

loaned by the Honolulu Zoo (the survivor of the previous propagation scheme) and a young goose which was caught last autumn by a hunter's dog and was quite uninjured. Both pairs were seen to display, and the display consisted of dipping and washing movements carried out by both sexes, but generally on land. The third pair, and especially the gander, showed some interest in two of the three artificial nests, each containing a single hard-boiled turkey's egg, which had been provided in their pen.

Unfortunately all the eggs laid at Keaau were infertile and the reason is not easy to see, for the birds, which have bred there in former years, live on several acres of lawn and lake and seem to be in perfect health.

There is sound reason to believe that the new project will produce an increasing number of good young birds each year; but that is only half the battle, for the provision of suitable places on Hawaii where the geese may live in peace and safety presents many difficulties. To introduce the species to some other place as a wild bird may not be altogether desirable, but there is no doubt that it would be wise to establish a reserve of birds in suitable collections where young ones of sound quality could be bred.

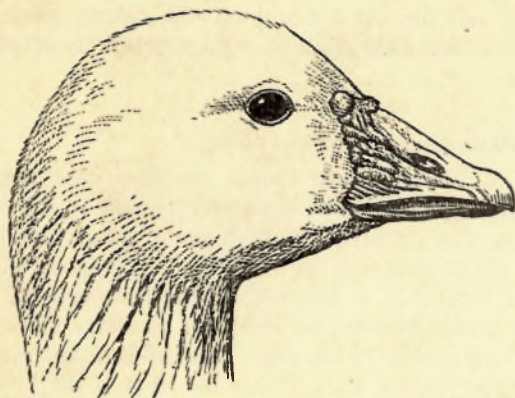
## THE PERRY RIVER EXPEDITION, 1949

THE Director was a member of an expedition to Arctic Canada during the summer. Its principal objects were ornithological; a study of the breeding geese was made and live specimens were brought back for the collection. A preliminary report follows :

The Perry River lies in the North West Territories of Canada between Hudson Bay and the Mackenzie Delta. It drains into Queen Maud Gulf at a point about 75 miles north of the Arctic Circle in longitude 102° West. Although not particularly far north it has hitherto proved rather inaccessible and no scientific expedition had previously been into the area.

This is a brief preliminary report covering the activities of the 1949 Perry River Expedition which was supported by the Arctic Institute of North America with funds provided by the United States Government. Support was also received from *Life Magazine*, Ducks Unlimited and Colonel Arthur Sullivan, K.C. The members of the expedition were Harold Hanson of Urbana, Illinois, Paul Queneau of Westport, Connecticut, Peter Scott of Slimbridge, England, and James Bell (pilot for the last two weeks) of Sudbury, Ontario.

The party arrived by train at Edmonton, Alberta, on 23rd May, flew from Edmonton to Yellowknife on 27th May and took off from there for the Perry River on 31st May in an Associated Airways Anson, Douglas Ireland, pilot. Conversion from wheels to skis was made during a forced landing on a frozen lake. Some difficulties were experienced on the flight north largely due to weather, and arrival at Perry River, via Musk-Ox Lake and Bathurst Inlet, was not until 6th June. Camp was made on a gravel ridge in the lee of a prominent hill about 14 miles up the Perry and half a mile east of it. The tundra was snow-blanketed, practically the only ground showing being the upper wind-blown portions of the rocky hills. The surrounding area was explored on foot and, after break-up, by canoe until 18th July, when Jim Bell, veteran bush pilot of Nickel Belt Airways, joined the party with a Fairchild Husky on floats.



Ross's  
Goose

During the following two weeks, the sea coast, Ellice River, McAlpine Lake, Armark River quadrangle, was explored by air. The party then returned south via Baker Lake, Churchill and Moose Factory on James Bay arriving at Sudbury on 5th August. In spite of an unusually late summer season an extensive programme of research and survey was carried through.

A full report of the summer's work will be submitted to the Arctic Institute in due course. Meanwhile a short summary of the ornithological work follows.

