

## METEOROLOGY FOR OCTOBER, 1866.

## 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.		Highest in sun.	Lowest on grass	Direction from three daily registers.	Force in lbs. per square foot.	
			°	°					
1	29.772	29.726	57	41	72.0	30.5	NW SWW	.26	
2	29.850	29.803	64	43	105.0	39.0	NW SE	0.	
3	29.850	29.715	64	41	104.0	39.5	NW W	0.	0.05
4	29.641	29.557	71	48	105.0	46.5	NW SE	0.	0.15
5	29.829	29.826	60	52	66.0	50.0	SW SE	.78	0.14
6	29.965	29.937	63	51	94.0	50.0	SE E	.26	
7	29.987	29.955	69	47	106.0	45.0	N SE NE	.78	
8	29.837	29.539	64	48	95.0	43.0	NW NE N	1.04	
9	29.485	29.340	64	49	90.0	45.0	NW WN W	3.12	
10	29.427	29.287	59	44	101.5	43.5	NW W SW	1.56	0.03
11	29.638	29.516	54	42	92.0	39.0	SS W W	3.38	0.05
12	29.965	29.770	61	42	100.0	40.5	NW W	2.86	
13	30.209	30.133	67	40	109.5	38.5	NW N W	.78	
14	30.315	30.279	69	38	110.0	33.0	NW E SE	1.04	
15	30.305	30.151	64	38	102.0	34.5	NE SE S	1.04	
16	30.106	29.859	75	39	113.0	34.0	W NW SE	.78	
17	29.663	29.612	77	49	108.0	46.0	NW SE	3.12	
18	29.355	29.299	69	50	107.0	50.0	NW N	3.38	0.22
19	29.570	29.483	64	51	103.5	49.0	N SE W	3.38	0.03
20	29.493	28.301	67	45	101.0	42.5	NW	5.46	0.06
21	29.559	29.422	64	50	106.0	47.5	NW W	6.25	
22	29.643	29.500	62	45	96.5	39.5	NW SE	1.30	
23	29.441	29.343	55	48	57.0	46.0	S SE S	10.94	1.75
24	29.641	29.546	53	47	54.0	45.0	S	3.64	0.63
25	29.760	29.719	56	41	80.0	38.0	NE SE	.78	0.15
26	29.867	29.756	58	40	92.5	38.5	NW SW	3.12	0.03
27	30.081	30.008	63	38	104.0	33.5	NW SE	.78	
28	30.053	29.910	69	40	110.0	40.5	NW SW	3.12	
29	29.910	29.826	82	53	119.0	48.0	NW SE	1.30	
30	29.990	29.789	81	47	122.5	47.5	NW SE	1.04	
31	29.837	29.682	90	51	121.0	48.5	NW SE	1.30	
Monthly									
mean 29.746 56 .03 98.30 42.32. Total force 66.59 3.34.									

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-five 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 :—*

- 4th. Pailonia Imperialis commencing to flower.  
 9th. Carpinus commencing to leaf.  
 15th. Ailanthus glandulosus ditto ditto.  
 17th. Tilia Europœa ditto ditto.  
 20th Morus niger ditto ditto.  
 25th. Maclaura aurantiaca ditto ditto.  
 25th. Ulmus Campestris, seeds commencing to fall.  
 28th. Melia azederach commencing to leaf.

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Barometer mean, 29 746in., being 0·038in. below the average.  
 Temperature mean, 56·03°, being 2·09° above the ditto.  
 Solar intensity mean, 98 30°, being 2·70° above the ditto.  
 Dew point mean, 46·3°, being 1·9° above the average.  
 Humidity of air mean, 75, being 02 per cent. above the ditto.  
 Elastic force of vapor mean, 334, being 034 per cent. above the ditto.  
 Total amount of rain, 3·34in., being 1·37in. above the ditto.  
 Increase of spontaneous evaporation on rainfall, 1·75in.  
 Mean amount of ozone, 8·10, being 0·18 on chromatic scale above the ditto.  
 Electricity active on the 1st, 10th, 12th, 14th, 16th 21st, and 30th.  
 Squally on the 11th with hail, rain and snow.  
 Thunder on the 3rd.

