

THE SUNBIRD



Journal of the
QUEENSLAND ORNITHOLOGICAL SOCIETY

Volume 16

Number 2

June 1986

CONTENTS

INGRAM, G. "Thickthorn" and his birds	25
WOODALL, P.F. Avian response to temporary flooding in Brisbane	33
WALKER, T.A. Numbers of the Torresian Imperial- Pigeon <i>Ducula spilorrhoa</i> on Double Cone Island, Central Queensland	41
Mystery Photograph	46

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THE SUNBIRD

Volume 16 Number 2

June 1986

"THICKTHORN" AND HIS BIRDS

GLEN INGRAM

Last century articles on native animals, which today are rarely found outside specialist journals, were commonly to be read in local newspapers. Moreover, in the Colony of Queensland, there were few scientific journals in which to publish empirical observations and findings. Newspapers provided virtually the only printed space. It is in the pages of the *Brisbane Courier*, the *Queenslander* and the *Telegraph* that the early literature on Queensland birds is to be found.

Foremost in the dispensation of ornithological knowledge was the natural history column, "The Naturalist". This was mostly written and compiled by "A Bush Naturalist" - the nom-de-plume of Price Fletcher, who was the Agricultural Editor of the *Queenslander*.¹ Fletcher had many correspondents who used colourful pen-names. Notable among these correspondents was a certain "Thickthorn" of Rockhampton.

"Thickthorn" first appeared in print in "The Naturalist" column on Saturday, 31 January 1880.² The column that day was devoted to "The Black Cockatoo", and was composed of letters written in response to an earlier letter from a Mr. Donavon. The correspondents were contentious. They debated whether black cockatoos migrated for breeding purposes and whether they ate large grubs or the kernels of oak and pine acorns. Mr. Duncan, for example, asserted grubs were their food and said "... that Mr. Donavon may have seen them about the oaks cracking the acorns, but it would be for amusement, not to extract the seed."³ Thickthorn in his letter thought black cockatoos could migrate to nest. He told of his encounter with 25 *Calyptorhynchus leachii* (an old Latin

name for the Glossy Black Cockatoo). The flock, he said "... consisted entirely of females, and the habit of many birds of passage to migrate in companies of distinct sex is too well known to require exemplar. On the whole the question remains for solution by direct observation."

What is surprising about the Thickthorn letter is the degree of erudition. There is the hint of a person of learning and reading. Thickthorn's next letter appeared in "The Naturalist" on 27 March, 1880. The letter impresses the reader even more that Thickthorn was a person of learning. He summed up the months of debate about Black Cockatoos in a succinct, empirical statement:

"Negative opinion, until established by examination of *specified* birds feeding at different seasons in various localities, is of course nugatory. The peculiar food whether vegetable or animal of each species still awaits elucidation. Nothing positive has yet been adduced to our knowledge of the nidification of the several species. Instances of black cockatoos breeding under observation have been adduced, and the record is valuable, but the want of identification (save in one or two cases) prevents the application of the information to those species whose breeding habitats were previously known."

Thickthorn's subsequent communication to "The Naturalist" was in the form of a paper, the subject of which was "The White-throated Gerygon".⁵ This was a delightful work of penmanship that combined aesthetics with excellent observations - a style typical of the Natural Theological writers. In the paper, he described his first encounter with the nest of *Gerygone albugularis* (a synonym of *G. olivacea*, the White-throated Gerygone):

"My first thought on seeing it was, What a contrast to the huge rough pile of bird-king's eyry! - it is a pigmy-maiden's bower to a frowning Norman Keep. Its form and size were those of an emu's egg reduced at either end to a fine point; its texture of exceeding delicacy. Amidst a basis of white-cobweb were carefully mingled soft mosses, fragments of the egg-capsules of puasmata and bits of mouse-ear lichen and as the work advanced it had been bound securely together with the finest of hair-like grass. Aesthetic taste, so frequently displayed

by birds, was here evidenced by particles of bright lichen and yellow leaf strewn on the outer surface and serving to throw out the whole structure in bolder relief against the dark green of the shaded cavity."

After detailing the nidification, the author noted that the "White-throated Gerygon" of Rockhampton area was unlike the described form: the vent and under tail coverts were white as well as the throat. Thickthorn thought it could be a distinct species but, for the moment, he proposed the varietal name of *Gerygone albugularis leucypura*. He asked readers to observe both forms and to communicate information respecting them so the question of distinctiveness could be resolved.

