



*Director-General, M.K. Thomas presenting F.H.G. Woodford with his retirement certificate. Others at head table are Ron Gillis, Mrs. Woodford, Bob Stark, Mrs. Edna Fowles and Graham Potter.*

Photos - T. Marouka

joined our Service in Winnipeg, and over the next 10 years progressed through weather observing and plotting, regional instructor to senior observer assistant. In 1955 Fred won a position in the Climatological Section at Met. HQ. and has worked at Head Office since that time.

Among the greetings given Fred at the luncheon was a message from old friends in Winnipeg, who recalled how Fred's service as a hockey goalie had a bloody conclusion.

## ONLY MUD FOR CHRISTMAS WHEN WINTER FORGOT TO COME

by

Henry Stanski

Prairie winters are harsh and many stories are told of week-long blizzards, snowdrifts 20 feet high and temperatures of minus 45°C.

However, one story not often told is the winter of 1877-78, the year winter forgot to come.

James B. Stewart, a druggist whose shop was located opposite the Grace Church, 183 Main Street, kept a journal of temperatures and precipitation starting in 1869.

As the days in December shortened that year, the temperature began to climb. Snow that had fallen late November melted and the frost came out of the ground. Farmers who hadn't completed their fall plowing returned to the fields. Soon almost everyone was again plowing and sowing fall wheat.

Plowing was interrupted on December 19, not by snow and cold, but by rain. Stewart records 2.14 inches (54.5 mm) of rain in December and only a trace of snow. Rain in December is a rare event on the prairies, and in fact, 2.14 inches is 5,350 per cent of the normal amount.

From the same period, J.W. Harris (Historical Society of Manitoba, Series II No. 3) made two interesting entries in his diary.

December 23 . . . "Mud, mud, mud, nothing but mud. Raining all day."  
December 25 . . . "Mud everywhere about the country. No snow."

The mud of the Red River Valley surely must be the stickiest and heaviest to be found anywhere. Indeed, on February 19, 1878 the following was taken from the Winnipeg Free Press:

Winnipeg's winter continued snowless; but though there was no snow there was an abundance of Manitoba mud which even old timers admitted was the genuine article. "In the old days" one citizen told The Free Press, "they used to say the city site was growing lower every year because of mud that visitors carried away."

On December 23 Stewart records a high of 47.4 ° F (8.6° C), the warmest day that month. December 6, 1940 now holds the record as being the warmest ever in December with a temperature of 53° F (12° C), December 11, 1913 at 49° F (9° C) is second while December 23, 1878 is the third warmest day ever in December.

Rain finally stopped on Christmas Eve and the clouds began to break up; Mother Nature was offering a Christmas gift, as a bright rainbow appeared northwest of the city.

There was no snow Christmas Day, only mud, and Stewart includes in his observations a remark that "two frogs were said to have been seen in the swamps adjoining the city."

The mean or average daily temperature for December 1877 was 10° C above normal, making it the mildest December ever.

For a few days around New Year's the weather turned cold, there was even a little snow though hardly enough to use a sleigh and then it too melted.

February and March were also the mildest months ever recorded. The mean daily temperature for February was 11° C above normal while March was 10° C above normal. Again as in the months, before, no snow, only mud.

Blackbirds were seen in mid-February, butterflies on March 6 and robins on March 15. Spring had arrived.

The period November 1877 to March 1878 is the warmest November to March ever recorded and also the period of least snowfall. The water equivalent of 2.64 inches (67 mm) of snow fell from November to March of which 2 inches (50.8 mm) fell in November. During this same period 6.30 inches (160 mm) of rain fell.

The summer of 1878 was one of the wettest ever, in fact from 1876 to 1880, Manitoba experienced the wettest period ever recorded. That's another story.

Mr. Stanski is a meteorologist at the Winnipeg Weather office.

### L'ACTIVITE HUMAINE MODIFIE LE CLIMAT

La transparence de l'atmosphère n'est pas constante: elle varie avec le temps, modulant ainsi la quantité d'énergie solaire reçue à la surface de la terre et dans la basse atmosphère. Mais ces modifications de transparence concernent surtout la météorologie et doivent être regardées comme des effets de climat. Elles n'intéressent donc pas le climatologue qui se préoccupe, au contraire, des modifications qui ont des causes externes: l'addition de particules de matière à l'atmosphère, en particulier. En dehors de toute activité humaine, l'atmosphère contient une certaine quantité de particules, émises par l'activité volcanique, arrachées au sol par l'érosion éolienne ou en provenance des mers et des forêts sous forme d'aérosols.

De tous ces phénomènes naturels, c'est l'activité volcanique qui a le plus fort impact sur l'équilibre climatique, comme l'ont montré sans discussion de nombreux travaux. Ainsi, on a pu mettre en évidence une corrélation au cours des derniers 100,000 ans, entre l'épaisseur des glaces arctiques et la quantité de poussières volcaniques tombées sur ces mêmes glaces. Et à courte échelle de temps, les mesures directes du rayonnement solaire au sol par ciel clair, effectuées au cours de ce siècle, montrent un maximum de transparence de 1920 à 1930, période de calme volcanique.

Il faut cependant noter que la transparence et la température moyenne atmosphériques dans l'hémisphère Nord ont commencé à décroître avant la reprise de l'activité volcanique, dans les années 1950 et 1960. On peut en déduire qu'une autre source de particules a commencé à faire sentir ses effets à partir des années 1940.

Cette source, à n'en pas douter, c'est l'activité humaine. Si l'on considère l'industrialisation et la mécanisation du monde comme des facteurs d'émission de particules dans l'atmosphère, on doit constater un accroissement presque exponentiel des particules de cette provenance à partir de 1935 (Bryson). C'est exactement ce que vérifient les retombées de plomb - d'origine industrielle - sur les glaces du Groenland et les poussières recueillies sur les champs de neige du Caucase - résultat de l'érosion aggravée par la mécanisation de l'agriculture.