

METEOROLOGY FOR SEPTEMBER, 1866.

PRIVATE OBSERVATORY, HOBART TOWN.

Day of month.	Bar. 37 feet abv. sea level, cor. & reduced		Self - register- ing Thermo- meters.				Wind.	Force in lbs. per square foot.	Rain in inches.
	Highest.	Lowest.	Highest in shade.		Lowest on grass.		Direction from three daily registers.		
			°	°	°	°			
1	29.959	29.926	75	52	105.0	50.0	N W N W	.78	
2	29.922	29.594	72	49	102.5	48.5	N N W	10.68	0.15
3	30.061	29.998	67	45	99.0	42.0	N W	3.12	
4	29.964	29.703	66	38	83.0	34.0	N W N N W	5.99	
5	29.884	29.753	64	44	93.5	42.5	N W N N W	1.04	0.07
6	29.748	29.380	58	42	73.5	40.0	N W N E N W	0.	0.06
7	29.656	29.322	53	39	60.0	39.5	S W W S W	10.41	0.45
8	29.956	29.925	51	36	88.0	33.0	S W N W	.78	0.06
9	29.739	29.461	61	36	91.5	36.0	N W	1.04	0.02
10	29.795	29.720	58	37	93.5	36.0	S W S N E	1.04	0.35
11	29.659	29.422	62	42	92.5	40.5	N W	1.30	0.02
12	29.832	29.736	55	37	89.0	36.5	N W E N W	.52	
13	29.872	29.762	64	34	96.0	33.5	N W	.78	
14	29.728	29.645	65	46	90.0	43.5	N W S E	.52	0.15
15	29.401	29.240	64	45	92.0	44.0	N W N	.52	0.12
16	29.504	29.355	59	43	90.0	41.0	N W N	1.04	0.01
17	29.453	29.362	60	41	97.0	35.5	N W W N W	3.38	
18	29.764	29.746	62	39	96.0	32.5	N E N W	1.04	
19	29.710	29.673	54	44	92.5	39.0	N W	8.33	
20	29.917	28.910	58	38	93.0	32.5	W S E	1.30	
21	29.940	29.790	57	37	96.5	32.0	N W N E	1.04	
22	30.008	29.982	61	42	88.0	38.5	N W N	.78	
23	30.078	29.907	66	35	89.0	30.0	N W N	1.04	
24	29.942	29.918	61	46	60.0	41.0	N W S E	.26	0.25
25	29.992	29.845	63	45	92.0	40.5	N W S E S W	.52	
26	29.653	29.494	65	45	100.5	41.5	N W W	7.81	0.02
27	29.615	29.546	58	40	91.0	35.0	N S W	3.12	
28	29.651	29.587	67	44	106.5	40.0	S W N W W	1.04	
29	29.828	29.790	58	38	85.0	33.0	S W	5.46	0.14
30	29.670	29.580	55	34	77.5	31.5	N W S E S W	5.47	0.01

Monthly

mean 29.730 52 .23 90.11 38.10 Total force 80.15 1.83.

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 :—*

15th. Ash commencing to flower.

16th. Oak commencing to break into leaf.

20th. Grape vines commencing to break into leaf.

,, Montan Peony commencing to flower.

26th. Horsechestnut commencing to flower.

29th. Robinia pseudo-acacia commencing to leaf.

Barometer mean, 29.730in., being 0.048in. below the average.

Temperature mean, 52.23°, being 1.31° above the ditto.

Solar intensity mean, 90.11°, being 3.11° above the ditto.

Dew point mean, 41.9°, being 1.695° above the ditto.

Humidity of air mean, .69, being .7 per cent. below the ditto.

Elastic force of vapor mean, .269, being .021 per cent. below ditto.

Total amount of rain, 1.88in., being 0.01 above the ditto.

Increase of spontaneous evaporation on rainfall, 1.93in.

Mean amount of ozone, 8.22, being 0.46 above the ditto.

Electricity active on the 1st, 3rd, 4th, 5th, 8th, 10th, 12th, 13th, 17th, 20th, 21st, 22nd, 23rd, and 29th.

A large circle round the moon on the 23rd.

Eclipse, badly seen, of the 24th, for clouds.

Snow never absent from Mount Wellington.

FRANCIS ABBOTT.

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

No September of the previous nine years was so favorable to health and life as the present month. The deaths were less than in any former September on record by 20 per cent, and below the average of the previous nine years by more than 33 per cent. Atmospheric pressure, though constantly oscillating, had no extreme ranges; wind movement was constant, but moderate, and the quality of the air was most pure; electricity was abundant, and rain-fall sufficient. The month's mean was warmer than the average, with extensive daily extremes, the latter being the only phenomenon that apparently had any adverse effect upon health and life.

