

JULY, 1871.

## PRIVATE OBSERVATORY, HOBART TOWN.

Day of Month.	Bar. 37 feet abv. sea level corrected & reduced.		Self-Registering Thermometers.				Wind.		
	Highest.	Lowest.	In shade.		In sun.		Direction from three daily re- gisters.	Force in lbs. per square foot.	Rain in Inches.
	In.	In.	Highest.	Lowest.	Highest.	Lowest.			
1	29.772	29.740	56.43	43	82.0	34.0	NW	1.30	0.63
2	29.584	29.426	53.40	40	75.0	36.5	NW	3.33	0.11
3	29.903	29.622	47.41	41	60.5	32.0	W	3.64	
4	29.966	29.942	54.44	44	74.0	35.5	NW	1.56	
5	29.823	29.600	61.44	44	86.5	40.0	NW	1.30	
6	29.694	29.596	53.40	40	72.0	36.0	NW SW	5.72	0.31
7	29.819	29.798	57.38	38	73.0	35.0	NW	8.33	0.03
8	29.837	29.787	61.44	44	83.5	40.0	NW NE	1.56	0.05
9	30.009	30.000	60.44	44	72.5	30.0	NW NE	.26	
10	30.016	29.900	63.40	40	85.5	36.0	NW	.26	
11	29.678	29.635	60.46	46	82.0	43.0	NW	3.58	
12	29.795	29.753	57.40	40	80.0	36.0	NW	1.30	0.03
13	29.866	29.790	57.40	40	79.0	37.5	NW	.78	0.10
14	29.294	28.990	56.41	41	68.5	40.0	NW	1.30	0.55
15	29.264	29.090	55.37	37	62.0	33.5	NW	1.30	0.18
16	29.467	29.433	56.41	41	83.0	34.0	W NW	10.94	0.54
17	29.000	28.753	57.42	42	60.5	40.0	NE NW SE	1.04	0.48
18	29.139	29.114	51.33	33	76.0	32.0	NW	1.04	0.06
19	29.714	29.483	46.36	36	74.0	31.0	SW SE S	3.64	0.01
20	29.850	29.765	51.43	43	71.0	31.0	NW SW	1.30	
21	30.182	30.066	63.39	39	90.0	33.0	NW NE SW	0.	
22	30.339	30.309	60.33	33	90.5	29.0	NW NW SE	.52	
23	30.327	30.142	57.34	34	84.0	29.0	NW NW SE	0.	0.04
24	29.819	29.556	52.37	37	65.0	33.5	NW	.78	0.13
25	29.203	29.052	63.37	37	88.0	33.0	NW SW NW	.78	
26	30.358	29.313	53.44	44	67.0	41.0	SW NW	.78	
27	29.420	29.237	59.37	37	72.5	32.5	NW	.26	0.20
28	29.493	29.236	60.43	43	91.0	33.0	NW S SE	.52	0.05
29	29.809	29.742	64.36	36	89.0	31.0	NW NE SW	0.	
30	30.079	30.042	62.38	38	90.0	34.5	W SE NW	.52	
31	30.096	30.024	63.43	43	94.0	41.0	NW	.52	0.04
Monthly mean			48.85	78.11	35.40		Total force	60.01	3.59
29.684									

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.—*Arbutus unedo* commencing to flower.  
 20th.—*Garrya elliptica*, ditto.  
 21st.—Almond in full flower.  
 25th.—White mulberry commencing to break.  
 31st.—Yellow crocus commencing to flower.

Barometer mean, 29.684in., being 0.160in. below the average.

Temperature mean, 48.85°, being 3.13° above the average.

Solar intensity mean, 78.11°, being 2.60° above the average.

Dew point mean, 39.6°, being 0.46° below the average.

Humidity of air mean, 76, being .07 per cent. below the average.

Elastic force of vapour mean, 2.260, being .003 per cent. above the average.

Total amount of rain, 3.59in., being 1.53in. above the average.

Increase of spontaneous evaporation on rainfall, 0.42in.

Mean amount of ozone, 7.40, being 0.31 of chromatic scale above the average.

Surface-electricity feeble all through the month.

Snow never absent from Mount Wellington during the month. The low hills and ground covered with a thick layer of fresh snow on the 19th.

FRANCIS ABBOTT.

# NOTES ON THE METEOROLOGY AND MORTALITY OF THE MONTH OF JULY, 1871.

By E. SWARBRECK HALL.

The weather this month was unusually wet, windy, and warm, with great mutations of atmospheric pressure, and an excessive daily-range of temperature, together with ozone above the average. It is very remarkable that exactly one-half of all the deaths were at and above 60 years of age, while deaths under 20 years old were less than one-fifth of the whole. The total deaths were about 24 per cent. less than the July average for the previous 14 years.

