

## METEOROLOGY FOR JANUARY, 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	29.725	65.41	95.5	50.0	25.5	.56	4	—	0.03
1842	29.713	62.34	82.7	43.0	23.1	.62	5 <sup>3</sup> / <sub>4</sub>	—	1.83
1843	29.636	62.00	87.7	45.6	29.9	.67	5 <sup>3</sup> / <sub>4</sub>	—	0.55
1844	29.878	60.47	89.2	47.2	20.7	.69	5	—	2.01
1845	29.757	63.12	91.0	46.2	21.8	.67	3 <sup>3</sup> / <sub>4</sub>	—	0.58
1846	29.630	61.75	95.0	45.0	21.8	.68	5 <sup>3</sup> / <sub>4</sub>	—	1.38
1847	29.690	61.80	91.4	46.1	21.8	.67	8 <sup>1</sup> / <sub>4</sub>	—	0.73
1848	29.731	60.21	82.7	43.0	20.5	.67	5	—	1.04
1849	29.726	59.74	105.0	43.0	21.8	.68	4 <sup>1</sup> / <sub>4</sub>	—	0.72
1850	29.604	59.10	86.9	47.7	19.4	.71	6 <sup>3</sup> / <sub>4</sub>	—	1.20
1851	29.631	62.00	91.1	46.0	19.3	.66	5 <sup>3</sup> / <sub>4</sub>	—	2.33
1852	29.588	59.50	87.2	46.8	18.9	.77	5 <sup>3</sup> / <sub>4</sub>	—	1.46
1853	29.775	57.67	81.0	43.6	16.7	.72	6 <sup>3</sup> / <sub>4</sub>	—	1.43
1854	29.646	62.25	93.3	45.0	23.4	.70	5 <sup>3</sup> / <sub>4</sub>	—	0.54
1855	29.756	65.00	88.0	42.0	14.14	.79	6.55	—	0.48
1856	29.809	71.10	91.0	42.0	25.13	.67	6.50	—	0.99
1857	29.714	62.16	85.0	42.0	20.00	.70	6.90	—	2.58
1858	29.509	66.40	97.0	44.0	24.00	.63	4.45	6.92	0.40
1859	29.882	65.67	99.0	46.0	18.90	.67	6.37	5.90	4.61
1860	29.744	65.10	91.0	48.0	20.29	.67	5.22	6.82	2.22
1861	29.861	65.85	88.0	48.0	18.66	.69	7.00	6.79	2.12
1862	29.780	65.72	98.0	43.0	25.03	.61	5.58	6.21	0.93
1863	29.831	65.74	93.0	47.0	21.42	.65	4.44	7.33	2.39
1864	29.714	61.49	81.0	48.0	17.13	.65	5.77	6.93	0.71

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:—*

- 10th—Veronica Angustifolia, in full flower.
- 12th—First ripe Apricot (Turkey) gathered.
- 15th—Grevillea Robusta, in full flower.
- 22nd—First ripe Jargonelle Pear, gathered.
- 30th—Catalpa Syringifolia, in flower.
- 31st—Mulberries commencing to ripen.

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

In no month of the twelve, during the preceding seven years, has the mortality been so little as in the present month; and the community so free from those diseases which usually prevail at this season of the year.

*Atmospheric-pressure* had a mean 29.714, all but identical with the 20 years' mean for January. The extreme month's range of the barometer was only .898 of an inch, but it happened within four days. The minimum was 29.259 on the 26th, and the maximum 30.157 on the 29th. From the 23rd to the 29th, within one of half of the whole deaths of the month took place. The greatest movement of the barometer on any day was a fall of .463 of an inch, on the 15th. There were rises and falls, exceeding one-fifth of an inch, on eleven other days.

The month's total *Wind-force*, 146.26 lbs., was more than double the average for January, being +74.50 lbs. above it. South-west, West, North-

west, North winds were all much above the average, both in frequency and force. North-east, though below the average in frequency, exceeded it considerably in force. East, Southeast, and South, were all below the average, both in frequency and force. There were only 6 calms noted out of the 93 observations, which is  $-11\frac{1}{2}$  less than the average in January. The strongest winds had a force of 10.42 lbs. pressure to the square foot, and were recorded three times. No hot winds occurred during the month. So windy a January had not occurred in the previous seven years.

