SUCCESSFUL HAND-REARING OF AN ABANDONED ROYAL ALBATROSS CHICK

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ABSTRACT

The hand-rearing of a Royal Albatross chick is documented. The fledging period of chicks and their survival is discussed in relation to the tendency for individual breeding pairs of the Royal Albatross to fledge their chicks at similar intervals each season.

INTRODUCTION

The Northern Royal Albatross *(Diomedea epomophora sanfordi)* at the small breeding colony at Taiaroa Head, Otago Peninsula, New Zealand, has been the subject of an intensive conservation programme since 1937. Though not a rare bird, the population of this only mainland colony has been increased by protection from one pair in 1937 to a present known population of some 45 birds with 5-10 pairs laying eggs each year. Up to 1972 some 85 chicks have been reared. An average of over 60 percent survive from departure, until their first return to the colony, at least 4 years later. The colony is regularly visited throughout the year at a present average rate of 5 days per week for observations and control of potential predators. Research has been confined almost entirely to observation by the local Wildlife Service field officer, with handling being restricted mainly to banding of chicks and measuring of adults for sex determination. Until the opening in 1972 of an enclosed public observatory, public viewing has been severely restricted to about 30 people per year.

RESULTS

In 1969 a pair, consisting of a 22-year-old male (65/66) and an 11-year-old female (C6), both of whom had not previously bred, laid their first egg as a pair. The laying was observed at 6.27 a.m. on 10 November (Fig. 1) and the chick emerged at 11 a.m. on 30 January 1970, an elapsed time of 80 days 4½ hours. The mean incubation time for a sample of 101 eggs at Taiaroa Heads is 78.85 days ± 0.14 with a S.D. of 1.46. Development of this chick (R-19853/53) continued normally until mid-May 1970; but by mid-June the chick (Fig. 2) was visibly smaller and unkempt in relation to a nearby chick of similar age. Debris in the nest indicated a feed on 23/24 June. On 5 July a neighbouring parent was attracted to the chick who performed the begging display but was not fed. The chick continued to deteriorate and on 9 July was recorded as being small in body with protruding sternum. Parent 65/66 fed the chick 5 times on 10 July and then departed, in spite of continuing demands. The chick again begged from a neighbouring parent on 12 July. Following signs of a pulmonary infection, and a dark flush on the back and flanks the chick was given an intra muscular injection (1 mil PEMSTREP L.A. and 2 mil Vitamin B complex) on 15 July.

FIGURE 1 — Parent C6 in process of laying egg.
Photo: A. Wright

FIGURE 2 — Chick R-19853/53 on 16 June 1970 aged 137 days.
Photo: P. A. Wright

Following further deterioration, feeding by hand was started on 18 July. An immediate improvement was seen, and on 20 July the chick began wing exercising and nest maintenance.

Hand-feeding was continued until the chick flew, with 1 Halibut Oil tablet being included in each feed up to 8 September. Details of feeds are shown in Fig. 5. All food was obtained frozen, thawed before being warmed to blood heat immediately prior to feeding, and carried to the nest site in the warm boiled water. No attempt was made to pulp the food to provide similarity with normal regurgitations. Each meal of squid *(Notodarus sloani)* consisted of 3-6 whole squid, fed mantle first (Fig. 3). The squid used was commercial stock normally used as fishing bait. Throughout this period the chick remained in the open on its normal nest site. Apart from one visit from parent 65/66 on 2 October, when only a small amount of liquid was passed to the chick, there was no evidence of a parental visit after 10 July.

On 10 October at 3.53 p.m. in a 15-30 knot wind, the chick was wing exercising when it lifted off the ground and headed into the wind before slowly heading out to sea where it landed at 3.55 p.m. It was then lost sight of, but was not subsequently recovered on surrounding beaches as has happened with premature departures in the past.

Subsequently, parent 65/66 was absent for a full season as is normal when a chick has been successfully reared. It returned again in the 1971/72 season, when it remained as an unattached bird for the whole season. Parent C6 has not been seen since May 1970.

Because of the very small number of chicks being reared each year and to avoid too much disturbance detailed weights and measurements are not taken. However, up to the stage in June when deterioration was noticed, plumage development was similar to the neighbouring chick which departed normally in 228 days. The mean fledging date for 64 birds including this chick at Taiaroa Head is 240 $\pm$ 1.1 days with a range of 216 to 257 days and a S.D. of 8.9. The mean fledging date for 32 chicks which have subsequently survived and returned to the colony is 240 $\pm$ 1.4 days with a range of 216-254 days and a S.D. of 8.1. The comparative sizes and development of chick R-19853/53 and the neighbouring chick at 202 and 210 days respectively is shown in Fig. 4.

DISCUSSION

Wingate (1971) has decribed the successful hand-rearing of a chick of the Bermuda Petrel *(Pterodroma cahow)*, and attributed this success to starting hand-rearing before the bird was starved beyond hope of recovery and to the avoidance of bacterial contamination of the food supply. Major problems experienced were matching the normal partially-digested consistency of the food and getting the chick to swallow it without excessive spillage onto the downy plumage.

