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## AVIFAUNA OF THE ROCKHAMPTON AREA, QUEENSLAND

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### SUMMARY

From February 1973 to October 1974 258 species of birds were recorded by the author during field observations in the Rockhampton area. A further 71 species, recorded by others in both recent and historical times, are listed making 329 species in all.

### A. INTRODUCTION

The area under observation was centred at Rockhampton, extending north to Byfield, and south to the mouth of the Fitzroy River. From the eastern limits at Keppel Bay the area stretched westwards about 80 kilometres to give a total area of approximately 10,500 kilometres square (Figure 1).

Notes are included on local history, climate, vegetation, and a breakdown of bird habitats is given. An attempt has been made to analyze the habitat preferences of each species. Ten habitat types were recognized and records kept of the species frequenting them. Breeding, where known, is given in the text.

### BRIEF HISTORY

Initially the area was studied during voyages in the early 19th century (e.g. Robert Brown in the *Investigator*, 1802), but the information gained was sparse. The next period of note was the latter half of that century when E.P. Ramsay (1878), Kendal Broadbent (1888), and Karl Lumholtz (1889), visited the region. In the following thirty years the only significant information was short notes and references published by A.J. Campbell (1900), A.J. North (1901-1914) and members of the Barnard family (Barnard, 1913).

In 1924 the Royal Australasian Ornithologists Union held their annual congress and campout in the area and made notable additions to local knowledge. At the same period, W.B. Alexander (unpublished MSS) made many notes from the Westwood area. Recently H.A. Nix (1972) made detailed observations in the Shoalwater Bay area, which adjoins the present study area to the north.

### B. METHOD AND APPROACH

The source of the specific information given is the author's field notes, made from October 1970, to November 1975. The main period of observation was from February 1973 to October 1974, while residing in the area. Other major sources of information were the reports of Broadbent (1888) and Wolstenholme (1925).

Apart from determining the distribution of the avifauna, a classification of the major habitat types was made by reference to Specht (1970), and identification of the local plant communities. The abundance of each species was arrived at as the result of regular two-hour periods of observation in each of the main habitats.

#### C. ENVIRONMENT

The area is mainly low flood-plain and coastal plain, with intrusions of low plateaux and small monoliths in the west, centre and north-east. To the north is an area of undulating hills. There are numerous islands in Keppel Bay.

The Fitzroy River and its tributaries drain the northern, western and central sections of the area. In its middle reaches around Rockhampton it forms a flood-plain with many lagoons and swamps, e.g. Gracemere Lagoon and Pink Lily Lagoon. There are several swamps on the coastal plain, some of which are brackish, e.g. Corio Bay area, Windmill Plains and Emu Park.

Settlement in central Queensland was stimulated primarily because of the excellent conditions for rearing cattle. Many large properties were established and the large areas of cleared grazing land have created a major habitat.

#### D. CLIMATE

East-central Queensland enjoys a warm dry winter with winds characterized by the south-east trades. Summer is influenced by monsoons which bring heavy rain and flooding. The area is in the cyclone belt, but records of cyclone damage to vegetation are few. The coastal plain, especially about Byfield, has a higher rainfall than the river flood-plain. Further west at Gogango, Kalapa, and Westwood the area has a much lower rainfall, influencing the vegetation accordingly.

#### E. VEGETATION

Vegetation types detailed by Specht (1970) were adapted to recognize ten main habitats. Further subdivision was not attempted because bird-life appeared to show little variation in closely allied habitats and limited time was available for observation. The following habitats were recognized:

- (a) Ocean: Keppel Bay, including inshore and offshore waters, and the harbours.
- (b) Tidal margins and shore: All areas of estuarine mudflat, beach, and headland. Although of limited area, this environment provides the requirements for many Charadriiformes.
- (c) Mangroves: Formed in sandy and muddy areas with tidal influences. Occurring mainly at Corio Bay, Coolamon Creek, Joskeleigh and in the Fitzroy estuary. Common mangrove trees include *Aegiceras* sp. and *Avicennia marina* var. *australasica*.
- (d) Wetland: All areas of fresh and brackish waters, creeks, rivers, swamps, and lagoons, and including the extensive flooded areas which occur almost annually.

- (e) Forest: Areas where the tree trunks are greater in height than the depth of the flattened crown. Examples of this occurred about Byfield, the Berserker Ranges, and Cawarral. Included are the rainforests and extensive pine plantations at Bowenia and Byfield. Principal trees include turpentine, *Syncarpia glomulifera*; pink bloodwood, *Eucalyptus intermedia*; stringybark, *E. acmenioides*; hoop pine, *Araucaria cunninghamii*; she-oaks, *Casuarina* spp.; and pines, *Pinus* spp.
- (f) Woodland: Characterized by trees with trunks usually shorter than the rounded crowns. Examples were found near Mount Morgan, the Berserker Ranges and Rossmoya. Principal trees included poplar gum, *Eucalyptus alba*; bumble box, *E. populnea*; ironbark, *E. drepanophylla*; tea tree, *Leptospermum* spp.; and some forms of brigalow, *Acacia harpophylla*.
- (g) Scrubland: Scrubs two to eight metres tall, occurring in areas of infrequent swampy nature and continuous dampness. Examples of scrubs are on the coastal plain about Yeppoon and along the Fitzroy River, e.g. the Town Commonage. Typical trees include paperbark, *Melaleuca* spp.; mimosa, *Acacia farnesiana*; honeysuckle banksia, *Banksia integrifolia*; and black she-oak, *Casuarina littoralis*.
- (h) Heathland: Confined to infertile soils in areas of high rainfall. Examples of the habitat can be found at Byfield and Emu Park. Typical vegetation includes heath, *Petalostigma pubescens*, beach she-oak, *Casuarina equisetifolia*, banksias, *Banksia* spp. and grevillea, *Grevillea banksii*.
- (i) Grassland: Grasses of short to medium height, existing in a tussock or as massed individual plants. Typical areas include Ridglands, Kalapa and Gogango. Species included lemon-scented gum, *E. citriodora*; ghost gum, *E. papuana*; bumble box, *E. populnea*; and speargrasses, *Heteropogon* spp..
- (j) Town: Areas of variable vegetation, gardens with exotic trees and shrubs, and open areas of mown grasses. The concentrations include Rockhampton, Gracemere, Yeppoon and Mount Morgan. Typical trees include parrot tree, *Schottia brachypetala*, figs, *Ficus* spp., grevilleas, *Grevillea* spp., and bottlebrushes, *Callistemon* spp..

## F. LIST OF SPECIES

An abridged record of the birds follows. Where notes have been incorporated from other major published data the author's initials are included in parentheses. Habitat preferences of each species are listed in an abbreviated form. The following abbreviations have been used.

## Author:

WBA	-	W.B. Alexander
EDB	-	E.D. Barnard
KB	-	Kendal Broadbent
AJC	-	A.J. Campbell
RG	-	Roscoe Gannon
HAN	-	H.A. Nix
GMS	-	G.M. Storr
HW	-	Harry Wolstenholme

## Habitat:

- 1 Fo - Forest
- 2 Gr - Grassland
- 3 He - Heathland
- 4 Mn - Mangrove
- 5 Oc - Ocean
- 6 Sc - Scrubland
- 7 Ts - Tidal flat and shore
- 8 Tn - Town
- 9 Ww - Wetland
- 10 Wd - Woodland

The following definitions of status have been used:

## Common

Many can be located throughout the year.

## Uncommon

At least one can be located, usually with little effort, throughout the year.

## Rare

An intensive search may be necessary to locate individuals.

## Seasonal resident

Common, uncommon or rare (as above); summer, winter or passage migrants; may be breeding or non-breeding.

## Transient

Seen only occasionally for short periods; sometimes over several years, but mostly rare and unpredictable in occurrence.

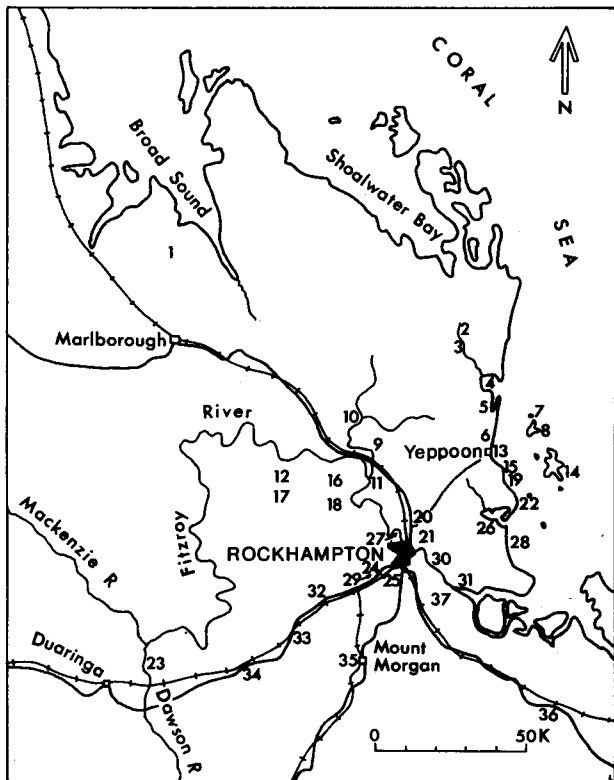
## Vagrant

Unexpected visitors; probably sighted once or at most twice.

## SPECIES LIST

(Doubtful records marked with asterisk)

- Emu *Dromaius novaehollandiae* Fo Wd He Gr Uncommon breeding species; varies from breeding pairs from June to July, to small flocks through the remainder of the year. Local residents maintain numbers are declining.
- Great Crested Grebe *Podiceps cristatus* Ww Uncommon seasonal resident; seen individually and in small numbers; several observed in nuptial dress during spring.
- Hoary-headed Grebe *Poliocephalus poliocephalus* Ww Vagrant; recorded at Fitzroy Vale in October 1924 (HW).
- Australasian Grebe *Tachybaptus novaehollandiae* Ww Common breeding bird; observed individually and in pairs, and in large flocks from May to August.
- Wandering Albatross *Diomedea exulans* Oc Winter vagrant; there are several references to birds seen in the area (i.e. HAN, GMS).



