

NOTES ON THE SPOTLESS CRAKE IN THE WAINGARO DISTRICT

By DON HADDEN

ABSTRACT

Observations on the Spotless Crake were made at Waingaro, 1967-70. Three occupied nests were found, and these are described, along with notes on Habitat, Territory, Voice and Feeding.

INTRODUCTION

The existence of the Spotless Crake *Porzana tabuensis plumbea* in Waingaro first came to my notice in August 1967 when Paul Macpherson, one of the boys attending the local school, informed me that he had heard some strange bird-calls in a swampy gully running up to the back of their farm. He had heard them while on the lambing beat and, recalling that earlier in the year I had mentioned to him the fact that swampy gullies could contain rare swamp birds, he at once notified me. A few days later we went and listened to the calls, but not being familiar with the Spotless Crake at this stage could not positively identify them. On many occasions we were able to approach within a foot or two of the bird making the call, but invariably were unable to catch even a glimpse of it. Eventually, it was decided to beat the swamp, and so with myself perched on a convenient bank over an open area, and some local children at the other end, the operation began. They had hardly begun beating, when a Spotless Crake emerged from the cuttygrass, thus solving our problem as to the origin of the calls. This bird saw me, turned back, heard the children behind, turned again and then flew some 8-9 yards to a stand of willows, on the other side of the clearing. It landed under the nearest willow and disappeared further down the swamp.

HABITAT — SWAMPS

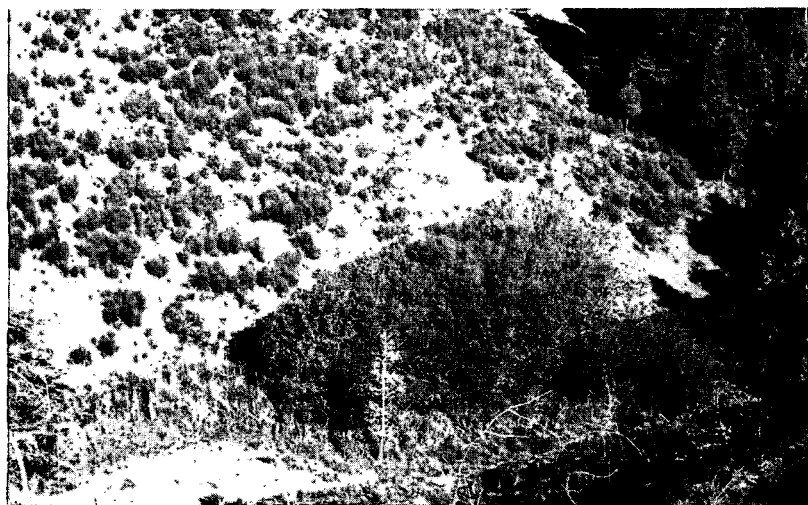
The three swamps in which nests of the Spotless Crake have so far been located are all between fairly steep hills in the Waingaro area. This district is concerned mainly with sheep farming, and almost all the farms are on steep hill country. Between each ridge there are narrow swamps, many of which run a quarter of a mile or so up into the hills. The swamps are rarely more than 20 yards wide and most of them are only half this width. The sheep graze right to the edge of these swamps, and in drier weather, the few cattle that some farmers run, actually walk into them. Occupied nests have been located in two swamps only.

Swamp A. This is located on Mr. Macpherson's property. Two sections of this swamp can be seen in Plates XX and XXI. In Plate XX the patch of cuttygrass and flax in the left centre adjoins the Waingaro Road, just not visible in this picture, and in this area birds have been heard calling and unoccupied nests found. The swamp decreases in size and runs up under the trees shown in the bottom right hand corner. The last of these trees can be seen on the extreme left of Plate XXI. In this picture it will be noticed that the swamp is considerably smaller and very narrow. However, it has been in these very small sections that most nests have been



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Plate XX — Typical Spotless Crake habitat, Swamp A.



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Plate XXI — Spotless Crake habitat. Several nests have been located in this narrow cuttygrass swamp. This section continues from that shown in Plate XX.



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Plate XXII — Spotless Crake habitat, Swamp B. The third occupied nest was found almost exactly in the centre of the swamp vegetation shown here.

located. The patch of cuttygrass seen on the left of the picture, and which runs up beside the willows to another patch on the extreme right (in shadow) has seen many nests found. In fact the first nest with eggs was located in the shadowed area on the right, a patch similar in size to that on the left.

