

SEPTEMBER, 1871.

PRIVATE OBSERVATORY, HOBART TOWN.

Day of Month.	Bar. 37 feet abv. sea level corrected & reduced.		Self-Registering Thermometers.				Wind.		Rain in inches.
	Highest.	Lowest.	Highest in shade.		Highest in sun.	Lowest on grass.	Direction from three daily re- gisters.	Force in lbs. per square foot.	
			°	°					
	In.	In.	°	°	°	°			
1	29.670	29.495	58.37	90.0	32.5	NW	1.04	0.04	
2	29.792	29.572	53.38	85.5	35.0	NW SW SE	5.46	0.37	
3	30.032	30.014	64.39	88.5	35.5	NW	1.04		
4	30.092	29.950	58.46	66.0	42.0	SW N SW	2.86		
5	30.219	30.176	61.39	91.5	33.0	NW SE	.26		
6	30.027	29.710	66.35	96.0	31.0	NW	.52	0.21	
7	29.307	29.185	61.47	75.5	43.5	NW	.52	0.16	
8	29.505	29.456	57.43	82.0	40.0	NW	.78	0.09	
9	29.890	29.587	53.38	78.0	34.5	W SW	5.56		
10	30.111	30.044	68.30	99.5	36.5	SW N NW	.78	0.02	
11	30.060	30.002	63.49	88.0	47.0	NW	.52	0.05	
12	30.014	29.990	60.46	66.0	42.0	SE NW SE	.78	0.01	
13	29.848	29.707	64.47	82.0	43.0	NW N NE	.52		
14	29.810	29.763	70.46	104.5	42.5	NW SE	0.		
15	30.179	30.061	60.41	95.0	37.5	NW SW SE	.78		
16	30.369	30.334	63.45	99.0	42.5	SW SE NE	.78	0.25	
17	30.242	30.034	56.47	60.0	40.0	NW	1.04		
18	29.977	29.890	71.49	105.0	48.0	NW SE	.52		
19	30.337	30.262	65.43	100.0	41.0	W NE SE	.52	0.04	
20	30.241	30.115	63.49	95.0	45.0	SW NE SE	.78		
21	30.106	29.902	74.42	105.0	40.0	NW SE NE	.26	0.06	
22	29.771	29.665	63.52	85.5	50.0	NW SW	.26	0.03	
23	29.863	29.842	67.46	100.0	46.0	NW	.26		
24	29.765	29.576	67.45	94.0	41.5	NW SW	.78	0.07	
25	29.650	29.580	61.44	95.0	38.5	NW SW	3.52	0.03	
26	29.881	29.751	69.49	98.0	39.0	NW	1.08		
27	29.691	29.484	69.47	95.0	45.0	NENW	7.84	0.12	
28	29.830	29.742	64.47	94.0	42.0	SW	.78		
29	29.864	29.617	66.39	96.0	36.0	NW	.52		
30	29.750	29.721	63.44	97.5	39.5	NENW	2.04	0.05	
Mean monthly	29.866		54.22	90.23	40.32			1.60	

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 a 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 25 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.

14th.—Ash commencing to break into leaf.

22nd.—Grape vines do do.

26th.—Oak do do.

27th.—Moutan Peony commencing to flower.

29th.—Horse chestnut do do.

30th.—Robinia pseudo-Acacia commencing to leaf.

Barometer mean, 29.866in., being 0.105in. above the average.

Temperature mean, 54.22°, being 3.46° above the average.

Solar radiation mean, 90.23°, being 1.69° above the average.

Dew point mean, 44.1°, being 1.93° above the average.

Humidity of air mean, 71, being .05 per cent. below the average.

Elastic force of vapour mean, .298, being .009 percent. above the average.

Total amount of rain, 1.60in., being 0.48in. below the average.

Increase of spontaneous evaporation on rainfall, 1.50in.

Mean amount of ozone, 8.35, being 0.39 of chromatic scale above the average.

Electricity active on the 3rd, 4th, 5th, 8th, 10th, 16th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, and 30th.

Fresh fall of snow on Mount Wellington on the 2nd and on the 9th, a heavy fall on the mountain and low hills, remaining in abundance until the end of the month.

FRANCIS ABBOTT.

NOTES ON THE METEOROLOGY AND MORTALITY OF THE MONTH OF SEPTEMBER, 1871,

By E. SWARBRECK HALL.

With the exception of June last, this is the only month since August, 1870, in which the deaths have exceeded the average of the previous 13 and 14 years.

The detailed remarks on the various meteorological phenomena of the month will indicate some of the causes to which this excessive mortality may reasonably be ascribed.

Atmospheric pressure mean, 29·866, was + ·105 above the 25 years' standard mean for September. It ranged from minimum, 29·185 on the 7th, to 30·369 on the 16th, being an extreme range for the month of 1·184 inches. The greatest movement of the barometer in any 24 hours from 1 p.m. to 1 p.m., was a fall of — ·682 of an inch on the 7th, being the largest recorded during the last 11 years. On 15 other days the movements exceeded one-fifth of an inch, which is an unusually large proportion for any month.

