-water Res.*
- Finlayson, C.M. 1980. Aspects of the hydrobiology of the Lake Moondarra - Leichhardt River water supply system, Mount Isa Queensland. *PhD Thesis, James Cook University of North Queensland.*
- Frith, H.J. 1977. *Waterfowl in Australia.* Sydney: Reed.
- Horton, W. 1973. Caspian Terns at Mount Isa, Queensland. *Austrn Bird Bander* 11: 51-55.
- Horton, W. 1975. The birds of Mount Isa. *Sunbird* 6: 49-69.
- Horton, H. 1976. *Around Mount Isa: A guide to the flora and fauna.* Brisbane: Univ. Qld Press.
- Liddy, J. 1955. Waders at Mount Isa, Queensland. *Emu* 55: 297-302.
- Marshall, A.J. 1933. Notes from the Leichhardt River, Queensland. *Emu* 32: 263-266.

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NOTES ON THE DISTRIBUTION OF QUEENSLAND BIRDS

JULIAN FORD, A. GREENSMITH and NICHOLAS REID

INTRODUCTION

As part of an investigation on avian hybridization in the region of the Burdekin-Lynd divide, we carried out an extensive tour of Queensland between 26 February and 18 June 1976. Our route was from Enngonia to Charleville, Tambo, Warrego Range (28 February - 1 March), Blackhall, Emmet, Gowan Range near Mt Grey (4-7 March), Ilfracombe, Winton, Hughenden (10 March), Flinders River, Torrens Creek, Burra Range (13-14 March), Pentland, Lolworth, Reedy Spring (16 March), Gregory Park, Lyndhurst, The Lynd, Carpentaria Downs (18-21 March), Einasleigh, Newcastle Range, Forsayth (23-29 March), Einasleigh, Kidston, Gilberton, Ortona (30-31 March), Kidston, Einasleigh, Oasis, Conjuboy (2-5 April), Reedy Brook, Forty Mile Scrub (6-8 April), Mt Surprise, Mt Garnet (12 April), California Creek, Petford (13 April), Almaden, Tate River, Almaden, Chillagoe (15-17 April), Tate River, Bolwarra (18-19 April), confluence of Lynd River and Pinnacle Creek (19-21 April), Torwood, Bolwarra, Chillagoe (22 April), Walsh River crossing, Wrotham Park (24-26 April), Chillagoe, Petford, Mt Garnet, Forty Mile Scrub (29 April - 1 May), Mt Surprise, Newcastle Range (2-4 May), Georgetown, Gilbert River crossing, Barramundi Rock Hole (7-9 May), Croydon, Blackbull, Haydon, Normanton, Karumba (14-18 May), Normanton, Croydon, Georgetown (20 May), Mt Surprise, Oasis, Greenvale (21 May), Hillgrove, Charters Towers, Townsville (23 May - 8 June), Mt Spec (29 May), Home Hill (2 June), Forest Beach (5 June), Townsville, Charters Towers, Myrrlumbing, Red Falls (8-10 June) Bodalla, Lolworth (10 June), Pentland, Burra Range (11-13 June), Torrens Creek, Hughenden, Boonderoo (14 June), Hughenden, Richmond, Julia Creek, Cloncurry (16 June), Mt Isa and Camooweal (18 June). Many significant observations on distributions of birds were made. In this contribution we are mainly concerned with extensions and other amendments to the known ranges of Queensland birds as outlined by Storr (1973). Distances given are linear between localities.

CRITICAL LIST

Dupetor flavicollis Black Bittern

During the autumn we often sighted this bird on watercourses in the southern interior of Cape York Peninsula. In at least the Gulf drainage it is not so scarce away from the coast as Storr indicated.

Threskiornis spinicollis Straw-necked Ibis

Except on tidal waters we found this ibis considerably more plentiful in north Queensland than its congener. In 31 sightings we counted 426 birds versus 14 sightings and 57 individuals of

the Sacred Ibis *T. aethiopica*. The Glossy Ibis *Plagadis falcinellus* was only sighted once: two birds near Wrotham Park HS on 25 April.

Cygnus atratus Black Swan

On 4 April ten adults were observed with two large cygnets and four small downy cygnets on a lagoon near Reedy Brook HS. This locality (in the Valley of Lagoons, upper Burdekin River) represents a slight northward extension of the breeding range.

Nettapus coromandelianus Cotton Pygmy-Goose

About 50 adults and five goslings were observed on a lily lagoon near Reedy Brook HS on 4 April, a considerable northward extension of breeding range in the Burdekin valley. Two Green Pygmy-Geese *N. pulchellus* were observed here.

