

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

The weather generally during the month was favorable to health and life, and the mortality in consequence was below the October average of the previous eight years, and fell principally upon aged and otherwise enfeebled persons. In no month of any year since the purity of the air has been recorded by the ozonometric test, has the atmosphere ever before exhibited so large an amount of allotropic oxygen. Atmospheric pressure fluctuated but little; winds were more than usually moderate, and preponderated from healthy quarters. Shade temperature was below the average, while solar heat was above the mean. Daily ranges, however, were somewhat in excess; rain-fall was above the average, and electricity was abundant. The usual accompaniment of such weather, inflammatory affections of the respiratory organs, was not absent, but the effect on the mortuary returns is scarcely appreciable.

Atmospheric pressure mean, 29·852, was only +·072 above the 20 years' adopted standard mean, and was not so high as October, 1864, by —·035. The extreme range of the month was only ·720 of an inch, being very considerably less than that of any October of the previous ten years, and —·367 below that of last year. The extremes were noted on the 6th and 23rd, the former having the minimum 29·464, the latter the maximum 30·184. The greatest movement in any twenty-four hours, from 1 p.m. to 1 p.m., was a fall of—·411 on the 31st. The greatest rise was +·344 on the 2nd. Altogether there were twelve days on which the perturbations exceeded one-fifth of an inch, and though this is the same amount in number as occurred in October, 1864, yet the extent of the fluctuations was very much less.

Wind-force total was 86·89 lbs., being —12·64 lbs. less than the average of the previous eight years, but —22·12 lbs. less than October, 1864, had. *South-West*, *West*, and *North-West*, were all above the average both in frequency and force, and the other five points were all below. The strongest winds had a pressure of 5·21 lbs. to the square foot, and were registered five times. *Calms* were noted at 17 observations, being the same in number as last year, but +1·43 more than the October average of the previous seven years. A *hot wind* blew on the 31st, and one approaching that character prevailed on the 4th.

Temperature mean, 53·67 degrees, is —·78 of a degree below the 20 years' mean, but is almost identical with that of October 1864. Indeed, the last three Octobers have all been much colder, than have been noted in other years since 1853. The self-registering maxima and minima thermometers, however, gave a much higher mean, *i.e.*, 55·76 degrees, which is +2·17 more than the same instruments gave last year. The extremes were 38 minimum, registered on the 1st, 2nd, 8th, 11th; 84 maximum on the 31st. The latter was only exceeded four times in the previous twenty-four years, *i.e.*, 87 in October 1861, 85 in 1855, 85·9 in 1854, 91·5 in 1845. The mean of all the high-day temperatures was 65·58 degrees, while last year's was only 63·29. On the other hand the low-night temperatures were almost alike, being respectively 45·95 for 1865, 45·51 for 1864.

Daily-range of temperature had the mean of 19·30 degrees, being +·30 above the 20 years' mean, and 3·00 above 1864. Thus, while the nights nearly corresponded in temperature in Octobers 1864 and 1865, the latter year had much warmer days, and consequently a much wider daily-range of temperature. The greatest range occurred on the 31st, and was 38 degrees, being +11 more than that of 1864. As high a range, however, was noted in 1862, though not in any other year of the 24 recorded. The lowest range was degrees on the 9th.

Solar-intensity mean was 97·18 degrees, which exceeds that of the previous ten years by +1·76, that of 1864 by +2·86, and that of 1863 by +3·39. The maximum was 119 degrees on the 31st, 1856 had a maximum of 120 degrees,

but no other year since then has had so high a maximum as the present October. As the present month had a higher cloud mean than usual, the greater warmth of the sun's rays while shining is remarkable.

The *Terrestrial-radiation* thermometer gave a mean of 43.16 degrees, being +1.30 above the mean of the previous ten years, though only +.08 above 1864. The extremes were 34, on the 1st and 8th, and 55 on the 27th, and in all respects differed remarkably from the extremes in 1864.

Rainfall total was 2.42 inches, which is +.65 of an inch more than the 20 years' average for October. Last year's October, however, had nearly a quarter of an inch more. There were 14 days on which more or less rain was precipitated, but on the average of the previous ten years, there ought to be 15 wet days to October. So that though a larger amount of rain fell than usual, yet it was restricted to a smaller number of days. In fact on only two of the days, the 9th and 10th, was the rain at all heavy, the quantity gauged being respectively 1.22 inches and .61 of an inch. Of course, this fall thoroughly soaked the soil, and flushed all the drainage channels. On the 15th the rain deposited was barely sufficient to cause the surface drains to run, but on no other days of the month, was there sufficient to effect this desirable result. *Snow* was never absent from Mount Wellington during the month, but none fell in the city as there did in October last year.

Humidity mean was 71, being — 2 below the 20 years' average, and — 3 less than 1864 and 1863 had.

Elastic-force of vapor had a mean of 305, which is +4 above the 20 years' mean. The extreme range was from 118 on the morning of the 15th, to 517 on the evening of the 25th. For the seven days, 21st—27th, the force was continuously high, never during the 21 observations having fallen below 295.

Cloud mean 6.75 was +1.13 above the 20 years' average, and a little above that of last year.

Ozone had the highest mean ever yet recorded for any month since records were kept, being 8.88. October, 1864, very nearly approached to this amount. The October mean, however, of the eight years' records is — 1.08 less than that of the present month. Nine times, saturation (10 of the chromatic scale) was recorded, and the minimum was 7, only recorded at the evening observation of the last day of the month.

Electricity had 24 positive indications with maximum tension of 8, and minimum of 2.5. Negative had 36 records with the extremes of tension of 7 and 1.5. There 2 "nils." No lightning was observed, but thunder was heard on the 10th. A lunar rainbow was seen on the evening of the 5th.