#### ROSS'S GOOSE (*Anser rossii*)

Only one breeding colony of Ross's Geese was found in the area. Two hundred and sixty nests were counted on five islands in a lake about 25 miles inland. No Ross's Geese were breeding on the lakes where they were previously found by Angus Gavin. Ross's Geese were found moulting on lakes to the west of the Armark River, and others which may have been of this species were seen on some lakes near the headwaters of the Perry, None of these were nesting this summer, but the lakes may have breeding colonies in a normal summer.

It is rather unlikely that any other substantial colonies of Ross's Geese exist in this area. There are indications therefore that the world stock of Ross's Geese in June 1949 may have been under 2,000 birds. Stringent protection everywhere may be needed to save this species from extinction.

The average brood-size of those which successfully hatched goslings was 2.8. Flocks of early-moulting, broodless birds contained adults apparently in breeding condition.

A striking polymorphism was observed in the downy young of the Ross's. In one brood of five, two goslings were silvery white, one grey, one greenish yellow and one bright yellow. Among broods observed the proportion appeared to indicate that the yellow forms might be recessive and the white and grey ones dominant. Twenty-five Ross's Geese were ringed and 10 were brought back alive. The latter were sent from Churchill to the Delta Waterfowl Research Station, Manitoba, and later to the Severn Wildfowl Trust for study and propagation purposes. One succumbed after the journey. The other nine were examined under the fluoroscope at Delta and three were found to be carrying ex-

shot in various parts of the body, in spite of the fact that the Ross's Goose has been a totally protected bird in the U.S. and Canada for nearly 20 years. Since the Eskimos rely almost entirely on .22 calibre rifles to secure game, shooting south of the breeding grounds is most probably responsible for body-shot in this species.

#### WHITE-FRONTED GOOSE (*Anser albifrons* subsp.)

Only one form of White-fronted Goose was identified. No breeding colony was found but pairs appeared to be scattered sparsely in the study area. Only four breeding pairs were located although many other individuals were seen. Seven full-grown birds and four goslings were collected. They differed substantially from the typical *A. a. albifrons* in the following ways. Bills of adult males much larger. Heads heavier, necks longer, plumage more brown, less grey; call of adult male very similar to Greylag. This call is unknown in *A. a. albifrons*, but other notes of the present form are similar to *A. a. albifrons*. The eyelids of some specimens show a tendency to be yellowish buff, but not so much so as in *A. a. flavirostris*, the Greenland White-front. The relationship of this form to *A. a. gambelli* and to the newly separated *A. a. frontalis* (Todd, Condor 1950) is still obscure.

Weights of seven specimens:

Adult ♂	.. ..	6 lb. 8 oz.	Yearling ♀	..	5 lb. 4 oz.
" ♂	..	5 lb. 10 oz.	" ♀	..	5 lb. 4 oz.
Yearling ♂	..	4 lb. 13 oz.	" ♀	..	5 lb. 3 oz.
			" ♀	..	5 lb. 2 oz.

It is thought that this striking variation in size may have accounted for Angus Gavin's report that two races of White-fronted Geese were to be found in the area. Two of these geese were brought back alive and are now at the New Grounds. The fluoroscope showed that the male was carrying No. 6 shot in the breast.

#### BRENT GOOSE (*Branta bernicla*)

Only one colony of breeding Brant was studied. This was on an island about  $1\frac{1}{2}$  miles east of the mouth of the Perry. There were 14 nests. All the breeding pairs were typical *B. b. nigricans* but a single female which formed a trio with a pair of Black Brant, but did not seem to have a nest, was typical of the race *B. b. hrota*. During an aerial survey from the Ellice River to the Armark—about 90 miles of coastline—only one other colony of Brants was observed. This consisted of some 30 pairs with young broods and a further 60 broodless moulting birds. The subspecies to which these belonged could not be determined from the air. No Brents were breeding in the delta of the Perry, and the island mentioned by Gavin for its colony of Atlantic Brent has been deserted for several years according to the Eskimos. The Black Brant colony was found in the habitat reported by Gavin as that of the Atlantic race.

Although all the nesting females were typical of *B. b. nigricans* considerable variation in the colour of the nest down was observed, some being dark brown while in other nests it was fairly pale grey.

#### CANADA GOOSE (*Branta canadensis* subsp.)

Many pairs bred singly on islands in lakes and also among the Ross's Goose

colony. Their eggs mostly hatched at least four days after the Ross's. The size of these birds was strikingly constant and indicated that they belonged to *B. c. parvipes*.

