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Atmospheric Environment / Environnement atmosphérique

A WEEKLY REVIEW OF CANADIAN CLIMATE

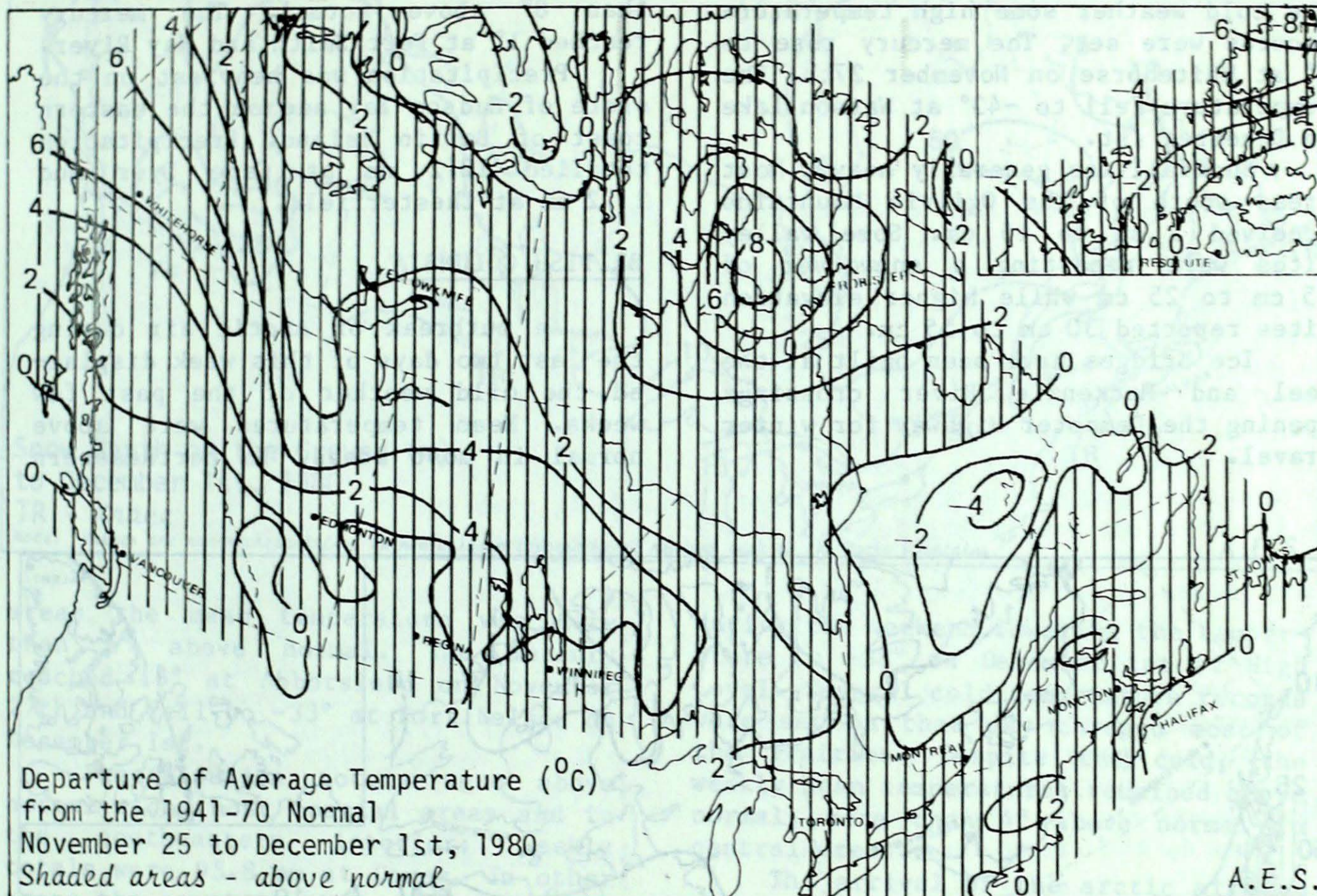
CLIMATIC PERSPECTIVES

THE CANADIAN CLIMATE CENTRE,
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DECEMBER 5, 1980

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WEATHER HIGHLIGHTS FOR THE WEEK - NOVEMBER 25 TO DECEMBER 1st, 1980

Cold spreads through central Canada, storms in eastern Canada

At the end of a very mild November, cold arctic air spread throughout the Prairie Provinces, the interior of British Columbia and Northwestern Ontario during the weekend. Temperatures fell below -25° at most stations on November 30 and December 1st. Several low temperature records were set.

A snowstorm deposited 45.4 cm of snow in 24 hours at Sept-Iles on November 29 but no major incident was re-

ported. In contrast, some growers are worried about a possible winter wheat kill in Southern Alberta because of the poor snowcover.

Temperatures fluctuated between -43° (at Watson Lake, Alert and Eureka) and 13° (at Abbotsford and Calgary). A total of 95.8 mm of precipitation was recorded at Comox. The snow depth was slightly reduced to 120 cm at Broughton Point.

NOTE: The data shown in this publication are based on unverified reports from approximately 225 Canadian and 115 northern United States Synoptic stations.

YUKON

Temperatures finally dropped to winterlike values during the last days of the week. On December 1st the temperature was in the -20° to -40° range throughout the Yukon, although the mean temperature for the week was above normal for all areas. Before the onset of the cold weather some high temperature records were set. The mercury rose to 3° at Whitehorse on November 27th. The temperature fell to -43° at Watson Lake on December 1st.

Snowfall was generally heavy. Most areas south of the Ogilvie Mountains received 5 cm to 15 cm. Some valley sites were reporting a snowcover of 15 cm to 25 cm while higher elevation sites reported 30 cm to 55 cm.

Ice bridges have been built at the Peel and Mackenzie River crossings opening the Dempster Highway for winter travel.