- Northern Giant-Petrel *Macronectes halli* Oc Vagrant; an immature bird was photographed at Emu Park, date unknown (Frauca, 1974, p. 100).
- Wedge-tailed Shearwater *Puffinus pacificus* Oc Common and breeding; recorded in small numbers throughout the year on Keppel Bay.
- Sooty Shearwater *Puffinus griseus* Oc Vagrant; one sight record of five near North Keppel Island in June 1974 (Longmore, 1974).
- Australian Pelican *Pelecanus conspicillatus* Oc Ts Ww Common; numbers fluctuate through local movement. Observed singly, in pairs and in flocks. There is an unconfirmed report of a breeding colony at Broad Sound, north of the study area.
- Australasian Gannet *Morus serrator* Oc Seasonal resident; recorded during July 1974 (D. Gravatt, pers. comm.) and October 1975 (A.E.F. Rogers, pers. comm.), in small numbers off the coast.
- Masked Booby *Sula dactylatra* Oc Rare transient; sighted on Keppel Bay. Usually seen individually some distance from the coast. In November 1975 a single bird was seen to take food in the surf at Kemp Beach.
- Brown Booby *Sula leucogaster* Oc Common; local movements noted, singly and in pairs. Often seen in Rosslyn Bay Harbour.
- Darter *Anhinga melanogaster* Ww Common; local movement observed, seen singly and in small flocks. Mainly on lagoons and along creeks, sometimes in trees up to 300 metres from water.
- Great Cormorant *Phalacrocorax carbo* Oc Mn Ww Common; usually seen as individuals or in small numbers; birds in nuptial dress noted although there are no reports of local nesting.
- Pied Cormorant *Phalacrocorax varius* Oc Ww Common with local movement; birds recorded on the mainland wetlands are probably some of the marine population moving inland for short periods. Observed individually and in flocks of up to 50.
- Little Black Cormorant *Phalacrocorax sulcirostris* Oc Mn Ww Common, breeding, with local movement; sighted singly and in large flocks on the larger lagoons. A small breeding colony of about 40 pairs located in June 1974 at Yeppen Yeppen Lagoon.
- Little Pied Cormorant *Phalacrocorax melanoleucos* Oc Ts Ww Common breeding bird; usually in pairs and small flocks. Occasionally perched in trees some distance from water. There are small breeding groups on Murray Lagoon, where four occupied nests were found in two trees in August and October 1974.
- Least Frigatebird *Fregata ariel* Oc Vagrant; recorded in Keppel Bay in October 1924 (HW).
- Pacific Heron *Ardea pacifica* Ww Wd Gr Tn Common breeding bird; single birds to small flocks frequently seen.
- White-faced Heron *Ardea novaehollandiae* Ts Mn Ww Gr Tn Common breeding resident; singly and in small flocks.
- Cattle Egret *Ardeola ibis* Ww Gr Rare seasonal resident; recorded during

spring and autumn; a flock of about 40 observed at Rossmoya in July 1974. Single birds to flocks of over 200 noted; one bird in nuptial dress seen at Rossmoya in November 1974.

Great Egret *Egretta alba* Ts Mn Ww Tn Common breeding bird; observed singly and in small flocks. May breed in mangroves at the mouth of the Fitzroy River (AJC).

Little Egret *Egretta garzetta* Ts Ww Common breeding resident; individuals to groups of five observed. Birds in nuptial plumes noted in October 1974.

Intermediate Egret *Egretta intermedia* Ts Ww Gr Tn Common breeding resident; flocks up to 80 often seen. Birds with nuptial plumes recorded in May and December 1973 and October 1974.

Eastern Reef Egret *Egretta sacra* Oc Ts Mn Common; presumably birds breeding on the Capricorn Group visit the area. Individuals to small flocks of both white and grey forms recorded.

Striated Heron *Butorides striatus* Ts Mn Common; individuals sighted along mangrove creeks.

Rufous Night Heron *Nycticorax caledonicus* Mn Ww Tn Uncommon seasonal resident; individuals and flocks noted at roost in thick vegetation and once in flight. A heronry once existed at Gracemere (AJC). It is notable that no immature birds were seen during the current survey.

Black Bittern *Dupetor flavicollis* Ww Uncommon seasonal resident; arriving in September and departing in March. Individuals and pairs recorded in wetland bordered by thick vegetation.

Black-necked Stork *Xenorhynchus asiaticus* Ts Ww Gr Common breeding bird; seen singly and in groups of up to four. One of three adult birds seen at Farnborough in November 1973, was almost fully black. A pair nested for many years at Gracemere, but has not done so since the late 1960's.

Glossy Ibis *Plegadis falcinellus* Ww Rare spring nomad; seen as singles to small flocks, mostly on the Fitzroy River flood-plain.

Sacred Ibis *Threskiornis aethiopica* Ts Mn Ww Tn Common breeding resident; there is a sharp decline in numbers from October to February. Usually noted as single birds and large flocks. Breeding recorded from north of the area at Torilla (EDB).

Straw-necked Ibis *Threskiornis spinicollis* Ts Mn Ww Gr Tn Common breeding resident; there is a decrease in numbers from October to February. As individuals or flocks and occasional single birds noted in house yards about towns. Juveniles were noted in March and October 1974. Breeding recorded from north of the area at Torilla (EDB).

Royal Spoonbill *Platalea regia* Ts Ww Common breeding resident; individuals to flocks of 50 birds recorded. Birds in nuptial plumage noted in December 1973; breeding colony located at Torilla 1913 (EDB).

Yellow-billed Spoonbill *Platalea flavipes* Ww Uncommon seasonal resident; absent from December to February. As single birds to groups of five.

- Magpie Goose *Anserana semipalmata* Ww Uncommon breeding resident; single birds to flocks of 100+ (G. Roberts, pers. comm.). An account exists of large numbers in the Fitzroy Vale swamps in 1924 (HW).
- Wandering Whistling-Duck *Dendrocygna arcuata* Ww Uncommon transient; mainly recorded on the Fitzroy River flood-plain. Observed as pairs and flocks of about 100 birds.
- Plumed Whistling-Duck *Dendrocygna eytoni* Ts Ww Wd Gr Tn Common breeding resident; individuals to large flocks noted, breeding recorded at Torilla (EDB) and at Parkhurst in December 1973 when downy young were seen.
- Black Swan *Cygnus atratus* Ww Common breeding resident; pairs and large flocks noted on the larger lagoons.
- Freckled Duck *Stictonetta naevosa* Ww Vagrant; there is an undated record of a bird shot many years ago at Broadmeadows (local residents). One bird seen near Gracemere in March 1972 (K.A. Ireland), and at Bessie Sue Lagoon in September 1973 (A.R. McGill pers. comm.).
- Radjah Shelduck *Tadorna radjah* Ts Ww Rare breeding seasonal resident; individuals and small groups of up to four seen, usually on the coastal plains from Corio Bay to Joskeleigh and on the lagoons of the Fitzroy River flood-plain, also at Rossmoya.
- Pacific Black Duck *Anas superciliosa* Oc Ts Ww Gr Tn Common breeding resident; individuals and large flocks observed. Records from Keppel Bay indicate movements between the mainland and the islands.
- Grey Teal *Anas gibberifrons* Ts Ww Common breeding resident; individuals and large flocks recorded with a winter movement; from October to February numbers frequent the flooded coastal mudflats.
- Chestnut Teal *Anas castanea* Ww Rare vagrant; one record of a female at the Woolwash Lagoon on 17 March 1974.
- Australasian Shoveller *Anas rhynchotis* Ww Vagrant; recorded nesting in March 1913 at Torilla (EDB). Also sighted in August 1959 near Rockhampton (Wheeler 1959).
- Pink-eared Duck *Malacorhynchus membranaceus* Ww Rare; one record of 13 birds between Rockhampton and Gracemere in August 1955 (Wheeler 1955).
- Hardhead *Aythya australis* Ww Common breeding resident; single and flocks on the larger lagoons and swamps. Each year, during October, numbers increase to flocks of hundreds.
- Maned Duck *Chenonetta jubata* Ww Gr Common breeding resident; seen as individuals and in large flocks. Downy young were seen on Gracemere Lagoon in March 1974.
- Cotton Pygmy-Goose *Nettapus coromandelianus* Ww Common breeding resident; numbers decrease from February to April. Downy young were noted at South Yaamba on 10 November 1973. Sighted as pairs and small flocks.
- Green Pygmy-Goose *Nettapus pulchellus* Ww Uncommon seasonal resident; first recorded in September 1974 and remained in small numbers and pairs.



- Musk Duck *Biziura lobata* Ww Rare vagrant; recorded in 1924 (HW) on Murray Lagoon; another record of a bird collected from a fish net in 1874 (Anonymous 1874). No recent records.
- Osprey *Pandion haliaetus* Oc Ts Mn Ww Uncommon breeding resident; mainly coastal, a few sightings along the Fitzroy River in its upper reaches. Nest sites located on many islands in the Keppel Group, e.g. four occupied nests on Great Keppel in June 1973.
- Black-shouldered Kite *Elanus notatus* Wd He Gr Tn Common breeding resident; absent from the area in January and February; usually noted as singles and pairs.
- Pacific Baza *Aviceda suberistata* Fo Wd Sc Gr Tn Uncommon breeding resident; absent from the area from January to June 1974; seen individually and in groups of three or four.
- Black Kite *Milvus migrans* Ww Wd Gr Tn Uncommon seasonal resident; recorded from February to October as individuals and small flocks, mainly about towns.
- Square-tailed Kite *Lophoictinia isura* Wd Gr Vagrant; recorded from Black Gin Creek in 1888 (KB). Recently observed during August to October 1974, when a lone bird frequented an area about Parkhurst.
- Brahminy Kite *Haliastur indus* Oc Ts Mn Ww Wd Sc Common breeding resident; recorded as individuals and pairs on the coast, and occasionally on the Fitzroy River flood-plain. Juveniles were seen at Farnborough in February 1972.
- Whistling Kite *Haliastur sphenurus* Oc Ts Mn Ww Fo Wd Sc Gr Tn Common breeding resident; heathland was the only habitat in which the bird was not recorded. Noted singly, occasionally in small flocks. There was a double breeding season; nesting was recorded in May-June and September in both 1973 and 1974. Nests were often located close to one another, allowing several to be observed from one point.
- Brown Goshawk *Accipiter fasciatus* Fo Wd Gr Tn Common breeding resident; with a decrease in numbers from December to February. Noted as single birds and occasional pairs.
- Collared Sparrowhawk *Accipiter cirrhocephalus* Fo Wd Tn Uncommon breeding resident; recorded only as individual birds. Recorded as common in 1888 (KB).
- Grey Goshawk *Accipiter novaehollandiae* Ts Fo Wd Tn Uncommon breeding resident; numbers increase slightly during July and August. Seen as individuals.
- Red Goshawk *Erythrotriorchis radiatus* Fo Gr Rare breeding resident; recorded several times from the Duaringa area by the Barnard family; present near Rockhampton in 1955 (Wheeler 1955) and in adjoining Shoalwater Bay in 1972 (HAN) where it was nesting. The sightings were of individuals and pairs.
- White-bellied Sea-Eagle *Haliaeetus leucogaster* Oc Ts Ww Fo Wd Tn Uncommon breeding resident; most sightings from the coast; occasional sightings along the Fitzroy River, usually of single birds.

