migratory arrival and commencement of laying are several days later than in the case of *A.caerulescens*. A fairly detailed survey of the island shows that the total number of Brent Geese nesting there in 1964 was at best 1,000–2,000 pairs.

We found gatherings of unmated Brent Geese in mid-July, in the intensive moulting period. During this period they congregated in flocks of several hundred birds on the shores of shallow lakes in the flat tundra in the northern part of the island. Among them were birds of at least two age-groups, judging by the plumage. It should be mentioned that four ringed Brent Geese were caught in one flock; all had been ringed in Alaska (Lower Kachunuk River), two males (1963) being marked as sub-adult, one male (1962) marked as adult and another bird, also ringed in 1962 without indication of age or sex. Judging by the dates of ringing (11th July–5th August), they had also been caught in Alaska during the moult. These finds are interesting for a number of reasons, although the data are insufficient for final conclusions.

The total number of moulting, unmated Brent Geese could be approximately assessed at not less than 10,000 birds.

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Shinhama - the Imperial Duck Decoy

PETER SCOTT

The Japanese duck decoy or *Kamoba* was evolved from the European type during the 19th century. The major difference is that in the Japanese form the ducks are caught individually with a hand net, which is regarded as a sporting activity and a social occasion.

Two such decoys are maintained by the Imperial Household, one on fresh, the other on brackish water. On a bright sunny day in October 1964 my wife and I were privileged to visit the brackish pool at Shinhama in company with Mr. Dudley Cheke – the British Minister – and Mrs. Cheke. The *Kamoba* lies just across the river Edo from Tokyo, no more than half an hour from the city, in a large area of paddy fields, and adjacent to the estuary mudflats. It was mid-morning as we approached but nevertheless there were springs of Teal and parties of Pintail and Shoveler flighting across the rice fields and the reedy pools surrounding the decoy wood. As we stopped the car to watch them we could hear the loud quacking of what were evidently, from the nature of the sound, a great many 'farmyard ducks'. We could also see large numbers of herons and egrets sitting in the tops of the trees surrounding the decoy. There turned out to be six species of these: Grey and Night Herons just like our own and four species of white ones – Great White, Plumed, Little and Cattle Egrets.

The rough track through the rice and lotus fields passed a tidal creek full of small boats and ended at a pair of large gates. A short drive of grey gravel led to an attractive reed thatched house – the headquarters of the decoy. Here we were met by the decoyman, a cheerful smiling man who offered us tea on a beautiful lawn overlooking a brackish pool of perhaps three or four acres fringed with bamboos. This was outside the decoy and empty of ducks. The only signs of life on it were some large fish which frequently jumped. Along the lawn was a row of artificially stunted pine trees completing a delightful Japanese scene. The decoyman brought out and demonstrated one of the hand nets which are the basis of the duck catching method – a rather large 'butterfly net' which was very light and beautifully balanced.

Briefly the principle of the *Kamoba* is that, as in European decoys, the ducks are perennially undisturbed on a quiet pool, surrounded by dense thicket. In this case additional attractions are a supply of millet seed, and the continuous quacking of 200 large 'farmyard' ducks. Radiating from the pool (or *tamari*) are a number of narrow vertical-sided ditches (*hikibori*) about 5 feet wide and 25 yards long, which bend sharply where they leave the pond and pass through the bamboo thicket. The rest of the *hikibori* is straight with a grassy space on either side and across the end of

each is an observation hut (*konozoki*) with a 'tube' down which millet seed is rolled to lead the ducks on. The catchers, who in the Imperial decoys are for the most part distinguished politicians and diplomats, assemble behind a bank and when the decoyman decides that enough ducks are in, they are deployed, each with a 'butterfly net', on both sides of the little channel. At a given signal they run in and catch the ducks as they rise (or, quite often, we are told, each other). This much of the method we knew before the decoyman led us along a grass patch flanked by a 25 foot bamboo 'wall', through a gate, and across a causeway into the *Kamoba* itself.

Our first view was along an external, rectangular, partly-reed-grown pool which constituted the buffer area between the outer belt of trees and the 'pipes'. A few Teal and Pintails rose and flew over into the *tamari*. The trees were full of egrets. The broad straight path we took was separated by a tall hedge from the buffer pool on our left. On our right was the first *konozoki* – the little concrete observation hut, camouflaged in a grass-covered bank, which commanded a view down the first of a row of eight pipes which flank the north-west side of the main pool. Through the peephole we could see a few of the enormous piebald tame ducks which act as decoys. At the third *konozoki* a five foot yellowish-brown rat snake moved into the open-backed hut ahead of us. It was at first cornered and could have been caught, but just as I had decided it was non-poisonous and was about to pick it up, it found a mouse hole in one corner and was down it and gone in two seconds.

Half way along the north-west side of the decoy was a different kind of observation hut, called an *onozoki*, one of six which stand at the very edge of the *tamari* giving a view through peepholes over the open water of the decoy. The whole rectangular pond seemed to be rather less than 300 yards long and about 100 yards across – perhaps six acres in all – and had some 6,000 ducks on it, mostly Common Teal with a number of Shoveler, a sprinkling of Pintails and a very few Garganey – perhaps 50 all told. In spite of a careful search through the tiny peepholes, poorly suited to binoculars, we were unable to find any Baikal Teal or Falcated Ducks. Nor, surprisingly, were there any Chinese Spotbills which were common on the Imperial Palace Moat in Tokyo, though we later saw a small bunch flying outside the decoy over what must have been the shore. There also we saw a small flock of Wigeon. Mandarins, which later arrive on the Imperial Moat – though not apparently nowadays more than 70 or 80 – do not come to Shinhama, perhaps because the water is brackish.

