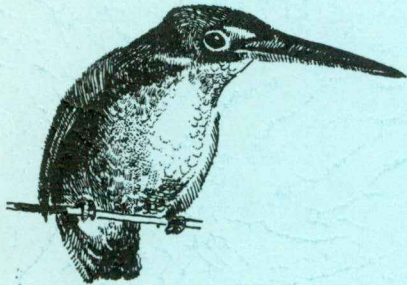


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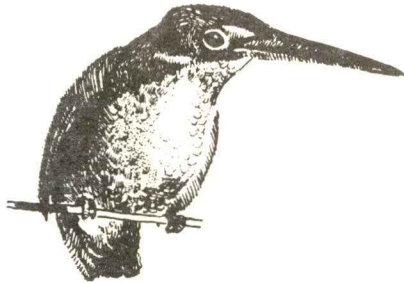
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AUSTRALIAN BIRDS



Volume 12, No.2

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OBSERVATIONS ON DISPLAY AND BOWER-BUILDING OF THE AUSTRALIAN REGENTBIRD

WILMA BARDEN

INTRODUCTION

Trapping, banding and colour marking of the Australian Regentbird *Sericulus chrysocephalus* (formerly known as the Regent Bower-bird) in the vicinity of Blackbutt Reserve, Newcastle has been conducted over the past few years in an attempt to gain some knowledge of this species. Despite much searching no bowers have been found in the Reserve. The topography and vegetation together with the extremely quiet display of the Regentbird presents some difficulty in the search for bowers.

Available literature (Iredale 1950, Marshall 1954 and 1970, Disney and Lane 1971 and Gilliard 1969) indicates that little is known about the bower building habits of *schrysocephalus*. Consequently when an immature male Regentbird constructed a bower in my garden, on two occasions, firstly in 1976 and again, using the same site in 1977, notes were kept on the display and bower-building observed. Details of the bower were not taken as I was hesitant at the time to disturb the bird in any way. Foliage and poor light conditions often obscured observations and there were times when it was not convenient to keep the site under constant observation. Also there were days when no activity occurred at the bower site.

On 9 November 1974 a brown coloured Regentbird (No. 7) was trapped and a band supplied by the Australian Bird Banding Scheme, applied. It was noted when the bird was retrapped for colour-banding on 3 August 1975 that colour changes of the bill had begun to occur. By 17 January 1976 the bill and eyes were completely yellow.

CONSTRUCTION AND ORIENTATION

The immature male (No. 7) commenced to build a bower on 17 January 1976 and again using the same bower site on 11 January 1977, under shrubbery — approximately three metres from the kitchen window. It is of interest to note that a captive Regentbird kept in the experimental area of Monash University was found to have constructed a bower at the time that similar colour changes occurred to the one described above, indicating that the bird was an immature male (Marshall *loc. cit.*).

First Bower (1976): On the first observed bower building attempt the bird worked consistently and busily for several days then abandoned bower building for about ten days before resuming. Bower building again continued for two more days, with no further activity for seven days, followed by bower building for three days and when, three weeks later, on 29 March 1976 the bower site was inspected, the bower appeared to be well constructed and probably close to completion.

Second Bower (1977): At commencement of construction of this second bower of the immature male there appeared to be no further changes in colouration of plumage, bill and eyes although the Regentbird was in moult at this time with brown plumage replacement. Bower building was swift and continuous and within four hours the bower was fairly well built with low walls. No further observations were recorded until four days later when construction continued despite rainy weather conditions. The following day was overcast and very humid and the Regentbird was in constant attendance at the bower where bower-building continued together with much display.

Observations were not constant for the next few days although the bird was seen in the vicinity of the bower. On 19 January 1977 bower building and display again continued and the bower appeared to be well constructed and near completion. From these two observations of the bower of the Regentbird I would agree with both Marshall (*loc. cit.*) that the bower "is not in the least degree rudimentary.....It is sturdy and durable.....Certainly the structure is smaller than that of any other avenue building species. But, so too, is the bird that builds it" and M. T. Goddard (1947) was quoted by Gilliard (1969) which describes the bower perfectly "It consisted of two parallel, triangular-shaped walls of fine sticks and twigs.....There was no arching effect of the walls and the platform of sticks and twigs upon which adornments are deposited (as seen in bowers of the Satin species) was lacking." It appears that the only reference to triangular-shaped walls are as described by Goddard and aptly describes the walls of the bowers observed by me.

During bower construction twigs of varying thicknesses and lengths are broken off nearby shrubs or picked up off the ground. The bird stands either at the end of the avenue or within the avenue in order to place the twigs in the wall — with much agile hopping to change position. Frequently bower building is interrupted whilst the builder indulges in bursts of display. This may be of fleeting duration or continue for an hour or so.

Orientation of the avenue of both bowers was north-south with the walls constructed on the west and east. This differs from the observations of Goddard (*loc. cit.*) where the avenue faced east-west. Chaffer (1959) in his comments on the Satin Bowerbird states that the walls of their bowers nearly always run north and south. Vellenga (1970) comments that the orientation of the Satins bowers did not always remain north-south.

