

# THE SUNBIRD



*Journal of the*  
**QUEENSLAND ORNITHOLOGICAL SOCIETY**

Volume 26

Number 3

September 1996

## CONTENTS

GLENN HOLMES	
Distribution and status of the Southern Star Finch.....	49
STEPHEN GARNETT and GABRIEL CROWLEY	
A new population of the Zitting Cisticola <i>Cisticola juncidis</i> on Cape York Peninsula.....	60
P.L. BRITTON, H.A. BRITTON and A.B. ROSE	
Note on the diet of the Letter-winged Kite near Charters Towers, North Queensland.....	63
J.A. McLEAN	
The birds of the Hope Islands, North Queensland.....	66
SCOTT BURNETT	
A further observation of a feeding association between the Platypus and the Azure Kingfisher and a discussion of feeding associations between birds and mammals.....	76
WALTER KOMSIC, STEPHEN GARNETT and GABRIEL CROWLEY	
Magpie Geese <i>Anseranas semipalmata</i> nesting in trees.....	79



# OFFICERS AND COUNCIL FOR 1996

*President*  
LYNDA LITZ-TYNE

*Vice President*  
IAN GYNTHNER

*Past President*  
ROY SONNENBURG

*Country Vice Presidents*  
JON WREN, VALDA McLEAN

*Treasurer*  
GARTH INNES

*Secretary*  
JAN BELL

*Outings Officers*  
GAYLE JOHNSON

*Records Officer*  
IAN GYNTHNER

*Sunbird Editor*

*Assistant Editors*

*Librarian*

PETER BRITTON REGINA MIGALA, JEREMY THOMPSON GRAHAM LEACH

*Audiovisual Librarian*  
JOHN NOYCE

*Projects Officer*  
IAN VENABLES

*Conservation Officer*  
MICHAEL HARDING

*Membership Secretary*  
GARTH INNES

*Newsletter Editor*  
GREG ANDERSON

*Property Officer*  
DENIS TAYLOR

## *Council Members*

JULIAN BIELEWICZ, JAN ENGLAND, ROSLYN LAUNDON  
DAWN MUIR, DON MUIR.

The objectives of the Society are to promote the scientific study and conservation of birds by all means possible, with particular reference to the birds of Queensland.

Annual subscription rates to the Society are:

Ordinary Member	\$30.00
Family Member	\$35.00
Student Member	\$15.00
<i>Sunbird</i> subscription only	\$25.00(Aust.)
Libraries, Universities	\$30.00(Aust.)
Overseas	\$30.00(Aust.)

All members receive a monthly newsletter and a copy of the quarterly journal, *The Sunbird*. The price of *The Sunbird* to non-members is \$6.00 per issue. The Society holds a general meeting and a field excursion each month.

General correspondence, including membership fees, should be addressed to the Secretary. *The Society's address is:*

P.O. Box 97, St. Lucia, Queensland, 4067.

# THE SUNBIRD

---

Volume 26 No. 3

September 1996

---

## DISTRIBUTION AND STATUS OF THE SOUTHERN STAR FINCH

GLENN HOLMES

### ABSTRACT

Records of the Southern Star Finch *Neochmia ruficauda ruficauda* are reviewed and less than 25 are accepted confidently. Other likely records are enumerated and several are rejected. The Southern Star Finch is considered to occur north at least to Bowen and west beyond Winton. It may extend north to Mt Surprise and Cloncurry/ Mt Isa, but records there could be interpreted to concern the Northern Star Finch *N. r. clarescens* instead. The habitat of *ruficauda* is described briefly.

Results of a field survey in 1993-94 are given. No Southern Star Finches were located but nine other finch species were encountered.

### INTRODUCTION

The endemic Star Finch *Neochmia ruficauda* is most closely related to the Crimson Finch *N. phaeton*, Plum-headed Finch *N. modesta* and Red-browed Finch *N. temporalis* (Christidis 1987). It is the least abundant of these species (see Blakers *et al.* 1984). Two subspecies were recognized by Keast (1958), the nominate form in the south and the brighter *clarescens* in the north. These were accepted by Ford (1986) and Boles (1988), but Schodde & Tidemann (1986) were uncertain about their validity. A definitive analysis of geographic variation is difficult because the few specimens of *ruficauda* are old and faded (see Keast 1958). Garnett (1992) referred to the forms as Eastern and Northern Star Finches. The name adopted here for *ruficauda* is Southern Star Finch, otherwise there is confusion for observers in north Queensland, especially in Cape York Peninsula.

Garnett (1992) reviewed briefly the status of *ruficauda* and *clarescens*. He classified them as Endangered and Rare, respectively. He further remarked that the status of *ruficauda* is Critical by the criteria of Mace & Lande (1991). Although it was described by Gould in 1837 from the Namoi River, it has seldom

been recorded south of the Tropic of Capricorn. Accordingly, a population survey of *ruficauda* was deemed urgent. A preliminary review of selected literature (e.g. Immelmann 1982, Storr 1984a,b, Blakers *et al.* 1984, Ford 1986) indicated that it was recorded at very few locations. These included Cairns, Cardwell, Townsville, Bowen, Rockhampton, Clermont, Blackall?, Emmet?, Lake Brown, Taroom and Inverell. It must have declined rapidly because there are no specimens in the Queensland Museum (pers. obs.). Moreover, it seems unlikely that any persisted in captivity because of interbreeding with *clarescens* (B. Hutchins pers. comm.).

It has been shown by Evans & Bougher (1987) that *clarescens* tends to aggregate near large bodies of standing water in the Kimberley region of Western Australia. It is locally abundant around Kununurra (pers. obs.) and at other locations where irrigation schemes are well established (Pizzey 1980). Judging by the few observations of *ruficauda* it has similar requirements. Garnett (1992) described its likely prime habitat as rank grass and reeds beside permanent freshwater. He also noted that banding studies of *clarescens* show that the Star Finch is highly sedentary. Thus, both subspecies are vulnerable to degradation of their habitat by cattle during drought.

#### PROCEDURE

Before field surveys commenced it was necessary to document information about *ruficauda* by various methods :

- review of published literature
- review of RAOU Atlas data
- inspection of museum specimens
- requests for information through birdwatching and avicultural societies, naturalists' clubs, local media and staff of the Queensland Department of Environment.

A population survey of *ruficauda* was considered likely to be most efficient during the dry season. Within its geographic distribution this period is normally May to November. Because parts of central Queensland were in drought, the survey commenced in June 1993. This meant that no transient pools would occur, so that only larger waterbodies would provide reliable drinking sources where birds might aggregate. The survey included all historical locations in Queensland and other places where suitable habitat was identified. Approximate limits of the core survey region were Cairns, Rockhampton and inland to the coalfields and central highlands. Survey of waterbodies included the Fitzroy/Mackenzie, Burdekin and Herbert Rivers, and more specifically locations such as Emerald, Middlemount, Clermont, Lake Elphinstone, Belyando River, Burdekin Falls Dam, Bowen, Charters Towers, Townsville and Ingham. Information obtained during the study extended coverage to the central west in



the Winton and Blackall districts.

A precise itinerary (Appendix 1) was compiled after consulting appropriate topographic maps. It was imperative to select routes carefully because of the enormous area concerned. Two major survey trips were planned as the most economical approach. Field procedure comprised various strategies to maximise the chance of locating *ruficauda*. Methods are enumerated as follows :

- traverses of watercourse, lake and swamp margins on foot
- traverses of suitable habitat by vehicle where tracks permitted
- scrutiny of all finch flocks, especially those comprising the Chestnut-breasted Mannikin *Lonchura castaneothorax* and Crimson Finch (these are common associates of the Star Finch in the Kimberley)
- broadcast of tape-recorded calls of *clarescens* (obtained in captivity) where finches were abundant or habitat appeared suitable.

Direct contact with observers during the course of the field survey sought positive or negative information about *ruficauda*. Eighty observers were interviewed in person or by telephone (Appendix 2).

Vegetation present at historical and other locations was described briefly. Dominant trees were recorded in all instances and at recent locations all grasses were identified. The CORVEG scheme recommended by the Department of Environment (DoE) was inappropriate for various reasons. In particular, historical locations were generally no longer identifiable precisely. Moreover, changes in land use and conditions prevailing during the drought meant that the habitat was usually quite unsuitable for *ruficauda*.

## DISTRIBUTION AND STATUS

There are less than 25 acceptable records of the Southern Star Finch (Table 1). These show that it became extinct generally in south-east Queensland and north-east New South Wales, perhaps over a century ago. The only modern record was near Inverell in 1964. The description given by Baldwin (1975) indicates that the birds concerned were definitely *ruficauda*, rather than escaped individuals of *clarescens*. This region probably acted as a refuge for finches and other granivores, since it supported residual populations of the Black-throated Finch *Poephila cincta* and Squatter Pigeon *Geophaps scripta* until at least 1986 (G. Holmes, unpub. obs.). Recent remarkable records near Winton and Middleton also most likely concern *ruficauda*. They help to substantiate prior records near Blackall and Emmet that were deemed implausible by Blakers *et al.* (1984).

Most records of *ruficauda* are from the central Queensland coast, in particular around Rockhampton. However, the problem of possible confusion with escaped individuals of *clarescens* causes uncertainty about various records from this

region (Table 2). Records near Mt Isa and Cloncurry are also difficult to assess. Since *clarescens* occurs on the Nicholson River (e.g. Doomadgee in 1986, G. Holmes & D. Stewart, unpub. obs.), birds of these highlands could be identified with it. However, they are equally distant from the recent records of inland central Queensland, identified here with *ruficauda* (Table 1).