Weights of six specimens:

Adult ♂ .. ..	6 lb. 3 oz.	Yearling ♀ ..	5 lb. 9 oz.
„ ♂ .. ..	5 lb. 12 oz.	Adult ♀ (after in-	
„ ♂ .. ..	5 lb. 12 oz.	cubating) ..	3 lb. 11 oz.
„ ♂ .. ..	5 lb. 8 oz.		

Before the breeding season parties of big Canada Geese (? *B. c. moffitti*) were seen migrating down the river. Four were found moulting with Lesser Canadas and Ross's, and on the last day of July a party of nine big Canadas was seen on the Perry already able to fly on new primaries. There was no evidence of breeding of the large race, but it was recognised by the natives as distinct from the Lesser Canada. It is thought that non-breeding birds may continue northward this far in order to find suitable moulting territory.

#### LESSER SNOW AND BLUE GOOSE (*Anser caerulescens*)

Lesser Snows bred in small numbers in the Ross's Goose colony. A few Blue Geese were also present, but only two are known to have bred. These were both males and were mated in both cases to Lesser Snow females. In one case where the Blue was a bird with white flanks and belly—the two young were both yellow and typical of *A. c. hyperboreus*; in the other case there were also two young—one yellow and one sooty (typical *A. c. caerulescens*).

#### Relative Abundance of Geese

An analysis of all field observations made inland from the Arctic sea coast between 6th and 21st June indicates the following relative abundance of the various species of geese which nest in the Perry River area: Lesser Canada Goose 33 per cent., White-fronted Goose 29 per cent., Ross's Goose 19 per cent., Lesser Snow Goose 17 per cent., Blue Goose 1 per cent., Black Brant 1 per cent.

#### PINTAIL (*Anas a. acuta*)

Large numbers of moulting males were present but very few females. No nests were found and no young seen. This may have been caused by the unusual weather conditions or it may be that only males move so far north. One Eskimo report was that the nests were never found. Another said that they nested sparsely and scattered over the tundra.

About 30 were ringed. (One has since been recovered. It was shot on the Pacific Flyway at Hannaford Valley, Lewis County, Washington on 23rd December, 1949.)

#### Other Waterfowl

The two common breeding ducks in the area were the King Eider (*Somateria spectabilis*) and the Long-tailed Duck (*Clangula hyemalis*). One Green-winged Teal was seen (among Pintails) and three Red-breasted Mergansers (*Mergus serrator*). No Eiders of the species *Somateria mollissima* were seen.

It was interesting to note that the spiked feathers on the drake King Eider's back were much more prominent than is usually figured in illustrations, and

that, in the spring, the female shows definite spikes of the same kind, though markedly 'blunter'. These feathers seemed to be under the bird's control. They were not always visible in the female and lay flat in skinned specimens of both sexes.

#### Species not Previously Recorded from the Area

The following birds were seen which were not shown in Angus Gavin's paper on the birds of the Perry River region: Peregrine (*F. p. anatum*), Pomarine Skua (*S. pomarinus*), Glaucous Gull (*L. hyperboreus*), Green-winged Teal (*A. c. carolinensis*), Red-breasted Merganser, Bonaparte's Sandpiper (*C. fuscicollis*), Dunlin (*C. alpina*), Baird's Sandpiper (*C. bairdii*), Knot (*C. canuta*), Ruddy Turnstone (*A. i. morinella*), American Pipit (*A. s. rubescens*), Savannah Sparrow (*P. sandwichensis*). Nests were found of Peregrine, Glaucous Gull, American Pipit and Savannah Sparrow.

#### Museum Collections

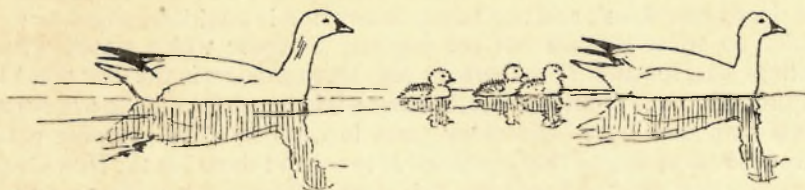
Over 100 bird skins were collected. The handling of these birds entailed considerable work in the expedition's laboratory, as for each specimen the following procedures were carried out: weighing, recording body fat, preservation of gonads, preservation of stomach contents, examination for internal parasites, and preservation of faecal samples for coccidia studies. Blood smears were obtained from many species but none showed the presence of blood parasites. A few ecto-parasites were also collected.

