

METEOROLOGY FOR MARCH, 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	29.972	61.45	89.0	43.2	22.2	.69	4	—	0.33
1842	29.947	59.14	81.0	47.3	19.6	.68	5	—	0.07
1843	29.847	59.91	83.6	41.2	18.3	.69	5½	—	0.02
1844	29.651	56.35	85.8	39.5	19.4	.69	5	—	3.22
1845	29.891	59.25	95.0	42.8	20.4	.71	4½	—	1.55
1846	29.796	57.87	98.8	40.4	19.4	.73	6½	—	2.15
1847	29.772	57.95	88.2	42.5	16.3	.75	6½	—	2.67
1848	29.743	59.56	81.0	47.3	18.2	.72	6	—	1.18
1849	29.575	54.73	75.0	39.0	16.8	.72	6½	—	2.37
1850	29.820	65.53	97.0	42.0	20.2	.63	5½	—	0.29
1851	29.674	56.98	80.0	42.1	17.5	.73	5	—	0.73
1852	29.887	58.12	87.2	40.6	18.6	.69	4½	—	0.31
1853	29.816	55.05	75.0	38.4	16.9	.76	5½	—	0.80
1854	29.668	55.67	75.0	41.7	14.8	.78	6	—	7.60
1855	29.961	61.00	84.0	38.0	17.16	.70	5.25	—	1.38
1856	29.968	64.64	91.0	38.0	23.80	.73	6.41	—	1.63
1857	29.802	60.00	82.0	40.0	23.50	.69	5.55	—	1.04
1858	30.021	62.16	90.0	42.0	22.47	.70	4.34	7.10	2.38
1859	29.906	59.20	85.0	41.0	22.29	.69	5.47	6.21	0.26
1860	29.892	62.38	90.0	46.0	20.25	.69	5.00	6.87	1.68
1861	29.919	64.03	99.0	45.0	20.58	.67	5.63	6.76	0.82
1862	29.900	62.38	87.0	41.0	20.48	.69	4.70	6.61	1.09
1863	29.966	61.33	86.0	45.0	15.00	.78	6.80	7.92	4.87
1864	30.109	60.30	81.0	43.0	20.32	.74	4.05	6.96	1.26

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, during the month:—

- 12th.—Coe's Golden Drop Plum, commencing to ripen.
 14th.—Seckle Pear, commencing to ripen.
 21st.—Tips of Elm, turning yellow.
 23rd.—Horse Chestnut, leaves turning brown.
 28th.—Ash leaves commence falling.
 31st.—Oak leaves commence falling.

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

The pleasant weather which so generally prevailed this month, excited almost universal commendation. To the sanitarian alone was the mischievous conditions palpable, which has made this month the most fatal to life of any March during the previous seven years.

Atmospheric pressure was so continuously high that the mean for the month, 30.109, is +.252 above the 20 years' adopted standard mean, and greater than

that of any March on record. Only three times in the previous 23 years, has any month of the twelve, exceeded the present month in pressure, *i. e.*, July 1850, 30.113; July 1860, 30.193; August 1860, 30.160. The maximum 30.497 was attained on the 26th and was never so high in any March of the previous 23 years. The minimum was 29.580 on the 14th, which is also the highest minimum record for this month during the same period. The month's range .917 of an inch, therefore, occurred in twelve days, and is not remarkable for its extent; 1856 and 1859, both had a greater range. The greatest movement of the barometer was a rise of +.375 of an inch, between the 7 a.m. observations of the 25th and 26th. Only six times during the month did the daily perturbations exceed the fifth of an inch. It is almost an unexceptionable rule, that continuously high atmospheric pressure is accompanied with excessive mortality.

The *wind-force* was 52.46 lbs., which is 2.50 lbs. less than the March average. Fortunately the ocean winds had greatly the preponderance, both in number and force. Northerly winds were much below the average in both respects. At seven o'clock in the morning, wind from northerly points of the compass prevailed for 27 out of the 31 days. At 1 p.m., they were only noted 7 times, at sun-set 9 times, so that the sea-breezes kept up a good supply of Ozone, and counteracted to some extent the injurious effects of drought, high solar temperature and excessive atmospheric pressure. The strongest wind recorded had 5.20 lbs. pressure to the square foot, and was registered at 7 a.m. of the 15th. But at an earlier period of the same day a hurricane blew, with a force of 20.83 lbs. and did considerable damage to buildings, shipping, and especially fruit trees. It was a north-wester, but not a hot-wind.

The *temperature* mean was 60.30 degrees, which is +.32 only above the 20 years' mean for March. Nevertheless it was colder than any March since 1859, when it was 58.20 degrees. The mean deduced from the maximum and minimum self-registering thermometers, differed less than usual from the former, being only 61.04 degrees. The maximum temperature of the month was only 81 degrees, and occurred on the 11th and is considerably below that of any March since 1854. The minimum 43 degrees was noted on the 4th, 22nd, and 26th. The months' range, 38 degrees, is less than has happened in any March since 1854.

The *daily range of temperature* had a mean* of 20.32 degrees, which is only +.28 above the 20 years' average, though it is +5.32 higher than March, 1863, had. The greatest range on any day, was only 29 degrees on the 22nd. Every March since 1854 has had a higher maximum than this. The smallest movement of the thermometer on any day was 13 degrees, and recorded on the 3rd and 16th. Shade temperature, therefore, in all its variations, was not inimical to health.

The mean of the *solar-thermometer* was, 107.87, which is +4.86 degrees, above the average of the previous 8 years, and, +12.23 degrees, higher than March, 1863, had. The long continuance of almost cloudless skies, as will be seen hereafter, accounts for this unusual abundance of sunshine. The maximum, 124, occurred on the 11th; the minimum, 74, was noted on the 19th, however, there were only six days altogether on which this thermometer indicated a lower temperature than 100.

