day, on the annual average, is between 2 and 4 p. m. and the coldest between 4 and 6 a. m. In the winter months, the minimum is at the later, and the maximum at the earlier hour; in summer, the reverse takes place. The mean *daily* difference in the height of the thermometer in the several quarters of 1841 and 1842 were as follows:—

	Max.		Min.		Difference.		
Winter,...	28.1°	32.0°	21.2°	25.9°	6.9°	6.1°	= 6.50°
Spring, ...	47.3	50.7	33.1	37.4	14.2	13.3	= 13.75
Summer,.	74.3	71.3	57.1	54.2	17.2	17.1	= 17.15
Autumn,.	51.8	51.0	41.9	40.1	9.9	10.9	= 10.40
In the yrs.	50.1	50.9	38.6	39.7	11.5	11.2	= 11.35

In 1841, June was the hottest month of the year and February the coldest; the respective mean temperatures were 66° 2′ and 23° 2′. In 1842, August was the hottest month and January the coldest, the temperatures being 65° 7′ and 27° 9′. The monthly means were obtained by the result of observations every two hours; the annual mean of 1841 being 43° 9′, and 1842, being 44° 8′, = to 44° 35′; on the two years,

The temperature in 1841 and 1842, as shown in quarterly and annual means, is ascertained to be—

Winter, ...	24.6°	28.5°	= 26.5°
Spring, ...	39.6	43.2	= 41.4
Summer,.....	65.4	62.4	= 63.9
Autumn,.....	46.2	44.9	= 45.5
In the years,.....	43.9	44.8	= 44.35

Barometer.—The daily, monthly, and annual means of the barometer, for 1841 and 1842, were also obtained by observations at every two hours, at 32° Fah., and are reckoned at 29 inches + the numbers below. The daily difference in the quarters was—

	Max.		Min.		Difference.		
Winter,.....	.631	.578	.574	.529	.057	.049	= .053
Spring,.....	.632	.618	.580	.574	.052	.044	= .048
Summer,....	.653	.678	.592	.628	.061	.050	= .0555
Autumn,....	.626	.664	.593	.616	.033	.048	= .0405
In the years,	.634	.635	.588	.591	.046	.044	= .045

The quarterly and annual means, as ascertained for 1841 and 1842, are—

Winter,.....	.601	.551	= .576
Spring,.....	.608	.591	= .600
Summer,.....	.620	.650	= .635
Autumn,.....	.606	.637	= .622
In the years,.....	.609	.608	= .608

The following particulars relative to the diurnal variation of the barometric pressure are derived from the tables. The morning maximum takes place at eight A.M. in the summer, and at ten A.M. in winter; in spring and autumn it is almost equally divided between those hours. The afternoon minimum takes place at two P.M. in winter; six P.M. in summer, and at four P.M. in spring and autumn and in the annual means. The second maximum occurs at eight P.M. in winter, is equally divided between eight and ten P.M. in autumn, is at ten P.M. in spring, and at twelve in summer. On an average of the whole year it is at ten P.M. The second minimum is at two A.M. in spring, summer and autumn, and in winter it occurs two hours and occasionally four hours earlier. From the average heights of the barometer in the several quarters, the winter and spring quarters are found below, and the summer and autumn quarters above, the general mean. The mean height in August is higher than that of any other month in 1841 and 1842, and February, in 1841, and January, in 1841, have the lowest barometric pressures of those years respectively.

Elastic Force of Atmospheric Vapour.—The elastic force of the vapour at Toronto has but one maximum and one minimum in the twenty-four hours. The maximum occurs at two P.M. on the annual and separate quarterly averages. The minimum takes place at four A.M. on the average of each year and in each separate quarter, except in autumn, 1842, when it was at six A.M.; but if the observations were made at shorter intervals than two hours, the minimum would probably be found to take place earlier in spring and summer than in winter and autumn. The average daily difference between the greatest and least elevated force of the vapour in each of the two years and in each quarter was ascertained to be in inches.

	Max.		Min.		Difference.		
Winter,.....	.130	.149	.112	.132	.018	.017	= .0175
Spring,.....	.214	.216	.168	.179	.046	.037	= .0415
Summer,....	.516	.480	.408	.371	.108	.109	= .1085
Autumn.....	.300	.277	.257	.235	.043	.042	= .0425
In the years.	.290	.279	.236	.231	.054	.048	= .0510

The quarterly and annual means for the two years, 1841 and 1842, as ascertained, are—

Winter, ...	.121	.140	= .131
Spring,.....	.188	.196	= .192
Summer,.....	.462	.426	= .444
Autumn, ...	.279	.258	= .269
In the years,.....	.262	.255	= .259

The average amount of tension of the vapour is less in winter and spring, and greater in summer than the mean of the year. Autumn approaches nearly to the mean but is somewhat higher. Both in 1841 and 1842, the month of August has the greatest elastic force of vapour. February, in 1841, and January, in 1842, have the least in their respective years. These are the same months which have the highest and lowest mean heights of the barometer in the same years.

Humidity of the Air.—The mean degree of humidity in both years is 78, or on an average of the whole year, the air contains a proportion of vapour of which the elastic force is 78 parts of 100 of the amount required for saturation. The spring is the driest quarter, then the summer, then the autumn, and the winter is the most humid quarter. May is the driest month of the whole year,* and December

* It must be borne in mind that these calculations are based on observations at Toronto. Its position on the borders of Lake