Fig. 1. Cape Searle.

Photo by V. C. Wynne-Edwards

THE FULMARS OF CAPE SEARLE

V. C. Wynne-Edwards*

In July 1937 I met Dr. L. D. Livingstone, who was returning as medical officer to Pangnirtung, on board the *Nascopie*, and it was he who first told me of the great fulmar colony at Cape Searle (67°13N., 62°30W.), on the Davis Strait coast of Baffin Island. That summer I joined Commander Donald MacMillan's expedition at Hebron, and paid a visit to Frobisher Bay in the Gloucester schooner *Gertrude Thebaud*. Though we cruised the open waters of Davis Strait north to about 66 degrees, we had no contact with the coast and learnt nothing further about fulmar nesting sites.

There appear to be four colonies known at the present time in eastern North America, all of great size. There is one at Cape Searle; another, also seen by Dr. Livingstone[1] about 1 June 1927, on the 1,500-foot cliffs at the mouth of Coutts Inlet, farther north on the east coast of Baffin Island; one found by Peter Freuchen in northwest Baffin Island in 1924, between Elwin Inlet and Baillarge Bay on the eastern shore of Admiralty Inlet, where it opens out into Lancaster Sound (Hørring, 1937, p. 43); and finally the "big breeding colony" discovered by O. Sverdrup at Cape Vera, Archer Peninsula, Devon Island on 8 August 1900 (Schaanning, 1933, p. 162). There are quite possibly other colonies as yet undiscovered. Mr. G. W. Rowley[2] reports that fulmars appeared to be breeding in cliffs in Adams Sound, farther south in Admiralty Inlet, in 1937.

References to Baffin Island fulmar colonies are exceedingly few and meagre. Ludwig Kumlien (1879, p. 101–2), naturalist of the Howgate Polar Expedition, first suggested the existence of a colony near Cape Searle. He records also that in July 1878 he found a few breeding near Quickstep Harbour in Cumberland Sound, on some small rocky islands. Quickstep Harbour is on the north side of Cumberland Sound about 16 miles northwest of the entrance to Pangnirtung Fiord, that is, near the head of the sound and more than a hundred miles from the open sea of Davis Strait. This is a most improbable place. In the Baffin Bay region, including west Greenland, small fulmar colonies of a few pairs are almost unknown (cf. Salomonsen, 1950b, p. 32), and the sites chosen are generally majestic cliffs, overlooking or close to open water of relatively high salinity, and not in such a landlocked sea as the upper part of Cumberland Sound. Kumlien's 'Contributions to the natural history of Arctic America' are exceedingly valuable, but they are not entirely free from major errors of this sort; and since more recent observation shows that

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[1]Note in the records of the National Museum of Canada.

[2]Oral communication.

fulmars are never at all numerous in Cumberland Sound (Soper, 1928, p. 86), my own opinion is that until further evidence is forthcoming the Quickstep Harbour record should not be accepted.

After mentioning the fulmar colony which he saw at Blåfjaeld (Mt. Uivfak, west Greenland, Kumlien continues with the following paragraph, which is quoted in its entirety.

"In Exeter Sound and to the northward along the west shores of Davis Straits and Baffin's Bay, the dark variety seems to predominate. Near Cape Searle they are extraordinarily abundant, breeding by thousands on the Padlie Island, and they are so tame about their nesting-places that they can be killed with a stick. The eggs, even after being blown, for many months still retain the musky odor peculiar to the birds. Perfectly fresh eggs are quite good eating, but if a couple of days old the musky odor has so permeated them, even the albumen, that they are a little too much for a civilized palate."

This is a puzzling statement. In the last part he evidently refers to his own personal experience of eating fulmars' eggs; but at Cape Searle at the present day no one would think of describing the birds on the inaccessible towers as tame, nor for a moment of trying to reach them with a stick. This discrepancy is emphasized by his omitting to give any hint that Cape Searle presents an extraordinary and unforgettable sight: the possibility indeed suggests itself that there may be some mistake or confusion.

The Editor has very kindly drawn my attention to Kumlien's reference (p. 105) to the largest rookery of Brünnich's murres he found, "being on the Padlie Islands in Exeter Sound"; and, further, to information received from the Eskimo by Mr. T. A. Harwood in 1938, that fulmars breed on Kaxodluin Island,[1] a low-lying island with a steep cliff, near the entrance of Exeter Sound, where it would be quite possible to kill the birds with a stick. These are either the same or neighbouring islands; and to me the most probable solution is that Kumlien's account refers wholly to the latter fulmar colony in Exeter Sound, which is not otherwise mentioned. The not unreasonable assumptions must be made either that he failed to identify correctly the Cape Searle of Ross, or that some confusion arose between the different "Padlie Islands". This at least provides an explanation for the two curious facts, first that he mentions one and not both 'Padlie Island' colonies, though we know he visited Exeter Sound; and second, that the description given contains no reference to the commanding site on Cape Searle, and seems wholly inappropriate to it.

