

RAILWAY AND ELECTRO-MAGNETIC TELEGRAPH.

Reports relating to the project of constructing a Railway, and a Line of Electro-Magnetic Telegraph, through the Province of New Brunswick.

Copy of Instructions from the Provincial Secretary to the Government Emigration Agent.

Secretary's Office, Fredericton, 26th October, 1846.

SIR,—I am directed by His Excellency the Lieutenant Governor to inform you of your appointment to the undermentioned service, and to communicate to you the following Heads of Instructions for your guidance in the execution of the duty intrusted to you:—

Her Majesty's Government having undertaken to ascertain by Exploration and Survey, the practicability of constructing a Trunk Railway from the Eastern Coast of Nova Scotia to Quebec, which will necessarily traverse this Province, and some intelligent Officers of the Royal Engineers being at present engaged in this exploration, it has become necessary, in order to enable the Provincial Government to co-operate effectually in this important undertaking; to prosecute certain inquiries in regard to the resources of the Country which may be traversed by the Railway, and the means it would be likely to afford of rendering them more extensively available, not only to the people of the Province, but to those of the United Kingdom.

The prosecution of these inquiries is intrusted to you, with a view to which you are instructed to put yourself into communication with the Officers who are employed; and having ascertained from them the direction of the lines explored by them, to examine the nature of the country, fertility of the soil, the indications of Mineral resources on or adjacent to such lines, and the local advantages for settlement at particular sites where Stations are likely to be fixed.

Your attention should also be particularly given to the measure of establishing Branch Railways to connect the Trunk Line with Fredericton, Saint John, Saint Andrews, Woodstock, Miramichi, Richibucto, Dalhousie, and other parts and places in the Province, to which they might be profitably carried. And as the project is likely to be revived of connecting the Bay of Fundy with the Gulf of Saint Lawrence, by short Railways, across the Isthmus at the Head of the Bay, which would necessarily constitute Branches of the Trunk Railway, it would be desirable to ascertain in particular the nature and amount of the traffic to which the establishment of such lines would give rise, especially the encouragement they would give to the Fisheries, and the facilities they would afford of prosecuting them in the Gulf of Saint Lawrence; and on the Coast of Labrador. The positions along the Trunk Line from whence these and other branches should be carried, ought to be indicated with reference to the nature of the country to be traversed, and the greatest facilities of access to other places with which a beneficial intercourse might be established.

As it is understood that Coal and Timber may be conveyed by Railway with facility, as well as lighter goods, the practicability of obtaining at all seasons supplies of these commodities, at Fredericton and Saint John, more cheaply and expeditiously than can now be accomplished by sea and river navigation, should be ascertained, and the facilities that would also be afforded for the transport, at moderate rates, of the productions of Agriculture and the Fisheries.

Although the exploration now in progress will hereafter be followed by precise Surveys, from which the distances will be correctly ascertained, it may be practicable to estimate in a general way, the length of the projected Railways between the principal ports and places, and the time that would be employed in the transit of passengers and goods; also the cost per mile for their construction.

Any

Any information as to the practicability of keeping the Trunk Railway and its Branches open in the Winter, and thus securing the communication throughout the year, would be of great value, not only to those places where the navigation is closed in Winter, but where it is open, as in the Bay of Fundy; thereby affording at all times an uninterrupted outlet for the commerce of this and the neighbouring Provinces. The branches of Trade that might be opened or facilitated should be subject to your investigation; and the probable influence of such Trade, not only on the principal places to which it may be carried, but on the Counties that would be immediately traversed by the Trunk Railway, and its several Branches; and with this view, some account should be given of the description, quality and value of the Timber Trees, and of the Agricultural and Mineral productions of the several Counties, and of the Sea and River Fisheries.

The prospect of opening extensive and valuable tracts of wilderness land to Settlers, and of forming prosperous Settlements at the Railway Stations, should lead to such inquiries as will enable you to determine the most effective means of providing for the success of such Settlements, and the welfare of those who might embark in them; also the probability of a profitable passenger traffic arising from these undertakings, as well during the progress of the work, as after the Railway may be finally opened between the Atlantic and Quebec.

Any other information connected with this important project which you may acquire, and which may assist in forming a judgment of the practicability and probable advantages of the undertaking, locally and generally, you are requested to include in your Report; and in particular the prospect of being able to establish a direct intercourse, by Steam Navigation, with the United Kingdom for the conveyance of Emigrants to the Province, and the export of certain articles of produce to and from Europe.

I have the honor to be, &c.

(Signed)

JOHN S. SAUNDERS.

To M. H. Perley, Esquire, &c. &c. &c.

