

Salvadori's Duck *Anas waigiensis*

SECTION I: THE TRUST COLLECTIONS

STAFF:

S. T. Johnstone is Curator of the *Slimbridge Collection* and is assisted by six Wardens: M. Davy and Mrs. P. Hall (who share with the Curator the rearing of young birds) and L. de Bastyai, I. Fairbairn, M. W. Henschman and L. T. C. Shakespear. L. P. Alder is the gardener, with G. Huggins and J. Parsons as groundsmen. Mrs. S. T. Johnstone is in charge of the gate-hut and of sales, assisted by Miss J. Price and Mrs. E. Warren. Miss J. E. Overman is secretary to the Curator.

N. Dudley is Curator of the *Peakirk Collection* and is assisted by G. Cole and K. M. Crowson. Miss N. Hall is in charge of the gate-hut.

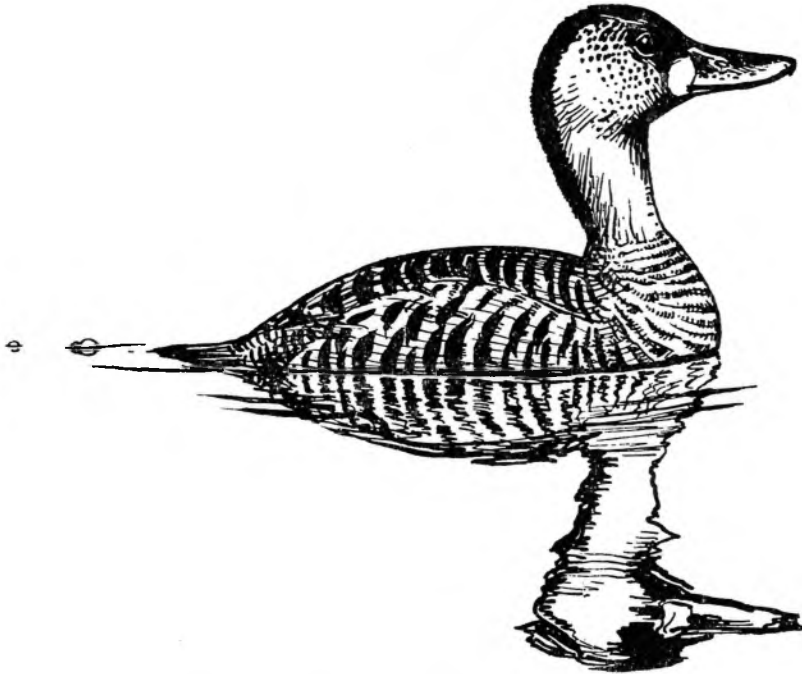
The senior members of the *Administrative staff* are the Secretary, E. A. Scholes, and the Bursar, H. G. Gower. D. Eccleston and C. M. Garside are assistant secretaries. Miss W. Young is in charge of the hostel, assisted by Mrs. H. Cobb.

THE development of the new piece of land at Slimbridge enclosed in November 1957 was completed in March 1959. Most of the new pens have already acquired quite a mature appearance and they add greatly to the attractiveness of the New Grounds. The lay-out of the whole area is illustrated by the map on the inside of the front cover.

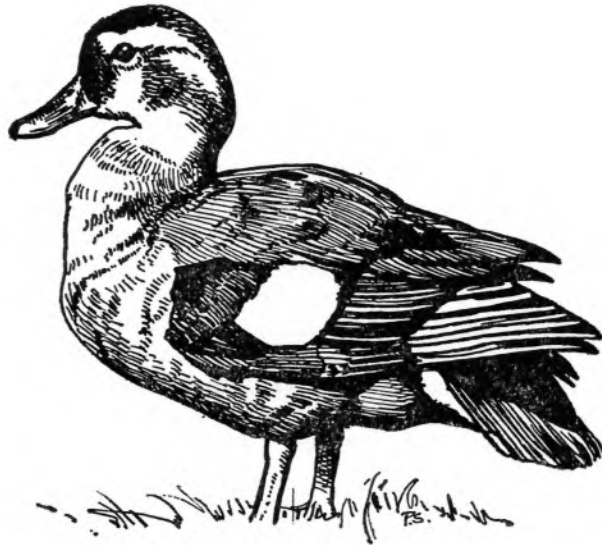
One of the problems of keeping a 'classified' collection grouped in separate pens (European, African, and so on) is to keep the pinioned birds where they belong. The multiplication of our pens, and of our visitors, created a need for devices enabling visitors to move readily through the collection without being constantly required to open and close gates. Several turnstiles and a variety of raised stiles alongside the gates on the roadway have been built, and in some cases rebuilt, and satisfactorily duck-proof patterns have been evolved. Full-winged birds (now more than 250, of 50 kinds, with up to 1500 wild additions) persist, of course, in making nonsense of the attempts at segregation, but the European Pen at least usually contains only what it claims to.

