

Transatlantic telegraph have flashed from this coast or from Newfoundland to Ireland the presence of the storm on this side, and its probable oceanic path,—Valentia might have warned Brest and lower stations, and the officer in command of a trial squadron, “looking for a gale of wind,” would scarcely have failed to communicate daily with the French or Spanish coast for signals, and to take additional precautions if aware of the approach of a cyclone.

I must not conclude without alluding to the probability of the General Government giving encouragement to the system of meteorological observations which the Director of Toronto Observatory, Mr. Kingston, and myself, have been for some time urging upon them and the Canadian public.

ART. X.—ON THE METEOROLOGY OF CALEDONIA MINES, LITTLE GLACE BAY, CAPE BRETON. BY H. POOLE, ESQ., M. E., *Superintendent of Mines.*

(Read May 8, 1871.)

THE accompanying record of the weather, observed in 1870, is in continuation of the meteorological registers forwarded for the previous years back to 1867 inclusive.

The Barometrical readings are a little lower than in former years. The highest reading being 30.560 on 1st January, and the lowest 28.460 on the 1st February, being an extreme range of two inches.

The mean temperature was 41.75, or 1.70 degree warmer than the mean of the previous three years. The mean at night being 1.78 warmer, and at day 1.50 warmer than the mean of previous years. The coldest night was only 2.5 below zero on 13th March, and the hottest day was 89.5 on 24th July. Only three nights marked below zero, though previous years had marked six, fifteen and seven. The nights of frost were one hundred and eighty three, being the average of former years, but the degrees of frost were only 1499 against 1794, 2486, and 2171 degrees of former years.

The rimy frosts were forty seven against a mean of twenty six with eight times of silver thaw, against a mean of five times. Hail was observed eleven times, and fogs sixty one, as compared with a mean of hail six times and thirty one fogs. Lightning and thunder were also more frequent, being seventeen times against a mean of nine times. Twelve rainbows were observed as compared with six in former years, and the unusual number of one hundred and two auroras, instead of a mean of thirty three. Also thirty four halos round the sun and twelve round the moon, instead of an average of twenty two round the sun and five round the moon, as previously. The mean force of vapour was 0.2691 inch, and the relative humidity was seventy four per cent, one hundred being saturation.

The wind continued to give a high mean of 17.4 miles per hour, or a total number of 152,353 miles for the whole year. The wind veered thirty eight with and backed seven times against the sun, making full revolutions; while the prevailing directions were one hundred and twenty three days from S. to W, ninety nine days from W. to N., eighty five days from N. to E., and fifty eight days from E. to S. In March the wind averaged 24.5 miles per hour throughout the month. The equinoctial gale blew on the 17th, 18th, 19th and 20th; the greatest force being on the 18th from 1 p. m. to 8 a. m. of the 19th, an average of 70.5 miles per hour; thence to 1 p. m. of the 19th, 89 miles per hour; and from 1 p. m. to 4 p. m. 88 miles per hour; and from the whole 24 hours of the 19th, an average of 72 miles per hour. The direction of the wind was north, and nine inches of snow fell. A total of one hundred and two inches of snow fell on fifty six days, which melted and added to the rain gave a total precipitation of 62.625 inches of water on one hundred and sixty days.

Table No. 2 exhibits the rainfall compared for four years. It shows that the least quantity falls in August, then July, June, May, April, March, January, February, October, November, December, and the most in September. In 1870, May had the least rain fall, 1.705 inch, shewing a reasonable excuse for the shortness of the hay crop in that year. The greatest fall of rain in one month was 11.265 inches in September 1867.

METEOROLOGICAL REGISTER, CALEDONIA MINE, LITTLE GLACE BAY, CAPE BRETON. 60 FT. ABOVE SEA. LAT. 46° 12' N. LONG. 59° 57' W.

