ARCTIC CIRCULAR
Vol. 10

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THE ARCTIC CIRCULAR

VOL. X NO. 1 Published by The Arctic Circle
Ottawa, Canada
(November 1957)

1957

The following meetings of the Arctic Circle have been held:

Seventy-second Meeting, 8 January 1957. The Annual General Meeting, "The future of the north" by Mr. R.G. Robertson, Deputy Minister of the Department of Northern Affairs and National Resources.

Seventy-third Meeting, 12 February 1957. "Life at an arctic weather station" by Mr. J.L. Courtney.

Seventy-fourth Meeting, 12 March 1957. "Northern agriculture" by Mr. F.S. Nowosad.

Seventy-fifth Meeting, 11 April 1957. "The Mid-Canada Line" by W/C G.J. Bury, R.C.A.F.

Seventy-sixth Meeting, 9 May 1957. The films "Wheels to the north" and "Northwest Canada" were shown,

Seventy-seventh Meeting. 8 October 1957. "The Eskimos" by Mr. G.W. Rowley.

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The future of the north. By R. Gordon Robertson

The following is a precis of Mr. Robertson's talk to the Arctic
Circle at the Annual General Meeting.-

There are so many unknown factors that it is impossible to speak with confidence about the future of north Canada, especially at a time when the pace of world events is so great that even apparently sure forecasts can soon prove unfounded. Nor is it possible to generalize since the north is so vast and varied. Only one thing seems certain, that the future of the north is a matter of very great importance to Canada, and especially to those Canadians who live there. It is obvious that great changes are taking place, probably more in the last five years than in the previous fifty, and these changes are affecting the economic life of the area, the livelihood and culture of the Eskimos and Indians, the transportation facilities, and in fact almost every aspect of the north-

In order to make policy decisions now and to plan for the future of the north it is necessary to form some picture of what this future will be, for there is always a great and unavoidable time lag before the results of policy can become effective. For instance the fuller education that is so necessary for the northern peoples cannot be provided immediately. It takes, say, two years to work out a

policy, five to six years to build the schools and supply the staffs, and eight to ten years to educate and train a child. Policy therefore must look fifteen to twenty years ahead to the way of life and means of economic support which will obtain then. Similarly for building roads, railways, airports, housing, hospitals, power installations, etc., it is necessary to look far into the future. The assessment of the future may prove wrong, and in many ways is sure to be mistaken, but some assessment is unavoidable.

An assessment of the future of the north must consider both the human and economic aspects. The questions which must be answered are how will the life of the Eskimos and Indians be affected, so that they can be helped to meet these new conditions, and what sort of economic development is likely to occur, at which places and when, so that steps can be taken to foster it. These two aspects are of course closely related since the economic base has overwhelming importance for the culture that can be built and sustained on it. Life in a snow house and lack of formal education are consistent with a hunting and trapping life, but not with employment in construction, mining, or government.

Both the northern Indians and the Eskimos were originally hunters. They were totally dependent on the resources of the country, obtaining all their food and clothing and many useful materials from hunting and fishing. Except in a few places where game was abundant they led a nomadic life in tents and snow houses. The Eskimos in particular had made a superb adaptation to life in a rigorous climate. Some 150 years ago this pattern of life began to be affected by our civilization. First the fur trade pushed inland from Hudson Bay and north along the Mackenzie Valley, putting emphasis on trapping, providing trade goods in exchange for fur, and introducing the rifle. Later whaling reached the tribes living in north Hudson Bay, Baffin Island, and the Western Arctic. These two activities, together with the work of missionaries, provided the total influence of our civilization until about 30 years ago. Their immediate effects did not substantially alter the native way of life, but their long-term effects would in fact have made this life precarious even if there had been no other encroachments. In the last 30 years, and especially since the war, there have been the new and far-reaching influences of administration, defence and development.

In the past the human demands on the country could not exceed the resources of the country, and the animal resources were extremely low. If the human demands became too great balance was restored by people starving. The "unspoiled" way of life, while

undoubtedly resulting in much happiness and satisfaction, was basically and unavoidably a rigorous and precarious life, leading in difficult times to famine, infanticide, and suicide among the old people. The earliest influences of civilization set in motion changes that could only upset the delicate balance of human numbers to country resources. On the human side Christian ethics and later the application of our code of laws had to oppose infanticide and suicide, and also to provide food and help in time of starvation. The effect of this on the size of the population was at first masked by epidemics of introduced diseases, but in the past 20 years or so these have been offset by medical treatment, while Family Allowances, Old Age Assistance, and Disability and Blind Pensions have added to the influences tending to increase the population. Though these factors were introduced without changing the basic character of the native way of life, they made its continuance impossible, unless the animal resources increased. The influence of civilization has however been to reduce the supply of game. The rifle made killing easier and often far more animals were killed than were needed; the result can be seen in the numbers of caribou which were estimated as late as 1949 at 668,000 and by 1955 had shrunk to 300,000. Dog food for the large teams required for trapping was another drain on the game resources. One of these resources, the whale, had been practically wiped out by the whalers. The result of civilization has therefore been that it is impossible, and has been impossible for many years, to took to the future and decide that the native way of life should be left unchanged. Whatever economic development occurs in the north, the total Eskimo and Indian population can no longer continue to live off the land. If game resources remain unchanged, they might just support the present population, but the natural increase will have to find some other means of support. If, on the other hand, game resources continue to decline, as seems likely, they will be inadequate for even the present number. The inevitable conclusion is that there will be an increasing need for some other source of support for the natives of the north. Some means must be found for providing a cash income to purchase food, clothing, and other necessities.

Until now the only significant source of income has been fur, but the fur trade is a depressed industry and with synthetic fibres, heated automobiles, central heating, and increased urban living, there is slim hope of its recovery. Fur prices today are on the whole lower than in 1937, while the price of goods in the north has become much higher. It seems that the fur trade will progressively become less able to supply the income needed in the north. Looking to the future then we must expect an increasing

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number of Eskimos and Indians who will not be living off the country, while those who continue to hunt and trap will no longer be able to kill enough caribou for food and clothing and will probably require a higher income than can be obtained from fur alone. The only other possible source of income is employment in administrative tasks in the north, in defence activities, or in economic development. There is no reason why Eskimos and Indians should not be able to hold this employment. They already carry out unskilled and semi-skilled tasks, but it is not enough to offer them this type of work alone. All positions should be open to them. For this they need education, technical training, and social adjustment. Present estimates of the prospects of Eskimo employment during the next ten years are:

Number
110
200
150
100
100
200
100
100
50
50
50
30
- <u>30</u> 1270

ii,

Obviously this is only an informed guess. If anything, it is probably conservative. It is clear, however, that the total of 1,270 represents an important proportion of the Eskimo population and their employment for wages would greatly reduce the pressure on the country resources. Similar opportunities will develop for the Indians in the Mackenzie Valley. Employment on this scale will not however solve the problem. The major question is whether economic development will continue for years to come to be on the sustained and increasing scale necessary to absorb the growing population. The north certainly contains the resources necessary for development metallic ores in the Canadian Shield, the Yukon, northern Quebec, and the islands of Hudson Bay; petroleum in the Mackenzie Valley and possibly in the Yukon and the arctic islands; forests in Wood Buffalo Park and the Mackenzie and Liard valleys; and perhaps some local agriculture in the Mackenzie Valley and the Yukon. Development of these resources in the near future will depend on costs, particularly the costs of transportation because of their inaccessibility, and of heating because of the climate. These costs may be reduced by improved transportation facilities, such as new railways, and possibly by atomic heating. Rising world prices of minerals and forest products would also accelerate development. It is however general economic conditions, not the need to provide local employment, that will justify development, and it is impossible to foretell whether this development will occur fast enough to absorb the increasing native population that will be in need of employment.

The conclusion that a steadily increasing proportion of Eskimos and Indians will be engaged in wage employment is not based on any assumption that this is a superior way of life, leading to greater happiness. An attitude of white superiority undoubtedly often exists, but there is little to justify it. The views of Father G.M. Rousselière in an article "To civilize the Eskimo" in Eskimo of December 1956 give food for thought,

"...the master of a bulldozer feels part of the civilization which produces bulldozers and implicitly superior to the Eskimo who, in the line of material achievements, has little to show. But a cursory glance at the intellectual food that abounds in construction camps and mines must raise some doubt as to the intellectual superiority of the white man and his competence for civilizing the Eskimo."

It is not any assumption of superiority for our way of life that leads to the conclusion that wage employment and education must be provided. It is plain, unavoidable economic facts. The inevitable changes which face the northern peoples will certainly entail a very difficult period of adjustment for them. This process of adjustment may take place too rapidly, in too many places, and involving too many people. The Eskimos and Indians may become bewildered and dismayed and their problems must be met with sympathy and understanding. What is important is to protect and preserve their cultural heritage, their pride, and their independence. If we can do this in the adjustment to new economic conditions we shall have achieved a great victory.

"Operation Mackenzie", 1957. By R.G. Blackadar

During the summer of 1957 "Operation Mackenzie" continued a programme initiated by the Geological Survey of Canada in 1952 to accelerate the geological mapping of Canada by using both rotary and fixed-wing aircraft to examine large blocks of territory. The area surveyed in 1957 extends from the southern border of the Northwest Territories to latitude 64°N, and west from the margin of the Precambrian Shield to longitude 126°W., an area of about 100,000 square miles. The survey phase of the project began in early May and lasted until the latter part of September.

The purpose of the survey was to correlate rock units in different regions, to acquire stratigraphic information on the succession of strata and their faunas, to map geological formations, to outline geological structures, and to assess the petroleum and natural gas potentialities of the region. In addition attention was given to Pleistocene deposits which have considerable economic value in an area such as the southern District of Mackenzie where extensions are planned to the existing road system.

^{1.} Published with the permission of the Deputy Minister, Department of Mines and Technical Surveys, Ottawa, Canada.

^{2.} Geologist, Geological Survey of Canada.

Much interest has been shown in this part of the District of Mackenzie by private oil companies and periodic drilling has taken place. Geological information is available for parts of the area but despite such material no over-all compilation of data had been published.

The operation was supported by two Bell helicopters and one Beaver aircraft supplemented in the early stages by one Otter aircraft. Five main and two secondary bases were occupied successively during the summer. The installations required at these were largely moved from site to site on a barge powered by a rivergoing boat thus saving the movement of large amounts of equipment by air.

Associated with Dr. R.J.W. Douglas, who was in charge of the planning of "Operation Mackenzie", were 8 other officers of the Geological Survey of Canada, experts in the fields of palaeontology, stratigraphy, structural geology, and pleistocene geology. They were assisted by 9 undergraduate university students. In addition to the geological staff, the party included 2 helicopter pilots and 2 flight engineers, a pilot and flight engineer for the Beaver aircraft, a radio operator, 2 cooks, and a skipper and boatman.

The helicopters were used to carry out geological observations, to place a geologist and his assistant in the field for a day, and to establish sub-camps at which a geologist and his assistant were left for three or four days. At the sub-camps the field parties were equipped with transmitter-receiver radio sets, and changes in plans could therefore be made after a field party had assessed the time required to investigate any specific locality.

Members of the Geological Survey of Canada participating in "Operation Mackenzie" were:

R.J.W. Douglas

W.B. Brady

B.G. Craig

P. Harker

D.J. McLaren

A.W. Norris

D.K. Norris

B.R. Pelletier

D.F. Stott

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The Council of the Northwest Territories

Under an amendment to the Northwest Territories Act which came into force in 1951, the Council of the Northwest Territories was required to hold at least two sessions in each calendar year, one in the Northwest Territories and all others at the seat of government. In practice two sessions have been held each year, one at some place in the Northwest Territories and the other at Ottawa, as the seat of government for the Territories.

The sessions since this date have opened as follows:

10 December 1951 at Yellowknife	17 January 1955 at Ottawa
2 July 1952 at Ottawa	29 August 1955 at Fort Smith
8 December 1952 at Fort Smith	16 January 1956 at Ottawa
25 June 1953 at Yellowknife	23 August 1956 at Aklavik (East 3)
7 December 1953 at Ottawa	14 January 1957 at Ottawa
18 February 1954 at Ottawa	3 June 1957 at Frobisher Bay.

14 June 1954 at Yellowknife

The Frobisher Bay meeting is therefore the first to be held in the District of Franklin and the first in the Eastern Arctic.

Following the Frobisher Bay meeting the Council of the Northwest Territories was dissolved on 17 June 1957. On June 18 the Governor-General-in-Council appointed Mr. W.G. Brown, the Deputy Commissioner of the Northwest Territories, to be a member of the new Council and on August 7 he appointed the following members: Mr. L.C. Audette, Chairman of the Canadian Maritime Commission, Commissioner L.H. Nicholson, R.C.M.P., Mr. C.M. Drury, a transport company president and former Deputy Minister of National Defence, and Lt. Col. H.M. Jones, Director of Indian Affairs in the Department of Citizenship and Immigration. Lt. Col. Jones succeeds Mr. Jean Boucher; Mr. W.G. Brown, who succeeded Mr. F.J.G. Cunningham as Deputy Commissioner earlier in the year, and the other members had served on the previous Council. Mr. R. Gordon Robertson, Deputy Minister of Northern Affairs, is Commissioner of the Northwest Territories.

In addition to the five government appointees, four members are elected by the residents of the District of Mackenzie. Mr. John Parker of Yellowknife and Mr. John W. Goodall of Fort Simpson, who were elected to the previous Council, were returned by acclamation in Mackenzie North and Mackenzie River constituencies; Mr. R. Porritt was re-elected in Mackenzie South and Mr. Knut Lang was elected in Mackenzie Delta. Mr. Lang succeeds Mr. F. Carmichael, who resigned from the previous Council.

The Northern Insect Survey, 1953-6. By T.N. Freeman

The last account of the Northern Insect Survey to appear in the Arctic Circular was for 1952 (see Vol. 7, 1954, p. 30). This article deals briefly with the activities from 1953 to 1956, thus continuing a chronological account of the survey from its beginning in 1947.

In 1953 four parties investigated areas as follows:

- 1. Fort McMurray, Alberta; Mr. W.J. Brown and Mr. G.E. Ball
- Herschel Island, Yukon; Mr. C.D. Bird and Mr. J.S. Waterhouse
- 3. MacKay Lake (64°05N., 111°15W.) and Muskox Lake (64°38N., 108°15W.), N.W.T.; Mr. J.G. Chillcott
- 4. Eureka Sound, Ellesmere Island, N.W.T.; Mr. P.F. Bruggemann.

The Fort McMurray party not only investigated distribution and abundance of biting flies, but also made general insect collections to supplement those made in the area during the nineteenth century. The first collecting here was by Dr. John Richardson, the surgeon of the Second Franklin Expedition (1820-2). The next, and probably the last collecting in the area before 1953, was by Mr. Robert Kennicott from 1859 to 1862, who was employed by the Smithsonian Institution, Washington, D.C., to make scientific investigations of the areas that were, at that time, called British America and Russian America. Several species of insects were described by early taxonomists from material collected by Richardson and Kennicott, and the collection obtained from McMurray contained, therefore, topotypical specimens. The insect fauna is essentially a Canadian one, with a few prairie and Hudsonian intrusions.

The Herschel Island party supplemented, and considerably clarged, the small collection made in this vicinity by the Canadian retic Expedition (1913-18). The insect fauna of this island is tirely arctic, including several Alaskan Arctic intrusions that do not retend their distributional ranges much farther eastward.

The investigations at Muskox and MacKay lakes represented the first major attempt to study and obtain insects from these regions. The material that has been examined suggests an insect fauna mainly of the northern Canadian and Hudsonian zones, with the addition of a few arctic indigenes.

The insect fauna at Eureka Sound was a meagre one. The absence of many insect groups and the paucity of species suggest that this part of Ellesmere Island lies beyond the distributional limits of most arctic insects.

In 1954 five parties investigated areas as follows:

- 1. Eureka Sound, N.W.T.; Mr. P.F. Bruggemann
- 2. Indian House Lake, Que.; Dr. W.R. Richards and Mr. R. Coyles
- Hebron (Lab.), Nfld.; Mr. J.F. McAlpine and Mr. E. Sterns
- 4. Payne Bay (Ungava), Que.; Mr. R. McCondochie
- 5. Sugluk (Ungava), Que.; Mr. H. Huckel

The Eureka Sound collection contained a few more species than that made in 1953. Furthermore, several of the species were much more abundant than in the previous year. As an example, mosquitoes were at times very numerous and annoying during the short season though they had been extremely rare the year before. This seasonal fluctuation in populations again suggests that the area is near the distributional limit of most arctic species.

The insect material obtained from Indian House Lake indicates an abundant fauna typical of the northern Canadian and findsonian zones, and also a few intrusive arctic species. This area had not previously been investigated entomologically.

