NESTING SUCCESS OF A PIED STILT COLONY

By REG. C. PULLEN

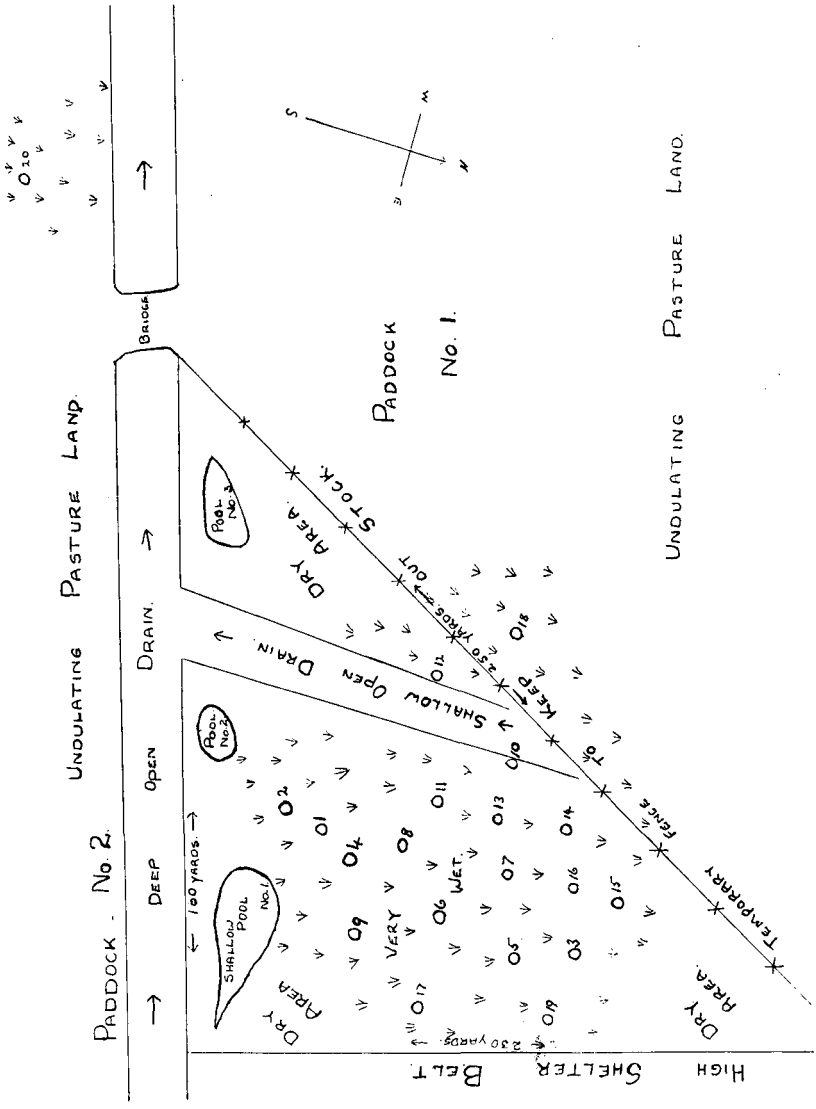
The locality of this colony of Pied Stilts (*Himantopus leucocephalus*) has been bountifully provided by civilisation. The open boggy area shown on the map would not have been available to these birds when New Zealand was in its natural state. The site is on the farm of the Kingseat Hospital at the tip of a tidal arm of the south-east part of the Manukau Harbour. All birds are protected on this farm. Insecticides are not used on the pasture. Trampling of the nests was avoided by the erection of an electric fence. Predators are often a serious factor and will at times wipe out all the eggs and young of a colony. In this colony there was no evidence of predation of eggs though there could have been a little. The distance from cover precluded the hedgehog, while the compact party of belligerent parents kept away two neighbouring pairs of Pukeko and other predatory birds. The greatest danger was to the chicks. It is the habit of the parents to move the small chicks out of the colony and here they were mostly taken to No. 2 paddock (see map). After seeing parent birds walking up and down on the far side of the big drain, ten feet wide and eight feet deep, I realised that chicks must be going along the smaller drain from the nesting area and falling about three feet into the main drain which has deep flowing water and is infested with large eels. If they breed there again I intend to fence the big drain with fine wire netting so that only the bridge can be used. Once out of the colony the greatest danger could have been from the many cats of the establishment though they were not observed in the area. Harriers and gulls were not seen to hunt them.

