

and it may, upon a closer examination, be found to extend between the ridges of mountains in a southerly direction much nearer to Quebec than is at present imagined.

At all events it would be attended with highly beneficial results, were a party sent overland from Quebec, to explore more closely the intervening country. Certainly great difficulties would be found in providing a sufficient supply of provisions, but by sending two parties of trusty Indians, the one from Chicoutimi and the other from Lorette, depôts might be formed on the shores of some well known lakes, sufficient to supply the wants of an exploring party. Were no other object attained by sending out such a party, the additional geographical knowledge which would be the result, would amply compensate for all the labor and expense employed on the occasion.

*A few Notes upon the DARK DAYS OF
CANADA, by the Honorable Chief Justice
SEWELL, President of the Society.*

AMONG the atmospherical phenomena of Canada, the dark days of October, 1785, and of July, 1814, appear worthy of notice. They were remarkable for their peculiarity of character, and for the circumstances by which they were accompanied; and as an attempt to explain the cause of the remarkable obscurity by which they were

more particularly distinguished has never, to my knowledge, been made, I propose in the present paper to offer to the society such accounts of these phenomena as I have been able to collect, with a few observations, which I hope will not be thought unworthy of their attention.

The first dark day of which we have any detailed account, was Sunday, the 16th of October, 1785. On the ninth of that month, a short period of obscurity occurred at Quebec, about four in the afternoon, and during its continuance the sky in the north-east quarter below the city, exhibited a luminous appearance upon the line of the horizon, of a yellow tinge. On the fifteenth, about three o'clock in the afternoon, there was a repetition of the same luminous appearance in the horizon, in the same quarter, the north-east, accompanied by a second period of obscurity, somewhat longer in duration than the first. Both of these periods were accompanied by violent gusts of wind, by thunder, lightning, and rain.*

The Morning of Sunday, the 16th of October, 1785, was perfectly calm, and there was a thick fog, but the fog was nothing more than what is often seen at that season of the year; towards nine o'clock, a light air from the north-east sprung up, which increased rapidly. The fog, by ten o'clock, was entirely dissipated; black clouds were then seen rapidly advancing from the north-east, and by half after ten, it was so dark, that printing of the most usual type could not be read; this lasted for upwards of ten minutes, and was succeeded by a violent gust of wind, with rain, thunder, and lightning, after which the weather became brighter, until twelve o'clock, when a second

* Quebec Gazette, 20th October, 1785.

period of so much obscurity took place, that lights became necessary, and were used in all the churches. This period was rather longer in its duration, than the first; a third period of obscurity came on at two o'clock, a fourth about three, and a fifth at half past four o'clock, during which the intensity of the darkness was very great, and is described by those who witnessed it, to have been that of perfect midnight. During the whole of these periods, and of the interval between them, vast masses of clouds, of a yellow appearance, which was very remarkable, were driven with great rapidity from the north-east toward the south-west by the wind; there was much lightning, thunder, and rain. The periods of total darkness were about ten minutes each, and although the intervals were not so dark, they afforded but little light.

The Barometer was stationary the whole time at 29 5, and the Thermometer, which stood in the morning at 52° fell two or three degrees in the course of the day.*

The water which fell from the clouds was extremely black; and the next day, upon the surface of what was found in different vessels, a yellow powder was floating, which, upon examination, proved to be sulphur; a deposit of a black substance in powder, was also found in the bottom of all these vessels, but I am not aware that it was submitted to any test whatever.†

Phenomena similar to those which have been described, took place at Montreal, on the same sixteenth day of October, but the darkness did not there commence until about two in the afternoon; the clouds were of the same remarkable

* Meteorological Journal of the late Rev. Dr. Sparke.

† Quebec Gazette, 20th October, 1785,—and Dr. Sparke's Journal.

yellow tinge, and were accompanied by gusts of wind, thunder, lightning, and rain; there was a period of obscurity at half past two o'clock, a second at a quarter past three, and a third at five, and during all of them the darkness was so intense, that to use the expression of one who was an eye witness, "*jamais nuit ne fut plus obscur.*" A medical gentleman of Montreal perceiving the black colour of the rain, collected, upon a strained piece of muslin, a certain quantity of the black pulverised matter with which it was charged, and by rubbing it between the fingers, and by ignition, this was found to be strongly impregnated with sulphur. It does not, however appear that any other experiment was made with it, so that we have no further data to determine its qualities,—a circumstance much to be regretted.*

I shall now lay before the society some accounts of the more recent appearances of the 3d of July, 1814, which will be found to be very similar to those which were observed on the 16th of October, 1785.

