THE BREEDING SEASON, 1954

By **S. T. Johnstone**

THE 1954 breeding season has no claim to any records save, perhaps, that for adverse weather conditions.

The relatively small number of eggs laid by the ducks was a reflection of the cold and wet spring. A comparison over the last three years for three common species, of which the numbers of pairs in the collection remained constant, is as follows :

TABLE I

Species	Number of Eggs		
	1952	1953	1954
Pintail	48	40	22
Wigeon	77	50	16
Shoveler	45	70	37

A large proportion of the pens were subjected to flooding in early June and in one night the water rose 18 inches with disastrous effect to the Carolinas and one or two other species that had been left to incubate their own eggs. To our consternation we found that the sitting boxes were under water and as there were at the time over a hundred bantams incubating, we had considerable losses both of incubating eggs and hatching young.

Among the 73 forms to lay, ten did so for the first time (see Table III). Indian Spotbill *Anas poecilorynchа poecilorynchа*, Canvas-back *Aythya valisneria* and Southern Pochard *Netta erythropthalma* were new species to be reared at the New Grounds.

A Baikal Teal *Anas formosa* laid two eggs in the Orchard pen. One egg was fertile and duly hatched, but the duckling was badly deformed and had to be destroyed.

Another interesting species to lay was the Ringed Teal *Anas leucophrys*, but the eggs were infertile as we only had two females in the collection at the time. The arrival in December of a fine male from South America gives hopes for the coming season.

The effect of luteinising hormone on the Ne-ne goose, Emma, in 1953 encouraged us to try our luck with the Brent geese.[1] Accordingly with the kind help of Dr Wynn Jones of Bristol University, two females, one of the light-bellied and one of the dark-bellied form, were treated. After an interval of a fortnight six eggs were laid in the course of a week. In no case was any

[1] Brents have only been recorded once to have bred in captivity, in the collection of Mr R. E. M. Pilcher at Boston, Lincs, in 1953.

attempt made to nest, the eggs being laid on the greensward where they were subjected to the attention of crows, in spite of a dawn to dusk vigil. We hope to renew the experiment in 1955 keeping the particular birds in a relatively small pen where we can exercise greater control.

A mains electricity supply became available in February 1954 and we were able to instal two pumping systems facilitating a greatly improved flow of water through the rearing pens. This improvement in the movement of the water we believe to be a major factor in reducing the number of deaths from the parasitic worm *Acuaria uncinata*. This year those affected were confined to three African Black Duck and some Carolinas. The majority of deaths were attributed to climatic conditions. In a number of cases necrosis of the liver was detected, a condition that may well be associated with a protein deficiency and we propose to increase the content of the mash by some seven per cent.

Table II shows the rearing figures for the years 1950 to 1954 inclusive.

TABLE II

Year	No. of Forms Reared	No. of Cygnets and Goslings	No. of Ducklings	Total No. Reared
1950	39	61	221	282
1951	44	72	338	410
1952	59	111	350	461
1953	51	137	248	385
1954	46	125	144	269

It was felt that the elimination of hens and bantams as foster parents would have distinct advantages, and we were, therefore, anxious to test electrically-heated brooders of a type we had been developing over the last three years. We were able to do so this season, and several species of duck, and a brood of Canada goslings, were reared successfully under these conditions.

After the early days, the broods were allowed to run free with each other in a relatively large pen. Whilst the added exercise seemed to assist the growth and well-being of the birds, there were a number of deaths due to the attentions of vermin, which might have been avoided by the presence of the hens and bantams.

The following species, apart from Mallard, were successful in rearing their own young : Cape Shelduck *Tadorna cana*, Gadwall, *Anas s. strepera*, Chestnut Teal *A. castanea*, European Wigeon *A. penelope*, Cinnamon Teal *A. cyanoptera septentrionalium*, and Ruddy Duck *Oxyura j. jamaicensis*.

