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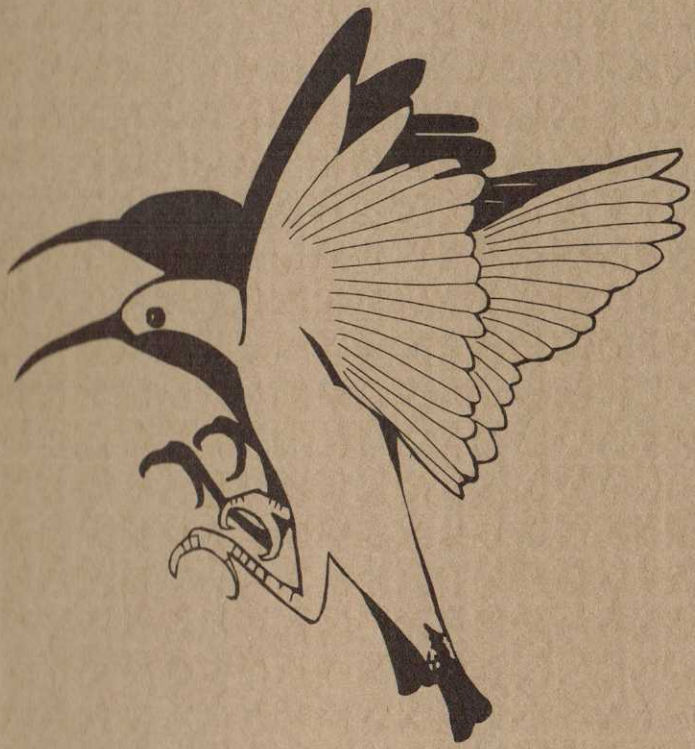

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CONTENTS

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THE SUNBIRD

Volume 30 No. 2 August 2000

FURTHER NOTES ON WHISKERED TERN BREEDING IN SOUTH-WEST QUEENSLAND

LLOYD NIELSEN

Following the publication of breeding records of Whiskered Tern *Chlidonias hybridus* in south-east Queensland by Johnson & Hobson (1998), it is probably an opportune time to clarify and place on record some breeding records from south -west Queensland. The notes given in Nielsen (1963) were virtually notes passed on from the late Monty Schrader following a visit to Cunnamulla and Lake Bullawarra with him in April 1961.

Schrader was one of the 'old school' birdmen - actively engaging in egg-collecting from an early age, as was often the practice in those days. He spent the latter 25 years of his life at Cunnamulla (he passed away late in life during the mid 1970s). He was a motor mechanic travelling widely around the stations where he often spent weeks repairing engines and machinery. Thus he gained an immense and intimate local knowledge of the area — from Bollon west to Thargomindah, south to Bourke and north to Charleville. His ability as a birdman was faultless, an opinion which was borne by many people who had met and birded with him during the 1950s, 60s and 70s. He was a scrupulously honest man, which carried into his birding interests. Unfortunately he never published his data and, as was often the case with such people, enormous ornithological knowledge of the area was lost when he died. I visited Cunnamulla a number of times through the 1960s and 1970s as a guest of the Schrader family, birding with him about Cunnamulla and Thargomindah and as far west as the Queensland–South Australian border.

Schrader regarded the Whiskered Tern as a fairly common breeding species about Cunnamulla and westward, usually breeding after major summer flooding (normally fairly infrequent). He sometimes stated that a fall of 150mm of rain was all that was needed to flood the temporary swamps and start birds such as Hoary-headed Grebe *Poliocephalus poliocephalus*, Red-kneed Dotterel *Erythrogonys*

cinctus, Whiskered Tern and others arriving and breeding. He had seen Whiskered Terns breeding in the vicinity of Lake Bullawarra and he found them breeding at the edges of Lake Bindegolly (locally known then as Lake Dynevor) in the very wet years of 1950 and 1956. Much of Lake Bindegolly today is apparently inaccessible, but in the times when it was station property, various rough tracks ran beside the lake. Schrader knew all of these and on one occasion in the late 1960s, I drove with him along one of these tracks to an area, probably 5 km north of the Cunnamulla–Thargomindah road. Here, in a near dry backwater we found recently vacated nests of Hoary-headed Grebe and Whiskered Tern, apparently used successfully several weeks before. However, most of the breeding he had seen was on smaller, open temporary swamps scattered across the shrubby, sparely timbered plains. R. Hobson (pers.comm.) recorded both species nesting at Lake Bindegolly in the late 1960s although detailed data have been lost. (An apparent breeding association between Whiskered Tern and Hoary-headed Grebe is interesting. R. Johnson (pers. comm.) recorded nine active nests of Hoary-headed Grebe along with the nesting Whiskered Terns at Karrasch's Dam (27°34' S, 152°16' E). Schrader considered that, about Cunnamulla, both species usually nested together).

My own experience with the breeding of Whiskered Terns was in the wet year of 1974, when a colony was established with Hoary-headed Grebes on a temporary shallow swamp about 15 km east of Cunnamulla and about 500 m from the Balonne Highway (28°04'S, 145°49'E). My visit was made in mid-March. The colony consisted of about 70 nests of Whiskered Terns and about 50 nests of Hoary-headed Grebes. Many terns were brooding while others were building and others were selecting nest sites. Schrader had known Whiskered Terns to breed on this swamp several times during his 24 year residence up until that time. At this same wetland, a few weeks before my visit, he had found several nests of Baillon's Crake *Porzana pusilla* and a nest of Painted Snipe *Rostratula benghalensis* (with 4 eggs), one of the few times he had found the latter breeding in the district; and data in Blakers *et al.* (1984) show that breeding of either species is exceptional north of about 35°S.

I agree with Johnson & Hobson (1998) that the few records from south-western Queensland may be an underestimate of breeding there, but I would go further to say that it is probably a considerable underestimate for several reasons. What is often not understood is the immensity of temporary wetlands in this part of the state following flooding. Only when one takes to the air does one appreciate the vastness of the country involved and the innumerable temporarily flooded depressions. In 1974, shortly after the 'big wet' of that year, I chartered a plane to inspect the wetlands from the air, flying from Cunnamulla to Charleville,

Thargomindah, Lake Bindegolly, Currawinya and back to Cunnamulla. I was astounded by the quantity of temporary wetlands — literally hundreds of small water-filled depressions of probably a hectare to several hectares in extent, and apparently ideal for breeding terns and grebes.

As Johnson & Hobson (1998) state, much of this country is inaccessible for months during and after a wet season, and birdwatchers tend not to travel during and shortly after a wet season. As well, there is an overwhelming tendency by visiting birdwatchers to stick to the better roads and the popularly known sites. Consequently, the vast majority of these temporary wetlands are rarely seen by anybody other than station owners and their staff. There could be dozens of Whiskered Tern colonies in that area at such a time, all of which would pass unnoticed. Had the colony I visited been a few hundred metres further from the highway, it too would have gone unnoticed. Schrader took me to a number of similar small swamps close to Cunnamulla in 1974, some a few hundred metres from the highway but totally obscured and known only through local knowledge.

As with many aquatic species, the Whiskered Tern seems to be an opportunistic breeder in south-west Queensland. Certainly in that area it is not a species which is part of a waterbird community most closely associated with deep, perennial wetlands (Fjeldsa 1985). Its favoured breeding sites seem to be shallow temporary swamps which form following extensive flooding, and the only species which breeds in association with it appears to be Hoary-headed Grebe. The fact that many birds are seen in breeding plumage over wide areas probably suggests that they are able to breed when and where conditions become suitable.

