

METEOROLOGY FOR JULY, 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 in shade.	Highest in sun.	Lowest on grass.	Direction from three daily registers.	Force in lbs. per square foot.	
	In.	In.	°	°	°	°			
1	30.129	30.103	68.45	89.0	41.5		NW	.52	
2	30.153	30.099	68.45	80.0	45.5		N NW	2.60	
3	30.061	29.932	64.41	89.0	37.5		NW W N	.78	
4	29.950	29.926	63.48	90.0	44.5		NW W NW	3.64	0.02
5	30.034	29.932	70.50	92.0	46.5		N W E	2.86	
6	30.264	30.241	65.39	84.0	34.0		NWSW	0.	
7	30.339	30.286	61.38	83.0	33.0		NW N NW	.26	
8	29.964	29.679	58.37	59.0	32.0		NW	3.38	
9	29.803	29.764	57.42	65.0	36.0		W SW	5.21	
10	29.836	29.816	55.30	77.0	27.0		W E SW	0.	0.03
11	29.864	29.826	57.38	68.0	36.0		SE S	13.02	0.11
12	29.818	29.802	49.44	50.0	40.0		SE S	.78	1.00
13	29.898	29.848	52.41	71.0	40.0		SW E SW	0.	0.07
14	29.880	29.825	56.39	80.0	39.0		NW N NW	.78	
15	29.666	29.627	56.39	85.0	35.0		NW	.78	
16	29.811	29.777	52.37	75.0	32.0		NW N NW	1.04	
17	29.712	29.655	61.40	84.0	35.5		N NW	1.04	0.02
18	29.923	29.803	58.45	72.0	43.5		NW S SE	0.	0.11
19	30.156	30.092	55.33	76.0	32.0		NW NE S	0.	
20	30.294	30.280	58.33	83.0	29.5		NW SW	0.	
21	30.382	30.331	60.34	82.0	30.0		NW S	0.	
22	30.363	30.148	57.35	79.0	31.0		NW N W	.26	
23	29.972	29.816	54.38	60.0	36.5		NW E S	0.	0.08
24	29.716	29.601	52.41	73.5	39.0		NW NE SW	0.	0.06
25	29.591	29.546	60.40	83.0	40.0		NW E SW	.26	
26	30.034	29.910	61.37	85.0	34.5		NW NE	0.	0.04
27	30.127	30.102	58.35	78.0	34.0		NW	0.	
28	30.121	30.049	60.43	77.0	40.0		NW N NE	0.	
29	29.820	29.772	56.40	67.0	36.5		NWSW NW	.26	0.01
30	29.892	29.756	57.45	85.0	39.5		W	15.62	0.05
31	30.010	29.984	55.40	66.0	38.0		N NW	1.04	
Total force 54.13lbs								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 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:—

- 1st. *Garrya elliptica* commencing to flower.
- 2nd. White mulberry buds commencing to break.
- 5th. Almond commencing to flower.
- 16th. Crocus commencing to flower.
- 25th. White Hyacinth commencing to flower.

Barometer mean, 29·947in., being 0·089in. below the average.

Temperature mean, 47·09°, being 1·27° above the average.

Solar intensity mean, 77·00°, being 1° ditto.

Dew point mean position, 38·5° being 1·33° below the average.

Humidity of air mean, ·78, being 4·5 per cent. ditto.

Elastic force of vapor mean, ·251, being ·008 per cent. ditto.

Total amount of rain. 1·60in. being ·13in. ditto.

Mean amount of ozone, 8·55 of chromatic scale, being 2·12 above the average.

Increase of spontaneous evaporation on rainfall 0·32in.

Electricity active on the 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, and 30th.

A very high wind, a.m. on the 30th, velocity from 24 to 48 miles per hour.

Snow on Mount Wellington copious all the month.

FRANCIS ABBOTT.

ANALYSIS OF THE OBSERVATORY RECORDS FOR JULY, 1865, IN CONJUNCTION WITH THOSE OF BIRTHS, DEATHS, &c.

BY E. SWARBRECK HALL.

No July of the previous eight years was so favorable to health and life, as the present month, for though 1862 had the same number of deaths, 36; yet both the "diseases causing death" and the "ages of the deceased" prove that July 1865 was the most auspicious. The weather generally, too, was most agreeable, and many days were more like temperate summer ones, than such as might be expected in this mid-winter month.

Atmospheric pressure mean was 29·947, being only +·089 above the twenty years' average for July. The maximum 30·382, occurred on the 21st, and the minimum, 29·546, was recorded on the 25th, being a range of only ·836, as the extreme for the month, though happening within five days. The extreme range in 1864 was much more, though a much great number of days intervened between the highest and lowest records. The greatest movement of the barometer on any day was noted on the 8th, being a fall of —·494 of an inch. Two men at the Invalid Asylum, aged respectively 72 and 71, succumbed to it. On only seven other days of the month did the perturbations exceed one-fifth of an inch. The highest rise +·422 of an inch on the 26th, followed by a rise of +·135 on the following day, caused 4 deaths on the latter day.

