atic ctives

A weekly review of Canadian climate | October 15 to 21, 1985 | Vol.7 No.41

Weather observations at Montreal McGill Observatory go back more than a century. This building with several later additions, was built in the autumn of 1862. Official meteorological observations continued without a break at this site until the last day of 1962. The building was torn down shortly thereafter.

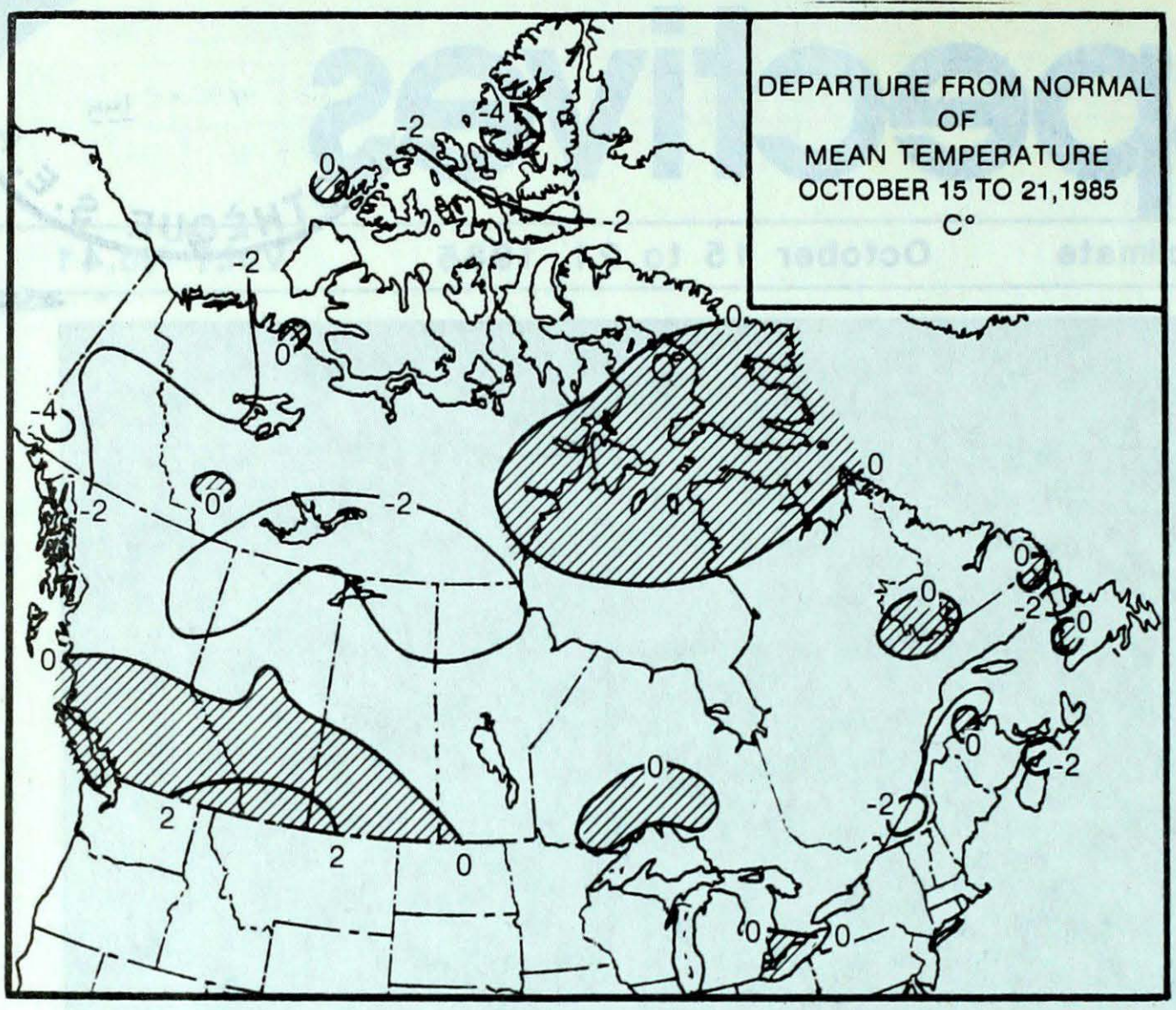
- ***Harvesting around the clock on the Prairies***

  – farmers take advantage of dry weather

- ***West Coast fishermen battle storm-force winds***

Canada

TEMPERATURE



WEEKLY TEMPERATURE EXTREMES (°C)

	MAXIMUM		MINIMUM	
YUKON TERRITORY	6.3	Watson Lake	-25.0	Beaver Creek
NORTHWEST TERRITORIES	3.6	Fort Simpson	-35.0	Eureka
BRITISH COLUMBIA	19.5	Kamloops	-7.9	Fort Nelson
ALBERTA	21.6	Lethbridge	-7.7	Cold Lake
SASKATCHEWAN	23.0	Moose Jaw	-15.9	Collins Bay
MANITOBA	20.3	Portage la Prairie	-20.0	Thompson
ONTARIO	21.4	London	-9.4	Big Trout Lake
QUÉBEC	19.3	Montreal	-13.0	Border
NEW BRUNSWICK	17.8	Chatham	-5.2	St. Stephen
NOVA SCOTIA	19.2	Western Head	-3.9	Truro
PRINCE EDWARD ISLAND	17.0	Summerside	-1.4	Summerside
NEWFOUNDLAND	16.9	Gander	-7.8	Churchill Falls

ACROSS THE NATION

Warmest mean temperature	11.9	Windsor, ONT
Coolest mean temperature	-27.9	Eureka, N.W.T.

ACROSS THE COUNTRY...

Yukon and Northwest Territories

Most areas reported snow this week. In the Yukon amounts generally ranged between 2 and 5 centimetres. Beaver Creek, however, received 32 cm. In the Territories amounts of 5 to 10 centimetres were common. Most small lakes are completely frozen over. In many locations the mercury failed to climb above freezing. With temperatures dropping to the minus thirties, freeze-up is well underway in the Arctic, and the navigation season has come to an end in Lancaster Sound and the Beaufort.