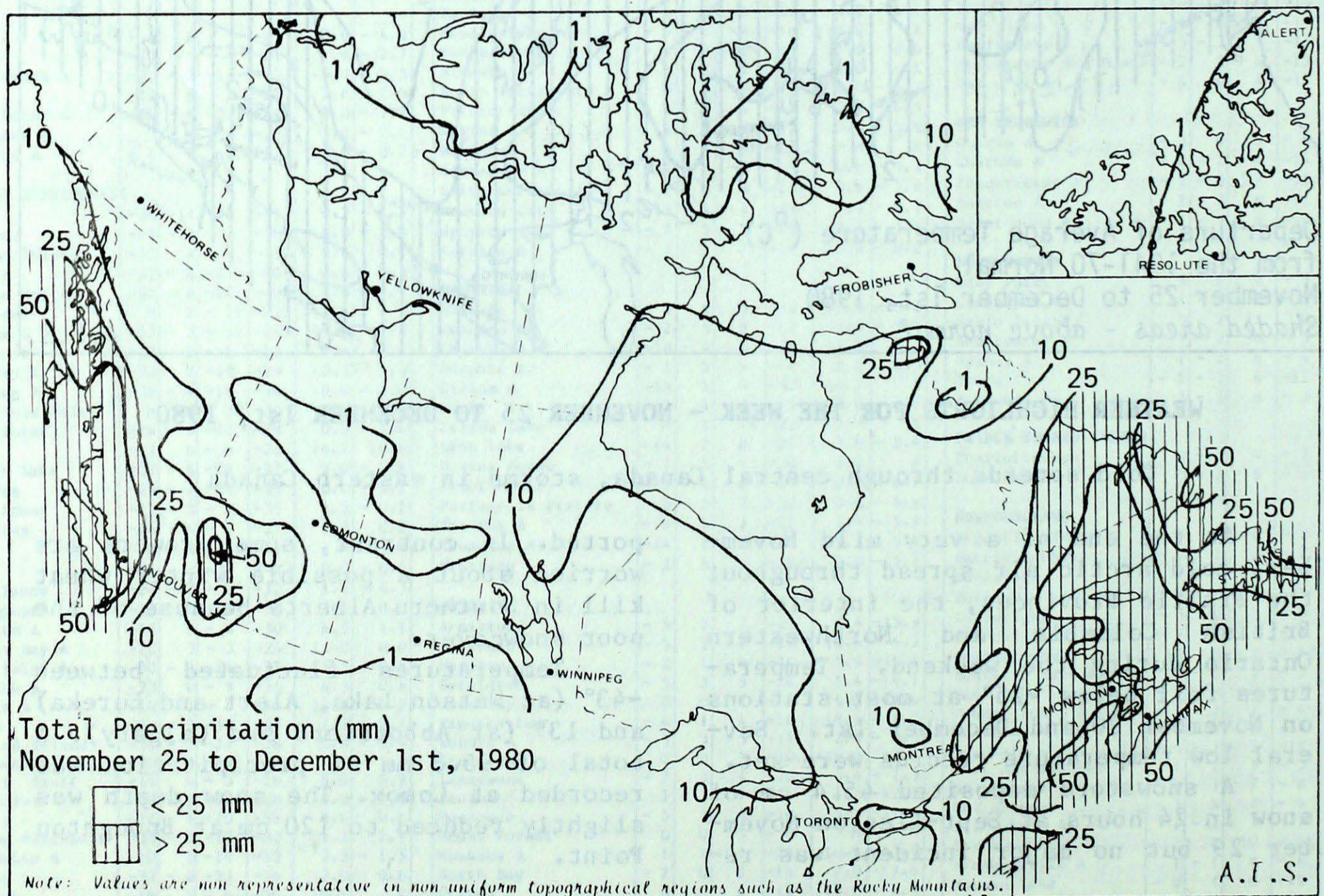
NORTHWEST TERRITORIES

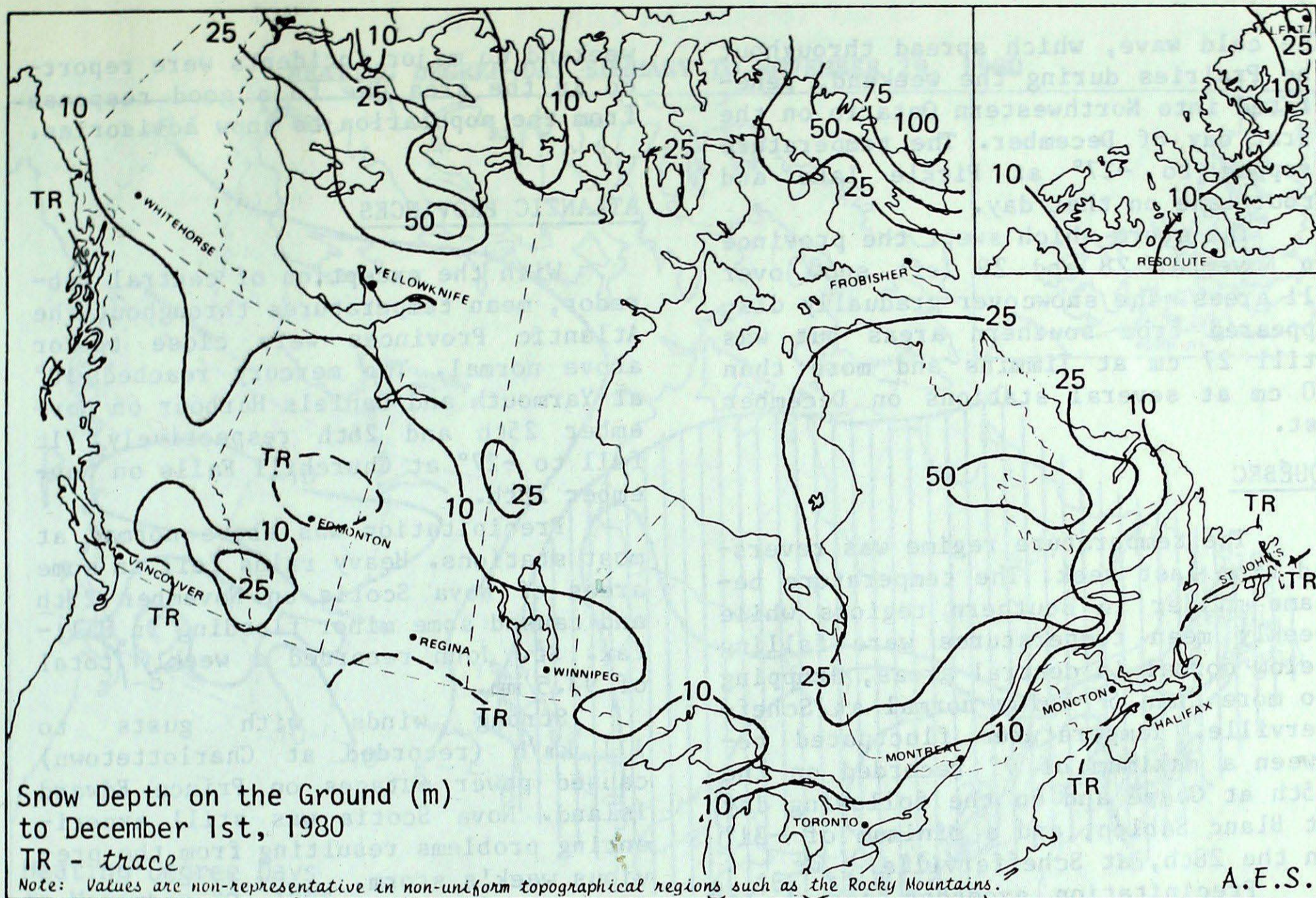
A very cold airmass remained over northern and western portions of the Franklin district. Temperatures dropped to -43° at Alert and Eureka. In contrast, the weather was milder in eastern sections of the Keewatin district where average temperatures were more than 8° above normal. The mercury reached 1° at Fort Smith and Hay River.