These accounts consist principally in four narratives, which I shall give at large. One from the pen of an Officer of the Royal Engineers, who is supposed to be Capt. Payne, describes the appearances at the Bay of Seven Islands, above Anticosti, on the second and third of July. The next describes the appearances during the second, at Cape Chat, from observations made by some Officers, who were on board the *Sir William Heathcote*, Transport, which lay the whole of that day at anchor in the River St. Lawrence, at that point. The third contains some additional observations respecting the appearances on the second of

* Quebec Gazette, 27th October, 1785.

July, made on that day, in another ship which also lay off Cape Chat; and the last narrative describes the appearances of the third day of July, upon the Banks of Newfoundland, of which I was an eye witness. It is taken from a journal of a voyage to England, which I made at that period in the *Phœnix*, from Quebec to England.

Before I enter upon these narratives, I beg leave to premise that the darkness of the 2d of July, 1814, does not appear to have extended much beyond Cape Chat. A mixture of ashes, and a black substance in powder, fell in partial showers at Kamouraska; and the day was there observed to be dull and gloomy,* but it was not considered to be peculiarly dark, and on this side of Kamouraska it does not appear to have attracted any particular notice; at Quebec also it exhibited nothing extraordinary except that yellow tinge upon the clouds, bordering the line of the horizon in the north-east quarter of the heavens, which has already been mentioned, and is not unfrequently seen from the walls of the garrison.*

The narrative of Captain Payne is taken from Tilloch's *Philosophical Magazine*, and Mr. Tilloch's correspondent makes the following introductory remark upon it:—"Your philosophical readers will not fail to notice the coincidence between the phenomena described below, and those which were observed at St. Vincent, and other Islands in the West Indies, upwards of a year ago."

This narrative is entitled:—

"Remarks on board ship in the River St. Lawrence, distant about twenty miles from the Bay of Seven Islands above the Island of Anticosti, 3d July, 1814."

* Information from several persons.

“ Yesterday morning at six A. M. the weather dark and
“ cloudy, with a few drops of rain falling ; winds high and
“ variable, chiefly from the eastward, and through the
“ day carrying all sail, the sails however of very little use,
“ from a very heavy swell of the sea from the westward,
“ which rendered the pitching of the ship very great, and
“ nearly endangered the carrying away of the masts and
“ yards ; towards evening the swell abated ; during the
“ day the clouds appeared to be coming with great rapidity
“ *from the northward* ; horizon and atmosphere thick and
“ hazy ; at night the darkness excessive, the masts and
“ rigging scarcely visible from deck ; about nine P. M. a
“ *sort of dust* or ashes commenced falling and continued
“ during the night ; towards the morning the whole
“ atmosphere appeared red and fiery to a wonderful degree,
“ and the moon then at the full not visible, and the
“ appearance through the cabin windows and crystal
“ lights on the deck singular in the extreme, as if sur-
“ rounded by a mass of fire, the sea sparkling much and
“ in a manner not usual in these latitudes.

“ At half-past seven in the morning, candles lighted in
“ the cabin, and the hour by a watch at nine scarcely
“ visible, the flame of the candle burning of a bright
“ bluish white colour, and the fire in the cook-house the
“ same, *the wind dying away to a dead calm*. Towards
“ noon to-day, the atmosphere resumed something of its
“ natural appearance, and the sun visible, but red and
“ fiery, as in the winter season, as if seen through the
“ darkened glass of a quadrant, and by degrees becoming
“ more of a yellow colour. Weather hazy and sultry, a
“ dead calm, and the sea scarcely agitated. The sea
“ covered with ashes, and a bucket of water taken up

“ appeared nearly as black as writing ink, from the
“ quantity of ashes which had fallen ; they appeared as if
“ those of burnt wood, and not of a heavy sandy nature,
“ a strong smell perceptible in the air, and a violent head
“ ache complained of by many on board.

“ Not having a thermometer on board, the temperature
“ could not be observed ; it did not, although close and
“ sultry at times, appear to be remarkable for the season
“ of the year. Numbers of small birds flying about,
“ seemingly much disturbed. The darkness at 8 A. M.
“ to-day, as great as is usual in London in the month of
“ December at the same hour. From the darkness during
“ the night, the seamen were obliged to use lanterns with
“ candles on deck to conduct the navigation of the ship.