The Hebron investigations supplemented insect collections have been made from time to time during the past 250 years by invavian missionaries along the Labrador coast. Some of that material had been sent to such pioneer entomologists as Fabricius and Huebner inving the first quarter of the nineteenth century. They described many new species from these early collections, and the Hebron material obtained in the 1954 survey contained a great many topotypical specimens. The insect fauna is, in general, similar to that at Indian House Lake, but the Hebron region contains more arctic components.

The Payne Bay and Sugluk collections were entirely of arctic species, but lacked some species that inhabit southern Baffin Island and the arctic mainland and the Archipelago to the northwest. It is probable that these have not yet extended their range to the Ungava region.

In 1955 two parties investigated areas as follows:

- 1. Atlin Lake, B.C.; Mr. B.A. Gibbard and Mr. H. Huckel
- 2. Cartwright (Lab.), Nfld.; Mr. E.F. Cashman and Mr. E. Sterns

Except for a few specimens collected about 1900 by officers of the Geological Survey of Canada and of the International Boundary Commission, and later by officers of the British Columbia Provincial Museum, the Atlin Lake district had had no extensive entomological investigation. The collection made in 1955 suggests an insect fauna abundant in numbers of species and individuals. The region contains insects indigenous to the Canadian, Hudsonian, Cordilleran, and Arctic-Alpine zones.

The Cartwright investigations supplemented and extended the collections made along the southern coast of Labrador by Grenfell medical missionaries, mainly during the last quarter of the last century. The insect fauna consists of Canadian and Hudsonian species as well as a few arctic ones.

In 1956 two parties investigated areas as follows:

- Mistassini Post, Que.; Mr. J.R. McGillis and Mr. J.R. Lonsway
 - Firth River, Yukon; Mr. E.F. Cashman and Mr. R.E. Leech

Mistassini Post is in the interior of Quebec, about 300 miles northwest of Lake St. John. Apparently this locality had had no previous entomological investigation. The insect fauna is abundant and typical of the Canadian zone. The collection obtained extended the known distributions of hundreds of species.

The Firth River party was part of a cooperative project with Dr. R.S. MacNeish of the National Museum. Most of the collecting was done near the base camp at 69°21N.,139°31W. The insect fauna, similar to that of Herschel Island, is arctic including several Alaskan intrusions. Apparently no previous insect collecting of any extent had been made in the vicinity of the camp.

Sixty-two survey parties have now carried out field work in the arctic and subarctic regions, from Greenland to Alaska, since the Northern Insect Survey began in 1947, and sufficient localities have been investigated to allow studies of distribution and geographical variation of various species and to relate the findings to biological and physical factors. However, there are still large areas from which collections are required in order that the distributional patterns of northern insects can be mapped more thoroughly. These are mainly northern Greenland, Manitoba northwest of Churchill, the Mackenzie Mountains, and Arctic-Alpine environments in the Cordilleran system.

Move of the Ennadai Eskimo to the Henik Lake area

In recent years, with the reduction in numbers of caribou, the small Eskimo community at Ennadai Lake had been finding it increasingly difficult to live in that region. Officers of the Department of Northern Affairs investigated the surrounding country for a better district and found that in the Henik Lake area, 125 miles to the northeast and only 50 miles from the trading post at Padlei, caribou were more plentiful, the fishing was good, and white foxes could be trapped.

In 1956, a year when food had to be flown in to them, the people at Ennadai Lake were asked if they wished to go to this richer area. They agreed and it was at first planned to carry out the move in the fall, but this was postponed to the spring to avoid spending the winter in a new district. With the cooperation of the R.C.M.Police and the Hudson's Bay Company the move was made in May 1957 under the supervision of Mr. W. Kerr, the Northern Service Officer for the region. The 55 men, women, and children in the group were flown to their new home at Oftedal Lake in the R.C.M.P. Otter aircraft based at Churchill.

Six flights were needed to complete the airlift in twenty-four hours. The Eskimo were supplied with new tents, fish-nets, enough ammunition for the summer, and food to last them one month. They were accompanied by Mr. Lewis Voisey of the Department of Northern Affairs, who was familiar with the whole region. By mid-October of 1957 small groups of caribou had appeared in the new area.

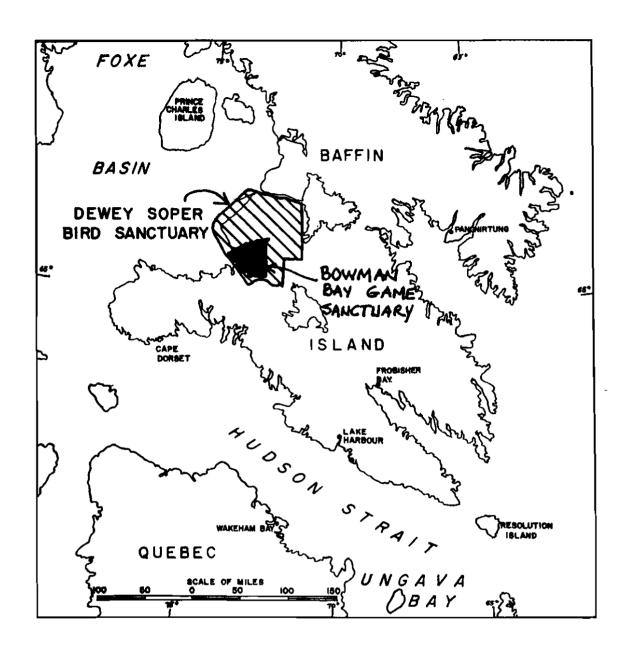
Protection for the Blue Goose nesting grounds in Baffin Island

Two sanctuaries have recently been established on the southwest coast of Baffin Island between Bowman Bay and the Koukjuak River to protect one of the most important summer goose colonies in the world. It was in this area that Mr. Dewey Soper, for whom the larger sanctuary has been named, discovered the nesting grounds of the Blue Goose in 1929. The Snow Goose, Canada Goose, and American Brant also nest in the area. The sketch-map shows the relationship of the two sanctuaries: the smaller Bowman Bay Game Sanctuary of 500 square miles gives complete protection to the most important breeding area, and the Dewey Soper Bird Sanctuary provides more limited protection over an area of 3,150 square miles.

The Bowman Bay Game Sanctuary was established by an amendment to the Northwest Territories Game Ordinance assented to on 23 January 1957 which came into force on March 1. Within the game sanctuary there may be no hunting or molestation of birds or their eggs or nests, and no person may enter the sanctuary without written permission from a game officer.

The Dewey Soper Bird Sanctuary was established by an amendment of the Migratory Bird Sanctuary Regulations made by Order-in-Council on 20 June 1957. Within a Migratory Bird Sanctuary there may be no hunting or molestation of birds or their eggs or nests, but persons are not prohibited from entering and the Chief of the Canadian Wildlife Service may authorize such activities as prospecting for and exploitation of mineral deposits. If mineral developments were allowed adequate steps could be taken to limit any effects, such as disposal of wastes, which might be damaging to migratory birds.

It is also planned to protect the geese from aircraft. Flying at an elevation of less than 2,500 feet and landing except in an emergency within the Dewey Soper Bird Sanctuary will be prohibited from May 15 to September 30 each year.



There are nearly 100 bird sanctuaries in Canada at the present time, the Dewey Soper Bird Sanctuary being the first established in the far north.

Change of Address

Members are earnestly requested to advise the Treasurer, Mr. C.J. Marshall, P.O. Box 68, Postal Station D, Ottawa, promptly of any change of address.

Editorial Note

The Editor would welcome contributions from those who are at present in the Arctic or have information about work in the Arctic, All material for the Circular should be sent to:

Mrs. Graham Rowley, 245 Sylvan Road, Rockcliffe, Ottawa 2, Ontario.

THE ARCTIC CIRCULAR

VOL. X NO. 2 Published by The Arctic Circle
Ottawa, Canada
(January 1958)

1957

Seventy-eighth Meeting

The seventy-eighthmeeting of the Arctic Circle was held in the P.L.D.G. Mess, 60 Queen Street, Ottawa, on Tuesday. November 12. The President, Mr. J.C. Wyatt, was in the Chair and introduced the speaker, Mr. Douglas E. Wilkinson, who gave an account of "The Inland Eskimo of today".

Seventy-ninth Meeting

The seventy-ninth meeting of the Arctic Circle was held in the P.L.D.G. Mess, 60 Queen Street, Ottawa, on Tuesday, December 10. The President, Mr. J.C. Wyatt, was in the Chair and introduced Commander A. Law, R.C.N., who described "Operation Bellot" and Mr. C.J. Marshall, who showed coloured slides taken on this voyage.

The Canadian caribou research programme. By A.W.F. Banfield 1

The barren-ground caribou - or "the deer" to many northerners - is an important natural resource of northern Canada. In areas remote from supplies of domestic meat, it is a staple item of diet.

^{1.} Chief Zoologist, National Museum of Canada.

The hide also provides sleeping robes and winter clothing not yet surpassed for insulation and lightness by manufactured fabrics; without adequate caribou skin clothing many Eskimo are unable to hunt in the winter, even for seal or walrus.

The first Europeans to visit the northern fundra and forests were impressed by the innumerable herds of caribou which they encountered. These herds were frequently compared in numbers with the bison of the great plains. The bison has, of course, long since vanished from its haunts on the plains and been replaced by white-faced Hereford cattle, and with the increased development of Canada's northland since the Second World War, grave concern was felt for the future of the herds of caribou. Federal and provincial governments recognized the urgent need for an investigation, and a cooperative survey was undertaken in 1948 and 1949 (see Circular, Vol. 1, pp. 77-8; Vol. 5, pp. 43-4). At that time aerial surveys gave the first factual estimate of the caribou population and provided information on its distribution, migrations, utilization, and ecology. The population was estimated then to be about 670,000 animals. The annual increment of calves was considered to be about 21 per cent and the annual kill by Indians, Eskimos, and white settlers was estimated to be about 100,000. When other losses were taken into account these figures indicated a gradual but steady decline in caribou numbers and it was recognized that such a decline had in fact taken place over the previous half century.

Following this preliminary survey, Mr. J.P. Kelsall, of the Canadian Wildlife Service, was stationed permanently at Yellowknife in 1950. He undertook more detailed studies of the fawning habits, the food requirements, and the effects of forest fires and native take on several nearby herds. His investigations indicated a series of low calf crops, some only 10 per cent, extensive migrations, and excessive native killing (see Circular, Vol. 6, pp. 6-7).

While Kelsall's investigations continued, additional surveys were made in other parts of northern Canada. In 1953 a survey of the northern Yukon caribou herd, undertaken with the cooperation of the United States Fish and Wildlife Service in Alaska, indicated a population of 25,000 to 30,000 caribou north of the Ogilvie Mountains. An aerial survey of Baffin Island in 1954, suggested a local population of some 5,000 animals. The same year a survey was begun in northern Quebec with the cooperation of the Quebec Department of Game and Fish which indicated a population of about 5,000 animals in the Ungava Peninsula. In 1957 a cooperative investigation of caribou population in Newfoundland and Labrador was started with the Department of Mines and Resources of that province.

In 1955, as six years had elapsed since the original survey, a complete re-survey of the central area was made during the spring months. Most of the caribou range between Hudson Bay and the Mackenzie River was covered from the air in strips 15 to 20 miles apart. The results were alarming. Only about 39,000 caribou were observed compared with approximately 350,000 in the initial survey. Kelsall's final calculations indicated a total caribou population of about 277,000 animals, as against 670,000 in the 1948-9 survey. Although some drop in the caribou population had been expected it was never considered that the actual decline would be more than 50 per cent. As might be expected, there were many reports of grave hardship among native bands and isolated white trappers.

As a result of this more recent survey, the interested game branches of Ontario, Manitoba, Saskatchewan, Alberta, and the Northwest Territories government joined with the Indian Affairs Branch, of the Department of Citizenship and Immigration, and the Canadian Wildlife Service, of the Department of Northern Affairs and National Resources, in establishing two Caribou Conservation Committees to work out a joint programme of research and management to help restore the caribou population. One committee was composed of technical representatives to formulate research plans, the other of senior administrators who would concern themselves with the application of management programmes. In 1956 these two committees prepared an intensive eighteen-month research programme to probe the causes of the accelerating caribou decline.

The research project commenced in April 1957 with the support of funds and personnel from the federal government and the governments of Manitoba, Saskatchewan, and the Northwest Territories. The technique decided on was to follow one herd of caribou continuously for eighteen months by 'leap-frogging' teams of biologists and guides, in order to establish the mortality suffered by the herd from all causes. In addition, a team of specialists was assigned to investigate special problems of caribou biology such as pathology, range requirements, and physical environment. Other specialists are working on problems of the reproductive cycle, the analysis of caribou range from interpretation of air photographs, and caribou taxonomy.

Already the research teams have successfully followed a herd of caribou from its 1956 winter range, south of Lake Athabasca, to its summer range, near Baker Lake, and back to its winter range, a distance of about 800 miles. Among the significant new facts on caribou biology and ecology that have already emerged from their studies are the following: Mr. A.G. Loughrey, of the Canadian Wildlife

Service, has shown that "windchill" is an important cause of mortality on the calving grounds. In addition, wolf predation and accidental losses from drownings were found to take a significant toll of young calves. It was also established that insect pests influenced the migration movements in summer. The calf tagging experiments were abandoned when it was shown that they interrupted the early calf-cow behavious patterns just when they needed reinforcing most, causing unnecessary calf abandonments. Post-mortem examinations indicated that the animals were generally in healthy condition. In addition, more accurate information on human utilization was secured.

In general, the intensive investigation has emphasized the need for coordinated management practices across the entire caribou range. All ethnic groups have an equal moral right to use this important food resource for basic sustenance in remote areas. This may mean taking a new look at Indian rights in the taking of game. Auxiliary sources of meat such as white whale, walrus, bison, and fish will have to be used as some means must be found of reducing the human take of caribou in order to protect them over this period of low calf crops. Wasteful hunting practices and the feeding of caribou meat to dogs must be stopped. Supervised community hunts and the storage of meat in common freezing lockers, while admittedly presenting practical problems, would help to spread out the period of meat supply. Other measures, such as improved predator control and better forest fire suppression. could also help to check the steady drain on the caribou population. The caribou is the animal best adapted to use the tundra pastures and taiga forest and, if properly managed, it could continue to provide necessary food and clothing "on the hoof" to the residents of northern Canada.

Activities of the Geological Survey of Canada in the Arctic in 1957. By R.G. Blackdar

Six officers of the Geological Survey of Canada carried out field work in various parts of the Arctic during 1957.

Queen Elizabeth Islands

Dr. R. Thorsteinsson, assisted by Mr. R.H. Janes, continued geological studies begun in 1956 in northwestern Ellesmere Island and northern Axel Heiberg Island. On April 11 this party,

^{1.} Published with the permission of the Director, Geological Survey of Canada, Department of Mines and Technical Surveys, Ottawa, Canada.

including two Eskimo from Resolute, Jebbedi and Jackoosie, was flown by the R.C.A.F. to Eureka weather station on Slidre Fiord. Two days later, through the generous assistance of the R.C.A.F., about 800 pounds of supplies for men and dogs was parachuted on to the ice of a bay just west of Cape Stallworthy, northern Axel Heiberg Island.

Thorsteinsson and his party left for Canyon Fiord on April 22 with two sleds and 23 dogs. On the outgoing journey the coast of Fosheim Peninsula was followed. A large cairn which contained a note left by W. Elmer Ekblaw, geologist of the Crocker Land Expedition, on 28 April 1915, was found on a low point of land to the west of Sorb Bay. From this point the party crossed over to the east side of the fiord and followed the shore northwesterly as far as East Cape before recrossing Canyon Fiord and returning to Eureka. They made an overland crossing of Fosheim Peninsula from a bay in Greely Fiord directly north of the weather station and arrived back at Eureka on May 9. On this journey the weather was generally clear and cold and the lowest temperature recorded at the weather station during their absence was -39°F.

On May 14 the party left Eureka for the north end of Axel Heiberg Island. After crossing Nansen Sound they continued to near the entrance of Jugeborg Fiord on Ellesmere Island then recrossed Nansen Sound to the southern end of Svartevaeg. The air-dropped food cache near Cape Stallworthy was reached on May 23 and the following day an overland journey to Rens Fiord was made without difficulty. The route taken was directly south from the food cache and through a low mountain pass that had been first located by a study of air photographs. The height of land in the pass, as measured by barometer, was 250 feet above sea level. As far as Rens Fiord, and including the Canyon Fiord journey, the party had sledged over generally smooth ice with a thin cover of snow. These ideal travelling conditions were in marked contrast to the west coast of Axel Heiberg Island and Sverdrup Channel where old hummocked ice was covered with moderately hard drifted snow, in places exceeding three feet in depth, and a mantle of about 6 inches of newly fallen snow.