Atmospheric pressure mean for the month was 29·730, being only +·048 above the mean of the 20 years' adopted standard. The maximum was only 30·078, recorded on the 23rd. This is the lowest maximum that has been registered since 1856. The minimum was 29·240, recorded on the 15th. In only nine, out of the previous 25 years, was a higher minimum noted. The range of the month ·838, is the smallest that has been registered since 1859. On twelve days in the month the barometer varied one-fifth of an inch, but the greatest movement on any day was only ·418 of an inch, recorded on the 9th. This is the smallest day range for any day in September of the previous ten years. When compared with the corresponding data in September, 1865, it is evident how much more favorable to health and life was the present month as regards atmospheric pressure.

Wind-force had a total of 80·15 lbs., which is +31·52 lbs. more than 1865 had, and +7·62 lbs. more than the average of the previous nine years. Nevertheless, there were no storms, the greatest pressure to the square foot having been 5·21 lbs., and that only recorded seven times out of the 90 observations recorded. The calms, 17, were —7·12 below the average of the previous eight years. Constant, but moderate, movement was therefore the rule. *South-west, west, and north-west* winds were alone more numerous than usual, the first and last being also greatly above the average in force, and the west very little below it.

Temperature mean, 52·23 degrees, was +1·31 above the 20 years' average, though somewhat cooler than 1865 was, *i.e.*, —·09 of a degree. By the self-registering maxima and minima thermometers, the mean was only 51·28 degrees. This is the third month in succession in which this remarkably unusual occurrence of a lower mean by these thermometers, than by the three daily observed ones has been noted. The maximum, 75 degrees, was registered on the 1st; the minimum, 34, on the 13th and 30th. The month's range was consequently 41 degrees, which is greater than in any September since 1857. The mean of all the maxima, or high-day temperatures, was 61·47 degrees, being —1·80 degrees less than last year. The minima or low-night mean was 41·10 degrees, being —2·53 degrees less than in 1865.

The daily-range of temperature had a mean of 20·37 degrees, being +2·35 above the 20 years' average, and +·74 of a degree higher than 1865 had. The greatest range on any day was 31 degrees, recorded on the 23rd. This is the highest noted since 1856; that year, 1855, and 1841, only, having a higher range than the previous 25 years. The effects of these wide daily-ranges accompanied with a large amount of ozone, was to cause inflammatory affections of the respiratory organs, from which diseases seven deaths were registered, being one fourth of the whole month's mortality. Not one of the deaths, however, were under 28 years of age, and three of them were aged 63, 69, and 80 years respectively.

Solar-intensity mean 90.11 degrees, was + 2.43 above the mean of the previous ten years, though —.99 of a degree less than in 1865. The maximum was recorded on the 28th, being 106.5, which is—4.5 less than the maximum last year. The minimum was 60 registered twice on the 7th and 24th.

Terrestrial-radiation had a mean of 38.10 degrees, which is—29 less than the mean of the previous ten years, and—2.07 less than 1865 had. The extremes were 50 degrees on the 1st, 30 on the 23rd.

Rain-fall amounted to 1.88 inches, being only + .01 more than the average of the 20 years, though—.68 less than 1865 had; nevertheless, my rain-guage gave 2.38 inches for the present month — my guage, however, is on the ground in an open garden, while Mr. Abbott's is more elevated and confined. There were 15 days on which rain fell, being—0.27 less than the average of the previous eleven years, and—2.00 less than 1865 had. The greatest fall recorded on any day was .45 of an inch on the 7th; but there fell sufficient on many other days, to cleanse the gutters and drains. *Snow* fell in the city on the night of the 7th, and at daybreak the ground and low hills about the city were well powdered with it, but it disappeared by ten o'clock in the morning. There were some slight squalls in the city, of rain, hail, and snow on the 29th. Snow was never absent from Mount Wellington during the month, and received several copious additions.

Humidity mean, 69, was — 7½ below the 20 years' average, and — 2 less than 1865 had.

Elastic force of vapour mean, 269, is—11 less than the 20 years' average, and 8 less than 1865 had.

Cloud mean was, 6.27, being + .52 more than the 20 years' mean.

Ozone mean was, 8.22, being + 0.26 above the average for September of the previous nine years, and + 0.23 more than 1865 had. The range was from 9 maximum to 6 minimum.

Electricity gave 28 positive indications with maximum tension of 7.5, and minimum 2. The negative indications were 32 with maximum tension of 8 and minimum of 2. "Nil" was never recorded. No lightning seen, or thunder heard. On the night of the 19th, about midnight, many persons observed a slight vibration of the earth as though from an earthquake.

28 Deaths for September, 1866, is the smallest number ever yet recorded for this month; and of all the other eleven months for the previous nine years, only January, 1864, had a smaller mortality (24). In May, 1859, there were recorded 29 deaths, and the same number in October, 1861. The present month's mortality is —18 1-9th less than the average of the previous nine years.