Aviceda subcristata Crested Hawk

On 1 March Reid observed a single bird in a well-wooded gully in the Warrego Range 17 km north of Tambo. On 17 March we saw six in ironbark woodland 13 km south of Lyndhurst. On 20 March we saw one at Boree Creek, 8 km east of Carpentaria Downs. These observations represent considerable western extensions of range of the east Australian population.

Erythrotriorchis radiatus Red Goshawk

Our confirmed sightings from 38 km south-west of Chillagoe and 18 km east of Croydon represent large extensions of range of the eastern population.

Accipiter fasciatus Brown Goshawk

Specimens of *A. f. didimus* from 7 km south of Chillagoe and the Little River (50 km east of Croydon) set the southern limits of the small northern subspecies in the interior of north Queensland.

Hieraaetus morphnoides Little Eagle

An observation of this hawk (which is rare in northern Queensland) at Georgetown helps to fix its northern limit in Queensland.

Circus aeruginosus Marsh Harrier

Our single sighting of this hawk (one on 17 May at 15 km east of Karumba) was less than we expected from Storr's account.

Alectura lathami Brush Turkey

On 9 June we found a good mound in the deciduous vine thicket of the Great Basalt Wall, near Red Falls, 57 km west-north-west of Charters Towers.

Coturnix chinensis King Quail

Parties of up to three birds were flushed from the rank buffel

grass at the northern foot of the Enniskillen Range (40 km west-north-west of Tambo) on 3 and 4 March.

Irediparra gallinacea Comb-crested Jacana

The single bird observed at Cumberland Dam (20 km west of Georgetown) on 4 April was presumably a vagrant. These lily-covered waters have often been visited by Mrs H.B. Gill who never recorded the species here (G.M. Storr pers. comm.).

Geopelia humeralis Bar-shouldered Dove

On 5 May three birds were seen and one was collected in mulga on the plateau of the Gowan Range near Mt Grey (20 km east of Emmet). This is a large western extension of range for this species at this latitude.

Phaps chalcoptera Common Bronzewing

On 26 April two birds were seen, 18 km south-east of Wrotham Park or 80 km north-west of Chillagoe that was previously the northernmost Queensland locality for this pigeon.

Geophaps scripta Squatta Pigeon

The northern race *peninsulae*, characterized by reddish orbital skin, was recorded as far south as Forsayth (observation), Conjuboy (specimen) and Reedy Brook (specimen from the escarpment overlooking the Valley of Lagoons). Only 52 km further south in the Burdekin Valley (at the base of a sandstone cliff 33 km east-south-east of Greenvale) two specimens intermediate between the nominate race and *peninsulae* were collected.

Ocyphaps lophotes Crested Pigeon

Our observations near Reedy Brook and Greenvale extends its range eastwards to the upper Burdekin.

Trichoglossus haematodus Rainbow Lorikeet

Observations at Gilberton and the Warrego Range (17-26 km north of Tambo) represent considerable western extensions of range in the eastern subspecies.

Trichoglossus chlorolepidotus Scaly-breasted Lorikeet

On 3 March we observed two in the Warrego Range at 26 km north of Tambo, well to the west of the Carnarvon Range, the previous inland limit at this latitude.

Barnardius barnardi Mallee Ringneck

A specimen was collected at 26 km north of Longreach and ten birds were observed in the Gowan Range near Mt Grey. These records extend the range of the nominate race considerably to the north-west.

Platycercus adscitus Pale-headed Rosella

Specimens collected at Gilberton and 20 km east of Hughendon represent slight extensions of range to the west.

Psephotus haematogaster Blue Bonnet

On 4 March we saw two in gidya at 26 km east-north-east of Emmet; three days later we saw two at 12 km west-north-west of Emmet. These observations (between Blackall and Yaraka) are the northernmost of this parrot.

Cacatua roseicapilla Galah

Observations near Almaden, Mt Garnet and Greenvale slightly extend the eastern limits of the species in northeast Queensland.

Cacomantis variolosus Brush Cuckoo

On 18 April we collected a specimen on the Tate River (50 km south-west of Chillagoe), and on 25 April we observed two immatures at Elizabeth Creek, 5 km south-east of Wrotham Park. These records represent a slight westward extension in range of the eastern population.

Chrysococcyx lucidus Shining Bronze-cuckoo

Observations in the Croydon district at Little River and Haydon Creek represent substantial extensions of range to the west; only single birds were seen. A specimen of the sub-species *playosus* was collected near Cargoon HS on 15 March.

Centropus phasianinus Pheasant Coucal

On 1 March we observed two in a valley vegetated with lancewood scrub and eucalypt woodland in the Warrego Range 16 km north of Tambo. This record defines the inland range in central Queensland.

Ninox connivens Barking Owl

One calling at the Forty Mile Scrub at sunset and later on 30 May represents a considerable westward extension of range of the eastern population.