After crossing Rens Fiord a southerly course was set down the west coast of Axel Heiberg Island, and on the evening of May 28 camp was made under the cliffs of Cape Northwest. The following morning the party started across Sverdrup Channel and in the afternoon of May 30 a landfall was made on the northeastern corner of Meighen Island. Owing to a shortage of dog food, Janes and Jebbedi left immediately for Li Fiord on Axel Heiberg Island to hunt seals. The following day Thorsteinsson and Jackoosie proceeded west along the north coast of Meighen Island. It was on June 1 while camped near the southwestern extremity of the island that they made the exciting discovery of a note written by

^{1.} Name applied as suggested on p. 29

Dr. H.K.E. Krueger, leader of the missing German Arctic Expedition, which he had left in Stefansson's discovery cairn. The note, which was dated 6 June 1930, contained the information that the three members were well and were leaving for Cape Sverre on Amund Ringnes Island. Up to this time it had generally been believed that the members of the expedition had perished either on the west coast of Axel Heiberg Island or on Meighen Island. From this caim Thorsteinsson and Jackoosie travelled eastward for about eight miles and then turned inland. On June 2 and 3 they camped in the hilly terrain some three miles south of Meighen's ice cap and then continued overland to the east coast and thence to Li Fiord on Axel Heiberg Island where they met Janes and Jebbedi on June 6. During the crossings of Sverdrup Channel numerous large boulders, consisting mainly of gneisses and schists, were seen singly and in fields on the top of the ice.

June 5 brought the first respite to the unpleasant weather that was experienced on the west side of Axel Heiberg Island, and the generally overcast conditions with frequent snow and fog gave way to prevailingly sunny and warmer weather. By June 8 the snow was rapidly leaving the ground and thereafter conditions for geological studies were generally favourable. On June 14 the party was back at the food cache near Cape Stallworthy and the following day camp was moved west to Cape Thomas Hubbard where three days were spent. Narrow leads of water between the polar pack and the landfast ice had been observed for the first time off Bunde Fiord on June 8. At Cape Thomas Hubbard a large lead, about five miles in width extended towards Lands Lokk on Ellesmere Island as an anastomosing system of wide fissures. Several gulls, Arctic Terns, and Brant geese as well as a school of about 30 white whales were seen in these waters.

Emma Fiord and Jugeborg Fiord were visited on the return journey to Eureka, which was begun on June 17. Meltwater on the ice was met for the first time on June 18 after which travelling conditions deteriorated rapidly. The progressive widening of shore leads made access to shore increasingly difficult and the development of fissures in the ice of the fiords and sounds slowed forward progress. Eureka was reached on July 5.

The greater part of July and August was devoted to studying the geology of Fosheim Peninsula. Travel was by foot during July and by canoe in August. On September 23 the party was flown to Resolute.

Dr. E.T. Tozer, accompanied by Oodlatetak, son of Idlout now of Resolute, and a team of 11 dogs spent two months studying the geology in the Norwegian Bay-Belcher Channel-Eureka Sound area. On

April 19 the party was flown by the R.C.A.F. from Resolute to Cornwall Island where a station for shoran trilateration was being established.

The week of April 21 was spent studying Exmouth and Table islands in Belcher Channel. These small, castle-like islands have steep cliffs and despite wintery conditions in this area, fair outcrops projected through the snow and provided better opportunities for geological work than the low surrounding coasts.

From May 1-21 the party travelled from Cornwall Island to Hat Island at the mouth of Bay Fiord. The route lay across Norwegian Bay to Hyperite Point and then north up Eureka Sound to Bay Fiord. The round trip amounted to about 350 miles. Ice conditions were poor in Norwegian Bay, with a breakable crust on a hummocky surface, but in Eureka Sound travelling conditions were excellent with little snow on either land or ice. Here the party enjoyed delightfully sunny weather and conditions were nearly perfect for geological work.

On May 30 the party started on the return journey for Resolute. The Belcher Channel-Arthur Fiord-Wellington Channel route had been chosen for this journey - a distance of some 300 miles. The geology of some areas was studied en route, in particular Exmouth, Table, and Princess Royal islands, and parts of Grinnell Peninsula. The country surrounding Belcher Channel was still quite heavily covered with snow on June 12 when the party left this area and crossed the isthmus at the head of Arthur Fiord. Summer arrived as the party travelled down Wellington Channel and on June 21 Oodlatetak and Tozer returned to Resolute. During the journey some open water was found between the Table Island group and Grinnell Peninsula; however Wellington Channel and Barrow Strait were solid ice, although there were many cracks. On June 28 Tozer flew over Wellington Channel on an R.C.A.F. flight to Alert, and by then the part of the channel north of Copeland Point was broken into large floes and pans.

Sea game was abundant throughout the area visited, with the exception of Norwegian Bay, where the ice was evidently old and thick. In all 16 bears were seen. Seals were first noted on April 27; thereafter they became increasingly abundant. Caribou were seen on Cornwall and Table islands and on the north and west coasts of Devon Island. Muskoxen were noted in Wolf Fiord on Axel Heiberg Island and at several points on the north coast of Grinnell Peninsula. Lemming signs were abundant on Cornwall Island and fox signs common bordering Eureka Sound, One wolf was seen on Cornwall Island and there were many tracks.

Mr. R.L. Christie was attached to Operation Hazen a project iniated by the Defence Research Board as part of the International Geophysical Year programme. This operation, carried out in northern Ellesmere Island, will be described in a note in a subsequent issue of the Circular.

Foxe Basin

Dr. R.G. Blackadar completed the reconnaissance geological survey of northern Foxe Basin which he had initiated in 1956 (see Circular, Vol. 9,No. 4, pp. 55-6). During May and June a 750 - mile sledging trip was made along Fury and Hecla Strait and north to the southern end of Admiralty Inlet thus connecting with mapping done in 1954. Two Igloolingmiut, Pacome Kalaut and Pauli Kunnuk, assisted in this programme. Travelling conditions were good and with the exception of the south shore of Fury and Hecla Strait, little rough ice was encountered.

Field work during the summer months was centred in northeastern Foxe Basin。 A 22-foot freighter canoe, 10 h.p. outboard motor, and food and fuel supplies were transported by sleds to Cape Thalbitzer in early July, During July Blackadar and Kalaut, accompanied by 4 dogs, backpacked through the region south of Neergaard Lake. Following break-up the canoe was launched on July 28 and the party proceeded to northeastern Steensby Inlet whence the western coast of Baffin Island was followed south to Eqe Bay. Unusually fine weather prevailed during all of August. This coast, which is underlain by Precambrian rocks, carries a relatively rich flora. Blueberries were particularly prolific, arctic char were speared at the mouths of many streams, and numerous small groups of caribou were seen. The party was met at Eqe Bay on August 30 by Pewaktoo with his trap boat and returned to Igloolik on September 6. Additional survey work was then continued west of Igloolik using the canoe, but on September 23 freezing conditions brought the field season to an end and Blackadar left Igloolik for the south on October 3.

Ungava

 $\underline{Dr. G.A.}$ Gross spent three weeks in the Ungava region during the summer in connection with the study of Canadian iron deposits being carried out by the Mineral Deposits Division of the Geological Survey. This examination was designed to give familiarity with the geology and types of iron deposits now being prospected in New Quebec and to enable some evaluation of the potential iron resources of the region to be made. These deposits are similar in many respects to those being developed farther to the south, notably at Wabash Lake

and Mount Wright. Dr. Gross made brief visits to the main exploration companies carrying out work on the west shore of Ungava Bay: Oceanic Iron Ores Ltd. south of Payne Bay, Atlantic Iron Ore Ltd. west of Hopes Advance Bay, Consolidated Fenimore Iron Mines Ltd. near Leaf Bay, and International Iron Ore Company north of Payne Bay. All of these companies face certain similar development problems; although all are near the coast the establishment of harbours is difficult due to the high tidal range in Ungava Bay. Mining problems are similar in many respects to those encountered in iron mining elsewhere in Quebec.

During July and August Mr. W.L. Davison was attached to a Topographical Survey party which, under the leadership of Mr. P. Atkinson, continued the survey of that part of New Quebec north of 58° N. and west of 71° W. Two Bell helicopters and two Beaver aircraft were used in this survey. Geological information was totally lacking for much of this region and thus although Davison could not carry out consecutive mapping work, much valuable information was obtained by means of spot observations.

Archaeological work in Ungava, 1957. By W.E., Taylor

For its ninth post-war season of archaeological work in the Eastern Arctic, the National Museum of Canada sent my wife and myself to Ungava to make surveys and limited excavations at Payne Bay, Payne Lake, and Sugluk Inlet. We sailed from Quebec City on 13 July 1957 for Payne Bay in the C.G.S. Montcalm, arriving on July 23,

During the few days available at Payne Bay, we examined a site on a small unnamed island at the mouth of the estuary and excavated sufficient artifacts to show that it belonged to the Dorset culture. We found several very small, circular, heavy tent rings and excavated two of them. The most interesting building, a rectangular, semi-subterranean house ruin with the remarkable over-all measurements of 85 feet by 31 feet, was not excavated as time was short. Its great size suggests a generous use of wood in any attempt to explain its method of roofing and also leads to speculation on how the building was heated and for what it was used. Such things as a coremonial or dance house, extended family residence, and multi-family residence come to mind. Adjacent to one of the small excavated circular structures, was a grave of the long, rough stone vault type. Although it looked like a Thule culture grave we excavated it and found chipped quartzite tools of the Dorset culture. We collected the skeleton which was in fair preservation, and since the skull and mandible show Eskimoid physical traits, this burial is the first concrete evidence that some,

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although perhaps not all, Dorset culture people were Eskimo in physical type.

On July 29, by courtesy of the Quebec Stream Commission, a Norseman, piloted by Mr. James Aspinel, flew us to the east end of Payne Lake where we tested six sites. Four of these yielded objects of the Dorset culture and three of these four had small roughly rectangular semi-subterranean houses. One of the forty Dorset houses found along the first mile of the river was excavated and several exploratory trenches were dug. The house proved to be quite deep, and was entered by a cold-trap passage up to forty-eight inches in depth. Lack of roofing material suggests that wood and skin roofs were used. This house pattern and the finding of a Dorset-type sled shoe strongly suggest a winter occupation in the interior by Dorset people. As would be expected, caribou bones were markedly dominant in the bone sample and the economy must have been based on caribou hunting, though lake and river fishing were probably also important. Presumably these people summered on the coast, living in tents, hunting sea mammals and fishing.

Recent tent rings, meat caches, an abundance of caribou bones, ground slate blades, drill-perforated lance and bow parts, and metal fragments reflect the post-contact Eskimo's seasonal visits to this area. To bring the occupation of Payne Lake up-to-date, we found a teaspoon and plastic collar stay, evidence of the 1948 visit of Dr. Jacques Rousseau's party. It was this expedition's discovery of two of the sites that led to our visit. This year the summer social season at Payne Lake was a complete success. Members of a nomadic Quebec Stream Commission fly camp and the crew of a large camp of the Photo-Air Laurentides Company at George Lake were magnificent hosts and also maintained a welcome helicopter watch over us.

On September 6 a Nordair Canso, piloted by Mr. Hartley Marsh, lifted the party to the Hudson's Bay Company Post at Sugluk. A single disturbed Dorset culture house near the post was tested with little success, and then, with a sizeable following of local Eskimologists, a camp was set up on Sugluk Island. At three sites on the island, small, rectangular, semi-subterranean houses of Dorset date were found. After completing a series of exploratory trenches in these sites, we moved to the northwest shore of Sugluk Inlet. Here, although we made a number of test trenches in two small Thule culture winter villages, hardly anything was found. A fifth Dorset village site on the southeast shore of the inlet, where we also dug a series of exploratory trenches, had house ruins similar to those on Sugluk Island but had been extensively looted during the 1930's

Two of the Sugluk sites, from a preliminary examination, appear to show marked similarities to the T1 site on Southampton Island, 1 which by Carbon-14 dating was occupied between 2,000 and 2,500 years ago. An additional two of the Sugluk area sites seem to be somewhat younger although quite within the Dorset period. The fifth Dorset site, like the two Thule sites, did not produce sufficient material for age estimates.

On October 2 we boarded the C.G.S. Montcalm at Sugluk and reached Quebec City on October 9.

Monument to Otto Sverdrup

Otto Sverdrup, the noted Norwegian explorer and discoverer of the northwestern Queen Elizabeth Islands which bear his name, was honoured when a monument to his memory was unveiled recently in Steinkjer, Norway. The Canadian Government contributed to the erection of this memorial and was represented most appropriately at the ceremony by Superintendent Henry A. Larsen, Royal Canadian Mounted Police. The monument was unveiled on 21 July 1957 by the then Crown Prince of Norway, now King Olav V.

Part of the address given by Superintendent Larsen follows: "It gives me great pleasure to be with you today in my old country as official representative of my new homeland, Canada, at the unveiling of the monument to the memory of the great Norwegian explorer Otto Sverdrup which most fittingly climaxes the celebrations which have marked the hundredth anniversary of the town of Steinkjer.

"Let me say here and now that the people of Canada have for many years been great admirers of Otto Sverdrup and are well aware of his accomplishments in the Arctic. The Sverdrup Islands today form very important links in the chain of Canada's Northland and with the developments of modern means of communication are becoming better known every day to Canadians in all walks of life, who are particularly amazed at the painstaking efforts and the accuracy of the work accomplished by Sverdrup and his men in exploring and charting these many islands.

^{1.} Collins, H.B. "Archaeological investigations on Southampton and Coats islands, Northwest Territories." Ann. Rept. Nat. Mus. Can, Fiscal Year 1954-5,

Mounted Police, have on various occasions during the past 30 years patrolled these islands while carrying out their many and various duties in the Canadian Arctic. We have Police detachments in several areas explored and named by Sverdrup: for instance, in Alexandra Fiord close by to where Sverdrup spent his first winter, and again in Grise Fiord on Jones Sound between Ellesmere and Devon islands and several of these same detachments themselves bear the name of the locations charted by the explorer. Many of these virgin islands originally explored by Sverdrup are potentially fine hunting grounds particularly well suited to the Eskimos' way of life. In recognition of this fact the Canadian Government has recently seen fit to transport a number of them from the less bountiful areas to the south to these newer and richer fields.

"Otto Sverdrup, of course, was a hero not merely to the people of Steinkjer who will naturally claim him as their son, but to all Norwegian boys, even as far south as Hvaler, where I myself was born, and I may add that to me, personally, he has been both an inspiration and a shining light during the past 30 years in connection with my own work in the Arctic as a member of the Royal Canadian Mounted Police. I was only once privileged to see the great man in person - in Oslo many years ago. Little did I know then that I would be present here today to pay homage, as a citizen of Canada, and on behalf of the Canadian people, to his memory."

Superintendent Larsen also read a message from the Royal Geographical Society of London and laid a wreath on the monument.

At a luncheon ceremony before the unveiling. His Royal Highness Crown Prince Olav was presented by Superintendent Larsen with a gift emblematic both of Canada and of the Royal Canadian Mounted Police. This took the form of an embroidered crest of the Force framed in Canadian woods and was made by members of the Force staff. The crest was mounted on a replica of a maple leaf in white maple inlaid in white oak and was framed in bird's eye maple with a one-quarter-inch width of black walnut forming the inner border of the frame.

Location of Cape Stallworthy and of Cape Thomas Hubbard

On 28 June 1906 R.E. Peary reached a point on the north coast of Axel Heiberg Island, which he named Cape Thomas Hubbard. Here he built a cairn and left a record and a portion of his silk

United States flag. On his return journey he mentions the presence of a bay separating this point from the next one east, and opposite page 199 in his book 'Nearest the Pole' is a photograph of Cape Thomas Hubbard.

In recent years some doubt has arisen as to the location of Cape Thomas Hubbard. For a time only one cape, named for Corporal Stallworthy of the R.C.M.P., appeared on the map of Axel Heiberg Island. When the existence of a second cape was shown by air photographs, the more westerly point was called Cape Stallworthy and the more easterly, Cape Thomas Hubbard. From observations made in 1957, Dr. R. Thorsteinsson of the Geological Survey found that the Peary photograph, referred to above, is taken looking west from the easterly point across the wide, unnamed bay and that on this point there are no cairns but that on the cape to the west there are several some of which can be ascribed to Peary. Thus there appears to be no doubt that Peary named the westerly point Cape Thomas Hubbard and that it would avoid further confusion if the name Cape Stallworthy were used for the more easterly point near the centre of the north coast of the island. In fact this would also be in keeping with the original naming of the northern point of Axel Heiberg Island for Corporal Stallworthy as the eastern cape is the more northerly of the two capes.

Mineral exploration in southern Baffin Island, 1957

Ultra-Shawkey Mines Ltd., a company with mineral properties in the Kenora District, Ontario, and in Dubuisson township, Quebec, staked 500 claims in southern Baffin Island in 1956 in areas showing iron mineralization. A report from the company dated 30 September 1957 gave encouraging results from the preliminary exploration work carried out during the summer of 1957. The programme was somewhat curtailed when the ship bringing in diamond drilling equipment was driven away from the area by an unseasonable summer gale. It was not until late in the summer that this equipment finally arrived and as a result the extensive diamond drilling programme planned for 1957 had to be postponed until 1958.