In the middle of the *tamari* are two square artificial islands called *Nakajima* which were covered with cormorants, egrets, Night Herons and Shovelers. Teal were crowded on the steep banks between the pipes. From the *onozoki* we were looking down on Teal and Shovelers not more than 10 feet away. A bin in the corner of the hut contained millet and if some of this was poured down the little wooden tube (made of three boards and triangular in section) the decoy ducks came at once to eat it, and so did Teal and Shovelers, picking it up as it drifted away on the surface.

During our two hours in the decoy there were several large movements of ducks, mostly into the decoy, but once from one end of the *tamari* to the other.

Several times during the morning a small group of 23 White-fronted Geese flew over the decoy – just the same White-fronts as we see at Slimbridge, where the first 25 had arrived immediately before our departure for Japan.

Towards the end of our time in the decoy we could hear great quackings from the tame decoy ducks. This was feeding time. An assistant decoyman was pouring millet down the tube from one of the *onozoki* huts to the accompaniment of loud hammering with a wooden mallet on a special wooden block in the hut.

The noise was evidently a feeding signal to which the ducks were well used. It was so loud that when I entered the hut to see the reaction of the wild birds through the peephole, I was forced to block my ears – yet the wild Teal and Shovelers were crowded round the hut, the nearest less than 10 feet away from the source of this shattering sound.

Perhaps more remarkable was the fact that the decoyman and his assistant conversed in a loud voice during and after the hammering, and seemed only to attract the wild ducks by doing so. When we left the *onozoki* there must have been 500 birds clustered around us within 20 or 30 yards.

The decoyman's estimate of the numbers on the decoy was about the same as mine – about 6,000 – but he said that on some days later in the winter he believed there might be 20,000. The annual catch during recent years had been about 3,000 birds, the great majority Teal.

We feel greatly honoured to have been allowed to see his interesting place and we are especially grateful to Mr. Kikkawa of the Imperial Household for making the arrangements and for sending on the details of duck catches (Table I).

Table I. The numbers of ducks taken in the Japanese Imperial Duck Decoys 1947–64

*Hunting Season**	*Saitama Preserve*				*Shinhama Preserve*				
	Mallard	*Teal*	*Other Ducks*	*Total*	*Mallard*	*Teal*	*Other Ducks*	*Total*	*Grand Total*
1947–48	2630	1035	32	3697	797	1756	75	2628	6325
1948–49	3554	1479	146	5179	517	2985	51	3553	8732
1949–50	1320	1527	232	3079	411	3803	191	4405	7484
1950–51	1609	1377	67	3053	386	3154	130	3670	6723
1951–52	1208	2043	223	3474	209	2293	91	2593	6067
1952–53	2044	1919	246	4209	549	3266	91	3906	8115
1953–54	1686	1529	108	3323	474	1873	124	2471	5794
1954–55	1396	1844	354	3594	254	2712	35	3001	6595
1955–56	1343	2488	234	4065	239	3551	157	3947	8012
1956–57	1761	1707	91	3559	374	3839	51	4264	7823
1957–58	2331	1080	84	3495	334	4256	162	4752	8247
1958–59	2167	1081	64	3312	273	2980	170	3423	6735
1959–60	1982	1211	83	3276	237	2075	201	2513	5789
1960–61	2650	700	280	3630	258	2216	418	2892	6522
1961–62	1671	899	225	2795	165	2500	151	2816	5611
1962–63	1883	747	172	2802	181	2844	136	3161	5963
1963–64	956	547	170	1673	97	2062	128	2287	3960

* From 1947–48 to 1952–53 the season lasted from 1 November to 28 February; from 1953–54 to 1963–64 it lasted from 1 November to 15 March.

Book Reviews

It is not a regular policy to publish book reviews with the Annual Report. However, a number of important publications have recently emerged, bearing on wildfowl conservation and/or closely associated with the Trust and its personnel. We therefore feel it is not out of place to draw attention to them. We would also remind members that orders placed through our Shop benefit the Trust financially.

Waterfowl Tomorrow. Ed. Joseph P. Linduska. pp. xii + 770, many photographs and line drawings. U.S. Department of the Interior, Washington. 1964. $4.00.

Many people interested in wildfowl know that a great research and conservation effort has been directed to ensuring the survival of worthwhile numbers of these birds in North America. Yet the depth and detail of this massive programme has been apparent only to the specialist, for, as the Preface says, 'most of the pertinent literature is not generally available in libraries'. This book performs an extremely important function in making this knowledge, albeit of necessity in outline, available to all – and at a remarkably low price.

The sensitive reader must suppress his shudders at some of the gay little chapter headings such as 'Cousins by the Dozens', 'Talon and Fang', 'They also serve', 'Carp, a sometimes villain'. He must also force his way past puce passages with which even the soberest experts seem constrained to open their chapters. When he gets to the meat it is wholesome and enormously informative. A hundred leading researchers and conservationists have been mobilised to survey every aspect of the subject.

In eleven logical chapters the wildfowl production areas of the North American continent are described and their importance to the general picture and to the individual species assessed. The wealth of detail available to the conservation planners contrasts starkly with our near complete ignorance in Europe. We do not even know if there is the equivalent of the prairie pot-holes and marshes, producing greatly varying numbers of ducks according to the rainfall trends, or whether we depend on low density but more stable production areas similar to the northern forests and tundra.

Next are described the four 'flyways', Atlantic, Mississipi, Central and Pacific, and the wintering grounds in which they terminate, including Mexico. The natural, biological flyways overlap and vary, so fixed administrative flyways, generally agreeing with the biological ones, are used as the basis for waterfowl management by regulation of season length and bag limit. Such a system could well be adopted in Europe. Again it is astonishing how much is known about the amount of habitat that is available