

METEOROLOGY FOR AUGUST, 1865.

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.		Lowest on grass.		Direction from three daily registers.	Force in lbs. per square foot.	
			°	°	°	°			
1	30·084	30·065	58	45	68·0	41·0	NE NW SW	3·12	0·04
2	30·119	29·987	60	38	85·0	34·0	NWSW	·52	
3	30·228	30·177	62	34	85·0	31·5	NW SW	·26	0·01
4	30·365	30·330	60	34	87·0	31·5	NW SE	·52	
5	30·345	30·278	62	38	90·0	33·0	NW NE S	0·	
6	30·313	30·291	62	39	90·0	36·0	NW N S	·26	
7	30·510	30·480	65	40	98·0	40·0	NW SE	·26	0·03
8	30·566	30·475	66	38	92·0	34·5	NW N	·52	
9	30·492	30·417	65	40	90·0	37·5	NWSW	·26	
10	30·397	30·234	66	39	91·5	35·5	NW W	·78	
11	30·100	30·018	62	46	70·0	40·0	NW SW	·52	
12	29·992	29·821	66	40	92·0	34·5	NE NW	1·04	
13	29·491	29·385	62	47	89·0	43·5	S W NW	5·20	0·06
14	29·785	29·648	58	37	90·0	37·0	SW S SW	·52	1·10
15	29·985	29·942	60	32	86·0	28·5	E N NW	·26	0·05
16	29·719	29·683	57	39	84·0	32·5	NW	·52	
17	30·060	29·911	54	38	78·0	33·0	SW S	·52	0·20
18	30·172	30·135	62	37	88·0	32·5	NW N SE	·78	
19	30·169	30·129	62	38	90·0	34·0	NW SE	·26	
20	29·961	29·821	61	43	73·0	39·0	NW	·52	
21	29·806	29·567	66	43	95·0	37·5	N	·78	
22	29·454	29·410	62	44	95·0	38·0	NW W	·52	0·03
23	29·749	29·716	64	40	95·0	36·0	W SE NW	·52	
24	30·006	29·853	61	43	87·0	40·0	NW SW	5·72	0·06
25	30·082	29·934	59	32	90·0	27·5	NW SE S	·26	
26	29·632	29·435	56	39	58·0	36·5	NW W NW	3·38	0·02
27	29·376	29·245	61	41	84·0	37·0	N NW N	1·04	0·05
28	29·343	29·264	57	41	89·0	38·0	N NW	3·64	0·05
29	29·448	29·364	55	42	85·0	40·0	W SW NW	5·72	0·38
30	29·500	29·444	52	41	67·0	37·5	NW	1·30	0·13
31	29·792	29·699	52	39	75·5	34·5	NW SE	·78	0·02
Total force 40·30lbs								1·23	

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 :—*

- 9th Horse Chestnut buds commencing to break.
10th Sambucus niger commencing to leaf.
12th Poplar commencing to break.
15th Gooseberry bushes commencing to break.
16th Elm commencing to flower.
28th Apricot commencing to break.

Barometer mean, 29·919in., being 0·136in. above the average.
Temperature mean, 49·31°, being 0·61° ditto.
Solar intensity mean, 85·08°, being 4·08° ditto.
Dew point mean, 40·7°, being 0·17° below the average.
Humidity of air mean, ·76, being 3·5 per cent. ditto.
Elastic force of vapor mean, ·265, being ·012 per cent. ditto.
Total amount of rain, 1·23in. being 0·83in. ditto.
Mean amount of ozone, 7·75 of chromatic scale, being 0·58 the above average.
Less rainfall on spontaneous evaporation, 1·28in.
Aurora Australis brilliant on the 3rd.
Lightning on the 30th.
Mount Wellington copiously mantled with snow all the month, with frequent fresh deposits.
Electricity active on the 10th, 12th, 14th, 15th, 16th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 28th, and 31st.

FRANCIS ABBOTT.