Apus pacificus Fork-tailed Swift

Four birds were seen on 5 March over the Gowan Range near Mt Grey, well to the west of its previous limits.

Ceyx azurea Azure Kingfisher

We collected a specimen in cajaputs overhanging a pool in the Lynd River 10 km east-south-east of Torwood. We observed a bird on the Burdekin River 23 km east-north-east of Charters Towers. Both sightings are further inland than previously recorded.

Dacelo novaeguinea Laughing Kookaburra

Observations at Wrotham Park, Torwood, Croydon, Gilberton and the Flinders River (20 km east of Hughenden) extend its range westwards in northern Queensland.

Halcyon macleayi Forest Kingfisher

We observed this species at Maitland Creek (45 km east of Croydon), The Lynd and Pentland, well to the west of its previous recorded limits.

Halcyon sancta Sacred Kingfisher

On 5 March one was seen in the Gowan Range near Mt Grey, an extension of range westwards. On 1 March a pair was breeding in the Warrego Range, 20 km north of Tambo.

Mirafra javanica Singing Bushlark

We collected this species in grassland savanna at 8 km south-east of Wrotham Park and observed it in grassland around Cargoan and Lolworth homesteads. All three localities are east of the previous limits of the western population.

Coracina maxima Ground Cuckoo-shrike

Our observations near Georgetown and Conjuboy are the northernmost for the species in Cape York Peninsula. We saw three in woodland along Wyandotte Creek, 23 km north of Conjuboy on 2 April and two in savanna woodland 28 km east of Georgetown on 20 May.

Coracina tenuirostris Cicadabird

This species extends much further west than indicated by Storr in southern Cape York Peninsula, at least in autumn. Between 26 March and 30 April we collected and observed birds of both sexes at a watercourse 20 km south-east of Wrotham Park, in deciduous vine thicket at the Forty Mile Scrub, and in open eucalypt forest (ironbark and woollybutt) on the Newcastle Range 30 km west-north-west of Einasleigh. Greensmith heard a bird in woollybutt on a sandstone plateau at Ortona.

Lalage leucomela Varied Triller

We collected this species in the deciduous vine thickets of the Forty Mile Scrub and the Great Basalt Wall (near Red Falls), both localities extending the western limits of the nominate race.

Zoothera dauma White's Thrush

On 29 May we observed one in rainforest near the dam at Mt Spec in the Paluma Range.

Petroica goodenovii Red-capped Robin

On 8 May we collected a specimen in female plumage but of indeterminate sex at Barramundi Rock Hole 50 km east of Croydon, the

northernmost locality recorded for this species in Queensland. Our northernmost observation of an adult male was on 22 May at the granite plateau with acacia scrub 15 km west-south-west of Charters Towers.

Petroica cucullata Hooded Robin

We collected a pair in paperbark *Melaleuca* sp. woodland 17 km east-south-east of Glenmore on 19 May. We observed a pair and collected a male in the scattered undershrubs of the ironbark-speargrass association 8 km north-north-east of Oasis on 2 April. Both records are well to the north of the limits given by Storr.

Microeca leucophaea Jacky Winter

An observation on 21 May of three birds near Hillgrove HS (middle Burdekin) helps to define the eastern limits of the species in northeast Queensland.

Eopsaltria australis Yellow Robin

We collected this species in the lancewood and wattle scrubs of the Burra Range (20 km east-north-east of Torrens Creek), in the wattle thickets of the Warrego Range (25 km north of Tambo) and in the lancewood and mulga scrubs of the Gowan Range (16 km east of Emmet). These localities are much further inland than those previously recorded (Ford 1979).

Colluricincla megarhyncha Little Shrike-thrush

We found this species common in the mangroves of the lower Norman, where we collected seven specimens. It was also recorded in the deciduous vine thickets of the Forty Mile Scrub and the Great Basalt Wall (near Red Falls), well to the west of the previous limits of the eastern population.

Oreoica gutturalis Crested Bellbird

On 13 June a male was observed in scrub-woodland in the Burra Range 17 km east-north-east of Torrens Creek.

Rhipidura rufifrons Rufous Fantail

On 6 and 7 April three specimens were collected in deciduous vine thicket at the Forty Mile Scrub, and on 14 April one of two birds was collected in cajaputs along Pump Creek, 2 km east of Almaden. These records extend the range of the nominate subspecies westwards.

Rhipidura fuliginosa Grey Fantail

The status is uncertain of the specimens of *R. f. alisteri* observed and collected on 28 February at Augathella and 32 km north of Charleville, and on 29 February and 1 March at 16-20 km north of Tambo. Because an adult was seen feeding two juveniles at Tambo, we suspect that they were residents (Ford 1981); so they greatly extend the breeding range of this subspecies westwards. In north Queensland migrants were not recorded until 13 April when we were 22 km south-south-east of Petford, after

which they were frequently encountered. They even outnumbered the resident *R.f. phasiana* in the mangroves of the lower Norman.