Swamp B. This swamp is about a quarter of a mile long and it maintains a width of some 10-15 yards with two exceptions. The first is where it bulges out twice its width into a paddock (Plate XXII) but it quickly reverts to its normal size. A short distance further, the swamp runs into farmland no longer being used, and thus has to its edge a thick growth of gorse and ti-tree (extreme upper right hand corner of plate XXII) in which and in the swamp itself can be found a number of Fernbirds. About 100 yards up, a dam has been constructed and this small lake makes the second exception to its normal width. The main swamp above the lake is composed almost entirely of raupo, with a few small patches of cuttygrass. It was in one of these small patches that the second occupied nest was discovered.

TERRITORY

Within each swamp it is obvious that a number of pairs are nesting but because of the difficulty of even briefly observing the birds, the territories can only be gauged by walking down the edge of the swamp and listening to the birds calling. Where there are gaps in the calling (such as places where willows predominate and there is little cover), and then further down more calling is heard,

it may be assumed that there a new territory starts. This is, of course, only a very rough guide, but following this procedure I would consider that Swamp A would contain at least four pairs, and Swamp B, a similar number. The actual size of each territory is also difficult to ascertain, but with at least one pair, the nesting cover would be no more than 12 yards square, although the actual territory may continue in under willows where there is no growth.

VOICE

The Spotless Crake has an interesting variety of calls, and while in my hide, the birds would use all of them, at different times and in different ways and I was thus not able to decide the meaning of each call. They seemed to be used indiscriminately, but then if the bird had been able to be observed, it might have shed more light on the matter. The calls I noted were as follows:

1. 'Mook.' A slightly nasal sound, and used commonly, either singly or repeated. It was usually fairly soft, but varied and some calls quite loud. They varied in pitch, too; some were high and some were low.
2. 'Bubbling' call. This was the 'mook' call repeated rapidly until it sounded like the bubbling noise that a swamp makes after one pulls one's foot out of it. I presume this is the call described by other writers as being like water running out of a narrow-necked bottle. I thought at first that the bubbling call was separate from the 'mook' call, but on a number of occasions the bird started with a few soft 'mooks' and without stopping went faster and faster until it became the bubbling call. Sometimes, though, when the bird started repeating 'mooks' faster, at a point just before it could be said to be a bubbling call, it would stop, and it was only a rapid series of 'mooks.' There was much variation in number and speed of the 'mooks.'
3. 'Pit' 'pit.' A sharp, high-pitched squeaky call, sometimes used singly, but more often a number of times in succession.
4. 'Purring.' There were a number of variations of this call, but most commonly it could be described as a high-pitched trilling purr, sometimes quite loud and sometimes very soft. On other occasions, I heard a loud, rattling, harsh 'purr.'
5. 'Harrng.' This was a harsh, extremely nasal call and not used very often. It could only be heard a few times in an entire day in the hide.
6. 'Murmurings.' Soft, nearly inaudible, high-pitched notes made by both birds at once, and all run in together. These were heard most commonly when the sitting bird would leave the eggs and join its mate on the ground behind the nest. The birds would then move away murmuring together. On one occasion a bird was 'mooking' to my left and another 'bubbling' to my right. The calls moved closed and when the birds met, the 'murmuring' calls began. 'Murmuring' calls were heard only when two birds were together.
7. 'Mint' 'Mint.' This call was heard only once and that was from the bird on the nest, who repeated the call twice, late one evening.