ANALYSIS OF THE OBSERVATORY RECORDS FOR AUGUST, 1865,
IN CONJUNCTION WITH THOSE OF BIRTHS, DEATHS, &c. By
E. SWARBRECK HALL.

This month was characterised by mild, dry, sunny, and agreeable weather, with enough of wind movement and electricity to produce a high state of aërial purity, and consequently the community at large enjoyed a better state of health than is usual in August, and the deaths were below the average of the previous eight years. Children, and adults up to 50 years of age, furnished an unusually small proportion of the deaths; more than two-thirds of the total mortality being from 50 to 85 years old.

Atmospheric pressure mean, 29·919 is +·136 above the 20 years' adopted standard, and also higher than that of either 1864 or 1863. The maximum of the month was registered at 7 a.m., of the 8th, being 30·566. This was the most fatal day to life in the month. The minimum, 29·245, was recorded on the 27th. In the previous 24 years, only August 1860 had a greater maximum, but the minimum was frequently much lower. The extreme range, 1·321 inches, was considerably greater than August 1864 had, though less than that of 1863. The greatest movement of the barometer in any 24 hours from 1 p.m., to 1 p.m., was a fall of—·564 of an inch on the 26th, and its influence is marked in the mortuary records:—Two persons above 70 years of age, and another nearly 40—long suffering from heart-disease—, succumbed to it. On fourteen days of the month, the barometrical movements exceeded one-fifth of an inch. It is remarkable, that of the 33 observations recorded on the first eleven days of the month, the atmospheric pressure was only once below 30,000 inches and so steadily was this high pressure maintained that only on the 11th did the perturbation in the 24 hours rise to one-fifth of an inch. The daily movements, therefore, in the remaining 20 days of the month were unusually numerous and extensive. This condition of atmospheric pressure told heavily on aged and enfeebled persons, and produced a remarkably abnormal proportion of deaths of persons above 60 years of age, but was innocuous to those of all ages below.

Wind-force in the aggregate, amounted to 40·30lbs., being + 1·94lbs., above the 4 years' average given in the standard tables, but —5·71 below the average of the last eight years,—the three last years very windy Augusts, having raised the average very considerably. The *calms*, 36, were exactly the four years' average,—but + 1·57 above the mean of the last seven years. The highest wind-force registered was only 2·60lbs., pressure to the square foot, and was recorded eight times. So much moderate wind-movement, so equally distributed, is not usual in August, for the records hitherto, exhibited either very little aërial movement, or very boisterous ones. The prevailing winds were, *south-west*, *west* and *north-west*, all of which exceeded the mean both in frequency and force. From the other five points of the compass, the winds were all below the average in frequency, and with the exception of *north-east*, also less than the mean in force.

Temperature mean, 49·31 degrees, is + 00·61 above the 20 years' average, but much warmer still than 1864 and 1863 were. The mean of the self-registering maxima and minima thermometers, was 50·03 degrees, being an unusually small difference between the two sets of instruments. The extremes of temperature this month were, 66 degrees recorded four times, and 32 registered for the nights of the 15th and 25th. The range was somewhat less in the August of the two previous years, but the extremes for August in the last 24 years were, 82 maximum in 1862, and minimum of 30·20 in 1846. The mean of all the maxima for the present month is, 60·48 degrees, while that of 1864 was only 57·84 degrees. The mean of all the minima for this August is only 39·58 degrees, while that of last year, was 41·38. So that the August of 1865 had warmer days and colder nights than the August of 1864. Eminent Sanitarians have compiled tables showing the hour at which death takes place, and it is found that the deaths are by far most numerous in the coldest hours of the night. I have no doubt the mortuary records of the present month would show this very clearly had I the means of ascertaining the details.