Precipitation was heaviest on the shore of Hudson Bay and on the eastern coast of Baffin Island. Precipitation totalled 12.2 mm at Cape Dyer and 11.2 mm at Chesterfield.

BRITISH COLUMBIA

An outbreak of Arctic air during the last two days of this week displaced the mild weather of the past few weeks. Mean temperatures were above normal in most areas. In northeastern





areas the mean temperature was more than 6° above normal. The mercury reached 13° at Abbotsford on November 27th and fell to -33° at Fort Nelson on December 1st.

Precipitation totals were above normal along most coastal areas and in the southeastern interior. Weekly totals were 95.8 mm at Comox. In other areas the precipitation totals were below normal.

In northern areas the ground was frozen enough to begin moving heavy machinery. Loggers were preparing their trucks for the the start of winter operations.

PRAIRIE PROVINCES

This week was one of contrast. The mild weather of the past weeks persisted well into this period producing some high temperature records in Southern Alberta. The mercury reached 13° in Calgary on November 27th but was down to -27° four days later. The very cold airmass marched through the Prairies

during the weekend lowering the temperature to -38° on December 1st at High Level. Several cold temperature records were set on that day through most of the Prairies. Despite the cold, the weekly mean temperatures remained above normal, more than 4° above normal in central areas.

The arrival of the arctic airmass was accompanied by snow. Accumulations of 5 cm to 15 cm were reported in most areas of southern Alberta. Precipitation totalled 21.7 mm at Churchill.

The snow perturbed travelling in Southern Alberta but there was still not a sufficient amount of snow to protect the winter wheat from the cold. Some growers are worried about a possible winter wheat kill.

ONTARIO

The mild weather spread to all regions this week. Mean temperatures were more than 4° above normal in the northwestern area. The mercury touched 9° at Trenton and Windsor on December 1st.

The cold wave, which spread throughout the Prairies during the weekend, penetrated into Northwestern Ontario on the first day of December. The temperature dropped to -27° at Pickle Lake and Trout Lake on that day.

The storm which swept the province on November 28 and 29 left snow over all areas. The snowcover gradually disappeared from southern areas but was still 27 cm at Timmins and more than 20 cm at several stations on December 1st.

QUÉBEC

The temperature regime was reversed from last week. The temperature became milder in southern regions while weekly mean temperatures were falling below normal in central areas, dropping to more than 5° below normal at Schefferville. Temperatures fluctuated between a maximum of 7° recorded on the 25th at Gaspé and on the following day at Blanc Sablon, and a minimum of -31° on the 28th, at Schefferville.

Precipitation exceeded normal at most stations, totalling more than 30 mm at several locations. The area extending from Gaspé to the Lower North Shore region received the largest accumulations. Accompanied by winds up to 103 km/h, a storm deposited 45.4 cm of snow in 24 hours (on the 29th) at Sept-Îles where the weekly total reached 75.7 mm. As the storm passed during the

weekend no major incidents were reported in the area due to a good response from the population to snow advisories.

ATLANTIC PROVINCES

With the exception of central Labrador, mean temperatures throughout the Atlantic Provinces were close to or above normal. The mercury reached 10° at Yarmouth and Daniels Harbour on November 25th and 26th respectively. It fell to -27° at Churchill Falls on November 28th.

Precipitation was above normal at most stations. Heavy rains fell in some areas of Nova Scotia on November 29th and caused some minor flooding in Halifax. St. John recorded a weekly total of 93.5 mm.

Strong winds with gusts to 111 km/h (recorded at Charlottetown) caused power outages on Prince Edward Island. Nova Scotia was still experiencing problems resulting from the previous week's storm.

November snowfall records were set at Halifax International Airport with a monthly total of 44.3 cm (previous record 33 cm in 1964) and at Nappan with a total of 57.7 cm (previous record 51.6 cm in 1933). Most of the snow received at Nappan fell on November 18th and 19th.

