

The Bewick's Swans at Slimbridge, 1966-67

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(See Photograph Section pp. IV and V.)

The winter of 1966-67 was the fourth in which wild Bewick's Swans have visited Swan Lake—the pond in front of the buildings in the Rushy Pen at Slimbridge. (For an account of the build-up of the flock and details of 1965-66 winter see P. Scott 1966, *Wildfowl Trust 17th Ann. Rep.* : 20-26.) The first swans to arrive were five days later than the year before; they were Kon and Tiki with four cygnets on 26th October, 1966. Three days later Pink and Rebecca came with four cygnets. These two families had been the most faithful of the winter before, the Kontikis having missed only two days between arrival and final departure, and the Pinks having been away for a period of ten days. The next families to arrive were also old friends of the previous winter—Shieldy and Freckles with five cygnets, Caesar and Calpurnia with four, Ambrose and Mrs. Lee with three, and Pepper and Amber with three.

One pair (Porgy and Bess) which had stayed for 60 days in the winter of 1965-66, paid one visit to Swan Lake on November 20th, 1966, and evidently decided it was too crowded, for they went away next day, returning only after 42 days. (Thereafter they remained for 70 days.) Because of the limited feeding area early in the winter there were several new families who came for one day and, not finding the food because established swans drove them away from it, never returned. An example of this was Father and Christmas, who arrived on Christmas Day with four cygnets and did not find the food. They never came again.

It has been found that the amount of food available controls the number of swans and it seems possible that if the feeding space is enlarged, the pond will hold many more swans—perhaps up to 500. The tradition inherent in the swans to winter in the same place every year,

Table I. Number and percentage of adult and two-year-old Bewick's Swans returning to Slimbridge in subsequent winters.

Winter	Number of adults and two-year-olds newly identified in each winter	Cumulative total	Number and percentage of adults and two year olds returning in subsequent winters					
			1964-65		1965-66		1966-67	
			No.	%	No.	%	No.	%
1963-64	19	19	12	63	11	58	10	53
1964-65	50	69	—	—	19	38	24	48
1965-66	74	145	—	—	—	—	31	42
1966-67	170	315	—	—	—	—	—	—
total number of swans returning			12		30		65	
% returning of total identified			63		43		45	

The first entirely new family did not come until 14th November, 1966, when Redspot and Scruffy arrived with three cygnets. It is apparent that in most cases the new families are brought in by the old ones, but whether they become "regulars" or not depends on whether they find the wheat which is put down for them. They can find it difficult to get to the food as they are often driven off by the more aggressive "established" swans. The feeding area was extended along the shore in front of the house later in the winter and further modifications to the underwater contours are contemplated.

although strong, presumably breaks down under certain circumstances—perhaps if they find a better place on the way. Only a certain percentage of the swans of one year returns the next year, as shown in Table I. The figures are restricted to adult and two-year-old birds because of uncertainties in identifying cygnets of a previous winter.

On 18th December, 1966, a pair (Wayland and Liz) arrived which had been in the winter of 1964-65 but not in 1965-66—the first recorded case of swans missing a season. As the bill pattern is subject to minor changes it might not always be easy

to recognise birds which skip a season.

About 440 swans have been recorded since 1963-64 on Swan Lake, named and given serial numbers. Three hundred and thirty-six different birds were noted in 1966-67, compared with 147 in 1965-66, 75 in 1964-65 and only 24 in 1963-64. The swans are referred to by names (rather than numbers) as these often help the observer to identify the bird. P. Scott (1966) gives an identification formula for Bewick's Swans based on their individual differences in bill-markings and other features which are incorporated in many of the names. A few additional points of difference have been noted this winter.

There are two main types of head shape, "cat-faced" and "weasel-faced," and also several main bill shapes, "bulgy," when the culmen bulges slightly (a "bulgy" swan usually has yellow across the culmen—a yellow-*neb* as opposed to a darkie), turned up, straight, and turned down. The body shape varies to a lesser extent and is therefore only noticed when it is a particular characteristic of a certain swan. Some have longer or more turned up tails. It has been found that individual swans have very different dispositions, some being very nervous and others, even if they are new, being very tolerant of human proximity.

Each day each swan is ticked off on a board which shows the general picture of the arrival and departure of the swans. Portrait photographs of them are taken (by Philippa Scott) and filed with the other particulars of each swan. These photographs prove extremely useful as they eliminate any human error involved in drawing the swans.