FRANCIS ABBOTT.

ANALYSIS OF THE OBSERVATORY RECORDS FOR  
OCTOBER, 1866, IN CONJUNCTION WITH THOSE  
OF BIRTHS, DEATHS, &c. BY E. SWARBRECK HALL.

Though many of the meteorological phenomena were abnormal in character this month, yet, on the whole, the weather was most auspicious to health and life, and specially so to all children and young persons, and even to adults under 60 years old. Very aged and weakly persons constituted the principal mortality of this October, and in a greater proportion to the total deaths at all other ages, than any other October on record.

*Atmospheric pressure* did not undergo any extreme daily variations, the greatest being a fall of  $-.318$  of an inch on the 8th, which is less considerably than in any October of the previous eleven years. Nevertheless, there were 13 days on which the barometrical movements exceeded one-fifth of an inch. The maximum pressure, 30.315, was recorded on the 14th, and the minimum, 29.287, on the 10th; so that in five days there was a range of 1.028 inches, and more deaths occurred from 11th to 14th inclusive than any other consecutive four days in the month. The mean of the month was 29.746, which is  $-.034$  below the twenty years' adopted standard mean for October.

*Wind-force* was unusually moderate for this generally very boisterous month. The total force was only 66.59lbs., which is  $-33.69$ lbs. less than the average of the previous nine Octobers. The diminution, moreover, was in winds from those quarters least favorable to health. *South-east, South,* and *West* had all more than the average force, the other five points had all less. The strongest winds registered had 5.21lbs. pressure to the square foot, and were recorded three times only. *Calms* were 21 times registered, 14 of them being in the first week of the month. The nine years' average is  $-6.22$  less. October 1865 had + 20.30lbs. more wind-force than the present month. No *hot winds* occurred, though it is probable from some other of the phenomena that winds of that type prevailed on the last three days of the month on the Australian continent.

*Temperature* mean, 56.03 degrees, is 1.58 above the 20 years' mean for October, and + 2.36 more than October 1865 had. The self-registering maxima and minima thermometers gave a mean of only 55.37 degrees. This is now the fourth month in succession in which this very unusual discrepancy has been noted. The maximum was 90 degrees on the 31st. Once before, during the previous 25 years, this thermometer attained the maximum of 91.5. This was in October 1845. No other October had a maximum exceeding 85.9. The maximum of the present month occurred in a very remarkable manner:—Both the previous days were hot, having maxima respectively of 81 and 82 degrees,—on the 31st at 7 a.m., the observed thermometer was registered at 64, and at 1 p.m., 67. In the interim did the intense heat of 90 degrees, recorded by the self-registering thermometer, occur?—and that was just before 10 a.m., for shortly after that time a strong cold sea breeze set in, and reduced my ordinary attached-thermometer 23 degrees in two hours, the barometer rising rapidly at the same time. The mean of all the maxima, or high-day temperatures, was 65.65 degrees, while 1865 was 65.58. The mean of all the minima, or low-night temperatures, was 45.10 degrees, 1865 being 45.95. The minimum was 38 degrees, registered on the 14th, 15th, and 27th. Both 1865 and 1864 had the same minimum of 38. The month's extreme range was 52 degrees, being the greatest recorded, with the exception of October 1865, which had a range of 56 degrees. The self-registering maxima and minima wet-bulb thermometers had a mean of



little more than four degrees less than the dry-bulb mean, being 51·08 degrees.