In the colony the relations to other birds were interesting. During incubation, when either one parent or the other was always on the nest, no notice was taken of Red-billed Gulls (*L. scopulinus*). Blackbirds (*T. merula*) and Thrushes (*T. ericetorum*), but Mynas (*A. tristis*) and Pukeko (*P. melanotus*) were not tolerated. After hatching no birds were tolerated.

HATCHING SUCCESS (See Chart)

Completely successful: Nos. 6, 8, 10, 19, 20.

Estimated to be completely successful: Nos. 1, 2, 3, 9, 13, 16. The last eggs of these nests were not seen to hatch but in the twenty-four or so hours between my visits they had ample time to do so, the chicks become dry and leave the nest. Stokes (N.Z.B.N. 2, 26) describes how one bird, presumably the male, takes away and guards each chick soon after it hatches, the other bird continuing to incubate until the last egg is hatched. He writes, "Early one morning the first chick hatched. It left the nest about four hours later and was taken in charge by what I took to be the male bird. On the second and third mornings the same procedure occurred. The sitting bird stayed on the fourth egg for three more days before giving up. The egg was addled." It is unlikely that these last eggs were taken by predators which would not in any case wait for the last one or two eggs in each of six nests, especially when a parent would still be sitting.



Partially Successful: Nos. 4, 5, 7, 15, 18.

Doubtful: Nos. 12, 14, 17. On Sept. 14 there were two chicks at No. 1 Pool (see map), two on the right of and close to Nest No. 20 and two more just through a fence by a pool. All of these were a week or more old, too old to belong to Nest N. 8. They were probably produced from Nest No. 12, a used empty nest when found, or possibly two of them were from Nest No. 14 which contained one bad egg

when found. I have therefore included estimates of these two nests in the egg total. Nest No. 17 could have been predated or four chicks could have hatched and left on 13th.

Unsuccessful: No. 11, but could have hatched one live chick on 11th.			
Total Eggs: estimating 4 for No. 12 and 3 for No. 14	= 77		
Total Hatched: including Nos. 12 and 14 but omitting No. 17 as doubtful	= 61	= 79.22%	
Infertile or dead chick inside	= 9		
Dead chick in nest	= 2	= 20.78%	
Egg broken in nest	= 1		
Doubtful No. 17	= 4		
	77		

This, I believe, was good hatching success which I think would be largely because the colony was compact and other factors prevented predation.

Unfortunately I was not able to follow up the rearing of the chicks. Before I could get to a vantage point overlooking the colony the alarm would be given and the chicks hidden. The birds became more used to intrusion latterly but still warned the chicks to lie low. The family parties out in No. 2 paddock would be hidden too and the folded nature of the ground made good observation there impossible. Only a few chicks were seen on odd days, not more than the six on 14th Sept. Strangely enough the two first seen on Sept. 11th at No. 1 Pool stayed there until they flew. On Oct. 7, the twenty-eighth

