Wild swans at Slimbridge, 1968-69

Bewick's Swans

The first Bewick's Swans *Cygnus columbianus bewickii* to arrive on Swan Lake this winter came earlier than ever, on 20th October 1968—20 days earlier than in the previous year. These first arrivals were all swans that had been to Swan Lake before: Pepper and Amber, Romeo and McJuliet, and Sahara and Gobi with one cygnet. The numbers built up very quickly and by Christmas there were 266.

The total number of swans identified this season was 439 and the most on one day was 366, 167 more than last season. Comparisons with previous years can be seen from Table I which also shows the percentage of cygnets in the flock each year.

The percentage of cygnets was very low for the second year running. The largest brood was one of three cygnets, that of Lefty and Mr. Wrong. It is probable that this was due to bad weather conditions on the breeding grounds which, according to Russian sources, are on the southern half of the Yamal Peninsula and along the tundra bordering the Kara Sea. (Not all the swans from there

Table I. Numbers of Bewick's Swans at Slimbridge 1963-64 to 1968-69, and annual breeding success.

Season	*Total of different swans seen*	*No. returning from previous years (Adult/2nd yr. only)*	*Cygnets*		*Mean brood size*	*Maximum on Swan Lake on one day*
			No.	*%*		
1963-64	24	—	6	25	2.0	24
1964-65	74	13	16	22	2.7	56
1965-66	148	31	43	29	1.7	125
1966-67	336	68	97	29	2.7	224*
1967-68	342	102	31	9	1.6	199
1968-69	439	130	34	8	1.6	366

* 271 birds were counted on 13th January 1967, mostly on the River Severn and Dumbles.

migrate to north-west Europe.)

The increased total for the number of swans on any one day was probably due to the food being scattered over a larger area of the shallow water than last year, extending all along the shore in front of the house and also along the shore of the bay near the entrance to the pen. It is thought that the feeding areas may have to be limited next season in order to control the number of swans, for the study depends on the observer memorising the name and face-patterns of every bird.

This season a great many more swans stayed consistently after arrival than in previous years. The proportion of swans that stayed for less than eight days was only 10%. It seems certain now that such swans go away because they do not learn about the food, or are kept away from it by the established swans. Where they go to we do not know, although Bewick's Swans are often reported in several places in south and west England including Sedgemoor and Chew Reservoir in Somerset, River Cherwell floods in Oxfordshire, Caldicot Moor, Monmouth, and Walmore Common and Ashleworth Ham near Gloucester. There is also a wet field behind the village of Slimbridge called the Moors, a little over one mile from the Wildfowl Trust Headquarters, where many of our swans regularly feed including a few that seldom come to Swan Lake. We had, for instance, a pair, Cheetah and Chalice, which came to Swan Lake on 31st December and 1st January without finding the food either day, but were seen on the Moors on 6th January and again on 14th February and probably fed there for several weeks. Even more interesting were a pair Oliver and Denise, which had previously only been seen on 1st January 1968. They returned this winter on 31st December, with two cygnets. They again failed to find the food and went away for 65 days. However, they were seen on the Moors on 14th and 18th February and also on the Dumbles on 2nd March. They returned to Swan Lake on 7th March when they found the food and having done so spent a great deal of their time feeding. By this date more than half the swans had left on their spring migration and Oliver and Denise were able to assume a dominant position among those that remained. They were one of the last pairs to leave on migration, on 27th March.

Chance may play a part in whether swans visit Slimbridge on their south-westerly migration. This year, Bertie Bassett, Mom, Prongy and Square, who had arrived very early last winter and in previous winters, did not come this season until the beginning of March, suggesting that they had wintered somewhere else, perhaps having gone there with another flock of swans or having overflown Slimbridge.

The first major exodus took place on 6th March 1969, two days after a full moon. Another major departure date was the 23rd, five days after a new moon (!), and all but the three swans mentioned earlier had left by 29th March.

Table II shows the numbers and percentages of adult and second year swans returning in later years. Cygnets, which cannot definitely be re-identified in subsequent winters, are omitted from the Table. The numbers of birds returning to Slimbridge in the second year are rather lower than might have been expected but after that the proportion returning declines more slowly, presumably through mortality. A provisional annual survival rate of 85% has been calculated from the figures in the Table.

