THE MANX SHEARWATER ON LUNDY*

BY

H. N. SOUTHERN AND B. W. TUCKER

(Plate 5).

The status of the Manx Shearwater (Puffinus p. puffinus) on Lundy has long been problematical. It has been repeatedly stated to breed, but only very few observers have been able to obtain positive proof of this and no one has succeeded in establishing that it does so in any large numbers in spite of large flocks being seen off the island and much calling heard at night. The earlier statements about the species are quoted by Loyd (1925), and with regard to these it must suffice to say that it was stated to breed by Moore as long ago as 1837 and that D'Urban and Mathew (1895) mention it as "very numerous" as a breeder, but give no details. Apparently the first ornithologist to examine eggs and young was Roberts at some date prior to 1903, when he published a little volume called The Bird Book. As his account is more explicit than that of any other writer and only receives passing notice by Loyd, who had apparently not seen it, it deserves quoting. Roberts writes:—

"Their nesting burrows were situated just under the brow of some loose-faced cliffs, and in some cases, at least, had an exit at the top. About three or four feet down was a chamber excavated by the birds, and the nest itself was nothing but a few dry scraps of bracken. Some of the holes that we examined contained a smooth white egg, others, a young bird resembling a young Puffin, except for a curious tuft on the head, but in every case we found the parent bird at home, and they required careful handling, as some scars on our hands testified for many a day."

The plumage of the birds and their cries at night are also described. Unfortunately no mention is made of the numbers of eggs or young found. Cummings (1909) states, presumably from personal information, that the nesting haunt examined by Roberts was "on the east side of the island near the granite quarries."

Another record of interest has not previously been published: on June 20th, 1903, Dr. H. B. Elton took a single egg from a number of burrows excavated. So far as he remembers, no birds were found in any of the other burrows opened. The site, as Dr. Elton most kindly informs us, was on the east side, perhaps half to a third of the way up towards the north end from the houses, and was approached down slopes overgrown with bracken, amongst which the burrows were. It will be noticed that this was about the same period as that of Roberts's visit, and all the evidence points to the locality having been the same. Dr. Elton was taken there by the gardener to the then owner, the late Mr. Heaven, showing that the colony was known to people on the island.

The next observer to find eggs was Loyd (1925), who writes:—

"Years ago the colony was at the north end of the island, but that ground was deserted, probably during the first decade of the present century or a little

* Publication of the British Trust for Ornithology.
later,* and a new spot chosen, in his efforts to discover which the writer experienced the greatest possible difficulty and weeks of disappointment, but was eventually successful. It is more than doubtful whether anyone else knows the exact or even approximate situation of the nesting site.”

The colony was in fact, as Capt. Loyd has been good enough to inform us, on Puffin Slope, which, as will be seen later, was the only locality where we found definite evidence of breeding in 1942. Capt. Loyd also states that a few bred on a slope to the west of Puffin Slope, and that he had also heard birds grunting below the Quarries (on the east side), but had not investigated this area closely. The figure of fifty pairs, given tentatively in his book, Capt. Loyd is now inclined to think may have been an over-estimate.

Evidence of breeding is also available from two or three other sources. Mr. F. W. Gade informs us that in 1934 he found a young Shearwater, evidently on its way to the sea, on the terrace of Millcombe House, and in 1935 he found another in the combe just below the house. He also tells us that one of the lighthouse keepers (H. Woodruff) has found eggs, and once found a young bird inside the North Lighthouse compound. Mr. R. M. Lockley informed Mr. Witherby that he also had confirmation of breeding at the north end of the island from a lighthouse keeper, who stated that eggs were chiefly laid in holes among granite boulders and difficult to dig out. Perry (1940) has further recorded having examined photographs of birds and eggs dug out by the lighthouse keepers from accessible burrows.

It will be seen, therefore, that although there are positive proofs of breeding scattered over a long period of years, none of the observations so far cited gives definite evidence of anything more than a quite small, and possibly rather unstable, breeding population. Indeed Loyd’s account of his prolonged search culminating in the finding of a colony of small size is definitely against breeding on any large scale.

Recently, however, Perry (1940) has asserted that great numbers breed on the island. In his map he marks breeding places at three points on the coast, Puffin Slope near the north-east end, Lametry in the south-east and an area on the east coast above Mill Combe. Each of these is credited with “1,000 pairs.” In the errata “1,000 pairs” is altered with commendable prudence to “a certain number,” but it is stated that approximately 1,000 pairs breed on the island. It is apparent that this is little more than a guess influenced by the numbers of birds, of the order of fifteen hundred to two thousand, seen off the island in July and we shall not lay undue stress on the figure of the estimate, but it must clearly be taken as meaning “a very large number.” The assumption of such a large breeding population is, however, in no way substantiated in Perry’s account, and it was primarily to try and obtain proper evidence on the problem that our visit to Lundy was made.

