

METEOROLOGY FOR JUNE, 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	30·019	30·030	58 38		80 34·0		NW S	·52	
2	29·980	29·829	55 33		77 31·0		NW N NW	0·	
3	29·678	29·493	56 36		72 32·5		NW W NW	·26	
4	29·370	29 308	58 34		84 35·0		NW N NW	·52	
5	29·640	29·480	57 32		80 28·5		NW NE W	·52	0·14
6	30·150	30·022	62 37		85 33·5		NW W	·26	0·30
7	30·282	30·225	59 44		76 29·5		SW NW	·26	
8	30·294	30·241	63 35		84 32·0		W S	0·	
9	30·277	30·231	60 34		85 29·5		NW N	0·	
10	30·203	30·116	62 37		87 34·0		NW SW	·78	
11	30·335	30·289	60 32		80 29·0		NW	·26	
12	30·314	30·232	61 34		82 30·5		W NW W	·52	
13	30·317	30·275	70 45		94 39·5		NW	·52	
14	30·390	30·338	66 49		70 44·0		N E NW	·26	
15	30·367	30·340	63 40		73 38·0		NW E	0·	
16	30·380	30·352	60 38		75 32·0		NW	·26	
17	30·349	30·252	58 34		70 32·5		NW	·78	
18	30·176	29·992	56 39		59 37·0		NW	·52	
19	30·082	30·061	62 38		88 37·0		NW N	·26	
20	30·092	29·963	69 50		83 47·5		N	1·4	0·06
21	30·125	29·982	72 52		92 44·0		SW NW N	·26	
22	30·114	29·976	69 41		86 37·0		NW W	·78	
23	29·840	29·757	72 50		93 44·0		NW N	·52	
24	29·538	29·425	68 45		78 40·5		NW N NW	3·38	0·14
25	29·491	29·319	64 41		76 43·0		N SWS	·78	0·10
26	29·906	29·804	61 41		60 38·5		W S W	·26	0·06
27	29·874	29·646	58 36		79 33·5		NW	·78	
28	29·564	29·478	55 39		65 33·5		NW S	·52	0·29
29	29·858	29·768	57 36		75 33·0		S SW	·78	0·10
30	30·092	29·855	57 40		81 36·0		W SW	2·86	0·01
Total force 18·46lbs									1·20

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 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 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 :—

- 3rd. *Maclaura aurantiaca* leaves commencing to fall.
 6th. Early *Narcissus* commencing to open.
 10th. Privet shedding leaves.
 15th. Snow Flake in flower.
 25th. Leaves of Mulberry (Black) all shed.
 30th. *Pyrus japonica* commencing to flower.

- Barometer mean, 29·982in., being 0·115in. above the average.
 Temperature mean, 48·44°, being 1·31° ditto.
 Solar intensity mean, 78·98°, being 1·98° ditto.
 Dew point mean, 39·6°, being 1·59° below the mean.
 Humidity of air mean, ·77, being 6·5 per cent. ditto.
 Elastic force of vapor mean, ·263, being 0·11 per cent. ditto.
 Total amount of rain, 1·20in., being 0·69 in. below the average.
 Increase of spontaneous evaporation on rain fall, 0·03 inches.
 Mean amount of ozone, 8·19, being 2·28 of chromatic scale above the average.
 Electricity active on the 6th, 10th, 12th, 29th, and 30th.
 Lightning on the 24th.
 Snow never absent from Mount Wellington during the month.

FRANCIS ABBOTT.

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

BY E. SWARBRECK HALL.

Warm, sunny days, cold nights, with consequent high mean of daily-range of temperature, very gentle aerial movement, high atmospheric pressure, small rainfall, and abundance of electricity and ozone, was the prevailing character of the weather this month. Only once in the previous eight years was there as small a mortality numerically (-32) i.e., in 1857, but in the comparison, both of ages, and classes of disease, the present month exhibits the healthiest character of any June on record.

Atmospheric pressure mean was -29.982 , being $+.115$ more than the average of the 20 years' adopted standard, though $-.049$ less than June 1864 had. The extremes were, 30.390 , maximum, on the 14th; and 29.308 minimum, on the 4th; being a range for the month of 1.082 inches. 1864, in this respect, differed in a scarcely appreciable amount. The greatest movement of the barometer on any day, was a rise of $+.539$ of an inch on the 26th. On nine other days the movements exceeded one-fifth of an inch. The perturbations of this instrument were much greater in June, 1864.

Wind force was only 18.46 lbs., being -6.80 below the average of the eight preceding years, and less than any of them, except June 1860, which had only 13.26 lbs. The calms were 46, being exactly the average. From every point of the compass, except S.W., W., and N.W., the winds both in force and frequency, were below the average. N.W. greatly predominated in frequency by the vane in Hobart city, yet other places had more from the W. and S.W. Even a place so near us as Mount Nelson evinced this prevalence from the pure ocean quarters. The strongest wind recorded had only 2.60 lbs. pressure to the square foot, and was registered at the 7 a.m. observation on the 24th, and at noon on the 30th. Pure, genial, gentle breathings of air, enjoyable by everybody, marked this month with a note of admiration in the weather calendar, and established its claim to having been the most delicious winter month ever recorded.