- Wedge-tailed Eagle *Aquila audax* Wd Gr Common breeding resident; there is a decrease in numbers at the commencement of the rainy season. Usually sighted as individuals and in pairs.
- Little Eagle *Hieraetus morphnoides* Wd Sc Uncommon seasonal resident; occurring from June to October. Singles and pairs in both colour phases recorded.
- Spotted Harrier *Circus assimilis* Ww Gr Vagrant; two records only, a single bird in May 1970 (Bristowe, Laybourne-Smith & Lendon, 1972), and an adult with a juvenile in May 1974, both near Bessie Sue Lagoon.
- Marsh Harrier *Circus aeruginosus* Ww Gr Common nomad; records of single birds and occasional pairs. Observed over swamps and lagoons with infrequent movements into grassland.
- Black Falcon *Falco subniger* Gr Vagrant; recorded in 1888 near Louisa Creek (KB), and in 1924 at Fitzroy Vale (HW).
- Peregrine Falcon *Falco peregrinus* Ts Mn Ww Fo Gr Tn Uncommon seasonal resident; several single birds have been recorded passing through the area.
- Australian Hobby *Falco longipennis* Ww Gr Tn Uncommon seasonal resident; single birds seen frequently through the years, apparently absent in January and February each year.
- Brown Falcon *Falco berigora* Ww Wd Gr Common breeding resident; decreases in numbers from November to February. Seen singly and in pairs.
- Australian Kestrel *Falco senchroides* Ts Mn Ww Fo Wd He Gr Tn Common resident; seen singly and in pairs. Mating flights observed but nesting not recorded. Often sighted on the Keppel Group.
- Orange-footed Scrub Fowl *Megapodius reinwardt* Sc Rare breeding resident; recorded in 1924 near Yeppoon (HW). Recent records refer to occasional pairs in the same area during 1969. Found nesting near Shoalwater Bay in 1972 (HAN).
- Australian Brush Turkey *Alectura lathami* Fo Sc Common breeding resident; recorded individually and in small flocks. Prefers thick undergrowth and mixes occasionally with domestic fowl, *Gallus gallus*, in farmyards.
- Stubble Quail *Coturnix novaeseelandiae* Gr Vagrant; one record of several birds in tall grasses at Rossmoya on 8 February 1972.
- Swamp Quail *Coturnix ypsilophora* Ww Wd He Gr Common breeding resident; there is a decrease in numbers during April and May. Seen singly and in flocks; commonly observed feeding along roadways.
- King Quail *Coturnix chinensis* Gr Vagrant; the only recent record is of a female flushed at Bessie Sue Lagoon on 23 June 1974.
- Red-backed Button-quail *Turnix maculosa* Gr Vagrant; recorded from the area in 1888 (KB).
- Painted Button-quail *Turnix varia* Wd Uncommon seasonal resident; usually

seen singly and in small flocks, recorded from August to October.

Black-breasted Button-quail *Turnix melanogaster* Fo Status uncertain; a series of skins collected locally in 1865 (North 1901).

Little Button-quail *Turnix velox* Gr Vagrant; status uncertain, reported in 1924 from Byfield (HW), and in Shoalwater Bay area in 1972 (HAN).

Red-chested Button-quail *Turnix pyrrhotorax* Gr Vagrant; a pair was sighted between Rockhampton and Woolwash Lagoon in September 1955 (Wheeler 1955).

Buff-banded Rail *Rallus philippensis* Ts Ww Gr Common breeding resident; observed singly and in pairs; nocturnal feeding observed.

Baillon's Crake *Porzana pusilla* Ww Vagrant; a single bird at Rossmoya in October 1974; some records from last century (Ramsay, 1878).

Spotless Crake *Porzana tabuensis* Ww Vagrant; there are early references to this bird being taken near Rockhampton (Ramsay, 1878); not observed during the present study.

\*Bush-hen *Gallinula olivacea* Ww Vagrant; a single bird was observed near the Botanical Gardens, Rockhampton, in September 1967 (A.R. McGill pers. comm.); recorded from the Shoalwater Bay area in 1972 (HAN).

Black-tailed Native-hen *Gallinula ventralis* Ww Vagrant; mentioned from the area in 1958 (Wheeler, 1958); also reported from Shoalwater Bay area in 1972 (HAN).

Dusky Moorhen *Gallinula tenebrosa* Ww Common breeding resident; observed individually and in large flocks.

Purple Swamphen *Porphyrio porphyrio* Ww Common breeding resident; sighted as individuals and small flocks; on the lagoons of the Fitzroy River flood-plain; infrequently sighted on coastal lagoons.

Eurasian Coot *Fulica atra* Ww Common breeding resident; with local movements during the monsoon period (November - February). Observed in pairs and flocks, on open water with a few sightings on patches of water hyacinth, *Eichhornia crassipes*.

Brolga *Grus rubicundus* Ww Gr Tn Common breeding resident; disperse and decrease in summer, although flocks of 150+ are recorded. Individuals and flocks on most areas of flood-plain and about Rossmoya. A breeding pair on a nest 16 kilometres south-east of Rockhampton was located in September 1973; also nested near Rockhampton in 1924 (HW).

Australian Bustard *Ardeotis australis* Gr Uncommon breeding resident; recently becoming numerous in the western section of the study area. Observed individually and in small flocks.

Comb-crested Jacana *Irediparra gallinacea* Ww Common breeding resident; numbers decreasing through the summer months. Observed singly and in small flocks; juveniles constituting half the numbers observed.

Bush Thick-knee *Burhinus magnirostris* Fo Wd Sc Gr Tn Common breeding resident; decrease in number during the summer monsoons. Recorded singly and in small flocks of five birds.

- Beach Thick-knee *Burhinus neglectus* Ts Uncommon seasonal resident; occurring singly or in pairs, with occasional groups of four. Most frequently seen in the Joskeleigh area.
- Pied Oystercatcher *Haematopus longirostris* Ts Common breeding resident; usually seen singly and in pairs; small groups of up to six have been noted. This species is the commoner of the two oystercatchers on the mainland.
- Sooty Oystercatcher *Haematopus fuliginosus* Ts Common breeding resident; individuals and pairs frequently recorded on the islands. Rarer on the mainland, although small groups are recorded occasionally.
- Masked Lapwing *Vanellus miles miles* Ww Wd Vagrant; few records of occasional birds in September - October, January, and March.
- Spur-winged Lapwing *Vanellus miles novaehollandiae* Ts Ww Fo Wd Gr Tn Common breeding resident; observed singly and in flocks of up to 20 birds. No large wintering flocks noted as have been recorded for the southern populations.
- Banded Lapwing *Vanellus tricolor* Ww Gr Uncommon vagrant; recorded during August and September, in the western section of the study area and near Ridgeland. Observed in pairs and scattered flocks.
- Grey Plover *Pluvialis squatarola* Ts Vagrant; one record of a single bird seen at Joskeleigh on 21 October 1973.
- Lesser Golden Plover *Pluvialis dominica* Ts Ww Uncommon summer migrant; arriving in September and departing in February. Seen singly and in flocks of up to 20 birds. Not easily located in the area.
- Red-kneed Dotterel *Erythrogonys cinctus* Ww Vagrant; one recorded from the Botanical Gardens, Rockhampton, in December 1974 (B.W. Finch pers. comm.), one at Farnborough, March 1975 (G. Roberts pers. comm.), and a third at Rossmoya in October 1975 (A.E.F. Rogers pers. comm.).
- Mongolian Plover *Charadrius mongolus* Ts Common summer migrant; frequently winters. Noted singly and in flocks of up to 30 birds, gathering prior to northward migration and on return in spring.
- Large Sand Plover *Charadrius leschenaultii* Ts Uncommon summer migrant; recorded sporadically throughout the year. Numbers vary from individuals to groups of four or five. Often associates with Mongolian plover.
- Red-capped Plover *Charadrius ruficapillus* Ts Ww Common breeding resident; observed singly and in small flocks. Some records of large flocks from the Joskeleigh area tidal flats.
- Black-fronted Plover *Charadrius melanops* Ww Common breeding resident; numbers much reduced from November to February.
- Black-winged Stilt *Himantopus himantopus* Ts Ww Uncommon breeding resident; singly and in pairs or flocks, mainly on the Fitzroy River floodplain.
- Red-necked Avocet *Recurvirostra novaehollandiae* Ww Rare vagrant; 20

recorded at Gracemere Lagoon in February 1958 (Wheeler, 1958), and a flock of about six was seen at the same locality during the summer of 1970-71 (K.A. Ireland pers. comm.).

Ruddy Turnstone *Arenaria interpres* Ts Uncommon summer migrant; generally frequenting the islands in small flocks. Mainland records are few, birds favouring the rocky foreshores.

Eastern Curlew *Numenius madagascariensis* Ts Common summer migrant; some birds remain during the winter. Large scattered flocks are often seen in the summer.

Whimbrel *Numenius phaeopus* Ts Uncommon summer migrant; recorded sporadically from August to March. Normally seen singly, though occasionally in small flocks.

Grey-tailed Tattler *Tringa brevipes* Ts Common summer migrant; several wintering records. Seen singly and in flocks of up to 20 birds; prefers mud-lined edges of mangrove creeks.

Wandering Tattler *Tringa incana* Ts Vagrant; one record of a single bird on a rocky headland near Yeppoon, March, 1975 (G. Roberts pers. comm.).

Common Sandpiper *Tringa hypoleucos* Ts Uncommon summer migrant; seen in small numbers, mainly feeding on the islands or along the edges of mangrove creeks.

Greenshank *Tringa nebularia* Ts Ww Common summer migrant; found on the tidal flats, in flocks of up to 50 birds.

Marsh Sandpiper *Tringa stagnatilis* Ts Ww Vagrant; a small flock was noted on the mainland in October 1975 (A.E.F. Rogers pers. comm.).

Terek Sandpiper *Tringa terek* Ts Uncommon summer migrant; one wintering record; singly and in flocks on tidal flats mainly about Joskeleigh.

Latham's Snipe *Gallinago hardwickii* Ww A spring and summer passage migrant; arriving in August and recorded until December; in groups of up to five birds.

Bar-tailed Godwit *Limosa lapponica* Ts Ww Common summer migrant; large flocks in summer, frequently seen in winter in small numbers. Movements have been noted from the mainland to the off-shore islands. Once recorded feeding on Gracemere Lagoon.

Red Knot *Calidris canutus* Ts Common summer migrant; widely scattered on the coastal tidal flats.

Great Knot *Calidris tenuirostris* Ts Uncommon summer migrant; mainly single birds; however, a flock of at least 150 seen at Joskeleigh on 21 October 1975 (A.E.F. Rogers pers. comm.).

Sharp-tailed Sandpiper *Calidris acuminata* Ts Ww Common summer migrant; arriving in August and departing in May. Usually in small flocks on the swamps and tidal flats.

Red-necked Stint *Calidris ruficollis* Ts Ww Common summer migrant; a small number remain during the winter; in pairs and flocks of over 200 birds.