Government Emigration Office,

Saint John, N. B., 25th January, 1847.

SIR,—I have the honor to state, that in obedience to the Instructions furnished by you under date 26th October last, with reference to the prosecution of certain inquiries in connection with the exploration and survey, by Her Majesty's Government, of the line for a Railway from the Atlantic to Quebec, I have attended diligently to the duties therein assigned me, and now respectfully submit the following statement, with the several documents which accompany this communication.

It has already been officially announced, that Captain Pison, R. E., the Officer in charge of the Railway exploration and survey, was accidentally drowned in the River Restigouche, on the 28th October last, while endeavouring to save the life of a fellow creature. Owing to this melancholy and most unfortunate event, some delay occurred in placing myself in communication with Lieutenant Henderson, R. E., upon whom the whole charge of the survey most suddenly and unexpectedly devolved. That Officer has kindly communicated all the information he is enabled to give at present; and I am thus enabled to describe the several routes explored the past season by the surveying parties engaged in that service.

One party of Sappers and Miners, under Lieutenant Henderson, and accompanied by Mr. Wightman, a Surveyor from Nova Scotia, commenced their labours at the Boundary between this Province and Nova Scotia, near the head of Bay Verte. This party explored the country, on a line nearly parallel with the Gulf Shore of this Province, to the head of the Tide on the South West Miramichi, crossing the Shediac, Cocagne, Buctouche, Richibucto, and other Rivers on the route, above the tide-way on each. After crossing the South West Miramichi, this party proceeded up the valley of the North West Miramichi, to the northern boundary line of the County of Northumberland, and there separated into two divisions, one of which descended the valley of the Nepisiquit for some distance, and then followed a northwesterly course, nearly

nearly parallel with the southern coast of the Bay of Chaleur, terminating their exploration above the head of the Tide on the Restigouche River, nearly opposite the mouth of the Matapediac River. The other division crossed the upper waters of the Nepisiquit River, and followed up the valley of Middle River, thence through and across the vallies of the Upsalquitch and its tributaries, to the Restigouche, at the mouth of the Quotawam-Kedgewick, or northwest branch of that River, which, however, is now believed to be the main Restigouche, and not a tributary of what has heretofore been supposed the principal stream.

A second party of Sappers and Miners commenced their duties at high water mark on the wharf at the Bend of Petitcodiac, and thence followed the route formerly surveyed for a portion of the line of a Military Road, under the direction of Colonel Holloway, R. E., to Boiestown; thence up the valley of the North West Miramichi, to the River Tobique, above the Red Rapids, and thence a course nearly northwest, to the Waagan Portage, between Grand River, a tributary of the Saint John, and a small tributary of the Restigouche.

A third surveying party under Mr. John Grant, of the Crown Land Department, was employed in exploring the valley of the Tobique, and the neighbouring hills.

The sudden death of Captain Pison, and the early setting in of winter at the north, brought the labours of the season to a close without any exploration being made north of the Restigouche. That service Lieutenant Henderson proposes commencing as early as possible the coming season.

On the several lines explored, much broken and hilly country has been found northward of the South West Miramichi, especially in the vicinities of the Nepisiquit and Tobique Rivers. A further examination of the lines already explored, and of other lines of country, will be requisite next season, in order to ascertain the best and most practicable route for the line of the proposed Trunk Railway; until that is ascertained, and the country north of the Restigouche is thoroughly explored, the general direction of the line from the Atlantic to Quebec, through New Brunswick, cannot be determined. So soon, however, as that important decision takes place, the precise Survey will be commenced with strong parties fully qualified for that service.

The line of the proposed Trunk Railway not being yet ascertained, I cannot, of course, report upon the various matters referred to me with regard to the line of country to be traversed; but that duty will be attended to hereafter, when the precise Survey commences.

I have now, however, the honor to submit herewith, a Report upon the several Counties of New Brunswick, with reference to their Trade, Agriculture, Fisheries, Resources, and Capabilities; as also, Tables compiled by myself, shewing the principle articles exported from the Port of Saint John and its Out-Bays, from 1819 to 1845, both years inclusive; the estimated value in pounds sterling of the Imports and Exports of New Brunswick, from 1828 to 1845, both years inclusive; and the numbers and tonnage of the Ships built in this Province, from 1825 to 1845, both years inclusive.

I have the honor also to append a Report on the Forest Trees of New Brunswick, describing the most valuable Timber Trees, and their uses and properties, which is submitted with great deference, and for which every indulgence is claimed as the work of one who is not a professed naturalist.