Ornaments found in the bower of the Regentbird generally harmonize with the surroundings and ground colour (Marshall *loc. cit.*). An exception to this is the colour blue referred to by E. P. Ramsay (1876) in his observations as quoted by both Marshall and Gilliard (*loc. cit.*). Observations of mine agree with Ramsay regarding this colour. A small

piece of blue balloon was a favoured ornament usually found decorating the avenue floor although it was rarely picked up during display. A list of ornaments seen at the bowers follows, and except for the blue ones, is similar to those reported by Marshall (*loc. cit.*), 1 amber bead, creamy-yellow flower and leaves, 1 and 2 fresh green leaves, fern frond buds, brown gall, snail shells, blue plastic hair curler, blue aeroguard cap, piece of blue ribbon, blue beads, 1 strip of blue balloon. The ornaments are placed within the bower although occasionally an ornament is found outside the bower in close proximity to it. Unlike the Satin Bowerbirds *Ptilonorhynchus violaceus* only a few ornaments have been observed at the Regentbird's bowers at any one time.

PAINTING OF BOWER

First Bower: Although painting of the bower may have occurred during construction of this bower this activity was not observed.

Second Bower: On 16 January 1977 a green unopened fern frond bud had been placed within the avenue of the bower. After rearranging the twigs and adding to the walls of the bower, followed by some display the Regentbird then chewed at the fern bud, presumably for the purpose of painting the walls of the bower. Although painting of the bower was not actually observed on this date this action was later confirmed. The Regentbird remained away from the area until 24 January 1977 when it was noted (per daughter Narelle Barden) to gather raindrops from the shrubbery, chew small amounts of fern fronds and then proceed to paint the walls of the bower. Observations on bower painting are also described by Goddard (1947).

RAIDING AND DISPLAY BY OTHER REGENTBIRDS

Vellenga (*loc. cit.*) describes raiding of bowers and counter-raiding of the Satin Bowerbird. My observations tend to indicate that similar behaviour occurs with the Regentbird.

First Bower: When inspected on 12 April 1976 the bower appeared to have been tampered with as the western wall was not so pronounced as previously noted. Bower building again resumed on 12 May 1976 and three days later when again inspected the bower appeared to be flattened and the ornaments had disappeared. On June 1976 the builder of the bower (No 7) was seen pulling the bower to pieces. Intermittent bower repairs later followed. A mature male (No 3) and an immature male (No 6) were both seen to attack the bower, the latter on 16 July 1976 when there was much display by the owner of the bower.

These two males often displayed at the bower whilst the owner was away either alone or more often with another bird or birds in attendance. The mature male (No 3) was observed in display at the bowersite on 7 June 1976 while the owner (No 7) watched for a time before chasing the mature male away. On 1 August 1976 whilst No. 3 sat on a branch above the bower preening a second mature male (No 10) displayed before him. An unbanded brown Regentbird was observed on one occasion to place blue ornaments into the avenue of the bower while No 3 was present. Display and attendance at the bower by other Regentbirds continued until the bower was abandoned about 25 August 1976. The builder of the bower then frequented Blackbutt Reserve until the second bower was commenced.

Second Bower: An immature male (No 18) was observed on 5 February 1977 to approach the bower cautiously, enter the bower and peck at the walls before flying away. The owner of the bower (No 7) was observed fighting furiously with an unidentified brown Regentbird on 15 February 1977 and again two days later with No. 6. The bower was demolished on this date. Whether by the owner, other Regentbirds or Satin Bowerbirds is not known.

Immature male (No 6) was observed to make aggressive movements towards No 7 on 7 March 1977 and later whilst No 7 was away this bird entered the bower and pecked destructively at what little was left of the bower, pulling and tossing twigs aside before leaving. This intruder was observed on 26 March 1977 displaying to No 18 another immature male. He appeared quite apprehensive and nervous during his stay at the bower site. Display and attendance at the bower by No 7 was last recorded on 14 June 1977 and he now frequents Blackbutt Reserve returning sporadically to my garden for feeding.

On 7 March 1977 an unbanded juvenile was observed attempting display on a branch of a tree close to the house. The body was stretched and wings outspread. Two weeks later on 25 March 1977 a colour-banded juvenile (it is not known whether this was the same bird that previously attempted display) began to display at the bower site with other birds in attendance. The juvenile's attempt was a strange "trance-like" weaving of head and body. It staggered several times and almost fell over. The wings were spread and fluttered and the beak opened at times in vocal display. An attempt was made to pick at the twigs, one twig was picked up and then replaced. The juvenile then preened itself again picking at twigs. It appeared unsure of what to do next, hesitated and then picked up a twig and tried to 'place' the twig into the bower wall. The juvenile then squatted in the bower and made dabbling movements at the twigs, then sat quietly for awhile before moving off with the other birds. During this juvenile display No 3 was perched in branches above.

INTERFERENCE AND DISPLAY AT BOWER BY SATIN BOWERBIRDS

There appears to be no reference to Satin Bowerbirds displaying at Regentbird bowers in the literature.

During 1976 a four-year-old 'green' immature male Satin Bowerbird had constructed a bower approximately 5.5 m away from that of the Regentbird and on a number of occasions Satin Bowerbirds were observed taking twigs from the Regent's bower as well as ornaments.