Several of the important additions to the collection at the end of 1958 which belong properly to the period covered by this Report (September 1958—August 1959) were mentioned in the Tenth Report. Of these, the Laysan Teal *Anas platyrhynchos laysanensis* and Australian White-eye *Aythya a. australis* claim repeated notice because, as recorded below, both bred in the summer of 1959, less than a year after arrival.

The principal additions in the first eight months of 1959 were a flock of Salvadori's Ducks *Anas waigiensis*, brought from New Guinea by the Curator. We are greatly indebted to Sir Edward Hallstrom who not only made the birds available from his Collection at Nondugl but also contributed substantially towards the costs of flying them to England. Fifteen of these rare and little known ducks arrived at Slimbridge in May, 1959. Unfortunately they have proved difficult to establish and several died before the end of the year. They are shy and undemonstrative but it is greatly to be hoped that the survivors will acclimatise themselves. Though they have bred at Nondugl, the clutch size and incubation period are not recorded and, more important, no ethologist has yet seen their full sexual displays. Their taxonomic affinities are still far from certain and the information provided by a behaviour study is likely to be of decisive importance.



African Whitebacked Duck *Thalassornis leuconotus*



Female Ringed Teal *Anas leucophrys*

THE BREEDING SEASON 1959

S. T. Johnstone

Slimbridge

The ways of waterfowl are inscrutable. In 1959 we reared 140 cygnets and goslings and over 540 ducklings, substantial numbers, but 150 less than in the wet summer of 1958, despite the exceptionally fine weather. The difference was not due to increased difficulties in rearing, because in each year about 70% of all the young birds hatched were successfully reared, a proportion as great as would normally be found in the wild. But the number of eggs laid in 1959 was substantially less than in 1958, and only 46% of 1380 eggs set under hens or in incubators hatched, a disappointingly low figure due to low fertility and a large number of early embryonic deaths. It seems unlikely that there are any dramatically simple remedies awaiting discovery, but there is a pressing need for work on these problems in the avicultural field.

The most serious example of low fertility and hatchability continues to be that of the Hawaiian Goose. A slight improvement in fertility occurred in 1959, 47 of the 91 eggs laid (52%) being fertile. (In 1958 the fertility was 45%). But only 24 hatched, from which 21 were reared. The total stock originating from the three brought to Slimbridge in 1950 now stands at 99—77 at Slimbridge, 2 at Peakirk, the remainder dispersed in seven other collections in Europe and North America. If the fertility of these birds approached that of other species of geese we would have had several hundred by now, which would have created a housing shortage but a welcome kind of embarrassment. Unfortunately our efforts to return Ne-nes to Hawaii, for release in the wild or to supplement the captive breeding stock there, are still held up.

There were several exciting new breeding records, including Spotted Whistling Duck, Laysan Teal, Australian White-eye, Trumpeter Swan, Baikal Teal and Hooded Merganser. The first three had never, so far as we know, previously bred in captivity, though Laysan Teal were successfully raised simultaneously in America. The Trumpeter Swan laid two eggs, but to our dismay one failed to hatch and the other was taken by an unknown predator. The nesting of the Hooded Mergansers also ended in tragedy; five of the six eggs reached the pipping stage but no ducklings emerged.

Other notable breeders included Hartlaub's Duck which nested unsuccessfully last year but raised five young this time—the first ever reared in captivity; Bewick's Swan for the third year, Black Brant for the second time, both forms of Comb Duck, Barrow's and European Goldeneye and Red-breasted Mergansers.



Downy Spotted Whistling Duck
Dendrocygna guttata

First breeding of the Spotted Whistling Duck (*Dendrocygna guttata*)

Five Spotted Whistling Ducks live in one of the heated aviaries. Late in August a female began laying in a wooden kennel. She laid eleven eggs in all. The eggs (not described hitherto, according to Delacour, *Waterfowl of the World*, vol. i, p. 35, 1954) were dead white like those of other Whistling Ducks, but more ovate and of a finer texture. The average size of the eggs was 52 mm. x 38 mm. and their fresh weight 49 grams.