All the calls with the exception of the 'bubbling,' 'piting' and 'murmuring' were uttered by one or other of the birds while actually on the nest. On one occasion a bird behind the nest gave a slow, low 'mook' and the bird on the nest replied with high-pitched 'mooks.' These calls were made with the beak closed. A number of times the bird incubating would 'mook' softly, but one morning the following occurred. The bird came onto the nest at 10.18 a.m. and settled. At 10.23 there were 'pits' to my right and faint 'mooks' from the bird on the nest. I could hear the bird on the right coming closer and as it approached the 'mooks' from the incubating bird became louder and faster until her whole body was shaking, and the nest and surrounding cuttygrass shaking too. The approaching bird then came onto the nest and the two stood side by side. I was sorely tempted to photograph them but did not want to do anything that might disturb the interesting behaviour I was watching. Eventually, the incubating bird left but almost immediately returned with a small straw which it passed to the sitting bird. This bird then stood up and left. A bird returned at 10.27, adjusted the grasses, turned the eggs and sat quietly. There was silence until the other bird returned at 10.35. The bird on the nest then 'mooked' rapidly, again shaking the surroundings, but eventually stood up, and as it was leaving, the approaching bird settled onto the eggs. The above incidents were the only times shaking occurred and I am at a loss to explain it, unless it was the sitting bird showing its displeasure at having to leave.

NESTS

General

When it was first discovered that Spotless Crakes were in local swamps, as we did not know where precisely to look for nests, it was decided to start at one end of each section of swamp and work systematically to the other. The nature of the swamps made it imperative that long trousers, long sleeved shirt and gloves be worn, as the cuttygrass quickly attended to bare knees and hands. Ordinary gumboots were of little use as the swamp was too deep in places, so an old pair of shoes had to suffice. It took quite a large number of hours to search, despite the relatively small areas to be covered, but they were done thoroughly and with Paul Macpherson's help we must have found the majority of nests built in 1967 and 1968. The closest we came to finding an occupied nest, was one that had broken egg-shells beneath it, on 12/12/68. The reason I believe no occupied nests were found during these two years was because of the dates on which we searched, but this will be referred to later.

Position

During 1967 and 1968 no specific records of nest positions were kept, but at least 20 were discovered. Records were kept for 1969 and a sample of these is as follows:

Swamp A —

- (a) In cuttygrass — 3 ft. from ground. 6" across, 6" deep. Loosely woven of cuttygrass.
- (b) In cuttygrass — 2 ft. from ground. 8" long, 4" across, 3½" deep. Quite tightly woven of dry cuttygrass.

- (c) In cuttygrass — 3 ft. from ground. 6" wide, 5" deep. Loosely woven of dry cuttygrasses.
- (d) In cuttygrass — directly below (c). 18" from ground, 5" across, 4" deep. Loosely woven of dry cuttygrasses. (Of all the nests discovered, I have only seen 6 which were of this double-decker type, i.e. one above the other.)
- (e) In cuttygrass — 12" from ground. 6" across, 5" deep. Loosely woven of dry cuttygrasses.
- (f) In cuttygrass — 2' 9" from ground. 5" wide, 3" deep. Loosely woven of dry cuttygrasses.
- (g) In cuttygrass — 2' 3" from ground. 6" wide, 5" deep. Base of cuttygrass, but some finer grasses were woven into the top of it. (This nest will be referred to later.)

Swamp B —

- (a) In cuttygrass — 12" from ground. 4½" across, 2" deep. Composed of dry cuttygrasses and a few other dry grasses. This nest is illustrated in Plate XXIII and is the one referred to in Plate XXII.
- (b) In cuttygrass 2' 3" from ground. 6" across, 3" deep. Loosely woven of dry cuttygrass and a few other dry grasses.
- (c) In cuttygrass 2' from ground — 6" across and 6" deep. Composed mainly of dry 'reeds,' but some dry cuttygrasses.
- (d) In cuttygrass 2' 6" from ground. 5" across, 3" deep. Loosely woven of dry cuttygrasses.
- (e) In cuttygrass 3' from ground. 5" across and 4½" deep. Loosely woven of dry cuttygrasses and a few other grasses.
- (f) In cuttygrass — 3' from ground. 5" across and 2½" deep. Loosely woven of dry cuttygrasses with a few other grasses.

Nests (d), (e) and (f) were very close together, nest (e) being 3' from nest (d), and nest (f) being 2' 6" from (d). It will be noticed that all the nests were located in cuttygrass, even from Swamp B, which had more raupo than cuttygrass. This was a distinct feature of the Waingaro nesting sites, although it became apparent to us only after hours of fruitless searching of other swamp vegetation. I cannot recall finding nests in anything other than cuttygrass.