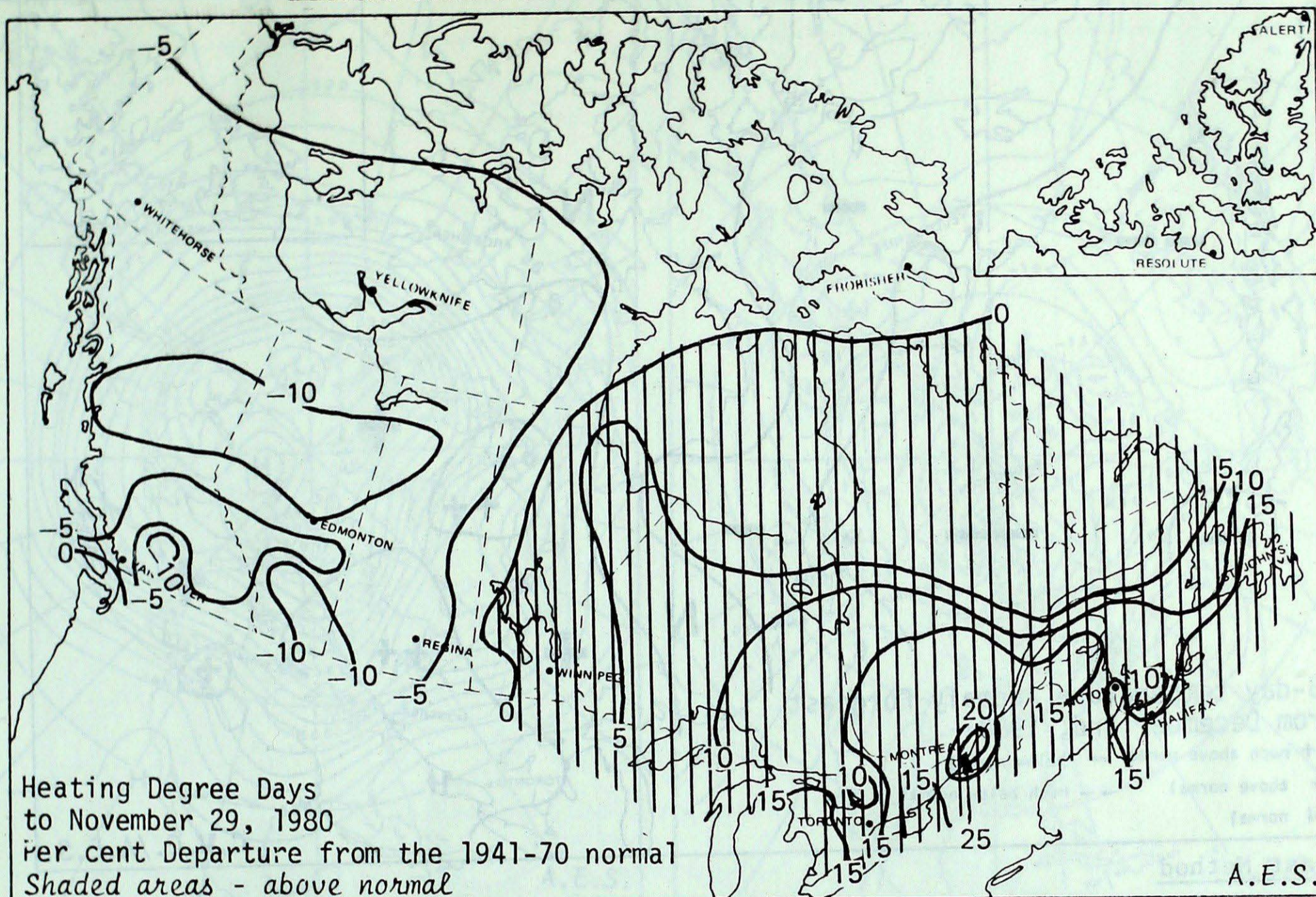
Pack ice continued to increase along the Labrador coast.



NOTE

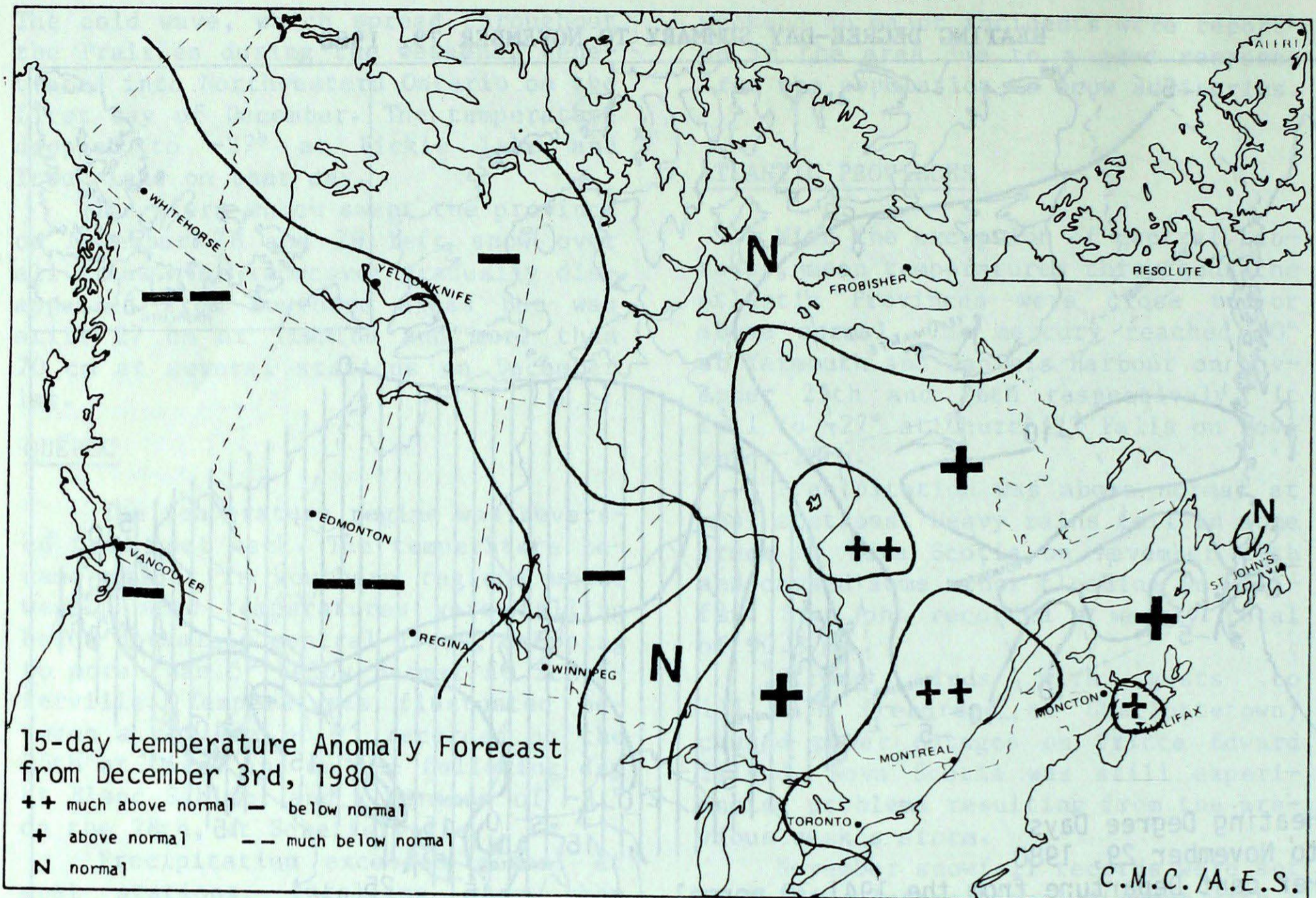
Climatic Perspectives will not be published during the Christmas Holidays. The temperature and precipitation data tables for December 16 to 29, 1980 will be inserted in the first bulletin in 1981.