The eggs were left for the parents to incubate. But on the twenty-first day both birds were in the run and the eggs cold. A small electric incubator is kept running for such emergencies and the eggs, after candling for fertility, were transferred to it. After a further ten days, all eleven eggs hatched.

The young are dark brown with the characteristic head and neck markings of the genus. There are two bands of cream running down the back, instead of the spots found in all other species except *D. eytoni*.

The ducklings were transferred to a brooder heated by an infra-red lamp. They quickly became 'imprinted' on the hand of the person tending them and would climb on to it whenever the feeding dishes were moved. Young *Dendrocygna* are usually very wild so that this tameness was as remarkable as it was enchanting.

They were offered freshwater shrimp, minced egg, duckweed and maggots, but they did not feed well. Two died after three days and a third on the following day. A change in treatment was clearly essential. No broody hen was available as a foster-mother, so it was decided to try offering the ducklings to a female Cuban Whistling Duck *D. arborea* that was rearing three month-old hybrid offspring of her own in the aviary. The Cuban mother was shut in her hut and her babies removed to the brooder. The

surviving Spotted ducklings were then put in with her—and an infra-red lamp as a precautionary source of heat. The female made no immediate attempt to take care of the brood, but at least refrained from attacking them. When a visit was paid to the hut after three hours, the female reacted by calling the youngsters to her and she seemed to be teaching them to eat turkey starter crumbs. After twenty four hours the hut was opened and the family allowed out in the run. All seemed well, but a later inspection showed that the female had left the brood and was walking up and down the wire netting trying to get out. Six of the ducklings sat huddled together. One was dead and the eighth was prostrate. The six were shut up in the hut and the prostrate one returned to the incubator. After a few hours it had revived and was returned to the brood.

Five days later the foster mother had forgotten her own ducklings and had become greatly attached to her new family. The remaining seven ducklings were reared without further trouble. Feathering began at 27 days and was complete in seven weeks. It was surprising to be able to rear these tropical ducks in an English October and November.

Breeding of the Laysan Teal (*Anas platyrhynchos laysanensis*)

The pair of Laysan Teal sent to us by the U.S. Fish and Wildlife Service, which only arrived at Slimbridge in 1958, seemed happy and very tame. The female first laid a clutch of four relatively enormous Mallard-like eggs, which proved infertile, then she produced a second clutch of six. We gave three to a broody bantam and left three with the parent. After 26 days she hatched one ginger-coloured duckling that was soon killed by a weasel. The bantam also hatched one duckling and this, a male, was safely reared.

Breeding of Hartlaub's Duck (*Cairina h. hartlaubi*)

The pair of Hartlaub's Ducks that had produced three clutches, 24 eggs in all, in 1958, but failed to rear any ducklings that year, were successful in 1959. Early in the year they had been moved to one of the new aviaries, with more space than in their old quarters. It seemed that the move might have disturbed them, for no eggs were laid until the end of July, more than two months after the date of the first egg in 1958. A clutch of nine was laid. The average size of the eggs was 53 x 40 mm. and their fresh weight 51 grams.

In 1958 the female made no attempt to incubate, but this year she sat very persistently. She produced a vast quantity of pale grey down. Eight ducklings hatched after 32 days. The ducklings are brown with a black cap on the head, yellow underparts and yellow blotches on the wings and the sides of the back. There is a distinct eye stripe. The bill and the longish tarsus and feet are black.

Both parents were very aggressive in defence of their brood. The ducklings began to feather at 28 days, and were fully-feathered at eight weeks. The five ducklings which survived were then separated from their parents because of the bellicose intentions of the male towards his offspring.

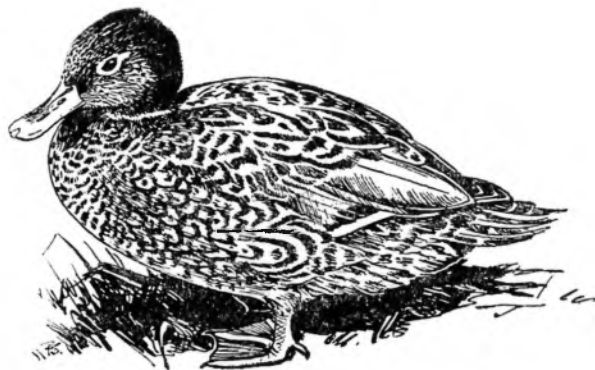
In contrast to the juvenile plumage of the related Comb Duck, which is mottled and quite different from the adults, the first plumage of young Hartlaub's Ducks is hardly different from the black head and chestnut body of their parents.