Temperature mean 48.44 degrees, was $+1.31$ above the 20 years' average, and about a degree higher than June, 1864, had. By the self-registering maxima and minima thermometers, the mean was 50.47 degrees. A peculiar phenomenon, however, is entitled to special remark, this is the wide and unusual difference between the mean of all the maxima and all the minima; the former being 61.60 degrees, and the latter only 39.33 degrees. The hottest days were the 13th, 21st, and 23rd, having the maximum temperature of 70° , 72° , 72° , respectively. No June in the previous 24 years had so warm a temperature as the latter. It is remarkable too that the barometer on these days was very high also, being a very unusual accompaniment. The coldest nights were the 5th and 11th, when the minima thermometer registered 32° , or freezing-point. The mean day-temperature in June last year was nearly five and a half degrees colder, while the night-temperature was more than one and three-quarter degrees warmer.

Daily range of temperature had the mean of 22.27 degrees, being $+6.97$ degrees above the 20 years' mean, and $+7.14$ more than June, 1864, had. This, with the high atmospheric pressure, told heavily on aged and debilitated persons, though innocuous to the young and healthy. The greatest range for any day was 28 degrees, and was noted three times;—on the 8th, 11th, and 22nd. The smallest range was 15 degrees, registered on the 7th. The corresponding records of last year were 22 and 6:

The *solar thermometer* had a mean of 78.98 degrees, which is $+4.49$ degrees more than the average of the previous nine years; 1855 was the only year that had a higher mean. 1864 had less by -6.52 degrees. The highest temperature noted was 94 degrees on the 13th. Only 1856 had a higher maximum. 1864 was five degrees less.

Terrestrial radiation mean, 35.65 degrees, was -1.09 degrees below the 9 years' average, and only 1862 was colder, having a mean of but 34.71 degrees. The extremes of the present month were 28.5 on the 5th, 47.5 on the 20th. Singularly enough these extremes are precisely the same as in June, 1864, while the mean for that month was more than two degrees higher than for this.

Rain fell on the 5th, 6th, 19th, 24th, 25th, 26th, 28th, and 29th. On the 5th, 24th, 25th, 28th, it was sufficient to scour the surface channels. The aggregate amount, however, 1.20 inches, is — .69 below the 20 years' average for this month, and was less than one-third of what was gauged in June last year. On the morning of the 29th the roofs of the houses and all the low hills around the city were coated with *snow*, and frequent snow squalls occurred; during the day. This was one of the few really wintry days in the month. *Snow* was never absent from Mount Wellington during the month, though diminished for some days about the middle of the month to a few scattered patches, as visible from the city.

Spontaneous evaporation only slightly exceeded precipitation, being 1.23 inches, and—19 less than last year.

Elastic force of vapor mean, was 263, being — 11 less than the 20 years' average, and — 10 less than last year had.

Humidity mean, 77, was — $6\frac{1}{2}$ below the 20 years' mean, and only 1858 had so low a mean; 1864 had a mean 5 degrees higher.

Cloud mean, 5.58, was + .09 above the 20 years' mean, but — .59 less than June 1864.

Ozone had the highest mean for June ever noted during the 8 years for which records have been made, *i.e.*, 8.19, being + 1.90 above the average, and + 1.29 above last year. Saturation, 10, was recorded five times; the minimum was 4, on the evening of the 17th. The 16th, 17th, and 18th had the smallest quantity in the month, and on all these days electricity was nil. N.W. winds marked at every observation and atmospheric pressure very high. The mortuary records show the lethal influence distinctly. A baby of 9 days old, with congenital heart disease, and men of 79 and 86 years old succumbed to it.

Electricity had 18 records of Positive with maximum tension of 6; 1864 had only 3 with maximum tension of 5. Negative was registered 34 times, with maximum tension of 5. June last year had 41, but with only 4.5 maximum tension. Nil was recorded 8 times, being only half the number noted in 1864. *Lightning* was observed on the evening of the 24th.

Thirty-two *deaths* have been registered for this June, being 11 less than occurred in May, and $15\frac{1}{2}$ less than the average for June of the previous eight years. It is, moreover, 22 less than died in June last year. The first year of the eight, 1857, had the same in number, but from the analysis of "ages at death," and "diseases causing death," it will be evident that the present month is the healthiest June on record.