First Bower: The first recorded observation of twig removal by Satin Bowerbirds occurred on 15 May 1976 and interference continued frequently until the bower site was abandoned on 25 August 1976. On 15 July 1976 two green Satin Bowerbirds were seen to pick up the ornaments and one Satin Bowerbird then displayed at the Regent's bower site.

Second Bower: Attendance by Satin Bowerbirds at the Regentbird's bower was again noted on 5 February 1977 when the previously 'green' immature male Satin, now in mottled plumage was observed in the vicinity of the bower. Onion skins as mentioned by Vellenga (1970) and a small piece of grey cardboard were placed outside the bower and it is believed that these items were deposited by the Satin Bowerbird. On several occasions when the Satin Bowerbirds were in fairly constant attendance sprigs of green pine leaves were observed within the avenue of the Regent's bower. Although unobserved it is highly probable that these were placed in the avenue by the Satins as a Satin Bowerbird had been observed at the bower with green pine leaves in its bill. Fresh sprigs of pine have also been noticed on a number of occasions in the avenue of the Satin Bowerbird's bower nearby. Whereas most ornaments of this species is placed outside the avenue on the display platform (Marshall *loc. cit*), Vellenga (*loc. cit*) in her comments states that although numerous items decorated the platform "strands of blue wool were so placed as to lead into and along the avenue..... Small ornaments.....flowers and other blue objects were lying on the floor of the bower".

Green immature Satin Bowerbirds attended the Regent's bower, "tidied" the walls, played with ornaments, sometimes picked up twigs and on one occasion one Satin was seen attempting to place a twig in the wall structure. Display by the Satin Bowerbirds at this second bower were also recorded on two occasions. The bower appeared broken down on 10 February 1977 and was demolished entirely by 15 February 1977. Whether this was perpetrated by the Satins, other Regentbirds or the owner is not known. Neither the builder of the bower nor any other Regentbird attempted at any time to defend the bower against intruding Satin Bowerbirds. They either left the area or moved into nearby bushes to return to the site after departure of the Satin Bowerbirds.

DISPLAY

Display by the Regentbird often takes place on branches of well-foliaged shrubs and trees near to our house as well as on the ground at the bower site. Duration of display may be brief or continue for over an hour.

No 7 frequently displayed at the bower either alone or with one or more birds in attendance from the commencement of construction until the site was abandoned. Ornaments are picked up during display by the 'dancer' as well as the bird displayed to. The bird in attendance during display usually stands or squats quietly and almost always remains in a position facing the 'dancer' changing position to do so.

The display song consists of very soft (by comparison to that of the Satin Bowerbird) open-beaked chirrings and twitterings as well as some sweet notes. Goddard (1947) aptly described it as a "peculiar low chattering". The song is accompanied by much head bobbing and pecking movements, sharply flicked wings and dashing hops about the branches. Movements during display are sharply abrupt and staccato-like especially when displaying at the bower where the twittering sounds are further accompanied by a few "charging" steps and hops, staccato wing movements and swift backward somersaults. The only apparent reference to display are those by A. J. Campbell and Waller (in Marshall 1954 and Gilliard 1969).

CONCLUSION

Both the Regentbird and the Satin Bowerbird frequent similar habitats with similar ecological requirements and it is likely that the Satin Bowerbird has some influence on the bower building behaviour of the Australian Regentbird.

The bowers observed by me, although built between the house and street were constructed under densely foliaged shrubbery which provided reasonable concealment. No other vegetation occurred at ground level other than stems of the shrubs. The few bowers of Regentbirds that have been found in the wild (Marshall and Gilliard *loc cit*) were usually well concealed in dense undergrowth and ferns protected by spiny lawyer vines. The interference at the bower by the Satin Bowerbirds may have influenced the Regentbirds in their choice of bower location towards dense and prickly vegetation.

The lack of discovered bowers led Gilliard (*loc cit*), in the belief that the Regentbird may be discarding its bower building habits, to comment that "the few bowers.....attributed to it are perhaps in reality bowers built by young Satin Bowerbirds". My observations have revealed that the male Regentbird does in fact build and continues to build a bower.

Male Regentbirds were constant visitors to the bowers under observation whereas only one known female had been sighted at the bower on one occasion only. These observations tend to support the view that the behaviour of the Australian Regentbird at the bower

appears to be similar to that of the Satin Bowerbirds (Disney and Lane *loc. cit*) and that likewise young male Regentbirds are taught the skills of bower building and display.

Suggestions have been made that the colour of ornaments of the Satin Bowerbird bears resemblance to the plumage colours of the female and/or rival male. Similar suggestions have been made concerning the Regentbird but no reference is made pertaining to the colour 'blue'. I would suggest that perhaps the Regentbirds attraction for this colour has been influenced by co-habitation with the Satin Bowerbird.

ACKNOWLEDGEMENTS

The writer wishes to express appreciation to F. W. C. van Gessel and A. K. Morris for their encouragement and assistance in the drafting and preparation of this article. I also wish to thank my daughters Narelle and Vikki for their assistance with observations and recording.