#### CAPTURE OF LIVE GEESE FOR THE COLLECTION

It may be of interest to record the circumstances in which the Ross's Geese and Perry River White-fronted Geese were captured in the Arctic for the collection at the New Grounds. The following account is taken from the Director's Journal of the Expedition.

##### Thursday, 28th July, 1949

'. . . We set off (from the base camp at Radio Hill, 14 miles inland from the mouth of the Perry River) on the goose-catching expedition to the River Kennet. Young Taanoo (a 16-year-old Eskimo boy) carried the aluminium canoe, Patsy (Taanoo's father—his Eskimo name is Topelakon) carried the nets, and Adaa, the grandfather came too. We used the big canoe to cross the Perry, and at the last moment the two little girls joined the party (two Eskimo girls of about 10 years old). Across the river the plan was to use a chain of lakes in order to have the shortest portages. In this way we covered the two or three miles, Patsy taking the canoe across each lake with Taanoo and the gear while the rest of us walked round and then portaged to the next lake. A caribou had been sighted in the morning and there seemed to me little enough chance of finding it, but the grandfather was more concerned with that than with our goose drive. Another new factor had now entered the field. The mosquitoes had finally hatched. Up till now the nuisance had been negligible, and could well be kept in check by our repellants. But today there were five times as many, and their attacks were, at times, pretty determined. They troubled the Eskimos a good deal and there was frequent and exasperated mention of *kiktoriaak*.



'We reached the Kennet just above a large open pool, on the banks of which I saw a bunch of between 20 and 30 white geese with their broods. We decided to go for them, and Taanoo was dispatched to cut off their retreat down stream, for already they had seen us. When we got to the river the birds were in a cluster in the centre of the pool. There were two pairs of Lesser Snows, about 12 pairs of Ross's and two pairs of White-fronts (Perry River race). Most of the geese had broods, and still had unmoulted primaries, but one pair of the White-fronts had no young and was flightless. The two little girls were stationed one on either side of the pool, and grandpapa went to the top of a hillock to do double duty as longstop and caribou spotter. Patsy and I then tried to find a place to set up the nets. The obvious place—an old overflow channel—was no good because the ground was stony and the stakes would not drive in. So we crossed in the canoe, to find a place on the other side of the pool. On the way over a Pintail flew past on little stumpy wings. This is the first I have seen which is quite evidently a post-moult bird.

'Then began the laborious task of setting up about 80 yards of string netting on the little aluminium stakes which could not be pushed more than six inches into the ground, because of the permanent frost level. The net was laid out in the form of an unequal V with a circular trap at the apex, the short arm stretching 10 yards into the water. It took us about an hour during which the geese remained clustered in the middle of the river about 70 or 80 yards away. At the end of that time Patsy and Taanoo took the canoe while I took up position on the shore below the trap and the drive began. All that I felt sure we would get was the broodless and flightless pair of White-fronts, because as far as I could see none of the other adults had moulted their primaries. But these two would not stay with the white geese and in due course the white ones were herded into the net without much difficulty. They ran all the way into the trap. Then I expected them to fly out, leaving the goslings and at best two or three adults. But only half a dozen flew out, and many with complete black primaries either wouldn't or couldn't fly, while in others the primaries fell out as they tried. So there were at least 15 adults in the trap. Very foolishly I had not led the trap onto hard dry land. It was on a soft muddy patch and in a moment it became a quagmire. I went into the trap and seized as many Ross's still with primaries as I could manage. Unfortunately we had only two sacks to hand and they were obviously insufficient. The next thing to do was to get the goslings out of the trap before they were trampled on. They were too small to be ringed. There were over 30 including the Lesser Snow babies, but in the excitement of the moment I did not start counting them until I had let about six go, also Patsy and Taanoo were letting them out as fast as they could. One was on its back and looked a bit bedraggled but it ran off with the rest to join the flying parents who were waiting about 50 yards away.