The number of *Deaths* this month is 39, being $4\frac{5}{8}$ less than in September, as well as that proportion below the average of the previous eight Octobers, 1857 to 1864.

Oct. 1865	Ages.	Sept., 1865	Octobers.								Avg. 8 yrs. Octs., 1857-1864
			1864	1863	1862	Mn. 61	1860	1859	Max. 1858	Max. 1857	
8	Under 1	9	8	4	2	8	6	9	9	10	7
0	1 to 5	2	3	6	3	3	10	3	15	7	6 2-8
2	5 to 20	6	4	2	2	0	4	6	4	3	3 1-8
11	20 to 45	3	8	8	9	12	10	7	12	10	9 4-8
6	45 to 60	9	8	13	4	2	8	9	6	22	9
12	60 and above	14	10	16	10	4	7	7	11	5	8 6-8
39		43	41	49	30	29	5	41	57	57	43 5-3

"Under one year old," the deaths were one more in number than the average of the 8 years, though precisely the same as those recorded for October, 1864. At "1 to 5," not a single death occurred, though the eight years' average is 6 2-8, and not one of the eight had less than three deaths in this group of ages. At "5 to 20," the deaths were more than one third below the average. At "20 to 45," the average was exceeded by +1 4-8, and only two years out of the eight had as many, that is 1861 and 1851, each 12, being one more each,

At "45 to 60," the deaths were exactly one-third below the average. Last year had two more than the present. At "all ages above 60," the deaths were nearly one third above the average. Only 1863 had more; last year had two less. Every month of this year, so far, except July, has had a considerable excess above the average of deaths in this group, while under 5 years old, the deaths in every month have been very largely below the eight years' average. The year so far, therefore, has been most propitious to infantile life, though inimical to old people. The former, however, is the admitted test of the salubrity of any season, or climate.

Oct., 1865	Classes of Disease	Sept., 1865	Octobers.								Avg. of 8 yrs. Octobers, 1857-1864.
			1864	1863	1862	Min.'61	1860	1859	Max.'58	Max.'57	
2	1. Zymotic	6	2	6	3	1	12	4	11	6	5 5-8
8	2. Constitutional	5	6	10	9	2	9	5	13	9	7 7-8
16	3. Local	22	22	26	12	17	22	28	23	30	22 4-8
10	4. Developmental	6	6	2	5	7	1	3	7	4	4 3-8
3	5. Violent &c.	4	5	5	1	2	1	1	3	8	3 2-8
39		43	41	49	30	29	45	41	57	57	43 5-8

The *Zymotic class of diseases* had precisely the same number of deaths as in October 1864, though very considerably less than half of the eight years' average.

The *Constitutional class* had a fraction more than the average, and 25 per cent. more than 1864 had. Six out of the eight were deaths from consumption, of whom one was born in Tasmania, a female, aged 25. Another was a New Zealander brought to Hospital from a whaler in harbor. He only lived three days after admission. Of the others, two were born in Scotland, and one each belonged to England and Ireland. October 1864 had only two-thirds of this number of deaths from consumption.

The *Local class of diseases* gave a smaller number of deaths than any year of the eight, and were very considerably less than the average, as well as of those in October last year. The 1st order of this class, "*Diseases of the Brain and Nervous system*," exhibits a striking contrast in its mortality this year to last, i. e. 5 to 12. The diminution this year is in accordance with the less disturbance of atmospheric pressure, the influence of which was alluded to in the "Report for October 1864." In the 2nd order "*Diseases of the Heart and Organs of Circulation*" the deaths this year were numerically the same as in October last year. The 3rd order "*Diseases of the Lungs and Organs of Respiration*" the deaths this year were 5, to 3 last. Last year not one of the three was under 56 years old, this year three of the five were under 23 years old; and two of these were babes under four months old, who died from acute inflammation of the lungs. It will be remembered that a cause for this was shown in the unusual abundance of ozone.

The 4th order, "*Diseases of the Stomach and Organs of Digestion*," had only half the number of deaths that October 1864 had. The 6th order "*Diseases of the Locomotive Organs*" gave one death, while 1864 had not any. The *Developmental class* had considerably more than double the average deaths, half of them, however, were from old age: and three out of the remaining five were all under nine months old. The class of *Violent and Accidental Deaths* was slightly below the average, and considerably less than last year had. One died from tetanus after amputation of the thigh for injury to the limb that occurred at Spring Bay. It is alluded to in last month's report. A boy of 7 was killed by a blow from the derrick of a steamer when leaving the port. The third, a babe of 7 months old, fell into the fire from its nurse's arms, and died from the burns inflicted. The *Inquests* on cases dying within the month, were 4, last year had 7. In *Hospital*, inclusive of two of the inquest cases, the deaths were 15. October 1864 had only 10. Of these, seven did not belong

to this registration district. In the *Male Invalid Asylum*, four died, aged respectively, 45, 64, 65, 74. October had the same number. In the *Cascades prison* two children died, each aged two months only. October last year had not any. Of the 39 deaths 20 were males, 19 females, an equality of the sexes very unusual. The Glenorchy division of the registration-district had not any deaths, the Queenborough had 3, and the rest died in the city. In the first week of the month there died 13; in the second, 8; in the third, 7; in the fourth, 4; in the last three days, 7. The last three days, and those from 2nd to 4th inclusive, were the most fatal periods of the month. The atmospheric disturbances, at both these times, were greater in most respects than any other three consecutive days during the month. On seven days of the month there was not a single death. The 4th and 31st had each three, being the minimum for the month.

The *births* registered were 65, being — 5 less than in October 1864.



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