Five main ore bodies have been outlined in the area which is in the vicinity of Chorkbak Inlet east of Cape Dorset. The first of these is reported to contain 60 million tons of iron-bearing material, the second 34 million tons of iron ore, the third 250 million tons of iron ore, and the fourth 12 million tons of iron-bearing material. Mapping of the

fifth zone was not completed at the time the report was published but it is said to contain magnetite of an exceptionally good grade. In addition to the geological mapping which outlined the ore bodies, reconnaissance mapping was also carried out and a number of sulphide zones were observed, one of which was 10,000 feet long and 1,000 feet wide.

Correspondence from W.E. Taylor

In a note published in the Circular for April 1957 (Vol. 9, No. 3, pp. 39-41) on archaeological excavations in the large Sadlermiut Eskimo site at Native Point, Southampton Island, I stressed the low frequency of whalebone at the site and marked scarcity of baleen. Further, I mentioned "that the Sadlermiut, in their last years, were getting very few large whales", or "that they were trading baleen to the whalers". The latter view was suggested by Mr. G.W., Rowley. I preferred the former view until, in a recent conversation, Mr. A. Copeland described the Native Point houses as he saw them in 1924-5. At that time whalebone was common on the site and particularly evident in the entrance arches, formed of whale mandibles which stood up to six feet in height. The scarcity of whalebone found in the 1954-6 work is explained by Mr. Copeland's observation that the Aivilik regularly removed old whalebone for sledshoeing. We had assumed that some such looting occurred but it must have been a regular mining programme to have removed virtually all the visible whalebone from the scores of houses at Native Point.

Additional evidence of Sadlermiut whaling activity comes from comments by Angutimarik (Scotch Tom) who told Mr. Copeland that the Sadlermiut were active whalers and that Native Point was a strategic Eskimo whaling base.

Thus it seems that the Sadlermiut remained quite successful whalers until the turn of the century and "that they were trading baleen to the whalers."

List of contents and title pages, Volumes 6 and 7

We have received a number of requests from libraries for a list of contents for Volume 6, 1953, and for title pages for Volumes 6 and 7. For the convenience of those members who also bind the <u>Circular</u> these missing parts have now been run off and will be mailed to all members with this number of the <u>Circular</u>. A list of contents was distributed for Volume 7. In future lists of contents and title pages will be produced for all volumes.

THE ARCTIC CIRCULAR

VOL. X NO. 3

Published by the Arctic Circle Ottawa, Canada

1957

February 1958

A manuscript diary written on Mr. Warburton Pike's visit to Back River in 1890

A manuscript diary in the Northern Affairs Library has on its cover, "Wm. Ogilvie DLS Diary sub party exploration Great Fish River 1890". This seemed unusual as nothing was known of a journey by Mr. Ogilvie to Back River. On examination the diary proved to be the work of Mr. James Mackinlay who made a journey to Back River with Mr. Warburton Pike in the summer of 1890. Mr. Pike's account of his journey is included in his book: "The Barren Ground of Northern Canada", published in 1892, and the sketch-map reproduced is taken from this work.

Mr. Mackinlay's diary agrees fully with Mr. Pike's account, but goes into considerably more detail on some subjects, particularly the wildlife they saw. It was therefore considered worth while to publish it in the <u>Circular</u>. The diary is given as written except for the insertion of punctuation where necessary, correction of the few spelling mistakes, and changing of the spelling of place and personal names to agree with the names used by Mr. Pike or the present officially adopted place names.

Mr. Pike had already spent some months in the region and had got to know Mr. Mackinlay, who was in charge of the Hudson's Bay Company post at Fort Resolution, and many of the local Indians well before setting out on the trip to Back's Great Fish River. He had arrived at Fort Resolution from England in August 1889 and had spent

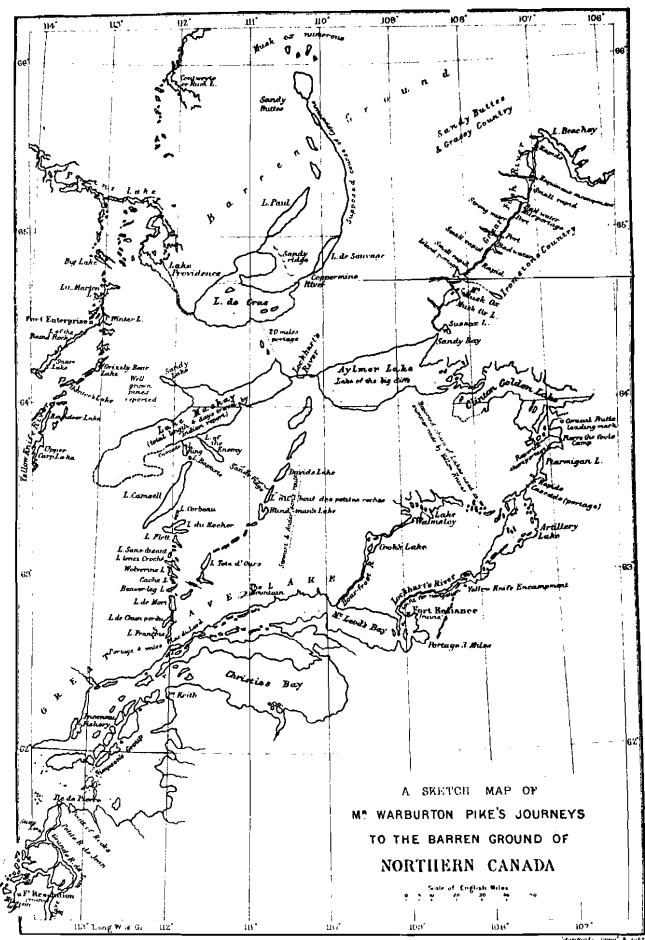
the fall and early winter months hunting muskoxen on the edge of the Barren Grounds with King Beaulieu, a local descendant of a French half-breed, and members of his numerous family. He returned to Fort Resolution for Christmas and passed the winter months making hunting trips with Mr. Mackinlay and planning the summer journey to the Barren Grounds. He decided to descend the Back River as far as practicable, spending most of his time in the headwater region observing birds and animals. Mr. Mackinlay, who was evidently interested in looking for a site for a new trading post, was released to accompany him and he was lent two of the fort servants: Murdo Mackay, a native of the Hebrides, and Moise Mandeville, a local half-breed. The Resolution party also included Pierre Lockhart, a Yellow Knife Indian engaged as guide, who had brought in news from Zinto the chief of the local band, and David, an Eskimo boy from Peel River who had been left at Resolution for the winter to learn English from the Protestant missionary there.

The Yellow Knives were waiting for Mr. Pike with members of the Beaulieu family at Fond du Lac, some six days' journey from Resolution, and after much discussion it was finally agreed that four Indians and their families would accompany the party: Capot Blanc, Saltatha, Syene, and Marlo. Carquoss, another Indian, was engaged for fishing at Fond du Lac but later joined the expedition, which numbered "over twenty people" and "seven trains of starving dogs... far too large a party for any rapid travelling, and badly handicapped by women and children" when it left Fond du Lac.

Note

After the typing of Mr. Mackinlay's diary had been completed it was discovered that D.B. Dowling had published extracts from the diary in the Ottawa Naturalist, for 1893 (pp. 85-92 and 101-14). As these extracts were considerably abbreviated and, in particular, om.itted the numbers of animals seen and killed it was felt that they did not really affect the interest of the complete diary.

(Editor A.C.)



JOURNAL FISH RIVER EXPLORING PARTY

James Mackinlay

Wed. May 7th, 1890: Left Resolution in the afternoon, found water knee-deep on the lake till reaching the Big River, which was good and camped. Inspr. Spendlove and Clark came out to camp with us and will return in the morning. Geese and ducks numerous in vicinity of the Fort, and most of the snow gone.

Thurs, 8th: Wind turned NE in night and cold freezing the water on the ice enough to bear us up. Reached Tête Noire's House in the evening and camped. Find a good deal more snow than at the Fort on the ground.

Fri. 9th . Still cold, good travelling. Crossed the lake and camped amongst the islands.

Sat. 10th: Cold. Before leaving camp a solitary goose turned up and was secured by Mr. Pike. Camped again amongst the islands /

11th to 13th: Fair travelling, mostly through rocky islands and reached Mr. Pike's shanty in the evening of the 13th. Found some Indians camped there. Zinto's Old Capot Blanc and King Beaulieu's tribes.

Wed, 14th: Talking with the Indians and getting shoes etc. repaired and made for the trip.

Thurs. 15th: Spelling our dogs and engaging two or three Indians to accompany us to the headwaters of the Fish River. Old Capot Blanc Saltatha and Syene have consented to accompany us, and to remain and make provisions during our absence, also Paul Beaulieu to accompany us as far as the large canoe cached by Mr. Pike last fall on Lake MacKay.

Fri. 16th: Decided to start on Monday. Our tent continually full of Indians begging. A boy arrived today from farther up the Bay and reports a family of Indians starving at Pierre Fort Smith near Lockhart's House.

Sat. 17th: A small party of Indians arrived from muskox country. Lots of robes on sleds but starving. Report lots of caribou at last woods.

Sun. 18th: We have decided on taking the canor route. The travelling on the lakes of which will be better than the woods at this season. Old Capot Blanc and Syene take the road of the first expedition and shall meet us near head of river if all goes well. Zacarrie arrived from Old Cap. Blanc's house and reports the Indians to have dry meat there, so consider it safer to send a sled for some.

Mon. 19th: Moise and Pierre Lockhart started to endeavour to buy a load of meat for us. Zinto and band started for the fishing grounds W of this. King still here but preparing to leave, as no fish are to be had in this bay whatever under ice, tho' a good summer fishery. Remained cold since arrival. Wind N. Only round trees, rocks etc. a little of the snow has melted off, the rest as mid winter.

Tues. 20th: Waiting for Moise's return. Mr. Pike and I took a walk to King's old post about 2 miles farther up the Bay. Found it in a filthy state - 2 old houses. Wind still north but thawing a little in the sun. The Indians who are to accompany us starving. We will have a tough time till we reach the caribou. Our stock of provisions on hand for trip is as follows -

3 bags flour

pemmican

40 dry ribs "we are supposed to have"

1/2 a caribou fresh meat and remains of 20 lbs. tea.

A slight contrast to the supplies of last expedition-"24 pc of 90 lbs." King's son killed a gull today.

Wed. 21st: Wind still N and cold. Our Indians who are to accompany us starving. Moise and Pierre turned up in the evening, bringing 20 ribs and hf. a moose fresh meat. The fresh meat we were obliged to feed off to the Indians as they have literally nothing to eat.

Thurs. 22nd: Got away at last and had dinner at King's old post, where we took on our flour and arranged our loads. Gave men allowance tobacco. Wind N and very cold. Camped with the Indians in a small bay about 8 miles from the old post. Saw a fresh caribou track crossing the lake. Gave I dry rib to each family. The Indian's dogs not a morsel and God knows when they had a feed last. Trust we may reach where we surmount the hill and get away from Capot Blanc's party as any morsel of meat we may give them means hard times for us should we not come across caribou soon.

Fri. 23rd: Wind still north but thawing slightly in the middle of the day. Three of the Indians started off from the camp to hunt on the top of the hill so we made a poor day, probably about 10 miles. The lake on leaving camp widened out. Studded with rocky islands. The banks on each side of lake high, rocky, sparsely covered with stunted pines and birch. Fixed and arranged what pcs. we are taking with our party as we separate from Capot Blanc's band a short distance from this point. The hunters returned in the evening. Their bag I young porcupine. They saw tracks of caribou however so we may fall in with them soon.

Sat. 24th: Wind still north but cloudy and a heavy thaw. Made about 5 miles to a little river which our Indian guides resolved to follow and here flattered ourselves to see the last of Capot Blanc and his camp followers, but much to our disgust we found they took the same track as us resolving to stick to the grub, which is only enough for our own party for ten days. We are now a party of over 20/souls and 7 trains of dogs, to which if we gave them full rations would get away with all our provisions in two days. We found on following up the stream a succession of falls which were all frozen in huge banks of ice which took us till evening to surmount. Some of the men packing and the rest helping the dogs. I mounted to the top of the hills and found a high rolling rocky country. No trees hardly to be seen and the snow mostly off except in the hollows. Gave each family 1 deer rib and a pot of flour.

I. From Warburton Pike.

Sun. 25th: Heavy thaw again today. Wind E. On again for a mile or so on the little river. Made a portage to a long narrow lake which we had for about 4 miles, then more rocky portages and small lakes till midday, when on account of the heavy thaw we lay by near a high cliff and small round lake which Mr. Pike recognized having passed on the canoe route last summer. Saw 3 geese in the forenoon on their way north and Syene, who started ahead in the morning from camp, shot I goose. Blind Antoine remained behind at the long lake and while we were at dinner came up with a fine large trout. Towards evening off again. Made a short portage into Lac de Chien perdu. The Indians here in a short time caught 3 trout. Dark speckled with red meat, from 5 to 10 lbs. Made a couple of miles on lake and left by a low valley and camped in sight of Lac du Mort. Syene arrived and reports to have come across fresh caribou tracks. Rocky ridges allaround, here and there thinly grown with small pines. If it were not for the lakes which cut up the country it would be impassable. They are generally more like a river than lake, and with short portages here and there which continue to get lower the farther we get away from the range of hills that skirt the northeast shore of Slave Lake. The track is fairly straight, W of N is the general course.

Mon. 26th: Wind N, but heavy thaw. By midday reached the N end of Lac du Mort where we were obliged to camp. Made about 8 miles. The lake is largish with long bays running here and there, surrounded by smooth rocky hills or banks nearly wholly destitute of timber which gives it much the appearance of a lake in the rocky prairie. Most of the Indians off hunting. Wh. partridges numerous, they are now changing their plumage. I noticed signs of the arctic hare on the bank of the lake which is probably as far south as they come, and are now off out again to the open farther north. Only a few wh. partridges today's bag.

Tues. 27th: Wind N as it seems always to be here, but thawing in the middle of the day as the sun gets hot. Early in the morning saw a band of 6 caribou crossing the lake, but failed to get a shot at them. We have made up our minds to pass the day here to hunt and spell the dogs. Put down hooks for trout. In hunting saw a good deal of country. Nothing of interest - long ridges of either smooth rock or of piles of loose stones similar to the edge of a lake and dry mossy valleys or narrow lakes. Not a sign of men have I seen so far.

Wed. 28th: Very cold north wind, wh. hard frost all day. Got off lake as there was much talking amongst the Indians as to what to do next. One of them had while hunting yesterday found a cache of meat and fat belonging to Paul Beaulieu so we decided on taking it.

Travelled to the end of Lac du Mort and portaged into next lake. Found the cache had been made with rocks on the banks of a stream which with overflows had covered it to the depth of many feet. The only way to get it was by building fires on the top and gradually thawing it out. By ll o'clock we had not got the meat. No caribou seen today but as some fresh tracks were seen they seem to be moving in this direction. We are looking out for them as they are wanted badly. Our stock of provisions rapidly decreasing as we are compelled to give the Indians enough to keep them in life, but their poor dogs get nothing. One dog died on the way to this camp, and the balance of them cannot hold out much longer unless something turns up. No geese or migratory birds seen today. We have now got past the last of the belt of hills which lie to the N of Fond du Lac. The country looking ahead N is a level or rather rolling field of snow as far as you can see. The snow is perceptibly deeper as we go northwards.

Thurs. 29th: Remained in camp as it is rather too cold to venture farther out on account of the scarcity of wood farther on. Besides we would not gain any advantage as the spring is evidently a late one and we will have ample time to reach the Great Fish River before it opens, but I much fear that we will be considerably later getting back to Resolution than we imagined, and too late to establish at the last woods as every arrangement must be completely made before it can be carried out successfully. Several ground hogs have been trapped - smaller than the mountain hog. Kept a fire burning on the cache all day but so far have not got at it yet, the ice being many feet thick. 22 partridges shot by our party today. 3 Indians who set off for the fishing lake this morning have come back with 15 trout. So we will move camp there tomorrow. Daylight all night but still sun sets for several hours. All the ice melted off, but no cache. Evidently we have mistaken the spot. Still a cold N wind.

Fri. 30th: Moved camp 3 or 4 miles to a creek where the Indians killed the fish yesterday but little or no luck today. Wind still north and cold but calmed down in the evening. Gave a couple of pots flour to each family. Our provisions gradually decreasing. Have now about 30 lbs. pemmican and 2 bags flour for our rather longish trip and about 1 night's rations for our dogs.