* We do not know Capt. Loyd’s evidence for this statement, but it will be noted that it does not appear to square with the experience of Roberts and Elton.
By kind permission of the Admiralty and Mr. M. C. Harman, Messrs. W. B. Alexander, J. S. Watson and the writers spent from July 2nd to 10th, 1942, on the island. Grateful acknowledgement is made of £20 received from the British Trust for Ornithology towards the expenses of the party, this being part of a donation generously made by Mr. Harman for the study of bird life on the island. Observations and conclusions fall under the following headings.

I. Distribution.

During the night of July 2nd-3rd two of us (B.W.T. and W.B.A.) ascertained that numbers of Shearwaters were landing and calling from burrows at Puffin Slope on the northern promontory of the island (see Plate 5). Accordingly most of our attention was concentrated at this place.

However, with the idea in mind that there might still be a really large colony somewhere else, a considerable amount of time was also spent at other places. The evidence from these was entirely negative, but it is worth mentioning them in some detail in order to illustrate the scope of our observations. Throughout the whole of our stay, conditions were ideal for Shearwaters: the earliest time of moon rising was about 3.45 a.m. (D.B.S.T.), and as calling usually began about 12.45 a.m. this gave plenty of time for investigations. In addition the sky was rarely clear, so that the nights were particularly dark, as those of us can testify, who made the long and rough journey up the whole length of the island about midnight.

(a) Slope on the west coast just south of the North Light. Visits were paid here by H.N.S., J.S.W. and B.W.T. on the night of July 4th-5th: just before midnight this slope was explored thoroughly for about an hour to see whether there were any likely burrows. Another visit was paid for a short while about 3 a.m. to find out whether any grunting birds could be heard. On each occasion results were negative. This is evidently the slope where Capt. Loyd found a few birds in the early nineteen-twenties.

(b) Slope on the east coast between Mill Combe and the rhododendron thickets. This area is one of the three mentioned as breeding grounds by Perry. Night observations were conducted here on two evenings by W.B.A. (July 4th-5th and 6th-7th), who found that birds were passing by the whole time after 12.45 a.m., but were not landing. On the mornings of July 5th and 7th about three hours in all were spent by all four of us quartering this slope to find traces of nesting burrows. There was in fact great difficulty in finding any burrows here at all, certainly none that would support a substantial colony. On the second day every possible burrow was dug out, but nothing at all was found. Nevertheless, it should be noted that Mr. Gade’s observation of young birds in 1934 and 1935, mentioned on p. 123, shows that in those years some Shearwaters were breeding somewhere in this area.

(c) Eastern Slopes from Mill Combe south to the Castle. These were visited by W.B.A. on the same nights as (b) above, and again,
although birds were passing and calling continuously above and below him, there was no sign of any of them landing.

(d) Slopes below the Castle, west of Lametry Bay. Several visits were paid here at various times, and the ground was carefully examined by B.W.T. and W.B.A. This is another area which Perry marks as the site of a large breeding colony in 1939. On no occasion could we find any trace of burrows, or even of birds. In fact W.B.A. particularly noted, during his night patrols of the cliffs above the Harbour that the Shearwaters seemed to go no further south than the Castle.

(e) Slope on the west coast by the Battery. This point was visited on the night of July 7th-8th by J.S.W., who stayed making observations from 12.30-1.30 a.m. Shearwaters were passing along the cliffs here, just as they were on the south-east side, but were not landing.

(f) Slope on the east coast near the road to the quarries. This place is some distance south of the Gannet Rock, and was visited by B.W.T. on the same night and for about the same period as (e) above. This is the locality where Roberts's colony is said to have been and where Capt. Loyd tells us that he has heard birds grunting. The area is of course a large one, densely covered with bracken, and it was impossible to work the whole of it, so a strategic point was selected for observation about half way along. The result was the same as elsewhere: birds were passing along at intervals the whole time, but there was no evidence of their landing.

(g) Slopes between Puffin Slope and Gannet Rock. For about two hours on the afternoon of July 8th H.N.S. and J.S.W. combed these slopes and dug out a number of burrows (see Table), but no sign of Shearwaters was found.

Thorough searches during the day are probably not as good as being present at night and watching for landing birds, but on Puffin Slope at least there was evidence in the shape of feathers lying around the holes, which would certainly have given away any large colony. Therefore, apart from possible odd birds or insignificant groups (Capt. Loyd mentions one bird inhabiting a burrow near the North Light steps) it is clear that during 1942 the Shearwaters were concentrated only at Puffin Slope and were only passing other parts of the island during their calling flights.