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DETECTABILITY THROUGH THE DAY OF SOME COMMON LAND BIRD SPECIES AT TALLEGALLA, SOUTH-EAST QUEENSLAND

G. J. LEACH and D. J. WATSON

ABSTRACT

Diurnal patterns of detectability for twenty-eight common species of bird in roadside softwood scrub and/or open eucalypt forest in South-east Queensland are presented. Variation within species was often large. Nevertheless, the diversity of patterns showed the importance of accommodating them, and selecting the most appropriate times of the day to maximize detectability, when censusing single species or small subsets of species.

INTRODUCTION AND PROCEDURES

Total numbers of bird species and individuals observed in censuses of roadside softwood scrub remnants and open eucalypt forest in the Marburg district, South -east Queensland, were generally independent of the time of day, provided the first 1-2 hours after sunrise were avoided (Leach & Watson 1994). However, the authors cautioned that censuses of individual species, or small subsets of species, would need to take account of differences in their detectability through the day. This note complements our earlier paper, providing details of patterns of detection among the more common species. Our objective was to determine how results of censuses of each species varied through the day to assist interpretation of other surveys in the district (e.g. Leach 1995, Leach & Hines 1992 and unpublished, Leach & Recher 1993); and, as in Leach & Watson (1994), not extrapolate to broader conclusions because that would require much more intensive censusing. Nevertheless, some implications from our observations may have relevance beyond the Marburg district.

Transect vegetation and census procedures were fully described in Leach & Watson (1994). Briefly, one 300 x 40 m strip transect through roadside softwood scrub remnants and another through open eucalypt forest, principally Spotted Gum *Eucalyptus maculata*, were censused on a fine day in September, December, March and July. Four pairs of 40 minute counts were conducted on each transect between sunrise and mid-afternoon. All birds seen or heard were counted. Consecutive counts within each pair were undertaken by two separate teams of 2

-4 observers. Pairs of counts through the day are subsequently referred to as Censuses 1, 2, 3 and 4, respectively. The total number of individuals of each species in each pair of counts was used to determine the mean number per 40 minutes of census.

This paper is concerned only with the commoner species, defined as those observed on at least one transect on at least three days and in at least four censuses per transect. Numbers of individuals were summed over the two transects where these criteria were met for both, and also where one transect meeting the criteria was complemented by presence of the species in at least four censuses on the other transect. There was no indication that responses for each species differed significantly between habitats in the latter subset.

Analyses of variance on observations were undertaken within each species, using the 2-factor (census no. x season) and 3-factor (census no. x season x habitat) interaction terms as the denominator in the F-test (because there were no replicates), where observations from either one habitat or both were used, respectively. As there were insufficient data to explore seasonal patterns for most species, the following analyses of diurnal patterns were based on means over the four days of counts. Cluster analysis was undertaken to search for patterns in diurnal detectability, using complete linkage and the Euclidean metric, and patterns within the first eight clusters are illustrated graphically. Regression analyses of the number of individuals of each species on census number (i.e. time of census) were undertaken to test for linearity in species from clusters which appeared to have a linear trend in the diurnal pattern.

RESULTS

Twenty-eight species met criteria for inclusion in this report (Table 1). Counts from both habitats were summed for thirteen of them, from only softwood scrub for a further ten, and from only eucalypt forest for the remaining five.

Analyses of variance showed significant differences between censuses ($P<0.05$) in only Scaly-breasted Lorikeet, Superb Fairy-wren and Double-barred Finch. Significant effects were also present in Rufous Whistler and Brown Honeyeater when analyses were confined to the three seasons with most observations. Cluster analysis provided strong indications that different diurnal patterns of detectability were associated with groups of species (Fig. 1). At the 8-group level, only three species (Scaly-breasted Lorikeet, Figbird and Golden Whistler) formed

single-species groups. The two species in Group 2 were eucalypt species, but all other groups included species observations from both softwood scrub and eucalypt habitats. There was no indication that taxonomic affinity affected the composition of groups.

Patterns of detectability among the groups separated by cluster analysis ranged

TABLE 1

Species consistently observed on one or both transects at Tallegalla (see text) and habitats included in analyses (S is roadside softwood scrub remnants; E is open eucalypt forest).

Species(Abbreviation)	Transects
Bar-shouldered Dove (BSD)	S
Scaly-breasted Lorikeet (SBL)	S + E
Little Lorikeet (LLT)	E
Laughing Kookaburra (LKA)	S + E
Superb Fairy-wren (SFW)	S
Striated Pardalote (STP)	S + E
White-browed Scrubwren (WBS)	S
Speckled Warbler (SWR)	S + E
Weebill (WBL)	E
Yellow Thornbill (YTL)	S
Noisy Miner (NMR)	E
Lewin's Honeyeater (LHR)	S + E
White-throated Honeyeater (WTH)	E
Brown Honeyeater (BHR)	S
Scarlet Honeyeater (STH)	E
Eastern Yellow Robin (EYR)	S
Golden Whistler (GWR)	S
Rufous Whistler (RWR)	S + E
Grey Shrike-thrush (GST)	S + E
Rufous Fantail (RFL)	S
Grey Fantail (GFL)	S + E
Willie Wagtail (WWL)	S
Black-faced Cuckoo-shrike (BCS)	S + E
Figbird (FBD)	S
Torresian Crow (TCW)	S + E
Double-barred Finch (DBF)	S + E
Mistletoebird (MBD)	S + E
Silvereye (SRE)	S + E

from overall downward trends in groups 1-4, marked fluctuation in group 5 (Figbird), and mostly either upward trends or relatively constant in remaining groups (Fig. 2). There was a progressive decline through the day from an early peak in Scaly-breasted Lorikeet (Fig 2a), while others that declined from an early morning peak displayed a slight increase at the end of the day (Figs 2c and 2d). Among those that increased through the day, most of the increase was between the first two censuses, for example Noisy Miner, Superb Fairy-wren and White-browed Scrubwren (Figs 2g and 2h). No species had a significant ($P<0.05$) linear trend.

