recorded temperature in Canada. Mean daily temperatures for March of −36°F at Eureka, −25°F at Resolute and −15°F at Baker Lake are indicative of the great length of the period of severe cold at Arctic stations.

The frequencies of occurrence of low temperatures at these stations provide further evidence of the coldness of the Arctic. During the four coldest months—December, January, February and March—temperatures may be expected to drop as low as −10°F on 85 to 100 p.c. of the days, −20°F on 70 to 95 p.c. of the days and −30°F on 30 to 90 p.c. of the days (the lower frequencies apply to southern sections of the Arctic and the higher values to the northern islands of the Archipelago). Readings of −50°F are about as frequent at stations in the high Arctic as in the recognized cold spots of the Yukon in December and January but are considerably more frequent in February and March. At the high Arctic stations of Eureka and Isachsen the longest uninterrupted spells with temperatures −50°F or lower, during the decade 1951-60, were four and five days respectively. On one occasion, temperatures remained below −40°F at Eureka during ten consecutive days. Several northern Arctic stations have failed to record temperatures higher than −30°F for periods up to 22 consecutive days.

Sheltered interior locations on the larger islands are subject to greater cooling than are the coastal sites of the weather stations. This is substantiated by the temperature reports from inland Lake Hazen at the north end of Ellesmere Island. During the only winter for which data are available, temperatures were consistently lower at this location than at the nearby stations of Eureka and Alert.

These statistics suggest that even brief warming trends are unlikely during this period. Although temperatures rarely rise above the freezing point north of the Arctic Circle, a favourable alignment of low pressure areas off the east coast may occasionally permit mild Atlantic air to penetrate the eastern sections of the region.

The familiar day-to-night temperature fluctuations of Southern Canada are most evident during April in the Arctic. For the remainder of the period variations during the calendar day are caused by changes in cloud cover or wind speed. Temperatures rise when clouds spread over the Arctic skies or when winds strengthen, and fall when the winds decrease or skies clear. Such random variations during the 24 hours are of the order of 8 to 12 degrees at high Arctic sites and 15 to 20 degrees at southern locations.

Degree-Days.—Monthly and annual totals of degree-days below 65°F (heating degree-days) are often used in Southern Canada for predicting fuel requirements for heating buildings, and degree-days below 32°F (freezing degree-days) permit estimates of frost penetration in soils and ice formation in lakes and the sea. Since cumulative degree-day values give an indication of the severity of the climate as well as the duration of cold weather, they may also be used to compare temperature regimes of the Arctic and Southern Canada. Reference to the climatic tables (pp. 64-72) reveals that annual heating degree-day totals at most Arctic stations, with the exception of locations at the south end of Baffin Island, average over 20,000, more than twice the 10,000 heating degree-days at Edmonton and Winnipeg and almost four times the 5,500 heating degree-days during a year at Vancouver. Freezing degree-days decrease from 12,000 over the Queen Elizabeth Islands to 6,000 along the shores of Hudson Strait, in striking contrast to 500 freezing degree-days in a winter at Toronto and 1,500 at Montreal.

Snowfall.—Throughout the December–April period the frigid Arctic atmosphere contains so little moisture that the few disturbances venturing this far north produce only thin, diffuse clouds and consequently very light snowfall. Average cloudiness north of the Arctic Circle is just under 40 p.c. South of this latitude, and particularly at the entrance to Hudson Strait, average cloud cover is considerably higher (70 p.c.). Cloudy days are more frequent in those areas of the eastern Arctic influenced by open leads in the