The Editor of the *Queenslander* was grateful for this paper, and, in future, nearly all Thickthorn's communications were to be of paper length. The subsequent paper submitted by Thickthorn began:

"Thickheads are very common in Queensland. Pardon me, Mr. *Queenslander*, you do me grave injustice if you suppose for a moment that I speak of its unfeathered bipeds. Had I any reason to think that a human thick-head existed among us I could not be so brusquely candid as to assert it roundly; I merely refer to a certain genus of birds ..."⁶

Thickthorn then discussed the species of *Pachycephala* and stated that there was a new species in Queensland. This he described and named *P. citrypura* because "the chief distinguishing character of the bird was the lemon-yellow of the under tail coverts ..." From knowledge we have of the taxonomy of the *Pachycephala* today, it can be seen that Thickthorn did not have a new species - he only succeeded in creating a junior synonym for *P. pectoralis*, the Golden Whistler.

In another paper, Thickthorn⁷ described a new species of fruit-pigeon, *Ptilinopus amabilis*. The author realised that his new species may be intermediate between the taxa of Gould - *P. swainsonii* and *P. ewingii*⁸ (better known as the Red-crowned and Rose-crowned Pigeons). He suggested that the three forms may just be variants of the same species. Today, they are all synonyms of *P. regina*, the Rose-crowned Fruit-Dove. Thickthorn said these fruit pigeons "... are amongst

the loveliest of birds, and if in generations to come they should survive the destruction of their native brushes it is hoped that the gardeners of that age will not grudge a little fruit to creatures so worthy of forebearance."

On 11 December, 1880, Thickthorn wrote on "The Pardalote".⁹ The author introduced his article with a humorous anecdote and then detailed the nidification of the Striated Pardalote *Paradlotus striatus*. He went on to ponder why some birds nest in trees and some in the earth. He thought that one day evolution may explain all, but in the present there was an urgent need for the naturalist to gather observations so knowledge may hasten an explanation. In concluding the article, Thickthorn gave an interesting record of the Striated Pardalote excavating a chamber in a termite nest in a fallen tree where they raised a brood three years before. "The Pardalote" was the last paper devoted to birds to be printed under the name of "Thickthorn", although other observations followed.

In the *Brisbane Courier* of 23 February, 1881, "A Bush Naturalist" told Thickthorn that "note received. I will endeavour to get you the measurement of the leatherhead,"¹⁰ The notes Fletcher referred to appeared on 5 March, 1881.¹¹ Thickthorn told how the Whistling Eagles brought up a brood of two in mid-December and were still feeding their young in late January. He also noted that the Collared Sparrowhawks had mated but, before he realised this, he slew the female. The male, he said, found another partner in three or four days, but he felt that the moult prevented them from nesting. Once before in the case of the White Goshawk he had noticed a similar brief widowhood; he found this remarkable because that species was rare. He also said he had found the nest of the skilful architect, the Reed Warbler, built amongst the papyrus fringe of Gracemere.

Thickthorn's last jottings on birds appeared in a paper called "Notes on Zoology" printed on 3 April, 1881.¹² In one section he commented on birds he had recently seen and of specimens he saw in the collection of Mr. Cuthbert. Cuthbert, he said was the "... local taxidermist, whose skill as a stuffer it is a pleasure to recognize ..." Thickthorn tells of his fifth sighting of a Crested Hawk and his first of the Channel-billed Cuckoo. He told that the autumn broods were now at hand and that the Long Neb or Cur-Cur (the Grey-crowned

Babbler) was finishing its ungainly nest. Interestingly, he mentioned the Yellow-tufted Honeyeater, which was unknown to him until a few days earlier. Its nest he said "... is a desideratum." (Longmore in 1978 list did not record the Yellow-tufted Honeyeater from the Rockhampton area.)¹³ In the spring of 1880, the Red-necked Avocet appeared in the swamps below Rockhampton. According to the duck-shooters this was the first time they had been seen in the area. Painted Snipes were also "pretty frequent".

Thickthorn's final articles were on reptiles and marsupials; the very last, "About Marsupials", appearing on 18 March, 1882. This was not the end of the author behind the nom-de-plume of "Thickthorn": his career was only beginning.