Myiagra rubecula Leaden Flycatcher

Observations and specimens extend the western limits of the nominate race in north and central Queensland to Croydon, Gilberton, the Burra Range (20 km east-north-east of Torrens Creek) and the Warrego Range (20 km north of Tambo). At the last locality a black-lored male was observed as early as 1 March.

Myiagra inquieta Restless Flycatcher

On 23 April we collected a pair in a bauhinia (*Lysiphyllum*) on a black-soil plain 12 km south-east of Wrotham Park. This is the easternmost record of the small northern subspecies *nana*.

Monarcha melanopsis Black-faced Monarch

On 6 and 7 April one bird was collected and up to four individuals were seen in the deciduous vine thickets of the Forty-Mile Scrub, a slight westward extension of range of the nominate race of southeastern Australia.

Machaerirhynchus flaviventer Boat-billed Flycatcher

On 27 May we collected a female in lantana along the Black River 33 km west of Townsville.

Pomatostomus halli Hall's Babbler

On 27 and 28 February we observed two parties in mulga at 32 km north of Charleville and collected one specimen. On 5 and 6 March we observed several parties in the gidya on the slopes of the Gowan Range near Mt Grey and in mulga on the plateau of the range. Here we collected a specimen and found a nest with two eggs 1 metre up in a mulga. Both localities represent easterly extensions of range.

Gerygone fusca Western Warbler

Birds belonging to the northern population (characterized by reduced white on the tail and generally lighter coloration) were seen or collected at 19 km and 37 km west of Blackbull, Haydon, Haydon Creek, 8 km and 34 km east of Croydon, Sisters Creek (9 km east of Georgetown) and 42 km south-west of Hughenden. On the Carpentarian lowlands between Georgetown and Normanton they were mostly in bauhinia, paperbark, wattle and deciduous scrub and sometimes in bloodwoods or river gums along creeks. At 42 km south-west of Hughenden two subadults were collected in a grove of tall *Eremophila mitchelli* on 10 March. A specimen collected in bushy paperbarks at Barramundi Rock Hole on 8 May had much white on the tail and was quite olive on the dorsum so it probably represented a southern migrant. Ford and Parker (1974) recorded this species in 1972 but did not report their observations. They saw two birds in a lone white gum in dense mulga country on 4 January at 58 km north-west of Longreach, two in dense mulga on 13 January at 8 km south of Namarva HS, and two in gidya on

10 March at 77 km west of Winton.

Gerygone palpebrosa Black-throated Warbler

Several birds were seen in deciduous vine scrub at the Great Basalt Wall (near Red Falls) and at Elizabeth and Louisa Creeks on Wrotham Park Station.

Acanthiza nana Little Thornbill

On 6 March we found it moderately common in the gidya and mulga scrubs of the Gowan Range and collected two specimens, extending its inland limits from Blackall.

Acanthiza apicalis Inland Thornbill

In March and June we found it moderately common in the lancewood and mallee scrubs of the Burra Range (21 km east-north-east of Torrens Creek) and collected three specimens, confirming observations by previous naturalists in the same area (Griffin 1974c).

Acanthiza katherina Mountain Thornbill

On 29 May we observed four birds in the rain forest near Mt Spec and collected one of them, confirming the observations of previous workers (Griffin 1974a).

Acanthiza uropygialis Chestnut-rumped Thornbill

In late February and early May we found this species fairly common in the Augathella, Tambo and Emmet districts, collecting specimens at the northern tip of the Enniskillen Range and in the Gowan Range near Mt Grey. An observation in the Warrego Range 20 km north of Tambo represents our largest extension of range eastwards.

Acanthiza reguloides Buff-rumped Thornbill

On 14 April we saw three birds and collected two in eucalypt woodland with deciduous scrub at 6 km east-south-east of Almaden, a considerable extension of range westwards from Herberton. We also observed birds in the Burra and Lolworth Ranges.

Acanthiza chrysorrhoa Yellow-rumped Thornbill

The observation of two birds at 8 km west-north-west of Charters Towers represents a slight eastward extension of range.

Sericornis frontalis White-browed Scrub Wren

Sue Hunt of Myrrlumbing reported its occurrence in the deciduous scrub of the Great Basalt Wall near Red Falls, a record representing an inland extension of range.

Sericornis brunneus Redthroat

On 6 March we saw one in bushy mulga on the plateau of the Gowan Range near Mt Grey, the easternmost locality recorded.

