

METEOROLOGY FOR NOVEMBER, 1870.

PRIVATE OBSERVATORY, HOBART TOWN.

Day of Month.	Bar. 37 feet abv. sea level corrected & reduced.		Self-Registering Thermometers.				Wind.		
	Highest.	Lowest.	Highest in shade.		Highest in sun.	Lowest on grass.	Direction from three daily re- gisters.	Force in lbs. per square foot.	Rain in inches.
			°	°					
1	30.009	29.847	71.50	96.0	47.5	NW SENW	1.30	0.06	
2	29.860	29.784	68.49	82.0	47.0	SE ENW	1.04	0.07	
3	29.945	29.915	65.44	105.0	42.0	NW SE	1.30		
4	29.907	29.810	72.45	111.0	43.5	NW SE	1.56	0.12	
5	29.560	29.424	75.52	114.5	49.0	NW NW SW	3.38		
6	29.648	29.620	68.46	99.5	44.5	NW	10.41	0.01	
7	29.810	29.684	68.49	110.0	48.0	SE W SE	2.86		
8	29.800	29.694	73.47	106.5	40.0	NW	5.46		
9	29.910	29.875	68.51	90.5	48.0	NW WS	1.04		
10	29.847	29.805	69.47	94.0	44.5	NW	1.30	0.03	
11	29.879	29.782	63.51	95.0	50.0	SE	.78	0.80	
12	29.687	29.635	55.48	57.0	50.0	SE	1.30	0.60	
13	29.598	29.553	52.48	51.0	47.0	S SE	3.64	0.62	
14	30.009	29.908	58.45	100.5	40.0	SE	1.30	0.01	
15	30.042	30.014	62.48	92.0	42.5	NW ESE	1.04	0.07	
16	30.240	30.118	54.42	63.0	41.0	NW SE	1.04	0.04	
17	30.339	30.324	63.48	99.0	42.5	NE SE	.78		
18	30.378	30.253	70.53	100.5	50.5	N NW NE	1.04		
19	30.195	29.969	77.54	110.0	51.5	NW E	.78		
20	29.910	29.767	77.53	113.0	51.5	NW SE	1.30	0.27	
21	29.676	29.522	65.53	67.0	50.5	NE SW SE	1.04	1.92	
22	29.685	29.649	57.43	70.0	45.0	SE	10.41	0.03	
23	29.698	29.530	60.45	101.0	40.5	NE NW	1.30		
24	29.798	29.758	69.47	105.0	42.0	NW	1.56		
25	29.659	29.150	68.50	75.0	47.0	NW	10.63	0.13	
26	29.632	29.546	67.43	97.0	40.0	NW	5.72		
27	29.929	29.890	57.39	97.5	37.5	NW SW	1.56		
28	29.876	29.796	64.45	101.0	43.5	NW SW W	1.04	0.01	
29	29.834	29.655	70.50	112.0	42.0	W NW	1.30	0.02	
30	29.530	29.515	66.48	91.0	45.0	N NW	3.38	0.01	
Monthly mean	29.816		57.63	90.26	45.12	Total Force	85.59	4.82	

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.

- 12th.—First strawberry (British Queen) ripe.
17th.—First cherry (May Duke) ripe.
20th.—Black mulberry in blossom.
25th.—Punica Granatum in flower.
30th.—First raspberry (Red Antwerp) ripe.
Ditto.—Bougainvillea spectabilis in full flower

Barometer mean, 29.816 in., being 0.095 in. above the average.

Temperature mean, 57.63°, being 0.09° above the ditto.

Solar intensity mean, 90.26°, being 11.55 below the ditto.

Dew point mean, 47.4, being 0.93 above the ditto.

Humidity of air mean, .70, being .01 per cent. below the ditto.

Elastic force of vapour mean, .329, being .004 per cent. above the ditto.

Total amount of rain, 4.82 in., being 1.98 in. above the ditto.

Increase of rainfall on spontaneous evaporation on rain fall, 0.83 in.

Mean amount of ozone, 6.93, being 0.63 of chromatic scale below the ditto.

Electricity active on the 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 16th, 18th, 24th, 26th, 27th, 28th, 29th, and 30th.

Auroras on the 19th, 20th, and 24th.

Sky cloudy and humid all through the month.

FRANCIS ABBOTT

NOTES ON THE METEOROLOGY AND MORTALITY OF THE MONTH OF NOVEMBER, 1820.

BY E. SWARBRECK HALL.

Atmospheric pressure and temperature this month closely approximated to the mean of the 25 years' adopted standard, but rainfall was largely in excess, the weather on the whole being highly propitious to health and life. No November of the previous 13 years had so small a number of total deaths. More especially were the deaths of young and middle-aged people the most remarkable for their extreme rarity.

Atmospheric pressure mean, 29·816, was + 0·95 only above the 25 years' adopted standard mean. The maximum, 30·378, occurred on the 18th; the minimum, 20·150, on the 25th. The extreme range, 1·228 inches, has often been exceeded. On the 14th there was a rise of the barometer of + ·432 of an inch, and on nine other days movements exceeding one-fifth of an inch.

