

Articles

SEABIRDS OF THE CARGADOS CARAJOS SHOALS, JULY-AUGUST 1971

A.J. WILLIAMS & B.W. ROWLANDS

Received 30 September 1980, accepted 16 October 1980

INTRODUCTION

The Cargados Carajos Shoals or St Brandon Islands (16 23S, 59 27E) consist of some 30 sandy cays or islets (named on a map in Staub & Gueho 1968) protected by extensive coral reefs and situated on the Mascarene Plateau in the Indian Ocean about 345 km NNE of Mauritius of which they are a dependency. Cargados Carajos is a corruption of an old Portuguese expression for seabird islands (Staub 1976) and this remote tropical archipelago remains an important seabird breeding station.

The few reports on the birds of these islands are based mainly on data obtained during visits in the period November-January (e.g. Newton 1956, 1958, Staub & Gueho 1968, Staub 1976, Watson *et al.* 1963). Fewer visits have been made to the islands in the period February-October and these have concerned only one or a few of the islets (e.g. Gardiner & Cooper 1907 (four islets), Pocklington *et al.* 1972 (1), Newlands 1976 (4)).

BWR visited the Cargados Carajos Shoals in 1971 and in the period 27 July to 21 August visited 21 islands (Rowlands 1974). His principal interest was to photograph the birds and to measure their eggs but he also made some observations on the breeding status of the species seen. He deposited an account of his visit, including egg distributional data, at the FitzPatrick Institute, University of Cape Town, in 1971. In view of the sparse information on the status of seabirds at the Cargados Carajos Islands in August the salient points of BWR's account are presented here.

RESULTS AND DISCUSSION

Nine species of seabirds currently breed at Cargados Carajos : Wedgetailed Shearwater *Puffinus pacificus*, White Booby *Sula dactylatra*, Greater Frigatebird *Fregata minor*, Lesser Frigatebird *F. ariel*, Sooty Tern *Sterna fusca*, Roseate Tern *S. dougallii*, Common Noddy *Anous stolidus*, Lesser Noddy *A. tenuirostris*, and White Tern *Gygis alba*. Redfooted Boobies *Sula sula* once bred at Cargados Carajos but have not done so since 1955 (Staub & Gueho 1968). BWR observed all the breeding species except the Wedgetailed Shearwater. Nor did he see any Redfooted Boobies although he kept a particular lookout for them and visited their former breeding locality. The species seen by BWR at each island and their status there at the time of his visit are given in Table 1. He obtained measurements of eggs of six species from a number of islets (Table 2).

TABLE 1

THE STATUS OF SEABIRDS OBSERVED ON 18 ISLETS IN THE CARGADOS CARAJOS, JULY-AUGUST 1971

Islet	Date Visited	Species							
		<i>Sula dactylatra</i>	<i>Fregata minor</i>	<i>Fregate ariel</i>	<i>Sterna fuscata</i>	<i>Sterna dougallii</i>	<i>Anous stolidus</i>	<i>Anous tenuirostris</i>	<i>Gygis alba</i>
Raphael	27.7	-	-	P	P	-	-	B	B
Albatross	28.7, 21.8	-	B	B	B	-	B	B	B
Petite Raphael	1.8	-	-	-	-	-	B	-	B
Poulailler	29.7, 8.8	-	-	-	B	-	-	-	-
Puits à Eau	2, 8.8	-	-	-	B	-	-	-	-
Sirene	7.8	-	-	-	B	-	B	B	B
Avoquer	11, 12, 13.8	-	-	-	-	-	-	-	B
Ile Paul	11.8	-	B	B	-	P	B	B	B
Ile Tortue	13.8	-	-	-	-	P	B	B	B
Zo Zo Posé	12.8	-	-	-	-	P	-	-	-
Ile Coco	12.8	-	-	-	-	-	-	B	B
Ile du Sud	12.8	-	B	B	-	-	B	B	B
Petite Capitaine	12.8	-	-	-	-	-	-	-	B
Grande Capitaine	12.8	-	B	B	-	-	B	B	B
Ile Longue	12.8	-	-	-	-	P	-	-	-
Petite Ile Longue	12.8	-	-	-	-	-	-	-	-
Ile Dagorne	12.8	-	-	-	-	-	B	-	B
Caloupe Spaces	12.8	-	-	-	-	-	-	-	-
Courson	12.8	-	-	-	-	-	B	-	B
Ile Bouquet	13.8	-	-	-	-	P	-	-	B
Ile du Nord	20.8	B	P	-	P	-	B	B	B

