

ROYAL SOCIETY.

METEOROLOGY FOR FEBRUARY, 1865.

PRIVATE OBSERVATORY, HOBART TOWN.

Day of month.	Bar. 37 feet abv. sea level, cor. & reduced		Self-register- ing Thermo- meters.				Wind.		Rain in inches.
	Highest.	Lowest.	Highest in shade.	Lowest in shade.	Highest in sun.	Lowest on grass.	Direction from three daily registers.	Force in lbs. per square foot.	
	In.	In.	°	°	°	°			
1	29·94 ⁵	29·910	68	44	100·0	41·0	NWSESE	·52	0·06
2	29·82 ¹	29·574	70	57	104·0	56·0	NE SE SE	·78	0·67
3	29·22 ⁵	29·099	66	54	78·0	49·0	SWNW SW	2·60	0·02
4	29·57 ⁵	29·451	63	45	100·0	40·0	SW NW	8·33	
5	29·72 ⁵	29·706	69	45	114·0	42·0	NW	·52	0·19
6	29·70 ⁴	29·322	68	55	110·0	51·0	NW N	5·20	
7	29·507	29·290	64	48	88·0	46·0	NW NE N	1·04	0·15
8	29·958	29·758	62	43	101·0	39·0	NEW NW	3·12	0·05
9	29·930	29·818	69	48	109·0	45·5	NW W	1·04	0·73
10	30·132	30·067	72	49	118·0	46·0	NSW NW	·78	
11	30·295	30·289	69	46	113·0	44·0	NW SE S	1·04	
12	30·258	30·140	78	51	122·0	50·5	NW N SE	·78	
13	30·129	30·086	78	53	120·0	50·5	SE	·26	
14	30·063	29·889	78	57	120·0	53·0	W SE E	·26	0·03
15	29·707	29·644	74	60	90·0	58·0	NENWSE	1·04	0·02
16	29·633	29·556	70	56	112·0	50·0	NS W W	·78	0·90
17	29·774	29·635	67	52	89·0	49·0	NW SE	·52	0·19
18	29·871	29·844	63	45	103·0	45·0	N SE	·78	0·10
19	29·971	29·892	62	48	92·0	45·5	SENE SW	0·	
20	30·132	30·093	65	52	111·0	52·0	N SE S	·78	
21	30·069	29·955	72	50	118·0	46·0	N SE	·52	
22	29·912	29·686	79	53	120·0	50·0	N NW SE	1·04	
23	29·762	29·755	74	56	115·0	53·0	SWSESW	1·04	
24	29·710	29·702	71	56	107·0	51·0	NW W	1·04	
25	29·857	29·756	68	55	97·0	50·0	NW NW	1·30	0·02
26	29·954	29·908	70	48	108·0	44·0	NWSESW	3·12	
27	29·724	29·443	76	55	110·5	54·0	N NW N	·52	0·24
28	29·849	29·567	71	57	114·0	51·0	N NW	5·46	0·22
[Total force 44·21lbs.]									

The mean in all cases is taken from the sums of the three daily registers, and not from the maximum and minimum.

The direction of the wind is registered from currents moving at the height of 192 feet, and the force according to Lind's Wind Gauge. The supposition, however, of an uniform velocity during the month is a very arbitrary one, and the results can be considered only approximately correct.

The relations of the quantities of rain which fell under the different winds, are registered each evening at sun-down.

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

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

- 7th. Kerry Pippin Apple commencing to ripen.
- 9th. Windsor Pear commencing to ripen.
- 14th. Bon Chretien Pear commencing to ripen.
- 15th. Green Gage commencing to ripen.
- 24th. Ash commencing to shed seed.
- 27th. Sycamore commencing to shed seed.

Barometer mean, 29·801 inches, being 0·049 inches below the average.

Temperature mean, 60·74°, being 1·79° below the average.

Solar intensity mean, 106·55°, being 2·45° ditto.

Dew point mean, 51·7°, being 1·49° above ditto.

Humidity mean, ·74, being 3·5 *per cent.* ditto.

Elastic force of vapor 393°, being ·020 *per cent.* below ditto.

Total amount of rain, 2·94 inches, being 1·47 inches above the average.

Mean amount of ozone 7·81, being 0·94, chromatic scale, above the average.

Increase of spontaneous evaporation on rain-fall 0·80 inches.

Electricity active on the 1st, 4th, 5th, 7th, 8th, 9th, 10th, 11th, and 28th.

FRANCIS ABBOTT.

ANALYSIS OF THE OBSERVATORY RECORDS FOR FEBRUARY,
1865, IN CONJUNCTION WITH THOSE OF BIRTHS, DEATHS,
&c. BY E. SWARBRECK HALL.

Though some of the meteorological phenomena this month were inimical to health and life, yet others were so propitious, that the general result was favorable, and the mortuary record is, therefore, considerably below the 8 yrs.' average.