Cape Searle was well known to the Scottish whalers, and in 1860 the ship's surgeon James Taylor made a collection of plants there, and published them in a list of plants and ferns collected on both sides of Davis Strait and Baffin Bay (1863), though he left no narrative or description of the cape.

The only other early records of fulmar colonies known to me are those of Franz Boas (1885), the ethnographer, whose journeys in Baffin Island in 1883–4 excite the keenest admiration. Boas was particularly active in collecting

[1]This name is given in the 'Sailing directions for Baffin Bay and Davis Strait' (1947, U.S.H.O. Pub. No. 76), but has not been officially adopted by the Canadian Board on Geographical Names.

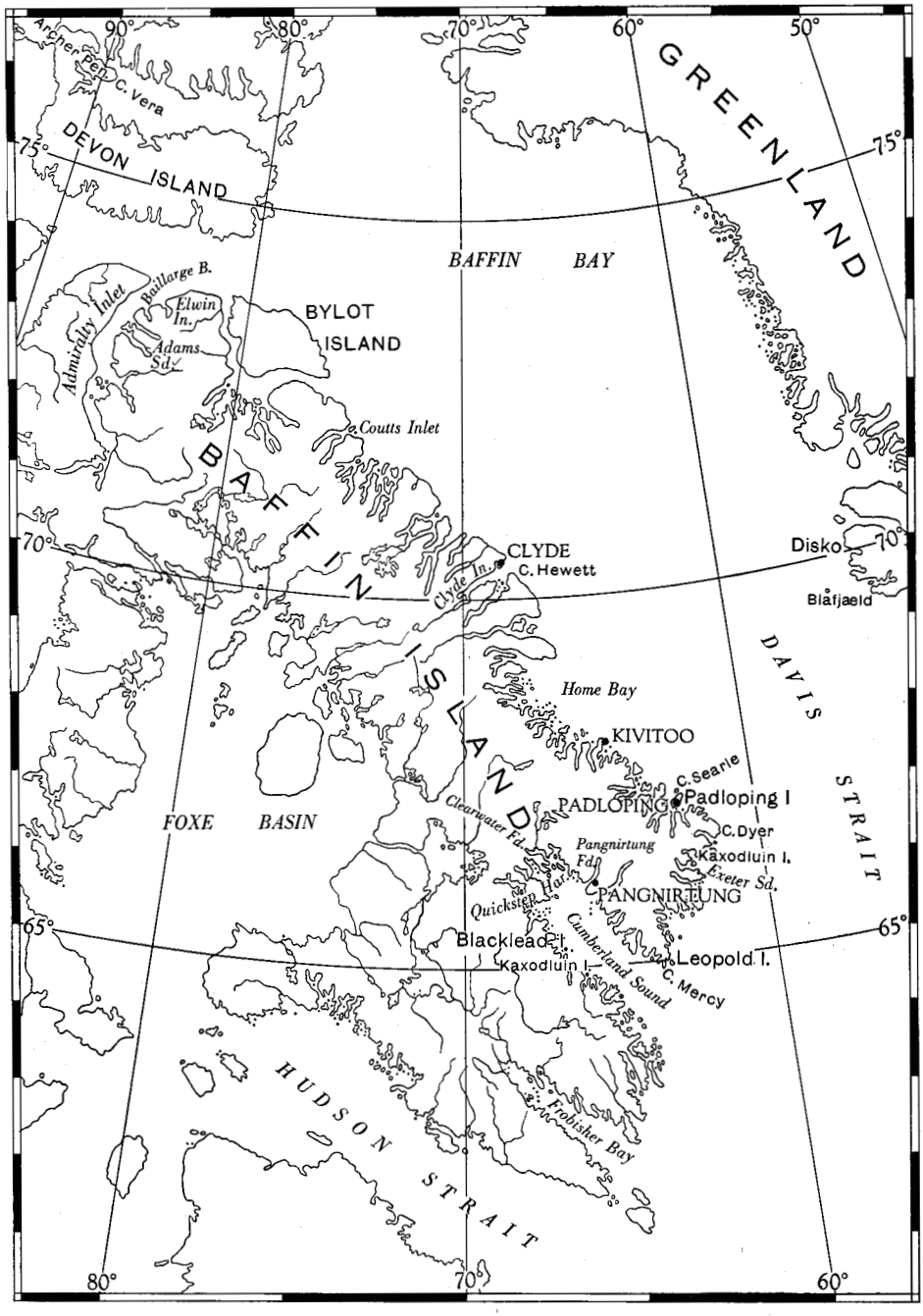

Fig. 2.