Discovery of Occupied Nests

Trying to ascertain the laying times of the Spotless Crake so that I could search at the peak of the season, I consulted what literature was available, and came to the conclusion that November was the best month. For example, 'Oliver' states, quoting Bell, that for Raoul Island, "the peak laying time is November 10th-20th," and that at Poor Knights, nests Buddle found "indicate that laying commences in October and continues until at least early December." Armed with this information I systematically searched many areas of Swamp A, about once every fortnight from mid-October to mid-December, and then once again in January. I was assisted on a number of occasions by Paul Macpherson and between us in 1967 and 1968, as noted above, we located at least 20 nests. We could not understand why, after such thorough and systematic searches we were unsuccessful in locating occupied nests. However, in the 1969 season a partial answer seems to have been discovered. Quite simply, it appears we were looking at the wrong time of the year. This only became apparent when, quite by accident, a nest was discovered, containing 3 eggs, on



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Plate XXIII — Typical Spotless Crake nest. This nest was deep in cuttygrass, which has been pulled to one side for this photograph.

August 23rd. It had never occurred to me to search for nests in August before, because I considered this to be far too early, but with the discovery of this nest, what time was available was spent in searching for others. Most of my time though was spent in erecting a hide and moving it closer, and then spending many hours in it observing the birds' behaviour at the nest. However, Paul Macpherson spent what time he could, and one day, after school, cycled to Swamp B. By now we had adopted the procedure of only searching in cuttygrass clumps, and ignoring the raupo, etc., and following this idea Paul went straight to one of the very small cuttygrass areas, in this swamp, and immediately discovered a nest containing two eggs. This second nest for the season was found on September 18th. A third nest was found in the area depicted in Plate XXII, on September 29th containing 3 eggs, and although we continued searching, no further occupied nests were found.

EGGS AND CLUTCH SIZE

Eggs and Clutch Size

The eggs were all very similar in colour, not appearing to differ greatly between the three clutches. They were biscuit-coloured and flecked all over with light brown markings. One egg from the first nest, measured by Mr. H. R. McKenzie, was 30 x 20.5. The first and third nests found had 3 eggs and the second 2 eggs.

Incubation and Hatching

The only information I could find in the literature I had on the Spotless Crake was a reference in K. Hindwood's 'Australian Birds in Colour,' where he states 'incubation is between 16 and 18 days.' I therefore reckoned on having about a fortnight to study this bird (first nest) providing, of course, she hadn't been sitting for some time. As it turned out I had an even longer time. I had found the nest on 23rd August at 3 p.m., containing 3 eggs and the 16th and 18th days passed, i.e. September 7th and 9th, with no signs of chipping whatsoever. On 12th September at 4.30 p.m., this being the 21st full day (including 23rd August) very faint lines were detected, which I suspected indicated the first signs of chipping. These marks were not easily seen and would have been overlooked if I had not been making a close examination of each egg. They were visible on only two eggs. On the 22nd day (i.e. Saturday, 13th September) the two eggs had slightly more visible cracks and the third egg, very faint cracks. On Sunday morning when I visited the nest at 8.00 a.m. there were two chicks and one egg. The parent birds were calling from just behind and below the nest, and although the chicks seemed very shaky, they climbed over the nest and disappeared. This all happened within a very short time of our arrival, perhaps only a minute or two, and I didn't even have time to pull my camera out of the carrying bag, couple the flash and take some pictures. They disappeared just as I was ready. Hoping an adult would call them back into the nest (there was still an unhatched egg), I quickly climbed into my hide, which had been in position for 17 days, and my wife performed her usual task of walking away. I realised it was a rather forlorn hope because I couldn't see how the chicks could possibly climb back up 3 ft. of cuttygrass, but a bird photographer has to be an optimist. Anyway I was very interested to see what she would do about the unhatched egg. It should be mentioned that from the time of our arrival at the nest at exactly 8.00 a.m., it was only eight minutes later that my wife walked away leaving me in the hide. There was no noise until 8.17 when, from just behind the nests sounds of 'tugging' were heard. It was an unusual noise and it seemed as though a bird was pulling at the cuttygrass. Accompanying this sound were very faint calls, and presumably this was the bird leading the chicks away, as the calls gradually became fainter and moved over the back, and by 8.30 there was silence. From 8.35 I heard occasional calls until 9.13, when a bird returned to the back of the nest and without pausing settled on the egg. She tucked the egg under her several times and was generally very restless and at 9.17 walked quietly away. There was silence until 9.27, when I heard both birds moving away from just behind the nest and calling to each other. All the calls were used except for the purring note. There was silence till 9.33 when the bird again returned and sat very restlessly, leaving at 9.36. I had kept quite silent and, of course, taken no photographs, during this time as I didn't want to jeopardise any further the chances of the chick's hatching. Uncertain what was the best thing to do, I left the hide at 9.37. I returned again at 5.00 p.m. but the egg was stone cold. A close examination of it showed only faint chipping marks. The chick from this egg was subsequently removed at the Auckland Museum. As far as the in-

