

METEOROLOGY FOR MAY, 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	29.924	49.41	75.5	35.0	15.1	.78	6	—	0.53
1842	29.664	50.45	67.0	34.2	11.1	.76	5	—	2.09
1843	29.994	51.26	72.4	37.0	13.2	.81	5½	—	0.10
1844	29.880	50.15	69.0	36.2	10.6	.82	4½	—	2.24
1845	29.817	48.43	66.5	34.3	15.0	.84	4¾	—	0.72
1846	29.864	48.19	63.0	38.7	12.9	.79	5	—	0.65
1847	29.835	47.64	65.0	33.4	14.4	.83	5½	—	1.49
1848	29.839	49.05	67.0	34.2	13.9	.83	6	—	4.38
1849	29.855	47.58	67.7	30.6	14.4	.85	6½	—	3.59
1850	29.834	50.68	70.0	36.3	13.9	.78	6½	—	0.57
1851	29.751	49.11	68.3	38.0	12.2	.82	5¾	—	0.74
1852	30.008	48.63	64.7	34.0	13.2	.88	6	—	1.46
1853	29.728	48.99	61.1	34.6	13.4	.80	6½	—	1.28
1854	29.834	49.18	66.0	36.3	11.0	.80	6	—	1.22
1855	29.474	51.00	67.0	35.0	13.21	.79	6.00	—	3.31
1856	29.926	51.96	69.0	35.0	19.51	.84	7.00	—	2.42
1857	30.082	50.24	69.0	33.0	22.40	.72	4.60	5.67	0.19
1858	29.997	53.00	77.0	35.0	18.58	.79	5.09	7.00	4.14
1859	29.719	51.70	71.0	37.0	15.54	.75	5.22	6.19	1.47
1860	29.821	53.03	73.0	35.0	15.74	.73	6.00	7.09	1.70
1861	29.917	52.78	71.0	40.0	18.38	.83	5.41	6.39	3.31
1862	29.975	50.01	67.0	34.0	18.74	.81	5.43	6.22	2.55
1863	29.897	52.35	69.0	36.0	15.45	.84	6.44	7.02	2.40
1864	30.002	52.14	70.0	33.0	17.16	.76	6.00	7.40	0.84

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 May, 1864:—

- 7th. First Medlar ripe.
- 10th. Caronilla glanca commencing to flower.
- 20th. Ailanthus trees bare of leaves.
- 25th. Diasma alba commencing to flower.
- 28th. Photima serrulata commencing to flower.
- 30th. Spiraea prunifolia commencing to flower.

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

In many respects the weather this month was a great improvement upon that of April, and the reduction of infantile mortality thereby effected, was considerable; on the other hand, some of the meteorological phenomena were very inimical to invalids, and the deaths of adults consequently much more numerous; so that the total mortality was still greatly above the May average of the previous seven years.

Atmospheric pressure mean was, 30.002 inches, which is +.174 above the 20 years' standard average for this month. This makes now three months in succession, with a mean for the month, above thirty inches—an event without parallel in the last twenty three years. The Mays of only 1857 and 1852, equalled

or surpassed the present month's mean, being respectively, 30·082, 30·008. The movements of the Barometer, too, were both extensive and frequent. The extreme range of the month was, 1·262 inches. In the previous seven years—1859 only, had a greater range, *i.e.*, 1·275 inches. The minimum 29·187 occurred on the 11th; the maximum, 30·449 on the 22nd. The latter has only been thrice higher in May during the previous 23 years, *i.e.*, 1852, 30·482; 1847, 30·467; 1845, 30·492. There were many lower minima. The greatest movement of the Barometer within any 24 hours, was a rise of +·680 on the 28th; a fall of—·539 took place on the 11th, followed by a rise on the 12th of +·493; altogether, there were perturbations exceeding one-fifth of an inch on 10 days. The high mean pressure, and great fluctuations, were very obnoxious to invalids; as the death records in diseases of the brain, and organs of circulation, and respiration, testify.

