NORTHERN NEWS

Geomorphological investigations in the Torngat Mountains of northeastern Labrador-Ungava

The writer, assisted by his wife, worked for a second summer season in the northeastern part of Labrador-Ungava, continuing and expanding the program of work initiated in 1956. The central area of study lay athwart the Labrador-Quebec boundary on the watershed between Nakvak Brook, which drains into Saglek Fiord, and the Koroksoak (Korok) River, which flows westwards into Ungava Bay.

As in the previous season, the party was able to use the main base of the British Newfoundland Exploration Company at North West River, and, once again, difficulty was experienced with a very late break-up which delayed departure for the southern Torngat Mountains until late July. The preceding month was spent at the head of Canairiktok Bay, southwest of Hopedale, and on an unnamed lake at 55° N some 60 miles to the west of Hopedale. This opportunity was used to study the glacial geomorphology of these areas which provided interesting contrasts to the Torngat Mountains.

The party was picked up by Beaver aircraft on July 27 and, after refuelling on Kingurutik Lake to the north of Nain, a successful landing was made on a small lake in the great east-west trough through which runs Nakvak Brook. A base camp was established here, and late the same afternoon a food and fuel cache was flown into another small lake, situated about 30 miles southwest of the base camp, and which drains into the main south bank tributary of the Koroksoak. The most intensive work of the summer was carried out from a series of temporary camps between these two bases, while longer excursions were made radially from each of the bases.

The first seven days in the area provided a series of fine, sunny skies and allowed a period of intensive work. Last summer's experience of Torngat weather gave warning that the utmost should be made of such favourable conditions. Bad weather was to hinder work for the remainder of the summer.

Attention was concentrated on an extensive system of lateral moraines and kame terraces which slope eastwards from the watershed towards the head of Saglek Fiord. Similar systems were examined in the through-troughs to the south. The whole complex represents the late-Pleistocene limits of trunk glaciers flowing through the mountains towards the east and supplied by an ice cap of continental proportions west of the height of land. At this stage the higher summits stood as nunataks well above the level of the ice, and an extensive series of ice-dammed lakes was held against the western slopes of the highland finding outlets over ice-free cols into the Atlantic.

Detailed studies in the watershed area provide a chronology of the final emergence of the area from the last ice sheet, and the draining of the ice-dammed lakes. A final stage was represented by a mass of ice in the lower valley of the Koroksoak which dammed a lake to the level of the col, at 1,050 feet, whence it drained into Nakvak Brook and ultimately into the Atlantic.

Glacial erratics, found on summits up to 4,000 feet above sea level, corroborate the conclusions of the previous summer's work[1] suggesting that at some stage the highest summits were inundated by ice flowing from the west.

[1]Ives, J. D. 1957. Glaciation of the Torngat Mountains, northern Labrador. Arctic 10: 67-87.

The data compiled from the two summers' work prompt the conclusion that during late-Pleistocene times the Torngat Mountains were influenced by two distinct glaciations, separated by an interglacial period of considerable intensity. The final glaciation, during which large areas remained ice-free, is tentatively correlated with the "classical" Wisconsin of central North America[1] whereas the date of the preceding glacial period is uncertain. It may be the equivalent of the Illinoian Glaciation, or even be of post-Sangamon age, and in this case be comparable with a cold phase tentatively identified in central North America, which is older than the "classical" Wisconsin Glaciation, and is separated from the latter by a warmer period.

Reconnaissance from the air during flights along the Labrador coast and some distance inland suggests that these general conclusions might well be applicable to the entire coastal zone of Labrador. Farther south, however, it is anticipated that the small mountain groups, such as the Kaumajet, Kiglapait and Mealy Mountains, might prove to be more important centres of local late-Wisconsin glacierization, as in that direction precipitation is heavier today, and probably was in the past.

The Beaver aircraft returned to base camp on September 8 and the party was flown to Knob Lake via Nain.

The work was made possible by a grant from the Banting Fund, provided through the Arctic Institute of North America, and by the provision of air transport by the British Newfoundland Exploration Company. This work will be written up in full during the present winter at the McGill Sub-Arctic Research Laboratory.

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[1]Flint, R. F. 1957. Glacial and Pleistocene Geology. New York: John Wiley and Sons. 553 pp.

Arctic investigations by the Fisheries Research Board of Canada, 1956-57

The work of the former Eastern Arctic Investigations, now the Arctic Unit, was extended in 1955 to cover the entire Arctic. In 1956 and 1957 five parties carried out arctic field investigations between Herschel Island and Frobisher Bay. In addition, marine mammal studies continue off Newfoundland and in the Gulf of St. Lawrence.

Fisheries investigations. In 1956 fisheries studies were concentrated in the Mackenzie Delta region between Herschel Island and Tuktoyaktuk, where fishes are relatively varied and abundant. A party worked at Whitefish Station, near Tuktoyaktuk, from July 7 to September 15, and another worked at the mouth of the Firth River, Y. T., from July 27 to August 10 and at King Point Harbour, just east of this, from August 12 to August 30. In addition to substantial beluga and ringed seal collections which were made for the mammal investigations, about 11,000 fish were sampled in all. In co-operation with the Canadian Wildlife Service, a preliminary survey of fish stocks in Pelly and Garry lakes of the Back River system was undertaken from August 2 to August 23. The lakes, which are shallow (20-30 feet), were found to support sufficient stocks of whitefishes and lake trout to permit organized subsistence fishing should this be necessary.

In 1957 one party carried out fisheries studies up the Mackenzie River from Aklavik to Fort Norman, and another surveyed fish stocks at Coppermine, N.W.T. An intensive study was made of the char run in Rowley River on Rowley Island, Foxe Basin by the M.V. *Calanus* and in northern Hudson Bay by whaleboat and by peterhead from Coral Harbour. Forty-five walrus were tagged in the latter area, and 20 were examined in detail. In Foxe Basin 60 walrus and 220 seals were sampled. The reproductive cycle, ages at maturity, and life expectancy have to a large extent been clarified by work on aging from growth layers in the cementum of molar teeth and in tusk development.