Sericornis sagittatus Speckled Warbler

On 6 March we observed two single birds in mulga on the plateau of the Gowan Range near Mt Grey, the westernmost locality of the species.

Malurus cyaneus Superb Fairy-wren

On 1 March we collected a male and saw several other birds in low shrubbery beneath tall eucalypts in the Warrego Range 16-20 km north of Tambo, which represents a considerable westward extension of range at this latitude.

Malurus lamberti Variegated Fairy-wren

On 9 June we collected two males in the deciduous vine thicket of the Great Basalt Wall at Red Falls, the north-easternmost locality of the western race *M. l. assimilis*. We also observed it in the sandstone gullies and on the western plateau of the Burra Range.

Zosterops lateralis Grey-breasted White-eye

On 12 June we collected a male in the Burra Range 21 km east-north-east of Torrens Creek, an inland extension of range at this latitude. The specimen was intermediate between the subspecies *westernensis* and *ramsayi*.

Lichmera indistincta Brown Honeyeater

Observations at 5 km east of Camooweal and 18 km east of Emmet represent slight inland extensions of range.

Myzomela sanguinolenta Scarlet Honeyeater

Our observations at 20 km south-east of Wrotham Park, Torwood, 45 km west-north-west of Croydon and on the high plateau of the Newcastle Range (east of Einasleigh) extend its range considerably westwards in north Queensland.

Meliphaga lewinii Lewin's Honeyeater

On 9 June we observed six birds in the microphyllous vine scrub of the Great Basalt Wall near Red Falls, thus extending its range inland in this region.

Lichenostomus chrysops Yellow-faced Honeyeater

We collected a specimen and saw four others in eucalypt forest in the Warrego Range, 21 km north of Tambo on 1-3 March. This is by far the westernmost record of this species.

Lichenostomus plumulus Grey-fronted Honeyeater

In early May we found this honeyeater common in open stunted woodland of eucalypts and deciduous trees in the Newcastle Range 20 km east of Georgetown and further west from 50 km east to 45 km north-north-west of Croydon. Just north of Croydon and in the

Newcastle Range we collected seven specimens. In June it was commonly observed in open woodland and scrub in the Burra Range and in the hilly country between Cloncurry and Camooweal.

Lichenostomus fuscus Fuscous Honeyeater

We found this species common in the sub-interior highlands of north-eastern Queensland and much further inland than indicated by Storr. Our westernmost records were at 21 km east-south-east of Torwood (a lone bird collected on 21 April at a sandstone plateau wooded with woollybutt and lancewood), 2 km south of The Lynd (1 collected on 18 March in flowering mistletoe on a river red gum on Lee Creek), 55 km south of Lyndhurst (one collected on 17 March in blackbutt woodland), and 5 km west-north-west of Cargoon (ca 30 birds seen and five collected in grey box woodland on 15-16 March).

Lichenostomus flavescens Yellow-tinted Honeyeater

This species was common in the southwest of Cape York Peninsula. Our easternmost records were at Bolwarra (when several flocks were attracted to the red-flowering grevilleas growing profusely on sandstone during our visit on 18-21 April) and at Routh Creek (20 km east of Georgetown).

Lichenostomus leucotis White-eared Honeyeater

In early March we collected three specimens in the Warrego Range 16-22 km north of Tambo, a considerable westward extension of range at this latitude. Later we were able to confirm its presence in the Burra Range 21 km east-north-east of Torrens Creek, much the northernmost locality recorded for this honeyeater (Griffin 1974b).

Lichenostomus flavus Yellow Honeyeater

Specimens collected in deciduous scrubs along creeks near Forsayth and Einasleigh represent slight southward extensions of range on Cape York Peninsula. An observation on Hann Creek at Myrrlumbing (50 km west-north-west of Charters Towers) is the westernmost for this latitude.

Lichenostomus unicolor White-gaped Honeyeater

On 24 April we collected a pair at Elizabeth Creek, 5 km south-east of Wrotham Park, the easternmost record for the western population of Cape York Peninsula.

Melithreptus albobularis White-throated Honeyeater

Observations at Forsayth and Gilberton represent slight inland extensions of range in north-eastern Queensland.

Melithreptus gularis Black-chinned Honeyeater

Our specimen from tall grey box woodland 5 km west-north-west of Cargoon and observation of six birds in lemon-scented gums at 12 km east of Reedy Spring help to define the western limits of the

nominate race in north-eastern Queensland.

Entomyzon cyanotis Blue-faced Honeyeater

On 7 March we saw two birds at a sandy rise vegetated with eucalypts (white gums and bloodwoods) and wattles 26 km north-west of Longreach.