'Then we started to ring the adults, a fairly difficult operation requiring

pliers in order to close the U.S. rings which are of much stiffer metal than ours. We ringed nine Ross's and two Lesser Snows, and in addition I kept four Ross's. I tried to select ganders but the majority of those which stayed with the goslings were females. Thus there are only three ganders in the four that I kept. (My intention was to bring males, because wild-caught females do not normally breed until they have been many years in captivity. The breeding stock in Europe in the spring of 1949 consisted of two ♂ and three ♀ at the New Grounds and one ♂ and two ♀ at Leckford. This stock originated some 40 years ago and no fresh blood appears to have been introduced since. It was therefore desirable that the five breeding females should be provided with wild-caught males and it was for this reason that an excess of males was selected.)

'Meanwhile the White-fronted Geese were still in the pool and being held there by the two little girls fielding, as it were, at mid-on and mid-off. Patsy and Taanoo set off in the canoe again to round them up. I remained ashore, because, with rubber boots on, I reckoned I could wade out, although in the event it was never necessary. After the success of the first drive, the second effort was surprisingly poor. Patsy did not seem to have the idea of patience and was rushing the geese in spite of my cries of "*Ahungeitomik*"—(slowly) and "*Tigumearung*"—(carefully). The result was that they split up and the pair with the brood went up stream; the gander could fly quite well. It was, no doubt, all for the best, as I should have been tempted to try to keep the goslings and it is very doubtful if it would have been a success. The remaining pair split up and began to dive. This was the result of hustling them too much. The female went and crouched under the far shore. When the gander was headed in the right direction I told them to go off and get the female. The gander proceeded to go straight into the net all on his own. By taking her slowly they brought the female in behind him and we had a beautiful pair of these interesting geese. As we had observed before there was a striking difference in size between the sexes. The gander is a big bird, the female with a completely orange-stained front, is much smaller. Her flight-feathers were ahead of his and in five or six days she would have been able to fly. Having found our third sack we packed the six birds into the canoe, for the first stage of their journey from the Northwest Territories to Gloucestershire; we dismantled the nets and laid them out to dry and then we repaired up the slope to where the two little girls were brewing tea over a heather fire. It was a delightful and triumphant picnic. . . .'

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A further catching expedition was made on **Sunday, 31st July.**

'I finally got off at about 2.30 p.m. after an elaborate operation of collecting the nets with Marki (a young Eskimo) from across the river while Patsy collected the canoe. We set off up the Perry—Patsy, Marki and the two little girls—and portaged round the rapids. Then I walked on ahead picking up a number of new flowers—including a spectacular one which has bracts, coloured rich crimson pink or nearly white and every degree in between, a very variable and handsome plant. There was a yellow Lupin and a pinky blue one, a little purple bladder campion, all bladder and tiny petals, and many more.

'On Upper Goose Island were nine large Canada Geese which had evidently finished their moult, as they flew off up the river. It was already 6 p.m. and still

a grey, rather windy evening when I decided to cross the river (about 150 yards wide) and look round one more corner before portaging over to the Kennet to try our luck there. Round the next corner, however, was a little party of White Geese. There were two broods of Lesser Snows and two broods of Ross's and about 15 broodless birds.

'We set up the nets which took much less time than before. Patsy is now quite adept at it. I could only get the river wing about 10 yards out into the water, but I made the trap in a gap in the mud furrows which looked as though it led back into the water. This is a good way of reducing pressure on the wings, which means less time spent in anchoring the bottom of the net. It was all finished in under an hour and then Marki was sent up stream to go round the birds. Patsy and I went to the headland on the corner to watch. The geese were ashore feeding, and above them were the nine large "honkers"—"Oodlo" is the Eskimo name. The white geese started down stream nicely and as they approached the corner Patsy and I hurried back to the canoe excitedly. As we did so the clouds blew away and the low evening sun came out with a clarity and brilliance which was supremely beautiful. It was very exciting waiting for the geese to come round the corner, and even more exciting when they finally appeared shining white in the sun. We waited a little to let the stream bring them down to our nets and then we suddenly paddled out from our hiding place. The geese bunched more tightly and turned to head the stream. So we gradually eased them over and then worked them to the short stretch of shore inside the V of our nets, the longer arm of which was not more than 30 yards. They went in perfectly and the whole lot ran into the trap. I quickly caught and released the 13 goslings (still too young to ring) and then ringed the three Lesser Snows (the gander of one pair had flown out). Then I selected six birds and put them into three sacks and ringed the rest of the Ross's—12 more—in quick time, Patsy taking the rings off the string and handing them to me. The whole operation had been completely successful.