Nine swans returned this winter having not appeared last. Of these Becky, Ivy, General and Red Spot had lost their mates of 1966-67. However, such losses do not necessarily interrupt returns, for Beater, Shieldy and Ambrosia present again this season had lost their mates of last year. Stamp left on the spring migration three days before its mate of last winter, Bertie Bassett, arrived on Swan Lake. This suggests that Bertie might

Table II. Numbers and percentages of adult and second year Bewick's Swans returning to Slimbridge in seasons after the first sighting.

Season of first sighting	*Number seen for first time*	*Numbers and percentages* returning in subsequent seasons*									
		2nd		*3rd*		*4th*		*5th*		*6th*	
		No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
1963-64	18	13	*72*	11	*85*	11	*100*	9	*82*	7	*85*
1964-65	45	20	*44*	19	*95*	14	*74*	14	*100*		
1965-66	74	38	*51*	28	*74*	26	*93*				
1966-67	171	51	*30*	33	*65*						
1967-68	209	50	*24*								

Mean annual survival (from percentages returning in 3rd and subsequent seasons) = 85%.

* The number returning in each season is expressed as a percentage of the number present in the preceding season.

have got lost at the beginning of the season. There were also two cases of swans losing their mates during the winter. Pierre was on Swan Lake from 9th to 26th December with his mate Auguste and two cygnets. After two days of the family's absence Auguste returned alone with one cygnet. Muscat came to Swan Lake on 15th, 16th, 24th and 26th December with his mate Grape and two cygnets but they failed to find the food. However, on 14th January Grape alone came back with the two cygnets and having found the food became firmly established.

The photographic coverage of the swans has been much greater this season which will be a considerable advantage next season in identifying them when they return. The swans become more and more individual to us and it is because of their slight individual differences in head shape, posture, etc., that the photographs are of so much more help than just the identikit-type drawings based on bill pattern alone. With greater recognition and more ringed swans we hope that next season the accuracy of the study may be increased.

Ringing

Forty-seven swans flew into trees at night, crash landed and were caught and ringed this season, mostly towards the beginning of the winter when there were several nights with awkward winds. The tall coloured plastic rings with large numbers engraved on them have been used all winter and have proved very easily readable. There was some concern when a swan ringed this year, Bess, was noticed 72 days later without the plastic ring, though still carrying the metal ring on the other leg put on for control purposes. It is believed that the plastic ring was not glued on properly. When correctly used the glue is so strong that rings have had to be cut in order to remove them. Besides serving as a check on identification by individual characteristics, the large rings enable swans to be identified at other places in Britain. A ringed swan, Speckly, which was with us for 20 days at the end of last season, was seen this year on the River Cherwell floods near Banbury, but never came to Swan Lake. We hope that further reports of such ringed swans will give us a better idea of where our birds go when they are not at Slimbridge. We also hope to ring many more next season, perhaps using a decoy pipe catching method.

Out of the 47 swans ringed during the season only four were at all damaged in the crash landings which allowed them to be caught, Brimmer, Momac and Concorde, all caught on 22nd March, and Sahara, ringed earlier in the season. The first three all hit trees in the dark in an east wind and fortunately recovered fairly soon though Momac had to be kept in a pen for a ten day convalescence. Momac and Concorde, together with an undamaged swan, Feather, stayed on Swan Lake until 11th April, Momac leaving last on the morning of the 12th. Sahara was originally caught in the flight net on 23rd November, the only time it was used this season, and he seemed completely unhurt. The next night however a swan crashed into the television aerial of the hostel but managed to fly out to the Dumbles. This must have been Sahara as he was found four days later sitting on the Dumbles unable to walk or fly and surrounded by crows. He was put in a pen for eight days, having already lost over 2 lb. in weight. Put back on the pond to join his mate, Gobi, and cygnet, he then recovered quickly. Before his injury he had been a very powerful swan, almost top of the 'peck order', and on being returned to the pond, although far from fit was still top swan without actually having to assert his authority. The others carefully kept out of his way. One of the Kontiki cygnets was seen to crash

land on the island in Swan Lake and although it appeared all right at the time and managed to fly out with the others, it was missing the next day. Its body was found two days later in the Tack Piece where it had obviously landed and, being injured or too weak to go any further, had been found and killed by a fox. It had been ringed earlier in the season and had a cataract in one eye which may have accounted for its bad flying.