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SEABIRD MORTALITY IN NEW SOUTH WALES IN 1976

GLENN HOLMES

ABSTRACT

During 1976 members and friends of the Field Ornithologists Club travelled 1837 km of the New South Wales coastline and found 1963 dead or dying seabirds. This was the lowest mortality since the beach patrol scheme began in 1970. Mortality was unusually large only in the Black Cormorant. A Red-footed Booby found in January was the first record for New South Wales. Species seldom found beach-washed in New South Wales included a Grey-headed Albatross, two Mottled Petrels, a Kermadec Petrel, two Westland Black Petrels and a Wilson's Storm-petrel.

INTRODUCTION

This paper presents the results of the NSWFOC beach patrol scheme for 1976. Within 1837 km travelled by a total of 19 participants, 1963 dead or dying seabirds of 39 species were found, giving a mean mortality of 1.1 birds per km. This is the lowest mortality rate recorded since the inception of the scheme in 1970.

Table 1 shows the monthly rates of seabird mortality in birds per km. Tables 11 and 111 give the monthly and zonal distributions respectively of mortality in each species. Good coverage was obtained only in the four northern zones. Previous reports (see Holmes 1976) are the basis for any comparisons between years for species discussed in this report. Nomenclature follows Condon (1975).

SIGNIFICANT RECORDS

A Grey-headed Albatross *Diomedea chrysostoma* found at South Ballina on 20 June was the ninth NSW record. Except for the sooty albatrosses *Phoebastria* spp., this is the only species of albatross that has been found beach-washed in NSW more often than it has been observed alive, strongly suggesting that it mainly inhabits pelagic waters.

Several Pterodroma petrels were found. Mottled Petrels *P. inexpectata* found near Lennox Head on 14 January and near Jervis Bay on 7 March were the sixth and seventh NSW records. These are consistent with previous occurrences within the period October to April. An intermediate phase Kermadec Petrel *P. neglecta* found near Jervis Bay on 20 June was the third NSW and Australian record. These records are for January, March and June; at Lord Howe Island the species is probably present from September to May (Fullagar *et al.* 1974).

A Westland Black Petrel *Procellaria westlandica* found alive at Kingscliff near Tweed Heads on 1 January was the third NSW and Australian record (Vernon 1977). Another was found freshly dead at Coffs Harbour on 14 December. Australian records are from 12 December to 2 January. This corresponds with the fledging period, which occurs throughout December at the only known colony near Punakaiki in the South Island of New Zealand. With less than 1,000 breeding pairs this species is among the rarest seabirds in the world (Best & Owen 1976).

A Wilson's Storm-petrel *Oceanites oceanicus* found near Ballina on 16 April is the first recorded in the scheme. Despite its abundance this storm-petrel is seldom found beach-washed in Australia. Serventy (1952) attributed this to its timing of passage, mainly in

April and October, coinciding with periods in which severe storms are infrequent.

The Red-footed Booby *Sula sula* occurs throughout tropical seas. One found near Ballina on 13 January was the first NSW record. Another found at North Stradbroke Island on 11 March was the first for south-eastern Queensland (Rogers 1977). The only other record for south-eastern Australia was of an adult found dead at Lord Howe Island in February 1974 (Rogers 1975).

PATTERNS OF MORTALITY

Short-tailed Shearwaters *Puffinus tenuirostris* and prions *Pachyptila* spp. are the species most frequently found dead in NSW. They suffered relatively little mortality in 1976. This was not simply due to mild weather; for example, bad weather in June and December (Anon 1976) could have affected prions and shearwaters respectively. However, sea surface temperatures were unusually high from March to October (unpublished CSIRO data) and prions were virtually absent from mid-northern NSW (*pers. obs.*). Probably very few prions wintered in NSW during 1976, so few would have been found beach-washed. These high temperatures clearly did not adversely affect survival of the Shearwater, but it is not known whether these temperatures actually increased marine productivity.

A significant influx of Black Cormorants *Phalacrocorax carbo* into coastal districts occurred late in the year (Rogers 1977). Large numbers were reported from Wollongong, Sydney and Newcastle and six juveniles banded during 1976 at Lake Menindee and in north-western Victoria were recovered from Narooma to Brunswick Heads. This influx coincided with the exceptional mortality in marine waters from October to December. Twenty birds found dead in the Maclean-Coffs Harbour-Hastings zones were all immatures (*pers. obs.*).

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TABLE I
MONTHLY RATES OF SEABIRD MORTALITY (BIRDS/KM) IN N.S.W. DURING 1976