Sept., 1866	Ages.	Septembers.										Avg. 9 yrs. Sept., 1857-1865.
		Aug., 1866.	1865	1864	1863	1862	61Min	60Max	1859	1858	1857	
3	Under 1	1	9	6	5	12	5	8	15	8	7	8 3-9
2	1 to 5	5	2	1	4	5	2	12	4	4	4	4 2-9
1	5 to 20	1	6	4	4	3	2	8	4	0	1	3 5-9
10	20 to 45	10	3	14	8	17	7	12	8	12	10	10 1-9
3	45 to 60	5	9	6	13	10	8	10	8	10	13	9 6-9
9	60 and above	11	15	6	8	9	11	15	11	8	9	10 2-9
28		33	44	37	42	56	35	65	50	42	44	46 1-9

Under "one year old" the deaths were little more than one-third of the nine years' average, and far less than any one year of the nine.

At "1 to 5" years of age, the mortality was less than half the average—1861, however, had only one, and last year and 1861 had the same number as the present year.

At "5 to 20," the deaths were not much above one-fourth of the nine years' average—1858, however, had not any, and 1857 had the same number; all the other seven years had considerably more.

At "20 to 45," the deaths were only a fraction below the nine years' average, four of the years having less, 1857 the same, the others more.

At "45 to 60," the deaths were less than one-third of the average, and but one year of the nine had fewer than double the present month's number.

At "60 and all ages above," the mortality was somewhat below the average—three of the nine years had less, one the same, and the rest considerably more, particularly last year.

Sept., 1866.	Classes of Disease	Septembers.										Avg. of 9 yrs. Augs '57-'65.
		August, 1866.	1865	1864	1863	1862	'61 Min	'60 Max	1859	1858	1857	
1	1. Zymotic	3	6	5	4	4	5	11	12	3	3	5 8-9
7	2. Constitutional	8	5	9	9	15	3	18	12	10	5	9 5-9
17	3. Local	12	22	20	23	26	17	32	16	25	25	22 8-9
2	4. Developmental	7	6	3	2	2	9	2	7	1	8	4 4-9
1	5. Violent &c.	3	5	0	4	9	1	2	3	3	3	3 3-9
28		33	44	37	42	56	35	65	50	42	44	46 1-9

The 1st, or *Zymotic class of diseases*, had only one death, or about one sixth of the average. No year of the previous nine had less than three times as many, last year had six. It is remarkable, too, that the solitary death (Metria) occurred in an isolated healthy spot in one of the rural divisions of the registration-district.

The 2nd, or *Constitutional class of diseases*, had somewhat below the average of deaths, though last year and two others had a still smaller number. Five of this class were from *consumption*, but not one of the number was Tasmanian born. Though 1865 had only 3 deaths from this disease, two of them were natives of the island.

The 3rd, or *Local class of diseases*, had considerably less than the average of deaths, and only one year of the nine, 1859, had less, 1861, however, had an equally small number. Last year had many more. In the 1st order, *diseases of the brain and nervous system*, the deaths were 4, while 1865 had 11. The 2nd order, *diseases of the heart and circulatory system*, had 4 deaths, being one more than in 1865. In the 3rd order, *diseases of the lungs and respiratory system*, there were 7 deaths, while 1865 had but one. The 4th order, *diseases of the stomach and digestive system*, had but one death, 1865 had one. The 5th order, *diseases of the urinary system*, had one death. Last year had four times as many. No other order of this class had any deaths this month, while last year had one in the seventh.

The 4th, or *Developmental class of diseases*, had only 2 deaths, a female, aged 64, and a child, aged nine months. The average is more than twice this number, and last year had three times as many as the present month.

The 5th, or *Violent and Accidental deaths* had only one death, a man, aged 40, registered "diffuse popliteal aneurism," but who had also phlegmonous erysipelas. From an accident there arose great hæmorrhage, necessitating the tying of the great artery of the thigh (femoral), and the subsequent amputation of the limb; the patient, however, died within

twenty-four hours. Last year this class had 5 deaths, and the average for the nine years is 3·3-9.

One *Inquest* only was held on a death within this registration district, a man, aged 74, suffering from heart disease, but death was accelerated by exposure to cold. 1865 had 5. In *hospital*, the deaths were 9; last year had 14; none of those dying in hospital this month were from other districts.

At the *Male Invalid Asylum* there was only one death this month; last year there were three.

Of the 28 deaths, 18 were males, 10 females; one died in the Glenorchy, 2 in the Queenborough divisions of the district, the rest in the city.

The most fatal period of the month was the three first days, during which six deaths occurred; two other periods of three days in succession had five deaths each. The first three days of the month were the hottest, a modified hot wind blowing gently on the 1st, but more violently on the 2nd. On the 27th, when four deaths happened, there had been within the previous twenty-four hours a rapid fall of the thermometer as well as the barometer; three of the diseases causing death, were chronic, and of long standing, aged respectively, 22, the fourth 7, 80; was from acute disease of the lungs, aged 23.

In the first week 5 deaths took place; in the second, 8; in the third, 3; in the fourth, 11; in the last two days, 1.

The *births* registered were 55, being 21 less than in September, 1865.