

METEOROLOGY FOR OCTOBER, 1864.

PRIVATE OBSERVATORY, HOBART TOWN.

Year.	Barometer reduced to standard temperature, 32 degrees.	Mean Temperature of the Air.	Maxima Thermometer Readings.	Minima Thermometer Readings.	Mean daily range of temperature.	Degree of humidity, 100 complete saturation.	Extent of cloudy sky 10 for sky covered.	Mean amount of ozone 10 for maxima.	Total amount of Rain.
	In.	°	°	°	°				In.
1841	29.835	54.08	80.5	36.6	17.1	.70	4	—	2.78
1842	29.526	50.36	72.0	39.0	17.1	.74	5	—	1.41
1843	29.618	54.04	75.6	38.2	21.3	.67	5	—	1.47
1844	29.776	52.75	72.2	36.5	18.6	.71	4 ¹ / ₂	—	2.57
1845	29.924	54.66	91.5	35.5	16.8	.76	5 ¹ / ₂	—	1.19
1846	29.831	53.77	79.6	35.2	19.0	.72	6	—	1.61
1847	29.852	52.51	80.0	37.6	20.3	.76	6 ¹ / ₂	—	1.74
1848	29.699	50.41	72.0	39.0	16.9	.79	6 ¹ / ₂	—	1.27
1849	29.744	51.35	73.3	35.8	19.6	.76	5 ¹ / ₂	—	1.41
1850	29.896	53.16	78.8	35.9	21.2	.74	5 ¹ / ₂	—	0.26
1851	29.788	51.85	80.0	38.0	18.2	.76	5	—	0.79
1852	29.654	51.93	78.2	36.3	16.4	.73	5 ¹ / ₂	—	1.77
1853	29.877	51.31	72.3	35.2	14.8	.84	6 ¹ / ₂	—	2.59
1854	29.682	54.06	85.9	35.0	17.4	.80	6 ¹ / ₂	—	1.74
1855	29.772	60.00	85.0	36.0	17.00	.72	4.75	—	1.51
1856	29.609	55.19	74.0	35.0	22.00	.68	5.46	—	2.22
1857	29.835	54.20	72.0	36.0	20.22	.72	6.60	7.87	2.20
1858	29.934	58.09	84.0	38.0	23.35	.69	4.39	6.41	0.75
1859	29.715	55.37	82.0	36.0	18.06	.71	6.16	7.80	1.91
1860	29.919	55.11	75.0	40.0	17.41	.76	7.12	7.72	3.09
1861	29.747	56.25	87.0	39.0	20.54	.72	5.81	7.42	5.04
1862	29.966	57.33	81.0	37.0	21.12	.71	4.77	7.96	1.72
1863	29.667	53.58	76.0	39.0	16.84	.74	6.53	8.41	3.11
1864	29.887	53.64	68.0	38.0	16.32	.74	6.49	8.79	2.63

The mean in all cases is taken from the sums of each column, and not from the maximum and minimum.

The twenty years' standard tables are used for obtaining the difference from average.

Leafing, flowering, and fruiting of a few standard plants, in the Royal Society's Gardens during the month.

- 3rd. *Carpinus Betulus*, Hornbeam, commencing to leaf.
 10th. *Ailantus glandulosa*, commencing to leaf.
 13th. *Morus Niger*, Black Mulberry, commencing to leaf.
 15th. *Lilia rubra*, Lime Tree, commencing to leaf.
 18th. *Maclaura aurantiaca*, Osage Orange, commencing to leaf.
 20th. *Ulmus campestris*, Elm, seeds commencing to fall.
 25th. *Melia azederach* commencing to leaf.

	In.
Barometer, highest, 1st, 7h. a.m.	30.321
„ lowest, 11th, sunset	29.234
„ mean for the month	29.887
Being 0.107 above the average.	.
Temperature, highest on the 24th and 25th	68.00
„ lowest on the 28th	38.00
„ mean for the month... ..	53.64
Being 0.81 below the average.	

Rain fell on the 4th, 5th, 6th, 7th, 8th, 11th, 16th, 19th, 27th, 28th, and

31st, to the amount of 2·63 in., being 0·86 in. above the average. Spontaneous evaporation, 2·87 in.

Electricity active on the 1st, 2nd, 15th, 19th, 20th, 21st, 24th, 25th, 26th, 27th, and 28th.

Snow was never absent from Mount Wellington, and had a fresh deposit on the 26th.

FRANCIS ABBOTT.

ANALYSIS OF THE OBSERVATORY RECORDS FOR OCTOBER,
1864; IN CONJUNCTION WITH THOSE OF BIRTHS, DEATHS &c.
By E. SWARBRECK HALL.

Most of the meteorological phenomena this month were highly conducive to health, and the deaths were somewhat below the average of the previous seven years' Octobers, and would have been much more so, but for the extensive and frequent alterations of atmospheric pressure, and the remarkably inclement weather on the 26th, 27th, and 28th days of the month, within which period 12 out of the 41 deaths in the month occurred.