HEATING DEGREE-DAY SUMMARY TO NOVEMBER 29, 1980



STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Resolute	1126.0	-104.0	3775.0	-57.0	99
Inuvik	1089.0	-57.0	2771.5	-11.5	100
Whitehorse	603.5	-176.5	1746.0	-179.0	91
Vancouver Int'l A	315.5	-29.5	764.0	-15.0	98
Edmonton Mun A	482.0	-158.0	1208.0	-164.0	88
Calgary Int'l A	466.0	-129.0	1227.5	-133.5	90
Regina	549.5	-119.5	1234.5	-102.0	92
Winnipeg Int'l A	517.0	-76.0	1272.0	35.0	103
Thunder Bay	601.5	10.5	1361.0	77.0	106
Windsor	425.5	32.5	778.5	106.5	116
Toronto Int'l A	461.0	41.0	913.5	112.5	114
Ottawa Int'l A	545.5	68.5	1081.5	153.5	117
Montreal Int'l A	539.0	89.0	1082.0	230.0	127
Quebec	580.5	70.5	1247.0	183.0	117
Saint John, N.B.	495.5	50.5	1139.5	108.5	111
Halifax	442.0	67.0	949.0	151.0	119
Charlottetown	472.5	49.5	1033.0	126.0	114
St. John's, Nfld.	453.0	34.0	1345.5	216.5	119

15 DAY TEMPERATURE ANOMALY FORECAST

Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

Temperature Scale

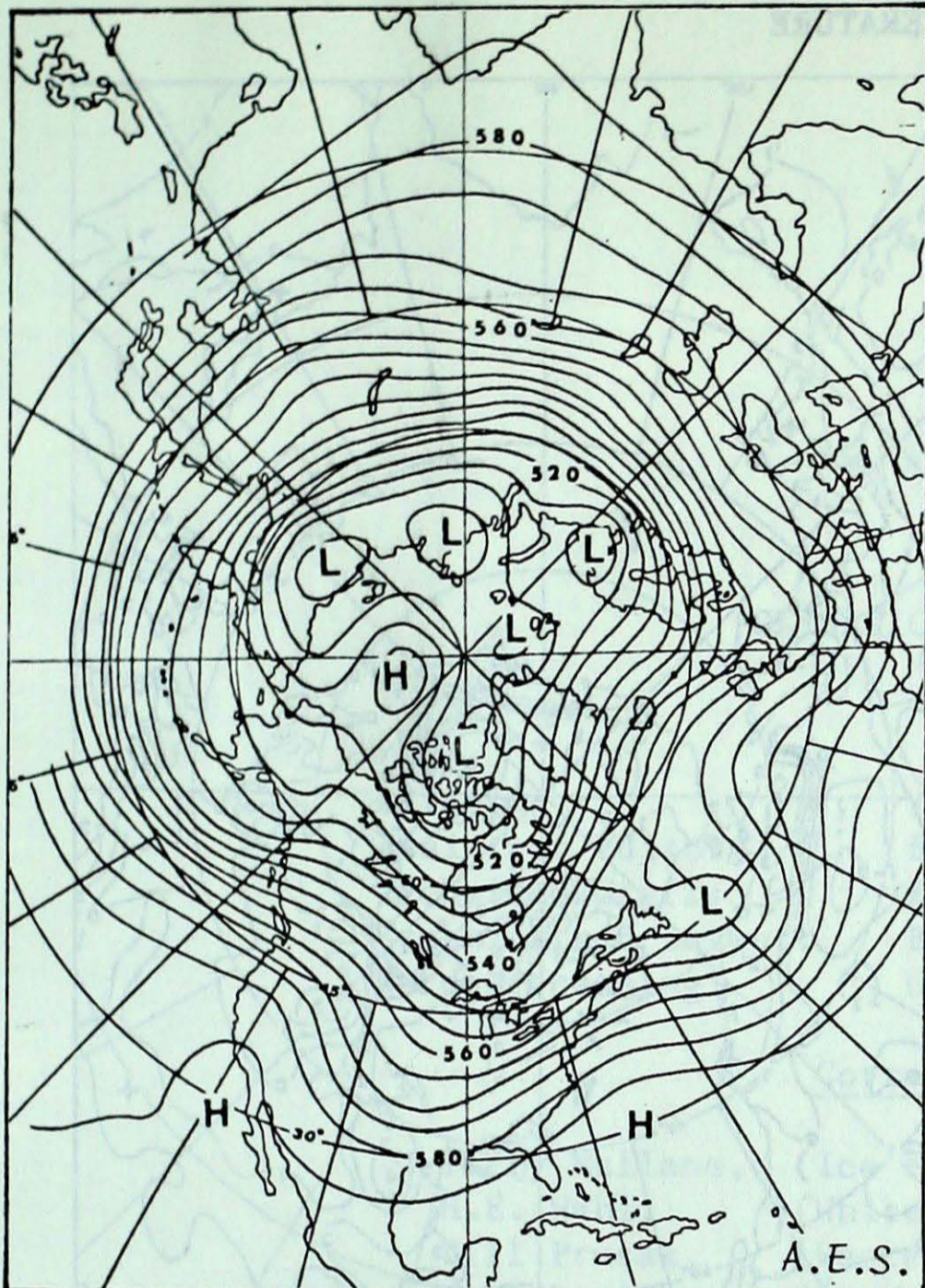
Each temperature class is designed to contain 20% of the historically observed 15 day means pertinent to specific location and time of year:

StationCurrent Temperature Anomaly Forecast

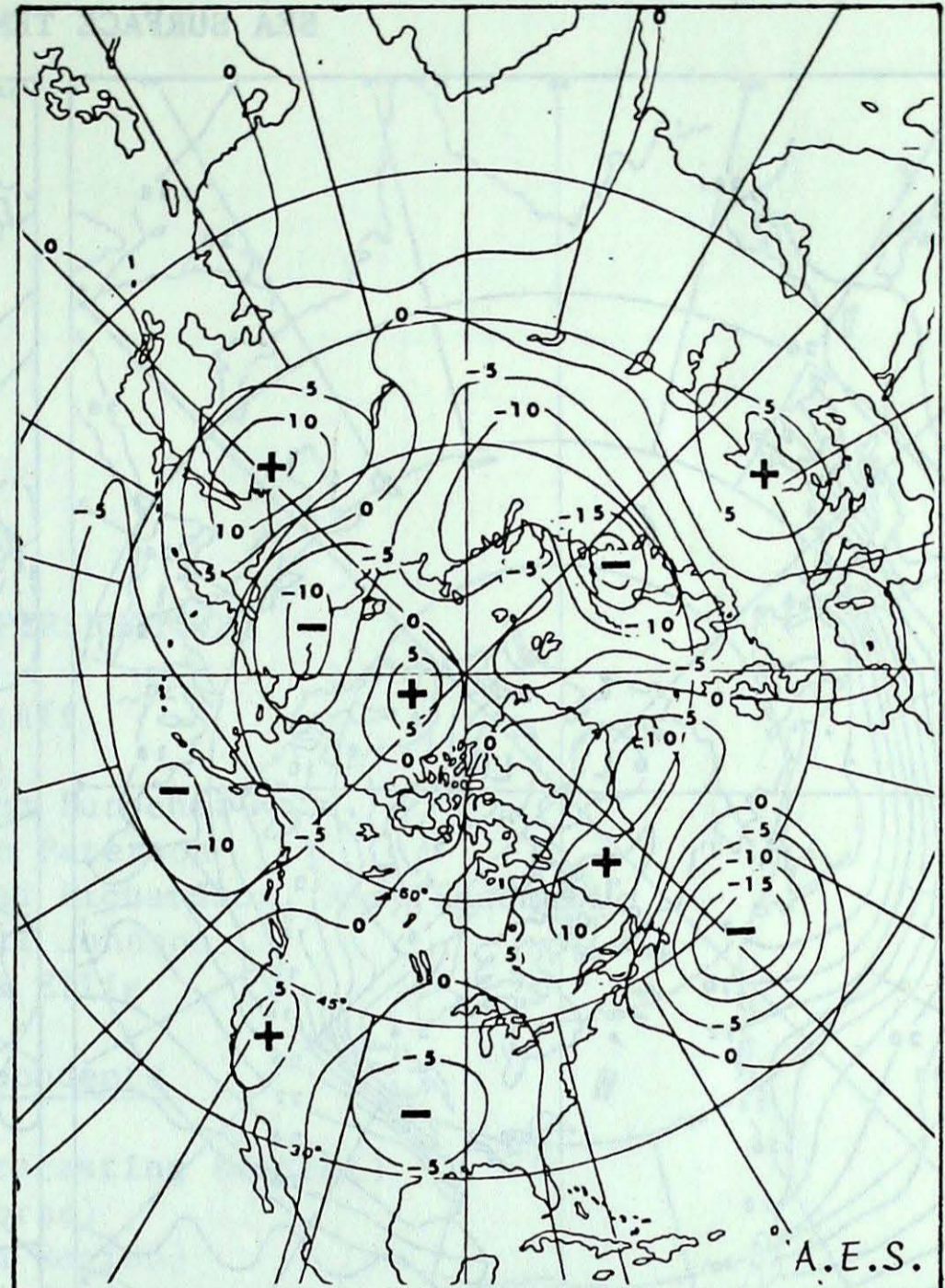
<u>Station</u>	<u>Current Temperature Anomaly Forecast</u>	<u>Current Temperature Anomaly Forecast</u>
Whitehorse	Much Below Normal	More than 5.8° below Normal
Victoria	Below Normal	From 0.5° to 1.5° below Normal
Vancouver	Below Normal	From 0.5° to 1.8° below Normal
Edmonton	Much Below Normal	More than 4.8° below Normal
Regina	Much Below Normal	More than 4.0° below Normal
Winnipeg	Below Normal	From 1.0° to 3.5° below Normal
Thunder Bay	Near Normal	Within 0.8° of Normal
Toronto	Much Above Normal	More than 2.2° above Normal
Ottawa	Much Above Normal	More than 2.6° above Normal
Montreal	Much Above Normal	More than 2.7° above Normal
Quebec	Much Above Normal	More than 2.5° above Normal
Fredericton	Above Normal	From 0.7° to 2.5° above Normal
Halifax	Much Above Normal	More than 2.1° above Normal
Charlottetown	Much Above Normal	More than 2.3° above Normal
St. John's	Above Normal	From 0.5° to 1.7° above Normal
Goose Bay	Above Normal	From 1.0° to 3.3° above Normal
Frobisher Bay	Below Normal	From 1.2° to 4.1° below Normal
Inuvik	Below Normal	From 1.2° to 4.2° below Normal

Note: Anomaly denotes departure from the 1949-73 mean.