2. NUMBERS.

It was impossible to arrive at any worthwhile estimate of the population which was circulating round the island, though it may be said that the general effect of the calling was far less noisy than at regular colonies. During the afternoon of July 8th, numbers of Shearwaters were observed at sea off the north end of the island. A count of those which were positively identifiable as Shearwaters, came to 230, but still greater numbers (of the order of 1,500-2,000) appeared to be present further out, though these were too far away to put their identification beyond doubt. Such flocks as these have
no doubt encouraged other observers (e.g. Perry) to assume that there must be a large breeding population on Lundy, but Lockley (1942) has shown how far the feeding grounds of this species may be away from the nesting site.

On Puffin Slope 19 holes were known to be occupied at night. If each of these represents two birds and a further 12 are added for single birds sitting about, we get a minimum figure of 50 for the numbers that were actually visiting the slope.

It is of interest to notice that Mr. Gade informs us that variations in the number of birds heard calling in different years support the view that the numbers breeding, or at any rate visiting the island, fluctuate considerably. Thus, 1943 and 1944, on this basis, have been scarce years, whereas 1934 and the three succeeding years were years of abundance. Mr. Gade's impressions would naturally be based principally on calling heard near his house at Mill Combe, and it may be recalled that 1934 and 1935 were the years in which he came across young birds in that area. He further informs us that notwithstanding what has been said above the number of birds seen off the island by day has been much as usual in 1944, viz. about 1,000-1,500, showing that there is no necessary relation between the number of birds seen on the water and those nesting.

3. STATUS OF THE PUFFIN SLOPE COLONY.

Observations were made during the following periods:—July 2nd, 4-7 p.m.; July 3rd, midnight-2 a.m. and 3-7 p.m.; July 5th, midnight-2.45 a.m. and 3-5 p.m.; July 7th, 2-4.30 p.m.; and July 8th, 11 a.m.-5 p.m.

Generally speaking we aimed to arrive at the colony just before the calling began. This was very regular during the short time that we were on the island and odd birds had generally started by 12.45 a.m.; within a few minutes this had swelled to quite a chorus, and by 1 a.m. calling was at its height. On the night of July 7th, when H.N.S. waited until daybreak before returning from the colony the calling ceased almost as suddenly just about the time the moon rose. On occasions when observers were scattered over the island at different points, there was remarkable coincidence in the times at which they reported the beginning of activity.

As soon as calling was well under way occasional birds would start to land; some of these remained just sitting in one place; on rare occasions one was actually noted to disappear into a burrow. Such a burrow would be marked at once with a peg and a small square of white paper. Generally, however, the way of locating occupied burrows was by listening for the birds calling inside.

The next day these burrows were excavated, or at least an attempt was made to excavate them, since, especially in the case of the holes higher up the slope, granite boulders sometimes defied any attempts to get to the depths of the burrow. Where digging was moderately straightforward each burrow was excavated to the end, which usually meant for a length of 9-12 feet, since there was commonly a long
extension behind the nest site, sometimes leading out to another exit.

Of the burrows positively known to be occupied 13 were opened up completely and as this number constituted two-thirds of all holes known to be occupied, the results may be considered sufficient to give a proper picture of the stage of reproductive activity in the colony. A number of burrows were also chosen at random for excavation. The results are summarized in the Table.

<table>
<thead>
<tr>
<th>Number of burrows</th>
<th>Locality</th>
<th>How Traced</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Puffin Slope.</td>
<td>By crowing.</td>
<td>Old nest and two birds.</td>
</tr>
<tr>
<td>1</td>
<td>do.</td>
<td>do.</td>
<td>New nest, chick and one adult.</td>
</tr>
<tr>
<td>1</td>
<td>do.</td>
<td>do.</td>
<td>Old nest and fresh droppings.</td>
</tr>
<tr>
<td>1</td>
<td>do.</td>
<td>do.</td>
<td>Old nest and new feathers.</td>
</tr>
<tr>
<td>1</td>
<td>do.</td>
<td>Dug at random.</td>
<td>Dead ad. Shearwater.</td>
</tr>
<tr>
<td>1</td>
<td>do.</td>
<td>do.</td>
<td>Old nest and chick skeleton.</td>
</tr>
<tr>
<td>1</td>
<td>do.</td>
<td>do.</td>
<td>Puffin's sucked egg outside; nothing inside.</td>
</tr>
<tr>
<td>6</td>
<td>do.</td>
<td>By crowing.</td>
<td>Two adult Puffins.</td>
</tr>
<tr>
<td>1</td>
<td>do.</td>
<td>Adult outside.</td>
<td>Nothing.</td>
</tr>
<tr>
<td>12</td>
<td>do.</td>
<td>Dug at random.</td>
<td>do.</td>
</tr>
<tr>
<td>2</td>
<td>Next slope to E. Slope nr. Gannet Rock</td>
<td>do.</td>
<td>do.</td>
</tr>
<tr>
<td>5</td>
<td>do.</td>
<td>do.</td>
<td>do.</td>
</tr>
<tr>
<td>36</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It will be seen from this summary that only one burrow was found to have a chick. Furthermore when we had become used to the characteristic noise made by this chick at night (a whickering "swee-wee-wee" noise), and to the persistence and carrying power of it, it is highly improbable that we should have missed any other such note on Puffin Slope. It looks therefore as if the proportion of Shearwaters which bred successfully on Lundy in 1942 was very small.

