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A WEEKLY REVIEW OF CANADIAN CLIMATE

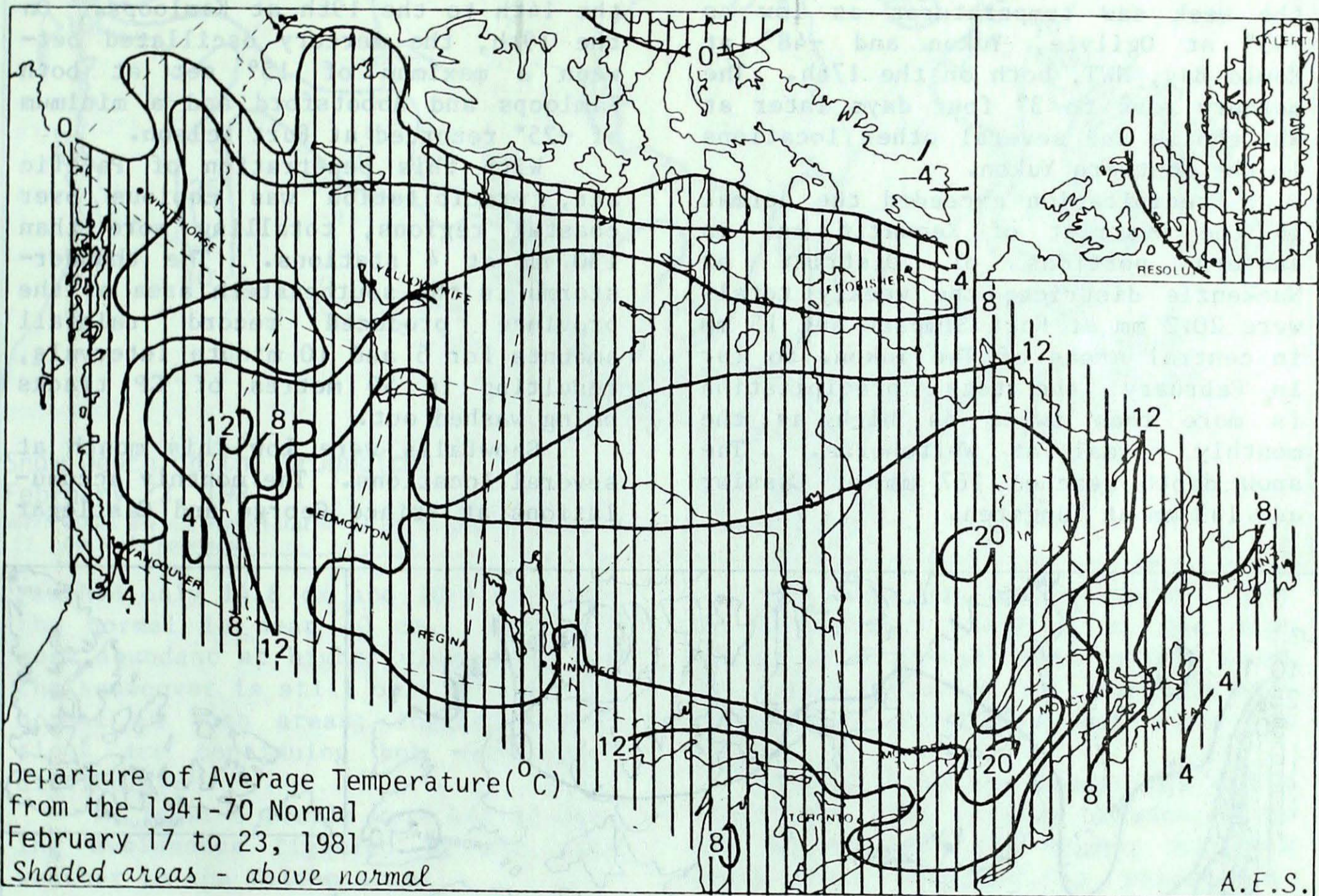
CLIMATIC PERSPECTIVES

THE CANADIAN CLIMATE CENTRE,
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FEBRUARY 27, 1981

(Aussi disponible en français)

VOL. 3 NO. 8



WEATHER HIGHLIGHTS FOR THE PERIOD - FEBRUARY 17 TO 23 1981

Spring arrives a month early in Southern Canada

Spring like weather spread to all continental areas of Canada, setting a multitude of records throughout the country. Some of those records dated back to the mid 1800s.

The mild temperatures combined to rain to eliminate any traces of snow from southern Canada, thus resulting in rivers overflowing their banks in southern Ontario and southern Quebec. Several town and municipalities were flooded in Southern Québec and Ontario. Damages amounts to several million.

Trees buds have started to grow, tulips are coming out and the grass is growing. But, once they come out of their dormancy state, trees and plants become very sensitive to cold. A severe cold snap could ruin this year's entire fruit crop.

The highest temperature this week 17° was recorded at Sherbrooke and Medicine Hat on the 19 and 22 respectively. The lowest minimum was -48° at Mould Bay on the 17. The precipitation totaled 136.4 mm at Bull Harbour.

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

YUKON AND NORTHWEST TERRITORIES

Following a brief cold snap at the beginning of the week, temperatures quickly rebounded above normal and mean temperatures for the week rose above normal in the continental area, the northern archipelago, and southern Baffin Island. The first few days of the week saw temperatures as low as -45° at Ogilvie, Yukon and -48° at Mould Bay, NWT, both on the 17th. The mercury rose to 3° four days later at Whitehorse and several other locations in the southern Yukon.