Wind-force, 91·62 lbs., was +48·32 lbs. more than the average of the previous seven years, and much higher than any one May of the whole seven. S.W., W., and N.W. prevailed at 73 out of the 93 observations, and had 78·35 lbs. of the total force. From all other points of the compass, the winds were below the average in number, and in force also, except E., which had +·06 only above. The strongest wind had a pressure to the square foot of 10·42 lbs., and was noted twice. So much aërial movement had a very purifying effect on the air and was beneficial to healthy persons, either young or old, but combined with the high and varying pressure, and wide fluctuations of temperature, it proved very fatal to invalids. Calms, 31, singularly enough, were within a fraction of the average for May.

Mean temperature was 52·14 degrees, which is +1·63 above the 20 years' average; last year, however, May's mean, was +·21 warmer. The mean, deduced from the maxima and minima thermometers, is 53·19. The maximum was 70 on the 5th, the minimum 33 on the 29th. Only in 1857, during the last nine years, did the temperature fall so low. The month's range, 37 degrees, exceeded any of the three preceding years' Mays.

The daily range temperature mean, was 17·16 degrees, which is +1·86 degrees above the May average, and nearly as much above May last year. On the 29th and 30th the maximum range, 28th, was noted; but on eight other days a range of 20, or above occurred. The minimum range was 8 degrees, on the 16th. These fluctuations of temperature were injurious to persons weakened by chronic diseases.

Solar temperature had a mean of 85·29 degrees, being +4·45, above the average of the previous eight years. This is very remarkable, as the cloud mean was also above the average. The maximum of the sun thermometer was 100 degrees, on the 5th, and this is higher than was noted for any May of the previous five years. The minimum was 63, on the 18th. This hot sunshine with great atmospheric pressure, &c., wide range of temperature, and strong winds, probably accounts for the increase of deaths from apoplexy and other diseases of the brain and nervous system.

Terrestrial radiation had a mean of 41·13 degrees, which is +1·97 above the average of the previous eight years. The maximum was 50·5 on the 5th; the minimum 28·5 on the 29th.

The total deposit of *rain* was only ·84 of an inch, being —1·01 less than the 20 years' mean fall for this month. It is also below that of any year since 1857, when it was only ·19 of an inch. Last year's May had nearly three times as much as the present. There were 12 days on which rain fell, but on only two of them, the 11th and 17th, was it sufficient to cause the street channels to run. The average wet days for May is +·32·3 higher. For the eight days, 20th to 27th, not a sprinkle of rain took place. Strong dry southerly winds well charged with ozone abounded in this period, and made catarrhs very prevalent, though without any deaths resulting therefrom.

Snow fell on Mount Wellington on the 17th, and remained on the 18th, but could not be seen on the following day. Another fall took place on the 28th, and continued on the mountain until the month expired.

Spontaneous evaporation exceeded precipitation being 1·27 inches.

Elastic force of Vapor mean, was 298, which is —11 below the 20 years' average.

Humidity mean was 76, being —3 below the 20 years' mean.

Cloud mean was 6·00, which is +·30 above the 20 years' average for May.

Ozone had a mean of 7·40, which is +·90 above the 7 years' average, and higher than any one of the seven. The maximum was 10, and the minimum 5.

Electricity had 17 positive indications, with a maximum tension of 6; and 44 negative, with maximum of 5·5, "Nil" record was only made once, at the sunset observation of the 14th. *Lightning* was recorded on the evenings of the 11th and 27th.

47 deaths this month, though 7 less than the preceding, is + 8 three-sevenths more than the average for May of the seven previous years. In only one of the seven, May, 1861, were the deaths more numerous, *i.e.*, 50; but more than one-third of those deaths were caused by measles, at that time prevailing epidemically. May, 1859, had the smallest mortality that has ever occurred in any month of a year during the last seven years, *i.e.*, 29. In the following table it will be seen that the bulk of the deaths this month has fallen upon adults, being exactly the reverse of what occurred in the previous month, and even higher than any of the other three months contrasted with it.