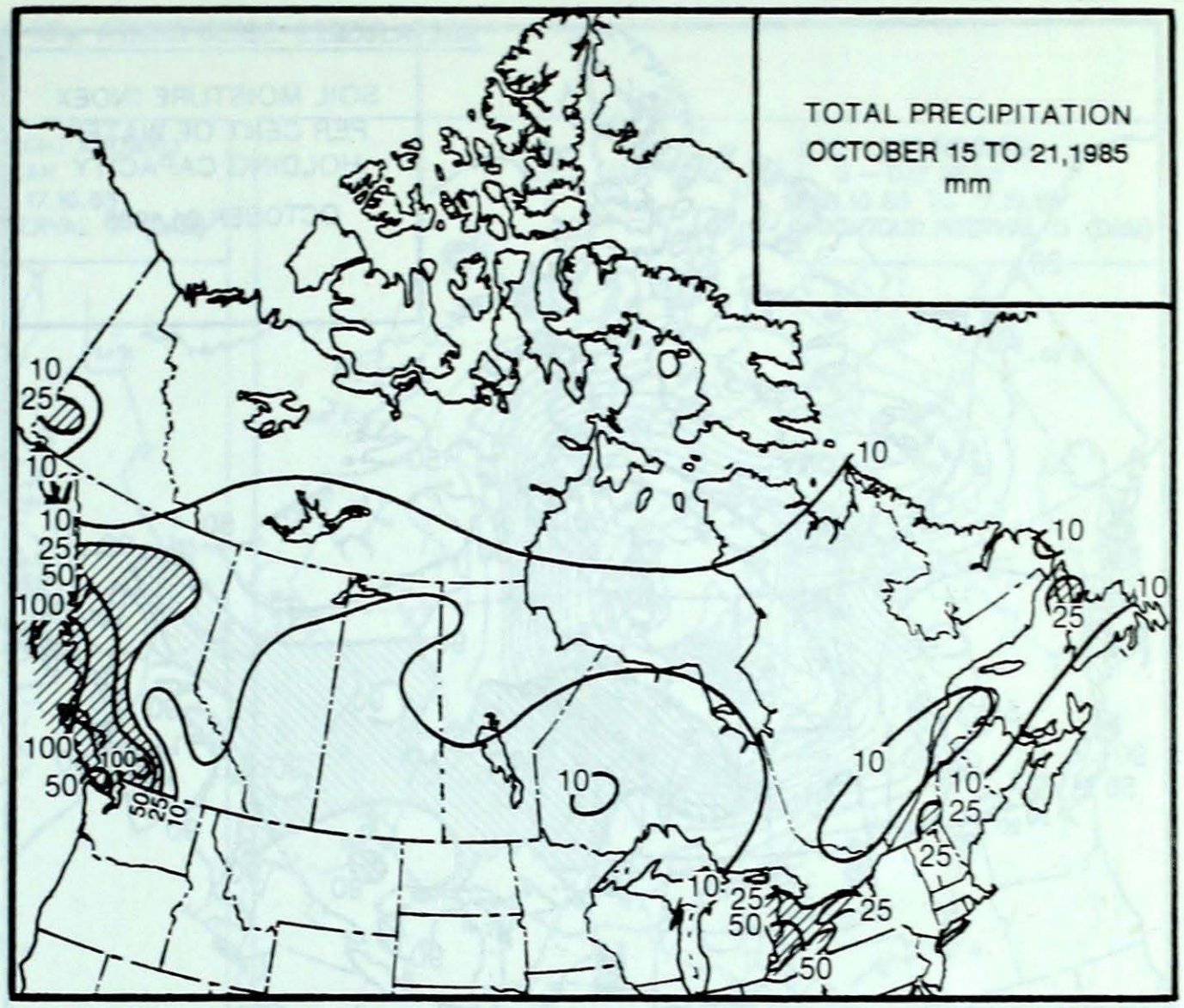
British Columbia

It was a typical autumn week with stormy weather along the outer and north coast, and dull and wet in the interior. On October 16, storm force winds gusting to 120 km/h and three-metre waves lashed Hecate Strait, between the Queen Charlotte Islands and the mainland. Two fishing boats foundered and sank, while a third had to be towed by a Canadian Coast Guard cutter. Snow fell in the central and northern interior. The Peace River District received 12 cm. Snow is beginning to accumulate at higher elevations. Wet roads hampered logging operations. The apple harvest is complete. The grape harvest is nearing an end.

Prairies

The weather was unusually cool. Early in the week a disturbance crossing the Rockies brought rain to agricultural districts, while snow fell to the north. By mid-week a ridge of high pressure exerted its influence over the region. Temperatures rebounded sharply under mainly sunny skies. Daytime readings in the south soared to the low twenties, breaking daily maximum temperature records. Drying conditions were excellent, and harvesting was able to resume over the weekend. Combines were utilized fully into the nights, trying to make up for lost time. In the Grand Prairie area harvesting is 85-95 per cent complete, while in other districts it has barely begun.

PRECIPITATION



Ontario

Series of weather systems affected the province. A disturbance moving south of the lower lakes gave heavy rain to southern Ontario, during the early part of the weekend. Several daily precipitation records were broken. London and Windsor received 48 mm and 61 mm of rain on October 18 and 19, respectively. Communities in the Niagara Peninsula received more than 40 mm of rain. Daytime temperature readings were on the cool side, varying from -2°C in the northwestern Ontario to as high as 21°C in the southwest.

Quebec

After several days of damp, dull weather skies cleared in the southwest, and Indian Summer weather arrived. At Trois Rivières and in the Eastern Townships good drying conditions helped farmers harvest their last hay crop. Under mainly sunny skies temperatures rose to the mid-teens. In contrast, winter arrived in the north. After mid-week, maximum temperatures remained below the freezing mark, and snow was evident in most areas. Shefferville reported 16 cm of new snow on the ground.

Atlantic

Most of the week's precipitation fell on September 15 and 16. The same weather system was responsible for strong westerly winds in Newfoundland. On September 17 winds gusted to 83 km/h along the coast. Much colder air spilled southwards during the middle of the week, and overnight readings in New Brunswick dropped to well-below freezing. Temperatures in the Maritimes gradually moderated for the weekend, but became progressively colder in Newfoundland. Snowflurries were reported in many areas of the Island. Weather conditions have been excellent for the Annapolis Valley apple harvest.