Atmospheric-pressure mean was, 29·887, which is +·107 above the 20 years' adopted standard for October, and +·220 higher than October 1863. The maximum pressure, 30·321, occurred on the 1st, and the minimum, 29·234, was recorded on the 11th. The extreme range in the month, consequently, was only 1·087 inches. In the previous nine years seven Octobers had a much more extensive range, 1863, especially, exceeded the present month by ×·724 of an inch, being marked by a somewhat higher maximum and a very much lower minimum. In the daily variations of atmospheric pressure, however, the present October was most inimical to life. Between the 10th and 11th, observations at 1 p.m., the barometer fell ·741, or nearly three fourths of an inch; but from the evening observations of the 9th and 11th, that is in 48 hours; the depression was—·946 of an inch. No October of the previous nine years, except 1863, which had —·820, had nearly so extensive a movement in the pressure in any 24 hours. On 12 other days mutations, exceeding one-fifth of an inch, were noted, one of them being a rise of upwards of half an inch—the 17th.

The *Winds* this month were favorable to health, for though the total force 109·01 lbs., is +10·84 above the average of the previous seven years, yet the predominant winds were from the healthy ocean quarters, and well laden with moisture, and ozone. Three of the seven years had a greater amount of wind force, but then north and north-west had a larger proportion of the whole than in the present month. *Calms* were recorded at 17 observations, being +1½ more than the average. The strongest winds noted had a pressure of 5·21 lbs. to the square foot and were registered 6 times.

Temperature mean was —·081 below the 20 years' average, being 53·64 degrees, and nearly the same as 1863, but very much less than any other October of the previous ten years, and only ·30 of a degree warmer than the previous month of September—by the self-registering thermometers, the mean temperature was only 53·59 degrees. Never before have I seen those thermometers give a mean below the others. The maximum record was 68 degrees on the 24th and 25th, and the minimum was 38 in the night of the 27th. Though this is an unusually small range for the whole month, yet occurring within three days, it told heavily on aged persons and weakly invalids, as alluded to before. The previous month of September with no lower minimum temperature, had a maximum of five degrees more; October 1863 had the extremes of 76 and 39—the widest extremes in October in 24 years' records is 91·5 maximum in 1845, and 35 minimum, in 1854 and 1856. With the exception of the three days commented upon, temperature was favorable to health and life, being cool and equable. All the previous nine years' Octobers had a wider range of temperature by five to nineteen degrees.

The mean *daily range of temperature* was only 16·32 degrees, being — 2·70 less than the 20 years' mean, and below any October of the previous 23 years, except 1853, which was only 14·80 degrees. Last year's October, however, did not exceed the present much, being only about half a degree higher. The greatest range on any day was 27 degrees on the 2nd, which is the lowest recorded in the previous ten years.

Solar intensity had a mean — 1·24 degrees less than the average of the previous eight years, being only 94·32 degrees. 1863, however, was about half

a degree less. The extremes were 113 degrees maximum on the 26th (which is noteworthy in connection with the previous remarks as to the air, temperature, and deaths on this day and the two succeeding). The minimum was 59 degrees on the 8th.

The *Terrestrial radiation* thermometer gave a mean of 43.08 degrees, which is +1.37 degrees above the mean of the previous eight years, though both 1860 and 1862 had a still warmer mean. The maximum was 48 on the 26th; the minimum 35 on the 27th. That the extremes, in the opposite directions, should be on adjoining days is curious, and gives another datum for the high mortality at this period.

Rain fell on 11 days out of the month, to the aggregate amount of 2.63 inches, being +.86 of an inch above the standard average of the month, though neither in amount, or in the number of rainy days equal to October last year. The number of wet days moreover for the present month is -4.44 below the average of the previous nine years, showing that the quantity precipitated fell more heavily than usual. On the 5th the fall, estimated from 10 p.m. to 10 p.m., was more than an inch, and thoroughly scoured the city rivulet and all its subsidiary drains and feeders. At this period of the month, 4th to 8th inclusive, rain was registered every day, amounting altogether to one and a half inches. On the 11th, again, half an inch of rain fell. On the 27th there were frequent strong cold squalls from south east to west with snow, hail, and rain. The snow remained even in the streets, for some time, and Mount Wellington was beautifully mantled with it. This inclement winter-like day excited much surprise in many persons, yet the meteorological records of Hobarton, show that such like weather, in varying degree, is not unusual from about the 11th to the 23rd of October. At the latter date, in October 1859, the low hills about the city were covered with snow. *Snow* was never absent from Mount Wellington during the month. In 1863 it did not disappear until the 7th December.

Humidity mean was 74 being +1 above the 20 years' average.

Elastic force of vapour had a mean of 306 being +5 above the 20 years' standard, though -1 less than 1863 had.

Cloud mean was 6.49, which is +.87 above the 20 years' mean, but much the same as October 1863.