The revived project of connecting the Bay of Fundy with the Gulf of Saint Lawrence, adverted to in my Instructions, being a subject of great importance, I visited the County of Westmorland for the purpose of collecting information with respect to it. The information obtained is embodied in the Report on Counties, under the head of Westmorland, where also will be found some valuable Statistics of the Population, Trade, Agriculture and Fisheries of Prince Edward Island, compiled from returns furnished by the Honorable T. H. Haviland, Secretary of that Colony, to whom I am under much obligation.

With reference to that portion of my Instructions requiring information as to the practicability of keeping the Trunk Railway and its Branches open in Winter, and thus securing the communication throughout the year, I am enabled to state, on the authority of E. H. Derby, Esquire, of Boston, a well known legal gentleman of high standing, extensively connected with Railways in Massachusetts, that the Railway Lines in New England have not sustained any very serious inconvenience of a permanent character

from snow. Every Railway is provided with Mammoth Snow Ploughs, of sufficient height and width to clear a passage for the Trains, each plough having two mould boards. These ploughs are impelled forward by two or three Engines placed behind, and thus the track is cleared of snow after a storm. When the snow is light, a single Engine performs the duty; but when the snow is long continued, and has accumulated to the depth of four or five feet, which sometimes happens in Berkshire County, Massachusetts, where the Western Rail Road surmounts an elevation 1,440 feet above the sea, more serious difficulties are encountered than in ordinary cases. The snow, after being repeatedly pressed out by the plough, occasionally becomes solid on each side of the road; the subsequent falls of snow, and the drifting snow which lodges in the track, at such times require a strong force with shovels to clear the way.

Drifts, however, are prevented in some places on the New England Lines, by board fences eight feet high, parallel to the tracks, at a few rods distance, against which the snow drives up and lodges in large masses; these fences have been christened "Snow-traps." From the best information, it is stated, that the expense of removing snow from the Rail Roads of New England, falls much short of one hundred dollars, (equal to £21 sterling,) per mile, per annum.

The Snow Plough is used on the Great North of England Railway, and other Railways in that part of England, which are sometimes impeded with snow. It is stated by a gentleman who has been connected with the working of these Railways, that they suffer but trifling impediment from snow, although it falls frequently to some depth; but that sleet in the winter season, by rendering the Rails icy and slippery, at times delays the Trains. The remedy for this is strewing the Rails either with sand or ashes.

As an almost indispensable adjunct to Railways, the Electric Telegraph is becoming universally applied. It is now proposed, that without waiting for the establishment of the Trunk Railway through these Provinces, a Telegraphic communication shall immediately be established from Halifax to Quebec, by the ordinary Post routes now in use. With this view, a Company has been formed in Quebec during the present month, with a capital of £6,500, in shares of £10 each; which amount, it is presumed, will be sufficient to establish the Line from Quebec to the boundary of this Province. It is proposed that the Provinces of New Brunswick and Nova Scotia shall form separate Companies to establish and manage the Line, each within its own Colony. With the present extremely high rates of Postage in these Colonies, and the dilatory mode of Post communication, apart from all other considerations, there can be very little doubt that Telegraphic Lines between the different Towns on the route, (as for instance between Saint John and Fredericton,) would pay from the very outset. The question therefore arises, whether the Telegraph would not be better managed from Halifax to Quebec, and thence to the extreme western part of Canada, by one Company, acting on a uniform system, or whether it would not even be more desirable that the whole Line should be established throughout, by the Imperial Government, which would secure proper arrangements for the transmission of important intelligence, and prevent those frauds and abuses which have occurred where Lines are under the control of companies or individuals.

If established by the Government, the Board of Ordnance would be able to appoint intelligent men from that branch of the service, who would perform the duties at the various Stations in a most satisfactory manner, at moderate rates of pay.

The value and importance of the Sea and River Fisheries of New Brunswick, the extent to which they might be profitably carried, and the impetus which would be given them by increased facilities of internal communication, are subjects which demand special attention, and the most careful and patient investigation. At present, no sufficient data, or precise information exists, from which correct or positive statements can be made with reference to these Fisheries; and I am therefore precluded from noticing them, except incidentally, in the Reports now submitted. This deficiency I hope to be able to supply to some extent in another season, after careful inquiry and research.

I have the honor to be, Sir,
Your very obedient servant,

M. H. PERLEY, G. E. A.

Report on the several Counties of New Brunswick,

With reference to their Trade, Agriculture, Fisheries, Resources and Capabilities, and including Statistics of Prince Edward Island; by M. H. Perley, Government Emigration Agent.

COUNTY OF RESTIGOUCHE.