Ramsayornis modestus Brown-backed Honeyeater

We collected a lone bird at Elizabeth Creek (5 km south-east of Wrotham Park) on 26 April. Three days earlier we had seen two birds in flowering paperbarks along a wash 20 km east-south-east of Wrotham Park. These records help to define the western limits of this honeyeater in north Queensland.

Ramsayornis fasciatus Bar-breasted Honeyeater

On 15 April we collected one of two birds in cajaputs along the Tate River at 21 km south-south-west of Almaden, the easternmost record for north-east Queensland. On 12 May Reid saw a single bird in paperbarks beside Haydon Creek at 26 km west of Blackbull, which is the latest record before winter for northern Queensland.

Flectorhyncha lanceolata Striped Honeyeater

A specimen collected in teatree scrub at Conjuboy and observations at Carpentaria Downs, 26 km south-west of Hughenden, and the Gowan Range (near Mt Grey) represent substantial westward extensions of range.

Conopophila rufogularis Rufous-throated Honeyeater

An adult and five immatures were observed at a dam 47 km south-west of Hughenden on 9 March, an inland extension of range.

Manorina melanocephala Noisy Miner

Observations in the Newcastle Range (10-33 km west of Einasleigh) and the Lolworth Range (44 km north-west of Pentland) extend the range of the northern Queensland population respectively westwards and southwards. Observations in the Warrego Range (16-26 km north of Tambo) represent a slight north-westward extension of range of the southern Queensland population.

Poephila bichenovii Double-barred Finch

A specimen was collected in mulga on the plateau of the Gowan Range near Mt Grey on 5 March, a substantial inland extension of range.

Lonchura castaneothorax Chestnut-breasted Mannikin

On 15 March we saw about 20 immatures, presumably of this finch, in a swampy area clothed with open long grass at 11 km south-south-east of Cargoon. If our identification is correct, the record would be the westernmost for the Burdekin Valley.

Passer domesticus House Sparrow

Our northernmost sighting was at Almaden on 14 April.

Oriolus flavocinctus Yellow Oriole

On 24 April we collected two of five birds at Elizabeth Creek, 5 km south-east of Wrotham Park.

Sphecotheres viridis Figbird

On 20 April we observed a pair on the Lynd River at its confluence with Pinnacle Creek, a substantial inland extension of range of the northeastern Queensland population.

Dicrurus hottentottus Spangled Drongo

During the northward migration through north Queensland this species occurs considerably further inland than indicated by Storr. Between 13 and 29 April we recorded it at the Burra Range (21 km east-north-east of Torrens Creek), the Forty Mile Scrub, 8 km east of Mt Surprise, 3 km north-west and 26 km north-north-west of Mt Garnet, 11 km south-south-east of Petford, 7 km south-south-east and 41 km north-west of Chillagoe and 5 km south-east of Wrotham Park.

Cracticus torquatus Grey Butcherbird

We found it common in the southern interior of Cape York Peninsula, recording it as far north as Torwood and Chillagoe and as far west as 23 km east of Croydon and Ortona. It was usually in lancewood scrub but at Chillagoe it inhabited deciduous scrub.

Corvus coronoides Australian Raven

We found its distribution much more extensive in the semi-arid northern Queensland highlands than indicated by Storr, observing it as far north as Wrotham Park, west to the Little River (50 km east of Croydon) and east to the upper and middle Burdekin (21 km north-west of Reedy Brook, 5 km west of Greenvale and 11 km south-east of Hillgrove).

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REFERENCES

- Ford, J. 1979. Speciation or subspeciation in the yellow robins. *Emu* 79: 103-106.
- Ford, J. 1981. Evolution, distribution and stage of speciation in the *Rhipidure fuliginosa* complex in Australia. *Emu* 81.
- Ford, J. and Parker, S.A. 1974. Distribution and taxonomy of some birds from south-western Queensland. *Emu* 74: 177-194.
- Griffin, A.C.M. 1974a. Birds of Mount Spec. *Sunbird* 5: 29-39.

- Griffin, A.C.M. 1974b. White-eared Honeyeater north of the Tropic. *Sunbird* 5: 49.
- Griffin, A.C.M. 1974c. Thornbill records from north Queensland. *Sunbird* 5: 65.
- Storr, G.M. 1973. List of Queensland Birds. *Spec. Publ. West. Aust. Mus.* (5).

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MEANDARRA ORNITHOLOGICAL FIELD STUDY UNIT

In December 1980 the Meandarra Ornithological Field Study Unit (MOFSU) was formally established as a research group of the University of Queensland, Australia.

MOFSU is active in field research mainly near Meandarra, 300 km west of Brisbane, with a major interest in aspects of the behaviour and ecology of communally breeding species.