BREEDING ANALYSIS 1959—SLIMBRIDGE

ENTRIES in the column "reared by parents" are additional to those in "reared artificially." In many cases the numbers of eggs laid, and lost, by females left to incubate are not known; for uniformity no details of eggs laid are given under "reared by parents." Hybrids are omitted.

Species and race	reared artificially			reared by parents
	eggs set	hatched	reared	
Magpie Goose	8	1	1	7
Spotted Whistling Duck	11	11	7	
Wandering Whistling Duck	8	1	1	
Fulvous Whistling Duck	58	50	13	20
Cuban Whistling Duck	14	2	2	7
Red-billed Whistling Duck	12	2	2	10
Black Swan				5
Black-necked Swan				1
Bewick's Swan	5	0		2
Trumpeter Swan	2	0		
Swan Goose	9	3	3	
Pink-footed Goose	4	0		
European White-fronted Goose	6	1	0	
Greenland White-fronted Goose	16	0		
Lesser White-fronted Goose	6	3	3	
Western Greylag Goose	22	16	12	8
Bar-headed Goose	31	6	2	
Emperor Goose	31	11	3	
Lesser Snow/Blue Goose	17	7	4	
Greater Snow Goose	16	6	4	
Ross's Goose	17	8	8	
Great Basin Canada Goose	9	5	5	
Taverner's Canada Goose				3
Dusky Canada Goose	14	8	8	2
Cackling Canada Goose	1	0		
Hawaiian Goose	91	24	21	
Barnacle Goose	30	17	17	
Black Brant	7	4	3	
Red-breasted Goose	18	13	5	
Cape Shelduck				6
New Zealand Shelduck	2	0		
Common Shelduck	12	12	12	
Egyptian Goose	14	0		
Orinoco Goose	20	3	1	
Abyssinian Blue-winged Goose	9	3	1	
Ashy-headed Goose	17	14	11	
Ruddy-headed Goose	4	0		
Lesser Magellan Goose	12	6	2	
Greater Magellan Goose				5
Cereopsis				3
Andean Crested Duck	14	6	2	
Bronze-winged Duck	6	0		
Marbled Teal	21	13	13	
Cape Teal	15	9	9	4
Silver Teal	44	14	4	
Puna Teal	5	0		
Bahama Pintail	16	14	9	
Northern Pintail	11	7	2	
Chilean Teal	8	0		
Baikal Teal	6	5	2	
Falcated Teal	2	0		
Australian Grey Teal	6	0		
Chestnut-breasted Teal	32	26	26	5
Hawaiian Duck	7	3	2	
Laysan Teal	10	2	1	
N. American Black Duck	12	7	5	
Indian Spotbill	7	5	0	
Chinese Spotbill	18	18	15	

Species and race	reared artificially			reared by parents
	eggs set	hatched	reared	
Australian Black Duck	9	0		7
Philippine Duck	29	16	14	
African Black Duck	25	13	9	
Gadwall	20	16	16	
European Wigeon	8	8	6	
American Wigeon	17	8	8	
Chiloe Wigeon	23	5	3	5
Blue-winged Teal	1	0		
Cinnamon Teal	42	31	15	
Red Shoveler	7	3	0	
Cape Shoveler	10	7	1	
Common Shoveler	16	14	5	
Ringed Teal	40	23	17	7
European Eider	12	6	5	
Red-crested Pochard	71	32	28	2
Rosy-bill	11	4	2	
Southern Pochard	15	12	12	
Canvasback	7	7	0	
European Pochard	6	6	6	
Redhead	32	13	5	
Common White-eye	30	22	20	2
Australian White-eye	8	7	7	3
New Zealand Scaup	16	6	4	
Lesser Scaup	24	13	10	
European Greater Scaup	8	3	3	
Brazilian Teal	6	0		
Mandarin Duck	23	11	9	
N. American Wood Duck			66	
Comb Duck	6	0		
S. American Comb Duck	6	4	4	
Hartlaub's Duck				5
Spur-winged Goose	8	0		
Barrow's Goldeneye	15	6	3	
European Goldeneye	21	11	2	
Hooded Merganser	6	0		
Red-breasted Merganser	9	3	2	
N. American Ruddy Duck				over 30