Atmospheric pressure had the widest range this month, 1.196 inches, of any February in the previous 24 years, except February 1846, when it was 1.270 inches. The extremes were only eight days apart, the minimum, 29.099, being noted on the 3rd, and the maximum, 30.295, on the 11th. The greatest movement on any day was a fall of $-.534$ of an inch on the 3rd; and the greatest rise was $+.532$ on the 8th: other fluctuations, exceeding one-fifth of an inch, occurred eight times. Though the daily variations of pressure were so incessant, yet the month's mean, 29.801, only differs from that of the 20 years, by being $-.049$ below it. As usual this perturbed state of atmospheric pressure had a very fatal effect on aged and diseased persons.

Wind-force total for the month, was only 44.21 lbs., 14.40 less than the average of the previous eight years. The calms were 19, being $+12.7$ more than the mean of the seven years preceding. North-west winds were more than usually prevalent, but of so gentle a character that the force was considerably below the average. On the other hand, north winds were fewer in number, but stronger in force than usual. South-east, the most auspicious wind for health, was greatly below the mean, both in frequency and force. In some measure this was compensated for by south-west and west winds being above the average, both in frequency and force. The strongest wind of the month had 5.21 lbs. pressure to the square foot, but was only recorded once, i.e., at 7 a.m. on the 4th, the direction being from the south-west.

Temperature by three daily observations had a mean of 60.74 degrees, which is 1.79 degrees less than the 20 years' average for February, though only differing from February last year, by $+.37$ of a degree. It is remarkable that the mean for the self-registering maxima and minima thermometers, was below the foregoing, being only 60.61 degrees. Never before has such a disparity been recorded, the usual fact being an excess of about one degree for the mean of the self-registering, over that of the observed thermometers. The maximum temperature of the month was only 79 degrees on the 22nd, which is the lowest maximum for February in the last 24 years, with the exception of 1853, when it was only 77.80. The highest ever recorded in this month was 100 degrees, in 1847. Thirteen other years have had maxima between 90 and 100 degrees. The minimum of the present month was 43 degrees on the 8th, which is not remarkable. The month's range, therefore, was only 36 degrees; 1861 had one degree less, but all the other 9 of the previous 10 yrs., ranged from 43 to 53 degrees.

Daily range of temperature had a mean 1.89 degrees below that of the 20 years, being only 18.50 degrees, and varying from that of February 1864, by only $+.30$ of a degree more. The greatest range was 27 degrees on the 12th, and the smallest, 12 degrees, on the 3rd. Except in 1861, when the maximum range was one degree less, no other year since 1853 had so small a maximum. The highest was 51 degrees in February 1856. So equably cool a temperature for this usually hot summer month, numerically the most fatal to life of any month of the twelve, though having the smallest number of days, was most propitious to health and life.

The *Solar Thermometer* had a mean of 106.55 degrees, being -1.47 degrees less than the average of the previous 9 years, and -1.58 less than last year. The maximum record was on the 12th, being 122 degrees. Last years was higher by seven degrees; and out of the previous ten years, seven others greatly exceeded that of the present month; 1857 having the maximum, -143 degrees. The minimum record of the present month was 78 on the 3rd.

Terrestrial radiation mean, was 48.28 degrees, being -1.33 below the average of the previous nine years, and $-.82$ less than 1864 had. With such a number of wet days, and so high a cloud mean, so low a mean for this thermometer is very unusual, and indicates clear nights. The extremes were, 39 degrees on the 8th, 58 degrees on the 15th.

Rain fell to the aggregate amount of, 2.94 inches, being exactly double the February average of 20 years. 15 days were recorded wet, being twice as many as the average of the previous ten years. On the 3rd, 6th, 16th, 17th, 27th, 28th, it was copious enough to flush the surface drains. At daylight on the

morning of the 8th *snow* was visible on Mount Wellington, but it speedily disappeared. So much rain equally distributed throughout the month, and precipitated at a moderate rate, had a very purifying effect on the atmosphere, and obviated much of the evil arising from want of aerial movement.

Spontaneous evaporation amounted to 3·74 inches.

Elastic force of Vapour had a mean of 393, being +20 above that of the 20 years; rather an anomalous result, considering the condition of other of the meteorological phenomena. It was also +·30 higher than February 1864 had.

Humidity mean was ·74, being + 3½ higher, than the 20 years' average, and + 5 above 1864.

Cloud mean was, 6·50, being +·81 more than the February average of 20 years, and + 1·58 more than February 1864.

Ozone mean was, 7·81, being +·91 above the average of the previous seven years, and only exceeded by that of 1863. The maximum was, 9·5 on the 28th, the minimum 5·5 on the 3rd.

Electricity had only three positive indications, with maximum tension of 4. The negatives were, 42, with maximum tension of 7; nil was recorded 11 times. *No lightning* was seen; but mutterings of *thunder* were heard on the evening of the 16th. The *Southern lights* were strong on the evening of the 18th.