'I walked over to the Kennet to see if there were any prospects there for a second drive. It was already 8.30 p.m., but for more White-fronts or Lesser Canadas we could have made the necessary portage. . . . I walked over in the evening sun. The mosquitoes, which had been out of sight and out of mind during the cold grey weather, were emerging a little but not enough to be tiresome. I walked on to a brood of six or seven young Ptarmigan which could fly quite well, and I also came upon a young Buffon's Skua which showed defiance. Curiously enough its parents were much less demonstrative than the pair near camp. A pair of Golden Plovers and some Pectoral Sandpipers had young near my route but I did not see either. I came to the Kennet at the point where we had found the first young Ross's Geese on the way up to Lake Arlone. Exactly opposite me was a large group of Ross's with broods. There were 28 adults and 41 downies; the 14 broods consisted of 2 fours, 9 threes and 3 twos (average 2.93). They were sitting ashore on the grassy bank opposite to me. I contemplated the long business of portaging the canoe and setting up the nets, and made the lateness of the hour an excuse for leaving those 14 families of Ross's Geese in peace. Instead I lay on the tundra looking over the brow at them, counted their broods and drank in the peaceful sight. Some of them half saw me and took their goslings into the water. But they landed again on my side and I watched them for another half-hour. Most of the parents were now flightless; only three or four had



black primaries still showing. The young were well grown, between two and three weeks. They all looked very grey and the sharp polymorphic distinctions in colour which we had seen in the small downies were at least not nearly so obvious.

'It was my last view of the Kennet—an unforgettable one—the low sun shining on the steep red bank on one side and the green pasture on the other, the calm water a deep blue, and the bright white geese with their silver-grey goslings. Had it been expressly in honour of our efforts to save them from extinction they could not have staged a more rewarding farewell scene on their traditional rearing grounds by the banks of this lovely little river.

'When I got back to the Perry the Eskimos had finished their tea and opposite them, stemming the stream, were two little goslings, obviously lost. Patsy and Marki took the canoe and tried to catch them but they dived, so we abandoned it. It was strange that they should have come back so exactly to the last place where they had seen their parents. Patsy ferried Marki and the little girls across the river for the five mile walk home then came back for me. We loaded in the nets and the live geese and set off paddling down stream looking for the two goslings. Soon we came upon them and caught them severally after a considerable chase and much diving. (I finally caught both under water in the shallows.) I was not absolutely sure whether they were Ross's or Lesser Snows, but inclined to the belief that they were Lessers. We paddled down stream. The wind had died; the sun had set; it was 11 p.m., but the northern sky was clear and orange. To the south the sky was pink and below that deep blue on the horizon. The river banks were sharp and black. As we came down to East Bend I could see the party of white geese ahead—the party we had already caught. We paddled hard and cut them off, so as not to drive them on down stream ahead of us. As they turned I counted them. All that we had ringed were there and the broods were complete except that one Lesser Snow had only one gosling instead of three. So I opened the bag and released the two downies. They swam off towards the flotilla ahead. We passed rapidly round the corner in order to allow the parents to slow down and wait for the young which they would probably see and certainly hear astern of them. We took the canoe down the edge of the main rapids. Patsy and Marki began it but when we came to a place which I could more easily negotiate because of my long boots, I took over and brought it the rest of the way. I shot two sets of rapids and then tried to cross above some others and got swept broadside on, the one unforgivable sin. However, my luck was in; I did not hit a rock in my short broadside sweep and got safely, if a trifle breathlessly, to shore. From there it was easy and on the last stretch I paddled slowly and peacefully in the still dusk, savouring this last impression of our river—for the morrow was our day of departure.'