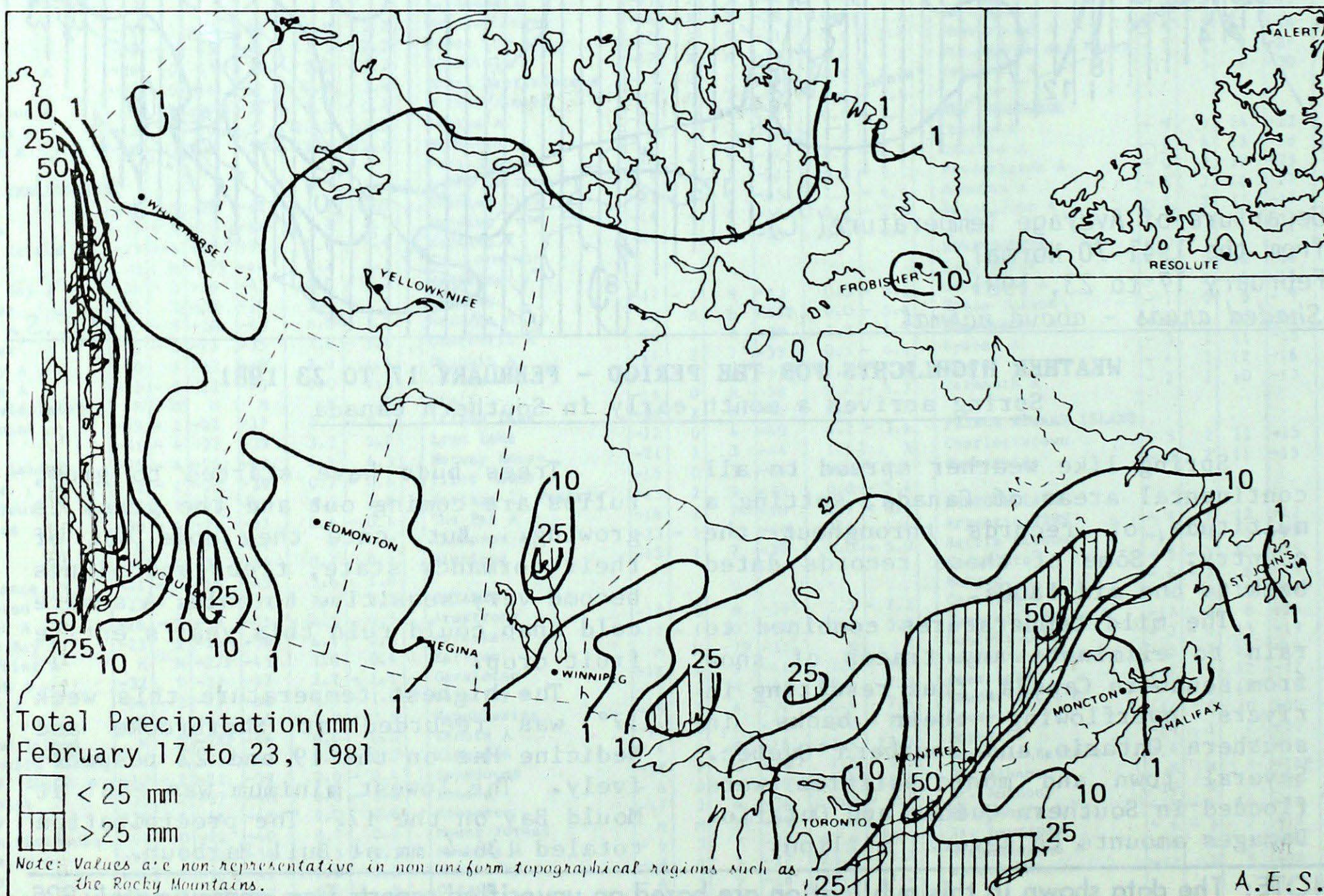
Precipitation exceeded the normal in the District of Keewatin and in eastern portions of District of Mackenzie district; the weekly totals were 20.2 mm at Fort Simpson and 15 mm in central areas of The Yukon. So far in February, the total precipitation is more than twice as high as the monthly normal at Whitehorse. The snow depth reached 167 mm at Cassiar and 143 mm at Tungsten.