Who was Thickthorn? His penultimate paper, "About Snakes", tells us.¹⁵ It is signed "Thickthorn (Chas W. Devis)". Charles Walter Devis was born on 9 May, 1829 - the son of James Devis of Birmingham.¹⁶ He completed a Bachelor of Arts at Cambridge University¹⁷, then entered the Church of England, and after being ordained, became the Rector of Brecon, Somersetshire. He subsequently took up the position of Curator when the Corporation of Manchester established the Queen's Park Museum. He held the post until he resigned. Devis came to Queensland in 1870 with his son George and settled at Black Gin Creek, near the city of Rockhampton. Here he collected birds for the Queen's Park Museum. The specimens he gathered were sent back to England, but were lost when the boat carrying them was shipwrecked.¹⁸ Later he returned to England but came anew to Rockhampton and became the librarian for the School of Arts. He called his residence "Thickthorn". It was during this period that he wrote his articles under his nom-de-plume. The name "Thickthorn" was conceived from the name of an estate of one of his ancestors. Chas Devis' grandfather was the last Devis to occupy Thickthorn estate in Warwickshire where the family had lived for about 400 years.

But who was Charles W. Devis? An article in "The Naturalist" of 2 January, 1882 tells us.¹⁹ He was C.W. de Vis. Devis changed his name to de Vis. In January 1882, Charles de Vis took up the curatorship of the Queensland Museum. The attention of the trustees of the museum had been drawn to de Vis as a direct result of his "Thickthorn" articles.²⁰ Before his death on 30 April, 1915, he would publish several hundred

papers and articles in which he would describe and name many hundreds of animals from Australia and New Guinea. In ornithology, he is best remembered as the person who described and named *Prionodura newtoniana*, the Golden Bowerbird²¹; *Rhipidura phasiana*, the Mangrove Fantail²²; *Sericornis gutturalis*, the Australian Fern Wren²³; *Amblyornis macgregoriae*, MacGregor's Bowerbird²⁴; and *Acanthiza katherina*, the Mountain Thornbill²⁵.

ACKNOWLEDGEMENTS

I thank Lucille Crevolla-Gillespie, Donna Case, and Wayne Longmore for their help with the search into the historical literature on Charles de Vis. Gregory Czechura and Peter Davie read the manuscript.

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GLEN INGRAM, Queensland Museum, Gregory Terrace, Fortitude Valley. Q. 4006.

Editor's Note: A departure from the usual method of presenting references was allowed here because there were so many and a large proportion referred to newspaper articles.

AVIAN RESPONSE TO TEMPORARY FLOODING IN BRISBANE

PETER F. WOODALL

ABSTRACT

The avian response to four periods of flooding at Rocklea, Brisbane (June 1983, November-December 1983, December 1983 and December-January 1983/1984) is documented. Some land birds were unaffected by the flooding, while others increased in numbers. The latter were more mobile, flocking species. Many waterbirds were attracted by the flooding and species showed a fairly clear separation of feeding zones. The June floods produced a major increase in bird numbers and biomass which declined rapidly after the flood waters receded. This influx was less pronounced with the summer floods.

INTRODUCTION

Temporary flooding following heavy rainfall in coastal areas of Queensland occurs frequently and can create a rich food supply for birds in the form of drowned and displaced animals. The breeding response of Australian waterfowl to flooding in dry areas has been studied (Frith 1977), but little is known about the more immediate avian foraging reaction to flooding or which species are sufficiently flexible in their foraging behaviour to exploit this situation.

STUDY AREAS AND METHODS

The Department of Primary Industry's Animal Husbandry Research Farm at Rocklea, on the western outskirts of Brisbane, consists mainly of open pasture and is drained by the Oxley and Stable Swamp Creeks which flow into the Brisbane River (Fig. 1). Observations on birds associated with the flooding were made from a vantage point on Medway Street at 0830 or 1630 hours, both at the height of the floods and also when the flood waters had largely receded. All birds that could be seen within the "arc of observation" (Fig. 1) using 10 x 50 binoculars were recorded. These observations lasted approximately 10 minutes. Regular, but unquantified observations of birds at the study area were also made prior to each episode of flooding.