Sat. 31st: Wind south and warm. A few flakes of snow fell from a passing cloud. One or two geese flying about and a few summer birds round about our camp. Set Old Capot Blanc's net in lake to see if we can get fish and if so will get down ours tomorrow. One or two small trout from lines. If nets prove successful will remain camped here for a few days. Good news this evening. Saltatha killed a deer and Capot Blanc saw good numbers a short distance from here. Pierre and

Marlo are off with our dogs to bring in the meat to provision the camp tomorrow, and Monday we will move to where the deer are ranging and try and get a little provisions made for our trip. A few days longer would have settled the Indians! dogs, without provisions.

Sun. June 1st, 1890: Fine day but wind turned N in the evening and cleared up with frost. Pierre Lockhart returned with the deer killed yesterday and accompanied by Marlo's boy who had left us the day we mounted the hill from the lake. He had started off to hunt and lost himself and was in a starving condition when found, having no ammunition for his gun, and without shoes or wherewith to make fire. We supposed he had turned back to where the Indians make their spring fishery, when luckily our men found him. Divided the meat amongst the camp and tomorrow will start for the deer, which if once found will put us all right as they are the bucks on their way out after the does which have left some time ago to have their young near the sea coast. So we will when oncewe strike the big bucks have them right with us to the head of the river. They move out as the snow disappears from the ground and meet the does out on the Barren Grounds on their return.

Mon. 2nd: Wind NE. Thawing a little during the heat of the day. Shifted our camp a few miles nearer where the deer are supposed to be. Started from camp with Saltatha and hunted all day, but the saw fresh tracks did not come across any caribou. Country rocky ridges often covered with loose boulders and stones and lakes lying between in the low ground. A fine grass thinly shows amongst the moss, rather like bunch grass. Wood now and then in sheltered valleys. Noticed large flocks of wh. wavies passing north. White partridges to be found wherever there are a few pines. Their neck is now dark brown and the rest of their plumage white. Shortly after my return the other hunters arrived at our lodge. Mr. Pike and the Indians 3 caribou. We are now amongst them and will only hunt on our line of march as we require meat. Murdo Mackay 2 wh. wavies.

Tues. 3rd: Made a small portage and fell on Lac Tête d'ours. Travelled in the night as it was too heavy a thaw all day so lay in camp feasting on fresh caribou meat. Made to Marlo's cache of the 2 caribou about midnight and camped. Wind SW and fine. I saw an arctic hare but did not get a shot at it. Geese, white wavies and swans passing all day.

^{1.} Described as'brother-in-law" by Pike

Wed. 4th: Were obliged to pass the day in same camp on account of heavy thaw. Fine bright morning and as we saw a band of 10 caribou crossing the lake all hands started to hunt, but after midday were driven back to camp by a heavy storm of snow and sleet and cold NW wind. On account of the caribou being apparently in more numbers to the east of the track we had been following, the Indians have decided to branch off and follow Old Capot Blanc's and the 1st expedition's track, and endless chains of lakes which intersect the barren stony ridges, enabling one to take any direction they have a mind to.

Thurs. 5th: Snowed a little all night and continued stormy throughout the day. Shifted our camp across the lake to get wood having burnt up the whole around our camp. The lake is about 2 1/2 miles in breadth at this point. Drifting on lake today like mid winter. Found a fine clump of large pines to make our camp in near an old meat cache. Wind NW. Indians hunting all day but without success, tho they had come across a band of 6 caribou which they missed. Broached our last bag of pemmican today. Wh. partridges numerous.

Fri. 6th: Shifted camp a couple of miles and camped at the end of Lac Tête d'ours. Lake I should say 10 or 12 miles in length and from 1 1/2 to 2 mith. Fine warm day. Wind 5. Indians killed 11 caribou today. I crossed the lake from our camp but did not see anything but a hare which I missed. Pierre Lockhart deserted from us today and we are not sorry to get rid of him, only regret missing the chance of writing, especially regarding boat. Country still rolling broken ridges.

Sat. 7th: Snowing in the morning and continued so till after midday so remained in same camp. After dinner I took a turn and shot a deer about a mile from camp. Wind northerly and chilly. Murdo shot a wh. wavy. Geese, wavies etc. flying about. Mr. Pike I goose from camp. The Indians 3 deer.

Sun, 8th: Wind still to the north but thawing slightly. Wavies in large numbers about any little water to be found and appear to be backward to go farther northward. The country still the same as that to the westward. Rolling ridges, broken rocks and loose stones often of immense size balanced on a few small stones are a very common feature of the scene. The ground is covered with several kinds of mosses, and a plant hf. moss hf. heather with a small black berry and cranberries are also to be found in the swamps. A short grass is to be found with a thin round blade. Wood getting very scarce and only to be found in sheltered spots. Passing the Sunday in our same camp. Brought in the deer I shot yesterday and found a large flock of gulls feeding on it.

Mon. 9th: Wind N easterly. Thawing. Off again this morning and made probably about 8 miles. Course NE to strike Capot Blanc's tract. First on two small lakes and then on a long one in appearance like a river, at the end of which we camped. After dinner we all started off hunting. I with Old Capot Blanc. Soon after leaving camp we saw a band of 7 caribou but our dogs had followed and just as we were approaching to get a shot, started off the deer. We again later on saw two which Salatha started for us! Towards evening, however, behind a ridge in front of us we heard some shots and soon some deer made their appearance from which I got a large buck. Moise who had fired at them first also got one. Mr. Pike and Murdo l each and Saltatha shot 3. Mr. Pike from camp got a grey wavy. So we are now feasting on marrow bones etc. The country still of the same appearance but not a single stick did I see while hunting. I noticed mica in small quantities yesterday and today but of poor quality and so far there are no rocks of sufficient size that I have seen to hold any, being all split up by the frost or other causes.

Tues. 10th: Wind NE but warm. In fact the hottest day we have had since we left Resolution and what it was like a month ago there. Water all over lakes etc. and the snow fast going. Only moved camp as far as the deer I killed yesterday which was right on our track. Made about 4 miles on small lakes with short portages between. Only David of of our party hunting and two Indians who killed nothing yesterday. It is useless to hunt while we have a day's provisions for ourselves and dogs as it only means extra weight to carry, the deer being now in small bands scattered over our line of march on their way northwards. The bucks have now horns 1 1/2 ft. in length which are considered a delicacy by the Indians, but we cannot appreciate them. Wood is very scarce at this camp and we can only find a little dry roots in spots where the snow is off the ground. The same bleak country, red and grey granite rock and ledges everywhere.

Wed. 11th: Wind NE, but a regular thaw. Spring has evidently set in. Water running in all the hollows and the snow is slush. Made about 5 miles in an easterly direction on a long, narrow winding lake. The hills a good deal higher today and rougher, abrupt bluffs and broken rocks. Leaving the lake we made a small portage and camped below a bank of fine sand of a red colour on the edge of Lac au bout des petites roches, which is the track by which Anderson and Stewart canoed it to the Great Fish River. Several of us started out after we camped to hunt caribou but did not see any signs. Geese and white wavies however are very numerous. They appear to have a feeding

ground here and our party got 10. Mr. Pike also shot a Black-throated Diver and I an arctic hare. This evening we had the first fog we have experienced, which is very prevalent throughout the Barren Lands in spring and fall and renders it dangerous for one to stray far from camp, as without hardly any warning and during a fine bright day a small dark cloud may be observed on the northern horizon. - a breeze springs up and in quarter of an hour or so, everything is enveloped in a mist so thick that one can only see a few yards shead, and on that account the Indians never hunt alone and often can only get back by shooting off their guns for each other to guide them to camp.

The bank of sand on which we are now camped extends for some couple of miles in length and perhaps 1/2 in breadth and is quite a pleasant sight after the everlasting rocks. It is formed in ridges, mounds and hollows like its rocky neighbourhood, and a few small stunted pines here and there.

Thurs. 12th: Have made up our minds to remain camped. here for a few days till the water sinks a little on the lakes. Still a heavy fog this morning but cleared off about 9 o'clock a.m. and turned a fine day. Did not freeze much last night and lakes forming in all the hollows. Geese and wavies flying about and a band of deer passed our camp early this morning, the whole of the dogs starting in pursuit. Mr. Pike and I taking a lazy day of it; the others off scouring the meighbourhood. Moise got back late, the only successful hunter, having killed 2 caribou and 3 wavies. Murdo also got 6 wavies and a loon. Wind NE and a heavy thaw.

Fri. 13th: All of the hunters having a spell and we will probably be detained here for three or four days yet as spring comes on so suddenly there is lots of water on all the lakes and we will be obliged to remain till it sinks. The last couple of days we have abandoned our snowshoes as most of the country is free from snow but immense drifts in all the hollows which we have to flounder through. Bands of caribou seen from our camp every now and then but are generally scared off before we can get a shot. Noel and another Indian lad arrived from Fond du Lac. They left the rest of their party some way back. They will probably reach here tomorrow. Wind NE and raw with now and then a few drops of rain. A slight fog towards evening arose, but later on came very thick and stormy.

Sat. 14th: Fog cleared off about 10 o'clock p.m. but the whole of the sky overcast and very stormy and cold. Our three men and some Indians started this morning to pack in the 2 caribou killed by Moise the other day and returned in the evening with the meat. Paul

Nathe and another family of Indians reached our camp today and joined our party of Indians. Zinto had moved on to Tête Noire's. They bring news that there are lots of fish being taken at the Fort and vicinity. Our men killed 3 loons and 2 wh. wavies and saw a band of caribou but did not get a shot. Wind continues a little east of north. Mr. Pike and I remained in charge of our lodge all day and very little temptation to venture out. A most unpleasant day.

Sun. 15th: Rained. Snow and sleet the whole day. Wind NE on getting up this morning. Found that the starving dogs of the late arrivals had cleaned out all our supply of fresh meat during the night, so we will have to hunt for more. So far the Indians we brought with us have given us no assistance, in fact we have been feeding them, or would have ample and to spare for our own party.

Mon. 16th: Wind NE. Rained and snowed all night and continued up to 10 o'clock today forenoon when it cleared up after dinner. I and Marlo started off ahead to hunt, arranging where we were to meet the sleds and camp. Saw two deer but did not get a shot. On making for the spot supposed to be near camp, which we reached about midnight, found that the sleds had not come up so started back for the camp we had left from through water and slush and bitterly cold. On our way overtook Syene with a load of meat he having killed a caribou. On arriving near our camp and congratulating ourselves we would soon get warm, we all at once struck the sled's tracks off by another snigh /sid so we had to turn back and follow and reached camp about 3 o'clock in the morning following. They had made about 5 miles, not very good in places as there are still drifts of snow and a good deal of water on the lake - a pretty long lake with rocky islands and points and channels running here and there. Good whitefish in it, but we did not set our net.

Tues, 17th: Wind NE and cloudy but the wind moderating and milder. Started off again in the morning and made 8 or 9 miles when we reached the northern or eastern end of the lake and made a portage of about a mile. Today we have camped half way on account of wood which is getting very scarce, only bushes you may say, tho pines, but the largest is not a yard in height. They are of a considerable size at the root, but immediately from that point the branches spring and seem to be backward to leave the ground and the whole is bent and crooked in every imaginable position and generally dry at the end or top. When we fell on this lake and camped during the heavy thaw we abandoned our snowshoes. All the land, or rather more properly rocks, are now free from snow except the large drifts and in getting on and leaving the lake we sink up to the wais: in snow and water. All hands off hunting except I and Murdo and we are having a good feed of bread all by our-

selves. 4 caribou were killed by the Indians.

Wed. 18th: Wind due south and a fine bright day. Finished the portage which is about a mile in length and fell on a narrow lake which we followed about 5 miles to where a little river joins it with the next lake in our route, but the ice we found gone on it and had therefore to make a portage of about a mile and a half in length over the hills. In the morning as soon as we got over the first portage on to the lake I left the party and hunted with Old Capot Blanc. Only saw 2 bucks but did not succeed in getting a shot. Snow only on small patches here and there. The whole country has the appearance of having been burnt, or rather more like a batture /reeffon a river, if it were thrown up into mounds, ridges and hills and the stones larger and rougher. In fact the whole of this section of the country is simply a bed of stones, as may be seen wherever the snow water carries off the moss leaving only the rocks no gravel or earth of any kind but the stones piled up on each other and great holes between. The country much the same appearance only less large bluffs of rock and now and then whole acres of loose stones without any covering. In hollows snow and then a yard or two of grass, no bushes of any kind except on the borders of a lake. On making for camp in the evening found the tents pitched on the hill looking down on the lake which we travel tomorrow. It appears of considerable size from the view we get of it from this point. Whiteish, trout, and jack are plentiful in both of these lakes,

Thurs, 19th: Wind south and warm. Left the men packing down to the lake and started off ahead with Saltatha to see some clumps of large pines. Followed the bay we first fell on the lake which runs north and south for about 5 or 6 miles, at which point the lake widens out forming a circle, and at the narrowest point in breadth is 3 or 4 miles, broadest 8 or 10, and from 16 to 20 in length. At the north end of the bay where it widens we took the shore to the west and passed over a pretty fair level country, more soil, and stretches of grass. Sand hills and ridges and several patches of pines suitable for building purposes and firewood. On the whole it is the best country I have seen since leaving Slave Lake. Mr. Pike took the east shore of the bay and also found the country unusually smooth and level for this quarter and saw considerable wood. In fact all round the lake there is lots for firewood. A small river runs out of the lake to the south at the northeast end of the bay. This is the point or lake at which the Yellow Knives would wish to have the post established. Our party with the dog trains followed the east and south shores of the lake and camped at the SE end having made some 16 or 18 miles today. Good travelling on the ice today, Mr. Pike shot I caribou, I 2,

and the Indians 5. Bands of caribou continually passing our tents all evening and night which our dogs start and chase off. Tomorrow another portage to the eastward over a flat country apparently. Sunrise at 1:30 this morning. Set 10 mins. after 10.

Fri. 20th: Wind NE but light and warm. Left camp about midday and made a portage of about 2 1/2 miles into a long narrow lake running northwards. Made about a mile on the lake and camped on a dry point. The Indians fished in a small stream which flows out of this lake where we fell on it and caught 2 large speckled trout in a few minutes for dinner. The country north of this lake appears level as far as one can see and freer of stones and rocks than the country we have left behind. Small bush pines in clumps in the low grounds. The lakes getting nice and dry. The caribou dung sinking through and leaving round holes all over the lake so that the water drains through as soon as the snow melts. The hen partridge now in summer plumage speckled brown, the cock still white with brown neck.

Sat. 21: Wind NE light and hot. Got away from camp at a fair hour, I walking ahead with Saltatha and taking the right side of the lake found the country much more level than we have seen it, long smooth sandy ridges covered thinly with bunch grass, and in the muskegs and edges of the small lakes, which are numerous, a good lot of grass to be found. Vegetation is pushing ahead rapidly, leaves starting on the small willows, and small flowering plants in bud, green grass showing and every sign of summer. I saw several bumble bees and lots of bluebottles about but no signs of mosquitoes or sandflies. Lots of small pines bushes - to be found in the low sheltered spots, but we must now be getting very near the so-called last woods. On a high sandy ridge beyond us we saw Old Capot Blanc and boy lying and they signed for us to come to them. We found they were watching 5 caribou lying down. We started to approach them from two sides and just as I was getting well up I heard shot which started the deer off on the run. Saltatha had fallen across another deer which he shot. We made up our loads and started for the lake. Shortly after starting a caribou came in sight behind us on a ridge coming at a trot in our direction. We lay on the watch for him and happening to pass near where I lay I dropped him. So we now had our dinner and with heavy loads started for camp which we thought to be at the end of the lake and a good distance. On coming out on the bank of the lake we heard dogs fighting and children calling and had the good fortune to strike the lake right at the point where the lodges had been pitched. 4 caribou having been killed near the lake had decided them to come to a halt at this place to pass the night and Sunday at. The party with the dogs had made about 8 or at most 10 miles. Mr. Pike, who had taken the N side of the lake with Syene, was guided to camp by a shot fired at a loon passing the lodges. Today's bag - Moise 3, myself 1, and the Indians 5 deer - 9. Trout and whitefish abound in this lake.

Sun. 22nd: Passed a quiet Sunday in same camp. The Indians all satisfied and contented having lots of meat in camp. Caught several trout in the lake in front of our lodge. Wind south and warm.

Mon. 23rd: While the men were fixing up the sled for a start Mr. Pike and I with some Indians started ahead and walked over a point on the southeast side of the lake and fell on a small creek running into the lake. The Indians started fishing and in half an hour caught 12 speckled trout, someof which we roasted for our dinner. The country we found rocky and intersected with small lakes. Saw a few mosquitoes and heard the first thunder of the season this forenoon. Wind in the morning west and hot but at midday heavy clouds came up and a rainstorm and the wind veered round to the NE again. Forked from the others who started to have a look for deer and made for camp with Old Capot Blanc. Saw a band of caribou on our way which Old Capot started after while we held on our way to camp and found the tents pitched on our arrival. Today the party with the dogs probably made about 8 miles. Today's hunt - Moise 2 and Marlo 1 deer. Noticed a little mica in the rocks above our camp.