“ Longitude 65 48 west, and latitude 49 49 north,—
“ 4th July ; this day the ashes falling in a small
“ quantity, and the darkness last night excessive again,
“ so much so that the hand could not be observed while
“ touching the face ; at half past three P. M. scarcely able
“ to see the hour by a watch. The ashes collected on
“ deck appeared to be those of burnt wood, but darker
“ and more heavy than the ashes from a tobacco pipe.—
“ That collected from the surface of the sea, when dried,
“ resembled a cake of shoe blacking ; several ships in
“ different quarters of the gulf and river St. Lawrence
“ observed the same appearance of darkness, which appears
“ to have been pretty general, although not to the same
“ degree. No reason can as yet be assigned for this
“ extraordinary phenomenon,—it is conjectured by many
“ to be the consequence of a volcano, but the ashes by no
“ means resembled those thrown up by the volcano on St.
“ Vincent, in the West Indies, some time since.”

The narrative of the Officers who were on board the *Sir Wm. Heathcott*, Transport, states that on the 2d July, 1814, there was a heavy fall of *ashes and sand*, which was succeeded by a dense haze, which gradually increased until eleven o'clock in the day, when it cleared up, and the sun was of a blood red colour. At one o'clock it again became so dark that the soldiers on board could not see to divide out their dinners without lighted candles. This darkness continued until night; and during the whole time ashes fell in abundance and completely covered the deck. The transport was the whole day off Cape Chat, the wind blew gently *from the north shore of the St. Lawrence*. The people residing down the river declared there had not been any appearance of fire in the woods.*

The third narrative is as follows :—

“ On the second instant (July 1814), being off Cape Chat, the sun assumed a very bright blood colour, and at half-past two a total darkness ensued, this continued till about sun set, when the horizon somewhat cleared, but at nine o'clock it became so dark that it was impossible to observe any object, however near, without the help of lanterns. The ship laid too till two A. M. when the obscurity disappeared. It is difficult to account for this phenomenon, as it was not observed beyond fifteen leagues on either side of the spot where the ship lay.— For three day previous some ashes and smoke had been observed; but on the second no symptoms of burnt wood were felt. It may be presumed that some volcanic

* The above was received from the Officers who were on board the *Sir William Heathcott*, by Lieut. Ingall, of the 15th regiment, who favoured me with a copy.

“ eruption has taken place in a north-easterly direction;
 “ which caused total darkness in a breadth of about fifteen
 “ leagues from each side of Cape Chat.”*

The fourth narrative is in these words.—

July 3d, 1814—Sunday.—A most extraordinary day. In the morning dark thick weather, and fog of a deep yellow colour, which increased in density and colour until four o'clock P. M. at which hour the cabin was entirely dark, and we dined by candle light; the binnacle also was lighted shortly after. In the evening, at twenty minutes after sun set, there was total darkness, so much so that on the deck a man could not see another at three feet distance, this continued until the moon arose, when there was some little appearance of light, but very little; it gradually went off until it disappeared in the course of the fourth of July.—The wind during this extraordinary obscurity was *westerly, with some northing*, and the *Phoenix* was in latitude 45', 50", north, and longitude 53', 12", west.

The relative positions of the ship in which Captain Payne was embarked, the *Sir William Heathcott*, with her associate transport, and of the *Phoenix*, may be readily seen upon reference to a map of the gulf of St. Lawrence, and from inspection it will be perceived that the northerly wind which blew on the second of July carried the clouds of ashes, dust, sand, smoke, and vapour across the River St. Lawrence, in a line from the Bay of Seven Islands to Cape Chat, and that by the westerly wind which set in, in the night of the second of July, they were carried, probably with more of the same description, across the gulf of St. Lawrence and the Island of Newfoundland, to the place

* Quebec Gazette, July 28th, 1814.

In which the *Phœnix* then was, and on the *third* of July enveloped her in the same obscurity with which Captain Payne's ship, the *Sir William Heathcott*, and the other transport were enveloped on the preceding day.

For the phenomena of the dark days of Canada which have been thus detailed there appear to be but two causes to which they can be attributed—the conflagration of a forest, and volcanic action.

As to the conflagration of a forest, the facts of which we are in possession, do not appear to warrant a belief that such can be the cause. It seems impossible to suppose that the conflagration of any forest could have produced a mass of smoke so dense and so extensive as to overspread (as it did in October, 1785) the surface of a territory exceeding certainly three hundred miles in length, and probably two hundred miles in breadth,* and producing at its utmost longitudinal extremity, and at mid day, the obscurity of the darkest night. And as the whole of the cause of this obscurity proceeded, apparently, from the Labrador country, where forest trees are few in number, stunted in size, and spread in small isolated patches over a general surface of rock, it is the more improbable. In point of fact, such a mass of wood-smoke could not have been collected