**TABLE 1. Summary of acceptable records of the Southern Star Finch presented in chronological sequence. All locations are identified using one-degree blocks.**

Date	Location	Comments/Sources
1835	30/149 Namoi R.	specimen, C. Coxen [1,2]
1839	30/149 Namoi R.	'thinly dispersed', J. Gould [3]
23/04/1844	29/151 Dumaresq R., Bonshaw	J. Gilbert [4]
10/11/44	25/149 Juandah Ck, near 'Clonduff'	nesting, J. Gilbert, diary
18/11/44	25/149 Robinson Ck, 'Verbena Park'	nesting, J. Gilbert, diary
24/12/44	24/148 Lake Brown	J. Gilbert, diary
<1866	23/151 Port Curtis	Anon. [5]
<1866	23/150 Rockhampton	Anon. [5]
<1867	23/150 Rockhampton	specimen, Nat. Mus. Vic.
28/02/82	23/150 Fitzroy Vale	specimen, Am. Mus. Nat. Hist.
1897	23/150 Rockhampton	specimen, Am. Mus. Nat. Hist.
<1912	23/150 'Dunrobin' near Yaamba	specimen, Aust. Mus.
<1915	20/148 Bowen	specimen, Aust. Mus.
<1915	23/150 Rockhampton	specimen, Aust. Mus.
1932	24/145 Barcoo R., Blackall	'plentiful', J. Marshall [6]
01/09/64	29/150 Gwydir R., 'Gwydir Park'	20 birds, M. Baldwin [7]
c. 05/75	23/149 Mackenzie R., Bingegang Weir	50 birds, E. Zillman, pers. comm.
1976	22/147 Sandy Ck., ? Pink Lily Lagoon	20 birds, D. Stewart, pers. comm.
08/78	24/144 Emmet	50 birds, Anon. [8]
c. 1980	22/149 Ogmoo near Mt. Brunswick	20 birds, C. Horan, pers. comm.
c. 05/85	21/148 Connors R., Boothill Ck	4-5 birds, R. Whalan, pers. comm.
14-15/10/88	21/146 Rosetta Ck., Bundoba Lag.	20 birds, D. Cameron, pers. comm.
24/05/92	22/142 Surprise Ck., SW Winton	6 birds, K. & L. Fisher, pers. comm.
07/93	22/141 'Archervale' near Middleton	3 birds, J. Young, pers. comm.

1. Hindwood 1938 2. Sauer 1982, p. 271 3. Gould 1865, p. 412 4. McAllan 1994  
5. Diggles 1866-70 6. Marshall 1932 7. Baldwin 1975 8. Blakers *et al.* 1984

Most records from Townsville to Cairns should be rejected (Table 3). Three records for the Field Atlas were accepted by Blakers *et al.* (1984, p. 593). One at Meunga Creek near Cardwell was simply a transcription error (M. Thorsborne pers. comm.). A description (Atlas URRF) for birds reported at The Rocks near Cairns more plausibly concerns immature Crimson Finches. This was certainly the cause for a tentative record near Edmonton, subsequently withdrawn (P.

Zammit pers. comm.). Recent reports near Trebonne were finally disclaimed for the same reason (D. Rogers pers. comm.). Thus it is prudent to reject the third Field Atlas record, and the report by Wieneke (1988), both for Townsville. Moreover, all these reports were by interstate observers unfamiliar with the region. No resident observers have reported Star Finches.

By contrast, there were definite records of Star Finches near Cardwell in 1904 and 1925-26 (Table 2). These were listed as nominate *ruficauda* by Storr (1984a). A record for the Field Atlas near Mt Surprise in 1981 was directly inland from Cardwell but on the south-eastern Gulf drainage. Since *clarescens* occurs northward from Normanton (e.g. Garnett 1992), this record could logically be identified with it. However, the birds observed at Mt Surprise in 1995 seem referable to *ruficauda*. They were judged to be duller than birds held in captivity nearby (P. Wallace pers. comm.).

One record given by the Historical Atlas (Blakers *et al.* 1984) appears to result from a misinterpretation of the source. The diary of John Gilbert for 23 March 1845 was deemed to record *Bathilda ruficauda* on the Suttor River (see original Atlas data sheet based on the copy in the Mitchell Library). However, the Star Finch was known at the time as *Amadina ruficauda*. Reichenbach did not originate the name *Bathilda* until 1862 (RAOU 1926). Moreover, this record was not reported by Storr (1984a,b) and was not apparent in a copy of the diary inspected in the DoE library, Brisbane.

**TABLE 2. Summary of likely records of the Southern Star Finch. The subspecies is uncertain because of the intermediate geographic location, or the possibility that the record concerns escaped birds.**

Date	Location	Comments/Sources
1880s	20/140 Cloncurry	'common', W. MacGillivray [1]
12/01/1904	18/146 Rockingham Bay	specimen, Nat. Mus. Vic.
1925-26	18/146 Cardwell	nesting, H. Barnard [2]
1970-71	20/148 Bowen, Muller's Lagoon	1 bird, R. Johnstone, pers. comm.
c. 1972-75	23/150 Rockhampton, Kawana	100 birds, C. Doblo, pers. comm.
11-12/08/76	20/140 Cloncurry, west side	A. Hunt, pers. comm.
10/07/81	18/144 O'Brien's Ck. gemfields	5-6 birds C. Allamby, pers. comm.
c. 1990	20/139 Mt Isa	1 bird, P. Harris, pers. comm.
11/01/90	20/148 Bowen, town area	3 birds, I Burrows, pers. comm.
c. 11/91	23/150 Rockhampton, Lion Lagoons	6 birds, A. Taplin, pers. comm.
07/93	23/150 'Alton Downs'	8 birds, per G. Porter, pers. comm.
10/95	18/144 Mt Surprise, caravan park	2-3 birds, P. Wallace, pers. comm.

1. MacGillivray 1901 2. Barnard 1926



**TABLE 3. Summary of rejected records of the Southern Star Finch.**

Date	Location	Comments/ Sources
23/03/1845	22/146 Suttor River	J. Gilbert, diary [1 misinterprets]
1976	19/146 Townsville, Alligator Ck	Anon. [2]
07/04/78	16/145 Cairns, The Rocks	A. Daw [1]
03-06/06/81	19/146 Townsville	M. O'Sullivan [1]
06-08/81	18/146 Cardwell, Meunga Ck	A. Thorsborne [1]
17/05/92	18/146 Trebonne, Stony Ck crossing	A. Rogers, per D. Rogers
17/09/92	18/146 Trebonne, J. Young residence	D. Rogers, pers. comm.

1. Blakers *et al.* 1984    2. Wieneke 1988

### SURVEY RESULTS

No Southern Star Finches were located during the survey. Nine other finch species were encountered, the most numerous being Plum-headed Finch (582), Double-barred Finch (445), Chestnut-breasted Mannikin (423) and Zebra Finch (339). A significant southern population of the Crimson Finch was located on the Connors River. By contrast, only 29 Double-barred Finches were recorded in seven days from 28 to 31 July and 4 to 6 August 1993 (Appendix 1). This might be attributed to local effects of the widely prevailing drought.

Vegetation at nine former locations of the Southern Star Finch was mainly woodland. Dominant trees were mostly species associated typically with permanent water or areas of regular inundation. The most frequent were *Eucalyptus coolabah*, *E. tereticornis*, *E. tessellaris*, *Melaleuca leucadendra*, *E. camaldulensis* and *Casuarina cunninghamiana* (Table 4). Bundoba Lagoon was the most distinctive location because none of its species was shared with others. At two recent locations near Winton and Middleton grasses predominated. Twelve species were recorded, with only *Oxychloris scariosa* and *Sporobolus australasicus* at both (Table 5).

**TABLE 4. Dominant trees recorded at selected former locations of the Southern Star Finch.**

Tree Species	1	2	3	4	5	6	7	8	9
<i>Eucalyptus coolabah</i>		+				+	+	+	+
<i>E. tereticornis</i>	+	+	+	+					
<i>E. tessellaris</i>	+		+	+			+		+
<i>Melaleuca leucadendra</i>	+		+	+			+		

Tree Species	1	2	3	4	5	6	7	8	9
<i>E. camaldulensis</i>						+	+	+	
<i>Casuarina cunninghamiana</i>			+				+		+
<i>E. raveretiana</i>				+					
<i>E. brownii</i>					+				
<i>E. cambageana</i>					+				
<i>E. populnea</i>								+	
<i>E. erythrophloia</i>			+						
<i>Angophora floribunda</i>									+
<i>Livistona nitida</i>		+							+
<i>Terminalia oblongata</i>					+				
<i>Lysiphylum</i> sp.					+				
<i>Cassia brewsteri</i>					+				
<i>Acacia harpophylla</i>					+				
<i>A. excelsa</i>					+				
<i>A. ? salicina</i>								+	
<i>Atalaya hemiglauca</i>					+				
<i>Eremophila ? mitchellii</i>					+				

1. Bowen, Muller's Lagoon

2. Robinson Ck, 'Verbena Park'

3. Connors R., Boothill Ck

4. Yaamba

5. Rosetta Ck, Bundoba Lagoon

6. Clermont, Pink Lily Lagoon

7. Mackenzie R., Bingegang Weir

8. Comet R., Lake Brown

9. Juandah Ck near 'Clonduff'

**TABLE 5. Grasses recorded at two recent locations of the Southern Star Finch.**

Grass Species	Middleton	Winton
<i>Aristida holathera</i>	+	
<i>Aristida</i> sp.	+	
<i>Cenchrus ciliaris</i> *	+	
<i>Chloris ? divaricata</i>		+
<i>Dactyloctenium radulans</i>		+
<i>Echinochloa colona</i>	+	
<i>E. ? tumeriana</i>	+	
<i>Enneapogon ? intermedius</i>	+	
<i>Eragrostis ? tenellula</i>	+	
<i>Oxychloris scariosa</i>	+	+
<i>Sporobolus actinocladus</i>	+	
<i>S. australasicus</i>	+	+

\* exotic

## ACKNOWLEDGEMENTS

This study was funded mainly through a Queensland twitchathon supported by the QOSI and the RAOU. It was administered by the Queensland Department of Environment. Staff who assisted there included T. Clancy, N. Kunst and J. Tilly. Field assistance was given by G. Porter (DoE, Rockhampton) and J. Holmes. The many informants are listed in Appendix 2.