Wind force total was 54·13 lbs., which is +16·40 lbs. more than the July average of the previous 8 years, and was only exceeded by 1863. Nevertheless the number of calms registered was very high, exceeding the eight years' mean by more than 18. The very fatal July of 1860, however, had two more. East, South, South-West, West, North-West, were all above the average in frequency; while North, South-East, South, South-West, and West were above the mean in force, but particularly the latter. It must, however, be noted that it was the storm on the 30th, which prevailed from this quarter, that alone gave the high amount to this point.

Temperature mean, 47·09, and +1·27 more than the 20 years' average, though more than two degrees colder than July, 1864, was. The self-registering maxima and minima thermometers gave a mean of 49·15 degrees, which is but ·67 of a degree less than what the same instruments gave in July, 1864. The extremes of temperature this month, however, were greater than was ever before recorded in July. The maximum, 70 on the 5th, the minimum 30 on the 10th. Last year they were 63 and 34 respectively. 1857 and 1863 had both the maximum of 70, but 34 and 32 were their respective minima. The mean of all the maxima of the present month, 58·55, exceeded 1864 by a scarcely appreciable amount; but the mean of all the minima, 39·75, was less by nearly one and a half degrees; so that while the days were nearly equally warm on the whole, the nights of the present month were very much colder.

Daily range of temperature mean, 18·81 degrees, is +3·46 more than the 20 years' average, and +1·49 higher than 1864 had. The greatest range was 26 deg., recorded on the 6th and 21st, and the lowest was 5 deg. on the 12th July, 1864, had the same extremes, though the mean was so much less.

Solar intensity had a mean of 77 degrees, being +1·65 higher than the average of the previous nine years, though nearly three quarters of a degree less than 1864 was. The greatest heat recorded was 92 degrees on the 5th, and the smallest was, 50 on the 12th. 1864 had the same maximum, but a minimum 4 degrees higher.

Terrestrial-radiation mean was, 36·76 degrees which is +1·34 more than that of the previous 9 years, though —59 less than that of July 1864. The maximum was, 46·5 on the 5th, the minimum was, 27 on the 10th. The latter was 3 degrees less than the minimum of July 1864. On the morning of the 10th, there was ice on all still-water in the open air and even within doors at the outskirts of the city. Several other mornings exhibited a copious deposit of hoar-frost, but very transient in duration.

Rain fell to the aggregate amount of, 1·60 inches being —·13 less than the 20 years' average for July, and —2·84 inches less, than fell in July last year; though in both months there were the same number of wet days, i.e. 12. This

number is -1.94 less than the average, of the previous ten years. On no one day, except the 12th, was there rain enough precipitated, to cleanse the surface drains, and sewage channels of the city. *Snow* was persistent on Mount Wellington throughout the month, and received several additions.

Humidity mean, 78, was $-4\frac{1}{2}$ less than the 20 years' average, and 2 less than July 1864.

Elastic force of Vapor, had a mean of 251, being -8 less than the 20 years' average, and 31 below the mean of 1864. No doubt this compensated, to some extent, for the low humidity mean. The maximum record was, 318 at noon on the 17th, and the minimum, 174, was registered at 7 a.m., on the 10th. Last year these extremes were, 403 and 193 respectively.

Spontaneous Evaporation amounted to 1.92 inches, therefore, but slightly exceeding rain-fall.

Cloud mean, 5.90, was all but identical with that of July, 1864, though $+ '63$ above the twenty years' average.

Ozone mean, 8.55, was higher than that for any July of the eight years' records, and above the mean of the whole, by $+1.65$, and exceeding 1864, by $+1.24$. The maximum was at the point of saturation $-10-$ at eight of the morning and evening observations. The amount registered never fell below 7. So much arial purity, with so little electric-force of vapor, and warm sunny days, was highly conducive to health.

Electricity had 21 positive indications, with maximum tension of 6; and 34 negative with maximum tension of 7. Nil was recorded at 7 observations, being all the records on the 12th, 13th, 23rd, and evening of the 24th. In July 1864, there were only 6 positives, with maximum tension of 5.5. Negatives 42 with maximum tension of 5, and 14 "nils." To a great extent this abundance of electricity accounts for the high *ozone* mean. No *lightning* was observed during the month.

The 36 *deaths* in the present month contrast most favorably with the 70 in July 1864, and indeed with any July of the previous eight years; for though 1862 too had only 36 deaths, yet comparing the "causes of death" and the "ages at death" of the two, 1865 had much the most favorable aspect. The average of the eight years exceeds the present month's mortality by $+11.3$.