This County, the most northerly in the Province, was formerly part of Northumberland, and afterwards a part of the County of Gloucester. It was erected into a separate County by Act of Assembly in 1837, and its northerly boundary is the line which separates New Brunswick from Lower Canada. It contains 1,266,560 acres, of which 156,979 acres only are granted and located, leaving 1,109,581 acres still vacant. The whole population in 1840 was 3,161, and the quantity of cleared land, 5,579 acres. The Settlements are almost exclusively confined to the Shores of the Bay of Chaleur, and the Banks of the River Restigouche; a large proportion of the land under cultivation is exceedingly rich and fertile. Limestone and Marl abound on the Coast of the Bay of Chaleur within this County, and the soil on the Banks of the Restigouche, (especially at the "Flat-lands" above Campbelltown,) is of excellent quality. The interior of the County, being in a wilderness state, and almost wholly unexplored, very little can be said of its resources or capabilities. The late Deputy Hunter has spoken in high terms of the excellence of the soil on the Upsalquitch, and to the southward and eastward of Campbelltown.

The principal Exports of this County, are furnished by its Forests and the Fisheries; and the extent of its Trade may be estimated from the following Table of Articles exported from 1835 to 1845, both inclusive:—

ARTICLES.	1835	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845
Timber—Tons,	34,974	32,945	39,357	44,485	42,229	45,639	35,869	27,046	33,042	27,914	25,206
Boards and Planks—M.,	281	322	481	..	..	116	205	211	136	405	417
Deals—M. feet, .. .. .	..	..	..	336	1,349	1,294	1,534	1,061	840	1,029	956
Masts and Spars—No.	174	192	261	433	515	274	450	229	154	438	75
Lathwood—Cords,	703	641	781	883	945	964	724	452	676	523	508
Shingles—M.,	60	40	881	487	402	588	1,323	995	453	838	2,352
Staves—M.,	35	75	16	..	12	25	30	40	..	8	5
Oars—No.,	400	248	442	666	296	883	518	756	208	36	..
Handspikes—No.,	6	100	240	120	..	..	89	48	..	..	36
Dried Fish—Quintals,	1,238	1,600	60	300	30	150	..	..	500	..	..
Herrings—Barrels,	20	235	63	231	136	80	13	..	..	..	41
Salmon—Barrels,	486	330	278	186	125	276	138	273	552	591	565
Fish Oil—Gallons, .. .. .	..	..	1,088	62	190	..	..	..	..	240	..
Grindstones—Pieces, .. .. .	..	..	..	..	..	..	244	..	..	..	..

The above Table is made up from the Custom House Returns; but there is reason to believe that it by no means gives a full statement of Exports arising from the Fisheries. It is not unlikely that a large proportion of the fish caught and cured on the New Brunswick side of the Bay of Chaleur, has been carried across the Bay to Gaspé, and shipped from thence as Canadian.

An Agricultural Society was established in this County in 1840. At the Meeting called for the purpose of establishing the Society, it was Resolved—"That the new County of Restigouche has been and still continues to be chiefly a lumbering community; that the Timber Trade has done much for Restigouche, has been the chief support of its inhabitants, and continues to afford a valuable article of export; but that the Agricultural interest, which from the peculiar richness of the soil, it is so admirably calculated to promote, have been hitherto much neglected; and that it therefore becomes necessary to give every facility, countenance, and support, to this branch of industry." The proceedings of the Society have been of much interest. By the fourth Report, (published in 1844,) it appears that a number of premiums were awarded for various products of the soil. The best Wheat is stated to have weighed 65 lbs. 6 ozs. per bushel; the second best, 65 lbs. per bushel; the third premium was awarded for Wheat weighing 64 lbs. 11 ozs. per bushel. The best two-rowed Barley weighed 56½ lbs., and the second best, 52½ lbs. per bushel. The best four-rowed Barley weighed 57 lbs. 5 ozs. per bushel, and the second best, 53½ lbs. per bushel. The best Siberian Wheat weighed 63½ lbs. per bushel. The best Black Oats weighed 42 lbs. 14 ozs., and the second best, 42 lbs. 2 ozs. per bushel. The best White Oats weighed 47 lbs. 10 ozs., and the second best, 47½ lbs. per bushel. It

It appears that there was much competition for the premiums ; and the weight of each description of grain mentioned shows clearly that Restigouche possesses capabilities for producing grain of superior quality ; and that this, and the other northern Counties of New Brunswick, are well calculated to become hereafter the granary of the Province. As an erroneous impression has obtained, that these Counties, from their high northern latitude, were incapable of producing Wheat, it is important that the error should be corrected as speedily as possible.

COUNTY OF GLOUCESTER.

This County is estimated to contain 1,037,440 acres, of which 332,902 acres are granted and located, and 704,538 acres are still vacant. The population in 1840 was 7,751 ; and the quantity of cleared land, 11,681 acres. The quantity of vacant land sold in 1845 was 1,721 acres.