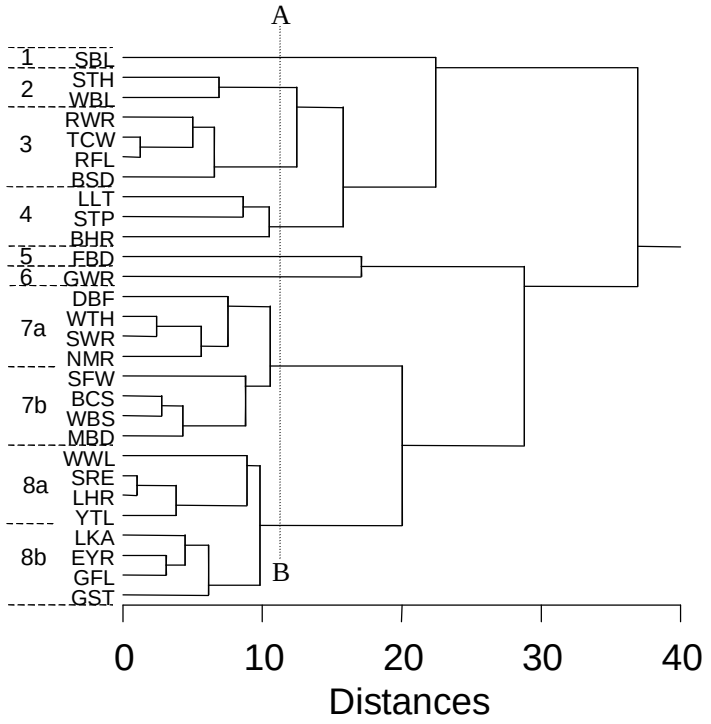
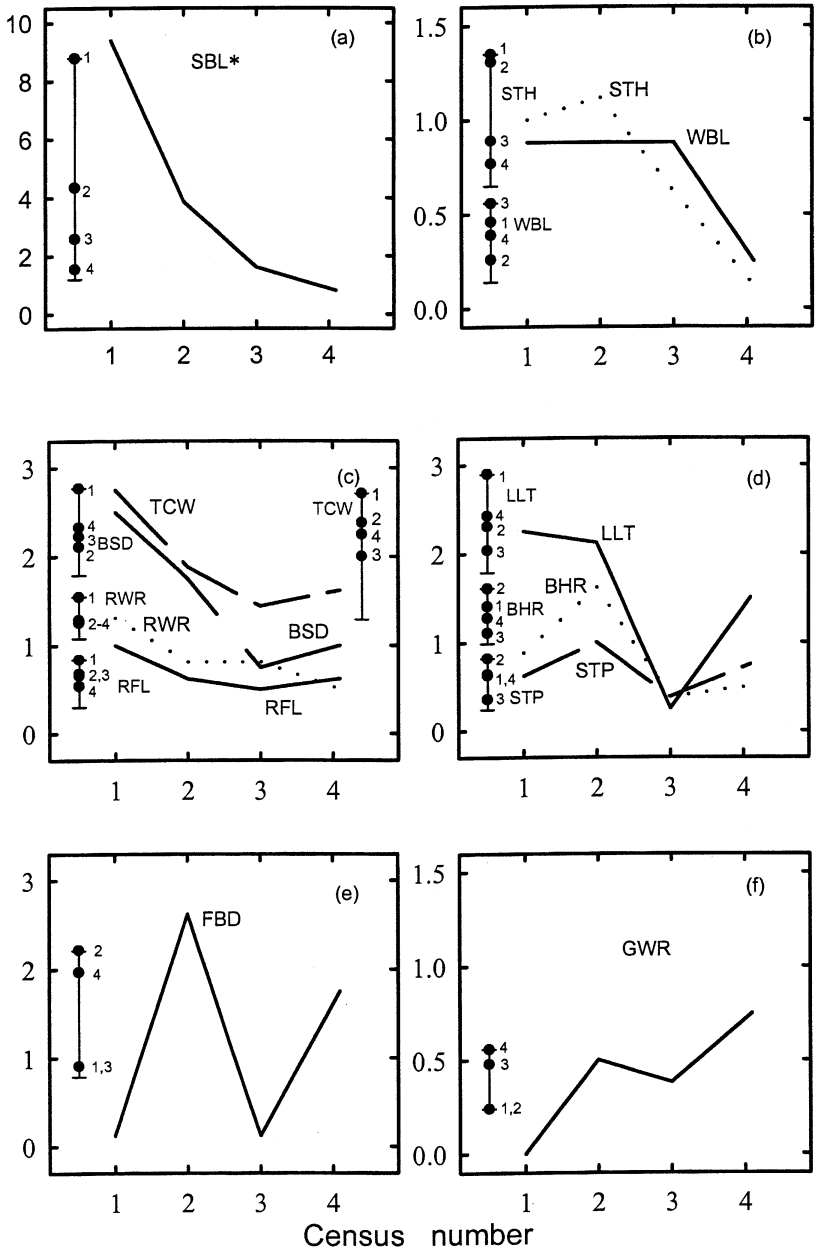


Fig. 1. Dendrogram from a cluster analysis of percentage of observations of each species detected at the four censuses through each day. Percentages were derived from the mean number of individual observations over the four days (see text). Groups at the 8-group level (i.e. those separated at A-B), with sub-groups a and b of 7 and 8, are indicated in the left-hand column. Species abbreviations are listed in Table 1


(a)
SBL*
(b)
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WBL
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(c)
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Census number

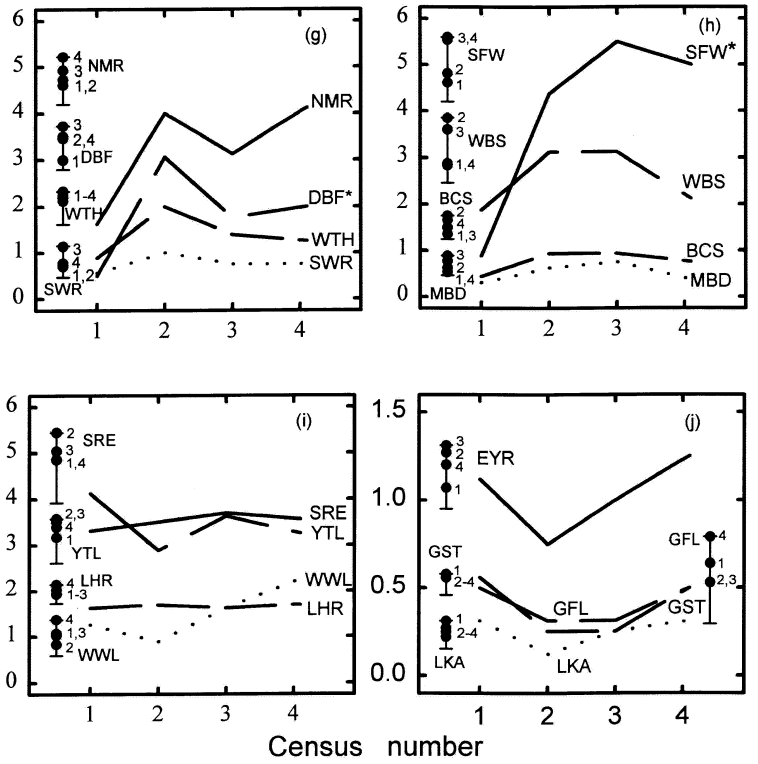

Fig. 2. Observations of each bird species per 40 minutes through the day (Censuses 1-4). Each observation is the mean over the 4 days of censusing through the year. Each component (a-j) of the figure represents groups from the 8 -group division in the cluster analysis (Fig. 1), with one additional division for the two larger groups (7 & 8). Note the different (vertical) scales for number of observations among the components of the figure. Species abbreviations are listed in Table 1; those with significant differences in the analyses of variance ($P<0.05$) are indicated with asterisks (*). Bars at the margins show standard errors of means (n = 4): the standard error for each census is represented by the distance from the base of the bar to the relevant numbered point.

DISCUSSION

The results indicate that, even among the small group of species examined, there was a wide diversity of patterns of detectability. Indeed, few pairs of species had closely similar patterns. However, the value of the observations is clearly limited by variability within species, with the small number of significant effects of censuses in the analyses of variance indicating the need for caution in interpreting our results and their wider implications. Nevertheless, because there do not appear to be reports of diurnal patterns of detectability *per se* for Australian species, rather than diurnal patterns of song and other calls, we present the observations to encourage others to confirm or refute them.