FIGURE 3 — Hand-feeding the chick on 23 August 1970 aged 205 days.
Photo: A. Wright

FIGURE 4 — Chick R-19853/53 (left) at 202 days and neighbour at 210 days.

Photo: A. Wright

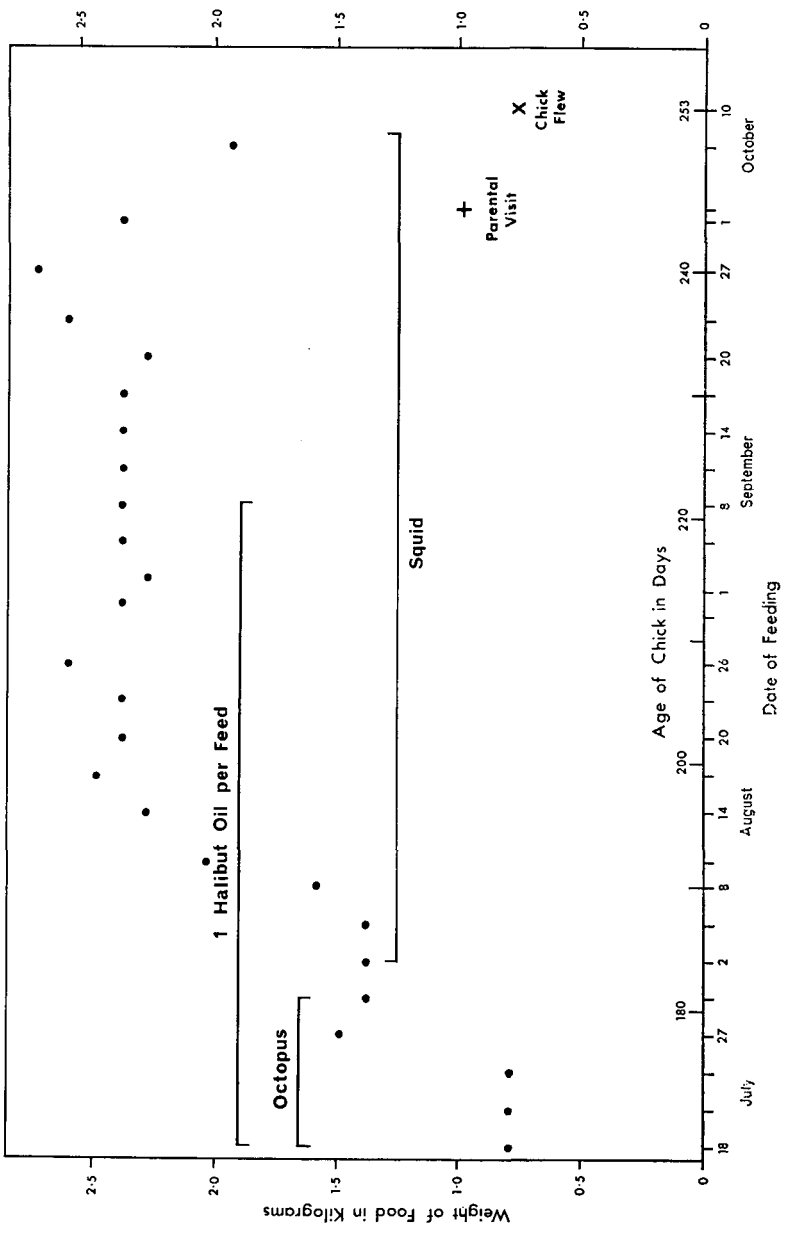

FIGURE 5 — Feeding intervals, amount and type of food during hand-feeding of Royal Albatross chick.