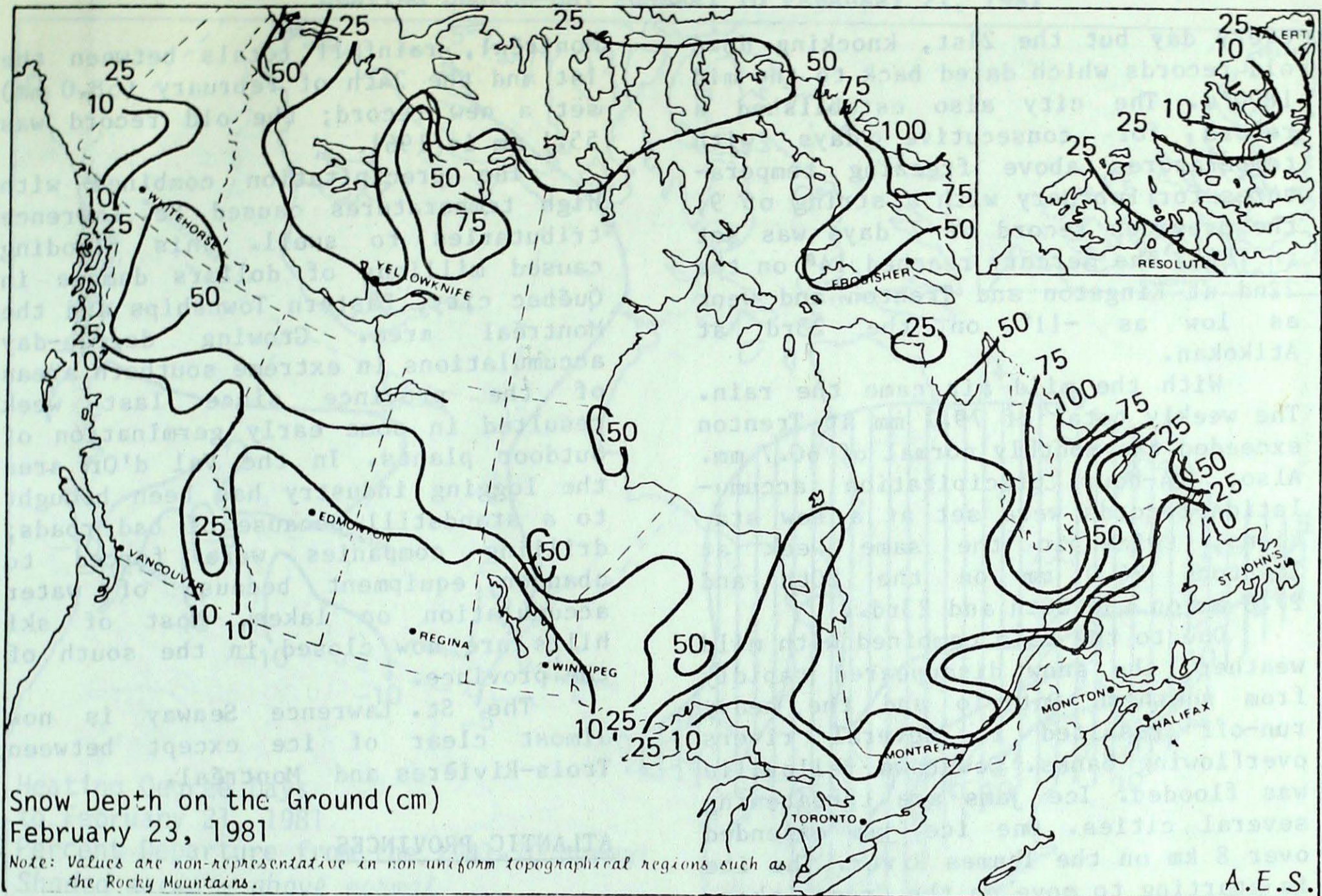
BRITISH COLUMBIA

The very mild weather persisted over the entire province after its late penetration during the previous week. Weekly mean temperatures rose to more than 4 degrees above normal over more than half of the province, and daily records were broken on every day from the 14th to the 19th at Kamloops. On the 19th, the mercury oscillated between a maximum of 15° set at both Kamloops and Abbotsford and a minimum of -25° recorded at Fort Nelson.

With this penetration of Pacific air, precipitation was copious over coastal regions, totalling more than 130 mm at 4 stations. The thunderstorms in the southeastern area of the province produced record rainfall amounts for 5 and 10 minute intervals, resulting in 50 metres of CP tracks being washed out.

Snowfalls were low this month at several locations. The monthly accumulations at Prince George and Castlegar





reached only 14.8 cm and 10.4 cm while the normal is near 40 cm. Snow was more abundant at higher elevations but the snowcover is still only 40 % of the normal in bush areas; logging operations are continuing but with great difficulty.

At least 5 people were killed during avalanches triggered by the mild weather in the Golden area.

PRAIRIE PROVINCES

The mild air spread to all the regions and pushed mean temperatures to more than 16° above normal. Many of the numerous maximum temperature records set on every day of the week were 8° or 9° higher than previous weeks. The mercury reached 17° on the 19th at Medicine Hat; it fell to -25° at High Level two days later.

Overall, sunny weather prevailed for the whole period. There was no precipitation at several stations this week. The wettest area was over central Manitoba where 26.2 mm were recorded at Norway House.

The snow has now retracted north to the central portions of the provinces which brought some concern about the future crops but soil moisture conditions are still good due to a wet fall.

The mild wether conditions and a fresh snow fall varying between 30 cm and 60 cm over the higher mountain areas have combined to produce an extremely high avalanche hazard. Over the past weekend, seven people have been killed in avalanches.

ONTARIO

If there were such an event as a "February thaw", this week would represent an outstanding example. During the past week, 90 separate records have been broken in the province. Those include records like the high daily minimum of 0° on the 20th at Geraldton where the previous record was only -16.5°, or the daily maximum of 6° on the 23rd at Moosonee where the previous record was 1°. In downtown Toronto, high temperature records were set on

every day but the 21st, knocking down old records which dated back to the mid 1800's. The city also established a record for consecutive days with temperatures above freezing temperatures for February with a string of 9; the previous record of 7 days was set in 1845. The mercury reached 14° on the 22nd at Kingston and Trenton and went as low as -11° on the 23rd at Atikokan.