Tues. 24th: Wind south. Made about 4 miles to the end of the ake, which is probably about 20 miles in length and from 2 to 2 1/2 in breadth, then a portage of over a mile and fell on the NE end of another small lake which we crossed, about three miles, and pitched our camp. Bands of caribou passing our camp all evening. I shot one close to our tent. Indians killed 4. Wood getting very scarce. In winter the little that is to be found must all be covered deep with snow.

Wed. 25th: Wind S and fine. From our camp of last night a portage of 4 miles has to be made to a small lake that lies between King and Aylmer lakes, the Lockhart River running through and connecting them all. We had our dinner about the middle of the portage and after started and got over the whole of our baggage. Found the river open between the lakes and lots of water at the lake edge; made about two miles on the NE bay of the small lake where the Lockhart River runs out of it into Aylmer Lake and took the bank where a portage of over a mile over a rocky hill has to be made. We got all our baggage to the top of the hill and as the men were tired camped. We are now on the north bank of the Lockhart River and on the native soil of the muskox. A little farther on on the portage I saw two muskox heads which had been killed by Marlo two years ago. On this side of the river I saw a

different sort of partridge, smaller than the usual wh. one; the cock bird is entirely white so far, but the hen is brown already. The country near to the south of the river is smooth and sandy and a good deal of muskeg. On the north bank a range of hills runs NE and the general aspect rocky and rough land. Aylmer Lake as seen from this point bends away to the SE. The river that runs below this hill is probably about a mile in length from the point of leaving the intermediate small lake till falling into Aylmer Lake. However plants are rapidly coming in bloom and little or no snow to be seen.

Thurs. 26th: Wind south and fine. Moise with 4 Indian boys and our dogs started back from our last night's camp for the large canoe left by Mr. Pike last fall on MacKay Lake. The Indians taking on our baggage on their sleds got through the portaging and had dinner and started off on Aylmer Lake a little after midday. Found the the ice very bad walking, put ashore first point we came to to collect some small pcs. of drift willows as there is no wood to be found near here. Saw on the point fresh signs of muskox. Made about 5 or 6 miles and camped on a low point a little distance from a small river that falls in on the N side of the lake. We fished a few minutes and caught 8 good-sized trout. Murdo and I shot 2 deer on the portage before starting out. The banks of this lake appear to be low and covered with grass, gradually rising as they recede from the water edge. The Indians are now most of them carrying canoes on their sleds picked up here and there where they had been cached along the route. Old Capot Blanc shot I deer.

Fri. 27th: Wind westerly and we had a shower or two of rain. Started off again this morning. I took the north bank of lake with Marlo. Found it nearly level and good walking. Found a duck's nest with eggs. Had to make for the lake as we could not cross a small river where Mr. Pike and the other hunters joined us. The sleds soon coming in sight we had dinner and again started off on the same side. Still level till we crossed a deep bay where the hills come to the lake again across which we camped on an island. While hunting any small willows we find we pack into camp as there is no wood to be found and we have been obliged to take it on our sleds for the last couple of days. Made about 8 miles today on this side of the bay where a little sream falls into the lake. The men started fishing and in a short time got over 40 trout. Mr. Pike, Murdo (2) and I each got 1 deer and the Indians 2. Mica again I noticed in the rocks at this place but still small and worthless. The banks on the opposite side are hilly; freezing hard tonight - ice on the small pools.

Sat. 28th: Wind southerly and fine. Started off again in a NE direction and probably made about 8 miles. The ice is getting better to travel on, the snow in sheltered spots not quite melted off on the edges yet and the ice good and sound getting on and off the lake, and very little affected by the sun as yet. This is probably a late season as Insprs. Anderson and Stewart passed through this lake the first week in July. This season I do not think that will be possible even to find a small passage for a canoe till at least the middle of July. We have kept the north side of the lake all along which is indented by long bays and a good many islands. A greater portion of the hill sides are slopes of grass and quite a lot of level plateaux, moss and grass, with here and there the prevaling ridge of rocks and stones. Quite enough feed for horses or cattle in summer to be found but not a sign of anything in the shape of bushes large enough to make a fire. Moss is the only thing to be found that will burn in this region. From our camp the route for Slave Lake stretches away to the southeast through an arm of this lake connected by the Lockhart flowing through to other lakes and then on into Slave Lake. From the farthest west end of MacKay Lake to the east end of Aylmer general course east and west is some 150 miles or thereabout of good navigable water and then south to Great Slave Lake or within a few miles of it. The route to the Fish River from this point is northeast to the end of the bay running in that direction and then a portage of some length I am told by the Indians. I do not think if we had managed to push ahead, as we intended on leaving the Fort, to the head of Fish River we would be any farther ahead in the end as in the event of the river being now open we should most certainly have found the lakes still fast. The point I most regret is not having seen King's road, which is much straighter to the westerly portion of MacKay Lake and by Mr. Pike's report much preferable to the one we came in by on account of wood being sufficiently plentiful for firewood, while the way we passed is decidedly unfit to be used by us to get out our robes in the event of a post being established. The Big Pines I mentioned as the probably suitable point for a post is north a little off towards the western end of Mac-Kay Lake. Owing to Zinto failing to make us meat we were unable to take King's track as we intended and were led off by Old Capot Blanc the way we came by, which is the track the Yellow Knives take at this season to make their usual meat hunt on Fish River or near that quarter; and their having a post would only be to supply them for that purpose and lead to no opening up of the muskox trade that I can see as in hunting the muskox in spring and fall they keep farther west, but the whole point rests that through jealousy they would wish to have the ammunition so that it would not be available for the Dog Ribs, who are the best hunters in this quarter. I proposed on falling into this chain of lakes to leave the party and go with an Indian on foot and see the Big Pines, but

found the lakes to the westward unfit to travel on and the rivers open so had to give up the idea. On my return if well I will endeavour to see it by canoe. The first muskox was killed today by David the Eskimo - a solitary bull; I deer by myself and 30 trout made our day's hunt. All the willows are out in leaf and many flowers in bloom. We find small birds' nests here and there and loons and pintail ducks are seen in the lakes but no wavies about of any kind; a few large geese, a small bird, evidently of the lark species is numerous here, which mounts into the air and sings.

Sun. 29th; Wind SW. Passed Sunday in same camp. Divine service by Syene. The day started with heavy rain and wind and fog, but towards evening turned fine.

Mon. 30th: Wind SW, Fine and hot in the morning but towards midday heavy rain and thunderstorm passed to the west of us and later on we had a little rain. Mr. Pike, the Indian hunters, and I took the NE bank of the lake in search of muskox. Saw lots of signs, but did not come on any. Saltatha killed a deer and we had dinner, finding enough small willows to make a fire. Saw quite a number of grey wavies. We are evidently now in their breeding grounds. Close to camp I wounded two caribou but did not get either. Our general course today was NE through a bay full of islands on one of which we are now camped. The dog trains probably made about 8 miles and tomorrow is all is well we will reach the portage leading to the head of the Great Fish River. No sign of Moise and our large canoe yet. Murdo killed a caribou along the lake shortly after leaving camp. Pretty fair country inland for walking. Lots of grass slopes, headed with rocks and stones and intersected with lakes. A few mosquitoes out today but not troublesome. Mr. Pike got an arctic hare today. The white partridge that come into the woods in winter, the last two days we have seen none. They do not come out as far as this but the smaller sort of which we have seen a few I believe are plentiful farther on. White fox holes we come across now and then of late - the first we saw on the portage to Lockhart River.

(To be concluded)

Editorial Note

The Editor would welcome contributions from those who are at present in the Arctic or have information about work in the Arctic. All material for the Circular should be sent to:

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THE ARCTIC CIRCULAR

VOL. X NO. 4 Published by the Arctic Circle Ottawa, Canada

1957

March, 1958

JOURNAL FISH RIVER EXPLORING PARTY

James Mackinlay

(cont'd from Vol. X No. 3)

Tues. July 1, 1890: Wind NW windy and changeable. Started rather late on account of heavy fog. Moise and party caught us up while the party with the dogs were having dinner. They brought the large canoe all right and report deer very numerous on MacKay Lake. During their absence from us they killed 8 deer. Today we made the end of the bay we have been following, called Sandy Bay, and camped on a high bank of sand close by to the north of us. A range of sandy hills and banks rum east and west; at the foot a small stream runs which is one of the sources of the Great Fish River. The country in sight and surrounding is prairie ridges with lakes in most of the hollows. Near our camp a band of some 15 muskox were seen feeding, so after our tents were pitched all the men of the party started after them. They were feeding at the foot of the hills across the little river. The Indians made up their minds to drive them into a small lake, on reaching which they stuck up poles with coats etc. hung on them. Some of us then strung ourselves on the hills on the north side to keep them from breaking, the river being the barrier on the south. An Indian then started them on the far side and they came down at a clumsy gallop along the river. On reaching the point where they were supposed to take to the water they refused and broke up. However we managed to get 7 out of the band -Moise 2, Murdo 1 and a calf, and I 3. No bull appeared to be with them. 3 Deer by the Indians today. We probably came some 6 or 7 miles today. This portage is long and forms the height of land, the water from the

southern slope running by the Lockhart into Great Slave Lake, of the northern by the Great Fish River in the Arctic. We have now finished our sled work and as our large canoe is in good condition we are well prepared for a trip down the river having plenty of ammunition and fishing gear - only we shall probably have a few days delay where we finally part with the Indians getting shoes and some dry meat made, in case anything should happen fto our canoe, to cache along the river and ensure our way back. Caribou to be seen in bands passing from our camp, but as we have plenty of meat no use troubling them.

Wed. 2nd: Wind NW fine and warm. Remained in camp at Sandy Bay repairing canoes, dressing leather, and packing in muskox meat. Bands of caribou passing all day. Indian women cutting up and drying meat. None of us wandered off from camp, all taking things easy, lots to eat but our tea has dwindled down to about 1 lb. Our flour holds out good, we have 1 meal a day of it - slap jacks.

Thurs, 3rd; Wind westerly, Rained early in the morning but soon cleared up and turned fine. We made a cache of some ammunition, tobacco, and muskox heads in the rocks near where we killed the muskox yesterday and have here left our sled and taken to the canoe, Our men passed down by the small river but had a lot of work getting through, the stream being full of large stones - 7 portages had to be made and they broke the canoe shortly after starting out. The small lakes are now open, but on the larger lakes there is only a small passage round the edge so that with the delay mending the canoe and winding round a lake it was about 2 o'clock next morning before our canoe came up. The Indians portaged their small canoes and baggage to the southwest and fell on a narrow lake which they passed over on the ice and then bent their course to the north again and camped where they fell on the river again. Mr. Pike and I started on after the Indians as soon as the break in the canoe was repaired but had some difficulty finding the camp which we only reached after midnight. On our way we saw a band of over 60 caribou and fresh signs of muskox plentiful. Our camp of last night is probably not over 4 or 5 miles from here in a straight line to the southeast. Noel started on ahead to make the crossing where they spear the deer as soon as passable and we hope we may find some dry meat ready for our trip beyond on our reaching that point. Among the rocks on the river banks enough wood is to be found for fire so we are well off and comfortable in our tent to what we have been for some time back when we had only a fire to cook. No pines are to be seen of any description, only willows, but they grow to a good size for this quarter. The country is rolling prairie with more moss and stones and less grass than the prairies we are used to to the south of this. The banks and bed of the stream are rocky or rather stoney, widening out here and there into narrow lakes between which almost a rapid.

Fri. 4th: Wind south and hot. Started off this morning and made a portage with our canoe to a lake around the shore of which there is a passage large enough for our canoe. The river being full of rocks and rapids made probably about 5 miles today and camped on the south side of a little river. I took the same side of the lake as the canoe and struck inland, crossing two small streams falling into the Fish River, Saw a large lake to the west. The country grassy ridges with here and there piles of rocks on the shores of small lakes mostly. Found a loon's nest with eggs, and all the other birds about hatching. Did not see any muskox, but near our camp Murdo saw a band of 9 but did not get a shot. Moise I deer, I 3, and the Indians 5. The course of the river today is about due north. Quite a lot of water flows already in the river but the bed is so stoney that it cannot cut in and spreads over the country making it useless for canoeing in this upper portion of the stream. The long narrow lake we are now camped on is Muskox Lake. A few mosquitoes about the muskegs in hollow spots today. The Indians still using their dogs in sleds over the bare ground and packing them. Deer in great numbers to be seen in our vicinity - all bucks on their way out after the does. The custom of the Indians is to travel up with the bucks in June getting ahead of them at a favourite crossing on the Fish River and spearing them in the water. Then they remain till the whole band, does and bucks, return in August, some time I fancy, and again slaughter as many as they have a mind to, from which they supply the Fort Meat Boat; but hundreds of deer they slaughter annually and waste the meat, and cannot possibly pass a band of muskox without trying to kill as many as possible only for the love of slaughter as they are poor at this season and the fur worthless.

Sat. 5th: Wind southerly. Started off again this morning but make poor headway as the canoe has to follow the shoreline all along, only a small passage being free from ice. We made probably from 4 to 5 miles still on the Muskox Lake which runs nearly north-south and is from a mile to a mile and a half in breadth. Trout are plentiful in it but no one fishing as we have so much meat. In the morning I started walking back from the lake and after midday some time came up to where the Indians were having a spell and dinner, Old Capot Blanc having killed two caribou. They had seen a muskox ahead along the bank of the lake and I and Old Capot started after it. We found it on an open flat and could not approach it so made a big round and got in front of it, coming feeding slowly towards us till it came to some small willows amongst which it lay down. So we started and approached it and came within 20 yds., when I gave it a shot behind the ear and it never rose again. Old Capot kept me from walking up to it as it lay kicking till he gave it another shot. It proved to be a large bull with a splendid set of horns which I at once cut off for fixing. The canoe and rest of the party soon coming

up we pitched our camp on the spot, which gave me a good chance to skin and clean the head and saved me packing it which would be no joke. We are now within 5 miles or so of the place where they spear the swimming deer. The country on this the west shore of the lake is still pretty much as I saw yesterday. Grassy hills and valleys but from here it gets more hilly and rocky. The east shore of the lake for the last two days appears rocky hills, little or no grass to be seen and I am told by Old Capot Blanc that it is a regular wilderness of rock and stones which extends for a long distance. Saltatha killed I deer.

Sun. 6th: Wind southerly and hot. Mr. Pike in taking a walk a short distance from our camp saw a band of over 20 muskoxen. There are lots of tracks of them all around but their habit being to remain nearly in the same locality there is not such a chance of seeing many of them as the deer, which keep moving about. So unless you happen to come right on them they may be all around and hid by the hills and ridges. The bulls at this season of the year do not appear to herd with the cows but keep solitary or in couples. In the evening we moved our camp about a mile farther on and camped on a high hill overlooking the place where the deer swim the lake. We have camped about a mile off so as not to frighten off the deer. At the north end of the lake there is a small island to which the deer cross from the east and when they take the water again from the island for this shore jis the scene of the slaughter. A little beyond, the small stream we followed into this lake flows out again to the north. To the east of our camp across the lake is the Muskox Mountain, properly hills. On our arrival here we found that the Indians, who had come ahead of us to kill the deer, had killed 15 and 4 muskox and gave us great news of having seen a man walking on the hills without a gun who they say must be an Eskimo. The Resolution Indians never go much farther north than this point close to which they have often seen tracks of the Eskimo. The country ahead appears to get wild and rocky again, There are a great variety of flowers now in bloom some of them very pretty. The plants are generally very small as well as the blossom. Three or four miles to the north a ridge of hills lie running nearly N and S, at the foot of which is a river flowing from the westward out of a large lake (Sandy Lake) and joins in with the stream we have been following. The love of slaughter proving too strong for some of our Indian partners, they started after the muskox seen by Mr. Pike and killed 3 out of the band, 2 Moise and an Indian 1. It appears they did not see Mr. Pike's band but another of 13.