*Daily-range of temperature mean*, 20·55 degrees, is +1·53 above the 20 years' average, and +1·23 more than 1865 had. The extremes were, maximum 39, on the 31st; minimum 6, on the 24th. No October in the previous 25 years had so high a maximum. Last year was 38, and singularly enough occurred also on the 31st day of the month. In 1862, also, a maximum of 38 degrees was recorded. The first twelve days of the month had a mean of nearly four degrees less in daily-range than that of the whole month; on these twelve days only 8 deaths occurred, while on the remaining 19 days there were 27.

*Solar-intensity* had the mean of 98·30 degrees, being +2·70 degrees more than the average of the previous 10 years, and +1·12 higher than 1865 had. As cloud mean was above the 20 years' average, it is evident that the sun's rays must have been unusually intense while they were unobstructed. The maximum, 122·5 degrees, was noted on the 30th, and was higher than ever occurred before in any of the Octobers recorded. The minimum was 54 degrees on the 24th, which was a cold wet day, with a fresh south wind.

*Terrestrial-radiation* had a mean of 42·32 degrees, which is only +·33 of a degree above the mean of the previous 10 years, but -·84 of a degree less than 1865 had. The extremes were, maximum 50, on the 5th, 6th, and 18th; minimum 30·5, on the 1st.

*Rainfall* amounted to 3·34 inches, being +1·37 more than the 20 years' average for October. Only 1861, in the previous 25 years, had a greater rainfall, *i.e.* -5·04 inches. There were twelve wet days, being -2·90 less than the average of the previous 11 years. The greater part of the deposit fell on the 23rd, 24th, 25th, -*i.e.*, 1·75, ·68, ·15, respectively. This gave a thorough cleansing to the sewers and city rivulet, and approached very nearly to a flood. *Snow* was never absent from Mount Wellington during the month. On the 11th it was coated afresh to its base, and showers of mixed snow, hail, and rain fell even in the city, but did not whiten the ground.

*Humidity mean*, 75, was + 2 more than the 20 years' average.

*Spontaneous-evaporation* considerably exceeded rainfall, being 5·09 inches.

*Elastic force of vapor mean*, 334, was + 33 above the 20 years' average. Out of the previous 25 years, only 1858 had a higher mean, *i.e.*, 341. The range was, from minimum 154 on the 12th, to maximum 494 on the 31st. Though the mean of 1865 was 29 less than the present month, the extremes were both higher and lower, *i.e.*, 517 and 118.

*Cloud mean*, 5·88, was +·26 above the 20 years' average, though -·87 less than in 1865.

*Ozone mean*, 8·10, was +·18 above the 9 years' average, though -·78 less than October 1865 had. Consequently the present month, while even more free from zymotic diseases than that month was, had also a smaller amount of those acute inflammatory diseases of the respiratory organs than was then recorded. Saturation, 10, was registered four times, and the minimum was 6. Last year saturation occurred nine times, and the minimum was 7.

*Electricity* had 30 positive indications, with tension ranging from maximum 8·5 to minimum 2·5. In 1865 there were only 24 positive, with tensions ranging from 8 to 2·5. There were 27 negative, with tensions ranging from 8 to 1·5. Last year they were 36, with range of tension from 7 to 1·5. There were 5 "*Nils*" this month, while 1865 had only 2. No *lightning* was observed, but *thunder* was heard on the 3rd of the month.

The *Deaths* for this October, 35, were nearly 20 per cent. below the average of the previous nine years. Two years out of the nine, 1862 and 1861, had a smaller number, but the other seven had considerably more; 1865 had five more.

Oct., 1866	Ages.	Octobers.								Avg. 9 yrs. Octs., 1857-1865.			
		Sept., 1866		1865	1864	1863	1862	'61Min	1860		1859	'58Max	'57Max
6	Under 1	3	8	8	4	2	8	6	9	9	10	7	1-9
1	1 to 5	2	0	3	6	3	3	10	3	15	7	5	5-9
0	5 to 20	1	2	4	2	2	0	4	6	4	3	3	
9	20 to 45	10	11	8	8	9	12	10	7	12	10	9	6-9
6	45 to 60	3	6	8	13	4	2	8	9	6	22	8	6-9
13	60 and above	9	13	10	16	10	4	7	7	11	5	9	2-9
35		28	40	41	49	30	29	45	41	57	57	43	2-9

In every group of ages, under 60 years old, the deaths were below the average of the previous nine years by more than one-third,—the average being 34,—while this month's amounted to only 22.