With the mild air came the rain. The weekly total of 79.7 mm at Trenton exceeded the monthly normal of 60.7 mm. Also, 24-hour precipitation accumulation records were set at a few stations, twice in the same week at Trenton, 26.0 mm on the 20th and 27.8 mm on the 20th and 23rd.

Due to the rain combined with mild weather, the snow disappeared rapidly from southern Ontario and the heavy run-off resulted in several rivers overflowing banks. Downtown Belleville was flooded. Ice jams are threatening several cities. One ice jam extended over 8 km on the Thames River. The ice is starting to move on the Great Lakes. The opening of the Seaway could be at a record early date again this year.

QUÉBEC

The province is coming out of the longest and most intense warm spell on record for February. Mean temperature anomalies everywhere were greater than 10° and the warm spot was Nitchequon, 21° above normal. More than 50 daily high temperature records were broken while 23 new monthly records were established. The mercury reached 17° at Sherbrooke on the 22nd and -25° at Inoucdjouac on the 17th.

Precipitation was above normal along the St. Lawrence valley and up to 200 km to the north. The highest weekly total, 50.8 mm, was recorded at Baie-Comeau. Amounts were close to normal over the rest of the province. In

Montréal, rainfall totals between the 1st and the 24th of February (58.0 mm) set a new record; the old record was 55.1 mm in 1961.

The precipitation combined with high temperatures caused St. Lawrence tributaries to swell. This flooding caused millions of dollars damage in Québec city, Eastern Townships and the Montréal area. Growing degree-day accumulations in extreme southern areas of the province since last week resulted in some early germination of outdoor plants. In the Val d'Or area the logging industry has been brought to a standstill because of bad roads; drilling companies were forced to abandon equipment because of water accumulation on lakes. Most of ski hills are now closed in the south of the province.

The St. Lawrence Seaway is now almost clear of ice except between Trois-Rivières and Montréal.

ATLANTIC PROVINCES

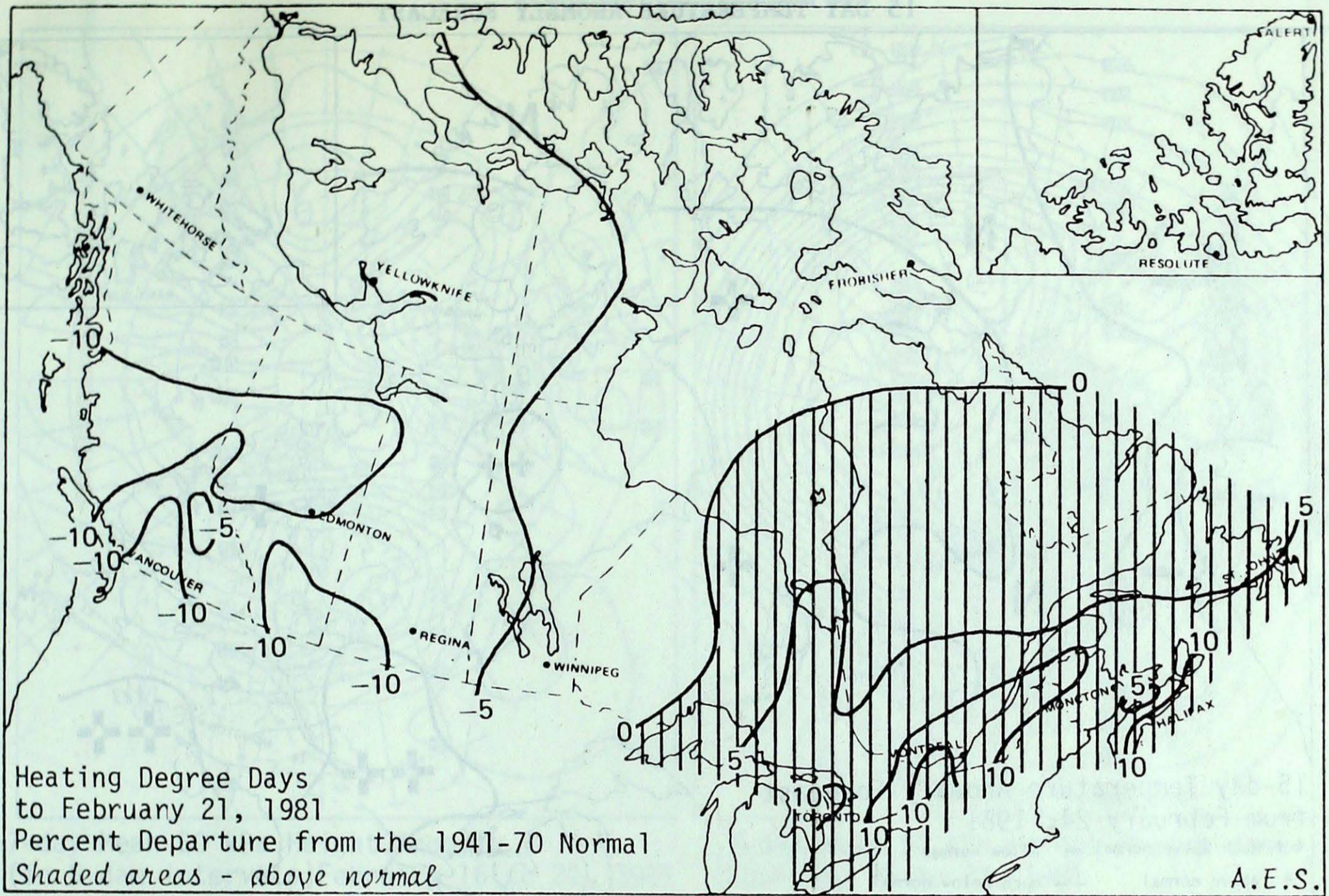
The warm weather continued in the Maritime Provinces and extended to Newfoundland. The weekly average temperature exceeded the weekly normal by more than 18° in western Labrador. Records were set on every day except the 20th and 21st. Three maximum temperature records for the month were set on the 23rd; 15° at Chatham, and 14° at Fredericton and Halifax. A brief cold air intrusion in the middle of the week brought the temperature down to -20° on the 19th at Churchill.