## REFERENCES

- BALDWIN, M. 1975. Birds of Inverell district, N.S.W. *Emu* 75: 113-120.
- BARNARD, H. 1926. Birds of the Cardwell district, Queensland. *Emu* 26: 1-13.
- BLAKERS, M., DAVIES, S. & REILLY, P. 1984. *The Atlas of Australian Birds*. Melbourne: RAOU & Melbourne University Press.
- BOLES, W. 1988. Comments on the subspecies of Australian native and introduced finches. *Emu* 88: 20-24.
- CHRISTIDIS, L. 1987. Phylogeny and systematics of estrildid finches and their relationships to other seed-eating passerines. *Emu* 87: 119-123.
- DIGGLES, S. 1866-70. *The Ornithology of Australia*. Brisbane: Author.
- EVANS, S. & BOUGHER, A. 1987. The abundance of estrildid finches at waterholes in the Kimberley (W.A.). *Emu* 87: 124-127.
- FORD, J. 1986. Avian hybridization and allopatry in the region of the Einasleigh Uplands and Burdekin-Lynd Divide, north-eastern Queensland. *Emu* 86: 87-110.
- GARNETT, S. (ed.) 1992. *Threatened and Extinct Birds of Australia*. Melbourne: RAOU, Canberra: ANPWS.
- GOULD, J. 1865. *Handbook to the Birds of Australia*. London: Author.
- HINDWOOD, K. 1938. John Gould in Australia. *Emu* 38: 95-118.
- IMMELMANN, K. 1982. *Australian Finches*. Sydney: Angus & Robertson.
- KEAST, A. 1958. Intraspecific variation in the Australian finches. *Emu* 58: 219-246.
- McALLAN, I. 1994. John Gilbert's missing months. *Mem. Qld Mus.* 35(1): 155-179.
- MACE, G. & LANDE, R. 1991. Assessing extinction threats: towards a re-evaluation of IUCN threatened species categories. *Conserv. Biol.* 5: 148-157.
- MacGILLIVRAY, W. 1901. Some north-west Queensland birds. *Vic. Nat.* 18: 45-47.
- MARSHALL, J. 1932. In search of a 'lost' bird. *Emu* 32: 99-103.
- PIZZEY, G. 1980. *A Field Guide to the Birds of Australia*. Melbourne: Collins.
- RAOU 1926. *Official Checklist of the Birds of Australia*, 2nd ed. Melbourne: RAOU.
- SAUER, G. 1982. *John Gould the Birdman, A Chronology and Bibliography*. Melbourne: Lansdowne.
- SCHODDE, R. & TIDEMANN, S. 1986. *Complete Book of Australian Birds*. Sydney: Reader's Digest.



- STORR, G. 1984a. Revised list of Queensland birds. *Rec. West. Aust. Mus.*, suppl. no. 19.
- STORR, G. 1984b. The distribution of estrildine finches in Queensland. *Sunbird* 14: 1-6.
- WIENEKE, J. (ed.). 1988. *Birds of Townsville and Where to Find Them*. Townsville: Wildlife Preservation Society of Queensland, Townsville Branch.

G. HOLMES, Glenn Holmes & Associates, 33 Twelfth Ave, Atherton, Q 4883.

**APPENDIX 1. ITINERARY OF SOUTHERN STAR FINCH SURVEY. NUMBERS OF FINCHES GIVEN FOR EACH LOCATION, JUNE-AUGUST 1993, JUNE 1994.**

Date	Location	Finch Numbers
23/06	20/148 Muller's Lagoon	CbM 10 DbF 4
	19/147 Cromarty	ZeF +
24/06	19/146 Billabong Sanctuary	DbF +
	19/146 Townsville Town Common	CbM + NuM + DbF
16/145	Mt Molloy, Baker's Rd	RbF + CbM + DbF + 26/06
27/06	16/145 Big Mitchell Ck	RbF + CbM + DbF + BtF +
28/06	18/146 Trebonne, Stone R.	CrF + RbF + CbM +
30/06	22/149 Sheepskin Ck	DbF 8
01/07	22/149 Sheepskin Ck	PhF 11 DbF 8
	22/149 Lotus Ck (1km)	PhF 40 DbF 15
	22/148 Connors R./Lotus Ck	CbM 260 DbF 21
02/07	22/148 Connors R./Lotus Ck	CbM 20 DbF 6
	22/149 Lotus Ck (2km)	PhF 130 CBM 6 DbF 20
03/07	23/150 Rockhampton, Lion Ck	CbM 10 NuM 2 DbF 30
26/07	23/150 Rockhampton, Nine Mile Rd	DbF 15
	23/150 Rockhampton, Fairy Bower	DbF 25
	22/149 Apis Ck	DbF 5
	22/149 Connors R., Top Island (1km)	PhF 30 DbF 5
27/07	22/149 Connors R., Top Island (8km)	PhF 68 CrF 2 DbF 60
	22/148 Connors R., Boothill Ck	DbF 5
28/07	21/147 Goonyella, Isaac R.	DbF 25
01/08	22/147 Clermont Weir	DbF 75
	23/148 Mackenzie R., Bedford Weir	DbF 6
	23/149 'Kola Bar'	ZeF 6
02/08	23/149 Mackenzie R., Bingegang W.	CbM 20 DbF 6
	23/149 Mackenzie R. bridge	DbF 9
	22/149 Isaac R., 'May Downs' road	CbM 4 DbF 2

	22/149 Lotus Ck (5km)	CbM 5 DbF 21
	22/149 Connors R., below Top Island	PhF 83 DbF 5
03/08	22/149 as above (circuit 10 km, including anabranchn)	PhF 220 CrF 77 CbM 88 NuM 2 DbF 60
04/08	22/149 Lotus Ck, nr Sheep Stn Hill	DbF 4
19/06	22/142 Surprise/ One Mile Cks	ZeF 88 PaF 2
20/06	22/142 Surprise/ One Mile Cks	ZeF 120 PaF 8
	22/141 Ada Ck bore	ZeF 50
	22/141 'Archervale'	ZeF 10 PaF 2
21/06	22/141 Cadell Ck, nr 'Woodstock'	ZeF 65 PaF 29

### Locations where no finches were recorded :

25/06	16/145 Redlynch, The Rocks
25/07	25/149 Juandah Ck nr Lilyvale; Robinson Ck
26/07	23/150 Rockhampton, Limestone Ck; Yaamba
27/07	21/148 Nebo/ Goonyella
28/07	21/147 'Diamond Downs'/ 'Pasha'; Suttor R. nr 'Glenavon'; Mt Coolon
28/07	21/146 Suttor R. and Belyando R. nr 'Mt Douglas'; Rosetta Ck, Bundoba Lagoon
29/07	21/146 Rosetta Ck, Bundoba Lagoon
29/07	21/147 'Yacamunda', 'Conway'
29/07	20/147 Sellheim R.
29/07	20/146 Lake Dalrymple (Burdekin Falls Dam)
30/07	21/146 Suttor R., 'Scartwater'
30/07	21/146, 20/146 Cape R.
31/07	19/145 Great Basalt Wall, Red Falls; Toomba Lake
31/07	19/146 Lynd Hwy, Fletcher Ck; Burdekin R., Big Bend
31/07	21/146 Suttor R., 'St Anns'; Suttor R., Murdering Lagoon
01/08	22/147 Sandy Ck, Pink Lily Lagoon
04/08	22/149 Isaac R., 'Manly'
04/08	23/149 'Apis Ck'/ 'Foleyvale'; Dawson R., Capricorn Hwy; Fitzroy R., 'Riverslea'
05/08	24/148 Comet R., Lake Brown
06/08	25/149 Lake Murphy; Roche Cknr Culgowie; Juandah Cknr 'Dunrowan'
18/06	24/145 Barcoo R., Blackall
19/06	23/144 Thomson R., Longreach

PhF	Plum-headed Finch <i>Nechmia modesta</i>	total	582
CrF	Crimson Finch <i>N. phaeton</i>		79
RbF	Red-browed Finch <i>N. temporalis</i>		+
CbM	Chestnut-breasted Mannikin <i>L. castaneothorax</i>		423
NuM	Nutmeg Mannikin <i>L. punctulata</i>		4
DbF	Double-barred Finch <i>Taeniopygia bichenovii</i>		445

ZeF	Zebra Finch <i>T. guttata</i>	339
BtF	Black-throated Finch <i>Poephila cincta</i>	+
PaF	Painted Finch <i>Emblema pictum</i>	41