- Curlew Sandpiper *Calidris ferruginea* Ts Ww Common summer migrant; in small to large flocks along the coast.
- Sanderling *Calidris alba* Ts Rare vagrant; one record of about 20 birds on the beach at Farnborough in March 1975 (G. Roberts pers. comm.).
- Broad-billed Sandpiper *Limicola falcinellus* Ts Rare vagrant; one record of a single bird seen during December 1974 at Emu Park (B.W. Finch pers. comm.).
- Silver Gull *Larus novaehollandiae* Oc Ts Ww Common resident; in flocks of up to 50 birds. Juvenile birds often noted in summer, apparently from the breeding colonies on the Capricorns and other local coral cays, no local nesting known.
- Whiskered Tern *Chlidonias hybrida* Ww Common nomad; recorded in pairs and flocks of from four to 120+, usually on the larger lagoons of the Fitzroy River flood-plain. Often seen in nuptial plumage but local breeding is unknown.
- White-winged Tern *Chlidonias leucoptera* Ww Vagrant; two records, both from Murray Lagoon in December 1974 and 1977, and both of groups of more than 20 birds (B.W. Finch and T. and L. Lindsey pers. comm.).
- Gull-billed Tern *Gelochelidon nilotica* Ts Ww Common winter resident; arriving in May and departing in September. Occasionally observed in summer, usually singly. In winter groups of up to eight birds in both breeding and eclipse plumage.
- Caspian Tern *Hydroprogne caspia* Oc Ts Ww Common resident; usually singly, in scattered pairs, or small flocks. Mainly noted along the beach-fronts, occasionally on lagoons near Rockhampton.
- Common Tern *Sterna hirundo* Ts Vagrant; one record of a bird observed with a flock of Little Terns on Great Keppel on 14 February 1972.
- White-fronted Tern *Sterna striata* Ts Rare vagrant; a specimen in the National Museum of Victoria is the only local record (Hindwood 1945).
- Little Tern *Sterna albifrons* Ts Ww Common resident; summer migrants increase from October to March. Mainly on the coast, less often on Fitzroy River and lagoons.
- Crested Tern *Sterna bergii* Oc Ts Common breeding resident; singly and in small flocks of up to 40 birds. Breeding plumage noted from October to December.
- Lesser Crested Tern *Sterna bengalensis* Oc Ts Uncommon breeding resident; on the mainland at Joskeleigh, in flocks of up to 20 birds associating with Crested Terns.
- Superb Fruit-Dove *Ptilinopus superbus* Fo Rare vagrant; recorded in 1924 at Byfield (HW).
- Rose-crowned Fruit-Dove *Ptilinopus regina* Fo Wd Common breeding resident; nomadic in winter. Inhabits denser sections of the wetter areas of forest and woodland, observed singly and in groups of up to eight.
- Wompoo Fruit-Dove *Ptilinopus magnificus* Fo Uncommon resident; recent

observations are of single birds only in the Byfield area.

- Top knot Pigeon *Lopholaimus antarcticus* Fo Gr Common passage migrant; moves through from July to October, in large flocks of up to 30 birds.
- White-headed Pigeon *Columba leucomela* Fo Vagrant; recorded from the Berserker Ranges in the 1880's (KB) and at Byfield in 1924 (HW) and in April 1975 (G. Roberts pers. comm.).
- Feral Pigeon *Columba livia* Ww Gr Tn Common breeding resident; found about Rockhampton, swamps, lagoons and grassland adjacent to urban areas. Observed singly and in small flocks.
- Spotted Turtle-Dove *Streptopelia chinensis* Wd Gr Tn Common breeding resident; singly and in pairs; in and around Rockhampton, not sighted more than five miles from the city.
- Brown Cuckoo-Dove *Macropygia amboinensis* Fo Common summer migrant; arriving September and departing in February, also recorded in April (G. Roberts pers. comm.), single birds only, usually feeding in low bushes in closed forests.
- Peaceful Dove *Geopelia placida* Mn Fo Wd Sc He Gr Tn Common breeding resident; individuals, pairs or flocks of up to 50 birds.
- Bar-shouldered Dove *Geopelia humeralis* Mn Ww Fo Wd Sc Gr Common breeding resident; widespread. Seen singly, although feeding groups of up to ten birds have been noted.
- Emerald Dove *Chalcophaps indica* Fo Wd Uncommon breeding resident; recorded in the Berserker Ranges in 1888 (KB), and three records for the Byfield area; October 1924 (HW), and common in March, 1975 (G. Roberts pers. comm.).
- Common Bronzewing *Phaps chalcoptera* Wd Uncommon seasonal resident; between June and September; singly and in pairs, particularly between Alton Downs and Westwood.
- Crested Pigeon *Ocyphaps lophotes* Fo Wd Gr Tn Common breeding resident; singly and in flocks of up to 30 birds; no records from coast but common inland.
- Squatter Pigeon *Petrophassa scripta* Fo Wd Sc Gr Uncommon breeding resident; singly and in flocks of up to six birds. Inhabits the drier areas.
- Wonga Pigeon *Leucosarcia melanoleuca* Fo Wd Rare vagrant; occasional spring records. Local residents state it is an infrequent visitor to the brigalow areas near Gogango; other sightings around the Byfield area.
- Red-tailed Black-Cockatoo *Calyptorhynchus magnificus* Fo Wd Gr Tn Uncommon nomad throughout the area. Usually in small flocks, although singles and pairs have been sighted. One pair nested in Rockhampton during 1973.
- Glossy Black-Cockatoo *Calyptorhynchus lathami* Mn Fo Wd Gr Tn Rare spring transient; inhabits the coastal fringe. Mentioned for the area by Forshaw (1969) and from Shoalwater Bay area (HAN).
- Yellow-tailed Black-Cockatoo *Calyptorhynchus funereus* Fo Rare breeding

vagrant; recorded from the Berserker Ranges in 1888 (KB). Recent unconfirmed reports from Gogango (K. Lindley pers. comm.).

- Galah *Cacatua roseicapilla* Wd Tn Uncommon winter transient; frequently seen about Westwood. Usually in small groups and in pairs.
- Little Corella *Cacatua sanguinea* Ww Gr Uncommon transient; occurred in regular small flocks of up to 12 from 1953 to 1960 (Wheeler 1953-1960) at Yeppen Yeppen Lagoon; in September 1973 two were recorded in the same area; lately there has been a small party in Rockhampton (J. McCabe pers. comm.).
- Sulphur-crested Cockatoo *Cacatua galerita* Ts Mn Fo Wd Gr Common breeding resident; in singles and pairs, to flocks of up to 100 birds; commonest in coastal belt.
- Rainbow Lorikeet *Trichoglossus haematodus* Ts Fo Wd Sc He Gr Tn Common breeding resident; singles, pairs, and some flocks of over 100 birds. Attracted in numbers to *Schotia* when in flower in town in September.
- Scaly-breasted Lorikeet *Trichoglossus chlorolepidotus* Ts Fo Wd Gr Tn Common breeding resident; singles, pairs, and occasional flocks of up to 20 birds. Also attracted to *Schotia*.
- Little Lorikeet *Glossopsitta pusilla* Ts Fo Wd Common breeding seasonal resident; records are lacking for December and January only. Observed singly and in flocks of up to 12 birds.
- Australian King-Parrot *Alisterus scapularis* Fo Wd Rare breeding nomad; recorded in 1888 (KB), October 1924 (HW), and in 1972 in the Shoalwater Bay area (HAN); no sightings during the current study period.
- Red-winged Parrot *Aprosmictus erythropterus* Fo Wd Common breeding nomad. Found singly and in small groups in the drier areas from June to November.
- Cockatiel *Nymphicus hollandicus* Ww Fo Wd Gr Tn Common breeding nomad; large fluctuations in numbers. Seen singly and in flocks of 100 and more.
- Budgerigar *Melopsitticus undulatus* Gr Tn Uncommon nomad; recorded for March to October. Individuals to small flocks of up to 20 birds seen in the drier areas.
- Pale-headed Rosella *Platycercus adscitus* Fo Wd Sc Gr Tn Common breeding resident; occurring singly, in pairs, and in loose flocks of up to ten birds.
- Pallid Cuckoo *Cuculus pallidus* Ww Fo Wd Sc Gr Uncommon spring migrant; in small numbers only. Occasional records of single birds for other seasons of the year.
- Brush Cuckoo *Cuculus variolosus* Wd Uncommon summer migrant; arriving in September and departing in February. Usually single.
- Fan-tailed Cuckoo *Cuculus pyrrhophanus* Fo Wd Common summer migrant; occasionally wintering. Recorded as single birds only.
- Horsfield's Bronze-Cuckoo *Chrysococcyx basalis* Wd Gr Common spring and



summer breeding migrant; single birds only recorded; numerous during spring.

Shining Bronze-Cuckoo *Chrysococcyx lucidus* Ts Wd Common spring and summer migrant; seen as single birds only; mostly in spring; there is one record of a single bird in June from the islands near North Keppel.

Gould's Bronze-Cuckoo *Chrysococcyx russatus* Fo Wd Uncommon spring migrant; single birds recorded from August to October.

Common Koel *Eudynamis scolopacea* Ts Fo Wd Sc Gr Tn Uncommon resident; in singles and groups of up to three birds; increase in numbers from September to January, when migrant birds arrive.

Channel-billed Cuckoo *Scythrops novaehollandiae* Fo Wd Gr Tn Uncommon summer migrant; arriving in September and departing in March. Usually in singles and pairs.

Pheasant Coucal *Centropus phasianinus* Mn Ww Fo Wd Sc Gr Tn Common breeding resident; their habit of frequenting roadsides results in numerous casualties from vehicles. Seen singly and in pairs.

\*Rufous Owl *Ninox rufa* Fo Vagrant; one record from the Byfield area in 1924 (HW).

\*Powerful Owl *Ninox strenua* Fo Vagrant; recorded about Rockhampton in 1888 (KB).

Southern Boobook *Ninox novaeseelandiae* Wd Gr Tn Uncommon breeding resident; unrecorded during summer; usually seen singly and in pairs.

Barking Owl *Ninox connivens* Wd Breeding transient; recorded about Rockhampton in 1888 (KB).

Barn Owl *Tyto alba* Gr Tn Rare breeding transient; recorded from March to November; not seen or heard during the summer. Single birds and pairs only.

\*Masked Owl *Tyto novaehollandiae* Rare vagrant; a single casual mention of the species in 1888 (KB).

\*Sooty Owl *Tyto tenebricosa* Rare vagrant; one record of a bird seen in 1888 in the area of Louisa Creek (KB).

Tawny Frogmouth *Podargus strigoides* Fo Wd Gr Common breeding resident; decreases in numbers in the wet season. Noted as individuals and pairs. The grey phase recorded regularly; on 1 August 1972 at Emu Park a pale-plumaged bird was seen.

Marbled Frogmouth *Podargus ocellatus* Fo Rare vagrant; a possible sighting of a bird from the Byfield area in 1924 (HW) is the only record.

Australian Owlet-nightjar *Aegotheles cristatus* Wd Uncommon breeding resident; mainly recorded in winter and spring. Seen as individuals only.

White-throated Nightjar *Caprimulgus mystacalis* Fo Wd Rare seasonal resident; recorded mainly in spring and winter; individuals seen in flight and heard calling.

