METEOROLOGY FOR MAY, 1865.

PRIVATE OBSERVATORY, HOBART TOWN.

Day of month.	Bar. 37 feet abv. sea level, cor. & reduced		Self-registering Thermometers.				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	29·906	29·874	66	41	91	37·5	NW SW	0·	
2	29·904	29·850	63	42	80	38·5	SW E W	·26	
3	29·860	29·635	60	42	68	39·5	NW	3·12	0·05
4	29·790	29·750	59	45	89	43·5	SE W NW	·52	0·03
5	30·148	29·976	56	41	80	40·0	SW S SW	5·99	0.08
6	30·219	30·166	66	43	93	32·0	SW NE NW	·52	
7	30·068	29·924	68	45	96	41·5	SW E S	·26	
8	29·840	29·719	66	49	65	47·0	NW N NW	·52	
9	29·698	29·521	67	44	93	43·0	NW N	·52	0·03
10	29·640	29·536	68	40	104	37·0	NW E SE	·26	
11	29·651	29·375	71	45	96	42·5	NW N	5·21	
12	29·520	29·174	68	41	90	39·0	SW N NW	7·81	0·11
13	29·418	29·228	62	45	70	41·5	SW SE W	3·64	0·04
14	28·924	28·885	58	38	85	34·5	N NW	·78	0·04
15	29·416	29·130	55	39	78	35·5	SW	8·07	0·23
16	29·737	29·654	58	45	90	40·0	W SW SE	·52	
17	29·912	29·812	60	42	90	38·5	W SE S	·26	0·08
18	30·137	30·034	57	39	80	35·0	NW N SW	·52	0·07
19	30·164	30·159	67	38	96	34·0	NE NE NW	·52	
20	30·239	30·186	68	35	92	31·5	NW N SW	0·	
21	30·291	30·248	65	45	90	30·5	W NW	·52	
22	30·336	30·316	67	36	95	32.5	NW SW	0·	
23	30·388	30·328	68	44	92	42·5	NW W SW	0·	
24	30·333	30·228	64	41	87	37·0	NW W	·26	
25	30·166	30·012	61	38	86	35·5	NW	3·12	
26	29·929	29·907	58	50	60	47·0	NW N	·26	
27	29·569	29·467	67	50	85	49·0	NW	13·02	
28	29·433	29·391	62	46	82	35·0	NW SW	·52	0·02
29	29·800	29·664	60	40	68	35·0	NW S	1.04	0.34
30	29·900	29.850	56	45	64	40·0	S	1.56	0·70
31	29·928	29.909	55	44	78	40·0	SW S	·78	0·06
							Total force 60·38lbs		1·88

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 a height of 192 feet, and the force according to Lind's Wind Guage. 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 sundown.

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 First Medlar ripe.
15th Coronilla glauca commencing to flower.
20th Diosma alba commencing to flower.
25th Ailantus trees bare of leaves.
28th Photima serrulata commencing to flower.
30th Spiræa prunifolia commencing to flower.

Barometer mean, 29·820in., being 0·008in. below the average.
Temperature mean. 49·95°, being 0·55° ditto.
Solar intensity mean, 84·29°, being 7·71° ditto.
Dew point mean, 41·8°, being 1·59° ditto.
Humidity of air mean, ·79, being 0· per cent.
Elastic force of vapor mean, ·283, being ·026 per cent. below the average.
Total amount of rain, 1·88in., being 0·03 above the average.
Mean amount of ozone, 8·18, being 1·69 of chromatic scale above the average.
Increase of rain fall on spontaneous evaporation, 0·25 inches.
Lightning on the 26th and 27th.
Frequent and fresh deposits of snow on Mount Wellington.
Electricity active on the 2nd, 4th, 10th, 27th, and 28th.

FRANCIS ABBOTT.

ANALYSIS OF THE OBSERVATORY RECORDS FOR MAY, 1865, IN CONJUNCTION WITH THOSE OF BIRTHS, DEATHS, &c.

By E. Swarbreck Hall.

The fluctuations in atmospheric pressure, with the frequent and extreme variations in temperature, this month, had an extensively fatal influence on aged and diseased persons, and, together with the unusually numerous accidental deaths, caused a total mortality slightly beyond the average of the previous eight years, though, still, considerably fewer than May, 1864, had. On the other hand, the pure state of the air, consequent upon its free movement, the moderate rain-falls, and abundance of electricity, preserved the community from Zymotic diseases; and infantile deaths were not half the number that May, 1864, had.

Atmospheric pressure had a mean (29·820), so nearly that of the average of the 20 years adopted standard, that it was only —·008 less; nevertheless the range, 1.503 inches, had never been nearly so great in May since 1865, when it was 1·649. The maximum was recorded on the 23rd, being 30·388, and the minimum 28·885, happened on the 14th. The greatest movement of the barometer in any 24 hours, was a fall of —·447 of an inch on the 27th. The greatest rise was +·407 on the 15th; and from that day the rises were great and continuous up to the 23rd. The 14th had a fall of —·401. Altogether there were variations of pressure exceeding one-fifth of an inch, on ten days in the month. However, in comparison with May, 1864, this month's atmospheric pressure was more favorable to life.