+ present but not counted

## APPENDIX 2. INFORMANTS INTERVIEWED FOR SOUTHERN STAR FINCH SURVEY.

City/ Town	Informants
Bundaberg	E. Zillman
Rockhampton	S. Barry, M. Crawford, D. Crossman, C. Doblo, A. Goltz, C. Horan, J. McCabe, G. Porter, S. Rothery, K. Tucker
Mackay	T. Brickhill, M. Crouther, R. Whalan
Bowen	J. Hoare, J. Kelly, J. Wren
Taroom	A. Clark
Emerald/ Clermont	J. Costello, K. Kendall, B. Lawrie, M. Perrin, W. Peterson
Collinsville	K. Hillhouse, C. Hayward, A. Hodges, K. Knuth
Ayr/ Home Hill	G. Cumming, A. Ey, R. Wyatt
Townsville	G. Blackman, P. Britton, D. Cameron, A. Griffin, P. Johnson, C. Mulvihill, J. Wieneke
Ingham	J. Young
Cardwell	M. Thorsborne
Cairns	J. Crowhurst, K. & L. Fisher, D. Magarry, K. Shurcliff, D. Storch
Julatten	G. Nicholson, L. Nielsen
Ravenshoe	J. Winter
Malanda	C. Frith, G. Harrington
Atherton	F. Crome, L. Moore, J. Fitzsimon, E. Sticklen
Mt Isa	P. Harris
Brisbane	G. Czechura, R. Dowling, I. Gynther, R. Garwood, G. Ingram, D. Stewart, J. Tilly, P. Walbridge
Melbourne	D. Andrew, D. & A. Rogers
Canberra	B. Gill, A. Taplin
Adelaide	B. Hutchins
Sydney	D. Hobcroft, A. Palliser, P. Zammit
Gold Coast	H. Beste, D. Price, R. Woolcott
Mullumbimby	D. Stewart
Ballina	J. Izzard
Lismore	D. Gosper
Tenterfield	M. Goddard
Port Moresby	I. Burrows



## A NEW POPULATION OF THE ZITTING *CISTICOLA CISTICOLA* *JUNCIDIS* ON CAPE YORK PENINSULA

STEPHEN GARNETT and GABRIEL CROWLEY

The Zitting Cisticola *Cisticola juncidis* in Australia is patchily distributed in saline grasslands along the northern Australian coast (Blakers *et al.* 1984). Similar habitat to that in which the species has been recorded beside the Gulf of Carpentaria is also present between the salt flats and the tea-tree woodland at the southern edge of Princess Charlotte Bay on the east coast of Cape York Peninsula. The area was visited as part of a survey of grasslands on 21 March 1995 and the opportunity was taken to search for Zitting Cisticola. A second visit to the area was made on 14 May 1995.

Zitting Cisticolas were found in March at a site on Marina Plains Station at 14°32'30"S, 143°55'00"E. Both species of Australian *Cisticola* were present, with individuals of both species undertaking display flights and calling. At least seven individual Zitting Cisticolas were observed performing a deeply undulating display flight 5-10 m above the ground, which involved giving a sharp 'zitt zitt' at the top of each undulation. By contrast, Golden-headed Cisticolas *C. exilis* flew 20-30 m in the air giving a sharp bisyllabic 'eee-whit', the first note extended and ascending, the second staccato.

A good view was also obtained of one sitting Zitting Cisticola. The male in breeding plumage had a streaked crown but unstreaked nape. In May two specimens, both moulting immature males, were taken and forwarded to the Australian National Wildlife Collection at CSIRO in Canberra. In addition recordings of the species were played, to which Zitting Cisticolas responded, yet they were not seen to affect Golden-headed Cisticola.

The habitat was a mixture of sedges Cyperaceae and the grasses *Sporobolus virginicus*, *Oryza australiensis* and *Panicum laevinode* in a continuous sward across seasonally inundated grassland. The grassland extended over at least 10 km<sup>2</sup>. In most years this grassland is burnt between May and October, though there are always patches of grass that remain unburnt (G. Shephard pers. comm.).

The taxonomic status of this population of Zitting Cisticola is uncertain. Three subspecies have been described from Australia (Schodde & Mason 1979): *C. j. laveryi* occurs in eastern Queensland from Rockhampton to Ingham; *C. j. normani* has been recorded on the eastern shores of the Gulf of Carpentaria at Normanton and Pompuraaw; and *C. j. leanyeri* occupies coastal areas from the Macarthur River of the Northern Territory to the Kimberley region of Western Australia. Though *C. j. normani* occurs on the western side of the Peninsula (Garnett &

Bredl 1985), only 250 km away from Marina Plains Station, the distance around the coast is about 1000 km. At present most of the intervening habitat is unsuitable. Though suitable habitat may have been distributed more continuously along the coast at times of low rainfall during the Pleistocene, the sea level then was lower and Torres Strait was a broad land bridge which further isolated the east coast from western populations (Schodde & Calaby 1972). The Princess Charlotte Bay population may therefore be more closely related to *C.j. laveryi* than *C.j. normani* because Ingham would have been closer to Princess Charlotte Bay than western Cape York Peninsula at the time sea levels were low and the habitat likely to have been more continuous.

The status of *C.j. normani* was considered Insufficiently Known by Garnett (1992 a,b) because of the small number of records. The lack of records is likely to be because the large area of potentially suitable habitat is mostly inaccessible. The area of habitat available to the Princess Charlotte Bay population is much smaller, occurring in a narrow fringe from about Running Creek in the north to Bathurst Range in the east, a total distance of about 80 km. Furthermore much of the grassland in this area has become woodland in the last 20 years. During the helicopter survey it was discovered that sites at nearby Running Creek that had been grassland in 1966 (R. Story *in litt.*) had become dense woodland of Broad-leaved Tea-tree *Melaleuca viridiflora*. The site where the Zitting Cisticola was found had no sign of tea-tree invasion, but this may not last because encroachment is occurring at the landward edge of the grassland (G. Shephard pers. comm.). Proposed research aimed at restoring the grasslands in the region may be important for the conservation of the Princess Charlotte Bay population of the Zitting Cisticola.

#### ACKNOWLEDGEMENTS

We are grateful to the Grassland Ecology Program of the Australian Nature Conservation Agency which funded the survey of grasslands, and to our patient helicopter pilot, Brian Hughes, baffled though he was by our pursuit of tiny brown zitting birds. We are grateful to David Stewart, Alistair Stewart and Jeremy Garnett for assistance with capturing the birds and to Richard Schodde for comments on the manuscript.

#### REFERENCES

- BLAKERS, M., DAVIES, S.J.J.F. & REILLY, P.N. 1984. *The Atlas of Australian Birds*. Melbourne: Melbourne University Press.
- GARNETT, S.T. (Ed.) 1992a. *Threatened and Extinct Birds of Australia*. R.A.O.U. Report 82.
- GARNETT, S.T. 1992b. *Action Plan for Australian Birds*. Canberra: Australian National Parks and Wildlife Service.

- GARNETT, S.T. & BREDL, R. 1985. An annotated list of the birds in the vicinity of Edward River Settlement. *Sunbird* 15: 26-40.
- SCHODDE, R. & CALABY, J. 1972. The biogeography of the Australo-Papuan bird and mammal faunas in relation to Torres Strait. In *Bridge and Barrier: the Natural and Cultural History of Torres Strait*. D. Walker (Ed.). Canberra: A.N.U. Press.
- SCHODDE, R. & MASON, I.J. 1979. Revision of the Zitting Cisticola *Cisticola juncidis* (Rafinesque) in Australia, with a description of a new subspecies. *Emu* 79: 49-53.

STEPHEN GARNETT & GABRIEL CROWLEY, Department of Environment,  
P.O. Box 2066, Cairns, Q 4870. Current address: PO Box 117, Parndana,  
Kangaroo Island, South Australia 5220.



## NOTE ON THE DIET OF THE LETTER-WINGED KITE NEAR CHARTERS TOWERS, NORTH QUEENSLAND

P.L. BRITTON, H.A. BRITTON and A.B. ROSE

The Letter-winged Kite *Elanus scriptus* is a seldom recorded, irruptive species in much of Queensland, breeding colonially in copses of trees on riverine plains of Lake Eyre drainage whenever Long-haired Rats *Rattus villosissimus* are abundant (Storr 1984). The small number of records from tropical Queensland includes single birds at Moranbah in May 1988 and Mareeba in May 1990 (Britton 1990, 1991), and numbers in the Townsville-Charters Towers region in 1994. Townsville sightings involved scattered records of single birds in June (F. Harrison & I.C. Gynther pers. comm.).

Two roosting birds were discovered on private land 40 km west of Charters Towers on 24 July 1994, and up to twelve birds continued to roost at this site until at least 19 November 1994, when there were again two birds present. Aware of the interest which this roost might generate in Townsville and beyond, the owners of Powlathanga Station (20°10'S, 146°00'E) preferred that PLB and HAB did not publicise the record while the birds were present. Lake Powlathanga, about 165 km south-west of Townsville at 340 m asl., is an impressive but typically ephemeral wetland, set in semi-arid wooded grassland dominated by ironbarks and box-gums. The roost, about 2 km from the shallow northern end of the lake, was at the outer edge of seldom flooded peripheral grassland.

Pellets picked up under the roost trees on 13 August, 3 September and 22 October were sent to ABR, who made various identifications using his reference collection of small mammal skulls from New South Wales. He sought the advice of Steve van Dyck, mammalogist at the Queensland Museum, and consulted relevant literature (Thomas 1888, Knox 1976, Watts & Aslin 1981, Strahan 1983). There were seven Letter-winged Kite pellets and two pellets from an unidentified owl *Tyto* sp., the latter characterised by the dark, 'glazed' mucous coating (see Schodde & Mason 1980).