At "60, and all ages above," the mortality was considerably above the average. 1865 had the same number, 1863 three more, but all the other seven years much less. Eight of the 13 were between 60 and 70 years old; 3 between 70 and 80; and 2 aged respectively 86 and 87 years old.

In no October of the nine years were the deaths under 20 years old so few as in the present month. This is a sure indication of the general salubrity of the weather.

Oct., 1866	Classes of Disease	Octobers.								Avg. of 9 yrs. Octs. '57-'65.			
		Sept., 1866		1865	1864	1863	1862	1861	1860		1859	'58Max	'57Max
0	1. Zymotic	1	2	2	6	3	1	12	4	11	6	5	2-9
9	2. Constitutional	7	8	6	10	9	2	9	5	13	9	7	8-9
19	3. Local	17	17	22	26	12	17	22	28	23	30	21	8-9
5	4. Developmental	2	10	6	2	5	7	1	3	7	4	5	
2	5. Violent &c.	1	?	5	5	1	2	1	1	3	8	3	2-9
35		28	41	41	49	30	29	45	41	57	57	43	2-9

In the 1st, or *Zymotic class of diseases*, no deaths occurred, which is of very rare occurrence indeed. October 1865 had 2, and the nine years' average is 5 2-9.

The 2nd, or *Constitutional class of diseases*, had somewhat more than the average number of deaths; seven of the 9 were from *Consumption*, two of the sufferers, having been born in Tasmania, females aged respectively 23 and 35.

In the 3rd, or *Local class of diseases*, the deaths were slightly below the average, though two more than 1865 had. The 1st order of this class, *Diseases of the brain and nervous system*, had 4 deaths, being one less than 1865 had. The 2nd order, *Diseases of the heart and organs of circulation*, had 7 deaths, being 3 more than in 1865. The 3rd order, *Diseases of the lungs and organs of respiration*, had 4 deaths, 1865 had one more. The

4th order, *Diseases of the stomach and organs of digestion*, had 4 deaths, 1865 had only 2. In no other order of this class were there any deaths this year, in last October there was one in the 7th order.

The 4th, or *Developmental class of diseases*, had 5 deaths, three of them from old age, the fourth a child five weeks old, the fifth three months old; 1865 had 19. The average of the nine years is 9.

The 5th, or *Violent and accidental class of diseases*, had 2, which is considerably below the average, and one less than 1865 had. One was *poisoning* from arsenic, taken in an attack of drunkard's delirium; the other found *drowned*.

The *Inquests* were three, last year had 4. In *Hospital* 8 deaths took place, 1865 had 15. Two of the cases were admissions from country districts, one a Sandwich islander from a whaler in harbor, two others from the Penitentiary. At the *Male Invalid Asylum* 7 deaths took place, aged respectively 58, 63, 66, 74, 77, 86, 87. Surely some of these long-afflicted, hopeless, and aged men ought to have been removed to the Hospital to die on beds somewhat more comfortable than straw ones can possibly be? In October 1865 there were only 4 deaths in this Asylum. Of the 35 deaths, 24 were males, 11 females. One death occurred in the Glenorchy division of the Registration-district; the rest in the City.

In the first week of the month the deaths were only 4; in the second, 11; in the third, 10; in the fourth, 3; in the last three days, 7. The most fatal period of the month was the nine days, 13th to 21st, when nearly half of the whole month's mortality took place. For any two consecutive days, the 13th and 14th, and 29th and 30th, had the greatest number of deaths, the first having 2 and 5 respectively, and the second 3 and 4.

The *Births* registered were 73, being 8 more than in October, 1865.