KERMADEC ISLANDS EXPEDITION REPORTS

THE WHITE-CAPPED NODDY *(Anous tenuirostris minutus)*

By M. F. SOPER

As Merton (1968) has already reported, Raoul proved a disappointing bird island, so that life history studies had in most cases to be pursued on Meyer, which proved difficult to get to. Opportunities, often widely separated, had to be seized as they occurrred and this resulted in much loss of continuity of data, particularly when dealing with the tropic bird, noddy and ternlet.

White-capped Noddies were breeding in numbers on the two Meyer Islets, but were not recorded from the others of the Herald group. On Raoul small numbers were recorded roosting on coastal boulders at D'Arcy Point and Smith Bluff, and resting on the sand of Denham Bay and North Beach, but breeding was not observed.

Nests were built in trees at the forks of horizontal or near-horizontal limbs. Thus ngaio and pohutukawa were most commonly chosen. Oliver (1955) mentions the use of *Pisonia* (parapara) — now *Heimerliodendron* — stating that most of the nests at the time of his visit (1908) were in trees of this species. Evidently Meyer's vegetation has changed since then, for we were able to find only half-a-dozen parapara on North Meyer; the species being a little more common on South Meyer. On neither islet was this tree being used by nesting noddies as none had suitable branches. Karaka trees were used but here again the general absence of suitable limbs prevented other than their occasional use.

Nests were simply flat platforms of twigs, leaves and litter from the bush floor cemented together with droppings. Occasionally seaweed and fern fronds were incorporated and the structure was often finished off with a single, large, usually green karaka leaf. Building was a leisurely process occupying some weeks. Possibly this is an adaptation to allow a liberal build up of cementing droppings between each layer of debris. The height of the nests ranged from about 3 to 15 feet above ground and they were aggregated in loose colonies mainly on the western faces of both islands.

Both courtship feeding (with regurgitated matter) and copulation were seen to occur at the nest site.

A survey of nests on the mid-western slopes of North Meyer on 22/11/66 revealed two with newly hatched chicks and thirty-two with eggs. The majority, however, were still under construction and there were large numbers of birds still learning their flight paths in and out of the trees. On 25/1/67, although most of the nests now contained eggs and in some cases chicks, a number were still being built; so the breeding season is an extended one. We were not, of course, able to ascertain whether this late nest-building was followed by successful breeding.

The clutch was invariably one and the incubation period (one record only) was 36 days. (An egg laid on the morning of 22/11/66 hatched on the morning of 27/12/66).

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Plate XXII — A pair of White-capped Noddies at nest.

What impressed me most about the breeding cycle of the White-capped Noddy was its leisurely pace and unpredictable outcome. Particularly noticeable were the number of nests begun that were subsequently abandoned and the number of eggs laid that were subsequently lost. This is one of the aspects on which we were unable to get sufficient data but as an example; of 12 marked nests,