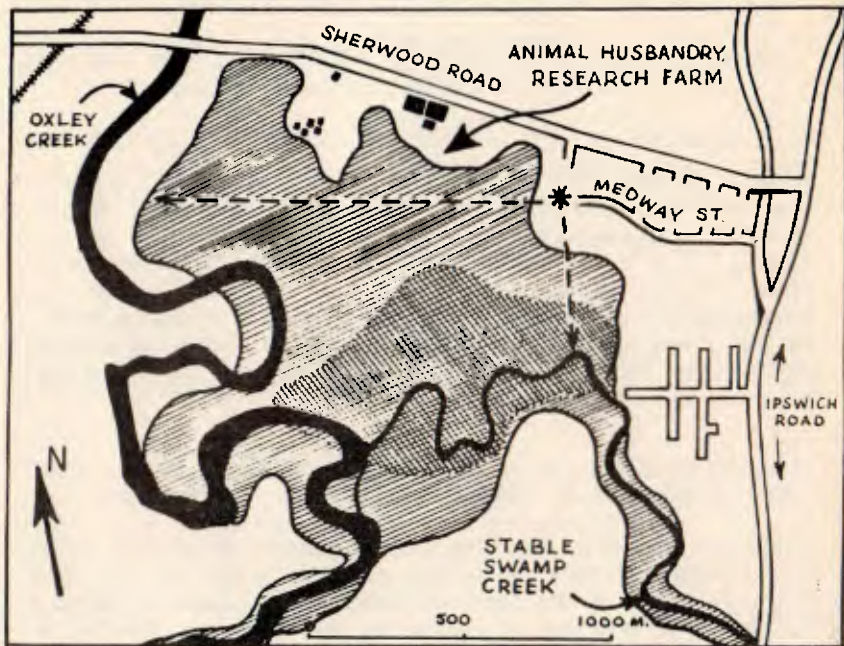


Figure 1. The study area on the DPI Animal Husbandry Research Farm at Rocklea, Brisbane. The approximate extent of the June 1983 flooding (diagonal shading) and the November/December 1983 flooding (cross-hatched shading) are indicated. The * indicates the main observation point on Medway Street and the dashed line delimits the arc of observation.

Four cases of flooding were observed. For further details, see the Bureau of Meteorology reports (Anon. 1983 a, b & c).

(1) June 1983. Brisbane received 94 and 70 mm on 22 and 23 June respectively and the total for the month at Brisbane was 273 mm, 295% above average (Anon. 1983a). By the morning of 24 June, 1983, both the Oxley and Stable Swamp Creeks had flowed over their banks and a major proportion of the farm was flooded to a depth of 0.5-1.0 m (Fig. 1). Two days later, the water had largely receded and only a few ponds remained which shrank in size over the next few days.

(2) November/December 1983. Brisbane received 52 and 44 mm of rain on 29 and 30 November respectively and the total rainfall for the month at Brisbane was 202 mm, 108% above average (Anon. 1983b). This rainfall caused the Stable Swamp Creek to over-flow its banks and resulted in flooding of the surrounding fields. The November floods covered about 25% of the area inundated by the June 1983 floods (Fig. 1). After two days the flood waters were receding rapidly.

(3) Early December 1983. On 4 and 5 December, 1983, 9 and 15 mm of rain respectively was recorded at Brisbane. This resulted in areas adjacent to Stable Swamp Creek re-flooding to a similar extent to that recorded on 29 November. Over the next three weeks the water levels declined but some large ponds remained throughout this time.

(4) December 1983/January 1984. Brisbane recorded 17 and 29 mm on 30 and 31 December, 1983 respectively (Anon. 1983c). This again caused flooding along Stable Swamp Creek, similar to that recorded in early December 1983. During the following week, water levels declined but some large ponds again remained.

Avian biomass was calculated from figures given in Frith (1977), Long (1981), Robertson and Woodall (1982) and from estimates based on these references.

RESULTS

The first flooding, in June, was very extensive but declined rapidly. The second, in November/December was much less extensive and also declined rapidly. The third and fourth periods, in early December and December/January, were both relatively minor and in both cases large ponds remained after the initial flooding. These two are combined in the analyses

TABLE 1a : Mean numbers of birds recorded during and after flooding at Rocklea, Brisbane - Land birds.

Months	June 1983		Nov./Dec. 1983		Dec. 1983/Jan. 1984	
Dates of Observation	24	27-30	29-30	1-2	5-6, 31	7-23, 2-5
Number of Observations	2	6	3	3	4	10
State of Flood	Up	Down	Up	Down	Up	Down

Species	June 1983	June 1983	Nov./Dec. 1983	Nov./Dec. 1983	Dec. 1983/Jan. 1984	Dec. 1983/Jan. 1984
Cattle Egret	36.5	1.8	13.7	1.0	9.8	4.2
<i>Ardeola ibis</i>						
Masked Lapwing	3.5	4.5	11.7	21.3	15.0	6.8
<i>Vanellus miles</i>						
Welcome Swallow	15.0	2.7	16.7	10.6	5.0	2.9
<i>Hirundo neoxena</i>						
Tree Martin	0	0	0	0	2.3	1.9
<i>Cecropis nigricans</i>						
Fairy Martin	0	0	0	0	0	1.0
<i>Cecropis ariel</i>						
Richard's Pipit	0.5	0.7	0.3	1.0	0.3	0.3
<i>Anthus novaeseelandiae</i>						
Willie Wagtail	0.5	0.3	0	0	0	0
<i>Rhipidura leucophrys</i>						
Common Starling	50.0	4.2	15.0	5.3	1.0	0
<i>Sturnus vulgaris</i>						
Australian Magpie-lark	0	0	1.3	1.3	1.0	0.8
<i>Grallina cyanoleuca</i>						
Torresian Crow	13.5	4.3	2.0	3.3	4.0	2.8
<i>Corvus orru</i>						

TABLE 1b : Mean numbers of birds recorded during and after flooding at Rocklea, Brisbane - Water birds.