Results of the analyses of variance may indicate either true absence of an effect or failure to detect effects. Both situations are likely, with, for example, Black-faced Cuckoo-shrike, Speckled Warbler, Mistletoebird and Lewin's Honeyeater (Fig 2f-h) probably having little or no diurnal variation; while large variability at each census of Bar-shouldered Dove, White-browed Scrubwren, Weebill and Scarlet Honeyeater (Fig 2b, c, g & h) may be masking real diurnal variation. F-values for census variation in Golden Whistler, Noisy Miner and Brown Honeyeater ($P<0.10$; see also above for the 3-season analysis) suggest that some additional survey could have provided evidence of significant diurnal variation. The high variability associated with the two fantails, and some of the honeyeaters, in part reflects differences in their seasonal presence through migration. In contrast, variability and/or fluctuations in pattern in species such as lorikeets, Figbird and Torresian Crow at least in part reflects their high mobility between feeding stations in and beyond the transects.

Acquiring the additional information to develop generalised patterns of species detectability within bird communities is likely to be precluded by its labour intensity, and further accentuated through limited opportunities to focus on 'representative' species. An alternative approach, again labour intensive, would be to examine components of detectability. As major contributors to detectability in our censuses, vocal cues should substantially determine patterns of detectability. Studies in forest and woodland communities predominantly show that song peaks pre-dawn, remains intense for another 2 hours in several species, and continues intermittently through the day in a few species, sometimes with a minor rise towards the end of the day in several species (Keast 1985, 1994a, b, c, 1995; Woodall 1997).

Our July census commenced 19 minutes before sunrise, while others commenced 5-16 minutes after sunrise (Leach & Watson 1994), so we are unable to comment on the contribution of pre-dawn song to detectability. We were also unable to detect indications of differences between the two 40 minute components of the first census each morning, which could have indicated a 'spill'of the dawn chorus into the initial segment of the first component (Leach & Watson unpublished data).

Detectability of eight Tallegalla species (Figs 2a-d) generally followed the pattern of high detectability in the early morning, probably reflecting predominant importance of vocal cues. Brown Honeyeater and Striated Pardalote (Fig2d) peaked later in the morning then fell to low levels. Superb Fairy-wren, White-browed Scrubwren, Noisy Miner and Double-barred Finch (Figs2g and 2h) each display very low detectability at the first census and generally high detectability thereafter, possibly reflecting a greater importance of ground foraging and visual detection, except in Noisy Miner, for which we are unable to offer a plausible explanation. For the remaining thirteen species, variability in relation to the relatively even detectability through the censuses precludes useful comment. Overall, discrepancies between our patterns of detectability and patterns of song in the forests/woodlands indicates that song is only a component of detectability in some Tallegalla species.

There were only three degrees of freedom for the t-test (Fisher & Yates 1963) in the linear regression analyses, so in such circumstances it is not unexpected that none were significant. However, it may be worth noting suggestions of linear trends in Scaly-breasted Lorikeet, Scarlet Honeyeater and Rufous Whistler ($P<0.10$) and to a lesser extent in a further five species ($0.11<P<0.20$) (Table 2). We do not use these regressions to suggest absolute linear trends, using them instead to highlight those species with strong downward trends (5 species) or upward trends (3 species) through the day. Some trends, with additional replication, could probably be fitted by relatively simple curvi-linear functions, for example Scaly-breasted Lorikeet, Superb Fairy-wren and White-browed Scrubwren (Figs 2a and 2h).

Overall, our observations illustrate the diversity of patterns of detectability that may be encountered in softwood scrub/eucalypt woodland communities. In view of the importance of changes in detectability to effectiveness of censuses (Recher 1988), there is a need for detailed information on individual species. Members of observation groups such as QOSI could increase information through systematic monitoring of diurnal detectability, and component activities

TABLE 2

Linear regressions of numbers of individuals on census number (time of census) with 0.06 < p < 0.20.

Species	Regression coefficient	Probability
Bar-shouldered Dove	-9.2	0.11
Scaly-breasted Lorikeet	-18.0	0.06
Superb Fairy-wren	8.5	0.17
Scarlet Honeyeater	-11.0	0.10
Golden Whistler	13.0	0.13
Rufous Whistler	-6.9	0.09
Willie Wagtail	6.3	0.17
Torresian Crow	-5.0	0.15

where possible, for some of the common species in regular 'birding areas'. In the meantime, the diversity of patterns reinforces the remark (Leach & Watson 1994) that "...census times will need to match trends in detectability", where the emphasis is on individual species or small subsets of species.

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A PIED HERON AT ROMA, SOUTH CENTRAL QUEENSLAND

RICHARD JOHNSON and CRAIG EDDIE

During a regular waterbird count on 6 March 1999 at an irrigation dam adjacent to the sewage treatment plant just south of Roma town (26°35'42" S, 148°48'14" E), an unusual sighting was made. Our first impressions were of a small dark grey and white heron with a crest of plumes on the hindneck, which we immediately recognised as a Pied Heron *Ardea picata*. The bird was viewed at about 1800 hours, in good light at a distance of about 20 metres, using 10 x 40 binoculars and a 20 x 77 telescope.

Description: a small, slender heron, much smaller than Intermediate Egrets *A. intermedia* and a juvenile White-necked Heron *A. pacifica*, but larger than Black-winged Stilts *Himantopus himantopus*, which were all present in the immediate vicinity; back, upperwings and uppertail slaty-grey except for a small white spot at the alula/carpal joint, which was visible in the folded wing; crown pale grey, this extending to the sides of the head and sharply demarcated from the white lower sides of the head in a line extending from bill below the eye to the rear of the head; neck white with greyish flecks; 3 pale grey nuchal plumes; underparts white except for flanks, thighs, underwings and undertail, which were blackish; bill, iris and legs yellow. It was readily distinguished from White-necked Heron, the only species likely at this site with which it could possibly be confused, by its much smaller size, yellow legs and bill, and the presence of nuchal plumes. The presence of black rather than white undertail coverts, the pale grey crown and nuchal plumes and white feathering between the carpal joint and tenth primary suggest that the bird was immature, perhaps in partial moult to adult plumage (Marchant & Higgins 1990).

The heron was first seen feeding in shallow water on a bare mudbank. This had been deposited by a recent flood event at the downstream edge of a vegetated marshy area immediately adjacent to the main waterbody of the dam. Shallow (2-5 cm) floodwater running over the mudbank drained into a much deeper body of water. The heron was located in the same place the following morning (7 March) and photographed by RJ. At this time, the water flow over the mudbank had reduced to a narrow, very shallow trickle and the heron was feeding along the edge of the deeper water. We failed to locate the heron during a visit to the site in the late afternoon of 8 March, nor was it seen on subsequent visits.

The Pied Heron breeds in coastal and near-coastal northern Australia, with migration of part of the population to Papua New Guinea and Indonesia at the beginning of the dry season. The species is not usually recorded south of the Mackay-Broad Sound area, Queensland (Marchant & Higgins 1990). A published record from northern Queensland is further inland than usual: a bird at Reeves Lake, about 150 km south-west of Townsville, in February 1986 (Redhead 1988). The authors are also aware of additional, unpublished records from inland Northern Territory and far south-western Queensland. Two birds were seen in December 1993 at Lake De Burgh on the Barkly Tableland, Northern Territory, some 350 km from the Gulf of Carpentaria coast (R. Jaensch, pers. comm.). Five birds were seen on 10 March 1999, at the causeway over Eyre Creek, on the Birdsville-Bedourie Road (24°S, 139°E), by R. Jaensch (pers. comm.), who added that local reports indicated that birds had been encountered here previously. There are three published records of vagrant birds well beyond the normal range of the Pied Heron: on the Murray River in Victoria, on 23 December 1973 (Disher 1974); at Leigh Creek, South Australia, on 18 February 1979 (Storr 1980); and, more recently, at Albury, New South Wales on 17-18 December 1999 (Herring 2000). Like the present record, these others occurred in mid-summer to early autumn. The description in Disher (1974) and the photograph in Storr (1980) indicate that these were adult birds, as were that seen by Herring (pers. comm.). The Reeves Lake bird was an adult (P.L. Britton, pers. comm.) but no aging data are available for the Eyre Creek sightings.