| ZONE | | Jan | Feb. | Mar. | Apr. | May. | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | TOTALS |
|---------------------------------|----------|-----------|----------|---------|---------|----------|----------|---------|---------|---------|----------|-----------|-----------|--------|
| Tweed Heads | Km Birds | 16 28 | 11 7 | 11 0 | 11 0 | 11 58 | 11 4 | 11 1 | 11 1 | | 11 9 | 11 5 | 11 19 | 132 |
| Maclean | Km Birds | 30 1 | 4 0 | 30 3 | 30 2 | 30 5 | 30 1 | 30 0 | 30 1 | 30 4 | 23 5 | 32 25 | 30 21 | 68 |
| Coffs Harbour | Km Birds | 50 12 | 70 13 | 24 1 | 46 9 | 71 7 | 61 12 | 50 0 | 28 1 | 48 6 | 91 92 | 79 196 | 81 155 | 504 |
| Hastings | Km Birds | 37 11 | 37 6 | 26 1 | 40 1 | 37 2 | 38 3 | 37 0 | 37 1 | 39 0 | 34 28 | 37 464 | 37 101 | 618 |
| Newcastle | Km Birds | 1 1 | | | | | | | | 2 0 | | | | 1 |
| Sydney | Km Birds | 1 4 | | | | 1 0 | 2 1 | | 4 0 | | | | | 5 |
| Wollongong | Km Birds | | | 1 0 | | | 3 2 | | 2 0 | | 8 35 | 10 33 | 13 266 | 336 |
| Ulladulla | Km Birds | 11 195 | 7 11 | 4 3 | | | 11 10 | 9 0 | 5 5 | | | 4 75 | | 299 |
| Bega | Km Birds | | | | | | | | | | | | | |
| Mallacoota | Km Birds | | | | | | | | | | | | | |
| Total Km travelled (not listed) | | 135 | 146 | 108 | 127 | 170 | 193 | 143 | 118 | 119 | 195 | 181 | 202 | — |
| Total Km patrolled | | 112 | 129 | 96 | 127 | 150 | 156 | 137 | 117 | 119 | 167 | 173 | 172 | 1837 |
| Total Seabirds recorded | | 252 | 37 | 8 | 12 | 72 | 33 | 1 | 9 | 10 | 169 | 789 | 562 | 1963 |
| Birds/Km patrolled/month | | 2.3 | 0.3 | 0.1 | 0.1 | 0.5 | 0.2 | 0.0 | 0.1 | 0.1 | 1.0 | 4.6 | 3.3 | — |
| Birds/Km trav/month | | 1.9 | 0.3 | 0.1 | 0.1 | 0.4 | 0.2 | 0.0 | 0.1 | 0.1 | 0.9 | 4.4 | 2.8 | 1.1 |

TABLE II
MONTHLY SEABIRD MORTALITY IN N.S.W. DURING 1976

| SPECIES | J | F | M | A | M | J | J | A | S | O | N | D | TOTALS |
|--------------------------|-----|----|---|----|----|----|---|---|----|-----|-----|-----|--------|
| Little Penguin | | | | | | 1 | | 1 | | | | | 2 |
| Wandering Albatross | 1 | | | | | | | | | | 1 | | 2 |
| Yellow-nosed Albatross | | | | | | 1 | | | | | | | 1 |
| White-capped Albatross | | | | | | 1 | | | | | | | 1 |
| Grey-headed Albatross | | | | | | 1 | | | | | | | 1 |
| Albatross sp. | | | | | | 1 | | | | | | | 1 |
| Southern Giant-petrel | | | | | | | | | | | 1 | | 1 |
| Giant-petrel sp. | | | | | | | | | | 1 | | | 1 |
| Cape Petrel | | | | | | | | | 1 | | | | 1 |
| Great-winged Petrel | 1 | 2 | 2 | | 2 | 1 | | | | | | | 8 |
| Providence Petrel | 1 | | | | 2 | 1 | | | | | | | 4 |
| White-headed Petrel | | | | | | 2 | | | | | | | 2 |
| Gould Petrel | | 1 | 1 | | | | | | | | | | 2 |
| Kermadec Petrel | | | | | | 1 | | | | | | | 1 |
| Mottled Petrel | 1 | | 1 | | | | | | | | | | 2 |
| Antarctic Prion | | | | | 1 | 1 | | | | | | | 2 |
| Fairy Prion | | | | | | 2 | | | | | | | 2 |
| Prion sp. | 1 | | | | | 10 | | 4 | | | | | 15 |
| Westland Black Petrel | 1 | | | | | | | | | | | 1 | 2 |
| Flesh-footed Shearwater | 1 | 1 | | | 1 | | | | 1 | 2 | 5 | 7 | 18 |
| Wedge-tailed Shearwater | 3 | 7 | 2 | 3 | 5 | | | 1 | | 1 | 5 | 6 | 33 |
| Sooty Shearwater | 5 | 3 | | | | 1 | | | | | 8 | 1 | 18 |
| Short-tailed Shearwater | 225 | 11 | | 1 | 46 | 1 | | | 2 | 152 | 758 | 527 | 1723 |
| Fluttering Shearwater | 2 | 8 | | | 2 | | | | | 1 | | | 13 |
| Little Shearwater | | | | | | 1 | | | | | | | 1 |
| Wilson's Storm-petrel | | | | 1 | | | | | | | | | 1 |
| White-faced Storm-petrel | | | | | | | | | | | | 1 | 1 |
| Australian Gannet | 1 | | | 5 | 9 | 6 | 1 | 2 | 3 | 3 | | | 30 |
| Red-footed Booby | 1 | | | | | | | | | | | | 1 |
| Darter | | | | | | | | | | | 1 | | 1 |
| Little Pied Cormorant | | | | | | | | | | | 1 | | 1 |
| Black Cormorant | 1 | | | | | | | 1 | 1 | 8 | 9 | 10 | 30 |
| Little Black Cormorant | | | | | | | | | | | 2 | 1 | 3 |
| Pelican | | | | | | | | | | | | 1 | 1 |
| White-tailed Tropicbird | 1 | | | | | | | | | | | 1 | 2 |
| Great Skua | 1 | | | | | | | | | | | | 1 |
| Pomarine Skua | 1 | | | | | | | | | | | | 1 |
| Arctic Skua | 1 | | 1 | | | | | | | | | | 2 |
| Silver Gull | 2 | | | 1 | 3 | | | | 1 | 1 | 6 | 4 | 18 |
| Crested Tern | | 3 | | 1 | 1 | 1 | | | 1 | | 1 | 2 | 10 |
| Sooty Tern | | 1 | 1 | | | | | | | | | | 2 |
| Common Noddy | 1 | | | | | | | | | | | | 1 |
| TOTAL | 252 | 37 | 8 | 12 | 72 | 33 | 1 | 9 | 10 | 169 | 798 | 562 | 1963 |