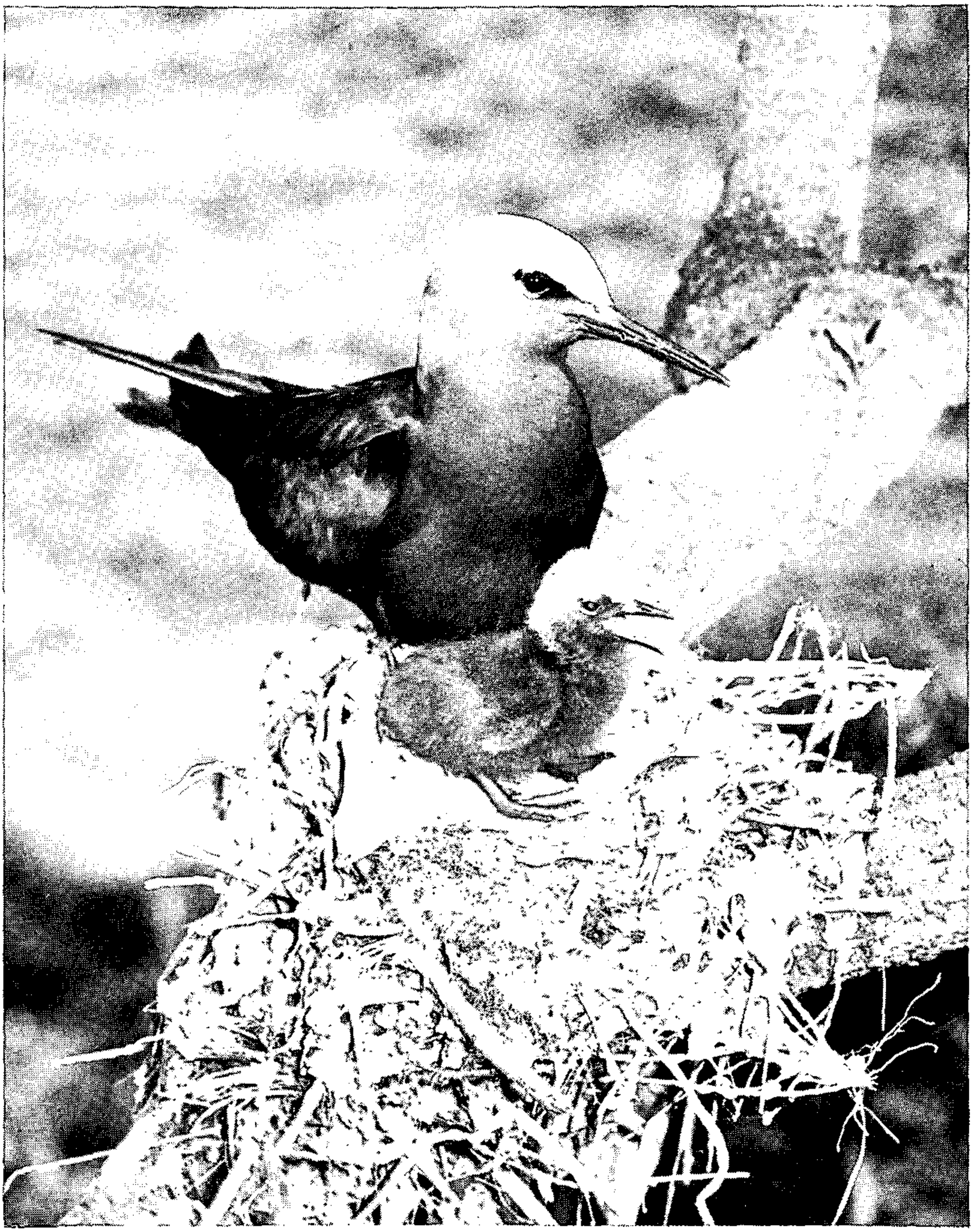

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Plate XXIII — White-capped Noddy and downy chick.

5 were deserted during building, 4 eggs were lost, one hatched and the remainder were still being incubated, presumably addled, 6 weeks later.

One chick which hatched on 22/11/66 was kept under observation till it fledged. This chick was brooded continuously for

its first 3 days and during this time was fed on a thin, oily-looking fluid regurgitated by its parent. Feeds were infrequent — about 4-hourly on the occasions I watched — and like the ternlets, the chick dibbled the fluid so rapidly from the very back of the parent's tongue that one had to look closely indeed to see what was being passed. By the 4th day the chick was becoming active and the parent was content to squat at the side of the nest and guard the chick rather than brood it. The guard period, with one or other parent always in attendance, continued for 3 weeks.

