

METEOROLOGY FOR FEBRUARY, 1864.

PRIVATE OBSERVATORY, HOBART TOWN.

Years.	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	29.801	62.60	91.6	47.5	24.3	.67	6	—	3.10
1842	29.949	63.09	81.0	42.7	19.0	.72	5 $\frac{1}{2}$	—	1.05
1843	29.869	63.19	90.4	43.5	19.6	.71	5 $\frac{1}{2}$	—	0.11
1844	29.827	62.88	96.2	45.0	21.4	.63	4 $\frac{3}{4}$	—	0.34
1845	29.758	60.47	83.0	48.8	18.4	.72	5 $\frac{1}{2}$	—	1.91
1846	29.556	58.89	91.8	44.0	19.4	.70	7	—	2.64
1847	29.828	60.91	100.0	41.4	18.9	.71	6 $\frac{1}{2}$	—	0.07
1848	29.951	59.31	81.0	42.7	16.2	.75	6	—	0.79
1849	29.783	56.58	85.8	40.5	18.4	.75	5 $\frac{1}{2}$	—	1.02
1850	29.776	60.13	91.8	41.5	18.7	.71	5 $\frac{3}{4}$	—	1.10
1851	29.866	61.17	97.3	46.2	18.8	.69	5 $\frac{3}{4}$	—	0.58
1852	29.776	61.33	94.0	47.0	20.0	.70	4 $\frac{3}{4}$	—	0.19
1853	29.570	58.23	77.8	42.7	15.7	.76	7	—	1.43
1854	29.847	59.28	89.9	42.0	19.9	.70	5 $\frac{3}{4}$	—	9.15
1855	29.902	68.00	95.0	41.0	18.30	.79	5.75	—	0.18
1856	29.765	64.51	94.0	42.0	23.44	.68	6.79	—	0.68
1857	29.966	64.00	93.0	41.0	23.00	.71	5.70	—	0.43
1858	29.954	64.50	89.0	42.0	22.32	.70	4.30	7.50	0.42
1859	29.814	62.32	99.0	40.0	23.17	.66	5.00	6.03	1.70
1860	30.025	63.56	95.0	46.0	19.27	.65	6.25	6.96	0.33
1861	29.846	63.64	81.0	46.0	17.60	.73	5.37	6.89	4.16
1862	29.744	64.21	87.0	42.0	22.42	.64	5.15	6.02	0.22
1863	29.855	63.39	96.0	44.0	18.92	.69	6.34	7.87	2.40
1864	29.943	60.37	88.0	41.0	18.20	.69	4.92	7.04	1.43

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

Time of leafing, flowering, and fruiting, of a few standard plants, in the Royal Society's Gardens, for the month :—

- 8th.—Kerry Pippin Apple commencing to ripen.
- 10th.—Windsor Pear ripe.
- 12th.—Summer Bon Chretien commencing to ripen.
- 14th.—Green Gage Plum commencing to ripen.
- 20th.—Ash Seeds commencing to fall.
- 28th.—Sycamore seeds commencing to fall.

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

Some of the meteorological phenomena this month were adverse to health and life, but those of the reverse character so much preponderated, that the mortality is about 25 per cent. less than the average of February for the previous seven years.

Atmospheric pressure had the high mean of 29.943, which is +.093 above the twenty years' mean for this month. The maximum pressure, 30.368, occurred on the 28th; the minimum happened on the 19th, and was 29.391; the month's range was consequently .977 of an inch, which is higher than the four previous years. The greatest movement of the barometer on any day was a rise of +.359 on the 1st, followed by a fall on the next day of -.357. There were only five other days on which the movements exceeded the fifth of an inch. The perturbations of pressure were, therefore, by no means great, but the high pressure was pretty uniformly continuous; and in combination with cold shade temperature and hot sunshine, injurious to health.

The *wind-force* this month, 57·49lbs., is so nearly the average of February, that it only differed by —·38. The strongest winds had a pressure of 5·21lbs. to the square foot, and occurred three times. The general character of aerial movement was:—moderate winds from the northerly quarters by night, and gentle breezes from the ocean quarters by day. Of the 29 observations at 7 a.m. 23 were noted as N., N.W. and N.E.; at 1 p.m., 22 were registered as E., S.E., S., S.W., and W.; and at sunset 26 out of the 29 were from the same points of the compass. On the hottest day of the month, the 18th, the wind was from the N.W., but it was calm both at 7 a.m. and 1 p.m. This was the nearest approach to a hot wind during the month. Aerial movement was, therefore, propitious to health. The calms were 17, which is slightly above the average.

Temperature mean was only 60·37 degrees, which is —2·16 degrees colder than the 20 years' average, and about three degrees less than February last year. This has been the coldest February since that of 1854. Altogether there have only been six colder Februaries in the last 23 years. The mean deduced from the self-registering maxima and minima thermometers is 61·17°. The highest shade temperature of the month was only 88° on the 18th. The lowest was 44° on the 11th. The range, 44°, therefore, occurred within eight days. The minimum temperature was as low in 1863, but the maximum was 8° higher.

The *daily range of temperature* had a mean of only 18·20°, which is, —2·19°, below the 20 years' average. Only 1848, 1853, 1861, had a smaller daily range. The greatest range on any day was only 27° on the 16th; the lowest was seven on the 13th. Only five years out of the last 23 had so small a maximum. Shade temperature, therefore, in all its aspects was very propitious to health.