- Large-tailed Nightjar *Caprimulgus macrurus* Fo Rare vagrant; recorded near Gracemere in August 1955 (Wheeler 1956). Other records are from the Shoalwater Bay area (HAN).
- White-throated Needletail *Hirundapus caudacutus* Ts Gr Uncommon summer migrant; arriving in October and departing in January; passage migrants seen, as only a few noted during the wet season. The largest flock numbered over 2,000 in October 1974.
- Fork-tailed Swift *Apus pacificus* Wd Tn Rare summer migrant; two sightings, one in April 1973 (over 1,000) and a second in August 1973 (about 200), represent the larger flocks observed. Recorded also from Shoalwater Bay area (1972) and in August 1957 (Wheeler 1958).
- Azure Kingfisher *Ceyx azurea* Ww Sc Common resident; singles and pairs along smaller creeks.
- Laughing Kookaburra *Dacelo novaeguineae* Ww Fo Wd Sc Gr Tn Common breeding resident; seen individually and in groups of up to five birds. This species outnumbers the blue-winged kookaburra by a ratio of about 2:1.
- Blue-winged Kookaburra *Dacelo leachii* Mn Ww Fo Wd Gr Tn Common breeding resident; recorded as individuals and pairs, occasionally in threes. Often calls at night.
- Forest Kingfisher *Halcyon macleayii* Ww Fo Wd Gr Tn Common breeding seasonal resident; commoner in spring and summer. Noted mainly as singles and pairs.
- Red-backed Kingfisher *Halcyon pyrrhopygia* Fo Wd Tn Uncommon spring and autumn breeding migrant; normally recorded as individual birds in the drier areas. Spring sightings indicate a build-up in numbers before departure from the district.
- Sacred Kingfisher *Halcyon sancta* Ts Ww Wd Gr Tn Common breeding resident; showing an increase in numbers during the spring and autumn migrations. Noted singly and in pairs, occasionally in threes.
- Collared Kingfisher *Halcyon chloris* Ts Mn Uncommon passage migrant; recorded singly in August, September and February. Noted at Joskeleigh and the Fitzroy River estuary (KB). The Shoalwater Bay population is apparently higher (HAN).
- Rainbow Bee-eater *Merops ornatus* Ts Mn Ww Fo Wd He Gr Tn Common breeding resident; showing an increase in migrants in spring and summer. Observed singly and in flocks of up to 20 birds.
- Dollarbird *Eurystomus orientalis* Ts Fo Wd Sc Gr Uncommon summer breeding migrant; arriving in September and departing in April. Seen singly and in pairs, perched in taller trees or hawking overhead.
- Noisy Pitta *Pitta versicolor* Fo Uncommon autumn and spring passage migrant; a few remaining through the summer. Records show a preference for the low closed forests. Recorded singly only.
- Singing Bushlark *Mirafra javanica* Wd Gr Uncommon transient; apparently absent during the autumn. Sighted singly and in parties of up to three birds.

- Welcome Swallow *Hirundo neoxena* Oc Tb Mn Ww Wd Tn Common breeding resident; normally in groups of four to five birds. Shows marked preference for coastal plain; fewer inland.
- Tree Martin *Cecropis nigricans* Ts Ww Wd Gr Common breeding resident; in pairs and flocks of up to 40 birds. Regularly mixes with Fairy Martin when feeding.
- Fairy Martin *Cecropis ariel* Ts Ww Wd Gr Tn Common breeding resident; numbers reduced in winter. Singles to flocks of more than 200 noted. During winter there is some movement on the coastal plain.
- Richard's Pipit *Anthus novaeseelandiae* Ts Wd He Gr Common breeding resident; individually and in pairs; widespread through the area.
- Black-faced Cuckoo-shrike *Coracina novaehollandiae* Ts Ww Fo Wd Sc Gr Tn Common breeding resident; in singles and pairs in summer; flocks of up to ten birds frequently noted in winter.
- White-bellied Cuckoo-shrike *Coracina papuensis* Fo Wd Tn Common breeding resident; regular sightings of individuals and pairs.
- Yellow-eyed Cuckoo-shrike *Coracina lineata* Fo Wd Rare transient; two recent records (WBA and HW), but has been recorded from the Shoalwater Bay area (HAN).
- Cicadabird *Coracina tenuirostris* Fo Wd Tn Uncommon summer migrant; arriving September and departing April. Recorded regularly from timbered hills, seldom on the plains. Usually seen singly.
- Ground Cuckoo-shrike *Coracina maxima* Gr Rare nomad; singles and pairs in areas of dry grasses along the Fitzroy River flood-plain.
- White-winged Triller *Lalage sueurii* Ts Wd Gr Uncommon summer breeding migrant; arrive September and depart December; occasional records for other periods of the year. Recorded in pairs, but irruptions can occur throughout the year.
- Varied Triller *Lalage leucomela* Ts Fo Tn Common breeding resident; decrease in numbers during November to February. Seen mainly in pairs.
- White's Thrush *Zoothera dauma* Fo Rare vagrant; recorded from Byfield area in 1924 (HW), also in the Shoalwater Bay area (HAN).
- Rose Robin *Petroica rosea* Fo Uncommon transient; recorded in July and August only; no recent records. Noted in scrubs bordering the Fitzroy River in 1888 (KB), and Shoalwater Bay in 1971 (HAN).
- \*Scarlet Robin *Petroica multicolor* Wd Rare vagrant; one record from Louisa Creek in June 1888 (KB).
- Red-capped Robin *Petroica goodenovii* Sc Rare transient; recorded from areas of brigalow in the western parts of the study area by local observers; no information on present status.
- Hooded Robin *Melanodryas cucullata* Sc Rare breeding transient; recorded near Black Gin Creek (KB), and the Westwood area (WBA).

- Eastern Yellow Robin *Eopsaltria australis* Fo Sc Uncommon breeding resident; singly and widely scattered through the area, mainly about Byfield.
- Jacky Winter *Microeca leucophaea* Fo Wd Common breeding resident; fewer in winter. Usually sighted as singles and pairs.
- Pale-yellow Robin *Tregellasia capito* Fo Rare resident; recorded in scrubby areas at Black Gin Creek in June 1888 (KB). The only recent sighting was of one bird at Byfield in October 1970.
- Crested Shrike-tit *Falcunculus frontatus* Fo Wd Uncommon breeding transient; a late winter and spring visitor to the north-eastern sector of the area. Also recorded in the Shoalwater Bay area (HAN).
- Golden Whistler *Pachycephala pectoralis* Mn Fo Uncommon resident; most common in July, least common in summer. Noted singly and in pairs.
- Rufous Whistler *Pachycephala rufiventris* Ts Mn Fo Wd Sc Gr Tn Common resident; fewer in autumn and winter. Mainly observed in pairs.
- Little Shrike-thrush *Colluricincla megarhyncha* Fo Wd Sc Common breeding resident; in small groups of three to four and as individuals.
- Grey Shrike-thrush *Colluricincla harmonica* Fo Wd Sc Common resident; varying numbers indicate much nomadic movement. There is no record of the bird west of the Fitzroy River.
- Crested Bellbird *Oreoica gutturalis* Wd Rare vagrant; recorded from the Westwood area in the 1920's (WBA).
- Black-faced Monarch *Monarcha melanopsis* Ts Fo Wd Uncommon autumn and spring passage migrant; arrive April and September and depart June and October. Noted singly and in pairs.
- Spectacled Monarch *Monarcha trivirgatus* Fo Common spring and autumn passage migrant; a small number remain to breed in summer. Noted individually and in pairs.
- White-eared Monarch *Monarcha leucotis* Ts Fo Wd Uncommon breeding resident; breeding in the wetter coastal areas, including Berserker Range. Seen singly and in pairs.
- Leadend Flycatcher *Myiagra rubeola* Ts Fo Wd Sc Common autumn and spring passage migrant; some remain to breed. Noted singly and in pairs, occasionally in threes.
- Satin Flycatcher *Myiagra cyanoleuca* Ts Wd Uncommon spring and summer migrant; found in singles and pairs. There is a small wintering population in the western section of the study area.
- Restless Flycatcher *Myiagra inquieta* Fo Wd Gr Common resident; in singles and pairs; decrease in numbers during the wet season.
- Rufous Fantail *Rhipidura rufifrons* Mn Fo Tn Uncommon resident; a spring movement into coastal plain by migrating birds, extending westwards to the Berserker Range. Occurs singly and in pairs.
- Grey Fantail *Rhipidura fuliginosa* Ts Fo Wd Gr Tn Common breeding winter

migrant; small numbers noted in late March, becoming numerous in June-July, decreasing rapidly in August, and not observed after October.

- Willie Wagtail *Rhipidura leucophrys* Ts Ww Fo Wd Gr Tn Common breeding resident; forms loose flocks in winter, otherwise found as single birds and pairs.
- Eastern Whipbird *Psophodes olivaceus* Fo Uncommon probable resident; although recorded only in spring. Pairs and individuals seen in the Byfield area. Recorded from the Shoalwater Bay area in two localities (HAN).
- Grey-crowned Babbler *Pomatostomus temporalis* Fo Wd Sc Gr Tn Common breeding resident; normally in flocks of from four to seven birds. Recorded only in the drier areas.
- Clamorous Reed-Warbler *Acrocephalus stentoreus* Ww Tn Common transient; recorded from July to November, with a peak in September; mostly in wetlands of Fitzroy River flood-plain.
- Tawny Grassbird *Megalurus timoriensis* Ww Wd Gr Uncommon breeding spring visitor; arriving August and departing November. Individuals and pairs recorded from both areas of plains.
- Little Grassbird *Megalurus gramineus* Ww Rare vagrant; one record from the Bessie Sue Lagoon area, in October 1974 (F. Johnston pers. comm.). Listed from the Shoalwater Bay area in 1972 (HAN).
- Zitting Cisticola *Cisticola juncidis* Gr Rare vagrant; there is an old record from Fitzroy Vale (Anon 1941). The only record in the study period is of a flock of six on 23 June 1974 between Gracemere and Rockhampton.
- Golden-headed Cisticola *Cisticola exilis* Ts Ww Wd Gr Tn Common breeding resident; occurs on the Fitzroy River flood-plain; coastal records from Joskeleigh and Coowonga only. Mostly seen as individuals and in groups of up to six birds.
- Rufous Songlark *Cinclorhynchus mathewsi* Fo Wd Gr Common summer migrant; arriving in September departing in February. Recorded only as individual birds.
- Variiegated Fairy-wren *Malurus lamberti* Wd Uncommon breeding resident; usually in pairs. *Malurus lamberti lamberti* was found in lantana near Alligator Creek; *Malurus lamberti assimilis* in brigalow about Westwood, Kalapa and Gogango.
- Red-backed Fairy-wren *Malurus melanocephalus* Ts Fo Wd Sc He Gr Tn common breeding resident; slightly fewer sightings in winter. Noted singly and in pairs and flocks of up to eight birds.
- Large-billed Scrubwren *Sericornis magnirostris* Fo Uncommon breeding resident; widespread on coastal plain, in singles and pairs.
- White-browed Scrubwren *Sericornis frontalis* Fo Wd Sc Common breeding resident; seen as individuals and pairs in thick vegetation and in rubber vines.