*Atmospheric-pressure*, 29·684, was — ·160 below the average. The extreme range of the month was 1·581 inches, being the largest on record. The extremes were : maximum, 30·339 on the 22nd ; minimum, 28·758 on the 17th. So low a minimum has only been registered seven times in the last 30 years. There was no excess of wind in Hobart Town, but great storms were reported elsewhere. The greatest movement of the barometer in any twenty-fours from 1 p.m. to 1 p.m. was a fall of — ·600 of an inch on the 14th, but on four other days there were movements of more than half an inch. Altogether there were 18 days on which the variations exceeded one-fifth of an inch, which is without parallel in the Hobart Town records. As is usual these excessive fluctuations of atmospheric pressure caused many deaths amongst old and debilitated people.

*Wind-force* total, 60·01 lbs., was + 20·46 lbs. above the July average. At 67 out of the 93 observations, with 36·85 lbs. of the force, the wind was registered from the north-west, but there is no doubt that many of them were really deflected west winds from their high ozonic character. It is, as has often been before noted, that owing to the sudden angle in the valley of the Derwent at Bridgewater eleven miles from the city, caused by the Mount Wellington tier, winds from the west are liable to be deflected towards the north-west. West and south-west winds were 13 in number with 18·22 lbs. of the force. The other winds were unusually below the average in both aspects. The strongest winds had only 5·21 lbs. pressure to the square foot, and were registered only three times. *Calms* were 23, being — 16·89 below the average.

*Temperature* mean, 48·85 degrees, was + 3·13 above the 25 years' average. In the previous 30 years there have only been 4 Julys with a higher temperature. It is noteworthy that the mean by the self-registering maxima and minima thermometers agree with that of the observed thermometers within a trifle. The maximum was 68 on the 31st ; the minimum 33 on the 22nd. The *wet-bulb* thermometer mean, 44·98 degrees, was + 1·86 above the average.

*Daily range* of temperature mean, 17·23 degrees, was + 2·09 above the average. The greatest range was on the 29th, being 28 degrees. These excessive changes of temperature, together with fresh winds and an excess of ozone, caused much disease of the organs of respiration, principally catarrh, but popularly, through erroneously, called influenza.

*Solar intensity* mean, 78·11 degrees, was + 2·60 above the average, which is remarkable, as 'cloud mean was also considerably above the average. The hottest sunshine was 94 degrees on the 31st.

*Terrestrial radiation* mean, 35·40 degrees, was — ·15 below the average. The lowest records were in the nights of the 22nd and 23rd, being 29 degrees.

*Elastic-force of vapour* mean, 260, was + 3 above the average. It ranged from 175 on the 19th to 374 on the 14th.

*Humidity* mean, 76, was — 7 below the average. Saturation (100) was registered three times.

*Rain-fall* amounted to 3·59 inches, being + 1·53 above the July average. This is the first time since November, 1870, that the rainfall has attained the average. It fell in a gentle and continuous way, there being 18 wet days, or + 4·27 more than the average. No floods occurred in Hobart Town, at the same time water courses, sewers, and rivulets were thoroughly flushed. *Snow* was never absent from Mount Wellington during the month, and received frequent and copious augmentations. On the 19th the streets and

low hills about the city had a good coating, but of short continuance. No ice was ever observed in or near the city, in this usually the coldest month in the year.

*Spontaneous evaporation*, owing to the warm and windy character of the month, exceeded precipitation, being 401 inches.

*Cloud* mean, 6.32, was + .92 above the average.

*Ozone* mean, 7.40, was + .31 above the average. Saturation (10) was recorded 8 times.

*Electricity* was registered 49 times out of the 62 observations; 4 only were positive with tension from 4 to 5. The negatives, 45, had tension from 1 to 5. There were 13 "nils." No *thunder*, or *lightning*, or *auroral* displays.

The *deaths* during the month were 42, being — 12 12-14 below the average of the previous 14 years' Julys. Under 1 year old the deaths were 4 (the registered births in the month being 65); from 1 to 5 the deaths were 2; from 5 to 10 one; from 10 to 15 *nil*; from 15 to 20 1; from 20 to 60 there were 13. At and above 60 the deaths were 21, the oldest being 90; 15 out of the 21 were above 70. Males were 26 in number; females only 16. In the *Zymotic class* of diseases there was only 1 death, a case of *croup* in a child aged 5 years. In *diseases of the brain and nervous system* there was the very large number of 14 deaths, many of them sudden from *apoplexy*, &c., a consequence of the rapid and extensive variations of atmospheric pressure. From *diseases of the organs of respiration* there were 5 deaths. *Consumption* caused only 1 death, a young woman born in Hobart Town. At the *Hospital* there were 10 deaths, inclusive of 1 *inquest* case, the only one in the month. Six of them were from other registration districts. One was one of the two last females of the aboriginal natives of the island, who died from *paralysis*; recorded as 50 years old only (?) At the *Brickfields Invalid Asylum* there were 6 deaths, aged respectively 67, 71, 74, 77, 83, 90. At the *Cascades* there only 2, aged 49 and 82.