Wind force had a total of 60·38lbs., being +11·04lbs. above the May average of the previous 8 years. S.W., N.W., and S. winds were above the average both in frequency and force. East had a slight excess in force, but all the rest were below the mean in both respects. The strongest winds had a pressure of 5·21lbs. to the square foot, and were recorded six times. *Calms* were noted at 38 of the observations, being slightly below the average for May.

Mean temperature, 49·95 degrees, was —00·56 below the average for May, and —2·19 degrees less than May, 1864, had. By the maxima and minima self-registering thermometers, the mean deduced was 52·65 degrees. The difference between these two modes of ascertaining mean temperature is unusually great. The hottest day of the month, the 11th, attained 71 degrees of shade temperature, which is higher than any May of the three preceding years. The coldest night was the 20th, when the thermometer marked 35 degrees. In 1864 the minima thermometer fell two degrees lower, and the extreme range was one degree more.

The daily range of temperature mean was 19·94 degrees, being + 4·64 degrees above the 20 years' average, and + 2·78 higher than May last year. Since 1857 no May has had a temperature so variable in its daily changes. The greatest range in any 24 hours was 33 degrees on the 20th, and the lowest was 8 degrees on the 26th May. 1857 had two degrees higher extreme range, but no other of the 24 years recorded have been so high. European medical practitioners usually ascribe the variations in daily mortality (in the absence of epidemic diseases) solely to fluctuations of temperature. An able article, in the last number of the *Popular Science Review*, "On the Wave of Temperature, and the Wave of Death," adopts this view. Tasmanian experience however, does not confirm it. Possibly in our purer air, with the better feeding and clothing of the great mass of the community, the constitution is more able to resist the injurious influence of rapid changes of temperature. Even the very young do not succumb to it; it is only the aged and diseased who sink under it.

Solar temperature mean, 84·29 degrees, was +2·68 degrees above the average of the previous nine years, though one degree less than May 1864 had. Nevertheless, as the present month exceeds last year's in its cloud mean, it is evident that the sun while shining was hotter. Indeed the maximum of this month, 104, on the 10th, is four degrees above the highest in 1864, and is the hottest on record in May.

Terrestrial-radiation mean was 38·56 degrees, which is —·83 of a degree below the average of the previous nine years, and —2·57 degrees less than May 1864 had. The extremes were 49 on the 27th; 30·5 on the 21st.

Rain fell on 14 days to the aggregate amount of 1·88 inches, which only differs from the 20 years' average for May, by +·03 above. At the same time, the number of wet days is —1·10 less than the average of the previous ten years. Until the 12th day of the month, no rain fell sufficient to scour the surface drains, but on that day, and again on the 15th, 29th and 30th, this effect, so important to the sanitary condition of the city, was produced. Frequent deposits of *Snow* took place on Mount Wellington, but it was not persistent throughout the month. Last year, less than one-half of the present month's rain fell in May. In the mortality comparisons of months, the rain-fall is always an important condition in Tasmania.

Spontaneous evaporation, notwithstanding the hot sun and free ærial movement, did not equal the rain precipitated, being only 1·63 inches. In May last year it was the reverse.

Elastic force of vapor mean, 283, was —26 below the 20 years' average. The previous May was only —11 less.

Humidity mean was 79, being exactly that of the 20 years' standard. May 1864 was —3 below this.

Cloud mean was 6·47 being +·77 more than the 20 years' average, and +·47 above May 1864.

Ozone mean, 8.18, was +1.56 above the average of the previous eight years' Mays, and the highest of any of them. It is also +.78 more than May 1864 had. Being accompanied with a moist state of air, and little elastic force of vapor, it did not, as otherwise it is apt to do, produce inflammatory affections of the air passages—catarrah, bronchitis, &c. Never was a month so free from deaths, from acute, or zymotic diseases.

The *electrometer* recorded 16 positive indications with maximum tension of 6. The negatives were 41, with maximum tension of 6. Nil was recorded 5 times. In May 1864 there was one more positive with same maximum tension, three more negatives, with maximum tension half a degree higher, and only one nil record.

The *deaths* in May 1865 were 43 in number, being +3⅜ more than the average of the preceding eight years, but —5 less than May 1864 had. The tables following will show, that the conclusions deduced from the analysis of the meteorological conditions of the month, are accurately substantiated.