Months	June 1983		Nov./Dec. 1983		Dec. 1983/Jan. 1984	
Dates of Observation						
Number of Observations						
State of Flood						

Species	June 1983	June 1983	Nov./Dec. 1983	Nov./Dec. 1983	Dec. 1983/Jan. 1984	Dec. 1983/Jan. 1984
Australasian Grebe	0	0	0.3	0	0	0.1
<i>Tachytapus novaehollandiae</i>						
Pacific Heron	0	0	0	0.3	0	0.2
<i>Ardea pacifica</i>						
White-faced Heron	0.5	0	0	0.3	0.3	0.4
<i>Ardea novaehollandiae</i>						
Great Egret	0	0	0	0	0.3	0
<i>Egretta alba</i>						
Sacred Ibis	60.5	0	0	0	0.5	0
<i>Threskiornis aethiopicus</i>						
Straw-necked Ibis	5.0	0	0	0	0	0
<i>Threskiornis spinicollis</i>						
Royal Spoonbill	0	0.2	0	0	0	0
<i>Platalea regia</i>						
Plumed Whistling-Duck	0	0	0	0	0	0.4
<i>Dendrocygna eytoni</i>						
Pacific Black Duck	0.5	1.8	2.3	7.0	14.3	2.6
<i>Anas superciliosa</i>						
Purple Swamphen	1.5	0.7	1.3	1.0	1.8	1.0
<i>Porphyrio porphyrio</i>						
Black-winged Stilt	0	0	3.0	0.6	1.3	1.9
<i>Himantopus himantopus</i>						
Silver Gull	115.0	0	41.0	0	0	0
<i>Larus novaehollandiae</i>						
Gull-billed Tern	2.5	0	0	0	0	0
<i>Gelochelidon nilotica</i>						

because of their similarities.

Avian response to flooding was rapid, with large flocks of land and water birds arriving one or two days after the start of the flooding.

Species Composition

The list of "land birds" and the "water birds" recorded during and after the flooding is given in Table 1. The "land birds" (Table 1a) were species normally present on the pasture lands and creeks; the "water birds" (Table 1b) were species not normally associated with the pasture land.

Feeding Behaviour

The flood waters produced a local abundance of a wide variety of insect food. Many dead insects were floating on the surface of the water while others, still alive, had moved into the surrounding grassland. The birds present showed a fairly clear separation of feeding zones. Gull-billed Terns and Silver Gulls obtained food from the surface of the water. The Silver Gulls also waded into the water (to a depth of 5 cm) or foraged in the grass at the water's edge. The White-faced Heron, Pacific Black Duck, Royal Spoonbill and Black-winged Stilt fed in shallow water, while Sacred and Straw-necked Ibis probed in the water or fed at the water's edge. Further back, 5-20 m from the water, Cattle Egrets foraged in the grass with flocks of Common Starling and Torresian Crows.

Numbers and Biomass

The numbers and biomass of land birds present prior to the flooding are considered similar to those recorded after the flooding. Although not quantified, this assumption is supported by observations made at the farm between floods.

Most waterbirds showed very large increases in numbers and biomass at the height of the flooding and then rapidly dispersed.

TABLE 2 : Numbers and biomass of birds recorded during and after flooding at Rocklea, Brisbane.

Date	June 1983		Nov./Dec. 1983		Dec. 1983/Jan. 1984		
	State of Flood	Up	Down	Up	Down	Up	Down
Mean Numbers:							
Land birds	119.5	18.5	60.7	43.8	38.4	19.7	
Waterbirds	185.5	2.7	49.9	9.2	18.5	6.6	
TOTAL	305.0	21.2	110.6	53.0	56.9	26.3	
Mean Biomass (kg):							
Land birds	22.6	3.6	9.4	6.7	8.4	4.2	
Waterbirds	86.6	3.2	17.8	9.5	18.8	7.8	
TOTAL	109.2	6.8	27.2	16.2	27.2	12.0	

The June floods produced the most marked increase in both numbers (x 15) and biomass (x 23) (Table 2). This was mainly due to the large numbers of waterbirds, particularly ibises, which were not present at the November/December or December/January floods. On the latter occasions, land birds were more numerous than water birds during the flooding, although in terms of biomass the water birds outweighed the land birds. Water bird numbers and biomass remained at high levels after the flooding in November/December and December/January compared with June. This was because some waterbirds remained on the large ponds which persisted after the main flood waters had subsided.