1870.	BAROMETER.				THERMOMETER.								Force of Vapour in inches.	Relative Humidity.	Force of Vapour in Millimetres.	Revolutions of Wind.	Miles per hour.	Rain, includes Snow.		Snow.		Degrees Frost.	Below Zero.	Rings Frost.	Hail.	Silver Thaw.	Fogs.	Light & Thun.	Showers.	Aurora.	Halo 23 Moon.	Halo 24 Moon.	Corona.	Wind.															
	Corrected to 32°.	Correc. for Vapor & 60 ft. above Sea.	Highest corrected.	Lowest corrected.	Mean.	Mean Night.	Mean Day.	Coldest.		Hottest.		Inches.						Days.	Inches.	Days.	Degrees Frost.													Below Zero.	Rings Frost.	Hail.	Silver Thaw.	Fogs.	Light & Thun.	Showers.	Aurora.	Halo 23 Moon.	Halo 24 Moon.	Corona.	Turned.		True N.		
								Night.	Day.	Night.	Day.																																		Night.	Day.	With Sun.	Against Sun.	S. to W.
January	29.9908	29.8920	30.560 1	28.569 30	26.50	21.0	32.0	7 10 13	14 38 4 50	18 1588	77.3	4.023	712690	19.16	6.550	18	23.25	13	30	304	2	1	11	7	7	6												
February	29.8004	29.7259	30.509 18	28.460 1	22.50	17.0	28.0	-2 5 6	4 36 25 41	25 1845	77.7	3.420	568780	16.78	7.605	13	23.25	9	27	421													
March	29.6929	29.6199	30.468 27	29.009 18	22.50	22.4	31.0	-2 5 13	12 80 30 44	2 1339	72.0	3.408	910440	24.47	3.980	9	36.50	9	31	308	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April	29.9739	29.8431	30.534 16	29.326 13	35.75	29.7	41.8	20 17 29	16 41 13 64	11 1908	69.1	4.847	581380	16.15	3.870	13	7.5	1	25	100													
May	29.8400	29.6789	30.310 31	29.397 4	40.90	33.6	48.2	22 6 34	5 44 30 69	31 2261	67.0	5.744	512960	13.79	1.705	10	4.25	4	18	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June	29.8899	29.5944	30.196 9	29.369 25	53.85	47.0	60.7	38 4 48	12 63 15 81	1 3555	70.4	9.032	511120	14.19	2.475	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July	29.8333	29.4185	30.101 5	29.534 25	64.10	55.5	72.7	39 3 57	1 69 9 89.5 24	4748	67.0	12.060	592100	15.91	2.120	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
August	29.8248	29.3843	30.066 8	29.465 6	63.35	56.7	70.0	45 7 59	24 67 11 83	1 5105	72.9	12.969	578420	15.55	3.310	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
September	29.9264	29.6013	30.370 30	29.333 4	54.25	48.2	60.3	35 9 46	60 63 5 75	5 3851	77.3	9.183	649020	18.03	6.575	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
October	29.8746	29.6530	30.420 24	29.304 21	46.00	40.8	51.2	28 28 36.5 27	60 14 68	12 2816	77.3	9.153	782810	21.00	6.195	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
November	29.7267	29.5653	30.489 22	28.976 13	38.45	35.0	41.9	19 15 25	30 47 16 55	16 2214	80.7	5.625	585930	16.27	9.065	20	4.25	5 14	39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
December	29.6288	29.5318	30.357 12	28.905 15	28.65	24.7	32.6	10 25 17	25 39 11 49	29 1570	84.8	3.969	637150	17.13	9.175	20	9.25	13	26	266	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mean	29.8433	29.6251	...	...	41.75	35.9	47.5	...	...	...	...	269174.0	6.787	634806	17.40	...	13.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Extreme	...	...	30.560 1	28.460 1	...	...	...	...	-2.5 13	6 4 69	9 89.5 24	...	...	7617670 r152353	62.625	160.102	0.561	1831499	34711	8611712	1234	12 4	38	7	128 99	85 58	...	...	...	...	...	...	...									

COMPARED WITH THE ABOVE.