In neither the South Australian nor the Victorian accounts did the authors comment on weather conditions, but the summer of 1973/74 was notable for record rainfall and flooding in much of Australia including the Murray Valley; while that of 1979/80 was characterised by average to below-average rainfall in northern Australia, but rainfall well above average in a band through much of South Australia (Qld Centre for Climate Applications, unpub. data). Jaensch (pers. comm.) noted that the Barkly Tableland lakes were exceptionally wet in 1993. At the time of Jaensch's (Queensland) records, and ours, heavy rain with flooding was widespread in southern and western Queensland (authors, pers. obs.). Herring (pers. comm.) states that a very wet summer was experienced in Albury in 1999-2000.

From the records we describe here, there is evidence of regular movement inland by Pied Herons to seasonally favourable areas. This movement would appear to involve only small numbers of birds, though it is possible that numbers are under

-reported, given that access to western Queensland, at least, is often difficult in wet summers. Such movement is well documented in many Australian waterbird species. However, the timing of these movements is of interest. Pied Herons consistently breed from late December to early April throughout their breeding range (Marchant & Higgins 1990) and all the sightings documented here occurred during this period. All but one of those for which age data are available involved adult birds and the single immature bird was at least one year old (see above). This may indicate that the inland movement only involves non-breeding birds in the population, rather than a post-breeding dispersal of adults or young.

As far as we can ascertain, ours is the first record of the Pied Heron for the Queensland section of the Murray-Darling Basin and one of very few records for inland Queensland generally. The presence of Pied Herons in inland Queensland, although remarkable, is not wholly unexpected, given the South Australian, Victorian, New South Wales and Northern Territory records.

ACKNOWLEDGEMENTS

We thank Roger Jaensch, Peter Britton and Matthew Herron for providing details of their sightings and permission to use them in this note.

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BUSH-HEN AT MOUNT MOFFATT SECTION, CARNARVON NATIONAL PARK, SOUTH CENTRAL QUEENSLAND

CRAIG EDDIE, RICHARD JOHNSON and AL YOUNG

On 23 January 1999 we visited Top Moffatt campsite (25°03'59"S, 148°03'11"E) on the east branch of the Maranoa River, as part of fauna survey and monitoring activities on Mount Moffatt Section of Carnarvon National Park. The campsite is situated on a flat on the inside curve of a bend in the river, which here is about 4 metres across. Upon approaching the water's edge, CE and RJ disturbed a medium-sized olive-brown rail-like bird on the opposite bank. It immediately ran into long grass, lifting its wings to show rufous-brown flanks and undertail coverts. We waited to see if the bird would re-appear. From cover, this and another bird began to call: a repeated sharp 'chuk' or 'chut' and a deeper 'unk'. We then heard piping 'pip'or 'peep' calls from the bank below us and three sooty -black downy chicks with greyish bills entered the water and swam across to the opposite bank, where they disappeared into the grass. The adult birds continued to call, and eventually both emerged briefly to exposed positions where the three of us were able to view them, using binoculars at a range of 10-15 metres, confirming their identity as Bush-hens *Amaurornis olivaceus*.

The description of the adult birds is as follows: a medium-sized rail; dusky olive-brown or olive-tan on top of head, neck, back and wings; rufous-brown undertail and flanks; bill grey with a yellow base; and yellow-green legs. The bill colour is consistent with that of birds in the early chick-rearing period (Marchant & Higgins 1993). The adult calls appear to be referable to the 'clicking' calls described by Clarke (1975) and Beruldsen (1976) as a contact call between parents and young.

The birds were present within a 15 m wide riparian community of River Oak *Casuarina cunninghamiana* and Weeping Bottlebrush *Callistemon viminalis,* with an understorey of dense tall grasses and forbs about a relatively shallow (about 1 m deep), clear stream to 4 m wide with scattered rocks and boulders. On one bank the understorey extended to the bank crest where it abruptly met the mown camp grounds; on the other it extended about 8 m to the base of a vertical sandstone wall about 4 m high. The surrounding vegetation was grassy woodland dominated by Rough-barked Apple *Angophora floribunda* and Silver-leaved Ironbark *Eucalyptus melanophloia*. This habitat is structurally similar to that used by the Bush-hen elsewhere in its range (Beruldsen 1976, Marchant & Higgins 1993, Muranyi & Baverstock 1996).

On current knowledge, the Bush-hen has a discontinuous distribution in coastal and near-coastal northern and eastern Australia as far south as northern New South Wales. It appears to breed throughout this range (Marchant & Higgins 1993). In Queensland there is only one previous inland record of the species (Blakers *et al.* 1984). This was of a cat-killed bird from Rubyvale (23°25'S, 147° 45'E). It was a non-volant juvenile, indicating that breeding had occurred, and was "apparently …caught nearby in the long grass and pools of Sheep Station Creek Flats".

Very little is known of the movements of the Bush-hen, though there is some evidence to suggest that they are at least partly nomadic, visiting areas and breeding in response to rain (Marchant & Higgins 1993). Thus it is difficult to put the present record into context. Mount Moffatt is part of the Carnarvon Range, which is notable for deep, well-vegetated sandstone gorges, some of which contain permanent water. We know of no other records for Mount Moffatt or nearby Carnarvon Gorge, despite very high visitor numbers and suitable habitat at the latter location. Rainfall at Mount Moffatt was substantial during the summer and previous winter (authors, pers. obs.) and the presence of Bush-hens here may be an instance of an opportunistic response to the favourable conditions. However, it is possible that the bird is regular in the Carnarvon Range but has escaped notice, since visitation in the hot, wet summer is reduced, and the bird is less obvious in winter. Further survey work, perhaps using call play-back tehniques, is required to determine whether the Bush-hen is a permanent resident of the Carnarvon Range or an occasional visitor during favourable periods.

ACKNOWLEDGEMENTS

We thank Rory Poulter of Birds Australia for providing details of the Australian Atlas record from Rubyvale.

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LOGRUNNER USING ITS BILL TO MOVE A LARGE STONE

PETER NICHOLS

The Logrunner *Orthonyx temminckii* is one of two species in the genus *Orthonyx*, both being ground-foraging birds of eastern Australian and Papua-New Guinea rainforests. In Australia, the Logrunner occupies temperate localities, ranging from the Blackall Ranges in Queensland to southern coastal New South Wales (Pizzey 1997). DNA studies by Sibley & Ahlquist (1985) found this genus so distant from other corvoids as to warrant a separate family, endorsed by Christidis & Boles (1994). The Logrunner has a characteristic habit of searching for food in rainforest litter by leaning back on its stiff-spined tail, and scratching backwards and then sideways with the feet (Boles & Shields 1980).