B = breeding; P = present but no evidence of breeding found

TABLE 2
DIMENSIONS (mm) OF EGGS OF SIX SPECIES OF SEABIRDS AT CARGADOS CARAJOS

Species	No. of eggs	•Length		Breadth	
		Mean \pm SD	(Range)	Mean \pm SD	(Range)
<i>Sula dactylatra</i>	126	63,9 \pm 3,0	(55,9-69,7)	44,7 \pm 1,6	(40,6-48,1)
<i>Fregata ariel</i>	136	60,7 \pm 2,1	(55,7-64,1)	42,4 \pm 1,3	(38,6-45,6)
<i>Sterna fuscata</i>	303	51,4 \pm 2,5	(44,5-58,6)	35,8 \pm 1,2	(31,2-39,4)
<i>Anous stolidus</i>	111	52,4 \pm 2,1	(47,5-58,6)	35,8 \pm 1,3	(30,4-38,4)
<i>A. tenuirostris</i>	111	44,4 \pm 1,9	(40,0-53,3)	31,0 \pm 1,1	(28,7-37,6)
<i>Gygis alba</i>	118	39,9 \pm 1,4	(37,0-43,7)	30,1 \pm 1,1	(26,8-32,8)

BWR measured eggs of both species of *Fregata* but, while confident in his identification of the more numerous *F. ariel* nests, included in his *F. minor* data measurements of eggs found beneath nests which may have been attributable to *F. ariel*.

TABLE 3
RECORDS OF SEABIRD BREEDING STATUS AT CARGADOS CARAJOS

Species	Months						
	January ¹	April ²	June ³	August		November ^{2,8}	December ²
				BWR ⁴	Others		
<i>Puffinus pacificus</i>	chicks	-	-	-	-	-	eggs
<i>Sula dactylatra</i>	breeding pairs	-	-	eggs, no chicks	-	breeding ² pairs	breeding ² pairs
<i>Fregata minor</i>	breeding	not breeding	-	-	-	breeding ² pairs	nests
<i>F. ariel</i>	breeding well advanced, chicks	nest building some eggs	eggs only	eggs & chicks	-	eggs & chicks ⁷	chicks
<i>Sterna dougallii</i>	chicks only recently hatched - well feathered	-	-	not breeding	-	eggs & chicks young all stages	chicks only
<i>S. fuscata</i>	eggs & chicks at all stages	-	-	eggs & chicks	eggs only ⁵ eggs, chicks ⁷	breeding	breeding
<i>Anous stolidus</i>	eggs & chicks at all stages	eggs & nearly hatched chicks	courtships, eggs, chicks & fledglings	eggs & chicks	-	breeding	breeding
<i>A. tenuirostris</i>	chicks all stages	-	eggs & chicks	eggs & chicks	eggs & chicks ⁷	breeding	breeding
<i>Gygis alba</i>	eggs & chicks	-	eggs, chicks & fledglings	eggs & chicks	eggs ⁶	breeding	breeding

1. Newton (1958) visits in 9-15 Jan 1955 & 7-21 Jan 1956 - islands unknown.
2. Staub & Gueho (1968), late Apr visit to Ile du Sud & Grande Capitaine visits in Nov 1963, Nov 1964 & Nov-Dec 1966.
3. Pocklington *et al.* (1972) Jun 1965 visit to Ile du Sud.
4. This paper.
5. Gadow & Gardiner (1907-09), material collected by Gardiner & Cooper (1907-09).
6. Gardiner & Cooper (1907-09), Aug 26-29 1905, visit to Raphael, Sirene & two Bird islands (Poulailler & Puits á Eau?).
7. Newlands (1976) Aug 1975, visit to Raphael, Sirene, Poulailler & Puits á Eau.
8. Pocklington (1965) 1 Nov 1963 visit to Ile du Sud.