Recent pellets from non-breeding Letter-winged Kites in Victoria and South Australia contained large numbers of House Mice *Mus musculus* (Marchant & Higgins 1993), whereas the data in Table 1 indicate that Canefield Rats *R. sordidus* were dominant in the diet at Powlathanga. Just as this specialised nocturnal hunter has adapted to include the introduced House Mouse in its diet in recent decades, it will presumably widen its prey selection to take advantage of local prey species in peripheral areas. Stripe-faced Dunnart *Sminthopsis macroura* and other dunnarts have been recorded as prey species, whereas the genus *Planigale* (probably Long-tailed Planigale *P. ingrami*) and the Canefield Rat are additions to the known diet of the Letter-winged Kite (see Marchant & Higgins 1993).

**TABLE 1. Pellets collected at Powlathanga, North Queensland on 13 August, 3 September and 22 October 1994.**

---

Letter-winged Kite

41.5 x 24.5mm	2 Canefield Rats
36 x 25mm	2 Canefield Rats and 1 <i>Planigale</i> sp.
29 x 21mm	1 Canefield Rat
30 x 23mm	1 Canefield Rat
31 x 20mm	1 Canefield Rat
29 x 22mm	1 Canefield Rat
28 x 17mm	1 Stripe-faced Dunnart

*Tyto* sp.

82 x 39mm	2 Canefield Rats
65 x 27mm	1 Canefield Rat

---

It is instructive to speculate on the identity of the *Tyto* sp. which shared the same prey base as the Letter-winged Kites (Table 1). Pellet size and the proximity of extensive grasslands at nearby Lake Powlathanga suggest that Grass Owl *T. capensis* rather than Masked Owl *T. novaehollandiae* was involved. Neither species is known from the semi-arid Charters Towers area. In size, the two pellets are within the range of Grass Owl pellets analysed by ABR but too large for Barn Owl *T. alba*. The Canefield Rat is a common prey item of coastal Queensland Grass Owls (Hollands 1991). According to S. Debus (*in litt.*), Letter-winged Kites and Grass Owls often live in the same habitat type and Grass Owls are known to perch in trees. Having seen photographs of the habitat close to and under the roost trees, he considers it highly likely that Grass Owl was involved.

Coastal populations of the Grass Owl are thought to be sedentary, although numbers fluctuate and it can be locally numerous in the Wet Tropics (Schodde & Mason 1980). Vagrants on islands in Torres Strait, detailed by Draffan *et al.* (1983), were perhaps derived from this coastal population rather than the markedly irruptive Lake Eyre population which exhibits a dispersal pattern similar to that of the Letter-winged Kite (Blakers *et al.* 1984). Britton (1991) included records from coastal sites at about 20°S, well south of the Wet Tropics, but it is believed to be extinct on the semi-arid Mitchell-grass plains to the west (Storr 1984). A confirmed record of the Grass Owl near Charters Towers would be of considerable interest.

---

## ACKNOWLEDGEMENTS

Bruce and Marg Rae have allowed PLB and HAB to enjoy free access to Powlathanga Station over a 12-year period; Steve van Dyck, Queensland Museum mammalogist, assisted with the identification of mammal skulls; and Stephen Debus provided valuable assistance at different stages, including a criticism of the paper itself. We are grateful for these various contributions.

## REFERENCES

- BLAKERS, M., DAVIES, S.J.J.F. & REILLY, P.N. 1984. *The Atlas of Australian Birds*. Melbourne: Melbourne University Press.
- BRITTON, P.L. 1990. The Queensland Ornithological Society Bird Report, 1988. *Sunbird* 20: 18-32.
- BRITTON, P.L. 1991. The Queensland Ornithological Society Bird Report, 1990. *Sunbird* 21: 65-89.
- DRAFFAN, R.D.W., GARNETT, S.T. & MALONE, G.J. 1983. Birds of the Torres Strait: An annotated list and biogeographical analysis. *Emu* 83: 207-234.
- HOLLANDS, D. 1991. *Birds of the Night*. Melbourne: Reed.
- KNOX, E. 1976. Upper molar alveolar patterns of some Muridae in Queensland and Papua New Guinea. *Mem. Qld. Mus.* 17: 457-459.
- MARCHANT, S. & HIGGINS, P. (Eds.). 1993. *Handbook of Australian, New Zealand and Antarctic Birds, vol. 2*. Melbourne: Oxford University Press.
- SCHODDE, R. & MASON, I.J. 1980. *Nocturnal Birds of Australia*. Melbourne: Lansdowne.
- STORR, G.M. 1984. Revised List of Queensland Birds. *Rec. W. Aust. Mus. Suppl.* 19:1-189.
- STRAHAN, R. (Ed.). 1983. *The Australian Museum Complete Book of Australian Mammals*. Sydney: Angus & Robertson.
- THOMAS, O. 1888. *Catalogue of the Marsupialia and Monotremata in the Collection of the British Museum (Natural History)*. London: British Museum.
- WATTS, C.H.S. & ASLIN, H.J. 1981. *The Rodents of Australia*. Sydney: Angus Robertson.
- P.L. BRITTON & H.A. BRITTON, *All Souls' & St Gabriel's School, Charters Towers, Q 4820*.
- A.B. ROSE, *61 Boundary Street, Forster, NSW 2428*.



## THE BIRDS OF THE HOPE ISLANDS, NORTH QUEENSLAND

J.A. McLEAN

## ABSTRACT

From May 1983 to December 1994, fifty-seven species of birds were recorded during seven visits to the Hope Islands. A further three species recorded by other authors are listed, making sixty species in all, eleven of which were breeding.

## STUDY AREA AND METHODS

The Hope Islands, situated at 15°45'S, 145°27'E, are two low vegetated coral cays, 33 km south-east of Cooktown, North Queensland. The islands are a National Park and lie only 9 km off the adjacent mainland near Obree Point.

The two cays which comprise the Hope Islands are 2 km apart and each has its own reef separated by a deep channel. The western cay, the largest of the two, is almost entirely dominated by mangrove forest about 9 m in height. At least eleven mangrove species occur on the cay, Rhizophoraceae being the dominant family. Other vegetation comprises of trees, shrubs and herbage. The cay is approximately 1000 m in length by 500 m in width. Coral rubble deposits extend over much of the island and coral rubble banks are found from the southern end of the cay's shoreline to almost the northern end. A band of flat calcareous beach rock lies adjacent to this rubble bank at the south-eastern end of the island, with further rubble banks immediately to seaward. A drying reef flat surrounds much of the island and extends northward for about 2 km.

The much smaller eastern cay is devoid of any mangroves and is composed of coral sand vegetated with mixed herbage, shrubs and trees to about 12 m in height. The cay is situated at the northern end of a drying reef. A prominent narrow rubble bank 100 m long lies 1 km to the south of the cay. Canopy trees on this cay consist principally of *Terminalia* sp., *Mimusops elengi* and *Planchonia* sp.; while thickets of *Cordia subcordata* are found on the northern and eastern sections, with scattered *Scaevola sericea*, *Thespesia populnea*, *Caesalpinia bonduc* and *Sophora tomentosa* throughout the interior. Various runners, notably *Ipomoea pescaprae*, *Canavalia rosea*, *Vigna* sp. and the succulent *Sesuvium portulacastrum*, are a feature of the island's periphery.

Annual rainfall for the Hope Islands is unknown. A mean estimate, based on records from Lizard Island (120 km north) and Low Isles (75 km south), is 2040 mm per annum, predominantly from November to April. Moderate south-east trade winds prevail from May to October, with moister winds of variable direction during the summer months (Smith 1987). Air temperatures (based on

Lizard Island data) range from 19°C during winter to 33°C during summer. Sea surface temperatures range from 23°C to 29°C (Smith 1987).

The seven visits to the islands documented here were during the periods 21-28 May 1983, 4-7 July 1985, 14-16 August 1986, 28-31 October 1987, 14-15 January 1992, 27 February-2 March 1993 and 24-26 December 1994. Other than the western shoreline and the interior of the western cay, the latter rarely traversed, both the eastern and western cays were explored by foot, mainly around the perimeter. The 100 m long rubble bank, 1 km south of the eastern cay, was traversed only at low tide.

### ORNITHOLOGICAL HISTORY

It would appear that J. MacGillivray, naturalist aboard H.M.S. Rattlesnake in July 1848, made the first observation of bird life from the Hope Islands. He noted "Besides the usual waders on the reef, I found great numbers of doves and honeysuckers, and, among the mangroves, fell in with and procured specimens of a very rare kingfisher, *Halcyon sordidus* [Collared Kingfisher]". These were all from the western cay. Referring to the eastern cay, MacGillivray went on to say "A pair of white-headed sea-eagles [Brahminy Kite] had established their aerie in a tree not more than twenty feet from the ground, and I could not resist the temptation of robbing them of their eggs" (MacGillivray 1852).

Le Souef (1894) was the next naturalist to call at the Hope Islands during October 1893. He recorded Australian Pelican (breeding) and many hundreds of Pied Imperial-Pigeons, which were busy hatching and rearing their young. On his second visit, in the spring of 1896, he recorded Eastern Reef Egrets (breeding), a pair of White-bellied Sea-Eagles (breeding), numerous Bridled Terns (breeding), thousands of Pied Imperial-Pigeons (breeding), a pair of Bar-shouldered Doves, a few pairs of Azure Kingfishers (breeding), a Northern Fantail and many Varied Honeyeaters at the western cay. From the eastern cay he recorded Australian Pelican, Eastern Reef Egret, Silver Gull and Pied Imperial-Pigeon (Le Souef 1897). Warham (1962), while anchored off Gubbins Reef, 6 km to the north-west of the Hope Islands, from 24 to 28 September 1958, noted five Australian Pelicans, fifteen Brown Boobies, Silver Gull and small parties of Pied Imperial-Pigeons commuting between the Hope Islands and the mainland, and he recorded four unidentified terns. Finally, Kikkawa (1976) made brief counts of Pied Imperial-Pigeons returning to the Hope Islands from the mainland on 26 October 1968. The scientific names for all species are given in Appendix 1.

