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## *THE NESTING OF ROSS'S GOOSE *Chen rossi*.*

By P. A. TAVERNER

**A**MONG the puzzling breeding mysteries of our high northern American birds those of the Blue and Ross's Geese, *Chen caerulescens* and *C. rossi* remained the longest unsolved. The former was cleared up by Mr. J. D. Soper<sup>1</sup> under the auspices of the Northwest Territories and Yukon Branch of the Canadian Department of the Interior in 1929 when he found it nesting on the low lands (Blue Goose Plains) of southwestern Baffin Island, at the foot of Bowman Bay, off Foxe Basin. Immediately thereafter it was also discovered on Southampton Island at the mouth of Hudson Bay by G. M. Sutton<sup>2</sup> and later noted there by T. Manning and R. W. Bray, the latter of unhappy memory as it was while returning to the area in 1938 for further information on this and other species that he was blown to sea and perished in the stormy waters of Foxe Basin. The summering grounds of Ross's Goose remained unknown and the subject of interested conjecture and speculation until this past summer.

Ross's Goose, *Chen rossi*, Scabby-nosed or Horned Wavy or Galoot as it is known to various interests, is a small goose, scarcely larger than a big Mallard duck, and a miniature edition of the Snow Goose, *Chen hyperborea*, except that adults have a rugose, warty or scabby base to the bill and lack the strongly marked black "grinning patches" along the cutting edges of the mandibles of their "laughing" congeners. Under the name of "Galoot" it has been known in considerable numbers to the trading and other estab-

lishments of Lakes Athabasca and Great Slave, particularly at Chipewyan where formerly many were killed and salted as an important addition to the winter food supply. Of recent years however it has been greatly reduced in numbers and, though the above practice has been largely discontinued, the fear has been growing that, through the decrease in numbers increasing the difficulty of finding nesting concentrations, it might, like the Labrador Duck, disappear before we could obtain definite information upon its breeding life history. Fortunately this has, at least in part, been forestalled by the discovery of the past summer. We at least know where it nests though the difficulty of entry into the area is a serious obstacle to further intensive breeding study.

From these great northern lakes where it appeared in vast snowy flocks, in early summer it vanished north or northeast-ward into the blue, disappearing from human ken without trace. Southward its movements were almost as obscure. It occurred in scattered groups or casual individuals eastward rarely to Manitoba and westward to the coast but the main flight line in transit appeared to be through eastern Alberta and western Saskatchewan in irregular and somewhat uncommon and usually sporadic flocks, sometimes of considerable size but never, in total, commensurate with the known numbers of the species. The greater body passed over most of this territory unobserved but, somewhere along or below the International Boundary it crossed the mountains to the great interior valleys of California for the winter, where, with Lesser Snow Geese, *Chen hyperborea hyperborea* it was an important object of sport and many were killed. Since wholesale systematic hunting on the lakes of its northern route has been discontinued, the future of the species seems to rest largely with California. It has recently been given complete protection there and prospects for its survival appear more promising.

1 Discovery of the Breeding Grounds of the Blue Goose, by J. Dewey Soper, *Can. Field Nat.*, XLIV, 1930, pp. 1-11. The Blue Goose, by J. Dewey Soper, Northwest Territories and Yukon Branch, Dept. of the Interior, 1930, pp. 1-64, King's Printer, Ottawa.

2 The Exploration of Southampton Island, Hudson Bay, by George Miksch Sutton. *Mem. Carnegie Mus.* Vol. XII, Part II, Section 2, The Birds of Southampton Island, pp. 1-167, plus Plates XIX-XXIV.



This discontinuous appearance along a line of migration is quite similar to those of its two close relatives, the Blue Goose and the Greater Snow Goose, *Chen hyperborea atlantica*. The latter winters in numbers on the middle Atlantic coast and occurs in similar concentration in passage on the lower St. Lawrence River near Quebec City. The former occurs in winter in large numbers with Lesser Snow Geese on the gulf coasts of Louisiana and Texas and in spring migration in southern Manitoba. Both Greater Snows and Blues are rare, irregular or casual between these points of observed concentration, and until lately their breeding grounds were unknown. The nesting of the Blues was discovered as above and that of the Greater Snows was found to be on the northeastern Arctic islands and north Greenland. The breeding ground of the Lesser Snow Geese is practically continuous across the arctic mainland coast and adjacent islands and its migration route is over a broad interior front without presenting much of exceptional interest. With the discovery of the nestings of these geese only that of Ross' Goose, remained unknown.

With the exception of mere casual occurrences, no word of the species could be obtained either by observation or inquiry along the main arctic coast east to King William's Island and there was no evidence that important numbers ever left the continental mass. Through the interior it was not found anywhere in the explored sections north or east of the big lake systems or from the Thelon River southward. The few reports from Back's River were equally negative. There seemed comparatively little ground yet to be investigated but by elimination the prospective field was narrowed to between Back's River and the hinterland of the arctic coast, and the terra incognita of the great peninsula north of Chesterfield and Wager Inlets. The latter however as far as we know is forbiddingly difficult of access and unpromising as a goose ground.