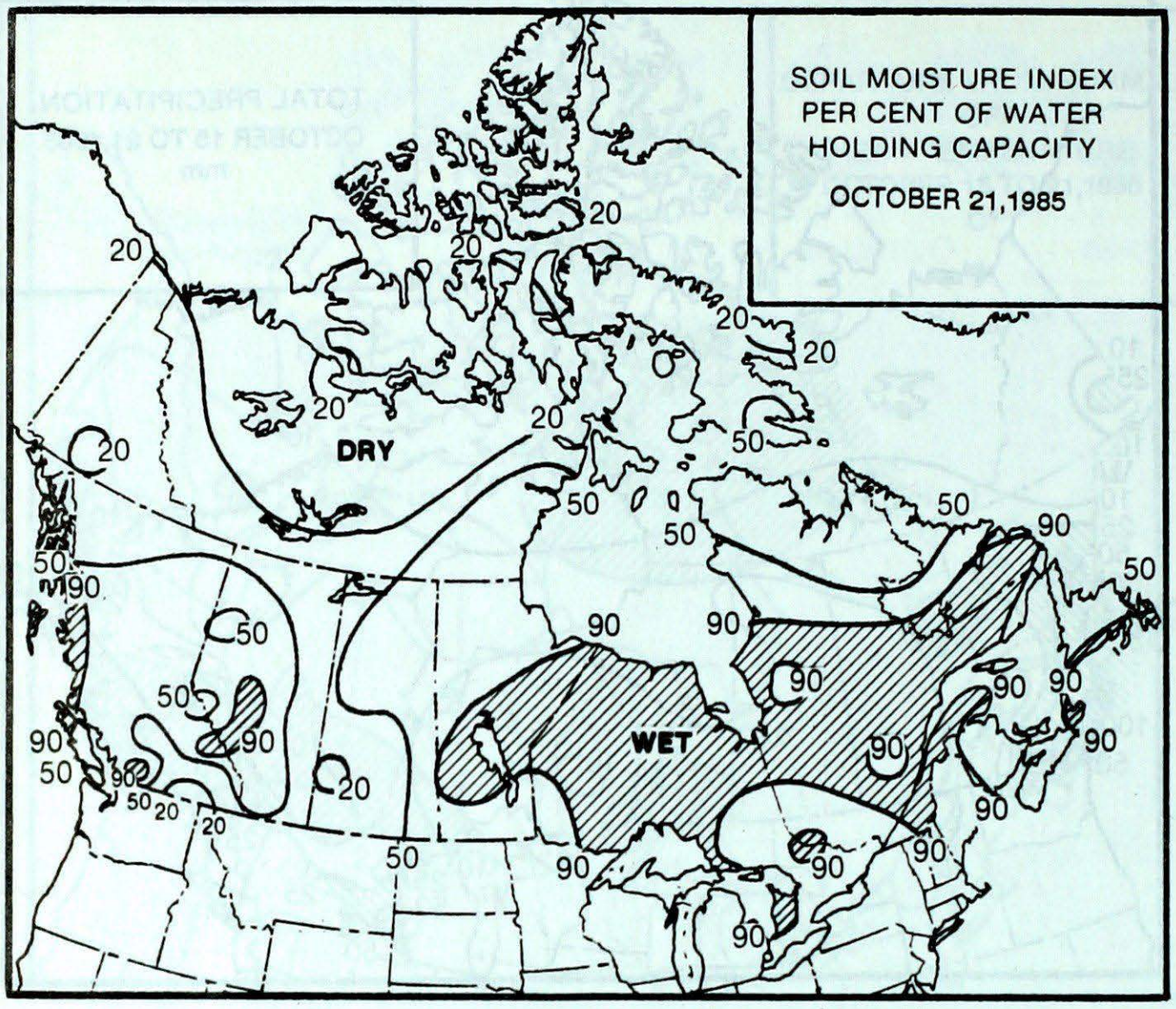
HEAVIEST WEEKLY PRECIPITATION (mm)

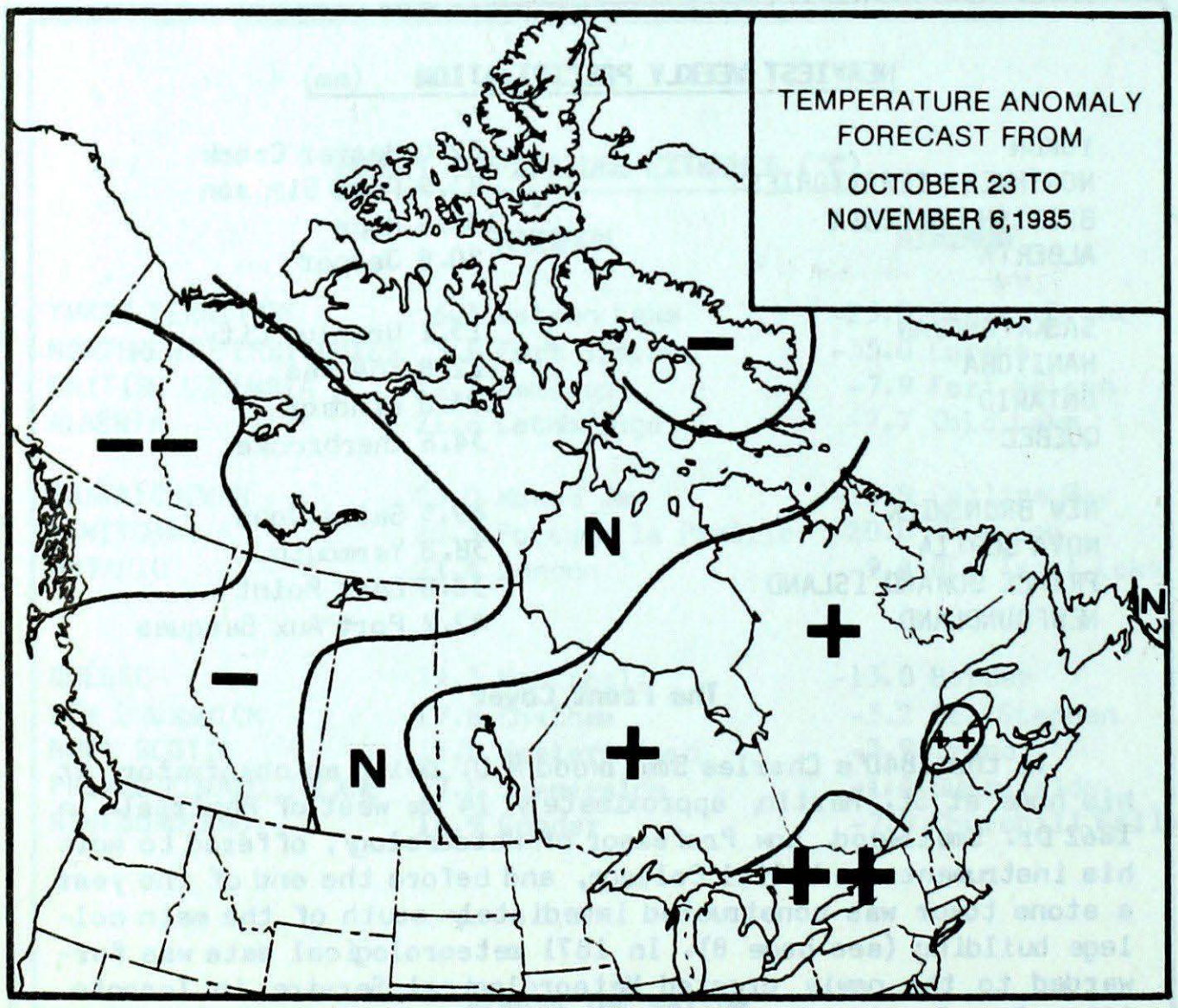
YUKON	32.0	Beaver Creek
NORTHWEST TERRITORIES	23.9	Fort Simpson
BRITISH COLUMBIA	135.6	Hope
ALBERTA	20.8	Jasper
SASKATCHEWAN	15.2	Uranium City
MANITOBA	22.8	The Pas
ONTARIO	73.0	Windsor
QUEBEC	34.6	Sherbrooke
NEW BRUNSWICK	49.5	Saint John
NOVA SCOTIA	38.8	Yarmouth
PRINCE EDWARD ISLAND	38.8	East Point
NEWFOUNDLAND	42.2	Port Aux Basques

The Front Cover

In the 1840's Charles Smallwood M.D. built an observatory at his home at St. Martin, approximately 14 km west of Montreal. In 1862 Dr. Smallwood, now Professor of Meteorology, offered to move his instruments to McGill College, and before the end of the year a stone tower was constructed immediately south of the main college building (see page 8). In 1871 meteorological data was forwarded to the newly created Meteorological Service in Toronto. After Dr. Smallwood's death, the work was taken over by C.H. McLeod, who was the observatory's superintendent for the next forty years. The building was enlarged in the 1880's and the 1890's to accommodate the McLeod family. In December 1961 weather observations began at the MacDonald Physics Building nearby, and for thirteen months were taken concurrently with the observations at the original site before being officially transferred.