DISCUSSION

The land birds with unchanged numbers (Richard's Pipit, Willie Wagtail and Australian Magpie-lark) are territorial species normally found singly or in pairs. The Masked Lapwing was present in fluctuating numbers and increases in its population were sometimes associated with flooding and sometimes not.

The land birds which increased in numbers during the flooding (Cattle Egret, Welcome Swallow, Common Starling and Torresian Crow) were generally more gregarious and mobile species. The increase in their numbers was probably due to several flocks converging on the flooded area.

Among the water birds, some were only present during the flooding and did not remain afterwards (Great Egret, Sacred Ibis, Straw-necked Ibis, Silver Gull and Gull-billed Tern). Ibises were present in large numbers only during the June flooding and their absence from the later periods is consistent with a general reduction in their numbers around Brisbane recorded in October 1983 (Woodall 1985). Sacred Ibis were far more abundant than Straw-necked Ibis. Carrick (1959) found there was considerable overlap in the food items of the two species of ibis but the Sacred preferred aquatic habitats and apparently used tactile rather than visual methods of locating its prey.

Silver Gulls were present during the June and November/December floods but not during the December/January floods. Perhaps the reduced flooding in December/January provided insufficient food for their requirements. Silver Gulls are known for their opportunistic feeding habits and Serventy *et al.* (1971) have recorded that they "may form loose associations with other species of both land and sea-birds to exploit some locally abundant food source". The Gull-billed Tern frequently forages in freshwater and may even range far from water (Serventy *et al.* 1971).

Some water birds such as Pacific Heron, Royal Spoonbill and Plumed Whistling-duck were only observed on the remaining ponds after the initial flooding had subsided. Others such as Australasian Grebe, White-faced Heron, Pacific Black Duck and Black-winged Stilt were present both during flooding and afterwards on the ponds. The Purple Swamphen was the only water bird observed on the farm prior to flooding, being found in small numbers on the creeks. The additional Purple Swamphens may have come from a small dam, a few hundred metres downstream. This may also have been the source of species like the Australasian Grebe and Pacific Black Duck.

ACKNOWLEDGEMENT

I am grateful to Doug Bailey, Department of Veterinary Anatomy, University of Queensland for drawing Fig. 1.

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**NUMBERS OF THE TORRESIAN IMPERIAL-PIGEON
DUCULA SPILORRHOA ON DOUBLE CONE ISLAND,
CENTRAL QUEENSLAND**

T.A. WALKER

Each year hundreds of thousands of Torresian Imperial-Pigeons migrate to Australia from Papua New Guinea to nest on Great Barrier Reef islands (Frith 1982). Double Cone Island supports a colony of Torresian Imperial-Pigeons which, although small compared with colonies on islands in the northern half of the Great Barrier Reef, is the largest reported colony south of the Brook Islands. In 1932 Double Cone Island was declared a fauna sanctuary to protect the pigeons from shooters who, according to Marshall (1934), "killed thousands of birds annually". The only recorded population estimates for pigeons on the island were made in 1932 and 1933 (Marshall 1934). Counts were therefore made in summer 1985-86 to evaluate the present status of the Pigeon population.

STUDY AREA AND METHODS

Double Cone Island is situated 17 km north of Airlie Beach (20° 6'S 148° 43'E) and consists of two islands separated by 400 m at their closest points and connected at low tide by a reef flat. Both islands are thickly wooded. The eastern island is 21 ha in area and rises to 128 m. The western island is 11 ha in area and includes a large area of forested sandspit and flat ground.

Pigeons were counted at both islands on 11 November 1985. Surveys at the eastern island were also made on 12 November, 1985 and 16 January, 1986. Birds were counted as they returned to the island from feeding on the mainland in the late afternoon. Small numbers of Pigeons returning at other times of the day were not included. Each returning bird was considered to represent a nesting pair; however if significant numbers of non-breeding birds were present then an over-estimate of the population would occur (Crome 1975). On 11 November counts were made from the top of the western island to get an all-round view of incoming birds. However

all Pigeons were found to arrive from the south so subsequent counts were made from the south-western beach of the eastern island.