Wind-force total was 42·23 lbs., being — 30·30 less than the average for this usually very winly equinoctial month. The strongest winds were only 5·21 lbs. pressure to the square foot; one was from the north-west recorded on the evening of the 27th; the other west at the morning observation on the 9th. At only five other observations was the pressure of 2·60 lbs. registered. At 50 out of the 90 observations the wind blew from the north-west, with 22·11 lbs. of the total force. From north, north-east, east, south-east, and south, only 23 winds were recorded with the very small united force of 4·94 lbs. *Calms* were 28 in number, being + 5·55 above the average.

Temperature mean, 54·22 degrees, was + 3·46 above the September average. In the previous 30 years, only the Septembers of 1858 and 1855 were warmer than the present month. The high-day mean was 63·23 degrees, the low-night 43·93 degrees. The maximum was 75 degrees, noted on the 21st; the minimum was 35, which occurred in the night of the 6th. *Wet-Bulb* mean was 49·19 degrees, being + 2·62 above the average.

Daily-range of temperature mean, 19·30 degrees, was + 1·66 above the average. The greatest was 32 degrees on the 21st.

Solar intensity mean, 90·23 degrees, was + 1·69 above the average. The highest was 105 degrees recorded on the 18th and 21st.

Terrestrial-radiation mean, 40·32 degrees, was + 1·93 above the average. The lowest was 31 degrees on the 6th.

Elastic-force of vapour mean, 298, was + 19 above the average, ranging from 182 on the 6th, to 501 on the 18th.

Humidity mean, 71, was — 5 below the average.

Rain-fall amounted to 1·60 inches, which is — ·48 below the September average. There were 16 days on which rain was registered, being + ·73 above the usual number. On four days enough fell to scour the gutters and drains, but not so heavily as to cause floods; the rest was deposited in light genial showers, keeping the ground in the most advantageous state for vegetation. *Snow* was never absent from Mount Wellington during the month, and received frequent and copious additions.

Spontaneous-evaporation amounted to 3·10 inches.

Cloud mean, 6·42, was + ·58 above the average.

Ozone mean, 8·35, was + ·39 above the average.

Saturation (10) was recorded 11 times. This excessive purity of the air, together with excessive daily range of temperature and frequent variations of atmospheric pressure, would account for the excessive number of deaths.

Electricity had 20 positives with tension from 4 to 9; and 34 negatives with tension from 1 to 10, and 6 "nils." So high a tension has never before been recorded either from positive or negative. No *thunder* heard or *lightning* seen during the month. *Southern lights* were seen on the evening of the 3rd.

The deaths during this month were 46, and as the average for September for the previous 14 years was $40\frac{10}{14}$, the deaths were in excess by $+4\frac{1}{14}$. With the exception of June, this is the only month since August, 1870, in which the deaths have exceeded the average. The range for September in the 14 years was from 56 in 1862 to 22 in 1869. Under one year old this month the deaths were 7, while September, 1870, had only 5; at one to five years of age there was only one death, being the same as in September last year; at five to ten there were two deaths, while September, 1870, had three; at 10 to 20 the deaths were three; while September last year had not any; at from 20 to 60 the deaths were 16, while last year they were only 13; at 60 and all ages above there were 17 deaths, the oldest being a man at the Brickfields Invalid Asylum aged 85; altogether 15 out of the 17 were aged 70 and above. Last year the deaths above 60 were 16. In the *Zymotic* class of diseases only one death can be tabulated, and that is doubtful, being a child 18 months old from *Diarrhoea*, an out-patient of the Hospital. Last year had two deaths from croup in this class. In the *Cachectic* or *Constitutional* class of diseases there were three deaths: one from *Dropsy*, two from *Consumption*, the latter were, a youth of 16, a married woman aged 38, both natives of Tasmania. In 1870 this class had six deaths, three of them from consumption, and two of them natives of Tasmania. In 3rd class, *Monorganic* or *local* diseases, there were 33 deaths, while 1870 had only 16. In the 1st order of this class, diseases of the *brain and nervous system*, there were seven deaths, 1870 had only four. In the 2nd order, diseases of the *heart and organs of circulation*, there were seven deaths, 1870 had only four deaths. In the 3rd order, diseases of the *lungs and organs of respiration*, there were 10 deaths, while 1870 had only three. The excess in this class makes up the difference, within one, of the total deaths from all causes between this year and the last. Last year ozone was $-.99$ below the average, this year it was $+ .39$ above the average, and this valuable agent so antagonistic to diseases arising from impure air—being nature's grand disinfecting agent—when in excess always over-stimulates the air passages of the organs of respiration, producing catarrh (not influenza), bronchitis, and pneumonia. The variations of temperature also were greater this month than in 1870. The difference in the other classes and orders between the two years were not material, and need not be detailed. In the public Hospital there were nine deaths, all belonging to the Hobart Town Registration District; last year there were only seven. Inquests were three, all from natural causes; last year there was only one. At the Brickfields Male Invalid Asylum there were two deaths, aged respectively 78 and 85; last year there were not any. At the Cascades there were four deaths, two men aged respectively 68 and 75, and two women, 58 and 70.