This note records an observation of a Logrunner using its bill to move a stone during foraging, and some dimensions of the stone. The observation was by Christine Nichols and PN at about 0730 Eastern Australian Summer Time on 24 December 1993 in dense closed-canopy rainforest in the National Park at Dorrigo, New South Wales (30^0 21'S, 152^0 44'E). A pair of Logrunners was observed for about 10 minutes in low light at about 2m distance, scratching through litter on slightly sloping ground. The female was seen to rake a circular stone upslope with a sideways sweep of its right foot. It then pushed the same stone aside and downslope with its bill, placing the bill, held at about 40^0 to the ground, under one side of the stone and 'flicking' the stone by raising its head. The birds continued foraging and eventually moved away.

The stone was retrieved and later measured. It appeared granitic, with a rough surface, coarse grain and dark red overall colour. It was 66 mm in diameter, and almost spherical; its mass was 325 g. The dimensions may be of interest, as well as the Logrunner's use of the bill. The relative mass of the stone to the bird [46 to 69 g (Boles 1988)] is about 5.5 times greater. Unlike the Eastern Whipbird *Psophodes olivaceus*, of similar habitats, which is known to use its bill to turn substrate materials (Hindwood 1934), the Logrunner appears not to have been reported doing so (e. g. Hindwood 1934).

ACKNOWLEDGEMENTS

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THE BIOGRAPHY BEHIND THE BIRD (NO. 15 IN THE SERIES.) BOWER'S SHRIKE-THRUSH *COLLURICINCLA BOWERI* RAMSAY, 1885

TESS KLOOT

Over ninety scientific names of Australian birds commemorate individuals who have made a valuable contribution to our ornithology. Bower's Shrike-thrush *Colluricincla boweri* is Queensland's own. It was named in 1885 by E. P. Ramsay (1842-1916) of the Australian Museum, Sydney, after Thomas Henry Bowyer-Bower, a young man, who despite brief visits here, and a very brief life, left a lasting memorial of his presence in Australia. Ramsay also named *Malurus cruentatus boweri* (1886), a subspecies of Fairy-wren, after him. Gregory M. Mathews (1876-1949), who thought very highly of Bowyer-Bower, named a genus and no less than six subspecies in his honour (Whittell 1954). Today only *Colluricincla boweri* survives (Christidis & Boles 1994).

NAMING THE BIRD

Bower's Shrike-thrush *Colluricincla boweri* Ramsay, 1885.

(*Kollurion*, a bird, Gk; *Cinclus*, thrush, L.) (Jobling 1991).

"Description of a new species of *Collyriocincla* sic, from the scrubs in the vicinity of Cairns, Queensland. By E. P. Ramsay, F. R. S. E., F. L. S., &c.

Collyriocincla boweri. Sp. nov.

This species which I have named after its discoverer, T. H. Bowyer-Bower, Esq., was found in the scrubs of the Cairns District, Queensland; it is quite distinct from any of the varieties of *C. rufigaster*, or *C. parvissima* of Gould"

The Proceedings of the Linnean Society of New South Wales Vol.X.

For the year 1885. Part ii PP244-245.

CAPTAIN THOMAS HENRY BOWYER-BOWER (1862-1886)

Thomas Henry Bowyer-Bower was born in Brighton, England, in 1862, son of Captain W. Bowyer-Bower, J. P., of Dorsetshire, England (Mathews 1915). The precise dates of his sojourns in Australia are not known but the earliest date, gleaned from Mathews' notes, is 4 May 1882, when Bowyer-Bower shot a Scaly-breasted Lorikeet near Sydney (Mathews 1915).

What is known is that he made two collecting trips here and the dates of these can be fairly accurately documented. He first went to Cairns, Queensland, during 1884-1885, collecting from there south to Herberton. Not a long journey but certainly a significant one. It was here he collected the bird that bears his name. "This very distinct species, of which I have the types now before me, was . . . procured by its discoverer, Mr T. H. Bowyer-Bower, at Peterson's Pocket, about thirty-five miles from Cairns, North-eastern Queensland, on 12th and 14th December, 1884" (North 1913-1914).

His second collecting trip in the north and north-west of Australia was made in1886 when he was accompanied by the taxidermist, Walter Burton, a fellow Englishman. Details of this trip, found in his notebooks, are dealt with by G. M. Mathews in a series of articles in the *South Australian Ornithologist* between 1915 and 1918. The lists of species are set out in the taxonomic order of the day. By sorting out the dates of various sightings it is possible to plot, chronologically, the direction of Bowyer-Bower's movements.

Briefly, on 4 May 1886 Bowyer-Bower was on Thursday Island, and by 8 May he had reached Palmerston (an early name for Darwin) in the Northern Territory. In June he moved on to Derby. He spent some months in the area, travelling between Derby, Point Torment and Napier Broome Bay, all in Western Australia, and Port Essington in the Northern Territory. By November he was collecting on the Victoria River in the Northern Territory. He was still collecting on 10 November 1886, just weeks before his death. On that date he collected a Darter and a Peregrine Falcon (Mathews 1917).

The RAOU Archives hold a small J. D. Macdonald Collection (Kloot 1995), and in his meticulous notes Macdonald records that from 6-12 November Bowyer-Bower was at his Fitzroy River Camp, Western Australia.

We are not certain just when he became ill, but by early December he was back in Palmerston. Captain T.H.Bowyer-Bower died there, of typhoid fever, on 22 December 1886. Walter Burton was to carry the body back to England. Of him, Burton wrote, "He was one of the finest young fellows it has been my good fortune to meet. Of course, as you are aware, you cannot make social distinctions where all share the common dangers and vicissitudes of bush life, but I can most feelingly say I was treated by him more as a brother than a servant" (Campbell 1901).

He left no known publications but the notebooks kept by him are in the Mathews Collection, National Library of Australia, Canberra. In 1920, G. M. Mathews sold his skin collection to Lord Rothschild and it is now in the American Museum of Natural History (Kloot 1986). It can be assumed that the Bowyer-Bower skins that were in Mathews' care were included. Others may be in the British Museum of Natural History and some may be in the Australian Museum, Sydney.

ACKNOWLEDGEMENTS

I thank Wayne Longmore, Australian Museum, Sydney, for assistance in locating the T. H. Bowyer-Bower material and an anonymous referee for valuable guidance.

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APPENDIX 1

DEATH NOTICE OF T.H.BOWYER-BOWER

Northern Territory Times

PALMERSTON: SATURDAY, DECEMBER 25.