Wind-force, 85·95 lbs., was -26·74 below the average, November being on the whole the windiest month in a year. It was more continuous and steady than usual, there being only four calms recorded, which is -5·67 below the average. The strongest winds, 5·21 lbs. pressure only to the square foot, were noted five times. *North-west* winds were recorded 41 times out of the 90 observations, and had rather more than half of the total force. Winds from *south-east* to *west*, the points most favourable to health, were nearly equal to the former both in frequency and force. *North, north-east, and east* were few and feeble.

Temperature mean, 57·63 degrees, only deviated from the 25 years' mean by the scarcely appreciable difference of an excess of + 00·09. The *wet-bulb* mean, 52·06, was + 00·21 only above the mean. The maximum shade temperature of the self-registering thermometer, 77, was noted on the 19th and 20th. This is the lowest maximum since November, 1853, when 75 was recorded, and only one other year, 1846, had a lower maximum than the present, *i.e.*, 76. In 1869 it was as high as 95. The minimum, 35, was registered on the 27th. The lowest ever before was 38 in several years. The extreme range, 38 degrees, was very small, though last year had the same, but only one other, 1863, had less, *i.e.*, 37.

Daily Range of temperature had the mean of 17·17 degrees, being -1·31 below the average; last year's was more than two degrees higher, and no year since 1855 had one so small. The greatest range for any day was 27 degrees, noted on the 4th. In 1861 the greatest range was the same, but every year since has greatly exceeded this year's.

Solar Intensity mean, 90·26 degrees, was -11·55 below the average, and the lowest on record, which is in a great measure accounted for by the rainy and cloudy character of the month. The maximum record was made on the 5th, being 114·5 degrees.

Terrestrial Radiation mean, 45·12 degrees, was -1·37 below the average. No other year, except 1867, had so low a mean. The lowest temperature in any night was 37·5 degrees. Many years have had lower minimums than this.

Elastic force of Vapour mean, 329, was + 4 above the average. It ranged from 225 to 494 during the month.

Humidity mean, 75, notwithstanding the excessive rain-fall was -1 below the average.

Rain-fall amounted to 4·82 inches, being + 1·98 above the 25 years' mean; but this was twice exceeded within the previous 29 years, *i.e.*, 1849, -8·94 inches; 1842, -5·84 inches. There were 18 days on which the rain fell, which is + 5·18 more than the average. On the three days, 11th, 12th, 13th, the aggregate fall was 2·02 inches, but on the 24th 1·92 was registered. Still it fell so steadily that no damage of any moment was inflicted, and the thorough cleansing it gave the streets, sewers, and rivulet was highly advantageous to health. No *snow* could be seen on Mount Wellington from the city during the month, but visitors up there on the 9th reported its presence in patches.

Spontaneous Evaporation amounted to less than the rain-fall, *i.e.*, 3·94 inches.

Cloud Mean, 7·70, was + 1·64 above the average, being the greatest on record in 30 years.

Ozone Mean, 6·93, was — ·63 below the average. On four of the wet days saturation (10) was registered.

Electricity records were 23 positive, with tension from 3·5 to 8; 33 negative, with tension from 1 to 8; and 4 nils. No thunder or lightning observed. On three nights the Aurora Australis was seen.

The *Deaths* registered were only 24, being—15 12-13 below the average of the preceding 13 years, and the smallest number for any November of the thirteen. The November average of deaths is the smallest of any month in the year. In the *Hospital* there were 8 deaths inclusive of an *Inquest* case, the only inquest in the month. All these cases were admitted from rural districts. Never before has it happened that no deaths of residents in the Hobart Registration District took place in hospital. Of the 24 deaths 6 were respectively aged 1 day, 5 weeks, 8 weeks, 9 weeks, 3 and 4 months. Between the last and 17 years old, not a single death! One at 17, another at 20, and a third at 22 were all that took place, until 39, at which age there was a death, and 4 more between that and 60 years old; from 60 to 86, at which age the oldest took place, there were 10 deaths. So small a proportion of young and middle-aged persons was never before recorded. There was not a single death in the *Zymotic* class of diseases, except two babes, registered as dying from *diarrhœa and convulsions*, can be properly considered to belong to this class. There were 2 deaths from *consumption*, one a youth, aged 22, born in Hobart Town, the other a man aged 60, born in England. From the details I have given it will be seen that out of a population of 25,000 persons in the Hobart Town Registration District only 16 died, being at the rate of less than 8 per 1,000 per annum, or 192 total deaths in the year. The annual average for the previous 13 years, *including* cases brought to hospital from other districts, is 560; the first year of the thirteen (1857) having 581, and the last (1869) only 462. The diminished death-rate of late years, where from the changes in the ages of the population, there ought, by the ordinary laws of mortality, to have been an increased death-rate (*Vide* report for May), cannot be ascribed solely to improved climatic conditions. Local sanitary improvements must claim a considerable share in the diminution, and of these our improved water-supply, I have data to prove, has been most influential.† Were our scavenging and sewerage so amended as to ensure the speedy removal of all animal and vegetable refuse, our dead no longer interred amidst the living, and the ventilation of our abodes and public places of assemblage better attended to, Hobart Town would be, as it ought to be, one of the healthiest towns in the world, its local and climatic advantages being unparalleled. No country with whose meteorological condition I have become acquainted, equals ours in the purity of its atmosphere, as tested by the ozonometer.