Table II. Number and percentage of Bewick's Swan cygnets and the mean brood size at Slimbridge, 1963-64 to 1966-67.

<i>Winter</i>	<i>Number of cygnets</i>	<i>Percentage of flock</i>	<i>Mean brood-size</i>
1963-64	5	21	2.5
1964-65	13	17	3.3
1965-66	43	29	1.6
1966-67	101	30	2.5

The number and percentage of cygnets each year are set out in Table II, together with the mean brood size. The samples are rather small for making valid comparisons but the larger brood size in 1966-67 over the previous year is noticeable. The grey cygnets of the year are not named, as it is difficult to recognise

them when they return as yearlings unless they are ringed. The pinky-grey indefinite patterns on the bills of cygnets change a great deal as the adult yellow and black patterns develop. Cygnets become whiter in plumage as the winter progresses and we have noticed a curious correlation; that cygnets which retain dark feathering have a more distinct pattern of black on the bill, which does not subsequently change so much when the yellow comes through.

The cygnets often inherit the characteristics of their parents. An example of this is the Kontiki family; both Kon and Tiki are "darkies," that is to say the black extends continuously from the tip of the bill to the feathering of the forehead, and their cygnets have always been "darkies" too. As well as inheriting the facial patterns, the cygnets often seem to share their parents' disposition and status in the peck order. Cygnets of a family which is high in the peck order may chase off adults which are lower than their parents. Bewick's Swans can have a circular peck order. For instance, Smoky and Misty beat Pink and Rebecca in a fight, the Pinks beat the Kontikis, but the Kontikis beat the Smoky/Misties. Their aggressive and courtship encounters are being studied in detail. In some cases, as in geese, the larger families dominate the smaller, but this is not always so. It appears that a new pair will always try to establish themselves among the birds already there when they first arrive, though they do not always succeed.

Some yearlings consort with their parents even though the new cygnets may be with them. This may persist into the third year, though not so strongly. In three years Pink and Rebecca have produced two, three and then four cygnets, and, with the mates of the first two, have all sometimes consorted together as a flock of 13 swans. All the young of Pink and Rebecca of three years are known to be alive except for one of the 1966 brood which died of aspergillosis. In many cases the yearlings do not come with their parents but join up with them after arrival. The percentage of yearlings in both 1965-66 and in 1966-67 was 20%.

Some of the widows and widowers of 1965-66 brought new mates in 1966-67. Maria, who came in February, 1964, with Aristotle and returned as a widow for the two following years, brought Harvey in on 31st October, 1966. Peasant, widowed during January, 1966, brought Gipsy in November, 1966. In 1965-66 there was one other widow—Mrs. X with one cygnet. In 1966-67 there were three widows

—Leda with two cygnets, Beulah with two cygnets, Dusky Girl with three cygnets, and from 30th November, 1966, one widower, Ambrose Lee with three cygnets, whose mate flew into a wall and was killed. There have been no recorded examples of divorce and remarriage in adult swans, although there have been mated swans which have departed in the spring with their mate and returned the next year with a different one, suggesting bereavement. An example of this was the Major who came in February, 1964, with Ethel and one cygnet. For the two following years they came (with cygnets) but on 30th October, 1966, the Major arrived with a big aggressive swan which apparently was mated to him and seemed to be the male. They brought two cygnets with them. In the early part of the season Flicker, as the new swan was named, did not seem very strongly attached to the Major and the cygnets but, as the season progressed, he became more strongly attached, suggesting that the cygnets did not belong to him, but to the late Ethel. In the previous years the Major had been taken for the male. "He" was a bigger more aggressive swan as shown in photographs of "him" with Ethel. Their sexes remain a mystery and can only be resolved by catching one of them.

Other mistakes in the sexing of swans have been made. Rose Lee who came in February, 1964, was taken for a female even when "she" came back the following year with a smaller swan (which was quite aggressive). When this bird flew into a tree and was caught, "he" was found to be a female, making his mate Rose Lee a male. Ambrose Lee as Rose Lee was then called, became a widower soon after when Mrs. Lee, apparently accident prone, flew into a wall and broke her neck. The swans can only be sexed by behaviour and size, or by catching them, and there are exceptions to the rule that males are bigger. Tentative pairings in the second winter seem unlikely to last. Altogether seven pairs were formed in the winter of 1965-66 and the only one to return still paired in 1966-67 was Smoky and Misty with two cygnets. All the others came back with different mates, not even having the same type of facial pattern. Adults which have lost their mates have returned with mates with the same kind of facial pattern as the previous one. For example, Lefty, who lost Mrs. Right a "darky," came back with another mate who was also a "darky."