MOFSU welcomes visitors and volunteer field assistants in its programs. From time to time students are accepted to work on field projects towards an M.Sc. or Ph.D. However, MOFSU is not in a position to support such students financially and they must obtain funding elsewhere.

For further information write to Dr Douglas D. Dow, Director, MOFSU, Department of Zoology, University of Queensland, Brisbane, Australia, 4067.

NOTES ON THE CROP CONTENTS AND LOCALITY RECORDS
OF THE MARBLED FROGMOUTH *PODARGUS OCELLATUS MARMORATUS*
GOULD FROM CAPE YORK PENINSULA

R.G. ATHERTON, P.A. MATTHEW and J.W. WINTER

Little is known of the marbled frogmouth *Podargus ocellatus marmoratus* in Australia and the only dietary record is of one bird that had been feeding on beetles (MacGillivray 1918). During a two year survey of the fauna of the McIlwraith Range area conducted by the Queensland National Parks and Wildlife Service (in prep.) two records of this bird were obtained.

One marbled frogmouth was collected (Queensland Museum O.17590) on 17 June 1979 in riverine semi-deciduous mesophyll vine forest on the Rocky River, 8 km south-west of its mouth (13°48'S, 143°28'E) at an altitude of 20-40 m. The bird was located in the forest canopy at 2300 hrs by a series of soft eerie *cooyoo cooyoo* calls. The same call was also heard (R.G.A. and P.A.M.) in notophyll vine forest in the Rocky Scrub 29 km north-east of Coen (13°44'S; 143°22'E) at an altitude of 520 m on 19 November 1978, but the bird was not seen.

The crop contents (deposited in the Queensland Museum) of specimen O.17590 consisted of entirely arthropods. The bulk of the material consisted of small hard fragments (legs, elytra, mandibles, etc.) of Coleoptera (beetles). The larger more recognisable fragments were:

Blattodea

Methana convexa (Walker) - whole adult cockroach.

Orthoptera

Gryllacrididae - one whole adult cricket-like species.

Tettigoniidae - two whole adult long horned grasshoppers.

Coleoptera

Cerambycidae - heads of two specimens of longhorn beetles.

Lepidoptera

Fragments of three large hairy moth larvae.

Arachnida

Cephalothorax of one spider.

Most of the recognisable species in the crop would be expected to occur on foliage, trunks or branches and not on the ground. (G.B. Monteith pers. comm).

It would appear the rainforest marbled frog-mouth has a similar diet to its open forest counterpart, the tawny frogmouth *Podargus strigoides* (Latham), which has been recorded as feeding on mantids, locusts, and small beetles (Gould 1865); centipedes

(Carter 1924); and insects, the diet of one bird contained many beetles (Thomson 1935). The crop contents of a Papuan frogmouth *Podargus papuensis* Quoy and Gaimard also contained a large quantity of insect remains (Thomson 1935).

ACKNOWLEDGEMENTS

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REFERENCES

- Carter, T. 1924. Birds of the Broome Hill District. *Emu* 23: 226.
 Gould, J. 1865. *Handbook to the Birds of Australia*. 1972 Edition. Melbourne: Lansdowne Press.
 MacGillivray, W. 1918. Ornithologists in North Queensland Part III. *Emu* 17: 180-212.
 Thomson, D.F. 1935. *Birds of Cape York Peninsula*. Melbourne: Government Printer.

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COMMUNAL BREEDING IN THE FIGBIRD

PETER F. WOODALL

INTRODUCTION

The Figbird *Sphecotheres viridis* is a gregarious species (Pizzey 1980) and, particularly in the north of its range, several may nest together in the same tree (North 1901-1904; Lucas & Le Souef 1911; Gill 1970). While Dow (1980) suggested that any birds showing a well developed tendency to flock all the year could be suspected of breeding communally, the Figbird was not included in his list of Australian communal breeders.

METHODS

I discovered the nest of a Figbird with three large young in the camping grounds of the Conway Range National Park in central Queensland (20°17'S, 148°47'E). The nest was continuously observed using 10 x 50 binoculars, between 1540-1715 and 0618-0703 hrs on 7th and 8th January 1981, respectively.

Several individuals were observed at the nest including one adult male (MW) with red facial skin and a displaced white outer tail feather (Fig. 1) which enabled it to be individually identified. In addition there were: adult male(s) (MP) with pale pink facial skin, adult males (MR) with red facial skin; and female(s) (F).

The adults brought small black fruit which they regurgitated and held momentarily in the bill before feeding the young (Fig. 1). This enabled a quantitative assessment of the feeding rate to be obtained. A "visit" was defined as the bird perching on the nest or on the branches immediately supporting it.