Eskimo place names, and his maps show no less than five places called 'Kaχodluin' (= Qaqudluk = Oohudluk), meaning fulmar, besides two others using this word with added terminations. In one of the latter, namely 'Kaχodlualung' in

Fig. 3. Cape Searle is not a suitable place for photographing fulmars at the nest because of their inaccessibility. This bird is an 'intermediate' in plumage.

Clearwater Fiord at the very head of Cumberland Sound, the unexpected sight of a fulmar, or perhaps a shearwater, could have been the occasion of giving the name, since it is a place where fulmars are unlikely ever to be particularly numerous.

One *Kaxodluin*[1] is the island of which Cape Searle is the northeastern point which Boas passed a day or two after 22 May 1884, on a sledge journey north to Kivitoo; a second is evidently Freuchen's site on Admiralty Inlet. There remain three others, all perfectly possible sites of fulmar colonies, namely Kaxodluin Island, 22 miles ESE. of Blacklead Island, near the mouth of Cumberland Sound (visited by Boas in early March 1884); Leopold Island off Cape Mercy; and Kaxodluin Island in Exeter Sound (66°15N., 62°15W.). There is a keen incentive to follow up these tantalizing clues, and explore the 150-mile stretch of capes and outer islands between Cumberland Sound and Cape Dyer, as yet unvisited by a naturalist.

One other interesting item is to be found in Boas, whose references to the fulmar are unfortunately confined to place-lists in the appendix. He suggests (p. 94, footnote) that Cape Searle is perhaps the Sanderson's Tower of John Davis. (William Sanderson was the principal patron of Davis's three voyages in search of the Northwest Passage). Sanderson's Tower appears, not in the log, but only as a name inserted on the famous 'New Map of the World' of 1600,[2] lying north of Mount Raleigh (Exeter Sound) in the general region of Cape Searle; but the map is so small and inaccurate that certain identification can never now be made. Davis may have named Sanderson's Tower on the First Voyage in 1585, but more probably on the Third in 1587. Certainly Ross was mistaken in identifying the name with what is now called Leopold Island, much farther south, although the latter is 2,000 feet high and according to Ross (1819, p. 219) "resembled a martello tower". As has been said, it was Ross who named Cape Searle (1819, p. 209).

[1]Boas uses the Greek χ usually transliterated *kh* or *ch*, but the letter *x* has been given here because 'Kaxodluin' is the officially adopted Canadian name for the island in Cumberland Sound; the U.S. 'Sailing Directions' also refers to the island in Exeter Sound as 'Kaxodluin'.

[2]Hakluyt Society, 1880. Published to illustrate the voyages of John Davis.

After Kumlien and Boas there was no news of Cape Searle until Dr. Livingstone's visit in recent times. It is in fact extraordinary how little has been generally known about the fulmar's nesting colonies in Arctic America, considering its abundance in the region. When Mr. P. D. Baird invited me to join his 1950 expedition to Baffin Island[1] I made known to him my long-standing wish to go to Cape Searle; and though it was a very long way from our base at Clyde, he at once consented to include it among the objectives of the expedition.

The races and distribution of the fulmar

Before describing our visit, it is necessary to say a few words about the fulmar itself. It is of course a petrel, related to the albatrosses and shearwaters, and like them a deep-water bird. It is nearly circumpolar in distribution, and remarkable for the fact that the colour varies between a 'light phase', with white head and underparts and grey wings, not unlike a gull, and a 'dark phase', in which the whole of the plumage is a dark smoky grey. There is a complete range of intermediates, and the proportions in which light and darker birds are mixed together varies tremendously from one part of the range to another. The colour differences are independent of age or sex. The span of the fulmar's wings (one measured 42 ins.) is a few inches longer than that of the kittiwake, but much less than that of a herring gull (about 56 ins.).

There are three geographical races at present recognized, namely one in the North Pacific and two in the North Atlantic. The Pacific fulmar, *Fulmarus glacialis rodgersii*, though variable, is quite distinct. The two named Atlantic types, *F. gl. glacialis* and *F. gl. minor*, however, appear to form part of a cline or graded series, though details of the situation are not yet fully worked out.