- Speckled Warbler *Sericornis sagittatus* Wd Uncommon breeding resident; usually in pairs and singly. Normally encountered on the Fitzroy River flood-plain and about Rossmoya.
- Weebill *Smicrornis brevirostris* Ww Fo Wd Common breeding resident; in flocks of up to 20 birds; mainly frequenting low eucalypt growth.
- Large-billed Gerygone *Gerygone magnirostris* Fo Rare vagrant; two records, Shoalwater Bay area where "quite common" in September 1971 (HAN), and a pair of birds in the Berserker Ranges in December 1973.
- Mangrove Gerygone *Gerygone laevigaster* Ts Mn Common breeding resident; seen in singles, pairs and in loose groups of up to ten birds.
- Western Gerygone *Gerygone fusca* Sc Rare vagrant; recorded by both Campbell (1900) and Alexander (GMS) from the western part of the study area; not seen during the present study.
- Fairy Gerygone *Gerygone palpebrosa* Fo Wd Sc Tn Common breeding resident; normally in pairs, feeding in the canopy of trees and distributed over a wide area.
- White-throated Gerygone *Gerygone olivacea* Fo Wd Gr Tn Uncommon breeding resident; passage migrants increase from August to January. Usually noted singly and in pairs.
- Brown Thornbill *Acanthiza pusilla* Fo Uncommon breeding resident; sightings from the Byfield area in 1924 (HW), and in the Berserker Range (HAN).
- Buff-rumped Thornbill *Acanthiza reguloides* Fo Rare breeding vagrant; the only records are from the Westwood and Mount Morgan areas (GMS).
- Yellow-rumped Thornbill *Acanthiza chrysorrhoa* Wd Gr Uncommon transient; in singles and in small flocks.
- Yellow Thornbill *Acanthiza nana* Fo Wd Uncommon breeding resident; recorded during August to October only, usually in small flocks. Although numerous in the Shoalwater Bay area (HAN), there were few sightings during the present study.
- Varied Sittella *Daphoenositta chrysoptera* Fo Wd Uncommon breeding resident; nomadic, in flocks of up to eleven birds.
- White-throated Treecreeper *Climacteris leucophaea* Fo Wd Common resident; showing occasional nomadic movement; mainly in wetter areas; usually in singles and in pairs.
- Brown Treecreeper *Climacteris picumnus* Fo Wd Common breeding resident; showing some nomadic movement during summer. Occurs in the drier areas; in parties of up to nine birds.
- Spiny-cheeked Honeyeater *Acanthagenys rufogularis* Tn Uncommon transient; several records from the 1950's (Wheeler, 1952, 1953, 1954), and one at Rockhampton in 1922 (GMS). No recent sightings.
- Striped Honeyeater *Plectorhyncha lanceolata* Wd Gr Common breeding resident; in the drier areas, usually singles and pairs.

- \*Silver-crowned Friarbird *Philemon argenticeps* Wd Rare vagrant; two records, the first by Bell (1968) at Shoalwater Bay area, the second when two were watched at Parkhurst on 22 September 1973.
- Noisy Friarbird *Philemon corniculatus* Fo Wd He Tn Common breeding resident; some autumn movement through the area. Seen in flocks of up to eight birds.
- Little Friarbird *Philemon citreogularis* Ts Fo Wd Sc Gr Tn Common breeding resident; seen in flocks of up to 20 birds.
- Regent Honeyeater *Xanthomyza phrygia* Fo Rare vagrant; one record, Ratcliffe (1938) near Byfield. There is an undated and unconfirmed record of a single bird seen near Westwood.
- Blue-faced Honeyeater *Entomyson cyanotis* Fo Wd Gr Tn Common breeding resident; widely dispersed except in the rainforests; seen singly and in loose flocks of about ten birds.
- Noisy Miner *Manorina melanocephala* Fo Wd Gr Tn Common breeding resident; seen in flocks of up to 14 birds.
- Yellow-throated Miner *Manorina flavigula* Gr Tn Uncommon seasonal transient; usually in autumn and winter; in small flocks in the drier western sector and occasionally in Rockhampton itself.
- Lewin's Honeyeater *Meliphaga lewinii* Fo Wd Common breeding resident; either singly or in small loose groups. Rarely observed in the area of brigalow in the west of the study area.
- Yellow-faced Honeyeater *Lichenostomus chrysops* Fo Rare winter migrant; in small numbers (RG, HAN).
- \*Varied Honeyeater *Lichenostomus versicolor* Mn Wd Sc Rare vagrant; recorded at North Keppel in 1924 (HW), in 1974 several were heard giving their distinctive call on Corroboree Island, north of North Keppel. All records were in the spring. Recorded from Shoalwater Bay area (HAN).
- Mangrove Honeyeater *Lichenostomus fasciogularis* Ts Mn Common breeding resident; singly or in small loose flocks. Small populations occur on the islands.
- White-eared Honeyeater *Lichenostomus leucotis* Fo Rare transient; recorded from the Westwood area (GMS), and from the Shoalwater Bay area (HAN).
- Grey-fronted Honeyeater *Lichenostomus plumulus* Wd Rare vagrant; recorded during the spring from west of Rockhampton, mainly from about Grace-mere (Mathews, 1913, and HAN).
- Fuscous Honeyeater *Lichenostomus fuscus* Fo Wd Common breeding resident; some local nomadic movements; usually in small flocks.
- White-plumed Honeyeater *Lichenostomus penicillatus* Fo Gr Rare transient; recorded from the area (GMS), and from Shoalwater Bay (HAN).
- Black-chinned Honeyeater *Melithreptus gularis* Fo Wd Uncommon nomad; in drier sections. Usually in small flocks in the canopy.

- White-throated Honeyeater *Melithreptus albobularis* Fo Wd Sc Gr Tn Common resident; some nomadic movements during the wet season. Recorded in flocks of up to 20 birds.
- Brown Honeyeater *Lichmera indistincta* Mn Fo Wd He Gr Tn Common breeding resident; seen singly and in small flocks, widespread through the area.
- White-cheeked Honeyeater *Phylidonyris nigra* Fo He Uncommon breeding resident; noted only from the coastal belt, never far from heathland; usually in small flocks.
- \*Bar-breasted Honeyeater *Ramsayornis fasciatus* Wd Rare vagrant; one local record of a flock of 30+ feeding in *Callistemon* sp. at Rossmoya on 18 October 1975 (A.E.F. Rogers pers. comm.). Also mentioned from near Broad Sound north of the study area (RG).
- Eastern Spinebill *Acanthorhynchus tenuirostris* Fo Rare vagrant; mentioned from the area (RG). On the 9 February 1972 at Mt. Wheeler a bird was heard calling several times in dry forest.
- Dusky Honeyeater *Myzomela obscura* Fo Wd He Common breeding local nomad; a possible spring movement through the area. In pairs and small loose flocks.
- Scarlet Honeyeater *Myzomela sanguinolenta* Fo Wd He Common resident; there is a movement to the rainforest areas in March, June, and August to November, but pattern of local movement not clearly defined; absent from woodland from November to January; several birds in heath during September. Recorded in flocks up to 50 birds.
- Yellow Chat *Epthianura crocea* Ww Rare vagrant; a single record of specimens collected in 1859 from Fitzroy Vale (Mack, 1930). Also from Torilla Plains north of the study area (A.J.C. 1917).
- Yellow-bellied Sunbird *Nectarinia jugularis* Wd Tn Uncommon breeding spring and summer migrant; occasionally wintering. Usually seen in groups of up to four. Common on offshore islands.
- Mistletoebird *Dicaeum hirundinaceum* Mn Fo Wd Sc Gr Tn Common breeding resident; usually observed in flight. Noted on one occasion feeding on ink-berries, *Phytolacca* sp.
- Spotted Pardalote *Pardalotus punctatus* Fo Uncommon transient; recorded as a spring and summer nomad; recorded in winter from Shoalwater Bay (HAN). Noted as individuals only.
- Yellow-tipped Pardalote *Pardalotus striatus striatus* Rare vagrant; there is a specimen collected at Rockhampton (Hindwood and Mayr, 1946).
- Eastern-striated Pardalote *Pardalotus striatus ornatus* Fo Tn Uncommon winter and spring breeding migrant, records indicate that it arrives in May and departs in October.
- Striated Pardalote *Pardalotus striatus substriatus* Fo Uncommon transient; recorded in spring only, when lone birds were noted. See also Hindwood and Mayr (1946).
- Black-headed Pardalote *Pardalotus striatus melanocephalus* Fo Wd Gr Tn



- Common breeding resident; widespread in singles and pairs.
- \*Pale White-eye *Zosterops citrinella* Rare vagrant; a possible record in the Byfield area was reported in 1924 (HW).
- Silvereye *Zosterops lateralis* Ts Fo Wd Gr Uncommon breeding resident; in pairs and flocks of up to 100.
- House Sparrow *Passer domesticus* Wd Gr Tn Common breeding resident; mainly in the towns, occasionally moving into adjoining grass and woodland.
- Red-browed Firetail *Emblema temporalis* Fo Wd Common resident; some local movements in autumn; pairs in flocks of up to eight birds; mostly along watercourses.
- Diamond Firetail *Emblema guttata* Wd Rare breeding resident; recorded from the drier parts in the western section of the study area, at Westwood (WBA) and the Dawson River (Keast, 1958). No recent records.
- Star Finch *Neochmia ruficauda* Gr Rare; no records this century; mentioned from several localities in 1888 (KB).
- Crimson Finch *Neochmia phaeton* Gr Rare; no records this century; recorded in tall vegetation in several locations along the Fitzroy River in 1888 (KB).
- Zebra Finch *Poephila guttata* Gr Common breeding resident; nomadic in summer. In pairs and small flocks of up to 20 birds; usually on the drier areas of the Fitzroy River flood-plain.
- Double-barred Finch *Phoephila bichenovii* Mn Fo Wd Gr Tn Common breeding resident; widely distributed; in flocks of up to 20 birds.
- Black-throated Finch *Poephila cineta* Fo Wd Gr Uncommon breeding resident; shows local movements; drier areas about Rossmoya and Westwood; in pairs and flocks of up to 20 birds.
- Plum-headed Finch *Aidemosyne modesta* Wd Gr Uncommon breeding nomad; in small parties of up to 12 birds; mainly in lightly timbered drier areas.
- Chestnut-breasted Mannikin *Lonchura castaneothorax* Wd Uncommon breeding resident; nomadic in summer. Small groups encountered during the 1950's (Wheeler 1952-1960), but only single birds seen now.
- Nutmeg Mannikin *Lonchura punctulata* Wd Gr Tn Common breeding resident; first appeared in the mid 1950's. Seen in Rockhampton in flocks of up to 40 birds.
- Common Starling *Sturnus vulgaris* Ww Wd Gr Common breeding resident; about Gracemere, Bessie Sue Lagoon, and Pink Lily Lagoon; distribution localized around these lagoons where they fed; appear to avoid urban areas; in flocks of up to 200 birds.
- Olive-backed Oriole *Oriolus sagittatus* Fo Wd Sc Gr Tn Common breeding resident; widespread in singles and pairs.
- Southern Figbird *Sphecotheres viridis vieilloti* Fo Wd Sc Gr Tn Common breeding resident; in timbered sections where fruiting trees were available. Seen in flocks of up to ten birds.

