

of nature, that while in the field of politics men are still engaged in intrigue, and in the theatre of war dynasties are still created or destroyed, the friends of natural science, each in his several sphere, are with loving hands assisting to erect an enduring temple that even Time cannot destroy. The objects that furnish material for thought may perish; but the immortal fruits are lasting as the mind itself.

If then, the observation and study of nature be so elevating, so profitable, and so enduring; and if we fully comprehend the sphere of natural science, we shall not restrict ourselves to contemplation only of the earth beneath our feet with its wealth of life and wonder and beauty; but we shall assert the dignity of our origin, and lift our gaze to the atmosphere that envelopes us, and even penetrate with the aid of its cunning implements the mysterious depths of the illimitable space. We shall not be content with pursuing our investigations only for the gratification which they afford; but we shall endeavor to discover new appliances for the promotion of industry, and wealth, and the happiness of the human race.

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ART. VII. ON THE METEOROLOGY OF THE GLACE BAY COAL DISTRICT. BY HENRY POOLE.

[*Read April 13, 1869.*]

THE accompanying register of the weather observed here in the year 1868, is in continuation of the Meteorological Register forwarded for the year 1867.

The mean barometrical readings for the two years vary very little: 29.8854 inches in 1868, against 29.8524 in 1867. The readings are corrected to the freezing point, and for an elevation of 60 ft. above the sea level, and also for the force of vapour. The force of vapour is an important element in the barometrical pressure, and during the year it gave a mean difference of 0.193 or nearly the fifth of an inch. The highest corrected reading was 30.611 on the 7th March. The lowest was 28.809 on the 6th February.

In February the greatest variations in pressure and temperature were observed. On the morning of the 5th the barometer stood at



30.371; during the following night the temperature fell to eight below zero, five inches of snow fell in almost a perfect calm, the anemometer only recording 18 miles in 14 hours. Suddenly the wind came round from the N. W. to the S. E., the temperature rapidly rose, the pressure rapidly decreased and that so quickly that in 24 hours it had fallen 1.562 inches. This great fall of the barometer was succeeded by a heavy storm of wind and rain on the night of the 6th.

The wind travelled 726 miles in 12 hours, when a sudden gust broke the anemometer. By the time the windgage was repaired the gale had moderated and the wind veered round to the West, where it continued until the night of the 8th, the thermometer then going down to 9 below zero. Again the wind went round to the S. E. and blowed for 15 hours at the rate of 79 miles an hour, the temperature having risen during that time to  $51^{\circ}$  Fah. The thermometer on the night of the 9th not going below  $42^{\circ}$  Fah. On the 11th it was so calm, that the air only travelled 13.4 miles in 14 hours; the anemometer recording but 671 revolutions.

October gave the highest monthly barometrical mean,—29.848. The mean temperature of the year was below the average,—39.29 $^{\circ}$  Fah. compared with 49.06 in 1867. February was the coldest month when there were 716 Fahrenheit degrees of frost; the coldest night was 13 below zero on the 4th; the warmest day was the 21st, when the thermometer rose to  $44^{\circ}$ . August was the hottest month, the mean being  $64.5^{\circ}$ ; the coldest night was  $46^{\circ}$  on the 28th, and the hottest days  $82^{\circ}$  on the 4th, 11th, and 24th. The hottest day of the year, however, was on the 19th July, when the thermometer registered  $86^{\circ}$  in the shade. The temperature fell below zero on 15 nights, and during three months there was no frost, July, August and September. In June there was frost only on one night.

From the above it will be seen that we have neither the extreme cold or extreme heat recorded on the same parallel of latitude more inland. The relative humidity averaged 74.3 per cent. The mean force of vapour was 6.233 millemetres. February furnished the lowest mean, 2.208 m., and August the highest 12.61 m., the latter equal to 49.55 inches of mercury. June 5th was the driest day when the relative humidity was only 20. On the 20th August

the force of vapour was the greatest, being 20·10 m., and on the same day the relative humidity was at 100 or saturation. Ninety-four and a half inches of snow fell on 65 days; none fell in May, June, July, August or September. The snow and rain together measured 59·75 inches of water, and this quantity would weigh 5980 tons to the acre. The average number of wet days in a month was  $12\frac{1}{2}$ .

The anemometer recorded 8,110,903 revolutions, in the course of the year, equal to 162,218 miles, and a mean velocity for the wind of 18·5 miles per hour. July was the calmest month when the average was 13 miles per hour; November was the windiest when the average rose to 24 miles per hour.

On the 22nd November the mean velocity for the 24 hours was as high as 50 miles per hour. The winds prevailed for 129 days from S. to W.; 107 days from W. to N.; for 76 days from N. to E., and for 54 days from E. to S.

Fog was recorded only on 28 days, and thunder and lightning on 12 days. The drift ice came on the coast as early as the 7th January. Robins were first seen on the 6th April. Grey birds began to sing on the 8th April. On the 22nd April the first herrings were caught in Glace Bay. Frogs croaked on the 1st May. The white coltsfoot came into bloom on the 8th; and on the 11th May the first butterfly, "the Camberwell beauty," was seen.

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ART. VIII. NOTES ON THE STRUCTURE OF THE NOVA SCOTIA GOLD DISTRICTS. BY HENRY Y. HIND, M. A.

[Read April 13, 1869.]

THE wide distribution of auriferous quartz in the form of beds throughout Nova Scotia, suggests a uniform origin extending simultaneously over many thousand square miles. Gold, however, is not confined to beds of quartz, but is found in slates without any quartz being visible, and there is good reason to suppose that it is distributed in exceedingly fine particles throughout many beds of quartzite.

The auriferous rocks which are worked in the Province bear a