Atmospheric Circulation



7-day Mean 50 kPa height max (dam)
November 24 to 30, 1980



7-day Mean 50 kPa height anomaly
(in 5 dam intervals)
November 24 to 30, 1980

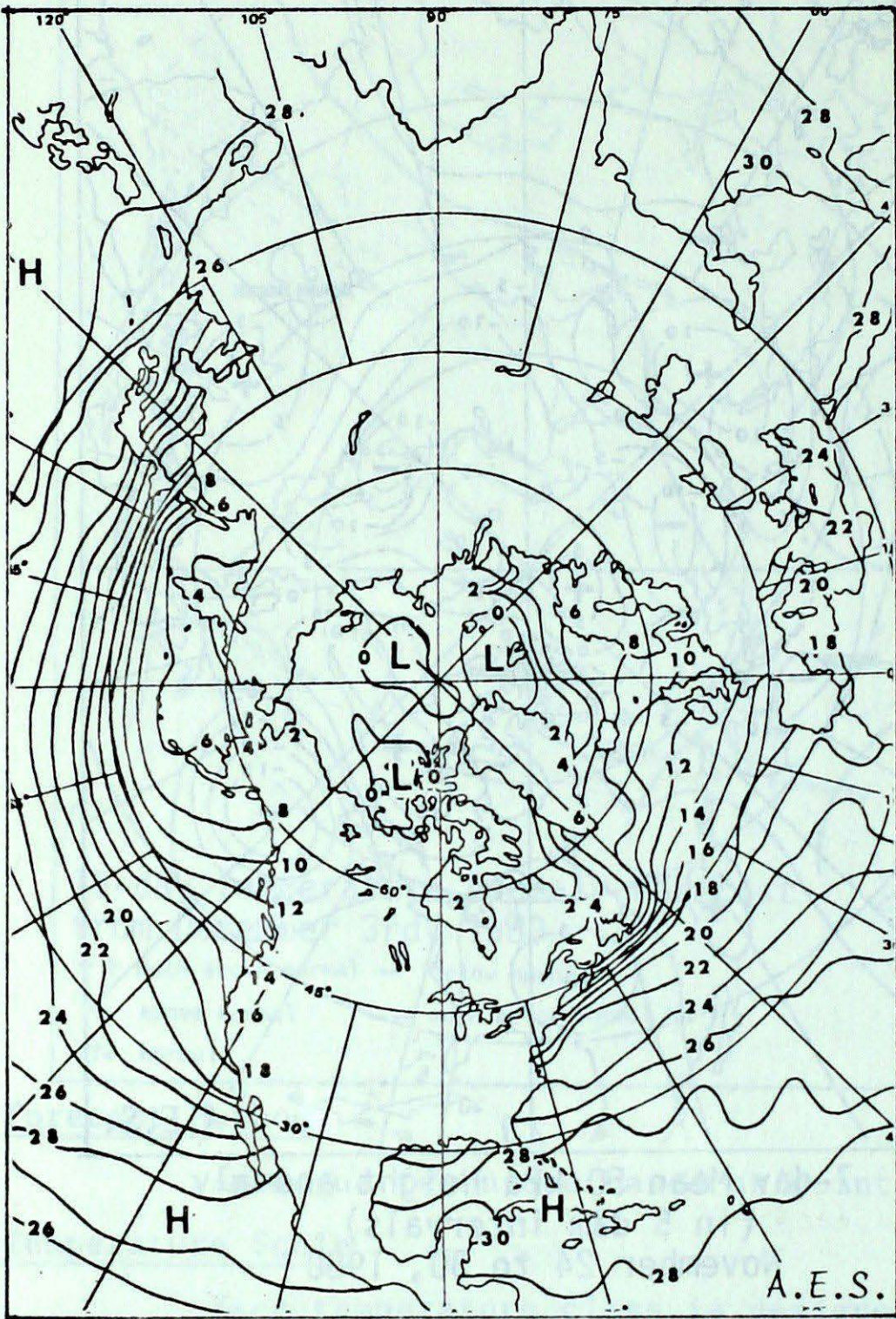
The north-south component of the circulation intensified over North America this week. The average 5 kPa height rose slightly along the Pacific coast while the trough centered over Hudson Bay and Lake Superior deepened. The strong anomalies over the Atlantic ocean were a result of the split in the tropospheric flow.