May, 1865.	Ages.	April, 1865	Mays,								Avg. 8 yrs. Mays, 1857–1864.
			1864	1863	1862	Max. 1861	1860	Min. 1859	1858	1857	
5	Under 1	5	9	4	7	12	9	7	12	8	8 4-8
2	1 to 5	2	6	6	2	16	4	5	7	7	6 5-8
4	5 to 20	4	2	3	3	9	1	1	2	1	2 6-8
8	20 to 45	7	11	11	12	5	13	7	7	10	9 4-8
12	45 to 60	7	12	3	8	3	8	5	10	7	7
12	60 and above	13	8	8	4	5	4	4	5	5	5 3-8
43		38	48	35	36	50	39	29	43	38	39 6-8

The deaths, under five years of age, 7, are less than half the average of the preceding eight years, as also of May 1864. Moreover, they are less than those in any one of the eight Mays tabled. They are also less than one-sixth of the total deaths at all ages. At 5 to 20 deaths were above the average and were only exceeded by one year of the eight, 1861. At "20 to 45," the deaths were below the average, and only three years had fewer. At "45 to 60," the eight years' average was greatly exceeded, and only May, 1864, had as many deaths. At "all ages above 60" the mortality was more than double the average, and no one of the

eight years' approached to it nearer than by one third less. The oldest person that died this month, was an inmate of the Brickfields Invalid Asylum, and was 91 years old.

May, 1865	Classes of Disease	April, 1865	Mays. Max. 1864	1863	1862	1861	Min. 1860	1859	1858	1857	Avg. of 8 yrs. Mays, 157-1864.
1	1. Zymotic	5	7	6	3	23	9	2	8	7	8 1-8
12	2. Constitutional	7	12	6	11	7	8	9	2	3	7 2-8
21	3. Local	20	24	16	13	14	18	13	25	21	18
3	4. Developmental	5	4	4	3	4	3	2	4	2	3 2-8
6	5. Violent &c.	1	1	3	6	2	1	3	4	5	3 1-8
43		38	48	35	36	50	39	29	43	38	39 6-8

Zymotic diseases had only one death, a baby of six weeks old, from congenital disease. No year of the eight, had less than double this number, and the highest had twenty-three. Nothing could more clearly indicate the general purity of the air, and propitiousness of the weather to healthy persons, than this. In the *Constitutional Class* of diseases, the deaths were greatly above the average, though precisely the same in number as recorded for May, 1864. Eight of the twelve were from *Consumption*, at ages from 6 to 50 years, and the two youngest were Tasmanians by birth. Two of the others were from *Hydrocephalus*, and *Cancer* and *Dropsy* had each one. All were old standing diseases brought to a fatal termination by the sudden variations of pressure and temperature. Indeed this remark is applicable to all the deaths of the month, except the six accidents, and one other. The *Local Class* of deaths exceeded the eight years' average, by the same number that it was less than May, 1864. The 1st order, *Diseases of the Brain and Nervous System*, had six deaths, while May 1864, had 10. The 2nd order, *Diseases of the Heart and Circulatory System*, had five deaths, May 1864 the same. The 3rd order, *Diseases of the Lungs and Respiratory System*, had four deaths, the same in number as 1864. The 4th order, *Diseases of the Stomach and Digestive System*, had four deaths, May 1864 had only one,—all were chronic diseases. The 5th order, *Diseases of the Urinary system*, had one death, while May 1864 had three. The 7th order, *Diseases of the Locomotive system*, had one death, but 1864 had not any, though it had one in the next order which was not the case in the present month. In the *Developmental class* of diseases the deaths were slightly below the average, and 25 per cent. less than 1864 had.

The class of *Violent and Accidental* deaths, had nearly double the average, while 1864 had only one-sixth of the number. Three of the six were from *burns*; one, internal injuries by a fall from a dray, was brought to Hospital from a country district and lingered some time; the fifth died in gaol from *suffocation* in swallowing a piece of meat; the sixth committed suicide by *hanging*.

Inquests on deaths occurring during the month were seven, while May last year had only four. In the *Hospital* sixteen deaths took place, exclusive of those on which inquests were held. Of these, four were received from country districts. Two others died on the day of their admission. In May 1864 the number of deaths in Hospital, including one inquest case, was ten. For a long time past, deaths in Hospital have formed a larger proportion of total deaths than used formerly to be the case, and it is to be accounted for from two causes:—first, the greater incapability of the lower classes of paying for private medical attendance; and second, the less repugnance there is to going into Hospital, now that its provisions for suffering humanity have been so much improved. At the *Brickfields' Invalid Asylum* five deaths took place, aged 57, 64, 67, 80, 91, respectively. In May 1864, only one death was recorded in that establishment. The remarks made on the hospital, are equally applic-

able to the Male Invalid Asylum, which under the able management of its Superintendent and the vigilant oversight of its Board, has improved so much. For a long time past every bed has been constantly occupied, and many applicants awaiting every vacancy.

Of the 43 deaths this month, 31 were males, 12 females, an unusually large share for the former. Two died in the Glenorchy division of the registration district, the rest in the city. In the first week of the month, 12 died ; in the second and third, 9 each ; in the fourth, 8 ; in the last three days, 5. Six days of the month had not a death. The greatest number on any two consecutive days, was 5, on the last two days of the month, which were remarkable for a sudden extensive increase of atmospheric pressure, decrease of temperature, absence of electricity, fresh southerly wind, and copious fall of rain.

The *births* registered during the month were 73, being 3 more than in May, 1864.