The seasonal breeding status of Cargados Carajos seabirds is summarized in Table 3. Of species seen by BWR White Boobies and Roseate Terns have well-defined breeding seasons. The actual state of breeding (whether eggs or young in the nest) has not previously been recorded for White Boobies at the Cargados Carajos. BWR found eggs but no chicks in the nests on 20 August. This species has a 42-46 day incubation period and chick rearing occupies a further 120 days (Nelson 1978). BWR's observations suggest that at Cargados Carajos this species lays in July or early August so that chick rearing should be completed by December or January. BWR made a careful search for Roseate Terns at their known breeding localities. Although he saw several pairs in nuptial plumage he found no nests and was convinced that the species had not yet laid.

The breeding seasons of the remaining species are not yet clearly understood. One reason for this is that visitors have often failed to report the nest contents of the more abundant species. It is probable, however, that the Sooty and White Terns and the two Noddies breed throughout the year (Newton 1956, Staub & Gueho 1968, Pocklington *et al.* 1972, Table 3). The seasonal status of the two sympatric Frigatebirds is particularly confusing and cannot be ascertained from existing information (Table 3).

BWR recorded only two other species during his stay : Whimbrel *Numenius phaeopus*, one at Albatross, and Turnstone *Arenaria interpres* in small parties at Albatross, Raphael, Petite Raphael, and Puits à Eau.

ACKNOWLEDGEMENTS

BWR wishes to thank Mr L. Couacaud, Director of Mauritius Fishing Development Ltd; Captain Valéran of *La Perle II*; Mr C. Carré, manager at Raphael; Mr Azie, manager at Avoquer; and Messrs Tegally and Soopermania.

REFERENCES

- GADOW, H. & GARDINER, J.A. 1907-09. Aves, with some notes on the distribution of land-birds on the Seychelles. *Trans. Linn. Soc. Lond. (Zool.)* 12: 103-110.
- GARDINER, J.S. & COOPER, C.F. 1907-09. Description of the expedition. *Trans. Linn. Soc. Lond. (Zool.)* 12: 111-175.
- NELSON, J.B. 1978. The Sulidae gannets and boobies. London: Oxford University Press.
- NEWLANDS, W.A. 1976. A piece of the rock. *Animal Kingdom* 79(3): 2-9.
- NEWTON, R. 1956. Bird islands of Mauritius. *Ibis* 98: 296-302.
- NEWTON, R. 1958. Ornithological notes on Mauritius and the Cargados Carajos Archipelago. *Proc. Roy. Soc. Arts. Sci. Mauritius*, 2: 39-71.

- POCKLINGTON, R. 1965. Birds seen on Coco Island, Cargados Carajos Shoals, Indian Ocean. *Ibis* 107: 387.
- POCKLINGTON, R., WILLIS, P.R. & PALMIERI, M. 1972. Birds seen at sea and on an island in the Cargados Carajos Shoals. *Atoll Research Bull.*, 158: 1-8.
- ROWLANDS, B.W. 1974. A visit to the Cargados Carajos Archipelago. *Bokmakierie* 26: 85-86.
- STAUB, F. 1976. Birds of the Mascarenes and Saint Brandon. Port Louis: Organisation Normale des Entreprises Ltée.
- STAUB, F. & GUEHO, J. 1968. The Cargados Carajos Shoals or St Brandon: Resources, avifauna and vegetation. *Proc. Roy. Soc. Arts. Sci. Mauritius* 3: 7-46.
- WATSON, G.E., ZUSI, R.L. & STORER, R.E. 1963. Preliminary field guide to the birds of the Indian Ocean. Washington: Smithsonian Institution.
- A.J. Williams, Percy FitzPatrick Institute of African Ornithology, University of Cape Town, Rondebosch 7700, South Africa.
- B.W. Rowlands, Scotia Lodge, Rustenburg Ave, Rondebosch 7700, South Africa.