Precipitation was very light this week except over Southern Labrador and the extreme northern portion of Newfoundland Island. The weekly accumulation reached 23.6 mm at Churchill.

With the almost total absence of precipitation in the Maritime Province, all the streams were under control this week.

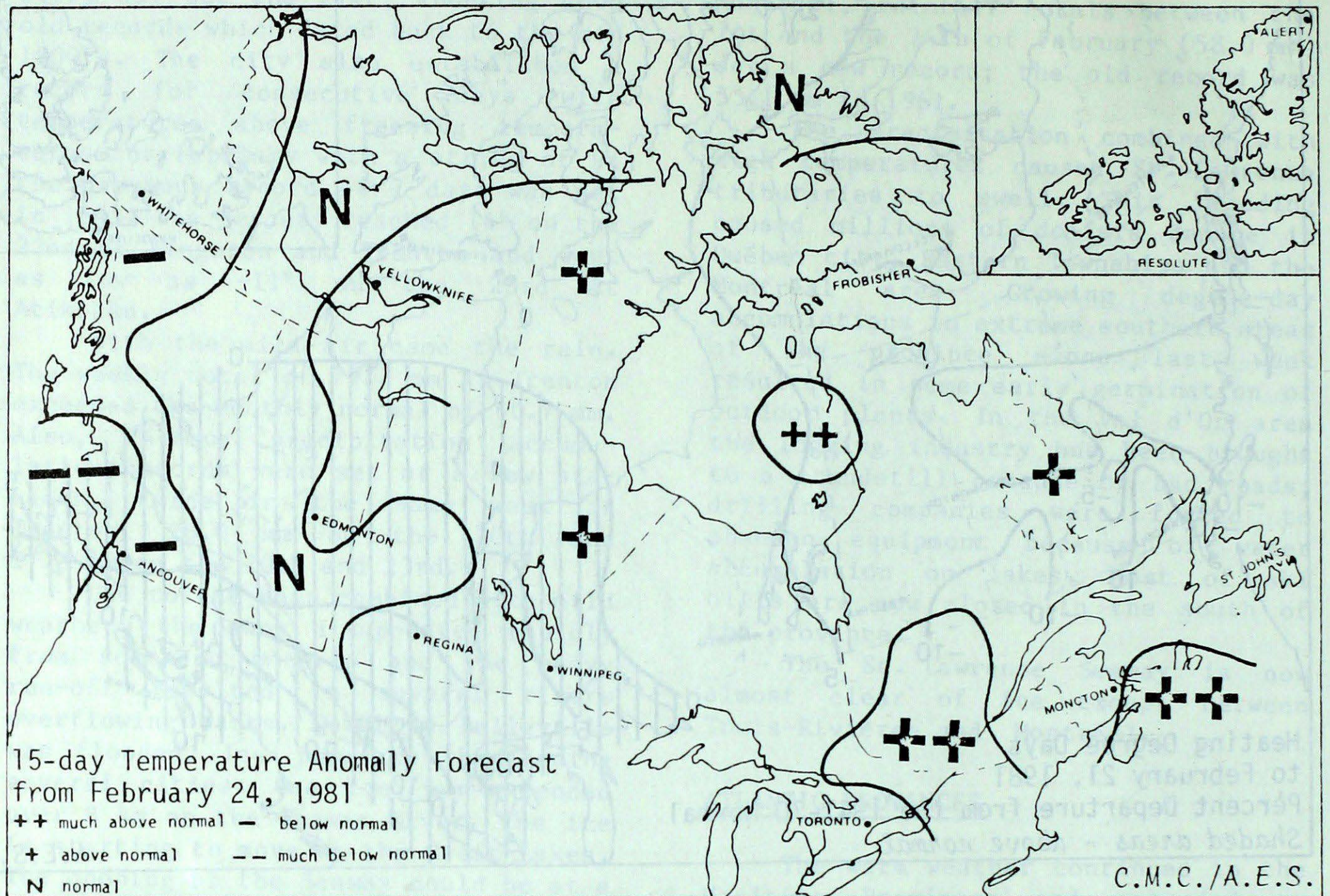


HEATING DEGREE-DAY SUMMARY TO FEBRUARY 21, 1981



STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Resolute	1053.0	-41.0	7749.0	-241.0	97
Inuvik	956.0	-61.0	6257.5	-482.5	93
Whitehorse	636.0	-41.0	4516.0	-309.0	94
Vancouver Int'l A	281.5	-10.5	1864.0	-144.0	93
Edmonton Mun A	516.0	-94.0	3420.5	-493.5	87
Calgary Int'l A	452.5	-98.5	3137.0	-491.0	86
Regina	629.0	-66.0	3775.5	-336.5	92