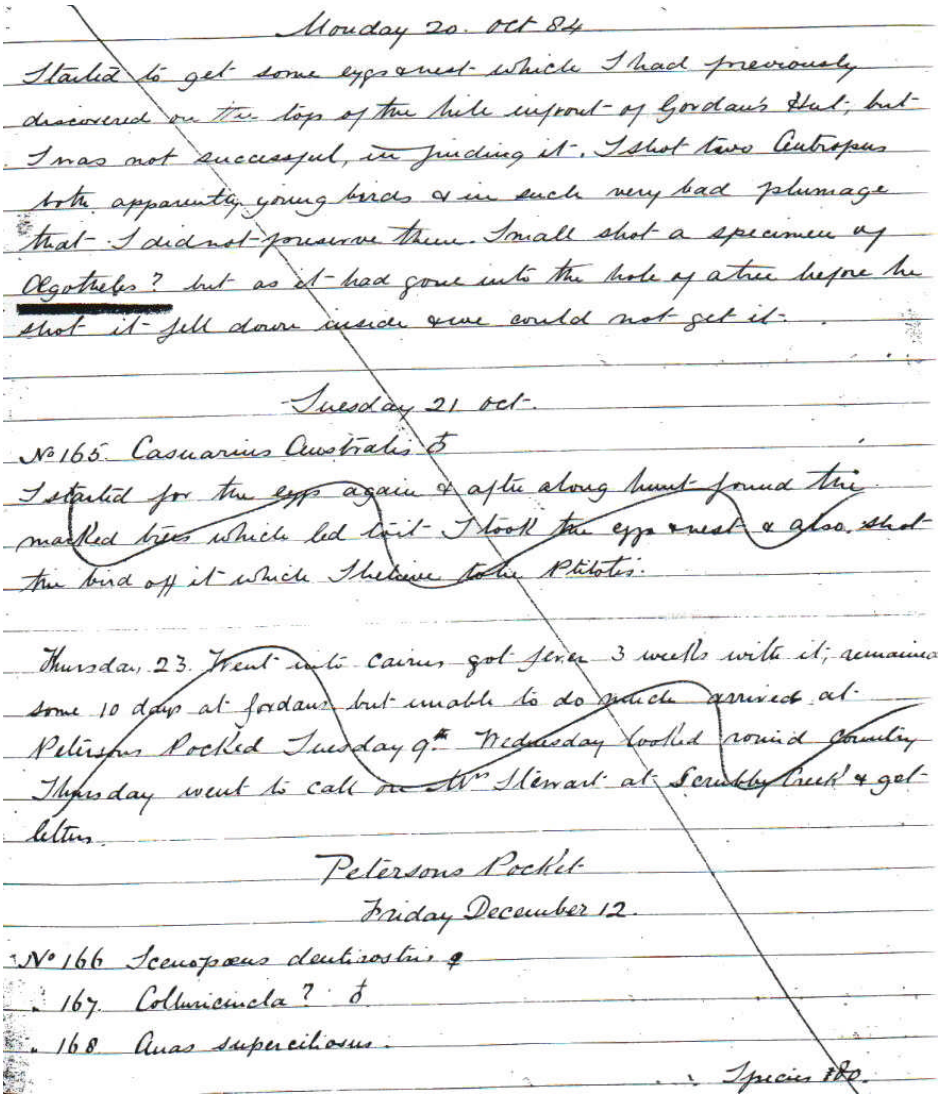
1886.

Mr. Thomas Edward Bower, a gentleman who was engaged in collecting specimens of natural history for the British Museum, arrived here a few weeks ago from Derby, Western Australia, in ill health. After residing for a short time at the Palmerston Club Hotel the unfortunate gentleman became so seriously ill that Dr. Wood deemed it necessary to remove him to the Palmerston Hospital, where he died on Wednesday, December 24th. We understand that the cause of death was typhoid fever, contracted at Derby, Western Australia. Mr. Bower was a son of W. Bower, Esq., J.P., of Dorsetshire, England. A cablegram has been received from the relatives of the deceased gentleman asking that his remains may be placed in a leaden coffin and forwarded to Sydney for interment.

Author's note:
It is generally accepted that T.H. Bowyer-Bower died on 22 December 1886. The date in this newsclipping is obviously a printing error.

APPENDIX 2

Pages from T.H.Bowyer-Bower's notebook (1884) recording the actual dates on which he collected the *Colluricincla* that bears his name.
National Library of Australia: MS1465/20



Monday 20. Oct 84

Started to get some eggs & nest which I had previously discovered on the top of the hills in front of Gordan's Hut, but I was not successful in finding it. I shot two Cuckoos both apparently young birds & in such very bad plumage that I did not preserve them. Small shot a specimen of Megapodius? but as it had gone into the hole of a tree before he shot it fell down inside & we could not get it.

Tuesday 21 Oct.

No 165 Casuarius Australis ♂

I started for the eggs again & after along hunt found the marked trees which led out. I took the eggs & nest & also shot the bird off it which I believe to be Pitohui.

Thursday 23. Went into Cairns got seven 3 weeks with it, remained some 10 days at Gordan but unable to do much arrived at Petersons Pocket Tuesday 9th Wednesday looked round Thursday went to call on Mrs Stewart at Scrubby Creek & got letters.

Petersons Pocket

Friday December 12.

No 166 Scenopoeus dentirostris ♀

" 167. Colluricincla? ♂

" 168 Anas superciliosa.

Species 168.

Saturday December 13 84

No 169

" 170

I am unable to name the above two. I shot Cathormis Spaldingi ♀ but it was too badly shot to make a good skin. I have however saved it in the rough Length 9".

Sunday December 14 84

No 171. Collurincela ? ♂.

" 172 Dryomodes superciliosus ♀

Mond Tuesday 16 84.

No 173 Monacha carinata ♂

Wednesday 17 84

No 174 Sceneopaeus denticeolis ♀

" 175 " " ♂

" 176 Todirhamphus ? ♂

Thursday 18 84

No 177. Todirhamphus ? ♀

" 178 Mclanonis sericea? ♀

Friday 19 84.

No 179 Malurus melanocephalus ♂

" 180 " " ♂

" 181 Calamus sordidus ♂

85 Species

APPENDIX 3

TESTAMENTARY CAUSES NOTICE OF T.H.BOWYER-BOWER

Northern Territory Times

PALMERSTON: SATURDAY, JANUARY 8.

1887

TESTAMENTARY CAUSES NOTICE

In the Supreme Court, Testamentary Causes Jurisdiction

In the matter of John M'Donald, late of Borroloola, stockman, deceased
In the matter of John Howard, late of Borroloola, stockman, deceased
In the matter of Andrew Qwalldon, late of Strangways Springs, miner, deceased
In the matter of Raymond Hill, late of the Northern Territory, miner, deceased
In the matter of George Henry Masters, late of Palmerston, miner, deceased
In the matter of Thomas Henry Bowyer Bower, late of Palmerston, gentleman, deceased

WHEREAS in pursuance of Act No 11 of 1867, orders have been duly made authorising me to collect, manage, and administer the personal estate of the above-named John M'Donald, deceased; John Howard, deceased; Andrew Qwalldon, deceased; Raymond Hill, deceased; George Henry Masters, deceased; Thomas Henry Bowyer Bower, deceased: Notice is hereby given that I require all persons who are indebted to the estates of the aforesaid deceased, forthwith to pay the amount of their respective debts to me, or proceedings will be taken for the recovery thereof; and all persons having any personal estate belonging to the said deceased are forthwith to deliver the same to me or my order: And I hereby require the creditors of the above-named John M'Donald, deceased; John Howard, deceased; Andrew Qwalldon, deceased; Raymond Hill; deceased; George Henry Masters, deceased; Thomas Henry Bowyer Bower, deceased, to come in and prove their debts before me; and I hereby give notice that, for the purpose of receiving such proofs I shall attend on Monday, February 7th, 1887, and on the three following days from twelve till three o'clock in the afternoon, at my office at the Local and Insolvency Court House when and where such creditors are to come prepared to prove their debts, and all persons not proving their debts on or before Thurdsay, 10th of February, 1887, will be excluded from the benefit of assets then in hand.

JOHN GEORGE KNIGHT
Public Trustee for N.T.

Palmerston, 6th January.