May 1864.	Ages.	April, 1864.	Maxi- mum. May, 1861.	Mini- mum, May, 1859.
9	Under 1	15	12	7
6	1 to 5	18	16	5
2	5 to 20	4	9	1
10	20 to 45	5	5	7
12	45 to 60	5	3	5
8	60 and above	7	5	4
47		54	50	29

The classes of diseases too, which caused the greatest share of the mortality this month, and those compared with it, is as different as the ages at which death took place:—

May 1864	Classes of Disease.	April 1864.	Max. May 1861.	Min. May 1859	Average of Mays of 7 years 1857-1863
7	1. Zymotic	32	23	2	7 6-7
12	2. Constitutional	4	7	9	7 1-7
23	3. Local	13	14	12	16 6-7
4	4. Developmental	5	4	2	5 2-7
1	5. Violent	0	2	3	3 3-7
47		54	50	29	38 4-7

It is thus evident that *zymotic* deaths were somewhat below the May average, and *violent* greatly less than the average; while *constitutional* were much above the average, and, in fact, above any year of the seven. *Local* were, also, considerably above the average, and actually more than any year of the seven, except 1858, when this class had 25 deaths. *Developmental* is slightly more than the seven years' mean, four of the seven having the same number—4—1860-3, but 1859 and 1862 only two each. *Violent* was very much less than the average, and only May, 1860, had as small a number. Of the 23 deaths in the *zymotic* class in the maximum May, 17 were from measles, at that time epidemic; so that with those deducted, the actual number of *zymotic* deaths would be one less than in the present month. The 7 *zymotic* deaths this month were respectively,—1 from diphtheria, 1 from typhoid-fever, after scarlatina, 4 from bowel complaints, 1 registered "worm fever." The *constitutional* class had three times as many deaths as in April; all were chronic affections of long standing, and all above 33 years old, except two children, aged two and seven months, respectively. The diseases were—cancer 4, mesenteric disease 1, consumption 6 (not one of the number being Tasmanians by birth), water in the brain 1. The *local* class too had a disproportionately large share of the total mortality, *diseases of the brain and nervous system* caused 10 of the number, *i.e.* :—*apoplexy*, *paralysis* and *brain disease*, all adults from 40 to 82 years of age, having 6; the other 4 were *convulsions* in children from one day to four months old. *Diseases of the organs of circulation* caused 4 deaths; recorded *diseases of the heart*, &c. Notwithstanding the variable, temperature and windy character of the month, and the general prevalence of catarrhal affections during the last week of the month, *diseases of the organs respiration* only caused 4 deaths, but all were of an acute inflammatory character. The *organs of digestion* had only one death; the *urinary organs* 3, and *integumentary system* 1. The deaths in the *developmental* class were 2 infants, and 2 women,

but require no comment. But one death arose from *violent or accidental* causes, *i.e.*, a man aged 42, who in a state of intoxication fell down some steps, was taken to Hospital in a state of insensibility, but having only slight external marks of injury, (a mere bruise on the back of the head) he survived nine days having recovered the powers of speech and locomotion, and eating well. The *post mortem* examination revealed a very severe and extensive fracture of the base of the skull (the sphenoid bone completely shattered) and a clot of blood in the front part of the brain. The coroner's jury returned a verdict in accordance with the medical evidence, *accidental death from a fall*. Three *inquests* took place, while the previous month had not one, though May 1863 had 7. Of the 47 deaths, 4 occurred in the Glenorchy and 3 in the Queenborough districts, the rest in the city; 25 were males, 22 females, being an unusual equality of the sexes; 10 deaths occurred in the Hospital, but 3 of them were admissions from country districts, and 2 from the male Invalid Asylum. The weekly number of deaths was unusually uniform, the first having 12, the second 9, the third 11, the fourth 10, and the last three days 5. On the 5th, 9th, 15th, 24th, not one death occurred; and the greatest number on any day was 4 on the 16th. The most fatal period of the month was the four days, 16th to 19th inclusive, when 9 deaths took place; within these days the barometer rose +.717 of an inch, and the depression of temperature was great.

The registered *births* were 70, being +9 more than May 1863 had.

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