There is much good land in the County of Gloucester, and it occupies a very favorable position as regards the Fisheries of the Bay of Chaleur and the Gulf of Saint Lawrence. Of late years, increased attention has been given to Agriculture, and the results have fully demonstrated that the capabilities of the soil and the climate enjoyed by this County, are such as to render it essentially a grain growing district. The great weight of the Wheat and other descriptions of grain grown in Gloucester of late years, has been such as to attract public attention, and elicit expressions of surprise. The Report of the Gloucester Agricultural Society for 1843, states, that—" Since the establishment of the Society, Agriculture has been gradually and steadily advancing, every succeeding year's exhibition shewing a manifest improvement in the weight and quality of all descriptions of grain, until the present year, when we have numerous stocks of Wheat weighing 68 lbs. to the bushel, and may safely state the average weight of Wheat and Barley throughout the northern part of the County to be about 64½ lbs. for the former, and 53 lbs. for the latter, an average not surpassed in this Province. The increased quantity grown of late years also affords cause of gratulation. From statistics collected by the Secretary, and not yet complete, it appears that all the grain raised in the Parish of Bathurst in the year 1833, did not exceed six hundred bushels ; while the quantity already ascertained of the crop of 1843, is beyond seven thousand bushels. But notwithstanding this gratifying state of things, your Committee must not be deemed unreasonable in stating, that they anticipate much more rapid progress yet, for a few years to come. Settlers will multiply—for the excellence of our soil is becoming known and appreciated ; cultivation will extend ; and in corn, at least, improvement must continue through assiduity and skill, until the weight of our Wheat reaches 70 lbs. per bushel, our Barley 58 lbs. to 60 lbs., and our Oats, 48 lbs. to 50 lbs., and this may be considered perfection, for it is improbable that grain, by any process, can be raised, to approach nearer the density of water than Wheat at the above standard ; a weight too it has not attained in any country, except in some rare and solitary instances."

A very interesting Statistical Return of the Agricultural Produce of the County of Gloucester, for the year 1844, made up with great ability by Henry Baldwin, Esquire, High Sheriff of the County, shews the following results :—

Bushels of Wheat,	20,254	Barrels of Potatoes,	106,984
Do. Oats,	23,139	Do. Turnips,	1,471
Do. Barley,	6,255	Do. other Roots,	203
Do. Peas,	994		
	52,470	Total,	108,658
Tons of English Hay,			2,251
Do. Marsh and Meadow Hay,			925
		Total Tons,	3,176

The valuable and highly interesting information collected by Sheriff Baldwin, has been of essential service to the County of Gloucester ; and it is greatly to be regretted that

that efforts have not been made, either by private individuals, or at the public expense, to collect and compile similar information in other Counties of the Province.

The principal Exports of the County of Gloucester from 1835 to 1845, both years inclusive, are thus stated:—

PORT OF BATHURST.

ARTICLES.	1835	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845
Timber,—Tons,	49,607	16,549	20,036	34,262	19,350	12,768	9,101	3,005	7,157	8,002	4,046
Boards and Plank—M. .. .	393	163	164	23	..	18	..	..	..	..	..
Deals—M. feet, .. .	..	..	..	474	898	5,005	725	424	796	253	452
Masts and Spars—No. .. .	324	320	264	104	182	142	130	64	67	56	155
Lathwood—Cords, .. .	1,142	367	443	698	388	235	157	55	125	143	67
Oars—No. .. .	316	124	281	306	246	163	72	128	24	..	..
Shingles—M. .. .	..	..	..	288	138	603	1,699	816	1,079	390	307
Dried Fish—Quintals, .. .	5,780	1,592	770	100	680	365	..	50	..	..	..
Pickled Fish—Barrels, .. .	29	19	1,005	362	50	..	3	..	..	102	264
Herrings—Barrels, .. .	32	135	..	..	..	..	..	..	..	20	52
Salmon—Barrels, .. .	72	20	78	37	64	151	32	161	250	126	134
Fish Oil—Gallons, .. .	719	..	..	..	..	990	..	..	..	1,215	..
Grindstones—Pieces, .. .	..	..	..	..	..	800	..	..	..	..	150

PORT OF CARAQUET.