TABLE III

ZONAL DISTRIBUTION OF SEABIRD MORTALITY IN N.S.W. DURING 1976

| SPECIES | TH | MC | CH | HS | NC | SY | WG | UL | BG | MA | TOTALS |
|--------------------------|-----|----|-----|-----|----|----|-----|-----|----|----|--------|
| Little Penguin | | | | | | | 1 | 1 | | | 2 |
| Wandering Albatross | | | 1 | | | | | 1 | | | 2 |
| Yellow-nosed Albatross | | | | 1 | | | | | | | 1 |
| White-capped Albatross | | | 1 | | | | | | | | 1 |
| Grey-headed Albatross | 1 | | | | | | | | | | 1 |
| Albatross sp. | 1 | | | | | | | | | | 1 |
| Southern Giant-petrel | | | 1 | | | | | | | | 1 |
| Giant-petrel sp. | 1 | | | | | | | | | | 1 |
| Cape Petrel | | | 1 | | | | | | | | 1 |
| Great-winged Petrel | 2 | 2 | 2 | 2 | | | | | | | 8 |
| Providence Petrel | 2 | | 1 | | | | | 1 | | | 4 |
| White-headed Petrel | | | 1 | | | | | 1 | | | 2 |
| Gould Petrel | | | 1 | | | | | 1 | | | 2 |
| Kermadec Petrel | | | | | | | | 1 | | | 1 |
| Mottled Petrel | 1 | | | | | | | 1 | | | 2 |
| Antarctic Prion | 1 | | 1 | | | | | | | | 2 |
| Fairy Prion | | | 2 | | | | | | | | 2 |
| Prion sp. | | | | 1 | | 1 | | 13 | | | 15 |
| Westland Black Petrel | 1 | | 1 | | | | | | | | 2 |
| Flesh-footed Shearwater | 3 | 2 | 9 | 3 | | | | 1 | | | 18 |
| Wedge-tailed Shearwater | 7 | 2 | 11 | 8 | | | | 5 | | | 33 |
| Sooty Shearwater | 2 | 1 | 5 | 9 | | | 1 | | | | 18 |
| Short-tailed Shearwater | 92 | 48 | 419 | 574 | | 4 | 318 | 268 | | | 1723 |
| Fluttering Shearwater | 4 | | 3 | 5 | | | | 1 | | | 13 |
| Little Shearwater | | | | 1 | | | | | | | 1 |
| Wilson's Storm-petrel | 1 | | | | | | | | | | 1 |
| White-faced Storm-petrel | | | | | | | 1 | | | | 1 |
| Australian Gannet | 8 | 5 | 15 | 1 | 1 | | | | | | 30 |
| Red-footed Booby | 1 | | | | | | | | | | 1 |
| Darter | | | 1 | | | | | | | | 1 |
| Little Pied Cormorant | | | 1 | | | | | | | | 1 |
| Black Cormorant | | 4 | 8 | 8 | | | 8 | 2 | | | 30 |
| Little Black Cormorant | | | | 1 | | | 2 | | | | 3 |
| Pelican | | | | | | | 1 | | | | 1 |
| White-tailed Tropicbird | 1 | | 1 | | | | | | | | 2 |
| Great Skua | | 1 | | | | | | | | | 1 |
| Pomarine Skua | | | | | | | | 1 | | | 1 |
| Arctic Skua | | | | 1 | | | | 1 | | | 2 |
| Silver Gull | 2 | 1 | 11 | | | | 4 | | | | 18 |
| Crested Tern | 1 | 2 | 5 | 2 | | | | | | | 10 |
| Sooty Tern | | | 2 | | | | | | | | 2 |
| Common Noddy | | | | 1 | | | | | | | 1 |
| TOTAL | 132 | 68 | 504 | 618 | 1 | 5 | 336 | 299 | | | 1963 |

A BAIRD'S SANDPIPER AT BOTANY BAY

J. E. COOK AND J. W. WAUGH

INTRODUCTION

Baird's Sandpiper *Calidris bairdii* (Coues) breeds in Eastern Siberia and North America; non-breeding birds migrate to southern South America (Slater 1970). The bird has been recorded twice in Australia, in Tasmania in October 1966 and in Victoria in November 1974 (Smith and Swindley 1975). In this paper the authors describe a wader seen at Botany Bay, New South Wales, on 23 November 1976 considered to be a Baird's Sandpiper, the third record for Australia and the first for New South Wales.