Terrestrial-radiation mean was 47.50 degrees, being —.88 of a degree, less than the 8 years' average, and —3.58 degrees lower than 1863 had. The maximum occurred on the 11th, and was 56.5 degrees, the minimum was recorded on the 6th and 22nd, being 39 degrees.

The total *rain* precipitated during the month was only 1.26 inches to the square foot, which is —.26 less than the March average, and —3.61 inches less than fell in March last year. There were only four rainy days, being —6.37 days below the average number for 8 years of March. The downfall on the 3rd was .83 of an inch, and thoroughly scoured the streets and gutters. Again on the 14th there was just rain enough to make the channels flow gently. On the other two days only enough fell to lay the dust, promote decomposition, and thereby pollute the atmosphere. *Snow* was never noted on Mount Wellington during the month.

The total of *spontaneous evaporation* was 2.94 inches.

Elastic force of vapor had a mean of 390, which exceeds the 20 years' average by +35. Four times only in 23 years, has the elastic force of vapor in March exceeded that of the present month.

Humidity mean was 74, being —1½ less than the 20 years' average, but —4 below that of March last year.

Cloud mean 4.05 is below that of any March in the previous 23 years,

except 1841, which had the decimals less. The 20 years' mean is +1.36 above the present month.

Ozone mean, notwithstanding so many unfavorable atmospheric conditions, was +.06 above the month's average, being 6.96. To the predominance of breezes from the ocean points of the compass, we owe this remarkable purity. Nevertheless, March 1863, owing to its copious rain-fall, had more than one degree more for its ozone mean. The range of the present month was from maximum 8.5, to minimum 5.

Electricity had 21 positive indications, with a maximum tension of .75. Negative had 39 records, with a maximum tension of 6.5. There was only one day, the 14th, on which electricity was "nil."

The *deaths* for this month exceed in number those of any March during the previous seven years; but the previous four months were all below the average, and the total deaths in the first quarter of 1864 is less by 30 1-7th than the average of the corresponding quarters of the previous seven years. In the following table the deaths are arranged in groups of ages, and contrasted with those of the minimum March, and the previous maximum, as well as that of the foregoing month of February:—

March 1864.	Ages.	Minimum year, March 1859.	Maximum March '59.	Feb. 1864.
25	Under 1 year	15	26	10
13	1 to 5	9	17	4
2	5 to 20	4	3	1
11	20 to 45	8	7	11
13	45 to 60	8	5	8
9	60 and above	4	8	13
73		48	66	47

The deaths under five years of age are 38, or rather more than half of the total mortality. February had less than one third, but March, 1858, had nearly two-thirds. March 1859, the minimum year, had exactly one-half of the total deaths under five years of age.

In the *Zymotic class of Diseases*, the deaths were 35. The greatest proportion of these (26) were bowel complaints. The preceding month of February had only 3 deaths in the Zymotic class.

In the *Constitutional class* the deaths were eight, two of them from consumption, but neither native born Tasmanians.

In the class of *Local Diseases* the total was 19; of these eight belonged to the order of *Diseases of the Brain and Nervous System*; four to the *Circulatory System*; two only to the *Respiratory System*; two to the *Digestive System*; two to the *Urinary System*; one to the *Reproductive System*. In the class of *Developmental Diseases*, the deaths were eight, two of them from old age, respectively 86 and 88 years old.

In the class of *Violent Deaths, &c.*, the deaths were three. The *Inquests* were five. In the first week of the month 12 deaths took place; in the second week 20; in the third 18; in the fourth 16; on the last three days 7. On five days of the month there was not a single death. The greatest number on any day, was 5, on the 18th and 24th. The greatest number on any three consecutive days, was 12, on the 9th, 10th, 11th, and 24th, 25th, 26th. The most fatal period of the month, was, the six days, 6th to 11th inclusive, when 21 deaths occurred.

The registered *births* were 58, being 21 less than March, 1863, had.

In all the registration districts of Tasmania, the deaths registered for the quarter ended 31st March, 1864, are only 340. 1863, had 390; 1862, 387; 1861, 397; 1860, 440; 1859, 451; 1858, 497; the average of the six years being 427, or nearly 20 per cent. more than the first quarter of the present year had. The gradual diminution of deaths yearly, in this the most fatal season of the year to life, is a remarkable fact; particularly when considered in relation to the annually increasing proportion of the Tasmanian born constituents of the total population, to the rest; and, also, the absolute numerical increase on the whole. The inference to be legitimately drawn from these facts, is, that the rate of mortality in the native born population will be very much less than that of their British parents, and very much less than that of British children of corresponding ages. The deaths then, in this, the usually most fatal quarter of the year, are for the whole island, at the very low rate of about 14½

per thousand per annum, being half per cent. less than that of the healthiest registration district of England and Wales.

It is worthy of note to remark, that while the month of March has been so much more unfavorable to health in Tasmania than February and January were this difference did not exist on the Australian Continent. March, in Victoria, was (I gather from the weekly health reports of its able Registrar-General) quite as favorable as the two previous months. It becomes therefore an interesting problem to solve, (by ascertaining the peculiar climatic differences during the period), what atmospheric condition or conditions varied so much, as to give the clue to the cause? In the absence yet of the published meteorological tables for Victoria, I cannot make a rigid comparative analysis, but generally I believe, the greater rain-falls on the Australian continent, contrasted with ours so much below the mean, affords one striking exemplification of the probable cause or causes.

F. ABBOTT.