Mon. 7th: We again shifted our camp on to the place the river leaves Muskox Lake, about 1 mile or so. No caribou are crossing at all since our arrival owing to the wind being in the wrong direction. We saw a large band on arrival here but they had taken the wrong track

so only I was shot by a little boy, and the rest run off by our dogs. The ground around our camp is all covered with old bones, the relics of many season's spearing of the deer. A band of muskox was seen from our camp feeding all day on their mountain, so, as we are in want of leather, about 8 o'clock in the evening we started out after them with Old Capot and Marlo going by the canoe which took us close up to the side of the mountain. We found there a band of cows with 3 calves, 10 head in all, Mr. Pike got 2, Murdo 1 calf, and I 3 and a calf. Before we got through skinning and cutting up the meat it was long after midnight so Mr. Pike, Murdo and I took our load and got down to the canoe where we found a lot of large willows and gathered a load to take back to camp with us. And thinking it a good chance to have one good fire again we started such a blaze we have not seen for over a month and roasted muskox tongues, marrow bones etc. for our supper or rather breakfast as it was now 2 o'clock in the morning. We then got in the canoe and got back to camp at 3:30. We are not at all particular what hours we keep as there is no night at all and the night is the pleasantest to travel, the days being very hot. Frost last night. Saw new ice forming amongst the old drifting ice, a few mosquitoes around but nothing to bother. Syene and some of the others hunted to the north of our camp and killed 4 muskox. The Indian women getting ready stages for drying meat and cutting it up.

Tues. 8th: Wind westerly and very hot all day. We will remain camped here for a few days till we can get some shoes and meat made by the women before we leave them. Old Capot and party remaining here to make meat for our return trip. The Indian women off for the meat of the muskox with our cance, Moise accompanying them to bring some wood. Cloudy and close towards the evening and lots of mosquitoes. Moise brought back the meat of a caribou which he had shot. We have finished our tea some weeks ago.

Wed. 9th: Wind southwest and very hot and sultry. Mr. Pike strolled out in the forenoon with Old Capot Blanc, crossing the river and taking to the north towards the lake and where the river from the west joins the stream on which we are camped. Left me in camp making cartridges. After dinner I got tired of camp so started with Marlo going NW following the rocky ridge on which we are camped. After walking a couple of miles we came out on a hill overlooking a large valley and I saw the west branch of the Fish River flowing through it about the same size as the stream we have been following. A small stream was also running at the foot of the hill on which we stood, coming out of several small lakes in sight. The valley looked well a mile or two in breadth and sloping up to the hills by which it is surrounded. Mosquitoes were the worst we have yet seen them so we made a smoke and sat down for a pipe. In a little while we saw a muskox rise from its bed in the willows on the slope about a mile or so up the valley. So hoping it would turn

out a large bull we started to try and get a shot. On getting near we found it lying in the open, however by crawling we at least got within shot and I knocked him over. It proved just what I was hunting, a bull with a fine head of horns. While we were skinning it a caribou came trotting by and I managed to get it also. Had a hard work getting the head to camp, where I found Mr. Pike had already arrived. He had seen nothing but both he and Old Capot got a ducking in a creek they had crossed. I forgot to mention we were roused out of bed this morning by a row in camp. Dogs barking and squaws yelling. On going outside I found the dogs after a muskox calf. Getting my gun I shot it and found that the cow had been shot by an Indian under the hill. They had crossed the river at the usual crossing and got into more trouble than they bargained for. The Indians besides killed 4 muskox out the direction Mr. Pike had taken. A few remains of snowdrifts still to be seen here and there but the country looking green and fresh.

Thurs. 10th: Wind northwest, hot in the morning and lots of mosquitoes. Later on thundered a little and slight shower of rain, after which it turned very cold and quite like tho! it might turn to snow. We all remained in camp and had a talk with some of the Indians about going down the river with us but they gave no decided answer so far. I passed the day fixing up the bull!s head I got yesterday.

Fri. 11th: Wind north. Strong and stormy showers of hail all day. Mr. Pike and I remained in camp with David. The others off with the Indians hunting. Only Moise and Noel saw anything. Moise killed 1 deer and 2 calf muskox, Noel 2 cow muskox. Wind increased towards evening a regular storm.

Sat. 12th: Wind northwest. We were awakened by the storm, which was still raging, breaking one of our lodge poles and had to shift our lodge to the shelter of a hill or it would soon have been blown to pieces. Cloudy and very cold. Snowed the whole of the day. We appear to have been too late reaching this point to catch the passing deer as not one has crossed since our arrival. They probably now find crossing places all over. We are tired out waiting for the loitering Indians to dress the skins and make shoes for us. They have delayed us all along and now we can never get to the mouth of the river and back in time. So we will at least endeavour to find the Eskimo and then turn back.

Sun, 13th: Wind westerly. Broken weather. Showers and sunshine. Wind going down but still in the evening looking very unsettled.

Mon. 14th: Wind still W and cloudy. Talking with the Indians and arranging to start on on Wednesday. 4 have agreed to go the trip with us, Marlo, Saltatha, Carquoss, and Noel to receive each 2 sks. p. day and half a bag of flour at Fort. The women dressing leather and making shoes. Murdo and some Indians going for wood came across a muskox bull and killed it amongst them.

Packing and preparing for our departure tomorrow if all is well. 4 Indians accompany us taking a small cance in case any accident should happen /to/the large one. We intend to push on to Beechey Lake and in the case of not seeing the Eskimo there we will cross over to Bathurst Inlet on foot taking the small cance to cross rivers and lakes that may be in our route. Murdo killed a muskox today and saw two more feeding close by a short distance from our camp. Saltatha and Carquoss killed each a muskox out of a band they came across and saw another band of 13 feeding not far from camp.

Wed. 16th: Wind westerly. Cloudy day and showers passing now and then. The Indians who accompany us came to our lodge in the morning and told us they could not start today as they had not enough shoes for the trip. So we were obliged to remain again today greatly against our will. To pass the time we started out in the evening to see if we could find the band of muskoxen seen yesterday. We found that they had wandered off, so seeing another band of 6 across a river we got a small canoe in which we crossed and got 3 out of the band - Mr. Pike 1, I 1, and the other an Indian.

Thurs, 17th: Wind southerly and fine. Lots of mosquitoes. Managed to make a start at long last. Bid farewell to Capot Blanc and party and got away at 2 o'clock. We crossed the little river opposite our camp and made a portage. Canoes and baggage right to a small lake, the river being too full of rocks to be of use. The portage we made lay nearly north and probably 2 1/2 miles in length. The lake is narrow and runs due N and S. Four Indians accompany us, Marlo, Saltatha, Carquoss and Noel. We have our large canoe and another small one which we bought from the Indians, This lake is quite free from ice so we hope to be able to push ahead from this point and find the river ahead fit for canoeing as so far it has been more portage work than canoeing. Across the lake from our camp of tonight a high range of rocky hills lie and the portage we passed is rocky country. Mr. Pike and I walked ahead to this lake, and close to the place appointed for our camp we saw a solitary muskox which we at once decided must be a bull, so we started after it but after we shot it, it turned out to be a cow. However we required the meat as we have only about a domen dry ribs, the whole supply we got from our great

Indian hunters. Our flour is all gone but about half a sack which we divided before leaving this morning and made a cache of about 25 lbs. with some powder and a few other things; the other 25 lbs. we brought on with us for our trip. So we have to depend wholly on our guns. The men have got through most of the powder and ball, but Mr. Pike and I have lots of ammunition, so we are all right. Before we left Capot Blanc's camp a large band of deer passed, 2 of which the Indians shot and Mr. Pike's muskox makes the bag for today.

Fri, 18th: Wind southwest and a fine day. Started off from camp at 8 o'clock paddling our canoe. Found the lake to be some 2 miles in length. Immediately where the river leaves the lake there is a small rapid with an island in the centre on which we made a small portage, canoe and all. We found the river much better than we anticipated so far from Anderson's report. Today we have probably made some 18 or 20 miles, and found the river the whole way, with the exception of 3 small rapids, two of which we ran, more like a lake than anything else. Very little current, deep, and averaging 200 yards in breadth. We passed through two lakes of some 2 and 3 miles in length, besides the one we were camped on last night, the country on both sides of the river being rough and covered with hills, bluffs and ridges of grey rocks and stones. The general course of the river being northeast. We camped at the point where the river leaves the 3rd lake, on the west bank, with a fine sandy beach and grassy bank rising to a hill which I and Mr. Pike climbed and had a good view ahead for a considerable distance. The country we found ahead to be fine and smooth again, grassy ridges and valleys. Game seen today - before leaving camp we saw a band of 7 muskox feeding at the end of the lake; while paddling downstream a band of some 16 on the river bank, a bull out of which Mr. Pike shot; towards evening 2 other bands far off, could not say how many. Only saw 3 caribou today. The whole of the bucks must have passed on ahead of us. On the bank where we have pitched our camp we found a few large willows lying that had been cut, evidently the work of the Eskimo, probably a couple of years ago.

Sat. 19th: Wind southwest. Before starting off this morning Moise came and told us that the Indians had made up their minds to turn back. After a long talk and much loss of time we found that Marlo was the ringleader, so we sent him and Carquoss back in the small canoe and got Saltatha and Noel to come on with us. Then starting on we found the river about a mile in length. Strong current and small rapids to where it falls into a long narrow lake, probably 9 or 10 miles in length. A river from the west fell in shortly after leaving camp. A little before midday we saw a band of muskox feeding on the east side of the lake, so as we required meat we went ashore and shot 3 - Moise a cow, David a yearling, and Noel a calf. We had dinner and a

fine breeze springing up we got ready a mast and sail and started out again. The banks on both sides of the lake rocky. Bands of muskox to be seen continually. From the northeast end of the lake the river flows out again running for about 3 miles. Strong current and 3 or 4 considerable rapids, all of which were run without portaging into a small lake on which, finding a fine sandy beach, we camped on the east shore. From this end of the long lake we passed through the country is pretty level prairie. Sandy hills and lots of grass; a little before we reached this lake another small stream fell in from the west. Towards evening we saw 4 muskox bulls feeding on the bank. As we sailed along they saw us and come and stood right on the top of the bank with heads raised looking at us - a fine sight. They could not make us out so started off at a small gallop down the bank of the river and on our putting ashore to camp we saw them coming right for our camp, one passing so close that Mr. Pike shot him from outside the tent. We must have seen over 50 muskox today, only 1 caribou near our camp.

Sun. 20th: Wind southwest and very hot. Passed the day in the same camp. I took a walk to a hill at the back of camp and saw a large lake to the west still apparently covered with ice.

Mon, 21st: Wind NW, Got away early this morning and paddled to the end of the lake, about a mile. Where the river leaves the lake a ledge of rocks runs right across, which we made a short portage to get past, canoe and all; then a lake of 2 miles in length, then below a short pc. of strong water with no real rapid into a lake of a mile in length, after which a rapid which was run light, portaging the cargo. Here we caught a couple of large trout with the spoon bait. After the rapid the river widens out into a sluggish current for 2 miles, then into a lake about 2 miles long. Here we put ashore for dinner. Travelled nearly due N all the morning. After dinner soon got to the end of the lake into a pc. of very bad water about two miles in length. The upper half it was impossible to run, so made a portage and then ran the lower half, then fell into a narrow winding lake on which we made 3 or 4 miles and then camped on a sandy ridge at 9 o'clock. We have made a very short distance today being delayed by the steersman having to get out to see any strong place before venturing. We saw 3 bands of muskox, the largest 16 probably in all 35. A great deal of the country we passed through today was prairie benches and ridges; the banks of the rivers and lakes being high and shutting off the view so we probably did not see bands of muskox we might otherwise have. On a point of the lake on which we are camped I shot a caribou. Very little wood in this part of the country; have to use moss and green stuff for our fire tonight. The banks of the lake getting lower, sandy beach and sloping grassy banks.

Tues. 22nd: Wind north. A heavy mist or smoke hiding the view for any distance. Made a late start, the men being tired after yesterday's work. Started on the lake paddling against strong headwind. Shortly after pushing out we saw a caribou lying down on a sand bank at the water edge and we put ashore and got him. About 4 miles paddling brought us to the end of the lake. This far we came due north, then on into the river about a mile or so in length. Strong currents, but deep and good, into a small lake about a couple of miles in length. Here we turned to the east the river flowing out of a bay at that end of the lake. As we approached the beginning of the river we saw some stones standing up that looked singular, on the top of the bank on the south side, so put ashore to have a look at them. We found that it was an Eskimo camp and the large flat stones had been placed by them in rows for what purpose we could not make out. This spot is evidently a resort of the Eskimo for spearing the caribou as they swim the river. Round their old encampment was thickly covered with bones and a great many muskox heads lying about, which they must also kill in the water. Under the bank from their camp they have stones built up in 4 or 5 places - stands for watching the animals. We counted where 9 or 10 camps had stood; the turf appeared to have been lifted for the size of the camp or lodge and built up round their lodges or snow houses, which must have been very small, barely large enough to hold 2 persons. No sign of fireplace inside of the camp but outside, near where each had stood, a small fireplace, about a foot in length, was made by placing up 3 flat stones on edge, one for the back and two for the sides. We found pcs, of the wood of snowshoes, poles, and broken arrows, and some old sealskin shoes. From the muskox heads that we found around they must have been camped here last fall and probably only left for their wintering quarters with dogs on ice before the real cold set in. Some horns of muskox we observed to have been cut off with an axe or sharp knife, not a scrap of iron of any kind did we see. Altho! it was rather soon we had dinner, so that we would have time for a good search around. Then, starting off we found the river large and deep with a very strong current, about 9 or 10 miles in length, flowing through a fine prairie flat, the hills standing a good way back and apparently also smooth and grassy; then into a small lake about two miles in length on which we put ashore sooner than usual on account of a heavy wind and rainstorm and pitched our tent under a rocky hill on the north shore. As we were putting in we saw a caribou feeding amongst the rocks, so while the men were pitching the tent I went and got him about 500 yds. from camp. We found lots of wood here which has been very scarce of late, the willows only growing amongst the rocks, the prairie country being dry sandy soil with short grass and in the hollows near lakes and streams a small kind of bush about a foot in height which the muskox seem to relish. Since falling into the lake of the Eskimo our course has been well to the east. We did not see any muskox today as we could not see the hills well and they do not appear to frequent the grassy flats so much as the rough rocky country. We saw

4 or 5 caribou singly, evidently animals strayed off from the band and lost their way - all small bucks.

Wed. 23rd: Wind westerly, light. Got away by 6 o'clock paddling. Soon came to the end of lake we camped on, the river flowing out to the NE through alternate stretches of small lakes. Now and then strong current, 2 rapids but both good for a distance of probably 9 or 10 miles. At the latter end bending away to the east, the whole of the way through a fine grassy country - benches, flats and hills, then fell into Beechey Lake on which we made about 4 miles and put ashore for dinner on the N shore. A breeze springing up we sailed off again but it soon fell calm again and had to turn to the paddles, making some 10 miles or so more when we camped on the N side. The country on both sides of the lake is rocky, with here and there strips and points of grass near the lake, which lies due east. We did not see a single muskox today and only 3 caribou, but did not get any of them, so as we are getting short of meat set the net! for the first time this evening. Did not see any signs of the Eskimo being in the habit of using this river tho we kept a good lookout for any traces of them which makes us of the belief that they must come by some other way to the camp we saw above, probably a stream may fall into the lake at the west end. We only passed thro' a small portion of the east end through which the river flows, probably coming from Bathurst Inlet.

Thuss. 24th: Rained most of last night and when we got up still heavy rain and east wind, so finding we would not have time to go down the river much farther and finding no traces of the Eskimo on the lake we made up our minds to turn back and have a search in the vicinity of the camp we saw above, where we may perhaps find out the way they come from the sea and travel inland as far as we can, perhaps meeting them in that way. Shortly after we sailed out from camp this morning it fell calm and the wind changed to the west. So about midday, after making 5 or 10 miles paddling, we put ashore for dinner not that we had much to eat but to see if the wind would fall a little. Just as we were landing we saw a caribou which I shot, it proving to be a female with a young one, the first we have seen. The wind increased with showers of rain so we camped for the day on the N side of the lake on a prairie ridge. The men went off with their guns in the evening and Moise killed 2, David 1 and Noel 1 caribou.

Fri. 25th: Wind NE, cloudy and showers of rain. Got away from camp by 4 o'clock in the morning paddling. At 9 o'clock put ashore near the end of Beechey Lake for breakfast. Started off again just as we got at the end of the lake saw a band of some 20 muskox, so we put ashore again and I got 2 bulls, one a fine head, the other a very large old bull with one horn broken through fighting, I suppose. The bulls

seem to have joined the cows now as there were a lot of cows with calves and several bulls with them. We had dinner so as not to lose time again and started and reached the 2nd small lake from Beechey by 4 o'clock in the evening and camped in our old camp on the way down,

Sat. 26th: Wind SE, fine day. Left camp at 7 o'clock in the morning paddling through the lake till we reached the river which we mounted on the line. About a mile below the Eskimo camp we had dinner and started again reaching the campment and lake by 1 o'clock. The lake lies NE and from the point the Great Fish River falls into it to the NE end is probably a little over a mile in length, and perhaps a half in breadth. At the NE end the river flows out again. On our reaching the lake we kept the north end and paddling along shore found as we expected a small river falling in at the NW bay, which we have named Pike River. We pitched our tent at the mouth of the river on a small flat on the edge of the lake. Just as we got ashore we saw a muskox feeding, but he got our wind and started off. I walked up the river for some 5 or 6 miles and found that it ran through a chain of long narrow lakes to the northwestward. The country in this vicinity is much the nicest we have seen - fine grassy valleys and flats rising to prairie hills, sandy banks to the lakes and sand banks here and there on the flats and hills. Single caribou are scattered here and there over the country. I saw 9 today. As we strongly suspect that the Eskimo must come down this river from Bathurst Inlet, Mr. Pike and I with a couple of men intend to start tomorrow and explore it up for some distance in the hopes of yet seeing the Eskimo. The men tracking up the river today saw an old fireplace and found a stone dish and an arrow head near it. The stone dish must evidently have been used for putting on the fire for cooking as it is all blackened.