July, 1865.	Ages.	Julys.										Avg. 8 yrs. Julys, 1857-1864.
		June, 1865.	1864	1863	Min. 1862	1861	Max. 1860	1859	1858	1857		
7	Under 1	7	16	6	3	10	8	7	7	16	9 1-8	
2	1 to 5	2	4	5	8	13	9	9	9	6	7 7-8	
3	5 to 20	4	7	3	2	10	4	2	0	1	3 5-8	
6	20 to 45	4	13	10	9	13	22	8	11	20	13 2-8	
7	45 to 60	3	18	14	11	3	22	5	8	4	10 5-8	
11	60 and above	12	12	10	3	10	49	8	6	5	12 7-8	
36		32	70	48	36	59	114	39	41	52	57 3-8	

"Under one year of age" the deaths were below the eight years' average, and less than half the number in July 1864. At "1 to 5" the mortality was but little above one-fourth of the average, and only half of what occurred in July 1864. At all ages under five years old—the usual standard for infantile mortality—the deaths were only one-quarter of those at all ages; very little more than half the average of the eight years, and less than any year of the eight, inclusive even of 1862, which had the same numerical total as the present year. At "5 to 20" the deaths were less than the average, and not half of those at the corresponding ages in 1864, though four years out of the eight had a still smaller number than the present month. At "20 to 45" no one year of the eight had so few deaths, and 1864, as well as the eight years' average, had above double the number. At "45 to 60" the deaths were considerably

below the average, though three out of the eight years had less than the present month. At "all ages above 60" the mortality was under the average, though more than all the eight years, except the last, and 1860, when the epidemic influenza carried off so many old people. The oldest death was that of a male invalid at the Brickfields Asylum, aged 88.

July, 1865	Classes of Disease	July.									Avg. of 8 yrs. July, 1857-1864.
		June, 1865	1864	1863	Min. '62	1861	Max. '60	1859	1858	1857	
3	1. Zymotic	2	0	3	8	19	38	4	6	6	10 4-8
9	2. Constitutional	3	13	7	7	6	10	8	7	9	8 3-8
17	3. Local	19	42	29	16	21	44	20	24	26	27 6-8
4	4. Developmental	6	11	9	1	5	11	3	2	5	5 7-8
3	5. Violent &c.	2	4	0	4	8	11	4	2	6	4 7-8
36		32	70	48	36	59	114	39	41	52	57 3-8

The *Zymotic* class of diseases had three deaths, being less than one third of the July average. One, a baby 10 months old, died from the effects of *Scarlatina*, from which no death has been recorded since February last. A girl of 13, in a healthy suburban district, died from *Quinsy*, and a boy of 10 years old, died at the Queen's Asylum, registered "*Pericarditis and Pyæmia*." He had abscesses in several parts of the body, the most extensive one arising probably from an accidental local injury. He had a strongly marked tubercular diathesis, formerly so prevalent and fatal in this Institution before the dietary was improved. This case offers a significant warning against any tampering, in the way of reduction, with the dietary, on which the children have so much improved of late years. On an average of nineteen years, with a much less strength, the deaths were nearly 16 per annum. In the present year the above is only the second death.

The *Constitutional* class of diseases had a slight excess above the average deaths, though less than 1864 had. Four were from various forms of *cancerous* disease, one from *scrophula*, only three from *consumption*, and none of them Tasmanians by birth; 1864 had three times as many in number and four of them were born in the island, one death arose from *Hydrocephalus*. The *local* class of diseases had very much less than the eight years' average of deaths, and much less than half of what occurred in 1864. In 1862, however, this class had one less death than the present month. The *nervous system* had 6 deaths, to 9 in 1864. The *circulatory system* had only 2 deaths, while 1864 had 5. The *respiratory system* had 6 deaths, in old people from 63 to 82 years of years of age, from *chronic bronchitis*; and two infants, 8 and 9 months old respectively, from *acute inflammation*. In 1864, this order furnished 23 deaths—10 of which were under 12 months old, 3 from 1 to 5 years old, 8 from 5 to 60, and only 2 above 60. The *digestive system* had 2 deaths being half the number in 1864. The *urinary system*, had the same number—1 in both years. The *developmental* class had 4 deaths, two 72 and 88 years old respectively, one two years old, and one that lived but one hour after birth. In 1864 this class had 11 deaths.

The class of *accidental* and *violent* deaths, had 2 deaths of infants *suffocated* by being *overlaid* in bed, and one girl of 8 years old, from *burns*, 1864 had one more death in this class.

The *inquests* this month were 5, last year had only 4. The deaths in *hospital*, exclusive of one of the inquest cases were 9, four of them admitted from country districts. In 1864 the deaths in this institution were 24. At the male Invalid Asylum the deaths were four, aged respectively 41, 71, 72, 88. In 1864 there were only 2. Of the 36 deaths the Glenorchy division of the

Registration district had 2 deaths, Queenborough 1, and the city 33. Males and females were alike in number, 18, being an exceptional occurrence. On eight days of the month—two of them consecutive—not a death occurred. In the first week of the month 9 died; in the second, 6; in the third, 11; in the fourth, 9; in the last three days, 1. For any two consecutive days the greatest number of deaths was 5, on the 27th and 28th. For any four days, 7, on the 1st to 4th, and 18th to 21st.

The *Births* registered were 73, being five more than in July, 1864.

For all the registration districts in the island, in the second quarter of this year ended 30th June, 725 births were registered, being + 11 more than for the corresponding three months of 1864. The deaths in the same period this year were 346, being—44 less than were recorded for the same months in 1864, and — 22 less than in the same quarter of 1863. It is evident, therefore, that the whole colony has been as healthy, as the monthly reports have shown the registration district of Hobarton to have been.