

**A COMPENDIUM OF ERRORS: A NOTE ON THE LOWEST OFFICIAL TEMPERATURE FOR NORTH AMERICA, 1910-1947**

For 37 years the lowest temperature officially accepted for North America was that of  $-79^{\circ}\text{F}$ . recorded by Father Gaston Houssais, O.M.I., at Fort Good Hope, N.W.T., Canada on December 31, 1910. This was not equalled until 1947, when a corrected reading of  $-81^{\circ}\text{F}$ . on February 3 at Snag, Y.T., Canada was officially accepted.

An analysis of the Fort Good Hope weather records from December 29, 1910 to January 1, 1911 (see table) raises serious doubts that a temperature of  $-79^{\circ}\text{F}$ . occurred during that period. In examining the record only the *minimum* and the *present* temperature readings should be considered. Because a mercury maximum thermometer was used the maximum readings given are unreliable.

preceding 11 hours. At 9 p.m. on the 31st the temperature was  $-57^{\circ}\text{F}$ ., only 1 degree lower than the temperature at 8 a.m., but the minimum for the 13 hours between 8 a.m. and 9 p.m. is given as  $-79^{\circ}\text{F}$ . At some time during the day of December 31, if we are to believe the record, the temperature dropped 23 degrees (from  $-56^{\circ}\text{F}$ . to  $-79^{\circ}\text{F}$ .) and rose again 22 degrees (from  $-79^{\circ}\text{F}$ . to  $-57^{\circ}\text{F}$ .). During the same period the barometric pressure fell 0.04 in. In the next 11 hours (9 p.m. on December 31 to 8 a.m. on January 1) the pressure rose 0.13 in.; the minimum temperature during this period was  $-68^{\circ}\text{F}$ . Between 8 a.m. and 9 p.m. on January 1 the pressure dropped 0.66 in. and the temperature rose nearly 30 degrees.

Father Houssais himself must have suspected the minimum temperature entry for December 31. He compared it with a reading from his own centigrade thermometer and in the column "Re-

**Table 1.** Summary of the meteorological records, Dec. 29, 1910 to Jan. 1, 1911.

Date	Barom.* press.	present	Temperature °F.		Sky	Wind	
			maximum	minimum		dir.	vel.
Dec. 29, 8 a.m.	30.29	-50	-52	-59	clear	E	light
	30.21	-56	-58	-60	clear	E	light
Dec. 30, 8 a.m.	30.31	-50	-60.5	-60.5	clear	E	light
	30.39	-55	-59	-67	clear	E	light
Dec. 31, 8 a.m.	30.46	-56	-60	-69	clear	E	light
	30.42	-57	-60	-79	clear	E	light
Jan. 1, 8 a.m.	30.55	-57	-61	-68	clear	E	light
	29.89	-30	-31	-60	clear	W	fresh

\*corrected to  $32^{\circ}\text{F}$ .

In examining the entries between the mornings of December 20 and 31 it should be noted that a minimum of  $-67^{\circ}\text{F}$ . was reported for the 13 hours from 8 a.m. to 9 p.m. on December 30. Some time in the next 11 hours, between 9 p.m. on the 30th and 8 a.m. on the 31st a minimum of  $-69^{\circ}\text{F}$ . was reached and recorded, but at the end of this 11-hr. period (8 a.m. on the 31st) the temperature was  $-56^{\circ}\text{F}$ ., a rise of 13 degrees from the lowest temperature of the

marks" of the official record sheet of December 31 noted the disparity between the two: "Maximum Therm seems be not right Today we have about 65 according to the Centigrad Therm." Unfortunately, his comment, intended to warn of possible error, suggests the introduction of a further error. Father Houssais undoubtedly knew that the maximum thermometer was unreliable below  $-38^{\circ}\text{F}$ ., the freezing point of mercury; yet he wrote

"Maximum Therm seems be not right". Did he not intend to write *minimum* instead of *maximum*? It would seem so, the more so as the maximum readings of the 3-day period ending December 31 are normal enough; it is the minimum of  $-79^{\circ}\text{F}$ . that cries out for correction and, according to the evidence, it is the minimum of  $-79^{\circ}\text{F}$ . that Father Houssais is contrasting with the "65 according to the Centigrad Therm." His loose "65" can only be meant for  $-65^{\circ}\text{F}$ ., arrived at by conversion from his centigrade reading. To read his "65" as  $-65^{\circ}\text{C}$ . would give a Fahrenheit temperature of  $-85^{\circ}$ , an obviously impossible maximum and a minimum even more open to suspicion than the  $-79^{\circ}\text{F}$ . in the record of temperatures for the period under consideration.

Eleven days later Father Houssais stated his disbelief in the  $-79^{\circ}\text{F}$ . minimum in firmer terms. On January 11, 1911 he entered in the mission diary a reading from his own thermometer of  $-57^{\circ}\text{C}$ . ( $-70.6^{\circ}\text{F}$ .) and remarked: "C'est le plus fort degré de froid que j'ai encore enregistré depuis 1895 que je suis dans le Nord". If he had believed that only 11 days before he had experienced weather  $9^{\circ}\text{F}$ . colder, he would scarcely have described the reading of  $-57^{\circ}\text{C}$ . as the lowest he had noted since coming into the North in 1895.

It seems probable that on New Year's Eve 1910-11 Father Houssais simply misread the station's minimum thermometer by 10 degrees, a slip recognized as common among meteorological observers. After writing on the December 31 sheet of the official record a note to point out his distrust of the minimum temperature recorded for that date, he ignored it thereafter. I submit that there is good reason for Canada's official weather records to do the same.

If the lowest minimum reading of December 31, 1910 at Fort Good Hope is rejected, the lowest minimum in Canada before the record of  $-81^{\circ}\text{F}$ . in the Yukon Territory on February 3, 1947 is the  $-78^{\circ}\text{F}$ . recorded at Fort Vermilion in northern Alberta on January 11, 1911—the day when Father Houssais wrote in the mission diary at

Fort Good Hope: "C'est le plus fort degré de froid que j'ai encore enregistré..."

Fr. Arthur Robin, O.M.I., and Fr. René Fumoleau, O.M.I., copied passages from the *Codex Historicus* of the R.C. Mission at Fort Good Hope, N.W.T. Officers of the Meteorological Branch of the Department of Transport helped by supplying photostats of the original records and Mrs. Wilson Follett gave valuable editorial assistance.

ALAN COOKE\*

\*Stefansson Collection, Hanover, N.H., U.S.A.

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