Laysan Teal *Anas wyvilliana laysanensis*
Immature male reared at the Trust

BREEDING ANALYSIS 1959—PEAKIRK

Species	No. of breeding pairs	Date of first egg	No. of eggs	Hatched	Reared
Fulvous Whistling Duck	2	18.5	30	—	—
Swan Goose	1	10.4	10	6	3
European White-fronted Goose ..	—	25.4	10	—	—
Lesser White-fronted Goose ..	1	19.4	3	—	—
Western Greylag Goose ..	1	24.3	7	7	7*
Eastern Greylag Goose ..	3	10.3	18	3	3*
Barheaded Goose	1	25.4	12	2	1
Emperor Goose	—	11.5	25	—	—
Blue Snow Goose	1	7.5	5	2	—
Greater Snow Goose	—	8.5	5	1	1
Ross's Snow Goose	1	14.5	3	—	—
Lesser Canada Goose	1	30.4	7	1	1
Dusky Canada Goose	1	3.5	5	2	—
Hawaiian Goose	1	17.3	3	2	1
Barnacle Goose	3	7.5	15	—	—
Cape Shelduck	1	20.2	7	5	5
Common Shelduck	2	5.4	11	9	9
Egyptian Goose	1	19.2	5	3	3*
Ashy-headed Goose	1	18.4	5	1	—
Lesser Magellan Goose	1	30.4	1	1	1
Greater Magellan Goose	1	24.3	12	2	1
Marbled Teal	1	25.4	4	4	4
Cape Teal	3	11.5	29	20	12
Puna Teal	1	4.4	4	2	2
Bahama Pintail	6	13.5	45	31	31
Pintail	1	13.5	4	—	—
Chile Teal	3	14.3	22	13	10
Chestnut-breasted Teal	2	30.3	11	9	9
North American Black Duck ..	1	10.4	20	10	10
Hawaiian Duck	1	19.4	5	—	—
Chinese Spotbill	1	12.4	27	12	12
New Zealand Grey Duck	1	12.5	7	6	4
Philippine Duck	4	10.5	25	7	5
African Black Duck	1	27.2	5	3	3
Gadwall	2	30.4	14	12	10
European Wigeon	—	25.5	14	—	—
American Wigeon	1	25.5	7	1	—
Chiloe Wigeon	1	13.5	10	—	—
Cinnamon Teal	4	20.4	33	22	13
Garganey	3	1.5	23	19	13
Cape Shoveler	1	21.8	9	—	—
Common Shoveler	1	1.5	9	6	3
Ringed Teal	1	1.7	3	3	2
Red-crested Pochard	8	4.4	43	17	16
Rosybill	3	9.5	26	20	20
Redhead	1	11.5	9	3	2
Common White-eye	1	3.5	6	4	4
Tufted Duck	1	9.5	7	—	—
European Greater Scaup	1	12.6	5	—	—
Mandarin	6	3.5	15	20	14
Carolina	7	20.3	228	119	75
North American Ruddy Duck ..	2	15.6	14	12	6*

* reared by parents



VISITORS TO THE COLLECTIONS

THE promotion of public interest in wildfowl is one of the main objects of the Trust. The two Collections are our most important means of arousing and maintaining interest. The most direct measure of their success is provided by the numbers of people visiting Slimbridge and Peakirk each year. The graph of Figure 1 records these numbers. Exact figures were not compiled before 1957 so that the earlier part of the Slimbridge curve is only approximately correct—and even rough estimates seem to be lacking for 1950 and 1952. Peakirk was not opened until April 1957.

It appears that after the great surge in the number of visitors to Slimbridge from 1954 to 1956 the Collection is now established in the public mind as a rural attraction the popularity of which will vary from year to year with changes in the weather and other factors such as transport facilities, or for no obvious reasons, as happens at other zoos, or great country houses, or museums. We can never hope to attract nearly two million people a year as London Zoo now does and even Whipsnade's 600,000 might be difficult to satisfy, but it ought to be possible to increase our visitors to nearly twice their present level. Figure 2, which compares the numbers of visitors each month in the last three years at Slimbridge and at Peakirk, suggests how this might be attempted.

