

## ANALYSIS OF THE OBSERVATORY RECORDS FOR AUGUST, 1866, IN CONJUNCTION WITH THOSE OF BIRTHS, DEATHS, &c. BY E. SWARBRECK HALL.

Never before was the month of August so pleasant in its climatic character, or so favorable to health and life. The last ten days of the month, specially, were more like model summer days, than winter ones. It is a general though peculiar phenomenon in the last week of August, that there should be three or four consecutive days of a warm summer character, but never before were there so many in any August, as have been recorded for the present month. August 1865 was a fine and healthy month, yet while the deaths then amounted to 42, the present month had only 33.

*Atmospheric pressure* mean, 29.952, was + .169 of an inch above the 20 years' adopted standard, and + .031 higher than August 1865. No August since 1861 had so high a mean as the present month. The maximum, 30.507, was registered at 7 a.m. on the 18th. 1865 had a somewhat higher maximum. This day was the most fatal to life of any in the month, 5 deaths having taken place, while no other day had more than 3 and that only twice. Last year also the day of maximum pressure, was the most fatal day of the month. The maximum was, 29.147, on the 9th, being considerably lower than in 1865. The extreme range of the month, therefore, was 1.360 inches, which is a wider range of pressure for August than any year since 1856. The greatest movement of the barometer, marked on any day, was a rise of + .464 of an inch on the 15th, and the effect on life was palpable in the three following days, during which 9 deaths occurred, while the next highest three days, 26th to 28th, had only 7 deaths. Every August since 1858, however, had a much higher maximum movement of the barometer than the present month. Altogether there were fourteen days on which the pressure varied more than one-fifth of an inch.

*Wind-force* in the aggregate amounted to 42.66lbs., being + 2.36 lbs. more than 1865 had. It was + 4.31 lbs. more than the average in the four years' tables of the adopted standard—1862 and 1863, however, had so very great a wind-force, that the average of the last nine years has been so largely raised that the present year's amount falls below it, by -2.72 lbs. The *North*, *North-east*, *East*, *South-east*, and *South*, were all below the four years' average both in frequency and force; *South-west*, was above the average in both respects, *West* winds were more numerous than the average, but of less force, *North-west* was greatly above the average both in frequency and force. *Calms* were only 31, being -3.62 below the average of the previous eight years, and -.5 less than last year. The highest wind-force registered had a pressure of 5.21 lbs. to the square foot, and was recorded at the sunset observation on the 24th, and the 7 a.m. observation on the 27th, both from the *North-west*, and the last a *hot wind* being a rare occurrence in August. The former two partook of the same character in a lesser degree.

*Temperature* mean, 50.60 degrees, +1.90 degrees above the 20 years' average, and +1.29 warmer than 1865 was. The self-registering thermometer gave a mean of only 50.05 degrees, thus adding another month to the number in which this remarkable discrepancy has occurred. The mean of all the maxima or high-day temperatures was, 59.32 degrees, being more than one degree lower than 1865 had, nevertheless there were 14 days on which the temperature was above 60, rising to 69 on the 27th and 31st. Last year's maximum was only 66. The mean of all the maxima or low-night temperatures was 40.77 degrees; being more than a degree higher than last year. So that the present month had, on the whole,



warmer nights and cooler days than August 1865 had. The minimum was 31 on the 1st and 18th; last year's was 32.

*Daily-range of Temperature* had the mean of 18.55 degrees which is + 2.16 above the 20 years' mean, but -2.35 less than 1865 had. The greatest range on any day was 31 degrees on the 18th (the most fatal in the month), while last year's was only 28.

*Solar-Intensity* mean, 83.70 degrees, is + 1.92 above the average of the previous 10 years, though -1.38 less than 1865 had. The maximum was 99 degrees on the 26th, the minimum 55 on the 2nd. Last year's extremes were 98 and 58.

*Terrestrial-Radiation* mean, 38.18 degrees, was + 2.38 above the average of the previous ten years, and + 2.33 more than 1865 had. The extremes were maximum 46.5 on the 26th, and minimum 28 on the 18th. Last year's extremes were 43.5 and 27.5.

*Rain* fell on 12 days, which is -1.45 below the 11 years' average of wet days for August. The total deposit gauged was only .93 of an inch, being -1.13 below the 20 years' mean, and -.30 of an inch less than August 1865 had. On the 10th .34 of an inch fell, and on the 12th .30; on these two days only was there sufficient rain to cleanse surface drains. No *Snow* fell in the city this month, but it did so frequently on Mount Wellington, which was never free from snow during the whole month.

*Humidity* mean, 73, is -6½ below the 20 years average, and 3 less than 1865 had.

*Elastic-force of vapour* had a mean of 267, which is -10 less than the 20 years' average. The range was from minimum 156 on the 18th, to maximum 375 on the 30th.

*Spontaneous Evaporation* was 3.00 inches, therefore greatly exceeding rainfall. Last year's was not so much by close upon half an inch.

*Cloud mean*, 6.24, is +.65 more than the 20 years' average, and about the same above last year.

*Ozone* mean, 7.79, was +.29 above the August mean of the previous 9 years, and a trifle more than 1865 had. It ranged from the minimum 5 frequently, to maximum 10 (saturation) on the 12th. So much atmospheric purity, with almost constant wind movement, genial temperature, and abundance of positive electricity, no doubt contributed largely to the very healthy character of this month.