ARTICLES.	1835	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845
Timber—Tons,	3,261	1,266	5,550	6,983	3,625	554	6,050	7,269	5,919
Deals—M. feet,	32	6	80	257	31	7	47	100	1,006
Masts and Spars—No.,	12	21	..
Lathwood—Cords,	70	23	108	153	99	15	131	171	140
Dried Fish—Quintals,	8,039	8,666	5,850	6,950	7,923	7,770	9,038	8,670	8,841	7,456
Pickled Fish—Barrels,	164	78	50	30	78	362	..	100	5	18
Herrings—Barrels,	40	4	1,770	8	..	26	87	16	50	110
Salmon—Barrels,	23	18	4	..	..	11	20	13	5	..
Fish Oil—Gallons,	922	900	1,218	1,750	..	1,038	4,178	2,905	2,579	849
Oysters—Bushels,	2,612	..	..	..	8,500	5,000	7,000	5,290	6,000	2,010
Grindstones—Pieces,	28	..	..	976	2,210	4,981	900	1,721	1,510

The quantity of Dried Fish exported from Caraquet, of late years, has formed a very considerable proportion of the whole export of that article from the Province. The fishing grounds being in close proximity to the shores of Gloucester, are much frequented by Fishing Boats from Gaspe; the New Brunswick Fishermen also, frequently carry a portion of their Fish over to Paspebiac, whence they are shipped to Foreign Ports.

Besides the exports mentioned, very considerable quantities of Manganese have of late years been exported to England from Bathurst. At this time, an exploration for Coal is going on in Gloucester, with very favorable prospects; the boring has at present reached the depth of three hundred feet. The mineral wealth of this County is reported to be very considerable, but the settlements being confined almost exclusively to the coast, and the interior remaining in a state of unbroken wilderness, a perfect and thorough examination of the country cannot yet be made. Abundance of Lime, and Marl of a yellowish white color, strongly resembling chalk, have been found on the coast of the Bay of Chaleur, north of Bathurst, and the use of these powerful stimulants to vegetation has been attended with the most beneficial results.

COUNTY OF NORTHUMBERLAND.

This is the largest County in New Brunswick, containing 2,980,000 acres, of which 986,168 acres are granted and located, leaving 1,993,832 acres still vacant. The population of the County in 1840, was 14,620, and the quantity of cleared land 25,323 acres, or one thirty-ninth part only of the lands granted and located, and only one hundred and seventeenth part of the area of the County. The area is equal to 4,656 square miles, and the population barely exceeds three souls to each square mile.

The whole Colony of Prince Edward Island contains 1,380,700 acres, or less than half the number of acres in the County of Northumberland.

There is much good land, well adapted for settlement and cultivation, in this County; but the immense quantity of fine Timber within its limits, and the facilities for floating it to market were so great, as to withdraw the attention of the settlers from agricultural pursuits. To remedy this state of things an Agricultural Society was established in 1838, which presented a first Report in 1839. From this Report some extracts are given with reference to the state of Agriculture and the capabilities of the County:—

“As to the County in which we reside, we would remark, what is generally known, that its inhabitants have been chiefly a lumbering community. The Timber Trade has done much for Northumberland; it has built its villages, and been heretofore the chief support of its inhabitants; and it has afforded a very valuable article of export. Unfortunately, however, it has been of far less advantage to this community than it might have been, had Agriculture been more extensively prosecuted. Our forests have been a mine of wealth, but that wealth has for the most part gone to enrich other countries and communities, which have supplied us with the necessaries of life. Had one part of our population kept to the cultivation of the soil, while the other was engaged in the manufacture of Timber, much of the money that was made in the County, instead of flowing into other channels, would have remained in it, and left us in very different circumstances from those in which we now find ourselves placed. Had the Farmer kept apart from lumbering entirely, or employed himself only in getting out such a quantity of Timber during the winter months, as he could on his own resources, without incurring risk; and had he laid out his energies in clearing and cultivating the soil, and in endeavoring to raise supplies, not only for his own family, but as far as possible also to meet the wants of his neighbours who were engaged in the labors of the forest, he would have slowly, but surely, arrived at independence and substantial comfort. His labors, instead of being like those of the lumberman, of a transitory, would have been of a permanent description; and while they added to the real wealth of the country, would have created a valuable inheritance to transmit to his children.”

“An idea long prevailed, that this could never become a Farming Country; that the soil was of an inferior description; and that the seasons were too short and precarious for the successful prosecution of Agriculture; and it was correctly said, that provisions could be purchased cheaper than they could be raised in Miramichi. Hence the occupants of the soil, without giving their farms a fair trial, or endeavoring by industry and perseverance to overcome the difficulties incident to the settlement of a new country, thinking they had discovered a nearer and easier road to wealth than the clearing of the forest, deserted their farms and embarked in lumbering. To enable them to carry on this business extensively, they found it necessary to obtain large supplies from Merchants on credit. It is needless to dwell upon the evils and abuses arising out of this system. It is sufficient to say, that from the heavy expense and great risks attendant on the manufacture of Timber, the great majority of those engaged in it have become involved in difficulties, from which they have been unable to extricate themselves. Those who once engaged in this employment seldom have had the resolution to quit it, as long as it could afford them a support, however precarious—this, at least, has been the case in Miramichi. Now, however, that the forests are so much thinned of the heavy growth of Pine, the manufacture of Timber cannot be carried to the same extent as in former years, very many, therefore, who have heretofore depended on it, must either quit the country or look to the soil for the means of support.”