At present the busiest month at Slimbridge is August, although the largest daily numbers have been during the Whitsun holidays. At Peakirk the August peak is much less marked. The difference seems likely to be due to the large number of people who come to Slimbridge on passage to holiday resorts in the south-west, Peakirk not being close to such a stream. The sad fact is that July and August are the worst months to look at waterfowl, since most of the birds are miserably moulting or in 'eclipse,' so that if visitors are to be favourably impressed they must be encouraged to come at other times. The birds are at their most beautiful and entertaining on mild winter days. Such days will not occur at week-ends as often as we would wish, but efforts must be made to persuade potential visitors that the winter is more rewarding than the summer. A campaign to establish a winter-visiting tradition will stand a much greater chance of success if better facilities, such as shelters and a restaurant, can be provided to offset the discomforts of promenading on a typical winter's day.

From the attendance figures Peakirk appears to have made little progress in the last two years (thanks to the first flush of visitors after the opening) but closer inspection of Figure 2 shows that a significant improvement took place during 1959 and it is reasonable to suppose that an upward trend should continue for several years yet. It may be even harder to increase winter visiting here than at Slimbridge since it lacks the lure of wild geese in the immediate vicinity.

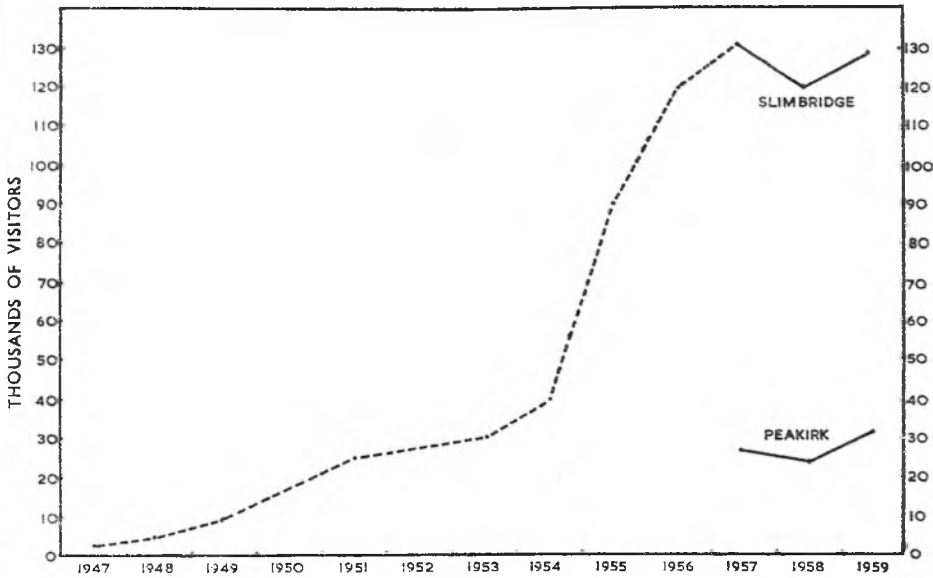


FIGURE 1

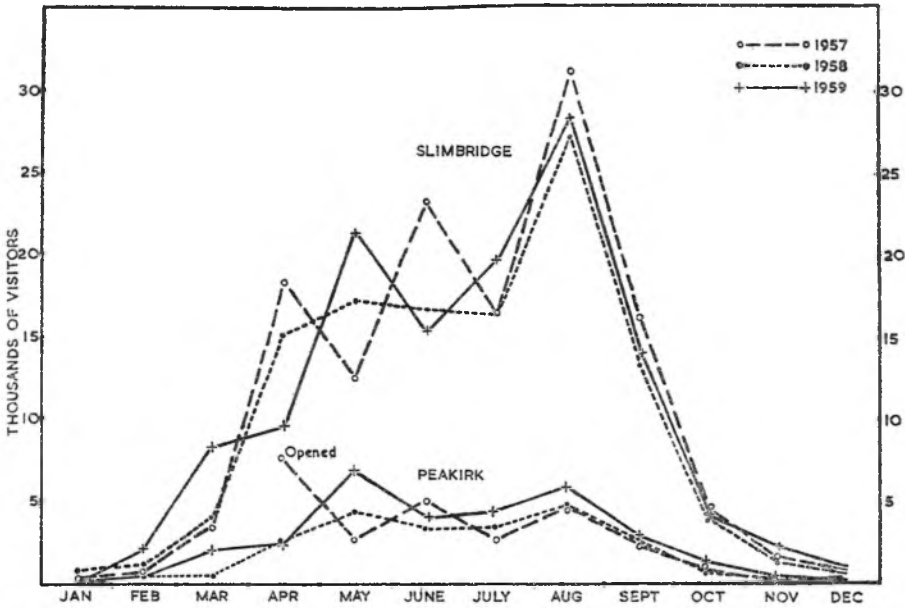


FIGURE 2