In this case, of course, the main interest centred on the activity of the birds which were occupying empty burrows. Three such burrows retained their occupants during the day, and we were able to examine them and determine that in two cases the two occupying birds were in fact a male and a female. This does not, of course, mean that all the occupied burrows apart from the one with the chick were being visited by a similar pair of birds, but it is probable that a good proportion were.

The problem arises as to whether these birds were pairs, which had attempted to breed and had lost their egg or chick (petrels lay only
once during the season), or whether they were immature birds, which were indulging in preliminary courtship activities before coming into full breeding condition in the following year. Lockley (1942) has shown that there is an interval of a year or two before the Shearwater starts to breed and also that, once started, it breeds every year; therefore the above two possibilities seem the only ones to explain this curious state of affairs.

On the material at present available to us it is probably impossible to settle the matter with complete certainty, but we wish to direct attention to the problem as one of very great interest from the points of view of ecology and reproductive physiology. Our detailed evidence, though incomplete, will be discussed in another publication. Two pairs of these "unemployed" birds were killed and taken back for examination; the testes of the males and the ovaries and oviducts of the females were remarkably small, the former measuring about 7 x 4 mm., the latter about 9.5 x 5.5 mm., while the diameter of the oviducts at the base were 7 and 5.5 mm.

This certainly strongly suggests that they were immature. It is known, however, that the reproductive organs of petrels, which lay only one egg during the season, regress at an extremely rapid rate even as early as during incubation, so the fact that these birds had such small gonads is not in itself proof that they were immature. Comparison with birds which are known to have bred would be necessary to settle this point, and we were not able to obtain any such. On the other hand the fresh-looking, sleek, unworn condition of the plumage and the clean, fresh colouring of the legs and feet lent no support to the idea that they had been engaged in nesting activities earlier in the season, and Mr. Alexander, who has had considerable experience of ringing Shearwaters, tells us that he considered they contrasted markedly in the above respects with typical nesting birds removed from burrows.

We hoped also to obtain some information as to when the burrows inhabited by these "unemployed" birds were last used for breeding by examination of the nests. Both the new nest and several of the ones noted as "old" in the Table were brought back to Oxford and Mr. R. B. Freeman has kindly examined them for parasites. Unfortunately neither category of nest contained any, so no light is thrown upon whether the "old" nests belonged to 1941 or 1942. The fact that the "old" nests were all made of bracken stems, while the new one was made of dry grass, suggests that the former, if they belonged to 1942, must have been abandoned early in the season.

One further factor bearing on this problem must be mentioned, though we were unable to obtain any positive evidence about it. There are many Brown Rats (*Rattus norvegicus*) on the island, and these are known to move about from season to season. It is possible that the Lundy colony of Shearwaters is continually plundered by these animals, since one species or another is known to have been present on the island since at least 1775 (testo Chanter, 1877).
However no signs of occupation by rats was found on Puffin Slope during our stay.

The status of the Manx Shearwater on Lundy is therefore rather a curious one. The colony has been there for many years, but there is no evidence that it has ever been large, and in 1942 only one out of 13, and probably out of 19, burrows contained a chick. The situation is similar to that reported by Lockley (1942, p. 145) for Gt. Saltee Island, so it is clear that the condition is not unique. What makes it so remarkable is the length of time during which the birds have been known on Lundy, for this suggests that it is not merely a case of the early stages of colonization.

References.

Chanter, J. R. (1877). Lundy Island: a Monograph, Descriptive and Historical, with Notices of its Distinguishing Features in Natural History. London.


British Birds, Vol. XXXVIII., Pl. 5.

UPPER—Site of Shearwater colony, Puffin Slope, Lundy.
LOWER—Nestling Manx Shearwater, Puffin Slope, July 3rd, 1942.
(Photographed by H. N. Southern).