In all races the males and females differ somewhat in the size of the bill, that of the male being both stronger and longer than that of the female. This sexual dimorphism is least marked in *rodgersii*, in which even the male has an effeminate bill with a weak 'nail', by no means so robust as that found in any of the Atlantic series (Fig. 4).

The length and strength of the bill also varies geographically, and is the basis upon which the various races may most readily be distinguished. The largest bills are to be found in the fulmars of the British Isles, Faeroes (Færøerne), and Iceland. Breeding birds from Spitsbergen (the type locality of *F. gl. glacialis*, as designated by G. M. Mathews, 1934), Bear Island (Bjørnøya), and Jan Mayen (and probably Greenland) have rather smaller bills, and form a group with a mean bill length significantly different from that of either the previous group, or of those breeding in Baffin Island. The latter have the smallest bills of all, and have lately been recognized by Salomonsen (1950a and b; see also "Twenty-sixth supplement to A.O.U. Check-list", *The Auk*, Vol. 68 (1951) p. 367) as the short-billed fulmar, *F. gl. minor*.

Besides the bill, there are other variable characters. Though the wing-lengths of all fulmars fall within much the same rather wide range, there is little doubt that the Icelandic–British type is on the average a substantially

[1]Supported by the Arctic Institute with funds provided through the U.S. Government.

heavier bird than that from Cape Searle. Incidentally, the males, in all Atlantic populations at least, average heavier than the females, and, as Salomonsen showed, birds with big bill's have big skulls and heads and *vice versa.*

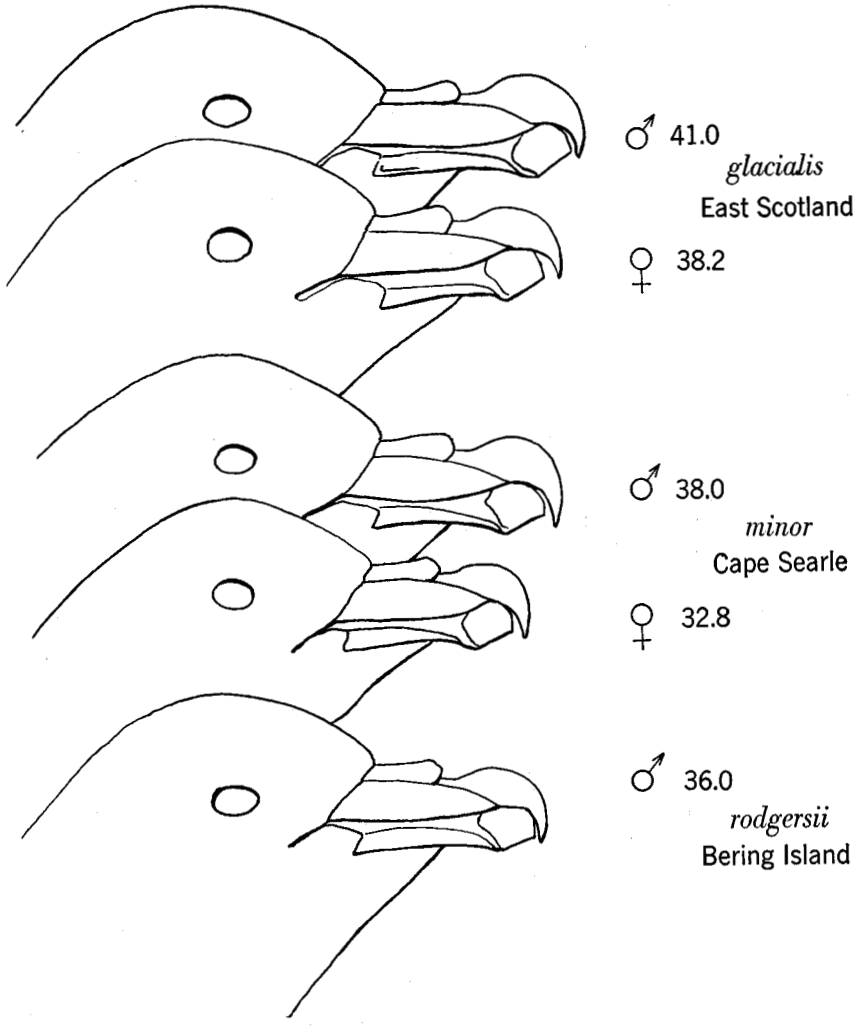

Fig. 4. A comparison of the bills of the three races of *Fulmarus glacialis.* (X 2/3). The figures show culmen-length in mm. of these individual birds, but are near average for the subspecies and sex concerned. Note the greater strength and curvature of the 'nail' in the males of *glacialis* and *minor,* and the 'female' appearance of that of the male *rodgersii.*