Ruddy Duck family

TABLE III

HATCHING AND REARING, 1954

Species	Breeding Pairs	Date of First Egg	No. of Eggs Laid	Infertile	Hatched	Reared
Black-billed Whistling Duck ..	1	11.6.54	6[1]	5	0	—
Southern Red-billed Whistling Duck	3	27.3.54	33	29	0	—
White-faced Whistling Duck ..	1	28.4.54	11	3	4	0
Black Swan	1	14.3.54	4[1]	2	1	0
Coscoroba Swan	1	12.3.54	4	2	2	1
Canada Goose	1	9.4.54	6	—	6	5
Dusky Canada Goose	2	14.4.54	15	8	7	1
Taverner's Goose	2	25.4.54	17	10	5	5
Cackling Goose	2	24.4.54	5	1	4	2
Ne-ne Goose	5	24.2.54	24	13	5	4
Barnacle	4	4.5.54	20	9	11	11
Dark-bellied Brent Goose .. .. / Light-bellied Brent Goose ..	2	3.6.54	6[1]	—	0	—
Swan Goose..	2	11.4.54	12	2	7	5
Bean Goose	2	12.4.54	11	6	4	3
Greenland Whitefront	2	17.4.54	14	11	0	—
Lesser White-fronted Goose ..	3	27.4.54	17	9	7	7
Greylag	3	10.4.54	21	6	14	11
Eastern Greylag	1	11.4.54	3	—	3	3
Bar-headed Goose	5	10.4.54	38	22	16	9[2]
Emperor Goose	2	23.5.54	12	6	6	2
Lesser Snow Goose..	4	11.4.54	58	32	19	—
„ white form	—	—	—	—	—	6
„ blue form	—	—	—	—	—	3
Greater Snow Goose	4	1.5.54	50	33	16	3[3]
Ross's Snow Goose	5	6.5.54	23	6	17	8
Cape Shelduck	2	28.2.54	12	—	12	11
New Zealand Shelduck	1	19.4.54	4	3	1	1
Radjah Shelduck	1	25.4.54	3[1]	3	0	—
Common Shelduck	1	17.4.54	10	1	9	5
Egyptian Goose	1	12.3.54	7	1	4	4
Egyptian Goose Grey Form ..	1	12.3.54	6	5	0	—
Orinoco Goose	2	13.3.54	34	4	28	22
Abyssinian Blue-winged Goose ..	1	20.5.54	7	—	4	0
Ashy-headed Goose	1	9.5.54	5	1	4	0
Cereopsis Goose	1	26.12.53	6	4	2	0
Andean Crested Duck	2	25.3.54	18	9	1	0
Marbled Teal	3	3.5.54	41	17	16	6
Versicolor Teal	1	21.3.54	11	1	10	1
Puna Teal	2	17.3.54	20	8	7	0
Bahama Pintail	2	25.5.54	11	6	5	0
Common Pintail	4	17.4.54	22	4	18	2
Chilean Pintail × Cape Teal (hybrids)	1	14.6.54	8	3	5	4
Sharp-winged Teal	1	22.5.54	4[1]	2	0	—

[1]First at New Grounds.
[2]Also 3 hybrids with Greylag.
[3]Also 2 hybrids with Greylag.

TABLE III—*continued*

Species	Breeding Pairs	Date of First Egg	No. of Eggs Laid	Infertile	Hatched	Reared
Baikal Teal	1	1.6.54	2[1]	1	1	0
Australian Grey Teal	1	10.5.54	11[1]	10	1	0
Chestnut-breasted Teal	3	9.5.54	11	2	9	2[3]
Florida Duck	1	16.4.54	16	16[2]	0	—
Mottled Duck	2	25.5.54	9	5	4	3
Indian Spotbill	2	5.4.54	21[1]	8	11	5
Australian Grey Duck	2	12.3.54	12	6	6	4
Philippine Duck	6	15.4.54	57	12	40	13[4]
South African Yellowbill	2	27.3.54	22	10	10	8
South African Black Duck	1	27.3.54	4	1	3	0
Falcated Duck	1	24.5.54	2	1	1	0
Wigeon	2	16.5.54	16	9	6	1
Chiloe Wigeon	3	26.4.54	34	13	14	13
Cinnamon Teal	5	10.4.54	61	14	35	11[5]
Cape Shoveler	1	23.4.54	18	3	15	0
Common Shoveler	3	15.4.54	37	7	27	6
Ringed Teal	1	—	6	6[2]	0	—
Red-crested Pochard	3	15.3.54	28	4	24	6
Rosybill	3	22.4.54	9	3	5	5
Southern Pochard	1	12.7.54	6[1]	4	1	1
Canvasback	1	27.4.54	8[1]	2	6	1
Redhead	3	18.4.54	36	17	18	1
Tufted	3	30.4.54	21	5	13	7
Scaup	1	2.6.54	7	1	5	2
Mandarin	3	15.4.54	26	18	6	3
Carolina	10	17.3.54	152	63	82	12[6]
Eider	3	27.4.54	15	5	10	4
Barrow's Goldeneye	1	7.5.54	4	4	0	—
Red-breasted Merganser	1	20.5.54	32	29	3[7]	0
Ruddy Duck	3	5.6.54	18	11	7	5[8]

[1]First at New Grounds.
[2]No male in collection.
[3]Plus 1 reared by parents.
[4]Plus many hybrids (× Mallard).
[5]3 reared by parents.
[6]Large numbers lost to *Acuaria*.
[7]2 hybrids × Goosander.
[8]Reared by parents.