cubation period was concerned, for this nest it must have been at least 22 days, and possibly more, if the 23rd August wasn't the first day of incubation.

The second nest was located on 18th September and contained two eggs, which on subsequent visits were not added to, and were thus the full clutch. The bird was on the nest when found at 5.00 p.m. On 7/10/69, I visited the nest at 6.00 p.m., and it still had two eggs and no signs of chipping. However, on 10/10/69 I visited the nest, arriving at 6.00 a.m. and saw two day chicks. I spent only seconds at the nest, hoping that by doing so the female wouldn't lure the chicks away. However, on visiting with camera equipment at 12.00 noon the same day, there was no sign of the chicks. Once again we have no accurate incubation period, but we do know it was a full clutch on 18/9/69 and if we assume that the bird sat from that day to 9/10/69 inclusive, then the incubation would be as before, at least 22 days. Once again it could have been longer, if the day the nest was found wasn't the very first day of incubation. It would surely be rather unusual to find two nests both on the very first day of incubation. The third nest was not able to shed any further light on the incubation period.

Mr. G. J. H. Moon in 'Refocus on New Zealand Birds,' gives the incubation period of the Banded Rail as 25 days, so perhaps that of the Spotless Crake could be about the same.

Behaviour at Nest

I kept a complete record of all movements and all calls, while I was in the hide and then wrote these out in full, after each day's observations. They covered many hours and would thus be of interest only to someone doing a detailed study of the bird. However, I have recorded below some of the more interesting observations. Unless otherwise stated they all refer to the first nest in Swamp A. The nest was discovered on the Saturday and I spent the next four days erecting a hide and shifting it closer. I had to part the cuttygrass to see the bird at all. This made the bird a little diffident about returning, and on the first day's observations of Thursday 28th, the bird seemed somewhat restless, moving off the nest quite often, and spending a good bit of time pulling at surrounding grasses until she was covered again, or getting off the nest and returning with a piece in her beak. On a number of occasions a piece of grass would be passed to the sitting bird from its mate, and this would be placed in front of the nest. By the end of the three weeks though, she had become much 'tamer' and took no notice of the cuttygrass being opened each morning. Nor did she make any serious attempt at pulling grasses across.

When the bird returned to the nest she made a surprising amount of noise, and could be heard clearly, rustling through the cuttygrass. Behind the nest one could see the route taken by the bird. This was a sloping track of cuttygrass which faded out near the ground. Its position was such that at one point I was sure the bird would be able to be seen from above, and this proved to be the case, when I spent one afternoon observing from the opposite hill. Although only appearing briefly she was definitely visible.



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Plate XXIV — Spotless Crake with grass.

I was able to ascertain that both birds share incubation, as the changeover was observed on a number of occasions, although as the sexes were so alike one couldn't be really sure, unless one bird came on as the sitting one left. One such occasion was as follows. A bird returned to the nest at 9.31 and except for tucking the eggs under itself once, was completely still until 10.07. At this time it put its head up and listened alertly. I could hear nothing at first but then detected a faint 'mook mook' call approaching, and this bird slipped onto the nest as the other one actually walked off. The sitting bird had cobwebs on its face, and this one was quite clean. The new bird placed a piece of grass it had been carrying, and immediately shuffled low onto the eggs. Apart from minor movements it sat perfectly still till 10.30, until Paul Macpherson passed close by while mustering sheep. The bird stood up at his approach and moved quietly into the cuttygrass by the nest, where I could still observe it standing motionless. The bird stayed there after Paul had gone but then quietly slipped away. Nothing happened till 10.43, when the first bird returned and settled. It still had a cobweb on its head. Then from 10.43 until 12.03, apart from minor movements, which I have recorded, it was quite still. At 12.03 it put its head up, listened carefully, and walked off.

