

Fog.—"Steam fog" and "Arctic sea smoke" are the names given to the type of fog that forms when very cold air passes over areas of open water. Steam fog is often observed in the Arctic during the period October to April, but it is relatively localized and usually does not persist more than a few miles downwind from the originating leads, or areas, of open water. Ice fogs occur rather infrequently in the Canadian Arctic because of the lack of moisture in the very cold air. However, as settlements become larger and vehicular and aircraft traffic increases, sufficient moisture may be added to the air through fuel combustion to cause ice fogs at these sites.

The Climate—May and June.—Following the return of the sun to the Arctic skies in February, the days lengthen rapidly until, by May, most sections of the Arctic have no sunset. Temperatures start the upward climb, slowly at first in March then more rapidly in April, but above-freezing temperatures are not reached until late May or early June. Even at these late dates sharp falls in temperature to near zero are possible.

May is a month of increased cloudiness and snowfall at most stations, due in part to more numerous open-water leads in Hudson Bay and in some eastern Arctic sounds, and to the arrival of moist air from Southern Canada. Increases are noted as well in the frequencies of fog, particularly in southern sections, but as far as over-all visibilities are concerned these are offset by fewer days with blowing snow.

Temperatures are usually a few degrees above freezing through most of June and, with around-the-clock daylight, the accumulated snow of the previous nine months quickly disappears from all lowland areas. At this time, however, the ice is still fast in most bays and channels. Mild air from Southern Canada is chilled as it passes over the extensive ice surfaces, causing appreciable increases in the frequency of occurrence of low-lying clouds and fog along the coastlines. Fogs are uncommon in the interiors of the larger land masses where sunny days are about as frequent as cloudy days.

The Climate—July and August.—During July and August the maritime influence of the seas and channels surrounding the Arctic islands stands out as a major control of the climate. By July, break-up is well advanced over Hudson Bay and in most years the navigation season opens shortly after the middle of the month. The season is delayed two or three weeks longer in the waterways separating the southern islands of the Archipelago, and in the north most of the channels remain practically icebound. Thus, throughout the Arctic, even the warm air masses that penetrate the region from Southern Canada are subjected to the cooling effects of large surfaces of ice-cold water. Evaporation from the exposed water areas and saturated ground surfaces produces a further cooling of the air masses. At the same time the additional moisture supplied to the air permits formation of extensive low-lying cloud layers, which in turn reflect much of the incoming radiation from the sun back into space.

Mean daily temperatures are quite uniform at about 40°F over the whole range of Arctic latitudes and exceed this value only over the larger southern islands and the Arctic mainland. Comparable July values for cities in Southern Canada are: Vancouver 64°F, Winnipeg 68°F and Montreal 71°F. At coastal locations temperatures may be expected to drop to within a few degrees of the freezing point whenever onshore winds occur, although when winds are off the land 45°F to 50°F readings are more likely. Temperatures have reached 90°F at such mainland settlements as Aklavik, Coppermine and Fort Chimo. Over the islands of the Archipelago, however, extreme maximum temperatures are not as high and range from 75°F in the south to mid-60° readings in the north.

With the exception of the southeastern Baffin Island-Hudson Strait area, where small amounts of rain or freezing rain may occur in almost any month, rainfall over the Canadian