Sun. 27th: Wind NE. Mr. Pike, Murdo, David and I started to have a walk up the small stream falling in from the west. We found the stream running to a chain of narrow lakes and in high water must be fairly good for canoeing. We followed it up for 15 miles or so and found that it came from the NW. We did not see any traces of Eskimo on or near it. Mr. Pike killed 4 geese at dinner and we got a muskox near where we camped.

Mon. 28th: Wind NE. We started back for camp and reached before midday and found all hands off hunting across the little river. Later on Moise and the two Indians arrived with packs of meat. They had seen a large band of caribou returning from the sea on their way south and had shot 9, cutting up the meat to dry for our return trip. The country up the small river is all nice prairie country as far as we could see ahead, here and there a little rocks and high conical sandy hills. As there is now no hopes of falling in with the Eskimo we shall leave a few articles in

their old camp for them and start back on our return trip tomorrow.

Tues. 29th: Wind SE and very hot. Got away from camp at 4 o'clock in the morning and paddled over to the Eskimo encampment and made a cache of a few articles we were leaving as a present to them in the rocks under their camp. We then started off and passed two small lakes, then the longest and worst rapid in the river, through a small lake into another rapid which we mounted and camped at the head on the N side of the river. Both rapids we mounted on the line, but broke the cance on the first one a little. Saw only 2 caribou today.

Wed. 30th: Wind SE. Got away in good time this morning and before midday passed the two portages. At the end of the 2nd we had dinner, and then on into the small lake where we passed Sunday going down. It then raining so heavily that we had to pitch our tent and remain for two poires. Started off again and got up to the strong stretch of river above where half loads had to be carried and we camped at the mouth of the river falling in from the west. Rained all night. Saw 4 caribou and 1 muskox today, but did not kill any as we have still meat.

Thurs. 31st: Wind NE. Started off from camp at 4 o'clock tracking up the river. On reaching the lake where we saw so many muskox on the way down we put ashore and had something to eat and off again paddling. Before midday began to rain and seeing a hand of 15 muskox put ashore and set up our tent on the east shore of the lake, and as our supply of meat was getting short and no deer to be seen started after muskox. Moise killed a bull, I 1, and David a yearling. Rained heavily all the rest of the day and night so we remained in camp.

Fri. August 1st: Wind NE. Rained heavily all day till a little before 6 o'clock in the evening, and being a fine fair wind for us we started and made 3 or 4 miles above our old camp where the 2 Indians left us with the little canoe. Camped at 9 o'clock on the east bank of the river. Shortly before we put ashore we saw a large band of muskox standing on the river side.

Sat. 2nd: Wind southerly and a fine day. Got away a little before six paddling all the way till we reached the portage on a small island where we had dinner, and stayed some time drying our baggage. Then off again into the last lake to Muskox Lake paddling against a strong headwind. On reaching the end of the lake, instead of making a portage into Muskox Lake, they worked the canoe up the river which is very shallow and full of rocks. Made one portage, canoe and all. On reaching the camp we left, Capot Blanc found about 10 lbs. dry meat hung on a pole for us. Saw no animals of any description except 3 wolverines which Mr. Pike shot.

Sun. 3rd: Rained now and then throughout the night. About ten o'clock as there was no wood we moved on to the narrows of the lake and camped on the east shore. Saw a band of muskox on the shore of the lake and as we are rather short of provisions went after them. Found them in the open and altho' I wounded one by a long shot we did not get any. However a caribou happened to be close to where we landed and got him which put us all right. Very few caribou to be seen tho' the Indians say they must have arrived here already. Wind southwest and blowing very strong. Rain showers passing all day.

Mon. 4th: Wind southeast and blowing very hard all last night and continued so all day so that we could not leave camp. So the men started off hunting and returned towards evening having killed 3 caribou. Later on it calmed down and at 7 o'clock we started off again and at 20 minutes to ten o'clock made the southern end of Muskox Lake and camped in a bay on the west shore near the point where the river falls into the lake - Muskox Lake 15 miles in length.

Tues. 5th: Wind westerly. Mr. Pike and I started on ahead from camp this morning and before midday reached Sandy Bay on Aylmer Lake where we found Capot Blanc and the rest of the Indians camped. They were preparing to start farther to the south to meet the boat and hunt the deer but remained again on our arrival, and we sent several of them to help our men through. Moise and the others with the canoe and the whole of our baggage got in about half past 6 o'clock in the evening having had to make a portage the whole of the way excepting a small lake which they canoed. The Indians, during our absence, have only killed 6 deer there being none around this part of the country and have been living on muskox meat having killed some 25 since we left. Syene started off on his way for Lockhart's House to meet the boat a few days after our departure. I am afraid the Indians have very little provisions for us and we will have to depend on ourselves.

Wed. 6th: Wind westerly. Mending and fixing up our cance and arranging with the Indians all day, and only got away at 4:30 o'clock in the evening. Saltatha and Noel accompanying us to Slave Lake. Made 4 or 5 miles. Sailing and paddling back on the bay we came over on ice on our way up, and camped on the east side near one of our old camps.

Thurs. 7th: Wind southwest, and a fine day. Early this morning getting up I found a slight frost on the grass and moss. Started off at 6 o'clock paddling and about midday reached the mouth of the bay we had been following running N from the main lake, which lies east and west. Put ashore and had dinner on a long island at the mouth of the bay, having probably made about 10 miles. Shortly after we had started again we saw caribou on an island, and going ashore I and Moise shot 2. After

taking the meat on board we started sailing, and after a run of about 10 miles the lake narrowed and Lockhart River left it at that point, but only one or two places the current is noticeable, the rest of the way is through long narrow lakes for about 10 miles more running into Clinton-Colden Lake, at the western end of which we are camped. The N shore of Aylmer Lake, which we followed, is low and rolling grassy slopes with lots of long islands, generally rocky, the breadth from 7 to 3 miles. We did not find anything in the shape of wood since leaving camp till we struck this spot and found a few willows.

Fri. 8th: Wind westerly. Started off from camp at 4:30 o'clock in the morning sailing and by midday had made some 15 miles. The lake all the way broad and having deep bays running in all directions. We put ashore on a large island for dinner where Moise killed 2 caribou. We found the females had arrived and lots to be seen from our dinner. place. After dinner we sailed off again and running some 5 miles farther, found the lake narrow up into what we supposed to be the river, but getting round the turn we found we were out in a considerable lake again. Up to the narrows we had been bearing to the SW all day, but from that point we found the lake lying due south, down which we made some 10 miles more and camped on the east shore at 7 o'clock evening. The two Indians we have with us it would appear have never come through this lake by canoe and are not sure of the way which may give us some trouble, the bays running off being so numerous and deep.

Sat. 9th: Calm. Got away by 6 o'clock and started paddling down a bay running SE and after making some 7 or 8 miles saw some poles sticking in the ground on the top of a bank. On approaching them we found we had struck the river all right, which leaves to the east and is about 200 yds. in width. Slow current. Landing to see the poles and have dinner we found Pierre Fort Smith had been camped here for a long time in the spring and had left a cache of something for us, but the wolverines had stolen it. He had killed round about here 33 muskox which accounts for us not seeing any tho' wherever we land there are lots of signs. After dinner down the river for about a mile SE into a small lake the N shore of which we followed for about 3 or four miles, coming nearly due west and seeing lots of deer. We camped on the SW end of the lake and killed some deer for our trip on - Murdo 3, David 1, Moise 2, I 3, and the 2 Indians 8. We found the country covered with them in bands, sometimes as many as 100 in a band, females with young and bucks mixed up.

Sun. 10th: Wind west. As there was no wood where we were camped last night we started off about 10 o'clock against a strong headwind. On leaving camp through a piece of river about a mile in length broad and good current, then into Artillery Lake on which we made

4 miles or so and pitched our tent on a point of the lake in the east shore. The course of the river and lake so far being due west but on ahead the lake appears to run a little south and west. The shores on the N of the lake are rocky, S mixed country - grassy, sandy, hills and rocks. Deer all round in bands.

Mon. 11th: Wind NW. Got away by 6 o'clock and crossing to the west shore had pretty fair sailing wind. Made probably about 12 miles to the end of the lake and came to where the river runs out, about 1/4 mile or so in length and a rapid. We made a portage on the east bank of the cargo and ran the canoe light, then into a small lake out of which the river flows again, another rapid, again and portaged on the east side again and ran the canoe. Here we saw the first pine tree we have seen for a long time. Into a stretch of water, perhaps 3 miles in length, at the end of which another rapid; portaged canoe and all on the east side again and down the river till we struck a large lake where we camped, the wind being too strong to venture out. This lake is evidently Artillery Lake, the one above we called so not being marked on the maps is named by the Indians Partridge Lake. We probably made about 25 miles today, 12 to the end of Partridge Lake and 12 or 13 through the stretch of river and small lakes. Saw lots of caribou all day, now and then crossing the river in front of us, Finished our flour today. Tobacco we have been short of for some time back.

Tues. 12th: Wind northerly. Off by 5 o'clock this morning. Rounded the point we were camped on and through a short bit of river 500 yds. in length into Artillery Lake where we hoisted the sail, and by midday had run probably some 20 miles when we had dinner at the first clump of pines we struck on the east shore. After dinner we sailed off again and made some 20 miles more. The lake lies nearly N and S and at the northern end, in fact for most of its length, averages 7 or 8 miles in breadth. Up to our dinner place the banks on both sides are prairie but from that point the west shore is pretty thickly grown with pines of a fair size. The east bank throughout is prairie except here and there a few pines in a sheltered spot. We had been following the east shore all day but crossed over to camp amongst the woods again and have a good fire once more. I mounted the hill and behind saw some small lakes and valleys well wooded with good timber.

Wed. 13th: Wind southerly. Got away by 5 o'clock again this morning paddling as it was quite calm. After making some 8 miles or so we saw some caribou on the hill and landed to have a shot as we wanted meat. Pushing out again we made a couple more miles, at which point the river leaves the lake through a long bay to the west, but as the river is not fit for canoeing we turned into a long narrow bay to the east and had only made a short piece when we met 2 Indians in canoes;

their camp they told us was just round the point so we paddled on and found 7 or 8 lodges on the top of the bank. On landing we found Syene had already reached here and the others were Ft. Smith and Resolution Indians. They had lots of provisions and were waiting for the boat which has not turned up yet. A short way up the lake from this they had speared over 300 deer. As usual we cannot make much of their news about the Fort. Zinto they say went to Ft. Smith with all his furs. As the boat evidently had not reached the lake yet we resolved to camp here for the night and arrange for our trip onwards in case she may not turn up soon. Have arranged that the Imlians will accompany us tomorrow and take down their meat to the lake ready for the boat.

Thurs. 14th: Wind southerly. Got away from the Indian camp about 9 o'clock and a paddle of 2 miles or so brought us to the end of Artillery Lake, the bay being just like a river, long and narrow from which point the route lies through a chain of small lakes. We finished 5 portages and camped on the beginning of the 6th. Some of the lakes through which we passed were mere ponds, others a mile or so in length. The country we are now passing thro' is high and rocky and very rough and cut up, being the range of hills near the Slave Lake. We probably have got about half of the portages finished between Artillery and Slave. Came about 8 miles from the end of Artillery Lake.

Fri. 15th: Wind northerly. Started packing over the 6th portage by 6 o'clock in the morning into a small lake and before dinner had finished 2 more portages and on the next lake I shot a caribou swimming, so we put ashore and had dinner. After dinner on nearing the end of the lake we saw a boy with a shirt too white and clean to have been long in the woods so we reckoned he must have come from the boat. On reaching him we found him stoning a young caribou which he had driven into the lake. Syene, who was with us, fired at the poor thing but missed when it turned to cross the lake passing us quite close, but we allowed it to live. Our supposition was correct. The boat had arrived on the evening of the 14th and three or four of the crew had been sent to meet us, but finding the caribou had scattered over the country in pursuit leaving us to our fate. The small supply of tobacco etc. sent us they cached in an Indian lodge a little farther on from where we met, which we lost no time in reaching and had a good smoke. A little farther on we came to another small portage into the last lake and then a portage, the last, and fell on the Great Slave Lake. 3 canoes were in sight sailing for our destination, the boat landing. So we fired several shots which were responded ' to by the boat people and canoes. This route from Artillery Lake is by far the most feasible we have passed through. The country tho! rough and hilly affords a good and serviceable road in the valleys from lake to lake and the surroundings during the whole way are much more interesting

than the general aspect of the country which has the general fault of sameness. The hills are high and rocky while here and there you fall on a fine sandy shored lake and slope of sandy hills. On falling on the Slave Lake we found what appeared a lake of some 4 miles or so in length and 2 in breadth, in appearance surrounded by high rocky hills. Where the boat is hauled up and crew camped is a sandy bay and a flat, which from the stumps showing has been evidently well wooded and showing that this route is much used by the Indians. We reached here by 6 o'clock but may be detained here a day or so till the Indians arrive with their meat which I am anxious to receive before leaving as I learn that the Fort has been badly off during my absence. We met, or rather saw, caribou here and there all day till quite close to the lake. On the last portage of all fresh tracks were quie numerous and our dogs would start now and then on a hot scent. On reaching the lake I received letters and amongst others from Dr. Mackayl and was most thoroughly disgusted to learn that the idea was abandoned to establish in this quarter, especially after seeing the resources of the country. The whole matter hinging on the narrow spirit of jealousy which exists between districts much to the detriment of the Coy's interests. How I will interfere with Rae and Providence is more than I can see. The country is large enough for all. Let Mr. Camsell define his limits and I am content and willing to work to the east of them.

Sat. 16th: Wind light and southerly. Our men started off to hunt caribou and get us some fresh meat. The Indians came in with their dry meat in the afternoon and I commenced arranging with them. Zinto arrived in the evening by cance on his way to the deer hunt from the Fort.

Sun. 17th: Calm. Arranging the Indians all day in the hope of getting away tomorrow. Finished with them all and got quite a quantity of meat and grease.

Mon. 18th: Wind southwesterly and dead ahead for us. Rained heavily all night and well into the day. No show for us to get away from here today and the Indians are beginning to be tiresome. Live in hopes of a change of wind before tomorrow.

Tues. 19th: Wind NW but very light. Sailed off by 6 o'clock in the morning but the wind was only fit for sailing at intervals. The rest of the day had to take to the oars. However we made probably about 30 miles and nearly reached the point where Old Capot Blanc's road leaves the N side of the lake.

L. H.B.C. officer in charge of the Athabasca district. (Ed. A.C.)

Wed. 20th: Wind westerly and light. Got away by 4 o'clock and on reaching Capot's track made a cache for him of tob. and tea. Sailing and oars from time to time all day and camped in a bay near Trout River about 6 miles from the old post, our first camp out last spring. Made probably some 25 miles.

Thurs. 21st: Wind northerly. Got away the same hour as yesterday and went ashore for breakfast at Mr. Pike's shanty.

Sat. 23rd: Reached Slave Lake.

THE END

Sun. 24th: Warburton Pike records: "The sun was just rising on Sunday, August the 24th, when we ran the boat on the beach in front of Fort Resolution, and a glance at the faces that gathered round told us that living had been none too good, and that a man is sometimes better off among the caribou than depending upon an uncertain fishery for a livelihood. With all thanks to priest and parson, Indian and half-breed, for the kind welcome they gave us, I noticed many an eye glancing furtively at our rich cargo from the land of plenty; and the rejoicings that day may be attributed equally to joy at our safe arrival and to the influence of a feast of fresh meat after so many weeks of short allowance."

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Subscriptions for 1958

Members are reminded that their subscriptions for 1958 (\$2.00 for Ottawa members, or \$3,00 for combined membership for husband and wife, and \$1.00 for out-of-town members, other than institutions), are payable to the Treasurer, Mr. C.J. Marshall, P.O. Box 68, Postal Station D, Ottawa.

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Members are earnestly requested to advise the Treasurer, Mr. C.J. Marshall, P.O. Box 68, Station D, Ottawa, promptly of any change of address.

Editorial Note

The Editor would welcome contributions from those who are at present in the Arctic or have information about work in the Arctic. All material for the Circular should be sent to

Mrs. Graham Rowley, 245 Sylvan Road, Rockcliffe, Ottawa 2, Ontario,

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