Owing largely to the personal and inspirational urging of Mr. E. F. G. White, the interest of Mr. R. W. G. Bonnycastle of the Fur Trade Department of the Hudson's Bay Company was aroused. Encouraged by suggestive native reports he authorized a company expedition up the Perry River emptying into the Queen Maud Gulf close to longitude 102° West. As no official maps have ever been made of this river subsequent localities cannot be clearly stated. June 30th of the past summer, Mr. Angus Gavin and Mr. E. Donovan, managers of Perry River and King William Land Posts respectively, with four

Eskimos started with canoe on dog-sled over the still present ice to the mouth of the river where they camped on an island occupied by a considerable colony of either Brant, *Branta bernicla*, or Canada Geese, *B. canadensis*, identity being uncertain in the hazy light. The next day they ascended the river in the canoe observing en route Swans, Geese, Cranes, and many Pintails to a branch where they spent the night at a native camp. Fifteen miles up this tributary, and over a number of difficult portages, they made their way to an unnamed lake. What they found there can be best reported in Mr. Gavin's words as contributed to him for publication in *The Beaver*, the official house-organ of the Hudson's Bay Company.

"After laboring up this (the last Rapids) we came to a mile or so of good water, and it was while we were on this calm stretch that the first Ross Goose was sighted in the early morning light, flying towards the lake that lay ahead of us."

"On entering the lake, we could see them flying all over the place. The lake was long and narrow, and studded with two or three hundred reefs of varying shapes and sizes up to about 500 by 50 yards. One of the islands nearest us was covered with white dots of the nesting geese. Through the glasses they reminded us of ptarmigan in winter garb. As we approached they rose in large flocks over our heads, loudly protesting at our invasion of their domain. Others took it very philosophically, and not until we had actually landed did they get off their nests."

"On the first three islands visited there were about fifty pairs nesting, anywhere from three to thirty-feet apart. A grassy base on the rock copiously lined and rimmed with white down, soiled to a dirty gray appearance, constituted the nest. The complete nest was about twelve inches over all with a nesting cavity about five inches in diameter and about two and a half inches in depth from the top of the downy rim. Four eggs were the most common clutch noted. There were two to six creamy-white, ovate eggs in the nests examined. Some nests contained five eggs, some two or three and one or two had six eggs. In all eggs the embryos were sufficiently developed so that the head, bill and eyes were clearly seen. Incubation was judged to be five to ten days

3 Where the Ross's Goose Nest, by A. Gavin, *The Beaver*, Outfit 271, December, 1940, Hudson's Bay Co., Winnipeg, Manitoba.



advanced. \_\_\_\_\_”

“On this island we also discovered two nests of the King Eider, *Somateria spectabilis*, one containing five greenish eggs, the other six. Unfortunately, light conditions were not too good as it was in the small hours of the morning, so we did not get any close-up shots with our cameras. After securing a few specimens and their eggs, we headed for the next island to cook a meal, and to have a short nap before trying to get some pictures. Back at the island where the geese were nesting, we finally succeeded in getting some close-ups of the birds on their eggs. As we approached, they would get off their nests; but we would lie down five or six feet away, and presently they would return and sit on the eggs again.”

“About three hundred yards from the first island visited, and in a grassy bay, on the mainland, four pairs of Blue Geese, *Chen caerulescens*, were found nesting, and the nests examined. They were grass-lined cavities with considerable dusky, bluish-grey down (two of them) containing four and three eggs respectively. Some of the older natives told us they had never before set eyes on this bird. They explained, however, that Ross’s Goose was common thereabouts, the chief breeding grounds being on a similar island in a larger lake about six miles away. We gathered from their description that about two thousand would be found nesting there.”

“Altogether we stayed about seven hours at the lake, \_\_\_\_\_  
On the return trip we saw about five hundred Pintails, *Dafila acuta*, in a marsh about half a mile long and a quarter wide. At least half of them were in flightless condition, having moulted their primaries. Other species seen on this trip were Canada Geese, *Branta canadensis*, Whistling Swans, *Cygnus columbianus*, Arctic Terns, *Sterna paradisaea*, and several species of shore birds and gulls.”

In corroboration of the above identifications there have been received and we have examined a number of clear, sharp photographs of eggs and nests and of birds, both White and Blue upon nests; also two skins of Ross’ Geese and five end-blown but otherwise perfect eggs. Without further data the photographs of the nests of course cannot be specifically recognized nor would the identity of the white geese be certain were they not supported by the skin specimens. The pictures of the Blue Geese, however, with their

white heads and necks, and dark bodies are unmistakable. Note that in the above account there is no mention that can be referred to either the much larger white Snow Goose or to the quite different White-fronted Goose, *Anser albifrons*, both of which might be reasonably expected to occur.