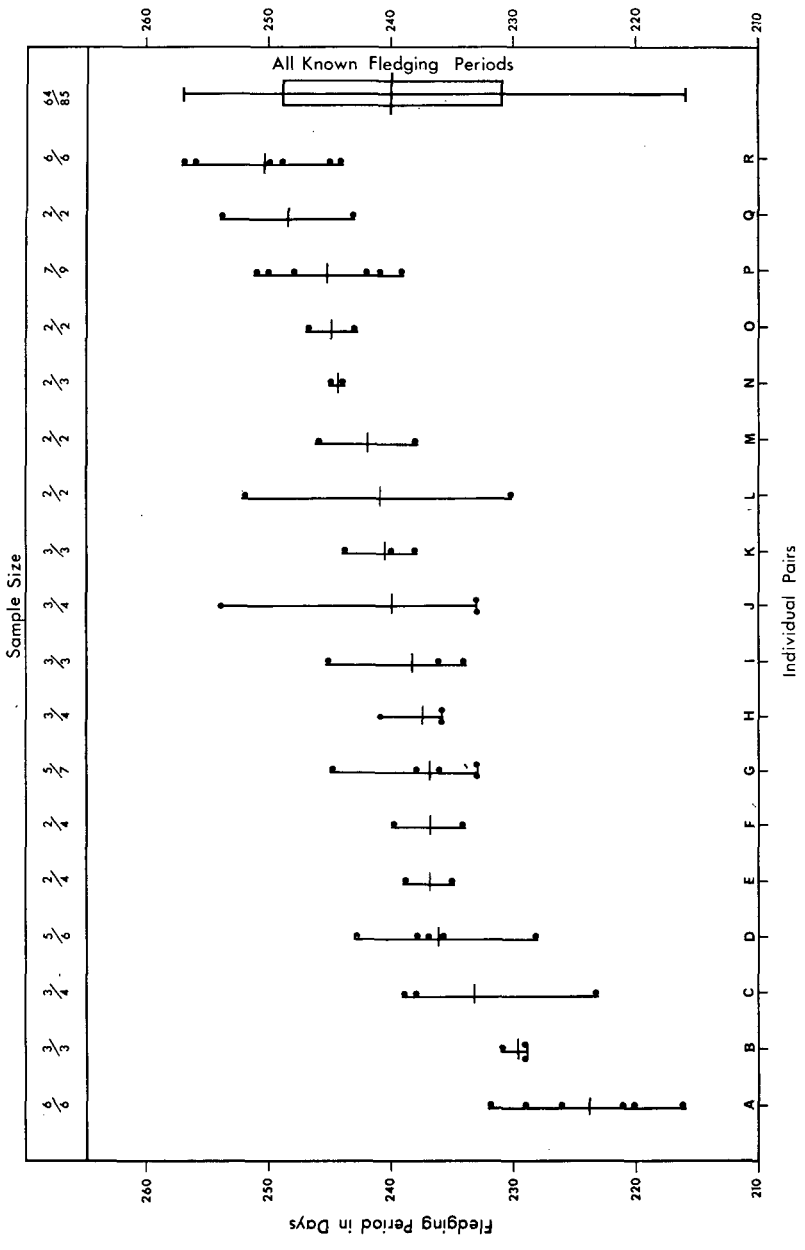

FIGURE 6 — Fledging periods of a sample of chicks produced by individual breeding pairs of the Northern Royal Albatross at Taiaroa Head 1937-1972.

It is possible that in our case the female parent C6 ceased to return to the colony during late May or early June and the decline of the chick points to the inability of one parent to maintain an adequate growth rate.

Richdale (1952) and Tickell (1968), as well as our data, show that the Royal and Wandering Albatrosses have a wide range of fledging times. Tickell found that some parents feed their chicks substantially more than others and suggested that the differing fledging periods may depend not on how long the parents " keep " it ashore, but on how long it is fed, as better-fed chicks developed more rapidly. Richdale (1952) stated that there was a tendency for mated pairs to keep their chicks ashore for about the same length of time each season. The departure periods for chicks of 18 pairs having 2 or more chicks with known departure dates are shown in Fig. 6. The sample sizes indicate how many chicks have known fledging periods from the total number of chicks produced. This information from Taiaroa Head 1937-1972 confirms Richdale's assertion. Although poor feeding conditions must be a partial cause of extremes in fledging times at the upper end of the range (Pairs 'J' and 'L' are good examples), there is sufficient evidence presented above to indicate that once a chick has fledged there is an even chance of survival. Further, there is no evidence yet, to suggest that " super " parents such as 'A' produce chicks more likely to survive than those of ' R.'

However, Richdale and especially Tickell reported very severe weight loss if the regular feeding pattern is interrupted. Tickell (1968: Figs. 36 & 37) illustrated a mean weight loss of 2.5 to 3.0 kg in a period of 20 days in 2 chicks deserted by their parents, and 4.5 to 5.0 kg in 40 days. In normally-fed birds there is a wide fluctuation in both the regularity of feeding and the amount of food given. Tickell's example of a growth/weight curve used to illustrate the marked daily fluctuations in a normal chick, shows a loss of 2 kg over a period of 20 days which included two feeds that did little to halt the weight loss in the chick. Tickell also indicated with his deserted chicks, that without feeds, a weight loss of 5.5 to 6.0 kg over a period of 58 to 80 days was fatal.

Hence, if we assume that, between 1 June and 18 July (a period of 47 days — the period may, in fact, have been longer), chick R-19853/53 was fed only sporadically by one parent, it should have been approaching the critical weight loss illustrated by Tickell.

Though no effort was made to reconstruct the normal consistency of natural food, the use of whole squid did have the advantage of preventing the soiling of plumage and permitting easy feeding of the chick with a minimum of disturbance. In fact, the chick readily adopted its foster parents, with an increase in begging activity as each feeding day approached. The return of this bird to the breeding area is awaited with interest as it will supply a further example of the successful management and conservation of this species.

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