In the Icelandic–British group, birds not in the typical light phase are decidedly rare, no doubt less than one in a thousand; and the greyest birds which do occur are not as dark as the darkest found in Baffin Island. The latter are in turn slightly surpassed by the darkest *rodgersii.* At Cape Searle, as described below, only about one bird in eight is of the typical light phase, and about the same proportion are extremely dark, the remaining 75 per cent

being intermediates. On the opposite side of Baffin Bay, on the other hand, in the Disko Bay (Disko Bugt) region of west Greenland, about 99 per cent of the breeding birds are in the light phase (Salomonsen, 1950b, p. 40). In northeast Greenland and Spitsbergen, "intermediate colour-phases constitute the main bulk of the population" (Salomonsen, 1950b, p. 40).

It will be noticed that there are two independent variables here, namely the proportion of white-headed birds, and the degree of maximum saturation to be found in the darkest individuals.

As a breeding bird in the Atlantic sector the fulmar generally avoids the continental mainland, and extends as a high-arctic bird from about 70°E. in Novaya Zemlya (possibly also Lonely Island (Ostrov Uyedineniya), 83°E.), and Franz Josef Land (Zemlya Frantsa-Iosifa), Bear Island, Spitsbergen, Jan Mayen, northeast and northwest Greenland, to Baffin Island. The known colonies, though often large, are not very numerous. The Icelandic–British group occupies a very different, temperate or boreal, environment, and has undergone a remarkable recent expansion of range, originating more than a century ago, and still continuing. In contrast to the ancient and metropolitan colonies, such as those at Cape Searle or St. Kilda, which seem elsewhere to be characteristic of fulmars, within the newly colonized region on the British coasts and isles there has been a rapid ribbon development of numbers of small or relatively small colonies, often situated on quite insignificant cliffs or bluffs. This tendency to pioneer and establish new colonies, instead of remaining to make the best of the old ones, may be something more than a mere consequence of the increase in numbers. It could, for example, be the primary result of an original mutation or hereditary change, which has brought about the increase in numbers and range in its train.

Whether wandering fulmars from the Atlantic sector occasionally mingle with those from the Pacific there is no evidence to determine. The latter are much more restricted in their range in the Arctic Ocean. Attention may be drawn again to the observation made in 1850, and the more recent specimen collected on 27 July 1916, at Banks Island in long. 125°W. (Rand, 1948, p. 175). This latter bird is now in the National Museum of Canada, and, though unsexed, has a bill-measurement normal for a female of the short-billed race (32.2 mm.); Rand was satisfied that it was not a *rodgersii*.

The bill-measurement (culmen from feathers) of a male collected by us at Cape Searle, 15 August 1950, is 38.0 mm.; of two females, 35.5 and 32.8 mm.; and of an unsexed skull 34.3 mm. These accord with the means of Freuchen's series from the Admiralty Inlet colony, namely, males 36.0 ± 0.4 mm. (standard deviation=1.7 mm.); females 33.1 ± 0.3 mm. (standard deviation=0.6 mm., which is probably too small; the number measured was only six).

Narrative of our visit to Cape Searle

The visit to Cape Searle in 1950 was left until after the middle of August, to make sure of open water conditions. The fulmars arrive early in the spring; they were already in possession of the cliffs in great numbers when Dr. Livingstone was there from 15 to 17 April 1929, though their nesting ledges were

still frozen and the ice no doubt extended far out into Davis Strait. The breeding season is about one month later than in the temperate climate of the British Isles; we were able to calculate from our observations that most of the eggs must have been laid just prior to June 15.

This late visit fitted in well with other plans, since by this time the biological work at Camp B, at the head of Clyde Inlet, was well advanced. There were five members of the expedition in the 'Padloping party': the pilot of the Norseman, Maurice King, who later lost his life on the Arctic Institute's Snow Cornice Expedition in 1951; Monty Ritchie, who had to be starting on his way south; and Mason Hale, Sandy Anderson, and myself. Maurice King fetched us from Camp B on August 12, and we spent a busy day at Clyde on the 13th preparing for the 350-mile flight to the southeast.

August 14: We tried to take off at 3.20 a.m., but there was an oily calm and the aircraft was too heavily loaded. Although we taxied out seven miles to the mouth of the inlet looking for a puff of wind, we made four or five runs without success, and returned to the post at 4.30. We tried again at 9.00, after pumping out 50 gallons of gas, but were still unsuccessful. Just as we came ashore again at 9.45 a strong breeze sprang up, and away we went.