Daily range of Temperature mean was, 20·90 degrees, being, +4·51 degrees higher than the 20 years' mean, and nearly the same above 1864 and 1863. Only in August 1861, and 1862, did the mean daily-range of temperature exceed

that of the present month. The greatest range on any day was 28 degrees, recorded on the 3rd, 8th, and 15th; the lowest was 11 degrees on the 30th. The Registrar-General of England in his admirable quarterly reports often refers to the "deadly effects of a rapid depression of temperature on persons of low vital powers." In this climate, however, variations of pressure seem to have a more lethal influence on such persons.

Solar-intensity mean, 85.08 degrees, is + 3.66 degrees above the August mean of the previous nine years, and higher than any one of them except 1856, which had a mean of 92 degrees. Last year's August, was nearly 6 degrees below the mean of this year's. The maximum record was 98 degrees on the 7th. In three years out of the nine, there were greater maxima than this, 1858 was the same, and the other five had all much less. The minimum record was 58 degrees on the 26th. The corresponding records of 1864 were, 93 and 60.

Terrestrial-radiation mean was, 35.85 degrees, which only differs from the nine years' mean, by an excess of + .05, but is — 1.68 below the mean of August 1864. The extremes were, 43.5 on the 13th and 27.5 on the 25th.

The total *Rain-fall*, amounted to 1.23 inches, being — .83 of an inch below the 20 years' mean, and nearly one and a half inches less than fell in August last year. The rain fell on 15 days in the month, being + 1.70 in number above the ten years' average. Only on the 29th was there enough precipitated to thoroughly cleanse the surface drains.

Snow was never absent from Mount Wellington during the month, and frequent fresh deposits took place.

Humidity mean, 76, was — 3½ below the 20 years' average.

Elastic-force of Vapor had a mean of, 265, which is — 12 less than the mean of the 20 years.

Spontaneous-evaporation amounted to, 2.51, inches.

Cloud mean, 5.58, was so nearly that of the 20 years' that it only differed by being — .01 less, though it was much below the average of 1864 and 1863.

Ozone had a mean of, 7.75, being + .26 more than the average of the previous eight years, but was — .79 less than August 1864 had, and — .87 less than was noted in August 1863. The maximum 10 (saturation) was recorded on the 1st and 15th. The minimum 6 was registered on the 10th.

Electricity was more abundant and stronger than was ever before recorded. There were 38 positive indications to 24 negative, and the maximum tension of each was 8, — no "nils" were registered. In August last year the first had only 13 records with maximum tension of 5.5, and the second 37 with maximum tension of 5 and 12 "nils."

Lightning was observed on the evening of the 13th and 30th. *Aurora Australis* on that of the 3rd.

The 42 deaths this month, were — 6½ below the average of the previous eight years, though both the Augusts of 1864 and 1863 had each one less; nevertheless, when the "ages at death," and the "causes of death," are compared for the same years, it will be found that the August of 1865 was by far the most favorable to health and life.

August, 1865	Classes of Disease	July, 1865	Augusts.								Avg. of 8 yrs. Augusts, 1857-1864.
			1864	1863	1862	1861					
							Min. '60	1859	Max'58.	1857	
1	1. Zymotic	3	9	4	3	15	10	9	7	7	8
3	2. Constitutional	9	4	6	8	6	4	7	9	15	7 3/8
20	3. Local	17	21	23	24	21	19	28	49	29	26 6/8
12	4. Developmental	4	6	3	4	6	6	3	4	2	4 2/8
6	5. Violent &c.	3	1	5	4	0	1	1	5	1	2 2/8
42		36	41	41	43	48	40	48	74	54	48 5/8

"Under 1 year old" the deaths were less than half the eight years' mean, and

though one more than 1864 had, yet below all the other seven years of the series. Moreover, two of the deaths only survived the birth by half an hour, and seventeen hours respectively; while last year the youngest of the four deaths in this group, was 18 days old. At "1 to 5" the deaths though below the eight years' average were more numerous than three out of the eight, and the same as two others, but two of the number were accidents on which inquests were held, and one of the two did not belong to the registration district, but died *en route* to hospital from the other side of the Derwent. At "5 to 20" there was less than one-fourth of the eight years' average of deaths, and though the child died in hospital, it came from the other side of the river, being sister to the girl last alluded to. At "20 to 45" the deaths were considerably less than the average, and no year of the eight had fewer, though three of them had an equal number. At "45 to 60" the mortality was also below the average, though three of the eight years had less, and one the same number. At "60 and above" the deaths were nearly double the average, and very considerably above any year of the eight. Ten of the eighteen deaths in this group, had passed beyond the three-score and ten of the Royal Psalmist, the oldest being 85 years old.