The continuity of the swans' stay varied considerably in the two seasons 1965-66

and 1966-67. In 1965-66 few swans went away for long periods, though during the floods in December many were temporarily absent. All except two returned before leaving for Arctic Russia. In 1966-67 many swans went away for periods of several weeks, indicating that they were probably not in the Slimbridge area. The longest stays in 1965-66 were by the Pinks, who stayed for 154 days and the Kontikis for 147 days; the mean for 147 swans was 79 days. In 1966-67 the longest stay was made by Pinocchio (135 days) and the mean for 336 swans was 60 days. Ninety-five swans stayed for over 100 days. Seventy-eight swans stayed for only one to five days. The most recorded in one day on Swan Lake was 222 and the most at one time was approximately 220. The total usage of the pond at 20,229 swan-days was nearly double that of the previous winter. Most of the birds departed at the end of February and in the first two weeks of March. The last birds were seen on 16th March.

The pattern of the flights out to the river and back varies as the season progresses. In 1966-67, when the swans first arrived, they spent most of the time on Swan Lake, feeding, preening and sleeping, and only occasionally going out to the river. They mostly spent the nights on the pond under the floodlights. By December most of them were spending the nights on the river and only a few stayed on the pond. They came in early in the morning and stayed until around noon when they flew out and then returned for the evening feed. In the mild weather of early February, the swans came in later and left later. In the latter part of the winter, many of the swans were coming only in the morning or only in the evening. As the season progressed, and with the longer days, the swans flew out in the evening before it was dark. If they fly out after dark, coming out of the floodlights, the risk of flying into trees or buildings is great. Four have been killed in this manner and many have fallen into a confined space and been unable to take off, being subsequently caught and ringed.

Apart from night collisions, other deaths during 1966-67 were Adolpha, a yearling, who died on 28th November of massive brain haemorrhage; a cygnet belonging to Shieldy and Freckles which died on 14th November of pericarditis; and the Pink/Rebecca cygnet already mentioned which died of aspergillosis.

The total number of Bewick's ringed is now 57, 32 of them in 1966-67, 16 in 1965-66 and nine before that. There have

been two recoveries away from Slimbridge (P. Scott 1966). New tall rings made of titanium are being used with larger numerals, which can be read with binoculars. It is hoped to develop plastic rings, which are both coloured and numbered, in the future, for even quicker confirmation of a swan's identity.

Some of the swans which came to Swan Lake spent part of their time on a flooded grass field about one and a half miles away in an area called the "Moors." A number of birds which only visited Swan Lake once were seen regularly on the Moors and it is probable that they had failed to find the wheat in Swan Lake but had stayed in the vicinity partly attracted by the other birds and partly by the good natural feeding conditions on the Moors. The highest combined count for Swan Lake and the Moors was 271 on 13th January, 1967.

Two swans (Bill and Catherine), who had been regular visitors in 1964-65 and 1965-66, were first seen on the Moors on 9th January and did not arrive on Swan Lake until the following day. Another swan (Groucho), who had been to Swan Lake in 1965-66, was seen on the Moors on 11th January, 1967, during the afternoon and did not arrive on Swan Lake until the evening feed of that day. Although watching the swans on the

Moors, which it is hoped will be done in more detail in the future, adds a link in the history of the individuals, there is much to learn of where they go when they leave Slimbridge, and why.

It is hoped that the swans at other haunts in Britain may be studied in as much details as the ones at Slimbridge, to try to fill the great gaps in their winter history. Perhaps one day it will be possible to follow them to their breeding grounds in the Soviet Arctic.

Having already learnt something about the social behaviour of an increasing herd of Bewick's Swans during four winters, we believe that there is still much more to be learnt. The numbers of Bewick's Swans visiting Swan Lake have more than doubled each winter. If the numbers continue to increase, it must become progressively more difficult to identify each swan from memory, as is now done. But by concentrating on swans which have been present in previous seasons, and on swans with families, it seems likely that the most interesting parts of the investigation can be maintained in spite of larger numbers, which without doubt increase the impressive beauty of the spectacle.

This study is essentially a co-operative one, most of the observations, apart from the writer's, being made by Peter Scott, Philippa Scott and Maya Scull.