The five eggs are stated by Mr. Donovan, who came out with them, while Mr. Gavin remained in the north, as probably from one set though he is not certain that they may not be from two adjoining clutches. They are ovate, creamy white somewhat nest stained, and with almost imperceptible gloss. They sort into two groups, two eggs being distinctly smaller than the other three. The following are the measurements with those of series of Snow and Blue Geese in the National Museum of Canada for comparison. The volumetric measurements were obtained by measuring the water they displaced in a graduate marked to two cubic centimeters. It can be noted that the only other known egg of Ross’s Goose is one laid in confinement and given by Bent<sup>4</sup> as measuring 74 x 47 mm. which is in harmony with the larger group of these figures.

Snow Goose

			cu. cm. volume
Southampton Island			
Set 785	82 x 53 mm.		130
	82.5 x 53.5		129
Camp Kungovik, Baffin Is.			
Set 2057	81 x 53		120
	81 x 53		122
	78 x 53.5		116
	80 x 53		114
	81 x 54		126
Perry River, 1936.			
Single egg	80 x 54		110

Ross’ Goose

		cu. cm. volume
No. 1	66.5 mm. x 48	76
No. 2	64 x 48	73
No. 3	72 x 48	82
No. 4	75 x 48	87
No. 5	71 x 49	90

4. Life Histories of North America Wild Fowl, by Arthur Cleveland Bent, Order Anseres, Bulletin 130, U.S. Nat’l. Mus. 1925.



## BLUE GOOSE

		cu. cm. volume
Camp Kungovik, Baffin Is.		
Set 2041 .....	83 x 54.5 mm.	120
	76 x 49	87
	80 x 54.5	122
	84 x 55	123
Camp Kungovik, Baffin Is.		
Set 2044 .....	82 x 52	109
	82 x 52.5	109
	84 x 52	116
	78 x 48.5	105
Camp Kungovik, Baffin Is.		
Set 2045 .....	85 x 52	123
	83.5 x 51.5	114
	81 x 52	112
	82 x 52	112
Camp Kungovik, Baffin Is.		
Set 2043 .....	83 x 50	109
	82.5 x 51	114
	80 x 51	110
Camp Kungovik, Baffin Is.		
Set 2042 .....	81.5 x 49.5	101
	79 x 49.5	94
Camp Kungovik, Baffin Is.		
Set 2050 .....	76 x 51	99
	74 x 50	96
Camp Kungovik, Baffin Is.		
Set 2052 .....	78.5 x 53.5	110
	79 x 53.5	110
	79 x 55	115
Camp Kungovik, Baffin Is.		
Set 2051 .....	79 x 53	114
	86 x 53.5	118

Though the primary interest in these discoveries lies with Ross' Goose, the nesting of the Blue Goose is of immediately second importance to it suggesting a westward extension of some six hundred miles to the known breeding range. It is impossible as yet to say how extensive this new nesting area of the species may be or how continuous it may be with that already known. The native report cited suggests that it is of rare or casual occurrence in this immediate neighborhood, but a specimen in the National Museum of Canada of a hybrid *caerulescens* X *albifrons* taken at Chipewyan in 1913 gives hopes of other occurrences from this approximate range.

Little is known of the physiography of this section of the country which constitutes one of the larger of the great unknowns of the continent. The Perry River area, probably to Back's River seems to be a low-lying coastal plain of low relief, an old sea bed somewhat similar to the ground where the Blue Goose has already been found nesting. East of lower Back's River the land is generally high and rugged and promises little if any suitable Blue Goose ground. But all this is a matter for future investigation when exploration facilities in this difficult country are further developed. Great credit is due to the Hudson's Bay Company for sponsoring, and to its officers for their initiative and energy in successfully carrying out the search. It may be remarked in passing that Ross's Goose was named in 1861 after Bernard Ross, a Hudson's Bay Company officer at Fort Resolution, whence the first specimens were sent by Kennicott. It was described as the "horned wavy" by Samuel Hearne, another Hudson's Bay Company officer in 1795, and he must have seen it on the barrens on one or more of his trips. Now, in 1940, two Hudson's Bay Company officers share the discovery of its nest.

## THE EUROPEAN PRAYING MANTIS (*Mantis religiosa*. L) IN ONTARIO

By F. A. URQUHART and C. E. CORFE



URING the past few years the European Praying Mantis has become definitely more abundant in the vicinity of the Toronto region. This suggested to us that the praying mantis was extending its range westward from its point of abundance in the vicinity of Prince Edward County. Up to the summer of 1937 our records indicated that the range of the praying mantis extended from Cooks-

ville on the west along the north shore of Lake Ontario to Kingston on the east (Corfe, *Can. Ent.*, LXX: 21-22). Since this time a number of other records have been obtained showing that the range now extends from Fort Erie on the west to Spencerville and Ottawa on the east. The most northerly record is Miner's Bay in Haliburton County.





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