1867.	Mean	29.8524	29.6704
1868.	Mean	29.8854	29.6924	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1869.	Mean	29.8413	29.6325	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

CLIMATE OF ALBION MINES, NOVA SCOTIA. LAT. 45° 34' 30" NORTH. LONG. 62° 42' WEST. 120 FEET ABOVE SEA.

10 years	29.7137	30.757	28.505	41.97	33.11	50.91	-22	98	44.967	173	111.563	1892470	19	112	126	66	61
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TABLE No. 2.
RAIN-FALL COMPARED

YEAR.	Jan'y.	Feb'y.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Decr.	TOTAL.
1867	5.915	3.395	5.965	5.085	5.370	2.010	3.080	2.560	11.265	2.920	4.780	5.745	58.090
1868	4.665	5.545	3.945	5.320	3.145	6.057	2.122	3.428	6.956	7.745	5.700	5.120	59.750
1869	3.610	5.820	6.005	4.420	7.400	5.300	6.400	2.725	2.870	7.220	5.065	5.655	60.490
1870	6.550	7.605	3.980	3.870	1.705	2.475	2.120	3.310	6.575	6.195	9.065	9.175	62.625
Mean	5.185	5.591	4.974	4.674	4.405	3.460	3.431	3.006	6.916	6.020	6.152	6.424	60.237
1867	10	5	11	7	8	1	4	2	12	8	6	9	
1868	5	8	4	7	2	10	1	3	11	12	9	6	
1869	4	8	9	5	12	3	10	1	2	11	6	7	
1870	8	10	6	5	1	3	2	4	9	7	11	12	
Mean	7	8	6	5	4	3	2	1	12	9	10	11	

1 quarter—March, April, May 14 053 } First half-year
 2 " June, July, August 9 896 } 23.949
 3 " September, October, November... 19 088 } Second half-year
 4 " December, January, February.... 17 200 } 36.288

Year 60.237

HENRY POOLE,
Caledonia Mine, Cape Breton.

Other phenomena noted at this station :

January 27th.—A two year old seal shot at Big Glace Bay.

February 3rd.—Sleighs travelled over Big Glace Bay Lake.

5th.—First drift ice passing southward.

March 17th.—Wild geese at Liñgan.

April 1st.—Great numbers of lobsters driven on shore at Little Glace Bay. 2nd.—Grey birds seen. 3rd.—Robins. 5th.—Whistling duck heard. 10th.—A large moth seen. Herrings caught on the 12th. 21st.—Codfish thrown ashore. 23rd.—Mayflowers in bloom. 26th.—Heard yellowhammer, woodpecker, *picres auratus*? 27th.—Gaspereaux caught in Big Glace Bay; and frogs piping. 30th.—Saw four humble bees, butterfly, “Camberwell Beauty;” heard a partridge drumming.

May 7th.—Saw a small hawk; blue herons, “*Ardea Herodias*,” and yellow-legs, “*Totanus flavipes*.” 10th.—A porpoise came on shore at Glace Bay. 21st.—Wild strawberries, white violets and coltsfort, “*Nardosinia palmata*,” bloom. 24th.—Alder catkins blossom. 28th.—Swallows seen. 29th.—Dandelions bloom. 31st.—Musquito hawk seen.

June 4th.—Swallow-tailed butterfly (*Papilio turnus*,) seen. 5th.—White and Sulphur butterflies, (*Pontia olerace et Colias Philodice*). 11th.—Wasps. 12th.—Apples in blossom. 17th.—Caplin “*mallothus villosus*,” struck in at Mire. 24th.—Caplin at Big Glace Bay. 29th.—Gathered ripe strawberries.

July 6th.—Fireflies seen. 14th.—Dragon fly. 16th.—Potatoes and wild roses in blossom. 21st.—Mowed hay. 26th.—Saw a bat. 29th.—Gathered peas and dug potatoes.

August 16th.—Golden plover arrived.

September 20th.—Sword fish seven feet long thrown on shore at Big Glace Bay. 21st.—Six wild geese in the Bay.

October 9th.—A lunar halo with paraselene from 8 to 10 P.M. 27th.—First frost.

December 31st.—A flock of wild geese in Big Glace Bay.