Ozone in September was more abundant than ever before recorded, yet the present month has exceeded it by +.05 being 8.79, and is +1.14 more than the average of the previous seven years. Its superabundance was so modified, however, by the moist state of the atmosphere, that inflammatory affections of the organs of respiration were few. Only three deaths from the diseases of these organs having taken place, the youngest of the three being 56 years old. In the previous month there were eight, and in October 1863 seven.

Electricity had 22 positive indications with maximum tension of 9, in the latter respect by far the highest ever known, though in the former one less numerous than in September. Negative had 38 records with maximum tension of 8, exceeding, therefore, September's registry, both numerically and potentially. "Nil" was registered twice, at the 1 p.m. observation of the 5th and 11th. *Lightning* was never observed during the month.

The *Deaths* in this October were 41, being -3 less than the average of the previous seven years, and -8 less than 1863 had; 1859 had the same in number, but 1861 had only 29, and 1862 only 30; 1857 and 1858, however, had each 57, which is the maximum. In the tabular analyses of "Ages" and "Diseases," the comparative proportions for each year, for the different groups of ages, and the different classes of diseases are detailed:—

Oct., 1864.	Ages.	Octobers.							Avg. 7 yrs. Octs. 1857-1863.
		Sept., 1864.	1863	1862	Min. 1861	1860	1859	1858 Max.	
8	Under 1	6	4	2	8	6	9	9	6 6-7
3	1 to 5	1	6	3	3	10	3	15	6 5-7
4	5 to 20	4	2	2	0	4	6	4	3
8	20 to 45	14	8	9	12	10	7	12	9 5-7
8	45 to 60	6	13	4	2	8	9	6	9 1-7
10	60 and above	6	16	10	4	7	7	11	8 4-7
41		37	49	30	29	45	41	57	44

"Under one year of age" (or in fact under five months old) the deaths were 8, being +1.1-7 above the seven years' average, though four of the seven had more. At "1 to 5" the deaths were less than half the average. Altogether

the deaths under 5 years old were considerably below the average, and constituted a very small portion (little more than one-fourth) of the total mortality at all ages. From "5 to 20" the deaths were one-third above the average. At "20 to 45" the deaths were -1 5-7 less than the average, only 1859, having fewer, 1863 the same number, and all the other years more. From "45 to 60" the deaths were also below the average by -1 1-7. At "60 and above," the deaths were +1 3-7 above the average. This month, therefore, has been unfavorable to very young and very old persons. Two of the old persons were each aged 80 years, and three others had passed beyond the "three score and ten."

Oct., 1864.	Classes of Disease.	Octobers.								Avg. 7 yrs. Octs. 1857-1863.
		Sept., 1864.	Octobers.							
			1863	1862	Min. 1861	1860	1859	1858	Max. 1859	
2	1 Zymotic	5	6	3	1	12	4	11	6	6 1-7
6	2 Constitutional	9	10	9	2	9	5	13	9	8 1-7
22	3 Local	29	26	12	17	22	28	23	30	22 4-7
6	4 Developmental	3	2	5	7	1	3	7	4	4 1-7
5	5 Violent, &c.	0	5	1	2	1	1	3	8	3
41		37	49	30	29	45	41	57	57	44

The small number of two deaths from *Zymotic diseases*, shows how great was the atmospheric purity of the month, the average being more than three times as much. *Constitutional diseases* were nearly one-fourth less fatal than usual. Two of the deaths were from *cancerous affections*, one was 75 years old, and died at the Male Invalid Asylum. Four were deaths from *consumption*, one of them being a native of Tasmania. *Local diseases* were slightly below the average, on the whole class. 12 of the number were from diseases of the *Brain and Nervous System*. This order usually furnishes a large proportion of the deaths when atmospheric pressure has undergone numerous and extensive perturbations. The *Heart and organs of circulation* had only three deaths. The *Lungs and other organs of respiration* had few (3) deaths, as before noticed. The *Digestive organs* had four deaths. In the other orders of this class there were not any deaths. The *Developmental class* had more than the average of deaths, owing principally to deaths from *old age*. The class of *violent and accidental deaths* was also above the average. Of the five, one was from *burns*, one from *drowning*, two from suffocation, of which one was a child overlaid by its mother, the other an old man by the inhalation of carburetted hydrogen gas, which had escaped into his bedroom, and from the danger of which he rejected all warning; the last was suicide by cutting the throat. There were seven *inquests* during the month, being precisely the same in number as October 1863 had. Ten died in the *Hospital* being -6 less than in 1863. In the *Male Invalid Asylum* there were 4 deaths, aged respectively 65, 73, 75, 80. In 1863 there were 5. Of the 41 deaths, 4 died in the Glenorchy district, the rest in the city; 24 were males, 17 females. On the 1st, 9th, 10th, 15th, 22nd, 31st, no deaths took place. The greatest number that died on any day was 6 on the 26th, and the next 4 on the 28th. The most fatal period of the month was the three days, 26th to 28th inclusive, when 12 deaths took place, which has been previously commented upon. In the first week of the month the deaths were 8, in the second 6, in the third 9, in the fourth 16, in the last three days 2.

The registered *Births* were 70, being +3 more than in October 1863.