We have had four more recoveries notified of ringed swans: Bootsy, shot at Lake Laidze, near Talsi, Latvia, on 26th October 1967; Mrs. Blount, found dead in Co. Antrim, Northern Ireland, on 14th November 1968; Colin, found injured in Co. Donegal, Eire, on 9th November 1968; and Andy, found injured in Neubrandenburg, East Germany, on 18th November 1968. Andy subsequently flew off.

Behaviour

The increase in numbers this season and therefore in the time spent on daily identification gave little opportunity for the detailed study of aggressive behaviour in the swans. However, large numbers of aggressive encounters were recorded as were courtship displays in sub-adult swans. A cygnet belonging to a powerful pair, even when by itself, can chase off another adult or even a pair of adults which are below its parents in the 'peck order'. This behaviour is interesting because of its parallels in human society.

The behaviour of the swans during two thunderstorms was observed. The first thunderstorm was around midnight on the night of 21st December and the swans all clustered in the middle of the pond calling loudly. The second thunderstorm was just before dusk on 17th January and one thunderclap panicked the swans, 70-80 being put into the air at once and flying very hazardously because of the strong gusting south wind. On that evening all the swans had gone before dusk. There was one other night during the season when all the swans became thoroughly unsettled and went out leaving the pond empty at dusk. This was on 7th January when, with a very strong south-east wind, the first swans to leave found flying very difficult. Many had to land back on the pond, to avoid hitting trees and buildings. Seeing this going on, the remaining swans panicked, walked up the grass and took off.

Whooper Swans (Plate IV)

During the season 14 Whooper Swans *Cygnus cygnus cygnus* came to Swan Lake, the first arriving on 7th November. This bird, Whoopic, stayed on Swan Lake and took up with a Bewick's, Tahiri, until on 19th December he went away with one of three more Whoopers, including one cygnet, which had arrived the day before. He returned on 24th December with another Whooper, Toopic, with which he was apparently paired until he had a collision with a tree on 7th January. Toopic, during Whoopic's subsequent convalescence, gradually lost interest in him, becoming attached to a different swan, Looper, with which she left on 4th February. Whoopic stayed for a further 17 days after which he too left. Three other Whoopers became regulars during this time, a pair, Super and Duper, and also Trooper. They left with Looper and Toopic on 4th February. However, on 3rd March Toopic, Looper and a new bird, Swooper, came back together with the cygnet and six days later another new pair arrived, Snooper and Grouper. These six all left on 1st April. The behaviour of the Whoopers is quite different from that of the Bewick's. Although it is possible that all these Whoopers were sub-adult birds, they seemed to stay with one 'mate' for much shorter periods than do the Bewick's when they are sub-adult, as illustrated by Toopic who at the beginning of the season consorted with Whoopic, then later with Looper and Swooper and finally took Snooper from Grouper.

This is the first winter that Whoopers have come to Swan Lake (except for a pair which landed for ten minutes the year before) and there was little time to study their behaviour in detail, but there seems to be great scope in this field especially in comparison with the Bewick's and we hope to know more next year.

Mute Swans

Up to sixty Mute Swans *Cygnus olor*, mostly sub-adults, were present on Swan Lake throughout the winter, but no particular study of them was possible.

Observation facilities

Plate VI shows Swan Lake now edged with observation windows, the three great sheets of the Honorary Director's studio, the new Administrative Block's and, in between, the long glassed-in verandah of the Swan Observatory. This is open to Trust Members and Swan Supporters who can remain until half an hour after sunset to share the incomparable spectacle provided by the floodlit concourse of great white birds.

DAFILA SCOTT

Breeding Results 1968: Slimbridge Collection.