By the *solar thermometer* the mean temperature of the month was, 108·13°, which is +·13 above that of the previous 8 years, but + 5·22° higher than February last year. The maximum by this thermometer was 129° on the 18th. Only 1856 and 1857 had a higher maximum out of the previous eight years. The minimum was 67° on the 8th, but excepting this wet day and the 18th, the sun's rays were very uniformly distributed throughout the days of the month, ranging from 94° to 121, but, only three times altogether, below 100. So much sunshine is favorable to health, provided due care is taken, but the reverse being unfortunately the rule, its dire effects are evident in the disproportionately high rate of mortality, from "diseases of the brain and nervous system" as will be seen hereafter.

Terrestrial-radiation mean, 49·10°, is—·57 of a deg. below the average of the previous 8 years, and—3° below 1863. The maximum was 59° on the 18th, the minimum 41 on the 24th, the latter being 2° lower than the minimum of 1863.

The *rain-fall* was 1·43 inches, which differs only from the 20 years' average by—·04 of an inch. From sunset of the 7th to that of the 8th, 1·10 inches fell, with a most desirable cleansing effect on the streets and gutters. On the 19th, the useful fall of ·20 of an inch, was precipitated. The number of days on which rain was registered, is 6, but it would be 7, were the records made from 12 p.m. to 12 p.m. The former is, —2·12 days below the average of the previous 9 years. February 1863 had nearly an inch more rain.

Snow never appeared on Mount Wellington during this month, but in February 1863, it was seen on the 27th and 28th.

Spontaneous Evaporation was 3·03 inches, or nearly double the rain-fall.

Elastic-force of Vapor mean, was, 363, being 10 below the 20 years' average.

Humidity had a mean of 69, which is—1½ below the 20 years' standard.

Cloud mean was, 4·92, which is—·77 less than the 20 years' average, 1844, had 4·50; 1852, 4·67; 1858, 4·30; all the other 20 years had a much higher cloud mean than the present February.

Ozone had a mean of 7·04 which is +·16 above the 6 years' mean, though it is—·83 below what 1863 had, doubtless owing to the greater wind-force and rain-fall of that month. The range of the present month was maximum 9, minimum 5·5.

Electricity was palpable at every one of the 58 observations during the month. The positive indications were 16, with the maximum tension of 7·0. Negative was recorded 42 times with maximum tension of 7·5. No lightning was observed, or thunder heard, during the month.

The mortuary record this month bears a most favorable comparison with all the seven years' Februaries that preceded it. The *deaths*, 47, are 15 and one-seventh less than the average of the whole. 1861 was numerically less—42—; but the following table, exhibiting the proportion of deaths in the different groups of ages in the present year, contrasted with the minimum and maximum years of mortality, and also that of February 1863, will show that the present

is really the healthiest year of the whole, as the deaths under 5 years of age, are actually 4 less than in 1861.

Feb., 1864.	Ages	Minimum year. Feb., 1861,	Maximum year. Feb., 1859	Feb., 1863.
10	Under 1 year old	8	31	25
4	1 to 5 ditto	10	11	9
1	5 to 20 ditto	2	2	2
11	20 to 45 ditto.	3	18	12
8	45 to 60 ditto	8	5	5
13	60 and above	11	8	16
47		42	75	69

While last year had 22 more deaths than the present year, it is seen above that the groups of ages "5 to 60" only differed by 1864 having one more, while in the ages "1 to 5" 1863 had 20 more, and in "all above 60," 1863 had 3 more. In the "zymotic class" of diseases only 3 deaths occurred this month, one, a boy of 6 years old, from scarlatina, a child of nine months from diarrhæa, and a man of 37 from the same. In 1863, this class of diseases gave 28 deaths; in 1862, 27; in 1861, 13; in 1860, 19; in 1859, 29; in 1858, 28; in 1857, 6. The inferior salubrity of the numerically minimum year, 1861, is hereby again clearly demonstrated in comparison with the present year's February.

In the "constitutional class" of diseases, the deaths were 6, four being from consumption, and one of them born in Tasmania.

In the 1st order of the 3rd class, "diseases of the brain and nervous system" there were the large number of 17 deaths—4 from apoplexy; 4 from paralysis; 1 from epilepsy; 6 from convulsions; 2 brain-disease. January had only 3 deaths in this order of diseases. February 1863 had only 7. The meteorological cause of the fatality in this group, has been previously indicated.

In the 2nd order, "diseases of the organs of circulation" 4 deaths were recorded, and these diseases are much influenced by the same atmospheric phenomena as the former.

In the third order "diseases of the organs of respiration" only one death took place—a remarkable event.

Three deaths from *old age* were registered, the oldest being 89.

Only one death from *accidental violence* occurred.

There were two inquests held on deaths which happened within the month; February 1863 had 7.

In the first week of the month, 16 deaths took place. In the second 11. In the third 9. In the fourth 10. On the last day one. On five days in the month not a single death occurred. The greatest number on any day was 5, on the 1st, when the greatest movement in the pressure of the atmosphere was noted. The greatest number of deaths on any two consecutive days was 6, on the 25th 26th. The greatest number on any four following days was 9, and occurred 1st to 4th, 5th to 8th 14th to 17th; from 24th to 26th was the most fatal period having 8 deaths.

The registered *births* were 77, being two more than in February, 1863. The total births registered in all Tasmania, in 1863, were 205 four-sixths less than the average of the previous six years, but the marriages last year exceeded the average, so that a different result may be expected this year. The colony gained in population, numerically, up to the 31st December, 789 individuals, but all by children born. The computed population on 31st December 1863, I make to be 93,117, being an increase of 3,140 since the census of 7th April 1861. With a population annually becoming so much younger, on the aggregate, an increased death rate, instead of the reverse, might reasonably be expected.