Winnipeg Int'l A	641.0	-84.0	3975.0	-123.0	97
Thunder Bay	634.0	-36.0	3935.0	46.0	101
Windsor	441.0	-22.0	2665.0	203.0	108
Toronto Int'l A	457.0	-53.0	3025.0	274.0	110
Ottawa Int'l A	469.5	-119.5	3529.5	295.5	109
Montreal Int'l A	450.0	-136.0	3510.0	421.0	114
Quebec	521.5	-99.5	3847.0	397.0	112
Saint John, N.B.	459.5	-92.5	3339.5	245.5	108
Halifax	420.0	-57.0	2849.0	289.0	111
Charlottetown	449.0	-95.0	3164.0	256.0	109
St. John's, Nfld.	448.0	-34.0	3075.5	175.5	106

15 DAY TEMPERATURE ANOMALY FORECAST

Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

Temperature Scale

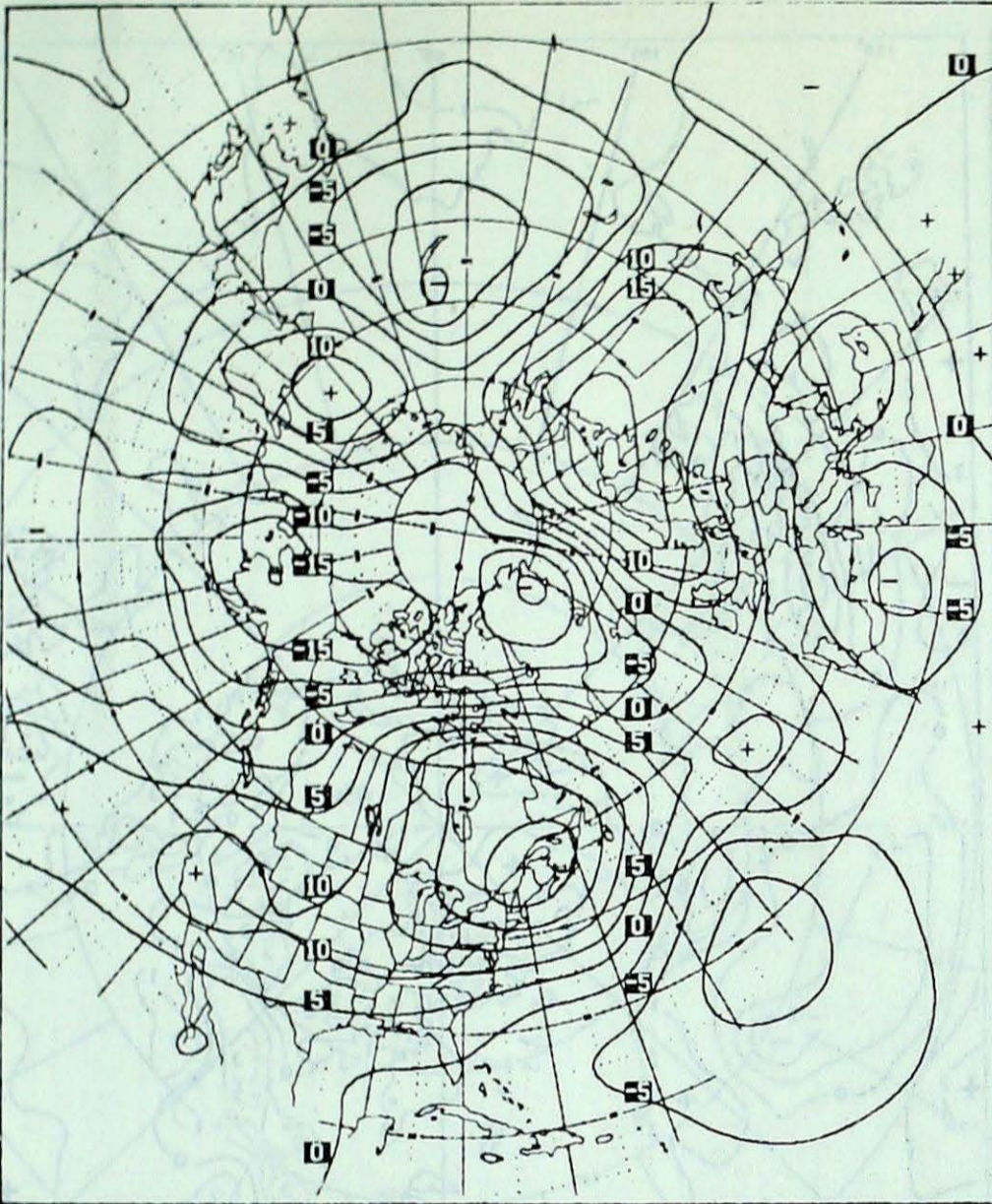
Each temperature class is designed to contain 20% of the historically observed 15 day means pertinent to specific location and time of year:

StationCurrent Temperature Anomaly Forecast

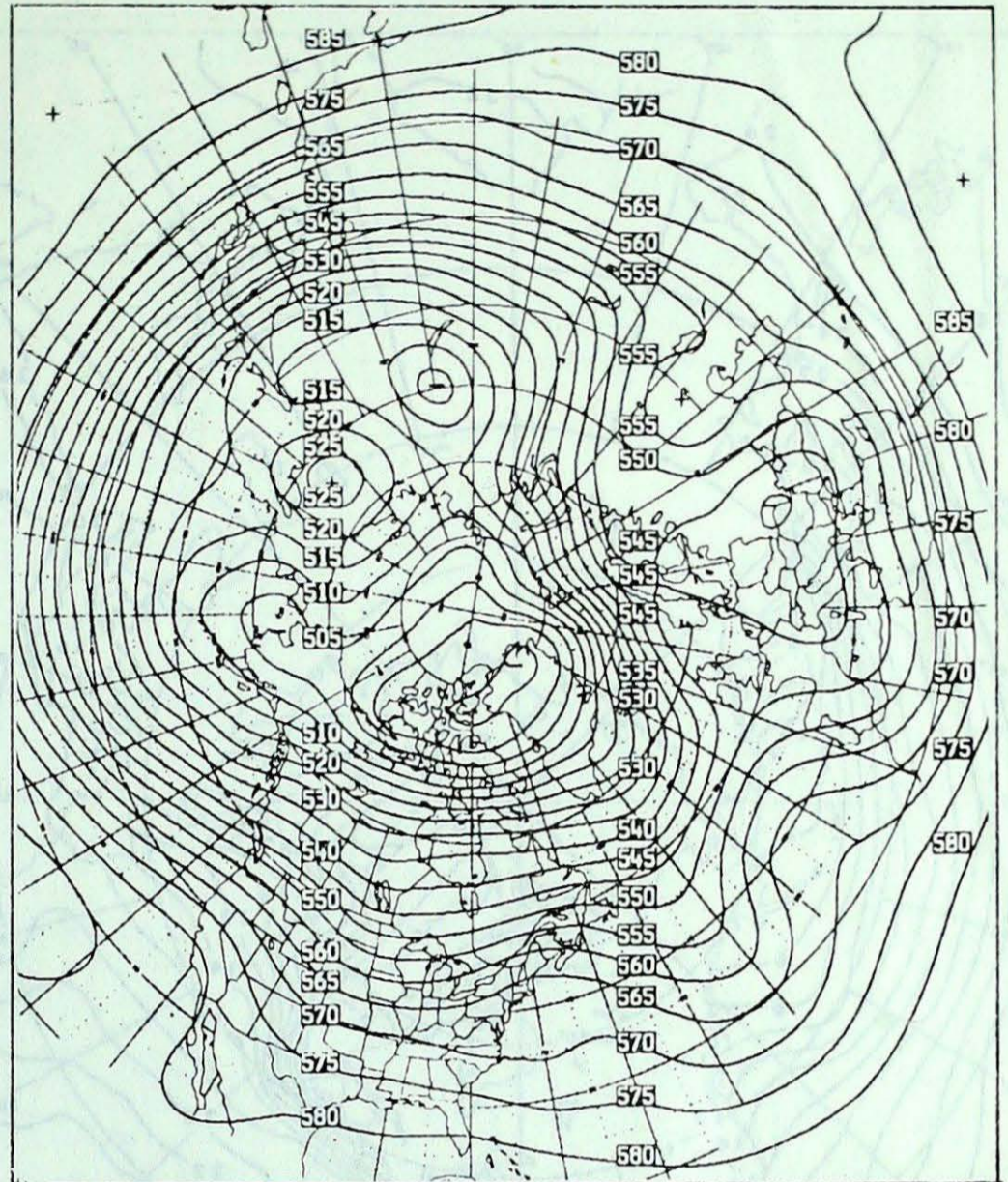
<u>Station</u>	<u>Current Temperature Anomaly Forecast</u>
Whitehorse	Below Normal
Victoria	Below Normal
Vancouver	Below Normal
Edmonton	Near Normal
Regina	Above Normal
Winnipeg	Above Normal
Thunder Bay	Above Normal
Toronto	Above Normal
Ottawa	Much Above Normal
Montreal	Much Above Normal
Quebec	Above Normal
Fredericton	Above Normal
Halifax	Much Above Normal
Charlottetown	Much Above Normal
St. John's	Above Normal
Goose Bay	Above Normal
Frobisher Bay	Above Normal
Inuvik	Below Normal

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

Atmospheric Circulation



7-day Mean 50 kPa Height Anomaly
(in 5 dam intervals) February 16 to 22, 1981



7-day Mean 50 kPa Height Map (in dam)
February 16 to 22, 1981

The strong mean upper air ridge over western Canada collapsed this week leaving an east-west circulation from coast to coast. The absence of a trough in eastern Canada resulted in 50 kPa height anomalies exceeding 25 dam in southern Québec.

Mild Pacific air continued to push inland re-enforcing the already mild conditions in southern Canada. On one occasion mild moist tropical air from the Gulf penetrated northward, letting its presence be felt in the south-eastern quadrant of the country. The Arctic frontal zone and storm track have now been displaced considerably further to the north than is normal for this time of year. Needless to say mean temperature across all of Canada have been well above normal.