### RESULTS AND DISCUSSION

Sixty species, eleven of them breeding, have been recorded from the Hope

Islands. These species and their breeding seasons are comparable with data from neighbouring coral cays to the north (Three Isles, McLean 1993; Eagle Island, Smith & Buckley 1986). However, because there are three geographical features found at the Hope Islands which differ slightly from features at most other offshore Barrier Reef coral cays in the Cooktown region, some differences occur. Firstly, there is the closer proximity of the Hope Islands to the mainland; secondly, isolation from the nearest vegetated coral cay (70 km); and thirdly, the comparatively large areas of exposed reef flat at low water. These factors are reflected by the somewhat larger number of various Palaearctic waders and the Eastern Reef Egret which occur at both cays. These include Greater Sand Plover, Whimbrel, Grey-tailed Tattler and Bar-tailed Godwit; and, to a lesser degree, Sharp-tailed Sandpiper and Red-necked Stint that were not recorded from other neighbouring islands (McLean 1993, Smith 1987). A count of 150 light and 20 dark morph Eastern Reef Egrets on 28 February 1993, from an anchored yacht at West Hope Island, probably accounted for the majority of egrets present, but certainly not all. A count from East Hope Island in December 1994 yielded 109 light and 8 dark morph birds. A complete tally from both islands simultaneously would be of considerable interest.

Typically, the principal flocks of Pelican, waders, gulls and terns tend to congregate on flood tide at the southern and south-eastern outer rubble banks on West Hope Island and the southern rubble bank on East Hope Island. Generally, larger numbers of Grey-tailed Tattler, Black-naped Tern, Bridled Tern and Crested Tern were observed at the western island. Peregrine Falcon, Fork-tailed Swift, Azure Kingfisher and Little Kingfisher are rarely recorded from other coral cays (Kikkawa 1976), but it is likely that surveys to date from such remote areas do not reveal the true status of such species. MacGillivray's record of Brahminy Kite nesting on East Hope Island is unusual. Kikkawa (1976) included few other breeding records of this raptor from coral cays on the Great Barrier Reef. During 1994, the Hope Islands supported only two small colonies of breeding seabirds, both of which were almost confined to West Hope Island.

Nests of the Black-naped Tern were found at the eastern side of West Hope Island. A Bridled Tern colony involved six single egg nests and one downy chick located at the southern end of West Hope Island. Their nests were found under low shrubs of *Vitex* sp., *Morinda citrifolia* and *Aegiceras corniculatum*, under a dead log, and in the base roots of a *Pandanus* sp.. One downy chick was also found at East Hope Island. Kikkawa (1976) cites both the Caspian Tern and breeding Lesser Crested Tern at Hope Island, documented by Le Souef (1897) and Le Souef (1894), respectively. Le Souef did not in fact mention either of these species at either island. Caspian Tern is mentioned by Le Souef (1897) from Pickersgill Reef, 16 km south-east of the Hope Islands. Le Souef (1894) saw hundreds of Crested Terns nesting on a sandbank not far from the Hope Islands,



but he was unable to land. This may also have been at Pickersgill Reef, which supports such a sandbank on its north-western side (Gruning 1973). Kikkawa (1976) also refers to breeding of the Bar-shouldered Dove, documented by Le Souef (1897). But the latter author refers to a sighting of a pair and does not mention breeding.

The primary summer breeding species on the Hope Islands is the Pied Imperial-Pigeon. King (1990) detailed eleven Queensland islands with large colonies (> 10000 pairs) of breeding Pied Imperial-Pigeons, distributed from near Cape York to near Cardwell. Three of these are located south of Cooktown. The Hope Islands support one of these large colonies, at West Hope, and there are a further 1000-10000 pairs at East Hope. The Hope Islands provide the only known offshore breeding refuge for this pigeon over a distance of 145 km, stretching from the Low Isles (off Port Douglas) to Three Isles near Cape Bedford. Although local mainland nesting is known as far inland as Laura (Storr 1953), such sites in the immediate area probably involve very small numbers. Pigeons returning to the Hope Islands from widely scattered mainland sites were counted by Kikkawa (1976) for 15 minutes (1730-1745 h) on 26 October 1968. A total of 199 flocks consisting of 1103 birds was noted (73 bpm - birds per minute).

Random counts were made in 1992, 1993 and 1994, some at similar hours to Kikkawa's. They were taken from a stationary yacht without the aid of binoculars, so many distant flocks would have been overlooked. The peak influx of returning pigeons was between 1545 and 1815 h (EST) corresponding to data from Three Isles (McLean 1993). Sunset was at 1850 h. Brief random dawn counts from West Hope Island, involving pigeons returning to the mainland on 25 December 1994, appeared to be more erratic than dusk counts, with peaks and troughs ranging from 114 to 35 bpm between 0530 and 0715 h. On 28 February 1993 dawn counts from West Hope Island had fallen to 21 bpm (0600-0615 h) and 12 bpm (0615-0630 h).

Nesting material utilized by many Pied Imperial-Pigeons at the western sector of West Hope Island was twigs and leaves from local stands of a small leafed mangrove species *Osbornia octodonta*. Nests from East Hope Island were slightly more bulky, with larger twig material incorporated from various plants, ranging from 1 to 7 mm in diameter. Several ground nests were found on West Hope Island in December 1994, situated in exposed areas on pumice, coral shingle and prostrate succulent *S. portulacastrum*, and under low 0.5 m shrubs.

The summer nesting record for 1 March 1993 of the Varied Honeyeater from West Hope Island appears to be earlier than the normal winter period that most literature provides, although breeding can occur at any time of year (Simpson & Day 1989). Two chicks were present in a nest situated 6 m above mangrove

swamp in a small *Rhizophora apiculata*. During the March 1993 visit, groups of up to six Varied Honeyeaters on West Hope Island were often observed feeding in the open on nectar from the tiny pink flowers of *S. portulacastrum*.

The importance of National Park status for the isolated Hope Islands' large Pied Imperial-Pigeon breeding population is unquestionable. Extensive reef flats at both cays provide significant feeding and resting opportunities for the Eastern Reef Egret and many other migratory wading birds.

#### ACKNOWLEDGEMENTS

Thanks are due to Dr G. Ingram, G. Leach, Dr N.W. Longmore and The Royal Australasian Ornithologists Union who kindly provided material during the course of this project. I would also like to thank Cairns Meteorological Bureau for rainfall figures.

#### REFERENCES

- GRUNING, J.F. 1973. *Australia Pilot*, Vol. 3. Wisbech: Balding & Mansell.
- KIKKAWA, J. 1976. *The birds of the Great Barrier Reef*. In Jones O.A. & Edean, R. (Eds.). *Biology and Geology of Coral Reefs*, Vol. 3. New York: Academic Press.
- KING, B.R. 1990. Distribution and Status of the Torresian Imperial Pigeon *Ducula spilorrhoa* in north-eastern Queensland: Cooktown to Cape York. *Emu* 90: 243-253.
- Le SOUEF, D. 1894. A Trip To North Queensland. *Vict. Nat.* 11: 3-31.
- Le SOUEF, D. 1897. A Trip To The Bloomfield River District, North Queensland. *Vict. Nat.* 14: 19-34.
- MacGILLIVRAY, J. 1852. *Narrative of the Voyage of H.M.S. Rattlesnake*, Vol. 1. London: Boone.
- McLEAN, J.A. 1993. The birds of Three Isles, North Queensland. *Sunbird* 23: 95-106.
- SIMPSON, K. & DAY, N. 1989. *Field Guide to the Birds of Australia*. (2nd edn.). South Yarra: Viking O'Neill.
- SMITH, G.C. 1987. The birds of Eagle Island a tropical sand cay on the northern Great Barrier Reef, Australia. *Sunbird* 17: 1-11.
- SMITH, G.C. & BUCKLEY, R. 1986. Seabird Islands No. 161. Eagle Island, Great Barrier Reef, Queensland. *Corella* 10: 81-83.
- STORR, G.M. 1953. Birds of the Cooktown and Laura Districts, North Queensland. *Emu* 53: 225-248.
- WARHAM, J. 1962. Bird islands within the Barrier Reef and Torres Strait. *Emu* 62: 99-111.

## APPENDIX 1

## ANNOTATED SPECIES LIST FOR THE HOPE ISLANDS

\* Indicates breeding record(s).

Teal *Anas* sp.. Three birds flying from east to west at 1800 h on 15 January 1992.

Brown Booby *Sula leucogaster*. Usually solitary; flying offshore on some visits.

Little Pied Cormorant *Phalacrocorax melanoleucos*. 1-11 most visits; seen at both cays resting at lowtide on exposed limestone rocks.

Little Black Cormorant *Phalacrocorax sulcirostris*. Two resting at lowtide on an exposed limestone rock at the southern end of eastern cay, August 1986.

\* Australian Pelican *Pelecanus conspicillatus*. 6-31 regularly seen feeding in shallows about both cays and resting on rubble banks. Le Souef (1894) suspected breeding on the island.

Least Frigatebird *Fregata ariel*. 1-3, usually males; May 1983, October 1987, January 1992 and March 1993.

White-faced Heron *Egretta novaehollandiae*. 1-5 seen on some visits, resting and feeding about shallows; mainly at the western cay.