An aspect of behaviour I wished to observe was the bird's reaction to an 'interloper.' To do this I borrowed a mounted Spotless Crake from Mr. P. Devlin and one morning at 10.47 Paul Macpherson placed the bird in a suitable position near the nest and then walked away. I expected some sort of display, or perhaps a lively battle, but in actual fact it was the complete opposite. The bird returned to the back of the nest at 10.58 and noticed the dummy immediately. She (?) became extremely alert and very, very cautious and quiet

in all her movements, which were few, peering out at the bird from all angles, but seemingly not daring to approach too closely. Her view of the mounted bird would have been slightly obscured by cuttgrass. She dashed off at 11.10 uttering two faint 'mooks' but returned exceedingly cautiously and quietly 30 seconds later, and stayed peering and hardly moving till 11.18 when she moved down the back, 'pit'-ing rapidly. At 11.21 I could hear a bird moving very quietly near the back of the nest but then there was silence till 11.37 when a bird, again extremely cautiously, appeared at the back and very slowly walked right around the back of the nest. There were long pauses in the same position but she finally left at 11.43. Then at 11.51 a bird again approached with great care, but carrying a piece of grass in her beak. She peered around but stepped slowly back out of sight. She reappeared at 11.56 but carrying no grass, and walked right round the back of the nest twice, moving out of sight by 12.02 but appearing again 30 seconds later and by 12.04 had with great caution settled on the eggs. She stretched her head right up, peered at the mounted bird and then walked off. From behind I could hear high-pitched purrs and bubbling calls. The bird reappeared at 12.08 giving soft 'mooks' as it approached. A bird over the back could be heard 'harrng'-ing and the bird at the nest sat by 12.10 facing the mounted bird. It jumped off after 30 seconds, but stayed near the nest and then after pecking at some grasses, cautiously stepped back on and while still standing peered at the dummy. However, she settled and tucked the eggs under her. The bird on the nest shook and shivered from time to time and stretched its neck up peering at the mounted bird. At 12.20 the bird behind called 'pit' 'pit,' and the bird on the nest gave some quite loud 'mooks' in reply. From then, till 12.42, the bird stayed on the nest except for shivering and peering at the crake at 12.22, 12.32 and 12.35. At 12.42 she stood, walked to the back of the nest, peered back and then left and murmurings could be heard behind. My wife returned a little later and I removed the crake.

As I mentioned above, the birds became much tamer and on occasions the bird would be sitting on the eggs again within 60 seconds of my wife's departure from the hide, and sometimes she could walk right up to the back of the hide before the bird even moved. This was in contrast though, with the bird at the third nest we found. On the few occasions that I attempted photography there, even though the hide had been in place some time, she showed extreme reluctance to return when the grasses were parted a little to enable one to see the nest. One evening my companion left me in the hide at 6.00, and at 6.14 the bird's beak appeared, although I think she was at the back earlier. However, from 6.14 to 6.44 the bird was almost totally motionless. I could see its beak against a blade of cuttgrass, and it moved it no more than half the width of one cuttgrass blade in the whole 30 minutes. I hardly dared breathe during this time but it finally slipped on at 6.44.

This bird also had a strange action which was not noticed at any of the other nests. When approaching this nest to check the eggs, the bird would stay on till the last minute, and be seen as a black shadow, slipping out at the back as we peered in. Then, immediately, from behind the nest would come splashing noises, which



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Plate XXV — Spotless Crake at nest. Here the bird has just come onto the nest and has not yet settled.



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Plate XXVI — Spotless Crake at nest. Here the bird has settled onto the eggs. The grass across her breast was pulled there by the bird. During the early stages of incubation she would soon be completely screened from observation by thus pulling at the cuttygrass. (See Plate XXIV.)

sounded exactly as though she were stamping her feet in the water. She couldn't be seen doing this, as the vegetation obscured her, but she would move around in a semi-circle behind the nest, and the splashings would be repeated, where she stopped. The noise wasn't because she was running along in the water, but would occur at one place and then at another and so on. If we persisted in the vicinity of the nest she would eventually give up. This would occur every time we visited the nest and we eventually called her the 'foot-stamper.'