As we passed low over the flat country of Cape Hewett, just south of Clyde Inlet, we saw a polar bear running, or loping, away, scared by the aircraft; and later three separate snowy owls. Over Home Bay we ran into fine weather, and could watch the changing panorama of magnificent mountains to the west of us all the way along the coast. We arrived at Padloping after a run of exactly three hours, and were met by the crew of the U.S.A.F. Meteorological Station with a carry-all and a truck to drive us up the bumpy road to the post. They were most hospitable, and gave us an enormous empty Quonset hut, with stove, beds, and table.

The seaplane which was to take Monty south was expected the following day, so he was extremely lucky. It got almost dark at night, and Jupiter was blazing in the low southern sky.

August 15: A very fine day. The PBY came in about 10.00 a.m. and left two hours later with Monty aboard. Very shortly afterwards Mason, Sandy, and I boarded a whaleboat with three Eskimo, and left at 1.05 p.m. for Cape Searle, sixteen miles to the northeast. Along the southeast coast of Padloping Island the high rugged cliffs of volcanic and sedimentary rocks were full of colour, a complete and not unwelcome change from the sombre gneiss of Clyde. We were in a wide channel, and at once among sea birds—dark fulmars, Brünnich's murres, black guillemots, and glaucous gulls. A group of harp seals in a small cove dived as we passed and did not reappear. About 4.00 p.m. we rounded the northeastern cape of Padloping Island, and immediately saw the majestic towers and jagged pinnacles of Cape Searle, three miles to the north.

Almost at once walrus were sighted, blowing like blackfish, and we gave chase. The Eskimo seized their rifles, and at first shot a bull was hit at 200 yards—a standing shot from the thwart of the pitching boat putting the bullet into his round back just at the water-line, as he broke the surface for a few

seconds. Then there followed a bloody chase. The herd, over a hundred animals, broke up, and several in our little group were badly wounded. The bull was killed, and, as we came alongside, the Eskimo thrust in a harpoon, and made it fast by the hide thong to a half-empty gas can (the sealskin bladder being stowed away and not at hand in the emergency of the moment). The calf swimming with him was shot also and hauled up over the gunwale with a short gaff. Meantime the bull sank, gas can, harpoon, and all, and was not seen again.

We went after another group, and another, and the water was red with blood. In the end we secured one bull of fair size, which was made fast alongside; but so rapidly do they sink that this, plus the small calf, was the total outcome of an hour's hunt, in which at the very least six walrus were mortally wounded.

We landed on Cape Searle island about 6.00 p.m. and put up the tent on the beach—the only level spot to be found. The Eskimo had a quick supper on their boat and proceeded to cut up the walrus into manageable pieces and pack it aboard, in all perhaps three-quarters of a ton of bone, meat, blubber, and hide. We were cooking and eating our own meal in the tent all this time. Shortly before 8.00 the skipper Anilik appeared and announced that they were going home. They assured us with much flourishing of wrist watches (of which they are excessively proud) that they would return tomorrow about 12. We should have to do the best we could without the boat, which, I confess, had appeared absolutely indispensable if we were to have a proper look at the cape.

The wind blew from the SW. at night, and there was some rain. We were lucky to have a sheltered spot, for we learnt afterwards that the Eskimo were obliged to seek shelter and lie up, and the gale at Padloping broke loose the huge pontoons used for a wharf, and drove them up on the beach.

August 16: Fair and calm, but mostly cloudy. We got up at 4.30 a.m. to make the best of the morning, and started for the bird cliffs at 6.00.

There is a six-knot tide-rip through the strait between where we camped and the Padloping shore opposite, running east on the flood and west on the ebb, with standing waves over a ledge running a mile out from our shore in the narrowest place. It was very popular with the fulmars, which floated in the stream by hundreds and fed, dipping their bills in the water. The walrus were there again also, far off.