\* Eastern Reef Egret *Egretta sacra*. Regularly seen at both reef flats. Counts at lowtide from the western side of western cay in February 1993 involved 150 light and 20 dark morph birds. In December 1994, 109 light and 8 dark morph birds were counted at the eastern cay reef flat. Nests with eggs, chicks and fledglings were found on both cays in February - March 1993; a few fledglings in May 1983 and two chicks in July 1985.

Great Egret *Ardea alba*. Sightings of a single bird from both cays in May 1983, October 1987 and December 1994.

Nankeen Night Heron *Nycticorax caledonicus*. Two adults flushed from *Rhizophora stylosa* mangroves in January 1992 and a solitary individual noted in February 1993.

\* Osprey *Pandion haliaetus*. In May 1983 a nest was located in a moderately sized *Terminalia* tree at the south side of eastern cay. A second nest was found about 40 m further north in a high *Terminalia* tree in January 1992. In December 1994 there was a different nest 25 m further north, again in a canopy tree; each



nesting site involved a live tree. 2-4 birds seen each visit, mainly from the eastern cay.

\* Brahminy Kite *Haliastur indus*. MacGillivray (1852) stated that a pair had established their eyrie in a tree not more than 6 m from the ground in July 1848; eggs were present.

\* White-bellied Sea-Eagle *Haliaeetus leucogaster*. One or two were seen on some visits, mainly from the western cay. In spring 1896, Le Souef (1897) recorded breeding on the western cay, when two young birds were present near the nest.

Peregrine Falcon *Falco peregrinus*. A solitary adult harassing Eastern Reef Egrets on the beach at the eastern cay, 26-27 May 1983.

\* Buff-banded Rail *Gallirallus philippensis*. 1-4 adults regularly seen on all visits, throughout the eastern cay and on the beach, usually at dawn and dusk. At least four dark chicks were seen with an adult on 1-2 March 1993. Five eggs in a ground nest consisting of a cup of grass on 25 December 1994, located under sparse half metre high grass at the southern edge of the eastern cay.

Bar-tailed Godwit *Limosa lapponica*. 1-23 birds observed on most visits from both cays.

Whimbrel *Numenius phaeopus*. 1-60 regularly seen from both cays.

Eastern Curlew *Numenius madagascariensis*. One on 2 March 1993 was feeding on the reef flat at the eastern cay.

Terek Sandpiper *Xenus terek*. A solitary bird with other small waders at the eastern cay on 30 October 1987.

Grey-tailed Tattler *Heteroscelus brevipes*. Summer counts of up to 160 birds resting on looping roots of mangroves *R. stylosa* at flood tides; NE side of western cay.

Ruddy Turnstone *Arenaria interpres*. Primarily found at rubble banks and reef flat areas at both cays. 1-15 seen on most visits.

Great Knot *Calidris tenuirostris*. A pair seen from the eastern cay on 28 May 1983.

Red Knot *Calidris canutus*. 1-3 recorded from both cays on some summer visits. One seen on 24 May 1983.

Red-necked Stint *Calidris ruficollis*. 1-3 birds observed from both cays, October - May.

Sharp-tailed Sandpiper *Calidris acuminata*. Counts between October and December of 1-7 birds; both cays.

Beach Stone-curlew *Esacus neglectus*. 1-4 frequently seen and heard from both cays.

Pied Oystercatcher *Haematopus longirostris*. One or two pairs conspicuous at both cays on most visits.

Sooty Oystercatcher *Haematopus fuliginosus*. One or two individuals per count from the western cay.

Pacific Golden Plover *Pluvialis fulva*. 2-14 seen on most visits at both cays. A pair in breeding plumage on 21 May 1983.

Grey Plover *Pluvialis squatarola*. Three recorded from the eastern cay in March 1993 and eleven from the western cay in December 1994.

Lesser Sand Plover *Charadrius mongolus*. 1-31 noted on most visits; both cays.

Greater Sand Plover *Charadrius leschenaultii*. 1-13 seen on most visits; both cays.

Silver Gull *Larus novaehollandiae*. 2-8 each visit; both cays.

Lesser Crested Tern *Sterna bengalensis*. 2-10 birds in non-breeding and breeding plumage, often resting on southern rubble banks at the eastern cay; mainly October-December.

Crested Tern *Sterna bergii*. Counts of 240 birds in non-breeding and breeding plumage on each summer visit, usually resting on the rubble bank areas at both cays.

\* Black-naped Tern *Sterna sumatrana*. In December 1994, a single flock of 65 adults at the western cay and three nests (each with two eggs) and a downy chick on a sand ridge at the edge of vegetation at the eastern side of the western cay. In both October 1987 and January 1992 there were only 1-2 adults present; absent in summer 1993.

Common Tern *Sterna hirundo*. One adult in May 1983 and January 1992; four resting on the southern rubble bank at the eastern cay in March 1993.

---

Little Tern *Sterna albifrons*. Summer sightings of 1-32 birds from both cays. On 1 March 1993 there were 140 resting on the southern rubble bank at the eastern cay.

\* Bridled Tern *Sterna anaethetus*. Flocks of 55 and 18 adults present on the western and eastern cays, respectively, on 24 December 1994. Otherwise only small flocks of up to 10 birds seen during summer 1992 and summer 1993. A small colony of seven nesting birds (six single egg nests and one downy chick) at the southern end of the western cay on or near a low shingle ridge. A single nest with one downy chick was found at the southern end of the eastern cay in December 1994.

Common Noddy *Anous stolidus*. One adult resting at the western cay in December 1994.

Black Noddy *Anous minutus*. One adult resting at the eastern cay in July 1985.

Emerald Dove *Chalcophaps indica*. One adult on 27 May 1983 at the eastern cay.

Bar-shouldered Dove *Geopelia humeralis*. 2-8 seen on most visits from both cays.

Superb Fruit-Dove *Ptilinopus superbus*. One adult female at the western cay on 24 May 1983.

Rose-crowned Fruit-Dove *Ptilinopus regina*. One adult male at the western cay on 15 January 1992.

\* Pied Imperial-Pigeon *Ducula bicolor*. Common summer visitor; many thousands breed on both cays, particularly the western cay. Nests with eggs, chicks and fledglings prevalent in mangroves (West Hope) and other vegetation (East Hope); occasional ground nests were seen. A pair of pigeons present at the eastern cay on 22 May 1983 and 15 August 1986.

Channel-billed Cuckoo *Scythrops novaehollandiae*. A solitary individual flying over the western cay on 28 February 1993.

Fork-tailed Swift *Apus pacificus*. Three birds flying between cays in January 1992.

\* Azure Kingfisher *Alcedo azurea*. A few pairs were seen; nesting was recorded in the dead hollow branches of a Pandanus Palm at the western cay in spring 1896 (Le Souef 1897).



Little Kingfisher *Alcedo pusilla*. A single adult seen at the western cay on 24 May 1983.

Sacred Kingfisher *Todiramphus sancta*. A solitary individual noted at the eastern cay on 23 May 1983 and 1 March 1993, and at the western cay on 28 February 1993.

Collared Kingfisher *Todiramphus chloris*. 1-2 adults seen or heard at the western cay on most visits. One immature observed on 1 March 1993.

Dollarbird *Eurystomus orientalis*. Two adults and one juvenile hawking for insects at the eastern cay on 2 March 1993.

\* Varied Honeyeater *Lichenostomus versicolor*. Parties of up to three in mixed vegetation at the eastern cay and up to six in mangroves and ground succulents at the western cay. A nest with two chicks in a mangrove at the western cay on 1 March 1993.

Spectacled Monarch *Monarcha trivirgatus*. An adult seen at the western cay on 24 May 1993.

Leaden Flycatcher *Myiagra rubecula*. One at the western cay on 24 May 1983 and a female at the eastern cay on 1 March 1993.

Northern Fantail *Rhipidura rufiventris*. One recorded at the western cay in spring 1896 (Le Souef 1897).

Spangled Drongo *Dicrurus bracteatus*. A solitary adult at the eastern cay on 28 May 1983 and in December 1994.

White-breasted Woodswallow *Artamus leucorhynchus*. Small groups of up to eight adults on all visits to both cays. One juvenile at the western cay on 28 February 1993.

Welcome Swallow *Hirundo neoxena*. Three flying about the eastern cay in August 1986 and two there on 30 October 1987.

---

**A FURTHER OBSERVATION OF A FEEDING ASSOCIATION  
BETWEEN THE PLATYPUS AND THE AZURE KINGFISHER AND A  
DISCUSSION OF FEEDING ASSOCIATIONS BETWEEN BIRDS AND  
MAMMALS**

SCOTT BURNETT

This note describes an observation of an interaction between an Azure Kingfisher *Alcedo azurea* and a Platypus *Ornithorhynchus anatinus*, similar to that described by Troughton & Wray (1994). This incident occurred in March 1992 at about 1100h in Rifle Creek, Mt Molloy, North Queensland (16°40'S, 145°20'E). I was sitting in the creek, which was swollen by floodwaters, when a Platypus appeared at a bend in the creek, approximately 5m in front of me. The Platypus, unconcerned by my presence, was foraging at the water's edge, sometimes beneath the surface and at other times among the thick leaf litter immediately above the water's edge. Pulling myself through the water, I followed the Platypus and noticed an Azure Kingfisher perched above the area where the Platypus was feeding. As the Platypus foraged, small shrimps were observed to leap from the water in its immediate vicinity. The Kingfisher was observed to swoop into the water after them although it did not appear to capture anything during my observation. The Platypus appeared to take no notice of the bird and, together, they proceeded upstream. The whole sequence of events was observed over a period of about 15 minutes. Clearly, the Kingfisher was feeding, or attempting to feed, on animals which the Platypus disturbed. While the Kingfisher was evidently (or potentially) benefiting from this association, benefits to the Platypus were less evident. While there is no reason to suspect that the Platypus should accrue any benefits from this association, it is tempting to speculate that the Kingfisher may inadvertently play the role of an anti-predator, early-warning system, facilitated by its alertness and strident alarm call.