FORECAST





Temperature Anomaly Forecast

++	much above normal
+	above normal
N	normal
-	below normal
--	much below normal

This forecast is prepared by searching historical weather maps to find cases similar to the present. The historical outcome during the 15 days subsequent to the chosen analogues is assumed to be a forecast for the next 15 days from now.

CLIMATIC PERSPECTIVES VOLUME 7

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The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socio-economic impact.

Unsolicited articles are welcome but should be at maximum about 1500 words in length. They will be subject to editorial change without notice due to publishing time constraints. Black and white photographs can be used, but not colour. The contents may be reprinted freely with proper credit.

The data shown in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment Service.

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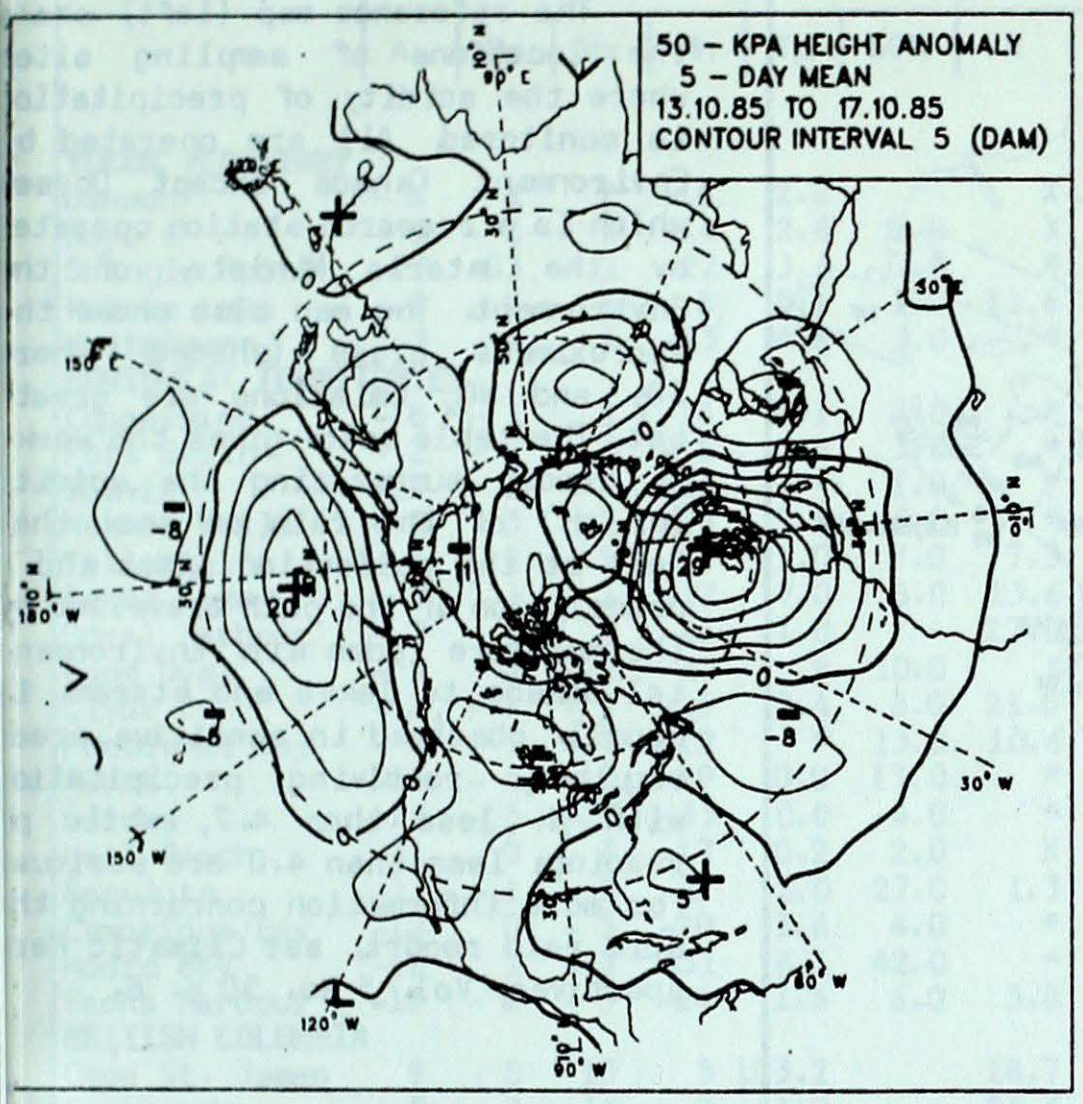
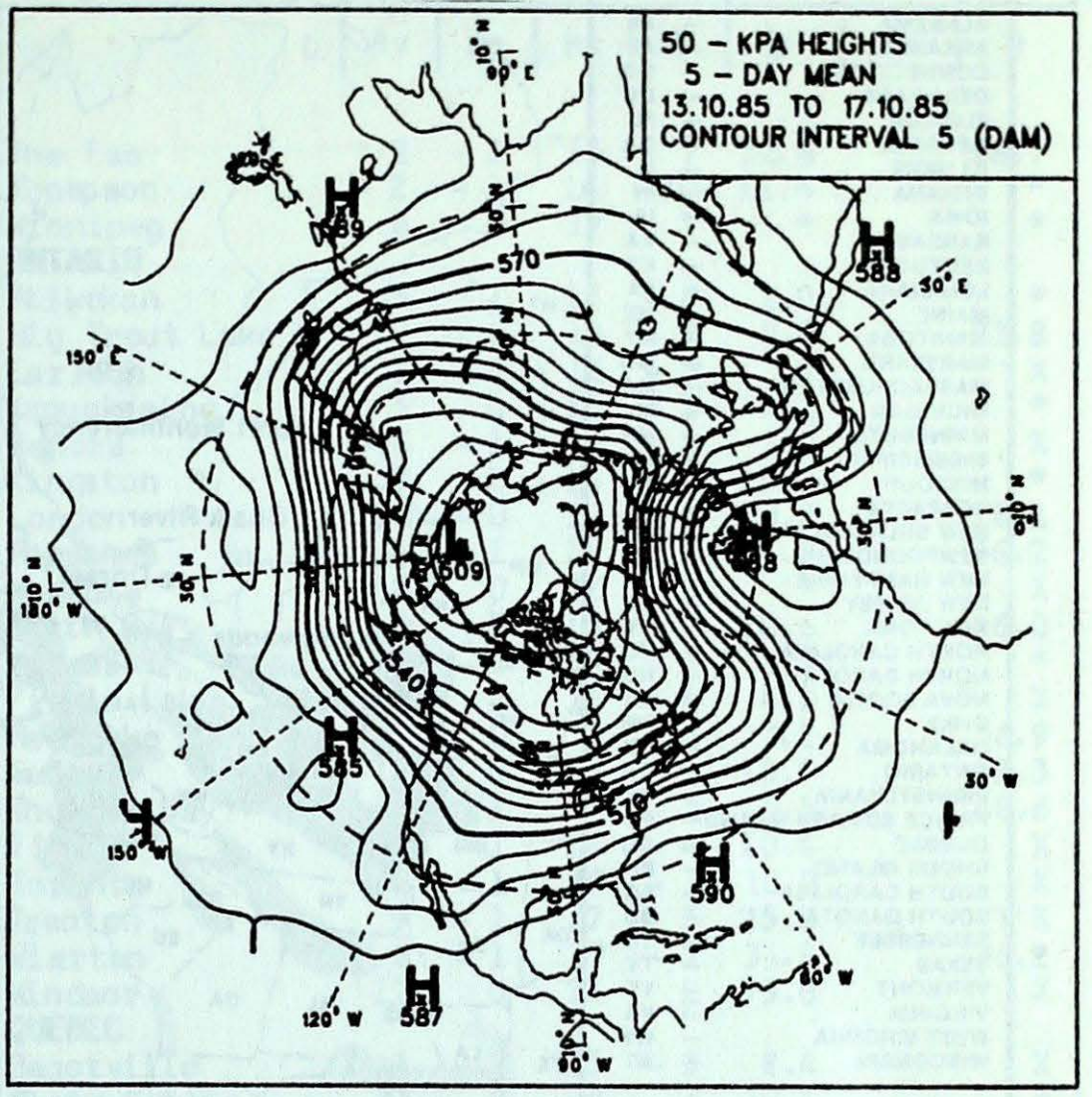
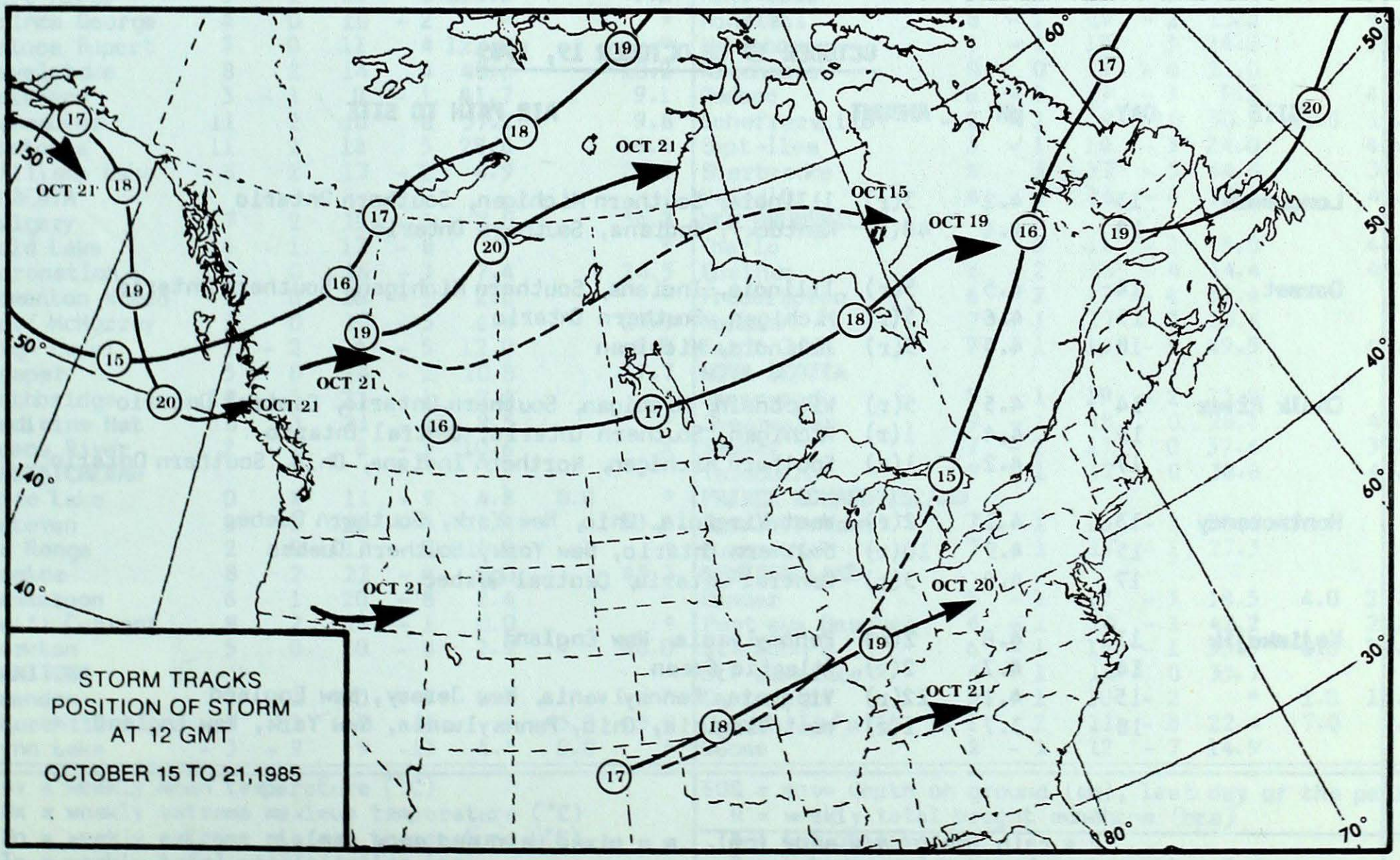
50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)
October 13 to October 17, 1985