*Electricity* had 37 positive indications, with a maximum tension of 5.5, and minimum of 2. Negative was registered 22 times, with extreme tension of 5.5 and 1. "Nil" was only recorded three times—on the first and second days of the month. August, 1865, had 38 positive and 24 negative records.

33 deaths for this month is -14 8-9 less than the average for August of the previous nine years, and seven less than the previous minimum (40) in August, 1860. Last year had nine more deaths than the present month.

Aug., 1866.	Ages.	Augusts.										Avg. 9 yrs. Augusts. 1857-1865.
		July, 1866	1865	1864	1863	1862	1861	'60Min	1859	58Max	1857	
1	Under 1	4	5	4	7	7	9	11	6	28	11	9 7-9
5	1 to 5	4	4	3	4	7	3	4	8	16	2	5 6-9
1	5 to 20	1	1	4	5	3	10	1	4	4	3	3 8-9
10	20 to 45	4	7	9	7	7	14	7	8	12	14	9 4-9
5	45 to 60	13	7	11	8	7	1	6	14	6	16	8 4-9
11	60 and above	28	18	10	10	12	11	11	8	8	8	10 6-9
33		54	42	41	41	43	48	40	48	74	54	47 8-9



"Under 1 year old" there was only one death, a child nine months old, long suffering from "*Hydrocephalus*" The nine years' average is nearly ten times as great, and the smallest number in any year previously was 4, in August, 1864. All sanitarians are agreed that the infantile deaths are the surest test of the healthiness of any season or climate.

At "1 to 5 years old" the deaths were slightly below the average, though less year and five others had all less.

At "5 to 20 years old," there was only one death, or little more than one-fourth of the average. Last year and 1860 had equally small numbers.

At "20 to 45" the mortality was a fraction above the average, only three years out of the nine having a greater number of deaths.

At "45 to 60" the deaths were greatly below the average, and only one year, 1861, had fewer.

At "60 and all ages above" the average was slightly exceeded, but was far less than August, 1865, had.

Below and above 45 years old the deaths were alike in number.

August, 1866.	Classes of Disease	July, 1866.	Augusts.										Avg. of 9 yrs. Augs '57-'65.	
		1865	1864	1863	1862	1861	'60 Min.	1859	'58 Max.	1857				
3	1. Zymotic	6	1	9	4	3	15	10	9	7	7	2-9		
8	2. Constitutional	6	3	4	6	8	6	4	7	9	15	6 1-9		
12	3. Local	27	20	21	23	24	21	19	28	49	29	26		
7	4. Developmental	12	12	6	3	4	6	6	3	4	2	5 1-9		
3	5. Violent &c.	3	6	1	5	4	0	1	1	5	1	2 6-9		
33		54	42	41	41	43	48	40	48	74	54	47 8-9		

In the first or *Zymotic class of diseases* the deaths were less than one half of the nine years' average, though three times as many as 1865 had. None of the three, however, could be said to be influenced by climatic causes. Two were within a month after childbirth and from diseases consequent thereon. Deaths at this time are of very rare occurrence in Tasmania.

In the second, or *Constitutional class of diseases*, the deaths were above the average, six out of the previous nine years having a smaller mortality in this class. Three were from *Consumption*, and all of them born in Tasmania—a very unusual occurrence.

In the third, or *Local class of diseases*, there was less than half the average mortality, and far fewer than any year of the nine. In the first order of this class, *Diseases of Brain and Nervous system*, there was not a single death, which is most exceptional. Last year had nine deaths in this order. In the second order, *Diseases of the Heart and Organs of Circulation*, there was only one death of a woman aged 67. Last year had 5. In the third order, *Diseases of the Lungs and Organs of Respiration*, there were nine deaths, though five of them were chronic affections. 1865 had only 2. In the fourth order, *Diseases of the Organs of Digestion*, a single death only occurred, in a young man of 22 from *abscess of the liver*, received into hospital from a country district. Last year this order had 2 deaths. In the fifth order, *Diseases of the Urinary Organs*, there was one death—1865 had 2.

In the fourth, or *Developmental class of diseases*, the deaths were considerably above the 9 years' average, though much fewer than in 1865. Two were children, one year old, from *atrophy* the rest were from *old age*, aged respectively 63, 71, 74, 76, 79.



The fifth, or *Violent and Accidental class of diseases*, had deaths slightly above the numerical average, though only half the number that occurred in 1865. One died from *fractures of neck and thigh* caused by a fall from the roof of a house. A child two years old from *hemorrhage*, from a wound in the face. A man of 45 died from *tetanus* (lock-jaw), consequent upon a crushed finger, though at an unusually long period afterwards.

There was only one *inquest*—the death from the fall off the roof of a house. Last year had 6. The deaths in *hospital*, inclusive of the inquest case, were 14. Last year had only 8. Three of them were cases admitted from country districts. At the *Male Invalid Asylum* there were only 3 deaths this month, aged respectively 66, 79, 86. Last August there were 5. Of the 33 deaths, all occurred in the city division of the electoral districts.

In the first week only 3 died ; in the second, 5 ; in the third, 12 ; in the fourth, 9 ; in the last three days, 4. The most fatal period of the month was the three days, 16, 17, 18, when 9 deaths occurred ; the next was the three days, 26, 27, 28, when 7 died. No other three days had more than 4. On twelve days of the month there was not a single death.

The registered *Births* were 70, being + more than in 1865.



Hall, Edward Swarbreck. 1866. "Analysis of the observatory records for August 1866, in conjunction with those of births, deaths &c." *Papers and proceedings of the Royal Society of Tasmania* 78–81.

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