* In October, 1785, the obscurity extended so as to comprehend on one side, Fredericton, in the province of New Brunswick, and on the other Montreal. A ship the *Adamant*, belonging to the house of Brook, Watson & Co. in which, it is understood, the late Sir John Johnson was a passenger, on the 16th of October, 1785, was, in the morning, off the east end of the Island of Anticosti; there it was then clear weather, but towards the west they saw a heavy black cloud, and by twelve o'clock on the same day had sailed into it, and very shortly afterwards found themselves enveloped in perfect obscurity.

without exposing the individuals which it enveloped, to the danger of suffocation; and it is not said in any of the accounts which are extant, that this was the case, or that their eyes were affected, or that there was even a smell of wood-smoke. Captain Payne, has indeed observed "that the *dust or ashes* collected on the deck appeared to be those of burnt wood;" but he immediately adds, that they were darker and more heavy than the ashes from a tobacco pipe, which are also vegetable ashes, though of another description; and from the quantity of salts which tobacco contains, tobacco ashes would probably be found heavier, or at least as heavy as an equal quantity of common wood-ashes. He mentions also that the powder which was collected from the surface of the sea, when dried, resembled a cake of blacking, and from this circumstance I am led to believe that what was so collected might be of a bituminous character, or possibly the powder of volcanic matter. If it had been wood-coal in powder, I do not apprehend that it would have caked when dried; and I may add that there was no appearance of fire in the woods, and that this fact was particularly noticed by the inhabitants during their intercourse with the Officers on board the *Sir William Heathcott*, and the third narrative expressly states that "on the second no symptoms of burnt wood were felt."

But there are among the facts which are detailed, some which cannot be reconciled to the supposition that the phenomena in question were occasioned by the burning of a forest. I allude particularly to the presence of sulphur among the black pulverised matter which fell on the 16th of October, 1785; and to the precipitation of the latter in water, from which circumstance it may be presumed to have been of mineral origin, and similar to that which

was ejected from the Souffrier mountain of St. Vincents on the 30th of April 1812 ; to the extraordinary swell of the sea which preceded the appearances which took place on the 2d of July, 1814 ; to the blueish white flame of the lights and fires mentioned by Capt. Payne ; to the strong smell which was perceived in the air, and which, without affecting the eyes, produced violent head ache ; and to the shower of sand mentioned by the Officers who were on board the *Sir William Heathcott*.

These facts appear to me to render it necessary to impute the phenomena of the dark days of Canada to volcanic action—and to indicate strongly the existence of a volcano (not yet extinct) in the Labrador territory. An inference which is strengthened by these considerations, viz : That on the second of July, the Bay of Seven Islands and Cape Chat were enveloped in the darkness of that day by a northerly wind, and that on the third of July, while the weather was clear at Cape Chat, the Bay of Seven Islands, and that part of the Atlantic Ocean which lies in latitude 45', 50'', north, and longitude 53', 12'', west, (the position of the *Phoenix* on that day) were enveloped in similar darkness by “ a westerly wind with some northing ;” for if a map of the gulf of St Lawrence and the adjacent coasts be inspected, and the position of Captain Payne's ship, of the *Sir William Heathcott*, transport, and her consort, and of the *Phoenix* be considered, it will be evident that the wind as well on the second as on the third of July, traversed the Labrador territory, producing in two different directions from that territory, the same effects.

The existence of volcanoes in the north of Europe, particularly Hecla and Jan Mayen, affords ground for the belief, that volcanoes may also be found to exist in the north of the

American continent. The north shore of the St. Lawrence appears also to exhibit proofs of volcanic action. Malbaie, the Eboulements, and perhaps the promontory of Quebec, may be cited in support of this assertion, and the frequent recurrence of slight shocks of earthquakes in the places first enumerated, may be mentioned as facts from which a continuance of this volcanic action may be inferred. There is, moreover, a good deal of coincidence in the facts stated in the preceding narratives of the dark days, and those which are stated by Charlevoix, in his description of the earthquake in 1663, which is generally supposed to have been of volcanic origin.

“ A Tadoussac” (says he) “ Il pleüt *de la cendre* pendant six heures.”—Tom. 1. p. 367.—And in page 366, he adds, “ Une *poussiere* qui s’*eleva* fut prise pour une Fumee, et “ fit craindre un embrasement universel.”

I will only add, that among the Indian tribes on the north shore of the St. Lawrence a traditional belief of the existence of a volcano in the Labrador country is said to prevail; but of the truth of this assertion, common report is the only evidence I can offer; except, indeed, to those who may still be inclined to believe that basalt may ultimately be found to be a volcanic and not an aqueous production, for by such persons the recent discovery of basaltic columns on the coast of Labrador, described in the first volume of the transactions of this society,* may be considered to afford some further proof of the authenticity of this tradition.

* Page 71 to 73.