June, 1865.	Ages.	Junes.								Avg. 8 yrs. Junes, 1857-1864.
		May, 1865.	1864	1863	1862	Max. 1861	1860	1859	1858	Min. 1857
7	Under 1	5 14	6 10	9	12 11	7	9	9	6 8	9 6-8
2	1 to 5	2 10	6 3	20	5 5	8	8	8	8 1-8	8 1-8
4	5 to 20	4 4	3 5	4	0 4	3	2	2	3 1-8	3 1-8
4	20 to 45	8 7	9 14	14	11 14	15	8	8	11 4-8	11 4-8
3	45 to 60	12 9	10 11	5	3 9	9	2	2	7 2-8	7 2-8
12	60 and above	12 10	14 10	7	5 5	5	3	3	7 3-8	7 3-8
32		43 54	48 53	59	36 48	47	32	32	47 1-8	47 1-8

At all ages under one year the deaths were considerably below the eight years' average. 1863 had one less, 1858 was the same in number, but all the other six years were much more numerous, last year having exactly twice as great a mortality. At "1 to 5 years of age" the deaths were not one-fourth of the eight years' average, and not one of the eight had so small a number. Last year had five times as many. At all ages under five years old, the present month has much fewer deaths than any one of the eight years tabled, and but little more than one-third of last year. At "5 to

20" the deaths were slightly above the eight year's average, three of the eight, including 1864, having the same number, 1862 one more, but the other four less. At "20 to 45," the mortality was little more than one-third of the average, and very much less than any one of the eight years. At "45 to 60" the deaths were considerably less than one-half of the average. 1862 had the same in number, 1857 one less, but the other six years all very much more. At "all ages above 60" the deaths were not only much above the average, but considerably exceeded every year, except 1863 which had two more. The high proportionate rate of mortality in old people, so often of late recorded, is significant of two facts; one of interest to the meteorologist and sanitarian, but the other of greater moment to the statesman. The first is:—that meteorological changes that hurry old and infirm people to the grave has little or no influence on the young and healthy; the second is:—that the changes for a long time going on, in the constituent elements of the Tasmanian population is rapidly increasing the number of the old and dependent, as well as the young and helpless. Nevertheless, as I remarked in the "Report" for January last, the population last year was increased by 666 more male adults "arrived" than "departed." For a long series of years previously the reverse was the annual return.

June, 1865	Classes of Disease	June, 1865										Avg. of 8 yrs. June, 1857-1864.
		May,	Junes. Max.								Min.	
			1864	1863	1862	1861	1860	1859	1858	1857		
2	1. Zymotic	1	5	4	9	23	2	11	8	9	8 7-8	
3	2. Constitutional	12	6	5	8	7	9	10	10	3	7 2-8	
19	3. Local	21	33	29	26	25	20	21	17	14	23 1-8	
6	4. Developmental	3	6	8	4	3	4	6	7	4	5 2-8	
2	5. Violent &c.	6	4	2	6	1	0	5	2	2	2 5-8	
32		43	54	48	53	59	36	48	47	32	47 1-8	

Zymotic diseases only caused two children's deaths, one from croup at 6 years old, the other from diarrhœa, aged 8 weeks. This number is less than one-fourth of the June average for eight years. Only one year of the eight—1860—having so few. 1864 had more than twice the number.

Constitutional diseases had much less than half the average, and exactly half of 1864. One of the three, only, was from consumption, a Tasmanian child 4½ years old. Last year the deaths from this disease were four, one a Tasmanian.

Local diseases caused less than the average number of deaths, and but little more than half of what occurred in 1864. Nevertheless, the two first years of the eight recorded, had fewer deaths than the present. Of the 19 deaths, 6 were from *diseases of the brain and nervous system*; there being 8 in 1864. *Diseases of the heart and organs of circulation* had 4 in 1865, to 6 in 1864. *Diseases of the lungs and organs of respiration* had 4, while 1864 had 14. Of *diseases of the stomach and organs of digestion* this year had only one, while 1864 had 3. The *urinary organs* contributed 4 to the mortuary record this year, but only 2 in 1864. No other of the orders in the local class gave any deaths to the list either in this month or June, 1864.

Developmental diseases had slightly above the average of June deaths, but exactly the same that 1864 had.

The *violent and accidental class* had less than the average, and only half of the number in 1864. One was a death from burns in a girl 7 years old, the other a young man of 19 died from the effects of an injury caused by a tree falling on and tearing off his foot. The *inquests* on deaths in this report were 2; while in 1864 there were 3. The deaths in *hospital*, including both those on which inquests were held, were 8, last year they were one more. One of the present month's deaths was a case sent from a country district. At the

Male Asylum for Invalids 5 deaths took place, aged respectively 54, 69, 75, 76, 79; June 1864 had only one.

Of the 32 deaths, one died in the Glenorchy, one in the Queenborough, and the rest in the city districts, 23 were males, 9 females, a disproportion nearly as great as occurred in May. In the first week, 13 died; in the second, 4; in the third, 5; in the fourth, 6; in the last two days, 4. The most fatal period was the first four days of the month, when 10 died; the last two days of the previous month having also been the most fatal in May. On one-half the days of the month no deaths took place, the longest interval without a death being the four days, 8th to 11th.

The *births* registered were 78, being 7 more than in June, 1864.