- Yellow Figbird *Sphecotheres viridis flaviventris* Fo Wd Rare vagrant; recorded from the coastal area by Gravatt (Beland, 1977).
- Spangled Drongo *Dicrurus hottentottus* Fo Wd Sc Gr Tn Common breeding resident; flocks of summer migrants arrive in September and depart in March. Mainly seen singly except during the summer when flocks of more than 100 are frequently seen.
- Satin Bowerbird *Ptilonorhynchus violaceus* Fo Rare vagrant; recorded in 1888 from the Berserker Range (KB); no recent observations.
- Regent Bowerbird *Sericulus chrysocephalus* Fo Wd Rare resident; several old references (KB; AJC, 1900; HW), and also more recent reports by local residents of sightings around Gogango.
- Spotted Bowerbird *Chlamydera maculata* Wd Gr Common breeding resident; in the western sector from Kalapa to Gogango. Seen individually and in pairs; many bowers in brigalow.
- Paradise Riflebird *Ptiloris paradiseus* Fo Rare vagrant; mentioned in 1888 from the Berserker Range (KB). A specimen collected in the 1930's, in rainforest near Mt. Larcombe, by local residents. No recent sightings.
- White-winged Chough *Corcorax melanorhamphos* Wd Gr Uncommon breeding transient; in small flocks of up to eight birds in lightly to moderately timbered drier areas.
- Apostlebird *Struthidea cinerea* Fo Wd Tn Common breeding resident; in drier areas and occasionally in Rockhampton; in pairs and flocks of up to ten birds.
- Australian Magpie-lark *Grallina cyanoleuca* Ts Mn Ww Fo Gr Tn Common breeding resident; flocks of 20 frequent in cooler months about lagoons and swamps on Fitzroy River flood-plain; otherwise in singles and pairs.
- White-breasted Woodswallow *Artamus leucorhynchus* Ts Ww Wd Gr Tn Common breeding resident; shows local movements; in flocks of up to 20 birds; mainly near wetlands and rivers.
- Masked Woodswallow *Artamus personatus* Wd Gr Rare transient; two records only, both from the western sector of the study area, in 1888 (KB), and the 1920's (GMS).
- White-browed Woodswallow *Artamus superciliosus* Wd Gr Uncommon breeding nomad; recorded in 1888 (KB) and the 1920's (GMS), and once at Grace-mere on 17 September 1974.
- Black-faced Woodswallow *Artamus cinereus* Fo Wd Gr Common breeding resident; in flocks of up to six birds; mainly in areas of grassland with scattered trees.
- Dusky Woodswallow *Artamus cyanopterus* Fo Uncommon nomad; mentioned from west of Rockhampton in 1888 (KB) and 1889 (Lumholtz). Two birds at Rossmoya on 12 May 1974 are the only recent sighting.
- Little Woodswallow *Artamus minor* Fo Wd Gr Common breeding resident; showing local movements, mainly in the drier sectors of the study area; in

pairs and groups of four.

- Grey Butcherbird *Cracticus torquatus* Fo Wd Gr Common breeding resident; less common than the Pied Butcherbird. Seen singly and in pairs.
- Pied Butcherbird *Cracticus nigrogularis* Mn Fo Wd He Gr Tn Common breeding resident; singly and in loose groups of up to five birds.
- Australian Magpie *Gymnorhina tibicen* Fo Wd Gr Tn Common breeding resident; singly and in flocks of up to 30 birds.
- Pied Currawong *Strepera graculina* Fo Wd Common breeding resident; in high country and associated valleys, occasionally in nearby lowland areas; in flocks of up to 12 birds.
- Australian Raven *Corvus coronoides* Fo Wd Gr Rare vagrant; mentioned from the Rockhampton area in the 1926 RAOU Checklist (2nd Edition). However, the only record during the present study was one bird near Woolwash Lagoon in September 1975.
- Torresian Crow *Corvus orru* Ts Mn Ww Fo Wd Gr Tn Common breeding resident; occurring in flocks of up to 20 birds.

#### C. DISCUSSION

At present the study area appears to be environmentally unstable. There is continued clearing of woodland for cattle production, and of small areas of forest for citrus, pine trees and other crops. Town areas are expanding with growth in population.

Conservation of natural areas has been limited to the establishment of small numbers of wildlife reserves, mainly in wetland (e.g. the Woolwash Lagoon). There is an urgent need for the immediate dedication of large areas of woodland and forest for the survival of many local bird species. At present, efforts are being made to establish a National Park in the Berserker Ranges. Removal of large tracts of brigalow and associated vegetation has already brought about the disappearance of some species and a reduction in numbers of others (i.e. Common Bronzewing, Western Gerygone, Red-capped Robin, Hooded Robin, Spiny-cheeked Honeyeater, Diamond Firetail). The decline in Orange-footed Scrubfowl could be attributed to loss of the forested areas along the coast, and destruction of tall swamp grasses along the Fitzroy River has resulted in the loss of both the Crimson Finch and the Star Finch.

During the study period it was recorded that a number of unusual species have been, or are at present in the area. These are not normally shown on distribution maps from the area. Amongst these are:

- Freckled Duck: The nearest Frith (1967) places the bird is about 300 miles south and north-west of Rockhampton, Storr (1973) gives similar notes on distribution.
- Bush-hen: Storr does not give detailed localities, but mentions Gin Gin to the south of the study area; Crouther (1977) gives an account of the bird about 200 miles north of the area; to the south the bird is not known north of Bundaberg.
- Wompoo Fruit-Dove: Condon (1975) states that it formerly inhabited areas near Rockhampton, whereas Storr (1973) refers only to Broadbent's

record in 1888.

**Large-tailed Nightjar:** Storr refers to the bird at Marmor and Gin Gin, south of the study area.

**Large-billed Gerygone:** Both McGill (1970) and Storr give the range of this species as extending north of the study area; McGill states the Suttor River, and Storr gives Mackay. Identification was made possible by recording the following; the breast yellow-buff, an eye-ring of white feathering, and a small spot of white over the bill (bill length was not recorded).

**Pale-yellow Robin:** Storr records the two populations from the south-eastern highlands and foothills and the humid northeast south to Paluma. Officer (1969) mentions the bird from Rockhampton without details.

**Grey-fronted Honeyeater:** Officer (1965) gives the range as east-central Queensland; whereas Storr gives Yaamba and Gracemere as localities.

**Silver-crowned Friarbird:** Storr gives the range south to Bloomfield, and Officer (1965) states south to Townsville.

**Eastern Spinebill:** Storr gives Mackay to the north and Gin Gin to the south.

**Bar-breasted Honeyeater:** Storr gives the lower Dawson, Officer (1965) the Mackay area. In the Australian Museum, Sydney, there are specimens taken in the lower Dawson area. MacDonald (1973) shows it south to Rockhampton.

**Regent Bowerbird:** Storr gives the lower Dawson, and Cooper and Forshaw (1977) give Mackay south to the McPherson Range; MacDonald gives the range north to Mackay.

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## FURTHER RECORDS OF PALAEARCTIC SPECIES IN DARWIN

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### INTRODUCTION

The area around Darwin in the Northern Territory is well situated to receive vagrant bird-species from the Palaearctic region. During the months of the Northern Hemisphere winter, it is an important area for non-breeding Waders (Charadriiformes). Crawford (1972) was the first worker to adequately summarize our knowledge of the area and to list records of vagrant species such as Redshank, *Tringa totanus*, and Yellow Wagtail, *Motacilla flava*. Since then, new species have been added and there have been further records of species recorded by Crawford. McKean, Thompson and Estbergs (1976) gave first Northern Territory records for Spotted Greenshank, *Tringa guttifer*, and Little Ringed Plover, *Charadrius dubius*, as well as additional records for other species. Thompson (1977) gives a further record each for the Garganey, *Anas querquedula*, and Redshank.

This paper brings the record up to date by publishing notes from the 1977/78 wet season for five species, all previously recorded in the area. There is an account of the records for each species and a brief discussion where it is thought to be appropriate. A short summary reviews our knowledge of Palaearctic species in the area and speculates on future observations.

### SPECIES

#### Garganey *Anas querquedula*

On 9 April, 1978, J. Estbergs and A. Hertog found a male Garganey in breeding plumage in a large flock of Grey Teal, *A. gibberifrons*, at the Sanderson Sewage Ponds, Darwin. The bird was seen later in the day by C. Devonport, A. Thompson and myself and on 10 April by Dr. D. Jacobs and T. Jacobs. I noted the following: noticeably smaller than Grey Teal; white eye-brows conspicuous at a distance, the two forming a V at the back of the head; on the water, appeared mainly grey with lighter flanks and the head and breast a rich dark-brown. In flight showed a green speculum with white bars on either side of it and blue-grey wing coverts. It was reluctant to leave the water and stayed behind after the grey teal had been put up.

This is the third record for the Northern Territory. Condon (1975) lists other Australian records from Victoria and Queensland and Wheeler (1977) and Kikkawa (1976) mention other records from Cape York.

#### Asian Dowitcher *Limnodromus semipalmatus*

Ali and Ripley (1968 onwards) describe this species as breeding in western Siberia, in Transbaikalia and in north-west and central Mongolia; they remark further that its complete breeding range is not known. They state that on migration and in winter it occurs in China, Japan, north India, Burma and Indo-China. Condon (1975) more explicitly describes it as wintering in Indo-China, Malaysia, eastern India and also the Sunda Islands, and cites the first Australian and Northern Territory record of Crawford at Darwin on 16 October 1971.

Klapste (1975), adding a new Victorian record, details previous occurrences in that state, starting with the first record of F.T.H. Smith at Port Phillip Bay on 7 January 1973 and continuing with the Werribee Farm record

of an individual that apparently stayed 26 months and his own Mud Islands record of 25 January 1975. Serventy and Whittell (1976) describe it as "a fairly common migrant" in the north-west of Western Australia and note that a specimen collected by R. Johnstone on 5 October 1975 is lodged in the W.A. Museum. Gardner and Gardner (1976) give the first Queensland record of a single bird at Wynnum on Moreton Bay on 11 January 1976. There are two further published Queensland records, that of Venables and Cusa (1977) who recorded a single bird at Thornside, 13 March, 1978, and that of Lane of a single bird at Cairns. J.L. McKean has given details of an unpublished record from Shoalhaven Heads, N.S.W. on 20 February 1977 when a single bird was observed by E. McGibbon, J. Bywater and himself. There is at least one record from New Guinea, of a single bird near Bereina, Central Province (Heron, 1977).

The second Northern Territory record was of a single bird at the Sanderson Sewage Ponds, Darwin, on 10-11 September 1977. The bird was first seen at about 06.54 hours on 10 September by C. Devonport and myself. The following description was taken:

at first glance, a large wader resembling a Bar-tailed Godwit, *Limosa lapponica*, but easily distinguished by its bill which was blackish, not parti-coloured, not upturned and obviously thicker with a slightly bulbous tip and by its tail, which, although barred like the godwit's was clearly visible at rest, not covered by the tips of the primaries. The upperparts were greyish-brown, streaked a darker brown with a diffuse dark-brown crown-stripe, off-white eyebrow and chin and a blotchy grey face-patch at the base of the bill. This patch differed on the two sides of the face, suggesting some moulting. The underparts were light fawn, flecked on the lower breast; the flanks were white with small crescentic black marks. In flight, the tail was white with close blackish bars, the rump appeared greyish and the wings showed a diffuse grey-white trapezoidal patch, resembling that of a redshank but not so clearly defined. The legs were dark greenish-black. The flight was noted as slow and "lazy". The bird fed singly and no call was heard.

This bird was seen again later between 12.15-13.00 hours by A. Thompson and myself. It fed with a stiff movement, pivoting back and forth on its legs, with its bill immersed in water up to the base. It jabbed its bill underwater several times in this position before withdrawing it. On this occasion it was more closely observed in flight than previously; the wing-linings were white and the rump which had appeared greyish was seen to be white freckled with a darker colour. The bird was seen for the last time on 11 September between 15.30-18.15 hours by J. Estbergs, C. Devonport and myself. A harsh alarm-call, noted as "rark" was heard and photographs were taken. These have been retained as record-shots but are unsuitable for publication.