Nests		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Date	Time	Eggs																				Weather
Sept.																						
10	1230	4	3	4	4	4	4	1	+++	4	4	4	0?	4	1	4	4	4				Fine
11	1830	4	3	4	4	4	4	2	0	4	4	3		4	1	4	4	4				Fine
12	1730	4	3	4	4	4	4	3		4	4	2D		4	1	4	4	4	4	2		Fine
13	1700	4	3	4	4	4	4	3		4	4	2		4	*	4	4	0	4	3		Light rain
14	1730	4	3	4	4	4	4	4		4	4	**		4		4	4		4	3	3	Fine
15	1730	4	3	4	4	4	4	4		4	4			3+		3+	4		4	4	3	Fine
16	1330	4	3	4	4	4	4	4		4	4			2+		1++	4		4	4	3	Fine
17	1330	4	3	4	1+++	4	4	4		4	4			++		1	4		4	4	3	Warm, showers
18	1150	4	3	4	1+++	4	4	4		4	4			0		1	4		4	4	3	Heavy rain
19	1730	4	3	4	1	4	4	4		4	4					•	4		4	4	3	Dull, cold
20	1730	4	3	4	*	4	4	4		4	4						4		4	4	3	Heavy rain
21	1700	4	3	4		4	4	4		4	4						4		4	4	3	Fine
22	1730	4	3	4		4	4	4		4	4						4		4	4	3	Fine
23	1800	4	3	4		4	3-	4		4	4						4		4	4	3	Fine
24	1800	4	3	2++		4	3	4		4	4						4		3+	4	3	Fine
25	1800	4	3	1+++		4	3	4		4	4						4		3	4	3	Fine
26	1730	3+	3	0		1+++	3	4		4	3+						2++		2	4	3	Fine
27	1730	1+++	1++			D	3	4		4	++++						0		2	4	+++	Dull, cool
28	1730	0	0			0	3	4		4	0								**	4	0	Fine
29	1745						3	4		1+++										4		Fine
30	1800						3	4		0										4		Fine
Oct.																						
1	1830						+++	4												4		Dull, cool
2	1800						+++	4												4		Fine
3	1830						0	4												4		Fine
4	1230							4												4		Cold, windy
5	1830							2++												4		Heavy storms
6	1830							2•												4		Fine
7	1730							**												2++		Fine
8	1330																			++++		Heavy rain
9	1730																			0		Fine

Legend: + = chicks hatched; • = eggs infertile or dead chick inside; D = dead chick in nest; - = egg broken in nest; 0 = no eggs or chicks left in nest.

day of observations, I counted fifteen flying young, eleven not fully grown. This presented a problem. The minimum hatching to flying time so far recorded is 29 days (Stokes, 3, 108), with 32 days quite usual. The two lots of two older ones, if in the fifteen, were flying at over 28 days, perhaps 30 and the two seen at No. 1 Pool on 14th Sept. from Nest No. 8 (?), at 28 days. The other nine could have come from another colony further inland and be on their way to the coast as is the habit of the species. If Nest No. 17 succeeded its chicks would have been 25 days hatching to flying and Nest No. 4 21 days, both very unlikely, even though there have been odd times recorded for this breeding season, e.g., A. Blackburn (13, 196) with Fantails (*Rhipidura placabilis*) has had a variation from minimum to maximum of nearly four days, or approx. 25%. H. R. McKenzie (pers. comm.) with Red-breasted Dotterel (*Charadrius obscurus*) had a minimum of 39 days hatching to flying, with 40 quite usual and sometimes 44 or more. This season he observed a brood which had flown in some days less than 38. In the case of the Stilts a similar variation would bring in only the doubtful Nest No. 17.

I had to cease operations on Oct. 7. For reasons already given I was unable to estimate the number of remaining non-flying chicks at that date. Four pairs of adults were still near the colony and all would have young, as would others in No. 2 paddock. Any attempt at an estimate would be only a guess. About 51 of those hatched should still have been in the non-flying group. If 15 of these survived to fly the total to fly would be 21, which would be 27.3% of eggs laid or 34.4% of eggs hatched. This is still leaving out Nest No. 17.

This study has given a record of hatching success but it has also revealed the difficulty of observing such a colony. To approach unobserved a covered way to the observation point is necessary, then a twenty-four hour watch, using an infra-red light at night. This over a period of say ten weeks would surely try the enthusiasm of any birdwatcher.

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LONG-TAILED SKUA ASHORE AT MURIWAI

By R. B. SIBSON

On 10/1/64 the Misses Perrin asked me to identify a strange sea-bird which they had found as it was washed ashore dead at Muriwai. They believed it was a skua. As soon as I saw it, I was surprised both by its apparent smallness and also by the general tone — dark ash gray, not brown — of its upper surface. The bill was small and black; and the tarsus pale flesh. The feathers of the back were irregularly, but rather prettily, edged or flecked with white, showing a state of moult. The wings also were obviously moulting, the two longest primaries in each wing being frayed and broken at the tips, while the other primaries were new and only partly grown. Such gaps in its wings must have gravely impaired its powers of flight. The preceding weeks had been cool and blustery; and this skua had evidently succumbed to one of a succession of strong westerly blows which had marked the mid-summer season of 1963-64.