The *Temperature* mean was 61.49 degrees, being  $-2.03$  degrees less than the 20 years' mean. So cold a January has not happened since 1853, when the mean was only 57.67 degrees, being the coldest January of the last 23 years. In addition to this, 1852, 1850, 1849, had also colder Januaries than the present. The mean of the self-registering maxima and minima thermometers approximated very nearly to the foregoing, being 62.00 degrees. The maximum shade temperature of the month was only 81 degrees, and was noted on the 1st. 1853 had also the same low maximum, but every other of the 22 years had a higher, ranging up to 105 degrees. The minimum shade temperature was 48 degrees. 1860 and 1861 had the same, and 1841 had 50 degrees, but all the other years were much lower. The month's range, therefore, was only 33 degrees, which is the smallest range ever before noted for January.

The *Daily Range of Temperature* had a mean of only 17.13 degrees, which is  $-3.62$  degrees below the 20 years' average. 1853 and 1855 had a still smaller daily range, but the other 21 years were much higher; the highest being upwards of 25 degrees. The extreme range on any day was 27 degrees, on the 1st and 25th. 1850 had only 15.00, but every other year was much above the present, the highest being 51.90 degrees. The smallest range on any day of the present month was 11 degrees, on the 12th.

*Solar intensity* mean, 107.64 degrees, is  $-2.99$  degrees below the average of the previous 8 years, though  $+1.58$  above January 1863. The greatest heat on any day of the month was only 123 degrees on the 1st. Every January of the previous 8 years, had a higher maximum solar heat than this. 81 degrees was the minimum of the month by this thermometer.

*Terrestrial radiation* had a mean of 50.53 degrees, being  $-2.02$  degrees below the 8 years' average. Only 1862, out of the 8, had a lower mean, *i.e.* 50.00 degrees. The maximum of any day, 57 degrees, was marked in the night of the 9th; the minimum, 43.5, occurred in the night of the 4th.

The *Rain-fall*, .71 of an inch, was less than half the 20 years' average for January, which is 1.50 inches; but it ought to be remembered, that every one of the three preceding months had a great excess of rain precipitated. The five previous Januaries had all much more rain than the present month; indeed, 1859 had the maximum fall, 4.61 inches, for the last 23 years' Januaries. In six years out of the 23, there fell less rain in January than the present month has, 1841 the minimum, having the almost inappreciable quantity of .03 of an inch. On only one day, the 24th, did sufficient rain fall,  $-.30$  of an inch—to cleanse the surface channels of drainage. Nevertheless, the number of rainy days, 9, was slightly in excess  $+ .34$ , above the average wet days of the previous nine years' Januaries.

*Snow* was seen on Mount Wellington on the morning of the 6th, but soon disappeared. It is several years since snow was noted on Mount Wellington in this month.

*Spontaneous-evaporation* bore a reverse proportion to precipitation to that recorded in December, 6.58 inches being registered.

*Elastic force of vapor* mean, 357, was  $-.27$  less than the 20 years' mean.

*Humidity*, 65, was  $-.3$  less than the 20 years' mean for January.

*Cloud* mean, 5.77, is  $+ .03$  only above the 20 years' average.

*Ozone* was 6.73, which is  $+ .27$  above the mean of the previous six years. Last year's January, however, had still more ozone, *i.e.* 7.33. This was, no doubt, owing to the abundance of rain in that month. It is remarkable that the greater wind force of the present month has all but compensated for the smaller rain fall, in preserving a high state of atmospheric purity. It is certain that many of the winds indicated by the vane to be from North-west and North points of the compass were really deflected westerly winds, as evidenced by their coldness and purity, as well as being noted as such by the observations of the coast stations. The daily reports from Mount Nelson, Fortesque Bay, and Low Heads, are of great value in correcting our city observations on this point, and an extension of them to the east and west coasts, and interior towns would add much to the knowledge the meteorological returns convey.

*Electricity* was never absent at the 62 observations in the month. Positive was noted 24 times, with the high maximum tension of 7. Negative was recorded 38 times with the still higher maximum tension of 8. These records

show a more frequent and stronger electrical condition of the air, than has ever before been registered in Hobarton.