On 15 October 1977, I saw two further birds in a flock of Black-tailed Godwit, *Limosa limosa*, at Leanyer Swamp, Darwin. They were readily picked out of the flock by their relatively longer black bills with bulbous tips, more clearly marked upperparts, heavier stance and more distinct head-pattern. One bird, possibly an immature, was browner and more heavily marked on the upperparts than the other. As with the first bird, once again the tail was seen clearly when the bird was at rest and was not hidden by the tips of the primaries.

J. Estbergs saw a further single bird at Lee Point, near Darwin, on 29 January, 1978.

Ruff/Reeve *Philomachus pugnax*

Condon (1975) describes this species as a wanderer to Australia and lists records from Western Australia, South Australia, Victoria and Tasmania. It has a more westerly breeding distribution than many waders visiting Australia and breeds from western Europe as far south as the mouth of the Loire in France and in Hungary (Voous, 1960). It is a very variable species, with no subspecies described, but it seems likely that, following normal migratory patterns, birds wintering in Australia and south-east Asia originate from the eastern end of the breeding range which extends to the Kolyma river in Siberia. There are two previous records for the Northern Territory (McKean *et al.*, 1976).

On 7 October 1977, I saw a single male bird in eclipse plumage at Holmes Jungle Swamp, near Darwin. It was first seen flying singly and appeared as a medium-sized wader with scaly golden-brown upperparts, a slight white wing-stripe and white on the sides of the tail. At rest with little Curlew, *Numenius minutus*, its body was slightly larger than that species' with a stocky, 'neckless' build. The bill was of medium length, rather thick, and appeared to decurve slightly because it tapered towards the tip. The upperparts were clearly scaly, the feathers golden-brown with black near the tips. The head was greyish-brown and almost unmarked. The underparts were grey-brown on the breast, tending to white on the abdomen. When the bird preened, it showed the white patches on the sides of the tail. The legs were grey-green. The habitat was an open lagoon with exposed mud where the Little Curlew flock was resting, adjoining dry sedge-plains and wet reed-beds of *Typha* sp.

I have seen this species before, not only in the Northern Territory but also in Europe and North Africa. It can be a difficult bird to identify because it is very variable, both in size and colour, and because it lacks the distinctive flight-features of many species. However, the scaliness of the upperparts, as in this bird, is often pronounced and the virtual absence of head-markings, with no distinctive colouring on the supercilium or lores is a good feature. The illustration of the autumn male in Peterson *et al.* (1954 and later editions) shows this well and is recommended.

Barn Swallow *Hirundo rustica*

Thompson (1977) has previously listed records of this species in the Northern Territory which were unknown to Klapste when he summarised Australian occurrences (Klapste, 1977). There are another four records for the 1977/78 wet season which are given for the sake of completeness:

22 September 1977:	1, Sanderson Sewage Ponds, Darwin (H. Thompson);
5 February 1978:	1, Sanderson Sewage Ponds, Darwin (D. Jacobs, R. Jacobs and T. Jacobs);
19 March 1978:	a small flock at Lee Point, Darwin, (D. Jacobs, R. Jacobs and T. Jacobs);
1 April 1978:	1, Nightcliff (Darwin), (H. Thompson).

It seems clear that this species is a regular passage-migrant in small numbers to the Darwin area and that, in the future, there will be little point in publishing individual records unless they deviate from this pattern or involve new localities. The species is widespread in south-east Asia and may well be a regular visitor as close to Darwin as Timor. McKean *et al.* (1975) list seven separate records for Timor between 20-25 October 1975 and I have a further record from near Laga, 12 May 1974 (with J.L. McKean and I.J. Mason).



Yellow wagtail *Motacilla flava*

This is another species that may well merit the status of regular passage-migrant or non-breeding visitor to the Darwin area although it seems to occur more erratically than the barn swallow. Recent observations in October and November 1977 suggest that at least two distinct subspecies may occur, representing two groups that have been separated at species level in the past. Current taxonomy generally recognizes in *Motacilla flava* a single species with several distinct subspecies, ranging over most of the Palaearctic region from western Europe to eastern Siberia, with a Nearctic population in Alaska.

However, Dement'ev, Gladkov *et al.* (1967) recognise two separate species, the Yellow Wagtail, *Motacilla flava*, and the so-called Yellow-backed Wagtail, *M. lutea*. Briefly, *M. flava* comprises subspecies in which the male generally has a blue or blue-grey head, often with a white supercilium and never a yellow one, and a range from the Channel coast of Europe through to eastern Siberia and Alaska. Under *M. lutea* they recognise three subspecies, *flavissima*, *lutea* and *taivana* in which the adult male has a green or greenish head and a yellow supercilium. Within this definition, *M. lutea* consists of three disjunct breeding populations, subspecies *flavissima* of Britain and the adjoining coasts of continental Europe, *lutea*, with an ill-defined range roughly coinciding with what is politically Soviet Kazakhstan and *taivana* which breeds over a large area around Yakutsk and islands in the Sea of Okhotsk. The westerly populations, *flavissima* and *lutea*, winter in Africa; *taivana* winters in south-east Asia and the Ganges drainage.

On 8 October 1977, the writer watched a single Yellow Wagtail feeding at the edge of a sewage pond at Sanderson, Darwin. It was immediately recognised as a wagtail by its habit of 'bouncing' its tail up and down frequently and to a much greater extent than is typical of pipits, *Anthus* sp.. The upperparts were noted as dark-olive, with the wings blackish; the wing-feathers had buffish edges and tips which were especially noticeable on the wing-coverts where they formed a double wing-bar. The tail was fairly long, black, with white outer tail feathers. The head was brown with a bluish tinge, especially on the 'mask' formed by the lores and the ear-coverts. There was a pronounced off-white eyebrow and white throat. The breast was light-buff, tending to white on the abdomen. The feathers of the vent and tibia were buffish. The undulating flight and "zweet" call were typical.

On 12 and 13 November 1977, the writer saw another bird at Sanderson. In general it resembled the first bird but the underparts were off-white with an untidy broken grey-brown pectoral band. The 'cap' and 'mask' were dark-grey and the supercilium whitish. The legs were brown-flesh. Both these individuals had dark rumps and on the basis of head-colour, were clearly representatives of the *flava* group. The second bird may well have been an immature.

On 26 November 1977, I saw yet another bird at Sanderson, with a second calling nearby but out of sight on the far side of some mangroves. This bird had olive-brown upperparts including the head, though the supercilium was predominantly yellow. The rump was olive-brown. The underparts of this bird were dirty-white, with a diffuse band of olive streaking on the breast. Unlike the other examples, however, the abdomen was bright yellow. This individual differed from previous ones in three respects; the supercilium was mainly yellow, there was no trace of blue or grey on the olive-brown head and the abdomen was yellow. On this basis, it clearly represented the *lutea* group and on the distributional evidence of Dement'ev *et al.* was most likely to have been *taivana*.

The following records are included to complete the list of known occurrences which have not as yet been published. On 29 November 1977, the writer saw two Yellow Wagtails flying over a garden in Nightcliff, a Darwin suburb, ahead of a tropical storm. They were not closely observed. Mr. Øle Jakobsen, of Copenhagen, Denmark, has kindly sent me details of an adult Yellow Wagtail in eclipse plumage apparently of the *flava* group, that he observed at Sanderson on 23 January 1976. He knows the species well from Denmark where it is a common summer resident.

#### SUMMARY AND DISCUSSION

Many Palaearctic species, especially of the Charadriiformes, are common in the Darwin area during their non-breeding months and since 1967, when Crawford began his observations, additional vagrant species have been discovered by alert observers. Crawford (1972) himself covers 254 species in his list, of which two were new records for Australia and five for the Northern Territory. Improved observer coverage has shown that species like the Barn Swallow and Yellow Wagtail are frequent visitors, if in small numbers.

There are some interesting discrepancies that perhaps cannot be explained by the shortage of observers. There are still only two records of the Long-toed Stint, *Calidris subminuta*, in spite of records in southern Australia. Similarly, as yet there is no Northern Territory record of the Dunlin, *Calidris alpina*, although it occurs in Java and there are records from elsewhere in Australia. Although we must allow that Darwin covers only a small portion of the Territory's vast and often inaccessible coastline, we must also consider whether some migratory pathways that we might expect, in fact, by-pass it. The Little Curlew *Numenius minutus*, for example, is common in Darwin between late September and early January on its southwards migration but is rarely seen on its way north.

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## YELLOW-TINTED HONEYEATER AT WEIPA

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The Yellow-tinted Honeyeater *Lichenostomus flavescens* has been recorded in much of northern Australia, from the Kimberleys in the west to the eastern drainage of the Gulf of Carpentaria, and as far south as Mt. Isa. It has been seen in a variety of habitat, including flowering paperbark and the landward edge of mangroves, but mainly in eucalypt forest, and especially near water (Storr 1973 and 1977). In Cape York, the published range of the species has hitherto lain as far north as Dunbar (Storr 1973; Kikkawa 1976), but is extended 400 km further northward by the following record.

On 3 June 1978, Don Bowery, David Close and Don Teese observed the species about two km north of the north end of the Weipa-Andoom causeway and about 10 km north of Weipa. The approximate grid reference of the observation was 141°52'E, 12°34'S. The habitat was tall open forest, consisting of two unidentified species of eucalypt, with an understorey of tall grass. There were large areas of both rainforest and mangrove within one km, but the species was not noted in either during a survey lasting about 90 minutes earlier that day by the above-mentioned and other observers. The birds were seen only in the canopy of tall eucalypts, never below about 10 m and usually higher. They seemed to be feeding, but it is not known what on. They were very active, and frequently chased each other around. It was

sunny, and details of the birds' appearance were seen well at distances down to about 20 m. The observers, who were familiar with this and similar species of *Lichenostomus* (*keartlandi*, *ornatus*, *penicillatus* and *plumulus*), realized when watching the birds that they were out of their published range. The following description was written down by D.C. and D.T. shortly afterwards.

The birds seemed the same size and shape of the other *Lichenostomus* species mentioned. The back and nape were dull yellowish-olive. All of the underparts were yellowish-buff, and much lighter than the back. The underparts of several birds were clearly seen and showed no trace of markings. The face was yellow, and brighter than the underparts. Behind the ear was a yellow plume with a black margin, which did not seem so marked as in *L. plumulus*. Nothing was noted about the crown at the time; but the observers' retrospective impression is that it was intermediate in colour between back and face, and certainly not distinct as with *L. keartlandi*. The colour of the lores was not specifically noted; but they were certainly not dark, as they would then have contrasted noticeably with the light face. No difference in plumage was noted between individual birds at the time of observation.

The most frequent call to be heard was a (usually double) "twit...twit", similar to a call of *L. plumulus*. Heard several times was a chuckling cadence, reminiscent of the characteristic call of *L. chrysops*. Also heard were a high-pitched trill, and a harsh scolding like that made by *L. flavus*.

The birds were numerous, being frequently heard and seen along about 500 m of track.

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