The 53 deaths for February 1865, is - 7 2-8ths below the eight years' average for this month; but last year, and 1861 were both numerically smaller as the table following exhibits:—

Feb., 1865.	Ages.	Jan., 1865.	Februarys.								Avg. 8 yrs. Febs. 1857-1864.
			1864	1863	1862	1861	1860	1859	1858	1857	
15	Under 1	10	10	25	21	8	22	31	34	19	21 2-8
5	1 to 5	1	4	9	9	10	13	11	16	5	9 5-8
2	5 to 20	2	1	2	1	2	3	2	1	1	1 5-8
7	20 to 45	7	11	12	8	3	10	18	8	10	10
9	45 to 60	11	8	5	11	8	14	5	5	8	8
15	60 and above	10	13	16	8	11	5	8	6	11	9 6-8
53		41	47	69	58	42	67	75	70	54	60 2-8

In every group of ages below "45 to 60," it will be perceived that the deaths were less than the eight years' mean; except at from "5 to 20," which had a small excess. The average was also slightly exceeded at, from "45 to 60;" but the principal excess fell upon old people at "all ages above 60." The fluctuations of atmospheric pressure, as already alluded to, was the phenomenon principally accountable for this. At all ages below five years, the deaths were not quite two-thirds of the 8 years' average, though the month of February is usually the most fatal of all the months of the year, to children of that age. Nine of the 15 deaths in the last group, were above the "three score and ten" the Royal Psalmist gives for the normal duration of the life of man; three were respectively aged 81, 84, 85, being one-half of the deaths at the Male Invalid Asylum at the Brickfields; the other three being 70, 74, 76. In February, 1864, only one man died in that establishment, aged 73.

Feb., 1865	Classes of Disease	1865 Jan..	Februarys.								Average of 8 years Febru- aries, 1857- 1864
			Min.				Max.				
			1864	1863	1862	1861	1860	1859	1858	1857	
11	1. Zymotic	10	3	28	27	14	19	29	30	7	19 5-8
11	2. Constitutional	3	8	14	9	8	13	8	6	6	9
20	3. Local	24	27	17	15	14	28	28	27	32	23 4-8
8	4. Developmental	4	8	7	5	2	3	6	5	7	5 3-8
3	5. Violent, &c.	0	1	3	2	4	4	4	2	2	2 6-8
53		41	47	69	58	42	67	75	70	54	60 2-8

The deaths in the *Zymotic class* of diseases were little more than half of the eight years' mean, but considerably less than any year of the eight, except the first and the last. 1864 having little more than one-fourth of the number in the present year. The diseases causing death were scarlet fever, 1; croup, 1; puerperal fever, &c., 1; a woman who died the day after she was brought to town, from a rural district on the sea coast, and, therefore, not fairly to be calculated as a death in the Hobartton Registration District; the remaining 8 were different phases of bowel complaint, usually so fatal at this period of the year, but from which the community has suffered so little during the last and present summer. February, 1864, had only three deaths in the zymotic class, being one from scarlet fever, and two from diarrhoea.

The deaths in the *Constitutional class* were above the eight years' average, and only exceeded by two years out of the eight; 2 were from cancer; 3 from hydrocephalus; 6 from consumption, of which one youth, 19 years old, was a Tasmanian by birth. In February 1864, the consumptive deaths were only 4.

The *Local class* of deaths had less than the eight years' average, though two of the orders in this class had more than the usual number of deaths, attributable mainly to the variations in atmospheric pressure. The first order "*Diseases of the Brain and nervous system*" had 6 deaths; the second order "*Diseases of the Heart and circulatory system*, had also six deaths, only one being below 60 years old. The *Lungs and respiratory system* had only 3 deaths, notwithstanding the coldness of the month, to which common belief, ordinarily but erroneously, attaches so much mischief to health. None of the other orders had deaths requiring special notice, either from their number or peculiarity.

The *Developmental class*, had the same number of deaths in February 1864, being more numerous than any of the other 7 years—5 were from *old age*; all but one, being 75 years old and upwards. Three were from *atrophy*, under three months old. Last year the numbers from the foregoing were 3 and 2 respectively, the other 3 being connected with *child-birth*.

The *Violent and accidental class*, had a fraction more than the eight years' average under this division. Two of the three were, *fractures of the spine* in men each aged 50; one arose from the kick of a horse which caused immediate death; the other was caused by being thrown out of a cart, and was brought to the City Hospital from a rural district on the other side of the Derwent. The third was a boy *drowned*. One death only in this class occurred in February 1861, being caused by a crush between a dray and a tree.

The *Inquest* deaths this month, were 3. February 1864 had only 2. The deaths in *Hospital* were 15, including one of the inquest cases. Seven of the number were brought to Hospital from other districts, a proportion of the whole, far greater than has ever before been recorded. February 1864 had two less deaths, and only three of them were from country districts.

Of the 53 deaths, 36 were males, 17 females, the latter being much below the ordinary proportion. Two only of the deaths took place beyond the city boundaries, that is, considering the Male Invalid Asylum as within the latter.

In the first week, 13 died; in the second, 14; in the third, 8; in the fourth, 18. On any two days consecutively, the greatest number of deaths was 7, on the 13th and 14th. On the 3rd, 10th, 17th and 10th, no deaths occurred.

The *Births* registered were 67, being 10 less than February 1864 had.