	Date of first egg	*Incubated by hens eggs*	*hatched*	*Hatched in incubator*	*Hatched by parents*	*Reared by parents*	*Total reared*
Magpie Goose	23.7	25	7				1
Fulvous Whistling Duck	7.4	66	37	10			35
Cuban Whistling Duck	28.4	18	4		6	5	9
Javan Whistling Duck	12.7	1					
White-faced Whistling Duck		20	14				12
N. Red-billed Whistling Duck		25	17				15
S. Red-billed Whistling Duck		27	18				16
Black Swan	25.1				3	3	3
Mute Swan						1	1
Black-necked Swan	9.2				5	2	2
Bewick's Swan	8.5	6	5		2		5
Trumpeter Swan	9.4	8	6		2	2	8
Swan Goose	4.4	8	6		5	4	7
Russian Bean Goose	28.4	18	2				2
Pink-footed Goose	21.4				7	6	6
European White-fronted Goose	1.5	7	5				5
Greenland White-fronted Goose	19.4	19	8				6
Lesser White-fronted Goose	28.4	12	11				9
Western Greylag Goose	5.4				17	17	17
Bar-headed Goose	25.4	24	11		5	5	16
Emperor Goose	27.4	16	10	1			6
Lesser Snow Goose		8	6		14	12	14
Greater Snow Goose	30.4				4	1	1
Atlantic Canada Goose	24.3				5	1	1
Moffit's Canada Goose		5					
Giant Canada Goose	29.3				5		
Lesser Canada Goose	21.4	5	3				3
Taverner's Canada Goose	11.4	4	2		1		2
Dusky Canada Goose	15.4				4		3
Cackling Canada Goose	25.5	5	3				2
Hawaiian Goose	16.2	72	30				25
Barnacle Goose	26.4				22	20	20
Black Brant	8.5	11	5				4
Red-breasted Goose	14.5	16	7				5
Ruddy Shelduck	3.4	20	6				5
Cape Shelduck	23.3	10	7				7
New Zealand Shelduck	15.4	6	5				4
Common Shelduck	3.5	7					
Abyssinian Blue-winged Goose	15.5	7	6		2	1	7
Andean Goose	6.4				8	5	5
Ashy-headed Goose	3.5	5	1		2	1	1
Ruddy-headed Goose	7.4	5	3		4	4	7
Lesser Magellan Goose		10			6	1	1
Greater Magellan Goose	19.4	10					
Cereopsis Goose					4	1	1
Patagonian Crested Duck	23.3	12	10		8	8	18
Andean Crested Duck	9.2	20	8				8
Marbled Teal		10	7	55			42
Bronze-winged Duck	3.4	5					
Cape Teal		14	12	5			15
Hottentot Teal	12.7	2					
Versicolor Teal	17.4	25	14	2			11
Red-billed Pintail	11.6	17	9				7
Bahama Pintail	8.5	31	29				29
Chilean Pintail	29.3			12			12
Northern Pintail	22.4	5	2				2
Kerguelen Pintail	16.4	14	4				4
Chilean Teal	25.3	18	11	26			30
Sharp-winged Teal	10.5	5	1				
Falcated Teal	20.5	20	3				1
Australian Grey Teal	1.4	30	14				13
Chestnut-breasted Teal		19	10	4	5	5	14
New Zealand Brown Teal	8.2	17	10				6
Greenland Mallard		6					
Hawaiian Duck	10.4	20	15		3	3	13

	Date of first egg	*Incubated by hens eggs*	*hatched*	*Hatched in incubator*	*Hatched by parents*	*Reared by parents*	*Total reared*
Laysan Teal	12.4	11	8	16	3	3	25
North American Black Duck	21.4			6			6
Indian Spotbill	26.4	13	3				1
Chinese Spotbill		12					
New Zealand Grey Duck				6			6
Pelew Island Grey Duck		8		6			6
Philippine Duck	13.5	13	9	5			14
African Yellowbill	17.3			5			5
Abyssinian Yellowbill	18.3			5			5
African Black Duck	13.2	6	1				
Gadwall	7.4			30			30
European Wigeon				15			9
American Wigeon				7			6
Chiloe Wigeon	20.4	42	26				9
Blue-winged Teal	28.4	34	24	4			14
N. Cinnamon Teal	3.5	19	9				8
Argentine Red Shoveler	4.5	7	5				1
Cape Shoveler	5.5	12	6				4
New Zealand Shoveler	7.5	8	3				1
Common Shoveler	4.5	19	10				6
Ringed Teal	1.5	36	13	5			10
Common Eider	1.5	16	8	4			12
Red-crested Pochard	6.4	8	3	16			15
Rosybill	5.6	22	15	3			13
African Pochard		4					
European Pochard	4.5	7	5				5
Redhead	8.5	7	4	8			12
Common White-eye		18	18	4			16
Baer's Pochard	13.6	7	6				6
Australian White-eye	28.4			17			14
New Zealand Scaup	15.5			8			8
Lesser Scaup		22	16	5			15
European Greater Scaup		6	1				1
Brazilian Teal		8	3				3
Maned Goose	19.3	10	6				5
Mandarin Duck				57			57
North American Wood Duck				142			72
Comb Duck	25.6	42	32	4			22
Hartlaub's Duck	1.7	8	8				6
Muscovy Duck					9	3	3
European Goldeneye	22.4	11	1				1
Smew	1.6	10	8				6
Hooded Merganser	28.4	8	1				
Red-breasted Merganser	20.6	7	2				
North American Ruddy Duck					40	10	10
African White-backed Duck		6					
Crested Screamer	5.4				4	2	2
Rosy Flamingo	15.6				1	1	1

Note: Where no date is given for first egg, nests were not found until the clutch was complete.