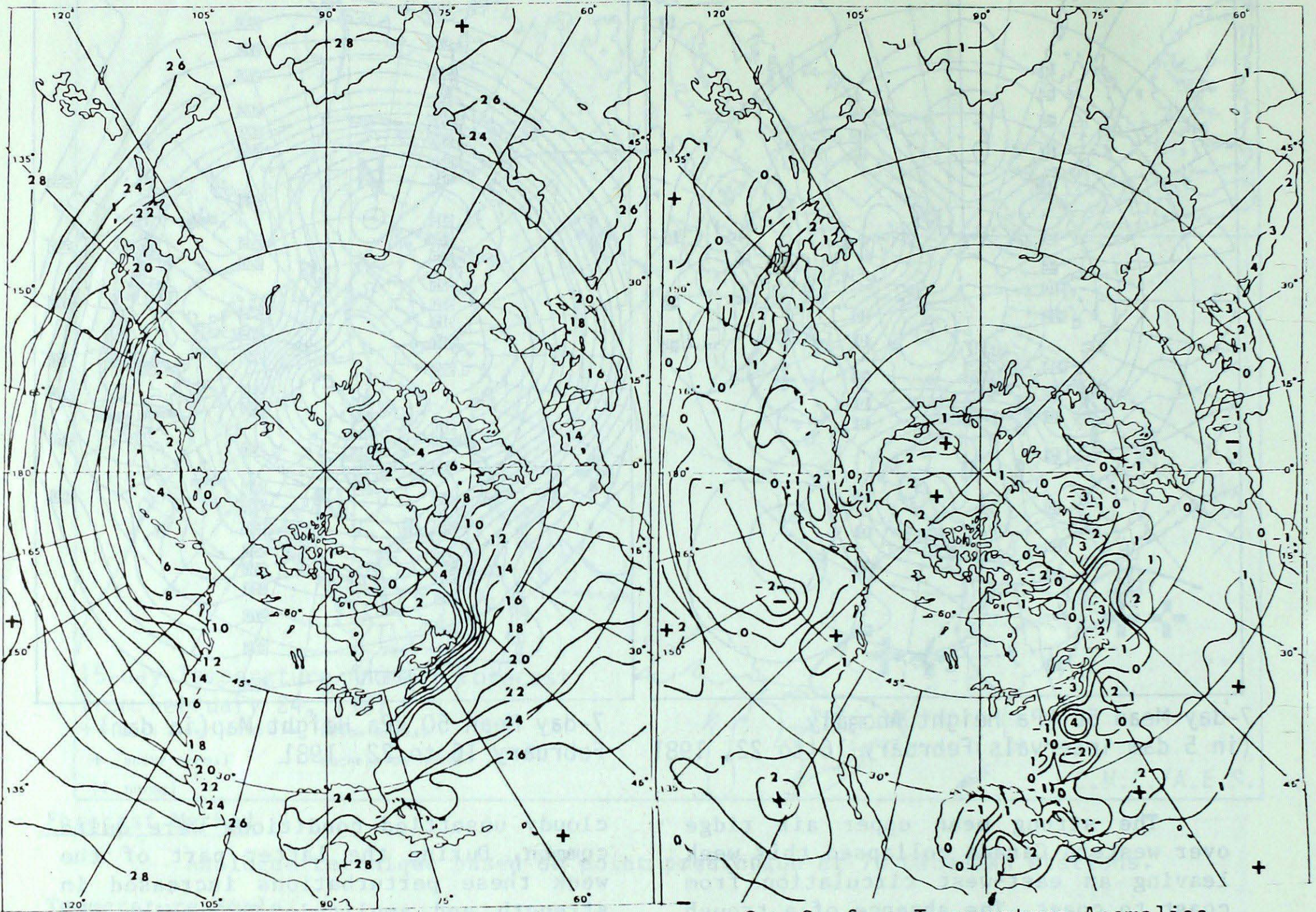
Atmospheric triggering pulses moved rapidly across the country. This supported the formation of numerous weak weather disturbances; mostly

cloudy unsettled conditions were quite common. During the latter part of the week these perturbations increased in strength and amplitude increasing the north-south component of the circulation pattern which in turn resulted in stronger low pressure system development at the surface.

Precipitation amounts varied widely across the country. Along the British Columbia coast a combination of approaching Pacific cyclones, an on-shore flow and orographic lift contributed to the precipitation totals of over 100 mm at many stations.

In Ontario and Québec, the confrontation of 3 contrasting airmasses associated with a well developed cyclonic storm slowly moving out of the American mid-west during the weekend, resulted in very mild temperature and copious amounts of precipitation falling over the regions; numerous temperature and rainfall records were broken at many locations.

SEA SURFACE TEMPERATURE



Monthly Mean Sea Temperature
Mid January to mid February 1981
(Note: Normals based on 1951-70 period)

Sea Surface Temperature Anomalies
Mid January to Mid February 1981

CLIMATIC PERSPECTIVES

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WEEKLY REVIEW

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NOTE: The data shown in this publication are based on observations from approximately 1,000 stations in Canada and 115 international stations.

TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. FEBRUARY 24, 1981

Table with 3 main columns for British Columbia, Alberta, and Saskatchewan/Yukon/NWT/Manitoba/Ontario, and another set of columns for Quebec and New Brunswick/Prince Edward Island/Newfoundland. Each column contains station names and their corresponding temperature and precipitation data for the week ending Feb 24, 1981.

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