The tropospheric flow reaching the coast of British Columbia brought a series of disturbances to coastal regions. To the leeward of the coastal mountain range, the tropospheric ridge dominated the circulation over Western Canada during the first part of the week. Temperatures were so mild that despite the arrival of a very cold air-

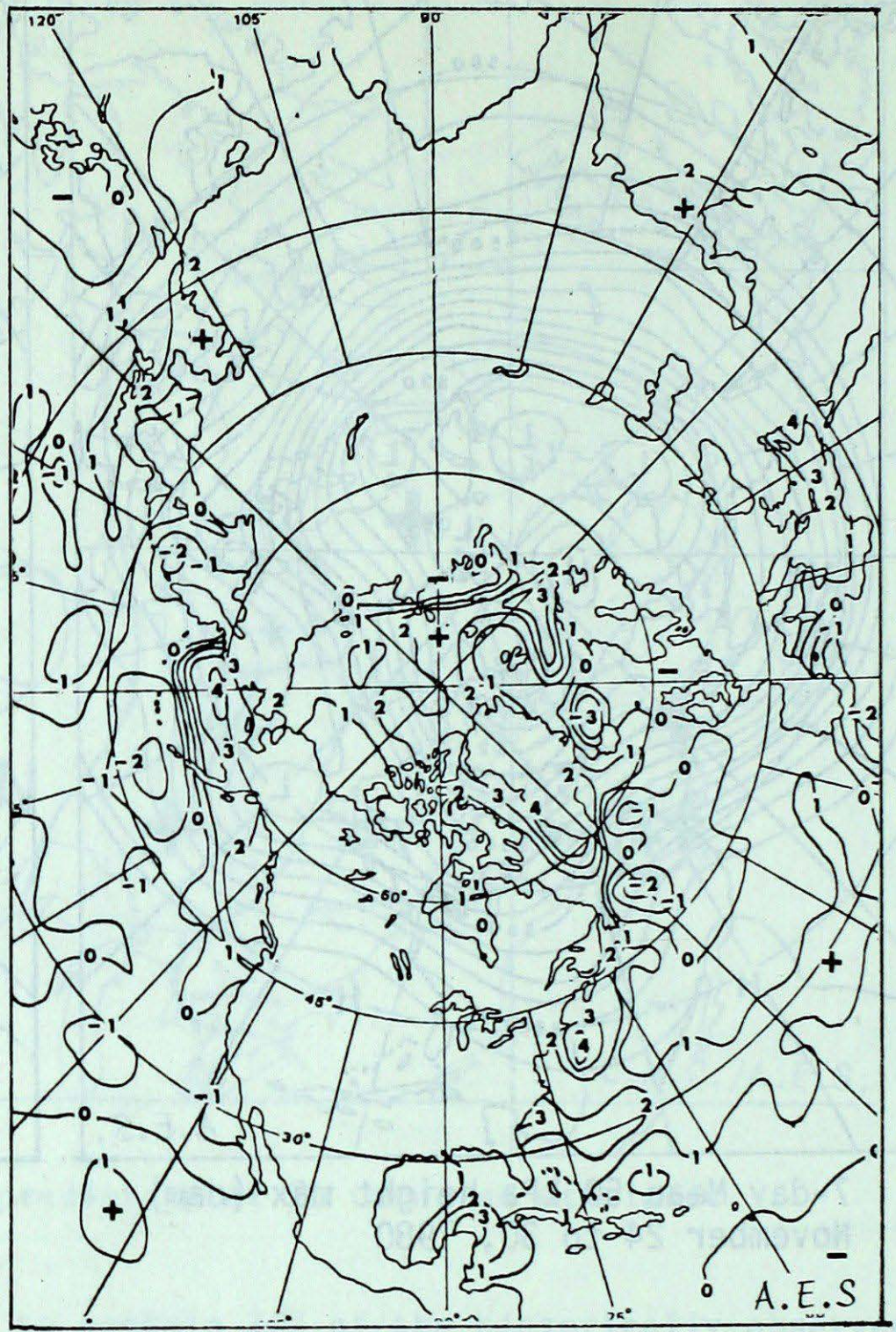
mass during the later part of the week, the weekly average temperatures remained well above normal. During the weekend, however, the tropospheric current acquired a more northerly component which spread the cold arctic air mass into the interior valleys of British Columbia, all of the Prairies, and northwestern Ontario.

In the east, the southwest circulation maintained above normal temperatures in all areas except central Québec and central Labrador. The storm which crossed eastern regions from November 27th to 29th deposited large amounts of snow in the Gaspé - Lower North Shore areas and copious amounts of rain in the Maritimes.

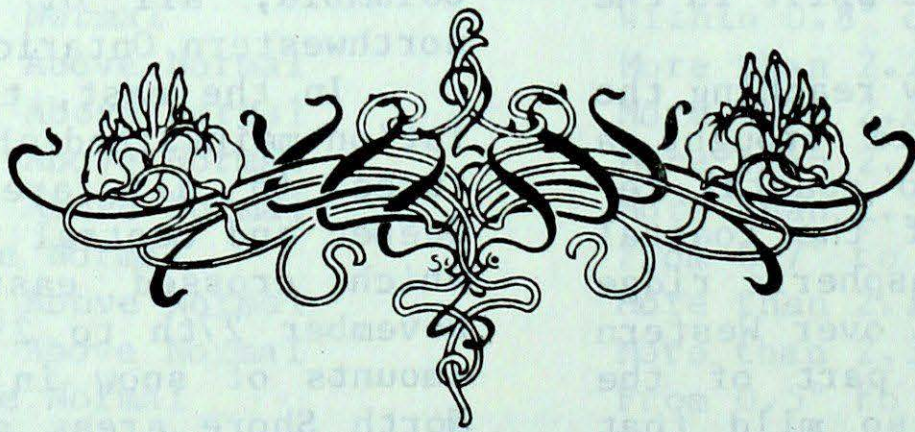
SEA SURFACE TEMPERATURE



Monthly mean sea surface temperature
November 1st to 30th, 1980



Sea Surface Temperature Anomalies
November 1st to 30th, 1980



CLIMATIC PERSPECTIVES

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TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. DECEMBER 2, 1980

Table with columns for Station, Temperature (°C) (Average, Departure from Normal, Extreme Maximum, Extreme Minimum), and Precip. (mm) (Total, Departure from Normal). It is divided into sections for BRITISH COLUMBIA, YUKON, NORTHWEST TERRITORIES, ALBERTA, SASKATCHEWAN, MANITOBA, ONTARIO, QUÉBEC, NEW BRUNSWICK, NOVA SCOTIA, PRINCE EDWARD ISLAND, and NEWFOUNDLAND.

P = extreme value based on less than 7 days X = no normal due to short period M = not available at press time