RESULTS

Numbers of birds returning to the eastern island on the three survey days are shown in Figure 1. Total numbers were similar on 11 November (2345) and 16 January (2333). The count on 12 November (1783) is clearly an underestimate resulting either from bad visibility or because substantial numbers of birds had returned before the count began at 1500 h. This flight commenced earlier and was spread out over a longer period of time than the other flights probably as a result of particularly dull, overcast weather. The counts on the previous day and in January were made in fine sunny weather with clear skies.

The return flight at the western island consisted of 1364 pigeons on 11 November. Adding this to the count for the eastern island gives an estimated 3700-3800 pairs of Torresian Imperial-Pigeons nesting on the Double Cone islands in 1985-86.

The peak times of return flight at Double Cone Island were similar to those at Low Isles (Crome 1975). On the two November days 77% and 88% of birds had returned by 1700 h whereas in January only 10% of birds had returned before 1700 h. This may indicate a substantial seasonal difference.

DISCUSSION

In late 1932 MacGillivray (in Marshall 1934) estimated that only 2000 Pigeons had survived shooting at Double Cone. In the following season Marshall (1934) gave an approximate total of 2700 birds. The source island for these values was not specified, but is reported in an unpublished letter from Marshall, Embury and Geary (1934) stating that "in a rough estimate there is about 2,700 Pigeons on the smaller island alone, and probably as many or more on the larger".

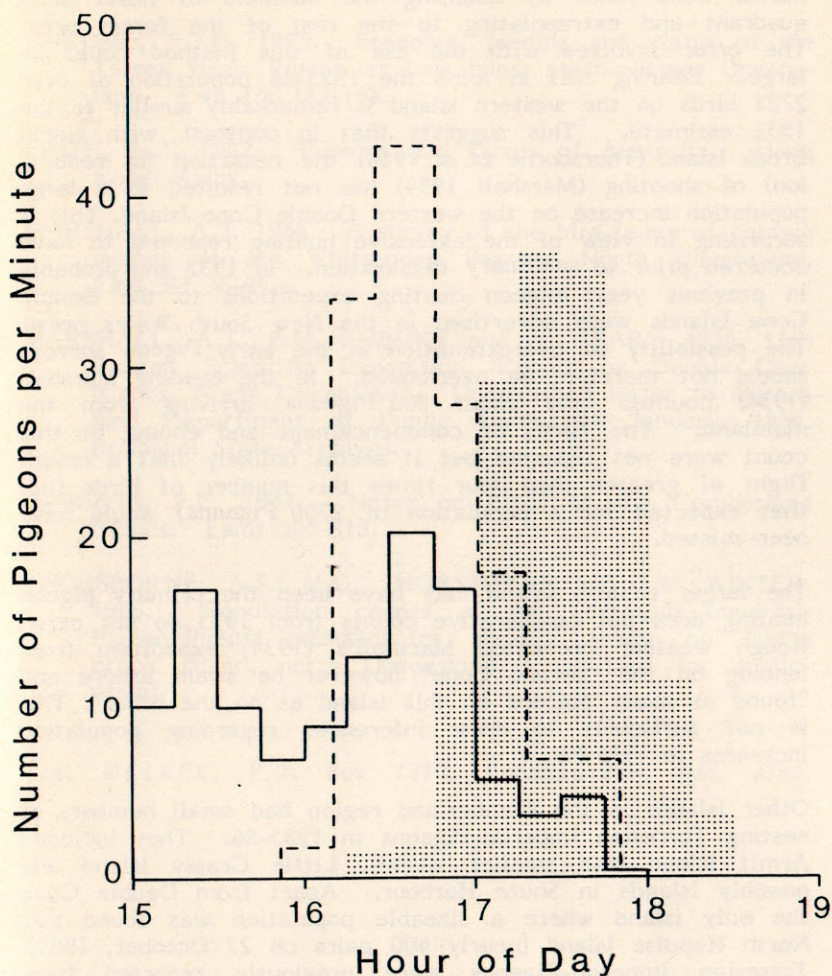


Figure 1. Rate of arrival of Pigeons at the eastern island throughout the afternoons of 11 November, 1985 (dashed line), 12 November, 1985 (solid line) and 16 January, 1986 (shaded). Birds were counted over approximately 15 min intervals. Total numbers of Pigeons are represented by the areas under the curves.