THE SIGHTING

On 23 November 1976 at 1300 hours a strange small brown wader was observed feeding on a sand flat near General Holmes Drive, on the north-western shores of Botany Bay. The bird was standing among 400 Red-necked Stint *Calidris ruficollis* and 250 Curlew Sandpiper *Calidris ferruginea* which were feeding on the flat as the tide went out.

At 1330 hrs the wader rose with a flock of about 40, flew past us, and settled with the flock 80 m away. It was observed first at 80 m, then at 60 m and finally at 45 m, after which it was flushed at 1345 hrs. A closer approach was impossible because the Stints and Curlew Sandpipers were between us and the bird.

Sighting conditions were excellent with bright sunlight, clear visibility, and three-tenths cumulus cloud. The bird was observed with 7 x 35 and 8 x 40 binoculars as it stood and walked slowly in clean shallow water and on clean sand.

The bird stood out among the Red-necked Stints and Curlew Sandpipers, particularly in its colour, shape, and feeding behaviour. In colour the bird was generally brown and buff, the back being distinctly scalloped dark brown with buff edging and the upper breast being a buffy grey that merged into the off-white of the underparts. It was closer in size to the Curlew Sandpiper than to the Red-necked Stint and its body had a longer appearance and was more slender than the former's. While feeding it had a hunched attitude (at no time did we see it extend its neck) and it held its body closer to the ground than did the Curlew Sandpiper. It did not feed in the shallow water 10 mm deep where it landed but walked slowly to land above water level where it stopped occasionally to peck in a deliberate manner at the surface. It also pecked in the same manner at the sides of sandstone rocks without extending its neck upwards. This behaviour was in sharp contrast to the rapid probing in the sand at the water's edge of the Curlew Sandpipers and the Red-necked Stints.

When the bird was flushed it flew 500 m with the flock and was not seen again that day nor on subsequent visits to the area and to other roosting and feeding areas around Botany Bay.

- Size:** Between Red-necked Stint and Curlew Sandpiper. Nearly as big as Curlew Sandpiper.
- Shape:** More slender than Curlew Sandpiper and appeared longer. Body nearly horizontal. Head held close to body. Not seen to stretch neck upward. Body closer to ground than Curlew Sandpiper's.
- Plumage:** General appearance, brown and buff. Much darker than Stint and Curlew Sandpiper's in their non-breeding plumage. Crown brown, no streaks seen. Forehead light brown

into light buff brow. Sides of head, buff. Back distinctly scalloped dark brown with buff edging. Transition from crown through nape to back not noted. Scalloping on bend of wing lighter than on back. Primaries when wings folded, dull brown-grey. Chin not observed. Sides of neck and upper breast, buffy grey, merging into off-white of lower breast and belly. Belly of Curlew Sandpiper and Stint much whiter. Undertail converts, off-white.

- Flight pattern: Flushed at 45 m with Stints and Curlew Sandpipers, flew at height of about five metres. No obvious wing-bar. Secondaries lighter than primaries. Dark centre stripe to rump and tail. White sides to rump. Sides of tail lighter brown than centre.
- Legs and feet: Black with greenish tinge. Legs appeared shorter than Curlew Sandpiper's possibly because of crouching attitude.
- Bill: Straight, black, rather fine, about length of head. Proportion of bill to head similar to Stint's. Much shorter than Curlew Sandpiper's.
- Eye: Dark.
- Voice: Not heard.
- Behaviour: Associated with Stints and Curlew Sandpipers which were feeding in shallow water. Did not feed in water. Sometimes moved quickly if a Stint came near, generally away but twice pecked at a Stint.

IDENTIFICATION

Listed below are all the waders with black or dark legs, black bill and size about that of the bird seen, excluding dotterels and plovers, taken from Pough (1951), Peterson (1954) and Slater (1970). Birds with other than dark legs and bill are excluded because the bird was seen on clean sand by clean water in good light. Dotterels and plovers are excluded because the bird much more closely resembled a sandpiper in shape and behaviour. Between us we have seen in the field all but the Western Sandpiper *C. fuscicollis*, the Broad-billed Sandpiper *Limicola falcinellus*, and the Baird's Sandpiper *C. bairdii*.

Against each bird in the list we give the chief points of difference between it and the bird seen, based on Pough (*loc. cit*) Peterson (*loc. cit*) and Slater (*loc. cit*), supplemented by the further references cited. The birds are listed roughly in order of size, as ascertainable from the literature. The bird seen was larger than a Red-necked Stint and somewhat smaller than a Curlew Sandpiper; the Red-necked Stint, similar-sized and smaller birds are therefore listed as smaller and the Curlew Sandpiper, similar-sized and larger birds are listed as larger. The plumage comparisons are based on descriptions of non-breeding birds. Generally "paler plumage also means greyer and duller plumage.