In concluding this section it should be mentioned that I spread Alumask, diluted with water, around the nests, so that predators following human scent, would be confused.

Use of Nest after Hatching

Although I visited each nest after the chicks had gone, I found no signs of their being used, and in fact their condition deteriorated surprisingly quickly.

At one nest, which had no eggs but which I did see being used, the following happened one evening. Just before dark I was standing quietly behind some small Kahikatea watching the swamp, when I saw the cuttygrass begin shaking, and I suspected a crake was climbing them, as the cuttygrass doesn't move, when a crake walks through it. The cuttygrass continued shaking and I could watch the passage of the bird as it climbed higher. It moved towards a place where I knew an unoccupied nest was situated (which I had been keeping under observation). After a short time the movement stopped. It was now nearly dark but to confirm that it was actually a crake I'd been watching, I walked quietly into the swamp and peering into the cuttygrass, at the nest site, I saw a black shadow disappear and heard the cuttygrass 'crash' as it fled. I assume this was a male using one of the spare 'roosting' nests. This nest is the one noted above as (g) Swamp A.

Reactions to Other Creatures

At times I was in the hide when various birds called quite closely, such as Morepork, Rosella, Tui, and others, but apart from raising its head the sitting bird continued to incubate undisturbed. The same was the case when sheep were being mustered or lambs docked in an adjoining paddock. Despite dogs barking and voices calling the crake would sit unperturbed. On one occasion to my astonishment, a hare came crashing through the swamp, to a position quite near the nest, but apart from listening intently, the bird did not stir.

While searching systematically through the swamp, I did come across an opossum once, fast asleep in the centre of a cuttygrass clump in the middle of the swamp. Possibly these animals could be predators on the eggs of swamp nesting birds.

FEEDING

Only once have I been able to observe the crake away from the cuttygrass and yet remain undetected myself. On this occasion, just before dark, I was able to watch two birds forage in a section of the swamp comprised of short grasses, growing over quite a wet area, almost impossible to walk on. The two birds seemed to dash

here and there, pausing briefly to peck at something, and then quickly running a few more feet and pecking again. This continued for about 10 minutes after which they disappeared. On one occasion James Macpherson was also able to remain undetected while two crakes fed. This time they fed more slowly, not running from place to place. As well, a Pukeko *Porphyrio melanotus* was feeding nearby and in the course of searching for food came quite close to the crakes. It suddenly dashed at them, causing them to flee into the cuttigrass.

Wondering whether they would eat if I left something at the nest, I tried some small pieces of luncheon sausage, but although they picked them up, they dropped them after turning them over in their beaks. However, both a grasshopper (dead) and a worm were consumed.

CONCLUSION

I appreciate that one cannot draw definite conclusions from only three nests, but as such nests are not found very frequently, every little helps, and the above information can be compared with data from any nests that may subsequently be found.

It will be noted, too, that I have given no description of the bird. This is because I am slightly colour-blind and am not always exactly sure of my colours.

Finally, I would like to thank Mr. M. I. Macpherson for allowing me free access to his property, and to Mr. H. R. McKenzie for obtaining the egg measurements for me.

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SHORT NOTE

MORE SIGHTINGS OF GREY TERNLETS

Dr. Falla's interesting account of Grey Ternlets *Procelsterna albigivitta* in the Bay of Plenty has prompted me to submit the following observations.

I have been offshore fishing in the Bay of Islands every year since 1964, except 1967. My first sighting of what I was sure were Grey Ternlets occurred in January, 1965, when I saw a flock of nine on one day and two birds on another. In 1966 and 1968 I saw one or two Grey Ternlets on more than one occasion. All these sightings were about ten miles from the shore.

During six days' fishing out from Mercury Bay in February 1967, I saw no Grey Ternlets at all. But in 1970 out from the Bay of Islands again I saw two on February 21st, one on 23rd and one on 25th.

I am sorry these notes are so sketchy. At first, in view of the scarcity of these ternlets in New Zealand waters I hesitated to publish my sightings; but in view of Dr. Falla's findings I am quite confident that the unusual terns I have been seeing in summer over some years are Grey Ternlets.

— MALCOLM WALLER