Aug. 1865.	Ages.	Augusts.										Avg. 8 yrs. Augusts, 1857-1864.
		July, 1865	1864	1863	1862	1861	Min. 1860	1859	Max. 1858	1857		
5	Under 1	7	4	7	7	9	11	6	28	11	10 3-8	
4	1 to 5	2	3	4	7	3	4	8	16	2	5 7-8	
1	5 to 20	3	4	5	3	10	1	4	4	3	4 2-8	
7	20 to 45	6	9	7	7	14	7	8	12	14	9 6-8	
7	45 to 60	7	11	8	7	1	6	14	6	16	8 5-8	
18	60 and above	11	10	10	12	11	11	8	8	8	9 6-8	
42		36	41	41	43	48	40	48	74	54	48 5-8	

Zymotic diseases never before caused such a trifling mortality in the month of August. Only one death, of a child of a year old, being recorded. August 1864 had nine times as many. In the *constitutional class* of diseases, the deaths were less than half the average and below any year of the eight. Two of the deaths were from *consumption*, one being registered as born in Hobarton. The *local class* was also considerably below the eight years' average in its total deaths. Only 1860 had less. In the 1st order, *diseases of the brain and nervous system*, the deaths were 9, one from *apoplexy*, two from *paralysis*, two from *convulsions*, and four from *brain diseases*, 1864 had only 3. The 2nd order, *diseases of the heart and circulatory system*, the deaths were 4; 1864 had 5. The 3rd order, *diseases of the lungs and respiratory system*, had only 2 deaths, one from *chronic bronchitis* aged 51, the other from *pleurisy*, aged 65. In 1864, there were 7 deaths in this order, three of them under 50 years old. In the 4th order, *diseases of the stomach and digestive system*, only 2 deaths were recorded, while 1864 had 5. In the 5th order, *diseases of the kidney, &c.*, there were 2 deaths this year to one only in 1864. Another of the orders had a death this month, balanced by one in a different one last year. The *developmental class* had nearly three times the average deaths, 8 of the twelve deaths being from 67 to 83 years of age, and the other 4, all below one year, *i.e.* :—12 months, 4 months, 6 weeks, and half an hour. 1864 had only 6 deaths in this class. The class of *violent and accidental deaths* had also considerably more than the average mortality, and 6 times as many as 1864, the deduction of this difference from the total deaths from all causes numerically, would establish the fact of the more generally healthy character of the weather this year. *Inquests* took place on 6 of the deaths this month, being three on bodies found drowned, one on a child of 4 burnt, two on children from Bellerive, on the other side of the Derwent, believed to have died from eating poisonous fungi. In 1864 there was only one inquest. The deaths in *hospital* were 8, including two of the inquest cases. Two were from country districts, and one a Chinese

cook. Last year the hospital deaths were 10. At the *Male Invalid Asylum* 5 deaths took place, aged respectively :—65, 66, 67, 79, 83. In 1864 there were 4. A female invalid aged 72 died at the Cascade Establishment. Of the 42 deaths, not one occurred in the Glenorchy division of the registration district, 3 died in the Queenborough, and the rest in the city. 30 were males, only 12 females. In the first week of the month, 6 died; in the second 14; in the third, and fourth, each, 9; in the last three days, 4. The greatest number of deaths on any day, was, 5 on the 8th; and on any two consecutive days, 6 on the 12th and 13th. On nine days of the month no deaths occurred.

The registered *births* were 68, being 6 less than in August 1864.