“It is well known that until lately this County had to depend on other countries for a supply of every necessary of life; and this is still the case to a deplorable extent. Even potatoes, for which our soil is so admirably adapted, were supplied to us almost wholly from the neighbouring Colony of Prince Edward Island.”

“Wheat is a tolerably sure crop, and where the soil is in proper condition, gives a fair return. More attention should be given to the raising of Oats, which have proved to be a sure and productive crop. Barley, in general, is found to answer well in our soil.”

This Report gives a statement of the quantity of provisions imported into Miramichi during the year 1838, the value of which is stated to be £102,770 currency.

It is very pleasing to notice the rapid progress of Agriculture in Northumberland since 1839. In the Report of the Agricultural Society for 1842, it is stated—“that the

the quantity of Wheat raised in the County during the past season, was at least twice as great as that produced in any preceding year. The Oat crop also was abundant, and the quality good. From the superior description of Mills lately erected, the quality, both of Flour and Oatmeal, produced in Miramichi, has been quite equal to any thing imported either from Canada or Britain. The return of Potatoes last year was very abundant, and amply sufficient to supply the wants of the County. The Committee feel warranted in saying, that a marked impulse has been given to Agricultural pursuits in this section of the Province, by the operations of the Society; and they humbly hope that the Legislature will continue, and even increase that patronage to it and kindred institutions, which may enable them further to promote the great ends they have in view; and that the day may come when New Brunswick may be enabled to raise provisions sufficient to supply the wants of the population. Then, and not till then, can we expect the Colony to attain any thing like substantial prosperity and independence."

The Report of the Society for the past year (1846) has just been published; from which it appears, that the annual Show took place at Newcastle, on the 7th January, 1847; and that the exhibition far exceeded any thing of the kind ever before witnessed in Miramichi; the farmers beginning to feel the benefits of the Society, and to take a livelier interest in its proceedings. A very large quantity of Butter was exhibited, and premiums were awarded for the best samples in firkins of not less than 30lbs. weight. The show of Grain was, by far, the largest ever exhibited, comprising sixteen samples of White Wheat, weighing from 63lbs. to 67lbs. per bushel, and stated to be very superior. Seven samples of Red Wheat, five parcels of which weighed 66lbs., one parcel 65lbs. and another 66½lbs. per bushel, all of very fine quality. Seven parcels of White Oats, weighing from 41lbs. to 46lbs. per bushel, all very good; three parcels of Black Oats, weighing from 39½lbs. to 43lbs. per bushel; five samples of Barley, weighing from 52½lbs. to 55½lbs. per bushel, very large and even; and six samples of Peas, weighing from 67lbs. to 68½lbs. per bushel, large and even, and all of good quality. Two samples of Timothy seed were also exhibited, the one weighing 43lbs. and the other 48lbs. per bushel.

This Report is highly creditable to the County of Northumberland, and affords the most convincing proof, not only of the progress of Agriculture, but of the capabilities of its soil for producing every description of Grain of the first quality, and in abundance. A very different state of things now exists in this County from that so well depicted in the Report of the Agricultural Society for 1839.

The following Table of the Exports of Timber and the produce of the Fisheries from this County, from 1835 to 1845, both years inclusive, will furnish a correct view of the great extent to which the Timber Trade has been carried in this part of the Province, and the state of its Fisheries:—

