

From the last column, headed "Mean Fluctuation," it is seen that between the mean for all Ontario, on June 27, and the means at the several stations, there is an average difference of  $2^{\circ} 5$ , the temperature ranging from  $77^{\circ} 6$  at Toronto to  $87^{\circ}$  at Hamilton or  $9^{\circ} 4$ . For June generally there is a range of nearly  $8^{\circ}$  between Goderich or Thornhill and Fitzroy Harbour.

The disagreement that may occur in the amount of rain that falls at different places in a single month is made apparent from the following table. Thus, taking all the stations, there was an average fall of 3.51 inches, a mean fluctuation of 1.1 inches, nearly, and a range of 6.81 inches between Toronto, where the fall was heaviest, and at Glencoe, where it was least.

RAIN fall at various Stations in Ontario in June, 1870:—

Barrie.	Belleville.	Collingwood.	Dundas.	Fitzroy Harbour.	Georgina.	Glencoe.	Goderich.	Gwillimbury, North.	Hamilton.	Ingersoll.	Kincardine.	Markham.
in. 4.44	in. 2.50	in. 5.11	in. 4.12	in. 2.16	in. 4.83	in. 1.28	in. 3.28	in. 2.52	in. 2.83	in. 2.19	in. 2.18	in. 4.47
Paris.	Peterborough.	Pembroke.	Simcoe.	Speedie.	Stayner.	Stratford.	Thornhill.	Toronto.	Weston.	Widder.	Windsor.	Woodstock.
in. 2.67	in. 3.01	in. 1.65	in. 2.88	in. 3.54	in. 4.61	in. 2.92	in. 3.05	in. 8.09	in. 3.44	in. 5.31	in. 4.45	in. 3.96

OBSERVATIONS BY THE REV. C. DADE, OF GEORGETOWN, ONTARIO.

Made at Toronto, from January, 1831, to April, 1841.

The register of Mr. Dade includes a record of temperature, the direction of the wind, rain, snow, and miscellaneous phenomena. Although he was engaged in arduous duties in connection with Upper Canada College, the observations were all made by himself on the premises of that establishment, and, as regards temperature, were carried on (Sundays included) with hardly the intermission of a day, excepting when he was absent from Toronto. During the latter half of August and the whole of September in 1831 and 1833, no record was kept. Mr. Dade was absent in England from the middle of October, 1838, to the end of June, 1839. All these months, of course, have been omitted in the table given below. In one instance,—August, 1835,—observations were suspended for several days in the middle of the month. This month, though of inferior value, has been retained. Prior to October, 1838, the thermometer was read at 8 a.m., noon, and 5 p.m., excepting in a few instances in 1831, when the morning reading was 7 a.m. From July, 1839, forwards, the 5 p.m. reading ceased altogether. Excepting during the breaks above named, the readings at 8 a.m. were made on every day but one throughout the series. The omissions in the noon and afternoon readings were much more frequent during a large portion of the series; but when the 5 p.m. readings were discontinued, from and after July, 1839, the noon readings were rarely neglected.

Now, in endeavouring to combine these temperature observations into monthly means, two difficulties suggest themselves:—In the first place the hours of observation are not suited to yield directly the daily or monthly means; and, secondly, the unequal number of observations at the different hours would give a too preponderating influence to the 8 a.m. readings. To obviate these two difficulties, as far as possible, a process of reduction has been employed, which consisted in what was *equivalent* to reducing each reading to the mean of the day, by applying to it the correction for diurnal variation deduced from the observatory records of 1842 to 1848; the quotient arising from dividing the gross sum of all the observations so corrected (in a single month), by the gross number being taken as the mean temperature of the month. The monthly means found in this way for the several years are given in the following table; but as irregularities occur in the numbers of observations in the several months of the same and different years, the general monthly means, at the foot of the table, have been derived from the *total* sums and *total* numbers in the same month for different years. Below the line of general monthly means are given the *annual variations* or differences of the monthly means in excess (marked +), or in defect (marked -), from the general annual mean ( $44^{\circ} 26$ ). For the sake of comparison analogous numbers have been also given, derived from the observatory records for an early and a late group of years, and embracing, respectively, six and ten years.

like Mr. Dade, may possess trustworthy documents relating to the climate of any part of Canada in remote times, to give me, by their means, an opportunity of tracing backwards the climatic movements to which I have referred.

\* The hours 7 a.m., 2 p.m., and 9 p.m., although not absolutely the best, yield a mean not far from the truth, and have been recommended partly because they are more likely to suit the convenience of the majority of observers than other combinations, and also because they are the same as those adopted by the Smithsonian Institution. When only two observations are taken, I have recommended to a.m. and 10 p.m., or any other pair separated by 12 hours.