*Twenty-four deaths* only have occurred in this, the first month of 1864. The seven preceding Januaries had respectively, in retrogressive order, 45, 55, 45, 72, 56, 74, 60. The average of the seven years, therefore, is 53 1-7th, or considerably more than double that of the present January, while that of the maximum year, 1858, is more than three times as much, and that of the minimum years, 1861 1863, not far short of twice as numerous. Furthermore it must be considered, that the mortality of the preceding two months of December and November was considerably less than the average. The smallest number of deaths recorded for any month of the twelve, in the seven previous years, was 29, and that never occurred in a summer month. January stands second of the months of the year for its high rate of mortality, yet the present month is about 17 per cent more favorable to life than has ever yet been recorded, even for the months of the healthiest character. Moreover, the diminution of deaths is principally at those tender ages, which afford the surest test of the salubrity of any season, climate, or locality, as will be evident by the following contrast:—

Jan., 1864.	Ages.	Jan., 1863, Minimum of 7 years.	Jan., 1858, Maximum of 7 years.
2	Under 1 year old	9	32
2	1 to 5 ditto	11	10
2	5 to 20 ditto	4	3
5	20 to 45 ditto.	6	21
6	45 to 60 ditto	6	
7	60 and above	9	8
24		45	74

Four deaths only of children under five years of age is without parallel in the mortuary records of Hobarton, for the last fourteen years at least. The same may be said also of the six under 20; yet the proportion of the population living at the present time, in this registration district under 20 years of age, is much greater, to the total population at all ages, than ever before was known. In the 25,000 persons, constituting the population of the Hobarton Registration District, the annual death-rate—were all the months of 1864 to be as auspicious to life as the first has been—would be only 11½ per 1,000; that being also about the annual death-rate of the rural districts of Tasmania. The annual death-rate of the healthiest rural district in England and Wales is 15 per 1,000.

There were only three deaths tabled in the zymotic class, and two of these are scarcely entitled to be so classed, one being an invalid at the Brickfields Asylum, aged 55, registered “old age? (senilis) and diarrhoea,” and the other a babe only seven weeks old registered “dysentery.” The undoubted zymotic case was a child two years old, registered “epidemic scarlatina.” This fever has not been epidemic in Hobarton for many years previously, though mild isolated cases have frequently occurred. During the present month it put on the epidemic form, but the type was very simple, no doubt mainly influenced by the remarkably cool, salubrious weather that has prevailed for many months past. The last death from scarlet fever registered in Hobarton, was in October 1863, the previous one being in August 1862, in the January of which year there was also another. 1861 had one in July. In 1860 there was not a single death from this disease. 1859 had 2, in the month of February. 1858 had 13 altogether: *i.e.*, February 1, May 1, June 2, August 1, October 4, and December 4. 1857 had one in June. In the terrible epidemic of this fever in 1852-53, upwards of 260 deaths were registered from it. In the epidemic of 1842-43, only 66 were recorded. That some part of the amended hygienic condition of Hobarton, is owing to sanitary improvements—incomplete though they be—I do not think admits of doubt.

The remarkable exemption from bowel complaints this month is unparalleled. In December these diseases caused 10 deaths; in January 1863, 14; January 1858, 17; January 1860, 23. Of the 3 deaths from consumption this month, none were born in Tasmania. Every year's records affords additional proof, for the fact I stated many years ago, of the exemption of the Tasmanian youths, from this terrible scourge of our fatherland. It is worthy of note—as the only instance on record—that not a death from any disease of the organs of respiration (with the exception of the cases of consumption included under another class and order) took place. The small daily-range and narrow

**extremes of temperature** no doubt tended to produce this unusual result. It is also remarkable that but one death from accidental violence occurred : that of the Hanoverian sailor who fractured his spine by falling into the hold of his ship. No inquests were held in January, but one was subsequently held on the foregoing case.

In the 1st week of the month, 7 deaths took place; in the 2nd, 5; in the 3rd, only 1; in the 4th, 9; in the last three days, 2. On 16 days of the month, there was not a single death. The greatest number on any day was three each on the 4th and 6th. The most fatal period of the month was the 23rd to 29th inclusive, though only eleven deaths occurred in the seven days, and the previous five days were without a single death.

The registered *Births* were 67, being 7 less than in January, 1863.

FRANCIS ABBOTT.