Breeding Results 1968: Peakirk Collection.

	Date of first egg	*Eggs incubated*	*Eggs hatched*	*Young reared*
Fulvous Whistling Duck	17.7	8	5	4
Black Swan	27.1	12	6	4
Black-necked Swan	27.2	3		
Swan Goose	8.4	8	2	
Pink-footed Goose	1.5	14	5	3
Greenland White-fronted Goose	2.5	6		
Lesser White-fronted Goose	21.5	6	1	
Western Greylag Goose	29.3	10	7	7
Emperor Goose	24.5	13	1	
Taverner's Canada Goose	3.5	6	1	1

	Date of first egg	*Eggs incubated*	*Eggs hatched*	*Young reared*
Cackling Canada Goose	29.4	11	8	6
Barnacle Goose	5.5	24	1	
Red-breasted Goose	19.6	5	3	2
Ruddy Shelduck	25.4	9		
Cape Shelduck	3.4	5	3	3
Common Shelduck	6.5	13	7	7
Greater Magellan Goose	27.4	4	2	1
Cereopsis Goose	7.2	3		
Marbled Teal	6.7	9	5	2
Bahama Pintail	22.5	22	12	6
Chilean Pintail	28.4	14	8	8
Northern Pintail	4.5	21	12	8
Chilean Teal	10.4	18	11	10
European Green-winged Teal	6.6	7	4	
Falcated Teal	13.6	7	2	1
Chestnut-breasted Teal	16.5	7	2	
North American Black Duck	9.5	7	5	5
Laysan Teal	28.4	20	10	9
Chinese Spotbill	10.5	20	3	2
African Black Duck	31.3	1		
Gadwall	8.5	11	4	2
European Wigeon	30.4	31	18	14
American Wigeon	14.6	11	2	1
N. Cinnamon Teal	7.6	6		
Red-crested Pochard	3.4	44	12	7
Rosybill	1.6	5		
European Pochard	19.5	13	8	5
Australian White-eye	8.5	7	7	6
New Zealand Scaup	11.6	7	7	
Tufted Duck	22.5	35	7	4
Maned Goose	23.4	6	2	2
Mandarin Duck	19.4	25	9	3
North American Wood Duck	28.3	38	17	8
European Goldeneye	5.5	1		
North American Ruddy Duck	15.6	23	7	3

Breeding the Rosy or Caribbean Flamingo at the Wildfowl Trust, Slimbridge

It was not until 1961 that it was decided to add flamingos to the waterfowl collection at Slimbridge. We made a start by having some 12 Chilean Flamingos *Phoenicopterus ruber chilensis* which were put into our South American Pen. These were followed by Greater and Lesser Flamingos *Phoenicopterus ruber roseus* and *Phoeniconaias minor* from Kenya, which went to our African enclosure. The Rosy Flamingos *Phoenicopterus ruber ruber*, which we were most anxious to have, were extremely difficult to come by, and our first birds were a fine pair presented by Antwerp Zoo. Somewhat later we were able to add a consignment from a Florida pet store. It was necessary to learn as much as possible about the husbandry of these beautiful birds, so we sought information from all the Zoos and Collections that kept flamingos. Perhaps the most significant remark was 'Not to worry, it will be seven years before you breed them'—and indeed this proved to be true. But in the meantime we went to a great deal of trouble to give them the right feed. Everyone seemed to have different ideas, but we have evolved a 'flamingo soup' that seems satisfactory for keeping the birds not only in good condition but also in good colour. Initially we bought meals and whole dried shrimps and mixed them together in our cement mixer! We now have a proper food mill and through this are putting equal quantities of wheat, whole maize, poultry biscuit, turkey starter crumbs and dried shrimp. To this is added minced carrot, beetroot and lettuce, along with Canthaxanthin and Rhodophyl for colour maintenance. Special concrete feeding basins were constructed and these are regularly and scrupulously cleaned.