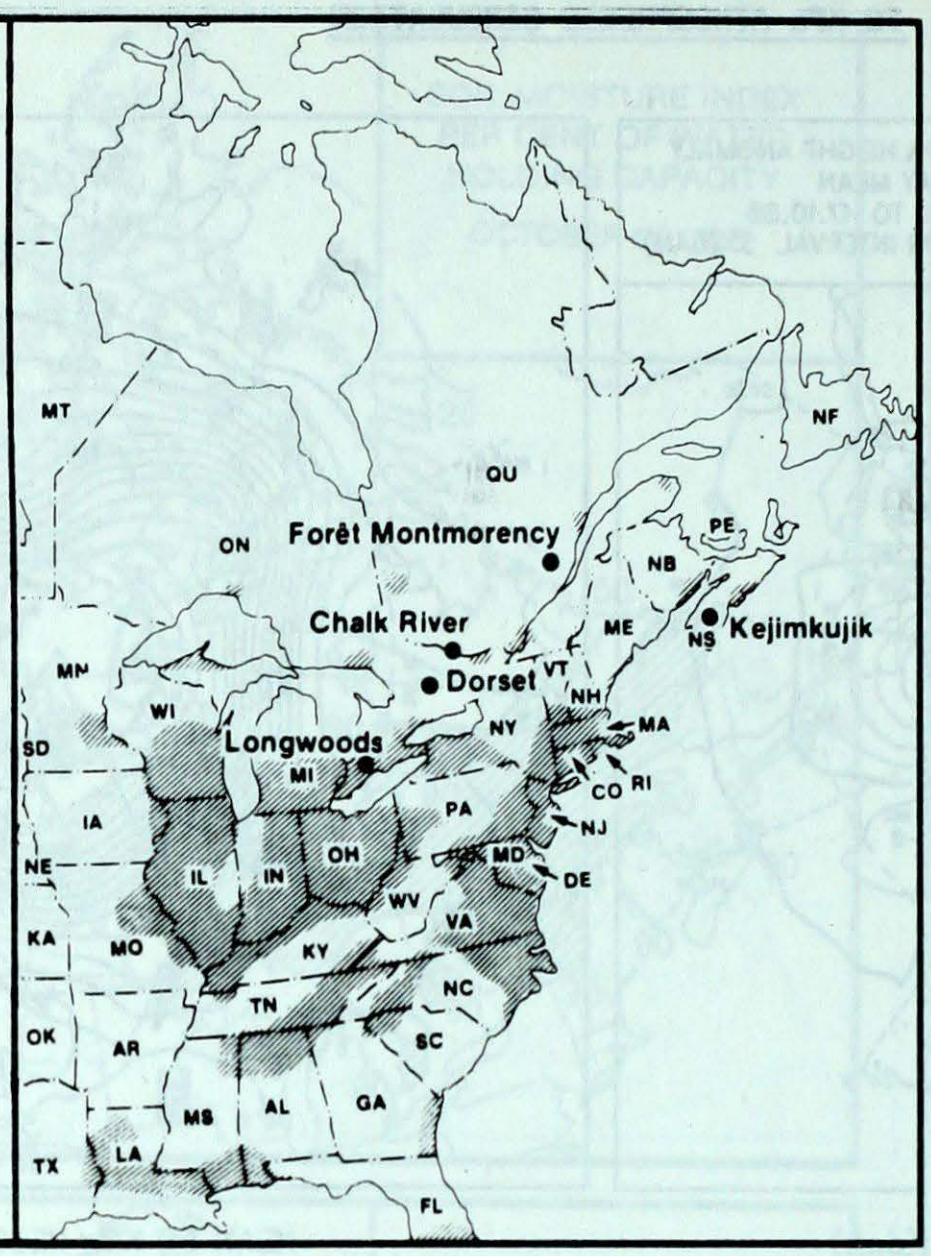


MEAN 50 KPa HEIGHTS (dam)
October 13 to October 17, 1985



ACID RAIN

ALABAMA	—	AL
ARKANSAS	—	AR
CONNECTICUT	—	CO
DELAWARE	—	DE
FLORIDA	—	FL
GEORGIA	—	GA
ILLINOIS	—	IL
INDIANA	—	IN
IOWA	—	IA
KANSAS	—	KA
KENTUCKY	—	KY
LOUISIANA	—	LA
MAINE	—	ME
MANITOBA	—	MT
MARYLAND	—	MD
MASSACHUSETTS	—	MA
MICHIGAN	—	MI
MINNESOTA	—	MN
MISSISSIPPI	—	MS
MISSOURI	—	MO
NEBRASKA	—	NE
NEW BRUNSWICK	—	NB
NEWFOUNDLAND	—	NF
NEW HAMPSHIRE	—	NH
NEW JERSEY	—	NJ
NEW YORK	—	NY
NORTH CAROLINA	—	NC
NORTH DAKOTA	—	ND
NOVA SCOTIA	—	NS
OHIO	—	OH
OKLAHOMA	—	OK
ONTARIO	—	ON
PENNSYLVANIA	—	PA
PRINCE EDWARD ISLAND	—	PE
QUÉBEC	—	QU
RHODE ISLAND	—	RI
SOUTH CAROLINA	—	SC
SOUTH DAKOTA	—	SD
TENNESSEE	—	TN
TEXAS	—	TX
VERMONT	—	VT
VIRGINIA	—	VA
WEST VIRGINIA	—	WV
WISCONSIN	—	WI



ACID RAIN REPORT

The reference map (left) shows the locations of sampling sites where the acidity of precipitation is monitored. All are operated by Environment Canada except Dorset which is a research station operated by the Ontario Ministry of the Environment. The map also shows the approximate areas (shaded) where SO_2 and NO_x emissions are greatest. The table below gives the weekly report summarizing the acidity (or pH) of the rain or snow that fell at the collection sites and a description of the path travelled by the moisture laden air. Environmental damage to lakes and streams is usually observed in sensitive areas regularly receiving precipitation with pH less than 4.7, while pH readings less than 4.0 are serious. For more information concerning the acid rain report, see Climatic Perspectives, Vol. 5 No. 50 p. 6.

OCTOBER 13 to OCTOBER 19, 1985

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	13	4.2	3(r)	Illinois, Southern Michigan, Southern Ontario
	18	4.4	48(r)	Kentucky, Indiana, Southern Ontario
Dorset	14	4.5	5(r)	Illinois, Indiana, Southern Michigan, Southern Ontario
	15	4.6	5(r)	Michigan, Southern Ontario
	18	4.5	5(r)	Illinois, Michigan
Chalk River	14	4.5	5(r)	Wisconsin, Michigan, Southern Ontario, Central Ontario
	15	4.4	1(r)	Michigan, Southern Ontario, Central Ontario
	17	4.2	1(r)	Southern Michigan, Northern Indiana, Ohio, Southern Ontario
Montmorency	13	4.1	2(r)	West Virginia, Ohio, New York, Southern Quebec
	15	4.9	10(r)	Southern Ontario, New York, Southern Quebec
	17	4.8	3(r)	Central Ontario, Central Quebec
Kejimkujik	13	4.8	2(r)	Pennsylvania, New England
	14	4.7	2(r)	Atlantic Ocean
	15	4.1	22(r)	Virginia, Pennsylvania, New Jersey, New England
	18	3.7	1(r)	West Virginia, Ohio, Pennsylvania, New York, New England

r = rain (mm), s = snow (cm), m = mixed rain and snow (mm).