The cape itself, where most of the fulmars nest, is totally inaccessible. The two huge towers, the bigger of which we called 'the keep' from its resemblance to a Gothic tower, are some 1,400 feet high and fall straight into the sea, so that there is access neither to the top nor the foot (except at sea level just at the inner end). We headed up the steep slope of the island, and found a way to the ridge top, 1,100 feet above sea level. The cliffs dropped away on every side, with fantastic pinnacles and buttresses, all orange-red with the bird-cliff lichen *Caloplaca elegans*; and everywhere the fulmars swarmed like flies. We were still 1,000 yards from the keep, but could see the cloud of birds over the summit, and away on either side far into the distance. The

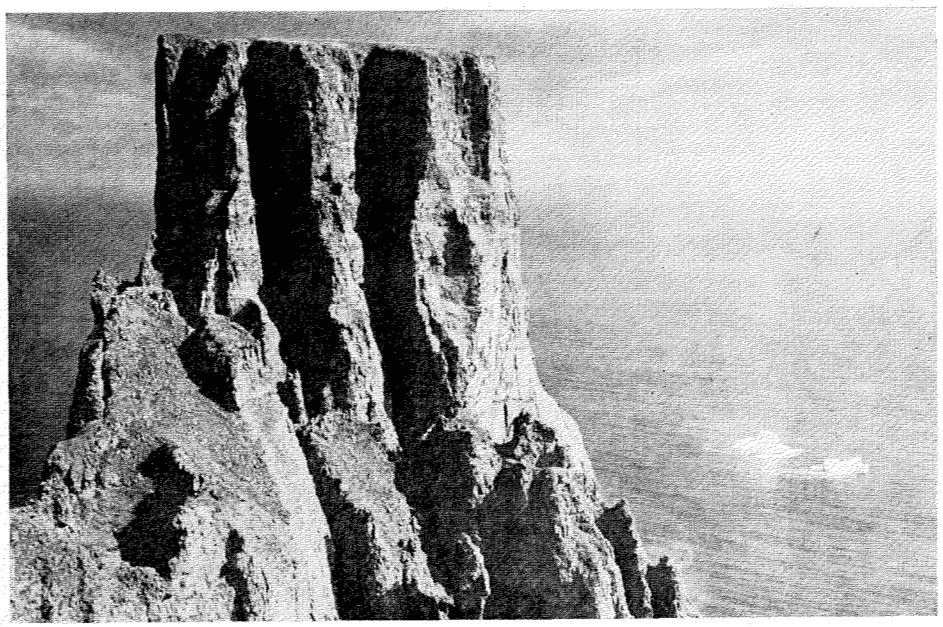

Fig. 5. 'The keep', the inner tower of Cape Searle, from the nearest accessible point on the ridge, about 1,000 yards away. Photograph taken from a position 1,110 feet above sea level (by aneroid), and from here the height of the tower was estimated to be 1,400 feet.

summit was evidently covered with luxuriant vegetation, although so high and exposed, and there appeared to be an immense number of nesting birds right on the flat top. There were nests at all heights down almost to the cliff-foot, but they were everywhere much more numerous towards the top. Unfortunately the massive keep entirely concealed the outer tower of the cape from our view.

We could look into scores of nests relatively close at hand from our look-out. Each had a grey down-covered chick half to two-thirds grown (though in fact not more than about 15–20 days old, so fast is their initial growth). We saw a weasel (*Mustela arctica*) precariously hunting the uppermost ledges close below us, though there was clearly nothing left within its reach; these and the ravens, glaucous gulls, and white gyrfalcons probably take a considerable toll, though the main towers must be inaccessible to foxes or weasels.

I tried to estimate the probable population of the colony, and feel satisfied that it exceeds a lower limit of 200,000, though it may not be as high as half a million adult birds. An unknown proportion of the birds present were no doubt unmated or not breeding; and a figure for the number of birds in residence, including the immense numbers at sea within a 50-mile radius, has therefore more meaning than one for the number of breeding pairs. On our way home in the aircraft we made counts of fulmars flying over the water below, and could derive from these a rough estimate of their density of numbers. Naturally this rapidly diminished as the distance between us and Cape Searle increased.

Fig. 6. The towers of Cape Searle from the southeast.

The white-headed birds were much the most easily seen when sitting on the ledges, and there appeared to be about one of them in every five or six birds (23/126); but more careful counts made later at the tide-rip gave 44 light-phase in 373, or 12 per cent. The remainder were for the most part intermediate in shade, and only a similarly small proportion was really dark (some of them of a depth of grey seldom if ever found in the Atlantic sub-species).

As we walked back to camp along the beach it was 'blowing hot and cold', as it does on the Lower St. Lawrence, and the sea horizon was distorted. The Eskimo were not there, of course, nor did they come for over 24 hours.

In the afternoon there was some rain, and a strong cold north wind blowing banners of fog through the notches of the cape, and over the 3,000-foot mountains opposite on Padloping Island. At 1.45 p.m., when collecting fairy-shrimps (*Branchinecta paludosa*) from a pond on the beach with the butterfly net, I saw MacMillan's schooner *Bowdoin* pass south under fore- and stay-sail about two miles off the cape.