Although my search for such records has been far from exhaustive, an examination of the raptor section of Marchant & Higgins (1993) revealed more than 25 references to raptors of eleven species in feeding associations with mammals, including humans, their pets and stock, or their machinery (Table 1). Brown & Amadon (1968, p. 30) also note that raptors may learn to associate gunfire with game. Raptors are also known to enter into feeding associations with other raptors, Emus and dolphins, and to take advantage of the effect of fires and lights on concentrating prey species (see Table 1). Feeding associations have also been observed by me between humans on farm machinery and Australian Magpies *Gymnorhina tibicen*, Torresian Crows *Corvus orru* and Laughing Kookaburras *Dacelo novaeguineae*, in the Glasshouse Mountains area of south-eastern Queensland. In this case, these birds were observed to capture insects and rodents which were disturbed by the machinery.

**TABLE 1. Summary of records of feeding associations involving raptors, as presented in Marchant & Higgins (1993).**

Species	Common Name	Association (number of references cited in Marchant & Higgins 1993 in parentheses)
<i>Lophoictinia isura</i>	Square-tailed Kite	Car (1)
<i>Hamirostra melanosternon</i>	Black-breasted Buzzard	Fire (1)
<i>Milvus migrans</i>	Black Kite	Fires (9), willy-willies (1), farm machinery (1), Emus (1), cattle (2)
<i>Haliaeetus indus</i>	Brahminy Kite	Street light (2)
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Common Dolphin <i>Delphinus delphin</i> (2), farm machinery (1)
<i>Circus assimilis</i>	Spotted Harrier	Fire (1)
<i>C. approximans</i>	Swamp Harrier	Black Falcon (3)
<i>Accipiter fasciatus</i>	Brown Goshawk	Other raptors (3), people and other animals (1)
<i>A. cirrhocephalus</i>	Collared Sparrowhawk	Peregrine Falcon (1), Black Falcon (1)
<i>Erythrotriorchis radiatus</i>	Red Goshawk	Fires or human activities (3)
<i>Aquila audax</i>	Wedge-tailed Eagle	Dogs (1), cattle (1), farm machinery (1)
<i>Falco berigora</i>	Brown Falcon	Humans (1), sheep (1), farming activity and fires (10), other raptors (1)
<i>F. longipennis</i>	Australian Hobby	Stock (2), farm machinery (4), trains/cars (2), people (2), other birds (12)
<i>F. subniger</i>	Black Falcon	Fires, stock, farm machinery, dogs, people, raptors, Emus (16)
<i>F. peregrinus</i>	Peregrine Falcon	Train (1)
<i>F. cenchroides</i>	Nankeen Kestrel	Street light (1), fire (1), vehicle (1)

Thus, although the observations of Troughton & Wray (1994) and my own, as described above, are unique in the freshwater context, similar associations between mammals and birds have been reported from marine and terrestrial ecosystems on numerous occasions.

#### REFERENCES

- BROWN, L. & AMADON, D. 1968. *Eagles, Hawks and Falcons of the World*. Feltham: Hamlyn.



MARCHANT, S. & HIGGINS, P. 1993. *Handbook of Australian, New Zealand and Antarctic birds*. Vol. 2 Raptors to Lapwings. Melbourne: Oxford University Press.

TROUGHTON, G.J. & WRAY, S. 1994. An apparent feeding association between the Azure Kingfisher *Ceyx azurea* and the Platypus *Ornithorhynchus anatinus*. *Sunbird* 24: 45.

SCOTT BURNETT, Zoology Department and Department of Tropical Environment Studies and Geography, James Cook University of North Queensland, Townsville, Q 4811.

**MAGPIE GEESE *ANSERANAS SEMIPALMATA* NESTING IN TREES**

WALTER KOMSIC, STEPHEN GARNETT and GABRIEL CROWLEY

Magpie Geese *Anseranas semipalmata* usually nest in swamps, bending over grass or sedge to form a base and then adding materials dragged in from the surrounding swamp (Frith & Davies 1961). Occasionally they nest in woody shrubs such as *Lignum Muehlenbeckia cunninghamii* or Northern Bluebush *Chenopodium auricomum* (MacGillivray 1914, R. Jaensch unpublished data). This note describes nests found in trees.

During a helicopter survey of grasslands in southern Cape York Peninsula, two nests of Magpie Geese were found in White Mangroves *Avicennia eucalyptifolia*. The trees were growing on a concave bend of Saltwater Creek on Marina Plains Station at 14°S, 144°E. The Magpie Geese flew from their nests when the helicopter approached, revealing clutches of 7 and 10 eggs. The nests, as viewed from the hovering helicopter, appeared to have been constructed entirely of mangroves which had been bent over to form a large platform. The cup itself appeared to have been constructed largely of slender sticks, possibly brought in from surrounding mangroves. The nest was about a metre above the high tide mark and about 2.5 m above the mud exposed by low tide. The nest was separated from open water by a 4 m wide band of trees about a metre higher than the nest rim. On the landward shore the low *Avicennia* was replaced by a 6 m high band of *Rhizophora* spp.. The creek itself winds through grassy alluvial flats on which other Magpie Geese were just starting to build nests from grass in the usual manner. All five of these swamp nests had up to four fresh white eggs. At the time the nest was found there were about 200 Magpie Geese roosting in the mangroves near the nest.

Nests of Magpie Geese were first located at the site in 1991 by the first author, and have been found there in every year since. Each year the Geese have built a new nest, some as much as two metres above the high tide mark. Usually only one nest has been found.

The Geese may have nested in mangroves because they had attained breeding condition before the sedge or grass in the swamps was dense or tall enough to permit nesting (P. Whitehead pers. comm.) Late development of the swamps was particularly evident in 1995, when the first heavy rains did not arrive until early March, about two months later than normal. The nests in the mangroves appeared to be at least two weeks ahead of those in the swamps.

## ACKNOWLEDGEMENTS

We are grateful to the Grassland Ecology Program of the Australian Nature Conservation Agency who funded the helicopter survey and our skilled pilot Brian Hughes. Peter Whitehead gave us the most plausible explanation for this odd behaviour.

## REFERENCES

- FRITH, H.J. & DAVIES, S.J.J.F. 1961. Ecology of the Magpie Goose, *Anseranas semipalmata*, Latham (Anatidae). *CSIRO Wildl. Res.* 6: 91-141.
- MacGILLIVRAY, J.R.W. 1914. Notes on some North Queensland birds. *Emu* 13: 132-186.
- WALTER KOMSIC, *Marina Plains, Princess Charlotte Bay, Q 4871.*
- STEPHEN GARNETT & GABRIEL CROWLEY, *Department of Environment and Heritage, P.O. Box 2066, Cairns, Q 4870. Current address: PO Box 117, Parndana, Kangaroo Island, South Australia 5220.*
-



# INSTRUCTIONS TO AUTHORS

*The Sunbird* is published quarterly by the Queensland Ornithological Society to further the knowledge of birds in Queensland and adjacent northern regions of Australia.

Papers are invited from non-members as well as members on all aspects of ornithology, e.g. life history, taxonomy, distribution, behaviour and ecology. Articles may take the form of major articles on specific birds, birds in specific areas or habitats, or short notes on either birds themselves or the literature on birds, such as reviews of books or comments on published articles.

Submission of a paper implies that the results reported have not been published and are not being considered for publication elsewhere. The editor reserves the right to submit records of rare birds to the Records Appraisal Committee of the Royal Australasian Ornithologists Union.

Manuscripts can be supplied on floppy disk (IBM or MACINTOSH systems in Wordperfect 5.1 or Word 4.0 format) or in typed form on paper. When typed, the manuscript should be double-spaced and two copies sent. Papers longer than four typed A4 pages should have a summary. If needed, help may be given to authors to find relevant literature. Common names, scientific names and order of names should follow Christidis, L. & Boles, W.E. 1994. The taxonomy and species of birds of Australia and its territories. RAOU Monograph 2. Intending authors should consult recent issues of *The Sunbird* to see acceptable forms of contributions.

References should be listed in alphabetical order at the end of papers in the following styles; titles of journals will be abbreviated as in the *World List of Scientific Periodicals*:

- FLEAY, D.H. 1937. Nesting habits of the brush turkey. *Emu* 36: 153-163.  
FRITH, H.J. (Ed.) 1976. Mallee fowl. In *Complete Book of Australian Birds*, pp. 136-137. Sydney: Reader's Digest.  
SERVENTY, D., SERVENTY, V.N. & WARHAM, J. 1971. *The Handbook of Australian Sea-birds*. Sydney: Reed.  
SLATER, P. 1970. *A Field Guide to Australian Birds. Non-Passerines*. Adelaide: Rigby.

Tables and Figures should be numbered with Arabic numerals. Drawings and diagrams should be in Indian Ink on cartridge paper or tracing paper. If authors cannot arrange suitable drawings, the editor may arrange the drawing of figures and diagrams. Authors may submit photographs (preferably black and white) with their manuscripts.

Reprints may be obtained at cost price by special request.

*Manuscripts should be sent to:*

Peter Britton (Editor *Sunbird*), C/- All Souls' and St Gabriel's School, Charters Towers, Queensland, 4820.