Unfortunately Marshall's and presumably MacGillvray's estimates were made by counting the numbers of nests in a quadrant and extrapolating to the rest of the forest area. The error involved with the use of this method could be large. Bearing this in mind the 1985-86 population of over 2728 birds on the western island is remarkably similar to the 1932 estimate. This suggests that in contrast with North Brook Island (Thorsborne *et al* 1986) the cessation (or reduction) of shooting (Marshall 1934) has not resulted in a large population increase on the western Double Cone Island. This is surprising in view of the extensive hunting reported to have occurred prior to sanctuary declaration. In 1932 and probably in previous years pigeon hunting expeditions to the Double Cone Islands were advertised in the New South Wales press. The possibility of overestimation in the early Pigeon surveys should not therefore be overlooked. In the evening Marshall (1934) counted only about 300 Pigeons arriving from the mainland. The times of commencement and ending of this count were not reported but it seems unlikely that a return flight of greater than four times this number of birds (i.e. that expected for a population of 2700 Pigeons) would have been missed.

The larger eastern island may have been the primary pigeon hunting area but comparative counts from 1933 do not exist. Rough weather prevented Marshall's (1934) expedition from landing on the "second Cone" however he swam ashore and "found as many pigeons on this island as on the other". This is not sufficient to draw inferences regarding population increases to 1985-86.

Other islands in the Cumberland region had small numbers of nesting Torresian Imperial-Pigeons in 1985-86. They included Armit Island (the smaller island), Little Grassy Island and possibly islands in Shute Harbour. Apart from Double Cone the only island where a sizeable population was found was North Repulse Island (nearly 400 pairs on 27 October, 1985). Torresian Imperial-Pigeons were previously reported from Victor Islet near Mackay (Roberts 1957) but none were observed there on 3 January, 1986 (bird nesting on this tiny island may be minimal as the resident lease holder has a large dog). On 24 February, 1986 a Pigeon was sighted on Fairfax Island, 550 km to the south of Double Cone Island. This is the southern-most Great Barrier Reef record for the species.

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MYSTERY PHOTOGRAPH



8. Mystery photo number 8 depicts a smallish wader with brownish-grey upperparts mottled paler, white underparts streaked darker on the breast, a dark line through the eye with a prominent, white supercilium, medium-length bill and feeding in water up to its "knees". It's the sort of description which could fit any one of dozens of sandpipers and is distinctive of none. In life, of course, we could also see details of the flight pattern, we could judge its size against the birds around it and maybe we could hear it call. But in the photograph the plumage doesn't look particularly distinctive, bearing in mind the notorious variation in waders due to age, moult and wear.

There are some pointers, though. The upperparts are certainly not sufficiently mottled for Sharp-tailed or Pectoral Sandpipers or a Ruff. On the other hand, they don't look quite as uniform as is typical of winter plumage Red-necked Stint or Curlew Sandpiper, although detail is poor. The breast is distinctly streaked which eliminates several species, such as the two Knots and Tattlers. Two features are rather unusual; one being the prominent streaking below the ear-coverts and the other being the obvious, white crown-stripe, forming a sort of "second supercilium". Either feature could be found in several species, but especially Long-toed Stint, Pectoral Sandpiper, Cox's Sandpiper and Broad-billed Sandpiper. Very suggestive of Broad-billed is the stark prominence of the

crown-stripe which is unlikely to appear so broad and well-defined in any of the other contenders. In fact, the resulting, rather snipe-like head-pattern is a classic feature of Broad-bill.

Undoubtedly the most diagnostic character visible is the bill. It is of medium length, just a little longer than the head as measured back from the base of the bill to the nape along the same line as the axis of the bill. It is clearly too long for any stint other than Western Sandpiper and too short for a Curlew Sandpiper or many of the *Tringa*. Just as importantly, it is essentially straight but for a distinct kink downwards at the tip which is associated with a slight bulge in the lower margin. Such a shape is diagnostic of just one species, the Broad-billed Sandpiper, of which this is a typical example. It may be noted that some other species such as Dunlin and Western Sandpiper are sometimes described as having the bill kinked down at the tip, but none of these have the typical Broad-billed shape in which most of the bill is straight and the tip is both swollen and kinked at a sudden angle near the tip. In the field, the Broad-bill's bill-shape is also unusual in looking peculiarly broad throughout its length compared to similar species when viewed head-on.

Other features of Broad-billed which may be apparent in life are the grey legs and the striking flight pattern, like that of a stint but with a more accentuated wingbar. The much-stressed black "shoulder-patch" is not a reliable feature as it is often visible in other species. Experienced wader-watchers should have little difficulty in recognising this photo as being of a Broad-bill but it is a good example of a species where the definitive features are rather subjective in nature and in which no one plumage feature is really diagnostic. It also emphasises the great importance of bill-shape in wader identification.

I photographed this Broad-billed Sandpiper at Scarborough, south-east Queensland in March 1983.

CHRIS CORBEN

Mystery Photograph 9. Identify the species. Answer in forthcoming issue.



INSTRUCTIONS TO AUTHORS

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

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