- Little Stint : smaller size, paler plumage narrow wing stripe.
C. minuta.
- Semi-palmated Sandpiper : smaller size, paler plumage more upright stance.
C. pusilla. (Browne 1956, Williamsons and Alexander 1956)
- Western Sandpiper : smaller size, paler plumage, bill down-curved.
C. mauri
- Red-necked Stint : smaller size, paler plumage, more white on rump, probes
C. ruficollis rapidly in sand and water.

- Broad-billed Sandpiper : lighter legs, longer bill with tip down-curved, paler plumage.
Limicola falcinellus
- Baird's Sandpiper : white eyebrows, pure white below.
C. bairdii (Boyd 1955, Fluke 1952).
- White-rumped Sandpiper : distinct white rump, greyer plumage.
C. fuscicollis
- Sanderling : wing bar, much paler plumage, much more active.
C. alba
- Curlew Sandpiper : larger white rump, longer and down-curved bill, paler plumage,
C. ferruginea. more upright stance.
- Sharp-tailed Sandpiper : larger, lighter legs, lighter breast, rufous crown.
C. acuminata.
- Dunlin : larger, stouter bill with tip down-curved, wing bar, probes in
C. alpina mud and water (Peterson 1942).
- Solitary Sandpiper : larger, longer legs, head held up, darker plumage, barred
Tringa solitaria. outer tail feathers.

These comparisons indicate that the bird seen most closely resembles the Baird's Sandpiper, the points of difference being that the bird we saw had a light buff brow and off-white underparts, rather than a white brow and pure white underparts, mentioned in the literature cited. However, not all observers report a white brow or comment on the whiteness of the underparts, viz. Peterson (1947) Pough (1951), Hollom (1960), Bruun and Singer (1972). We examined the skins of four Baird's Sandpipers in the Australian Museum, Sydney, none of which had markedly white brows or underparts.

The feeding behaviour of the bird seen agrees with that of the Baird's Sandpiper as described by Fluke, Smith and Swindley (*loc. cit*) and L. Salmon (*Pers. com*), as does its horizontal attitude (see Browne, Smith and Swindley, and Sharrock 1976).

The Baird's Sandpiper is consistently described as having its folded wings longer than the tail. We did not note the relative length of folded wings and tail. Despite the absence of this observation we conclude, from the size, plumage, bill, legs and general behaviour of the bird seen, that it was a Baird's Sandpiper.

ACKNOWLEDGEMENTS

We wish to thank Walter D. Boles for making available the skins of the Baird's Sandpiper at the Australian Museum; Arnold McGill and Fred T. H. Smith for their comments on our Unusual Record Report to the R.A.O.U; and L. Salmon for a copy of his field notes on a sighting of Baird's Sandpiper in England and for copies of articles in "British Birds".

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A NOTE ON WELCOME SWALLOWS AND A CANADA GOOSE ON LORD HOWE ISLAND

C. N. SMITHERS

During entomological field work on Lord Howe Island from 2-8 February 1977, some casual observations were made on birds, two of which seem worth recording.

Welcome Swallow *Hirundo neoxena* Gould.

The Welcome Swallow is usually regarded as a rare visitor to Lord Howe Island (Fullagar et al. 1974 H. F. Recher Ed. Environmental Survey of Lord Howe Island pp.53-72), referred to as *H. tahitica*. Recent observations (given below) indicate that it does occur in large numbers at times.

OBSERVATIONS

- 3.ii.1977 Six specimens flying around the top of Intermediate Hill.
- 4.ii.1977 Many specimens flying over open areas, e.g. golf course, airstrip and pasture near Old Settlement Beach. Counts were not made but, in all, at least a hundred specimens would have been seen.
- 5.ii.1977 A count of up to 37 was made of specimens sitting on fence wires along the northern side of the airstrip. Less than half had been counted when a passing car disturbed the flock into flight. Numbers were also seen near Johnson's Beach (see below).
- 6.ii.1977 Many specimens again flying over open areas, as on 4 February 1977 and approximately 40 seen on fence wires near Johnson's Beach.
- 7.ii.1977 Large numbers near Old Settlement Beach.

On 5 February, near Johnson's Beach, at the mouth of Soldier's (or Big) Creek more than a dozen specimens were seen repeatedly flying upwind against a strong easterly wind. As they approached a patch of weed in seed *Senecio* sp. they hovered over the seed heads, alighting on them. The weight of the birds bent the heads and the swallows usually lost balance and took off again. From time to time one succeeded in keeping its hold and could clearly be seen removing material from the seed heads. This behaviour continued for more than ten minutes. Close inspection of the heads failed to reveal any insects, although they would be expected to be present. In the absence of insects it seems probable, therefore, that the birds were taking the seed itself.

Canada Goose *Branta canadensis* (L.)

A single specimen of the Canada Goose was seen at least once each day from 3-8 February 1977 at Johnson's Beach. The bird could be approached, with care to within about 20 m if it were on the beach. On closer approach it would either fly off or walk down the beach and swim out for some distance. The Canada Goose does not seem to have been recorded from Lord Howe Island; it does occur in New Zealand.

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