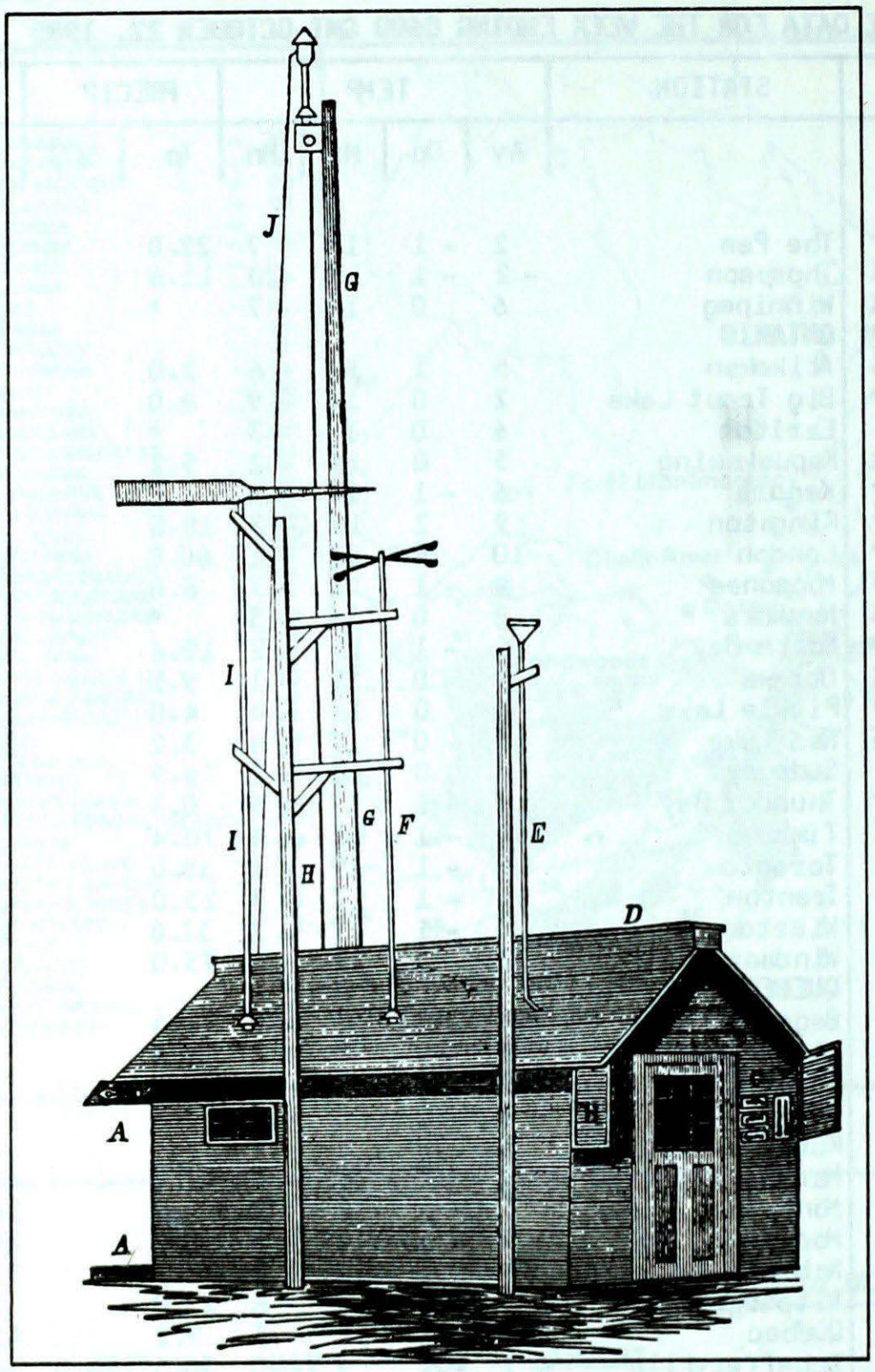
STATISTICS

TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT OCTOBER 22, 1985

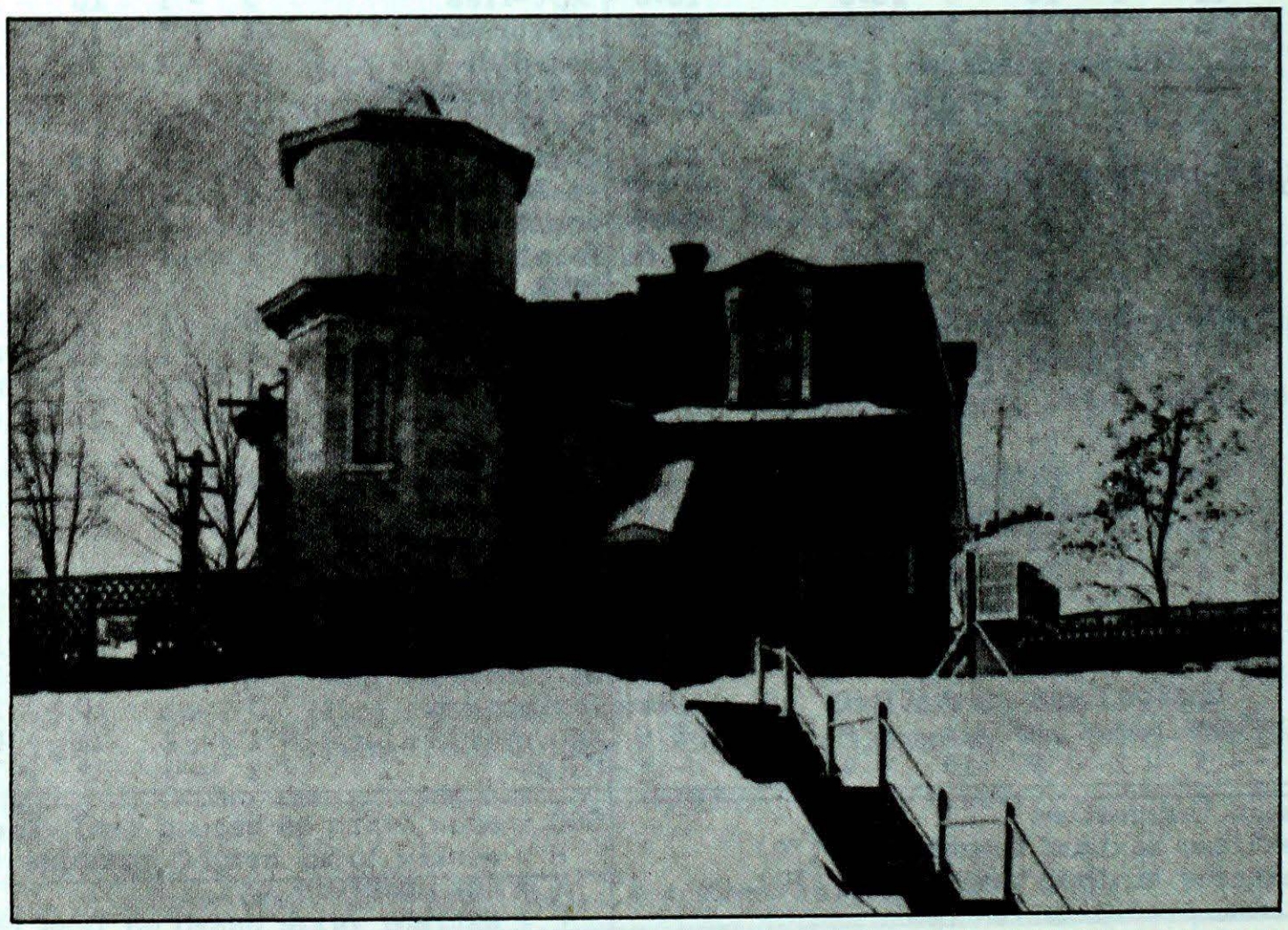
STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY							
Dawson	- 6	- 2	2	-16	2.2		X
Mayo A	- 5	- 2	2	-14	2.8	2.0	X
Shingle Point	-13	- 3	- 2	-22	3.6	7.0	*
Watson Lake	-2	- 2	6	- 8	5.1	1.0	11.6
Whitehorse	-3	- 3	4	-13	4.8	3.0	*
NORTHWEST TERRITORIES							
Coppermine	- 8	- 1	1	-14	8.1	6.0	*
Fort Smith	- 2	- 2	3	- 8	11.4	3.0	*
Inuvik	-13	- 3	- 1	-23	*	1.0	*
Norman Wells	- 9	- 3	2	-18	7.6	6.0	*
Yellowknife	- 4	- 2	1	-11	11.0	7.0	7.3
Baker Lake	- 7	1	- 1	-17	7.0	5.0	13.6
Coral Harbour	- 7	1	1	-16	1.0		27.0
Cape Dyer	- 8	1	- 1	-15	*	10.0	X
Clyde	- 8	- 2	- 1	-15	2.4	8.0	21.0
Frobisher Bay	- 4	1	2	-12	*	13.0	10.6
Alert	-25	- 4	-19	-29	0.0	13.0	*
Eureka	-28	- 5	-23	-35	0.0	4.0	*
Hall Beach	-11	0	- 3	-17	0.2	2.0	X
Resolute	-17	- 1	- 9	-27	2.0	27.0	1.3
Cambridge Bay	-12	0	- 5	-20	3.6	4.0	*
Mould Bay	-18	1	- 7	-31	6.1	42.0	*
Sachs Harbour	-15	- 1	- 3	-24	1.6	6.0	3.8
BRITISH COLUMBIA							
Cape St. James	9	0	13	5	103.2		14.7
Cranbrook	8	3	15	- 2	1.0		24.6
Fort Nelson	- 2	- 3	6	- 8	10.0	6.0	6.2
Fort St. John	1	- 3	9	- 7	25.2	3.0	X
Kamloops	11	3	20	3	1.0		28.8
Penticton	10	1	17	1	7.4		17.0
Port Hardy	9	1	15	3	115.3		7.2
Prince George	4	0	10	- 2	*		*
Prince Rupert	7	0	11	4	122.9		*
Revelstoke	8	2	14	4	48.6		10.2
Smithers	3	- 1	8	- 1	41.7		9.1
Vancouver	11	2	16	8	57.2		9.8
Victoria	11	2	18	5	28.6		16.6
Williams Lake	6	2	13	- 2	4.9		26.5
ALBERTA							
Calgary	7	2	19	- 3	7.0		34.3
Cold Lake	4	- 1	17	- 8	*		*
Coronation	5	0	16	- 3	7.4		24.5
Edmonton Namao	5	0	16	- 1	2.8		*
Fort McMurray	3	0	13	- 5	6.4		23.9
High Level	- 1	- 2	4	- 5	12.0		9.9
Jasper	5	0	14	- 1	20.8		17.7
Lethbridge	10	3	22	1	0.6		*
Medicine Hat	10	3	21	- 1	9.5		*
Peace River	2	- 1	8	- 3	10.6		X
SASKATCHEWAN							
Cree Lake	0	X	11	- 9	4.8	0.0	*
Estevan	8	1	22	- 4	1.4		53.0
La Ronge	2	0	13	- 8	10.2		*
Regina	8	2	22	- 4	0.0		45.3
Saskatoon	6	1	20	- 8	2.4		*
Swift Current	8	2	19	- 1	0.0		*
Yorkton	5	0	20	- 8	2.9		48.0
MANITOBA							
Brandon	4	- 1	20	- 9	0.3		*
Churchill	- 5	- 3	2	-14	*	5.0	5.9
Lynn Lake	- 3	- 2	9	-15	4.4	0.0	*
The Pas	2	- 1	15	- 7	22.8		26.7
Thompson	- 2	- 1	16	-20	11.6		*
Winnipeg	6	0	19	- 7	*		*
ONTARIO							
Atikokan	5	1	18	- 6	2.0		*
Big Trout Lake	2	0	14	- 9	8.0		21.8