At hatching the chick was covered with jet black down and the white cap was startlingly in evidence. At 5 weeks this down was disappearing and the chick, now wandering away from the nest platform, was beginning to resemble an adult. It flew for the first time on 12/1/67 — a fledging period of 52 days. It was still using the nest as a roost four nights later; the last observation made. Throughout the fledging period it was fed on regurgitated material. At first, on the thin oily-looking fluid; later, by gradual change and at lengthening intervals, on a thick salmon coloured paste. No adult was ever seen to carry food in its bill. Regurgitation was always direct with the chick approaching from the side in the manner of a petrel chick. No regurgitated material was examined but the appearances were consistent with the contents being plankton.

Scattered over the island, wherever there were suitable open bare patches of ground, were Noddy "clubs"; one of which was on the small sandy beach in front of the camp. This particular club was in use in a desultory way when we first arrived — mostly by birds sunning themselves and picking up what appeared to be grit as they had done during a brief visit on 20/11/64 (see Edgar, Kinsky & Williams 1965) — but in early December a change was noticed in that the arrival of a bird often prompted soliciting by one of those already present. This usually resulted in one of two things: either a copulation attempt during which other birds would join in till there were 3, 4 or even 5 birds all in a heap; or, alternatively, an obviously half-hearted attempt by a single bird which would be promptly terminated by the instigator who then solicited a number of other birds in turn. So far as I could see none of these mating attempts was successful and the impression gained was that the club was a gathering place of immature birds. On 30/12/66 the club abruptly dispersed though there had been a slight slackening of activity over the previous few days.

Noddies feed at sea in a similar manner to ternlets, except that they do not feed in such dense flocks and forage much further afield. The region of Hutchinson Bluff was a favourite feeding area and throughout our stay a steady stream of birds was to be seen flying to and fro past North Beach. Noddies were only rarely seen on the other side of the island, at Denham Bay.

The stomach contents of two collected on North Beach on 18/12/66 have been examined by F. C. Kinsky, Dominion Museum, Wellington. Just prior to collection these birds were seen to eat what appeared to be grit. D.M. No. 12394, an adult female, contained 12 fragments of white mollusc shell (various shapes and sizes) and 4 small *Nematode* worms, but no food remnants. D.M. No. 12395,

another adult female, possessed 4 small dark pebbles, one small piece of white mollusc shell, and one dark feather, probably swallowed when preening, but no food remnants.

MEASUREMENTS (in Millimetres) OF ADULT NODDIES COLLECTED

(Measurements are those used by the O.S.N.Z.'s Beach Patrol Scheme, and described by Heather (1966).)

Dominion Museum Number	Date Collected	Locality Collected	Sex	BILL Length	BILL Depth	BILL Width	Mid-toe and Claw	Tarsus	Wing	Tail
12394	18/12/66	Nth.Beach Raoul Is.	F	44.5	7.7	11.2	35	20.7	221	110
12395	18/12/66	" "	"	41.5	8	12.7	34	20.2	223	114
12396	19/12/66	" "	"	41	7.5	11.2	33	20.2	222	113.7
Skeletal Remains	1/12/66	Nth.Meyer	-	42	8	-	33	19	229	102
	20/12/66	" "	-	42.5	8	-	35.5	22	229	119

Of 32 noddy eggs measured on North Meyer Islet their mean was 43.8 x 30.9 mm. They ranged from 40.3 to 47.9 mm. in length (standard deviation 2.1) and 28.9 mm. to 32.6 mm. in width (standard deviation 0.9).

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THE GREY TERNLET *(Procelsterna cerulea albivitta)*

By M. F. SOPER

Although breeding on all islets of the Herald group and at Smith Bluff, Raoul Island, the two Meyer Islets and Napier Islet (which had a very large population) were the main strongholds of this delightful species. Breeding was well advanced on 19/11/66, which was our first full day on Meyer, and on that date all stages were present from eggs to flying young.

The nests, which were widely dispersed and usually well-hidden, were confined to the coastal strip of the islet. The most favoured sites were cavities, crevices and ledges on cliff faces. A few were placed in the shade of boulders on the beach and others under clumps of vegetation such as grass, *Cyperus* and low growing *Coprosma*