THE BIRDS OF CONICAL ROCK, NORTH QUEENSLAND

J.A.McLEAN

ABSTRACT

An annotated checklist of twenty-two bird species from Conical Rock has been compiled from observations made between l990 and 1999. Breeding was confirmed for six species. Data are compared with those from several other islands.

STUDY AREA AND METHODS

Conical Rack is a minute vegetated island located 37 km NNE of Cooktown, North Queensland. The bold mainland feature known as Cape Bedford lies 10 km to the south, while the closest island is Low Wooded Island, 8km to the north-east. For climatic details see McLean(1993). The island is approximately 90m in length by 80m in width. A significant arched outcrop of dark rock, belonging to the Hodgkinson Formation, occupies the entire western edge of the island, where it obtains a maximum height of 12 m. It consists of greywacke, slate, minor volcanics and limestone (Bureau of Mineral Resources and Geology, 1966). Small outcrops of rock are also scattered around the island's shoreline, and offshore. The remainder of the island is similar to the larger low vegetated coral cays in the vicinity, which consist of extensive coral rubble bank deposits.

A shallow elliptical reef extends 1.5 km west of the island, terminating at a tiny sand cay, which is partly exposed at low tide. The status of Conical Rock is an island sanctuary on state land. Stunted mangroves *Avicennia* sp. and *Aegialitis annulata* are dispersed around all but the western periphery of the island. Low shrubs of *Cappris* sp. and *Manilkara kauki* occupy small areas of mostly the northern sector. Otherwise the remainder of the island supports mainly scramblers and vines, consisting of *Ipomoea pes-caprae, Flagellaria* sp. and *Canavalia* sp.; various herbs include *Sesuvium portulacastrum, Tribulus* sp., *Boerhavia* sp. and *Tetragonia tetragoniodes*, and there are small grassed areas.

The six visits to the island documented here were during the periods 5-6 November 1990, 13 July 1995, 18 December 1996, 11 December 1997, 18 December 1998 and 14 December 1999. The summit of the western ridge

provided an ideal observation centre to survey the entire island. The tiny western sand cay was visited only once. There appears to be no published information on the avifauna of Conical Rock. Scientific names for all species are given in Appendix 1.

RESULTS AND DISCUSSION

Twenty-two species of birds were recorded over a nine-year period at Conical Rock, including six breeding species. In comparison, the two considerably larger neighbouring islands of Low Wooded Island (measuring 1200 m by 500 m) and Three Isles, both of which are of similar area, recorded 39 species (seven breeding) and 57 species (nine breeding), respectively (McLean 1993, 1997). Rocky Islets, located 30 km to the north-east of Conical Rock, supported 36 species (11 breeding) (Lowry 1998).

The primary regular summer breeding species on Conical Rock is the Bridled Tern. A few dozen single egg nests were found, mainly concentrated along the western rocky ridge and its base, on all summer visits. Nest sites were found in rock cavities, under rocks or amongst an assortment of low vegetation, and occasionally in the open. Hatchlings were also seen on most visits. The irregular breeding regime of the Lesser Crested Tern in the region was illustrated by a single colony of 59 single egg nests located on short grass and coral shingle at the southern end of the island during December 1996. Due to the paucity of substantial mangrove and other trees and shrubs on the island, the maximum Pied Imperial-Pigeon count was only 30, with a few nests, eggs and nestlings found on most summer visits. The single Little Egret in December 1996 and a pair in December 1997 are the only records from islands in the Cooktown region (pers.obs.). They rested on both visits on southern rocks and shoreline in association with Eastern Reef Egrets. Two beachwashed specimens were found on Conical Rock, namely Pied Cormorant and White-capped Noddy, both in December 1997. One unidentifiable bleached elliptical egg measuring 62 mm in length was found beneath a *Manilkara* shrub on the northern side of the island in December 1998. A pair of Wedge-tailed Shearwaters were observed on the wing 1.5 km offshore from Conical Rock in December 1999.

Considering its relative size when compared to its two larger neighbours, diminutive Conical Rock, with its six breeding species, contributes significantly to the area's avifauna.

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APPENDIX 1

ANNOTATED SPECIES LIST FOR CONICAL ROCK

* indicates breeding record(s)

Wedge-tailed Shearwater *Puffinus pacificus*. A pair on the wing, 1.5 km offshore from Conical Rock. in December 1999.

Brown Booby *Sula leucogaster*. One juvenile resting on outer rocks in December 1998.

Pied Cormorant *Phalacrocorax varius*. Two adults perched on eastern rocks in December 1999 and one beachwashed specimen in December 1997.

Little Black Cormorant *Phalacrocorax melanoleucos*. A single adult seen in December 1998 and December 1999 at southern rocks.

Australian Pelican *Palecanus conspicillatus*. Always 3-4 resting on the island or feeding on the adjacent reef.

***Eastern Reef Egret** *Egretta sacra*. Counts of this breeding species varied between 3-22 birds, both dark and light morphs being in similar numbers. At least one nest with three eggs and a separate fledgling were found in scrambling *Flagellaria* vine in December 1997, when six unoccupied nests were also located in nearby *Capparis* thickets.

Little Egret *Egretta garzetta*. A single individual was recorded in December 1996 and a pair in December 1997, resting on each occasion with Eastern Reef Egrets at southern rocks and the adjacent shoreline.

*__Osprey__ *Pandion haliaetus*. In July 1995 a nest with a fledgling was located on rocks towards the southern end of the western ridge. One immature bird was present near the nest in December 1996.

Whimbrel *Numenius phaeopus*. One individual was resting with a small flock of Ruddy Turnstone on southern rocks in December 1996.

Tattler sp. *Heteroscelus* sp. Counts of 3-40 were recorded on surrounding rocks an each visit.

Ruddy Turnstone *Arenaria interpres*. Small flocks of 4-20 on all visits, usually resting at outer rocks.

Beach Stone-curlew *Esacus neglectus*. One individual flushed from shrubs at the northern end of the island in December 1996 and December 1998.

***Sooty Oystercatcher** *Haematopus fuliginosus*. 2-4 birds seen on some visits; two eggs were located on mixed coral rubble and pumice-stone at the northern side of the island in July 1995.

Silver Gull *Larus novaehollandiae*. 3-9 seen on each visit.

*__Lesser Crested Tern__ *Sterna bengalensis*. During December 1996 a breeding colony consisting of 59 single egg nests was located on short grass and coral rubble at the southern end of the island; otherwise only 1-2 birds were noted on other visits.

Crested Tern *Sterna bergii*. 8-50 birds seen on all visits.

Black-naped Tern *Sterna sumatrana*. A pair seen on some summer visits.

Little Tern *Sterna albifrons*. One individual noted in November 1990.

*__Bridled Tern__ *Sterna anaethetus*. This was the primary regular summer breeding species on Conical Rock. A few dozen single egg nests were found, usually along, or at the base of, the steep rocky western ridge, located in cavities, under rocks, under low shrubs and herbage or amongst grass and creepers, but also in the open. Hatchlings were also seen on most visits. Counts of between 120-150 birds on the wing were regularly noted on each summer visit.

White-capped Noddy *Anous minutus*. A beachwashed specimen was found in December 1997.

*__Pied Imperial-Pigeon__ *Ducula bicolor*. Summer counts of up to 30 birds. A few nests, eggs and nestlings were found in *Capparis*, *Manilkara* and *Avicennia* vegetation on most summer visits.

White-breasted Woodswallow *Artamus leucorynchus*. One or two noted on some visits, usually perched on the summit of the western ridge.