The morning's collection of plants included several good finds, such as *Tofieldia pusilla, Ranunculus sulphureus, Erigeron unalaschkensis* (a northern extension); also *Arabis alpina* and *Phyllodoce caerulea*, now for the first time confirmed in their northernmost known station, whence Taylor reported them in 1860; but I could not find his '*Gnaphalium sylvaticum*' (= *norvegicum*). (This is interesting, in view of Polunin's doubt (1940, p. 358) on the accuracy of Taylor's record of this plant, and his conclusion that it "needs confirmation"). I also obtained one specimen each of the butterflies *Colias hecla* and *Boloria freija.*

August 17: Bright, with a cold NE. wind. At 7.00 a.m. we tried to reach the foot of the keep along the shore and rocks; but it was high water, and there was a place where the heavy swell was breaking against the foot of an overhanging cliff. The morning was spent collecting and visiting the glaucous gull colony at the end of the sea cliffs nearest our camp, where over twenty pairs were breeding. Apart from some scattered black guillemots (*Cepphus grylle*) and the glaucous gulls, the fulmars are the only sea birds nesting on the cape.

Sandy skinned out the bodies of the birds we had obtained in the last two days, and we had an early dinner of fried breast of fulmar, murre, and guillemot: we all agreed that the fulmar was delicious and better than the rest.

At 12.00 we tried again, and had good fun running under the cliff from cove to cove between successive waves. We reached the green slope below the keep about 1.00 p.m. and had over half an hour there. It was extraordinary to look up the sheer walls hanging over 1,000 feet above our heads, with clouds of birds wheeling round them. The lush vegetation turned out to be chiefly mountain sorrel (*Oxyria digyna*) and the grasses *Trisetum spicatum* and *Alopecurus alpinus*. So rank was the growth that some of the sorrel leaves measured 9 cm. across. There was a well-used Eskimo camp-site on the flat, bare ground among the boulders at the foot of the cliffs, with an ugly accumulation of rusty tins and the wings and remains of many birds.

Soon after passing under the overhanging place on the way back we met Anilik coming to look for us. We reached the tent at 2.50 p.m., and were all packed and stowed aboard and on our way by 3.10. We found the boat all set for another walrus hunt, and an extra man along, evidently a crack marksman: but we saw no walrus, and only a small herd of harp seals, which vanished at the first shot.

It was a cold journey home of three-and-a-half hours, and the tarpaulin rigged over the fore part of the boat was welcome. To avoid the rough water out to sea we came round the north and west sides of Padloping Island, completing our circumnavigation of it; but the last two miles into Padloping were uncomfortably rough. The Met. boys gave us supper in the mess-hut with three eggs each and new bread, followed (after a suitable interval) by a hot shower and a comfortable bed.

August 18: Blustery weather. At 2.50 p.m. we took off for Clyde, on very rough water; while getting the mooring ropes aboard we drifted right among the rocks and only just got clear. Forty-five minutes after taking off we ran into fog patches, which soon got thicker and more continuous, extending from sea level to over 2,000 feet. It was not possible to make any radio contact, so we turned back to Padloping, landing about 4.30 on slightly calmer water. We learnt next day that farther north there had been heavy snow-storms all afternoon. It was a windy night, but the sky cleared and all the snow peaks to the south were lit up with rosy light at sunset.

August 19: Very fine, with a cold SW. wind reaching 35 m.p.h. We had a calm take-off, however, at 9.50 a.m., and flew along the north side of Padloping Island to Cape Searle, banking steeply round it close in to the cliffs

at about 1,000 feet. I spent most of this brief time taking movies, but had the chance to see the outer tower and the whole of the north side. The top of the outer tower slopes to the north, and is entirely covered with nesting fulmars. The colony extends more than one mile along the north side of the cape, some way west of our look-out place of the 16th and on to the first mountain. (This is rather greater than the extent of the colony on the south face.)

Farther north we saw a bear in the water, and flew over the unoccupied settlement of Kivitoo, where the buildings appeared to be in good repair. We landed among big ice floes at Clyde at 12.25.

Another account of the Cape Searle fulmars is to be found in my paper on the birds of the Baird expedition (Wynne-Edwards, 1952). It is in great measure complementary to this article, and comparatively little has been repeated in both places.

For the loan of the blocks of the coloured illustration my thanks are specially due to Mr. James Fisher of London, and to the Editors of the *Geographical Magazine*, in the August 1951 number of which journal the picture originally appeared.

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