RESULTS

The greatest number of visits to the nest was made by MW and he also contributed by far the greatest quantity of food to the nestlings (Table 1). The female(s) F paid fewer visits to the nest and provided a correspondingly reduced amount of food. The male(s) MP visited the nest almost as often as MW but gave little food to the nestlings. This was partly because MW actively chased MP from the vicinity of the nest nine times, often while MP was feeding the young.

Both MW and MP sometimes brooded the nestlings after feeding them but for no more than a few minutes. MW spent 24 minutes perched 0.5-1m from the nest (compared with 10 minutes by MP). This appeared to discourage MP from approaching and it was only in the absence of MW and F that MP visited the nest.

On one occasion MP, after feeding the young, perched near the nest and then chased a Spangled Drongo *Dicrurus hottentottus* which arrived in the same tree. F was generally unmolested on visits to the nest but once MW and MP appeared to chase F as she

approached it. On another occasion MR approached the nest with fruit in its bill but was chased off by a second MR before MW returned to the nest.

Removal of faeces was performed by MW, MP and F, slightly more often by F, although samples were small.

Table 1. Activity of Figbirds during nest-watches totalling 140 minutes

Activity	Individuals (see text for details)				Total
	MW	MP	MR	F	
Total number of visits to the nest	12	10	(1)*	5	27
Number of visits when young were fed	7	4	(1)*	3	14
Number of fruit given to young	34	9	0	15	58
Number of visits when faeces were removed	2	1	0	3	6

* MR was chased from the vicinity of the nest before feeding of young could take place (see text), so this was not a "visit" in the strict sense.

DISCUSSION

The aggressive behaviour shown by MW to MP, an attendant, is not surprising. Dow (1977) reported that aggression was common in Noisy Miners *Manorina melanocephala* when several males brought food to a nest at the same time.

Chapman (1979) suggested that individuals could vary the colour of the eye patch, presumably according to mood. MW always had red facial skin, but it is possible that MP was one of the individuals referred to as MR.

The short time available for observation and the lack of more individually marked birds limit the conclusions that can be drawn from the results but the nestlings were fed by at least three individuals of which MW provided over 50% of the food. The lack of previous observations on communal breeding in Figbirds suggests that this species may be an *opportunistic communal breeder* (Dow 1980). Is this feature more common in the northern parts of its range, where loose colonies of nests are found? Clearly further detailed observations are needed to clarify the situation in this species.



Figure 1. An adult male Figbird (MW), identified by a twisted outer tail feather, feeding small black fruit to three nestlings

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REFERENCES

- Chapman, G., 1979. Figbird. In *Complete Book of Australian Birds*. (H.J. Frith consul. ed.) p. 548. Sydney: Readers Digest.
- Dow, D.D., 1977. Reproductive behaviour of the Noisy Miner, a communally breeding honeyeater. *Living Bird* 16: 163-185 (Publ. 1978).
- Dow, D.D., 1980. Communally breeding Australian birds with an analysis of distribution and environmental factors. *Emu* 80: 121-140.
- Gill, H.B., 1970. Birds of Innisfail and hinterland. *Emu* 70: 105-116.
- Lucas, A.H.S. and Le Souef, W.H.D., 1911. *The birds of Australia*. p. 409. Melbourne: Whitcombe & Tombs.
- North, A.J., 1901-1904. *Nests and eggs of birds found breeding in Australia and Tasmania*. Sydney: Australian Museum.
- Pizzey, G. 1980. *A field guide to the birds of Australia*. Sydney: Collins.

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ARBOREAL FORAGING BY A STRAW NECKED IBIS
THRESKIORNIS SPINICOLLIS

A. HAFFENDEN

The Straw-necked Ibis is considered to be a terrestrial and aquatic feeder, using its beak to explore water and probe mud and soil to obtain insects and other animals. It will also take surface animals, with prey ranging from small vertebrates to ants (Carrick 1959, MacDonald 1973). Although it is well known that this species roosts in trees, I know of no report of this ibis foraging in trees.

One afternoon in July 1979 at Pallarenda, Townsville, five birds were seen perching 10m above the ground in a dead tree, after foraging on the lawn below. One bird was observed probing into cracks and under the bark of the branch on which it stood, occasionally dislodging pieces of bark with a sideways head movement. This continued for 2 to 3 minutes, as the area within reach of the bird was searched. The bird was clearly not beak cleaning, and although no items were seen to be secured or swallowed, the probing activity was indistinguishable from earlier feeding on the ground.

REFERENCES

- Carrick, R., 1959. The food and feeding habits of the Straw-necked Ibis *Threskiornis spinicollis* (Jameson), and the White Ibis *T. molucca* (Curvier), in Australia. *CSIRO Wildl Res.* 4: 69-92.
MacDonald, J.D., 1973. *Birds of Australia*. Sydney: Reed.
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