Earlton	6	0	16	- 3	*		X
Kapuskasing	5	0	16	- 2	5.2		*
Kenora	6	- 1	17	- 2	1.0		X
Kingston	9	2	16	- 2	18.0		*
London	10	0	21	- 1	68.8		28.1
Moosonee	4	- 1	16	- 7	6.8		26.2
Muskoka	8	0	16	- 3	*		X
North Bay	6	- 1	15	- 2	10.6		46.0
Ottawa	9	0	19	- 1	9.1		*
Pickle Lake	4	0	16	- 4	4.0		X
Red Lake	5	0	17	- 4	3.2		36.9
Sudbury	7	0	16	- 2	18.9		49.3
Thunder Bay	5	- 1	17	- 5	0.5		48.6
Timmins	5	- 1	16	- 4	10.4		X
Toronto	8	- 1	19	- 1	18.0		X
Trenton	9	- 1	17	- 3	25.0		X
Wiarton	8	- 1	17	- 2	31.8		38.2
Windsor	12	0	21	2	73.0		X
QUEBEC							
Bagotville	4	- 2	13	- 3	8.4		X
Blanc-Sablon	3	0	8	- 6	19.0		*
Inukjuak	0	1	5	- 4	9.8		2.1
Kuujjuaq	- 1	0	6	- 6	13.6		*
Kuujjuarapik	2	0	8	- 3	27.4		4.3
Maniwaki	7	0	17	- 4	7.0		47.4
Mont-Joli	5	- 1	12	- 2	8.4		38.2
Montréal	8	- 1	19	- 2	13.2		48.8
Natashquan	4	- 1	10	- 3	24.2		33.0
Nitchequon	0	0	9	- 6	21.0		7.1
Québec	6	- 1	17	- 3	9.2		45.1
Schefferville	- 2	- 1	9	-10	30.3	16.0	10.3
Sept-Iles	3	- 1	10	- 3	24.0		41.9
Sherbrooke	6	- 3	17	- 5	34.6		38.9
Val-d'Or	4	- 1	16	- 4	10.2		41.7
NEW BRUNSWICK							
Charlo	5	0	14	- 2	8.0		44.1
Chatham	6	- 2	18	- 4	14.4		46.9
Fredericton	6	- 2	17	- 4	31.4		*
Moncton	7	- 1	17	- 3	25.6		*
Saint John	7	- 1	16	- 3	49.5		40.1
NOVA SCOTIA							
Greenwood	8	- 1	19	- 2	23.8		X
Shearwater	9	- 1	18	0	28.4		42.7
Sydney	7	- 2	17	0	37.6		30.5
Yarmouth	9	- 1	17	0	38.8		45.4
PRINCE EDWARD ISLAND							
Charlottetown	7	- 1	16	- 1	35.6		*
Summerside	7	- 1	17	- 1	27.3		*
NEWFOUNDLAND							
Gander	5	- 1	17	- 3	18.5	4.0	22.7
Port aux Basques	6	- 1	14	- 1	42.2		20.8
St. John's	6	- 1	15	- 1	35.5	0.0	22.1
St. Lawrence	6	- 1	14	0	35.7		X
Cartwright	3	- 1	10	- 2	*	1.0	17.3
Churchill Falls	- 1	2	11	- 8	22.4	7.0	9.2
Goose	2	- 1	12	- 7	14.9		*

Av = weekly mean temperature (°C)
Mx = weekly extreme maximum temperature (°C)
Mn = weekly extreme minimum temperature (°C)
Tp = weekly total precipitation (mm)
Dp = Departure of mean temperature from normal (°C)

SOG = snow depth on ground (cm), last day of the period
H = weekly total bright sunshine (hrs)
X = not observed
P = extreme value based on less than 7 days
* = missing



In the early eighteen hundreds scattered weather records were being kept by a variety of private citizens. This is a sketch of Dr. Smallwood's observatory at St. Martin on Isle Jésus in 1858.



McGill Observatory (1886). Photos from Bulletin American Meteorological Society.