ARTICLES.	1835	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845
Timber—Tons,	74,579	49,449	51,570	79,405	77,023	68,242	68,348	16,259	27,937	24,463	37,793
Boards and Plank—M. feet,	9,906	7,739	12,092	583	623	997	333	1,415	1,222	1,135	1,664
Deals—M. feet, .. .. .	..	..	..	21,918	18,391	19,178	30,802	15,477	20,929	22,328	27,856
Masts and Spars—No.,	1,267	824	1,383	1,578	1,294	1,352	484	156	281	566	570
Lathwood—Cords,	1,676	1,099	1,193	1,649	907	1,678	1,921	551	716	831	1,123
Shingles—M.,	972	673	1,413	1,241	1,909	1,806	3,399	4,357	2,772	3,504	4,154
Staves—M.,	39	18	17	28	5	..	30	..	14	1	..
Oars—No.,	1,281	927	1,359	1,913	1,407	1,529	1,178	200	592	506	246
Handspikes—No.,	54	528	220	565	1,212	204	768	995	..	..	70
Dried Fish—Quintals,	3,441	3,610	1,659	..	1,863	933	..	486	340	150	..
Pickled Fish—Barrels, .. .. .	..	..	..	..	63	4	40	58	70	83	368
Herrings—Barrels,	12,465	8,629	..	331	2,067	496	140	346	219	1,080	3,732
Alewives—Barrels, .. .. .	..	..	3,559	3,298	2,414	1,089	313	1,839	866	4,333	..
Salmon—Barrels,	717	499	1,370	703	1,129	1,377	1,614	2,295	1,093	1,616	1,836

The extent to which Shipbuilding has been prosecuted in this County will be seen on reference to the Return of Vessels built and registered in this Province, which is appended to this Report.

COUNTY OF KENT.

There is scarcely a single hill of any magnitude in the whole of this County, and the land, especially on the Gulf Shore, is very low and level. It may be described as the most level County in the Province. The Settlements are chiefly confined to the coast and the banks of the Rivers along the tide-way, where the Acadian French, who constitute a considerable proportion of the population, reside in close proximity to each other.

The County of Kent contains 1,026,400 acres, of which 386,398 acres are granted and located, and 640,002 acres are still vacant. The population in 1840 was 7,477 souls, and the estimated quantity of cleared land, 20,413 acres. The quantity of vacant land sold in 1845 was 2,777 acres.

The quantities of Timber and Fish exported from this County, from 1835 to 1845, both years inclusive, are given in the following Table:—

PORT OF RICHIBUCTO.

ARTICLES.	1835	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845
Timber—Tons,	17,313	25,267	16,973	16,458	15,093	16,957	13,935	11,463	7,153	7,157	6,072
Boards and Plank—M.,	5,294	4,742	7,161	177	251	213	460	1,061	1,000	912	902
Deals—M. feet, .. .. .	..	..	..	5,959	4,987	4,404	3,962	2,455	3,215	4,261	6,286
Masts and Spars—No.,	869	455	316	285	235	243	89	487	242	95	199
Lathwood—Cords,	517	626	479	491	482	557	353	262	206	205	219
Shingles—M.,	301	125	562	87	67	317	256	1,531	1,107	826	489
Staves—M.,	8	44	23	4	..	15	..	..	..	9	..
Oars—No.,	318	338	114	262	90	72	80	277	..	..	..
Dried Fish—Quintals, .. .. .	..	..	..	6	..	..	..	..	..	40	..
Herrings—Barrels,	917	300	255	..	..	..	..	..	100	..	49
Alewives—Barrels, .. .. .	..	..	..	102	20	..	..	..	..	79	..
Salmon—Barrels, .. .. .	..	..	..	..	1	..	20	..	107	137	77
Oysters—Bushels, .. .. .	..	..	..	..	..	..	..	..	3,000	8,000	6,075

As the County of Kent possesses several good Harbours on its Coast, and is in other respects well situated for prosecuting the Fisheries in the Gulf of Saint Lawrence, the small amount of exports arising from the Fisheries is somewhat striking, and shews that something is wanting to give an impetus to this branch of industry.

The lands already settled in Kent are of good quality, and much yet remains vacant equally good, and well adapted for the culture of Grain and Potatoes. The Agricultural Society of this County has of late years used strenuous exertions to improve the mode of farming. The Report for 1842 states that preparations were made in that year to bring a much larger quantity of land under cultivation than in any previous year, and in most instances the expectations of the farmers were fully realized. The best Wheat exhibited at the Show of that year weighed 70lbs. per bushel, the best Barley 56lbs., and the best Oats 48lbs. per bushel, fully proving the capabilities of this County for growing the different kinds of Grain.

COUNTY OF WESTMORLAND.

In 1845 the County of Westmorland was divided into two separate Counties, that part lying south and west of the River Petitcodiac being erected into a new County, by the name of Albert. The area of the present County of Westmorland is 878,440 acres, of which 577,440 acres are granted and located, leaving only 301,000 acres vacant land.

The population of Westmorland, at present, is estimated at 18,360 souls; and the area of the County being equal to 1372 square miles, the proportion of population exceeds thirteen souls to each square mile.

This is eminently an agricultural and grazing County, as the abundance of rich compost, and the extensive dyked marshes within its limits, teeming with inexhaustible fertility, offer the greatest means and facilities for growing every description of agricultural produce, and for grazing and feeding Stock. In 1840, the County of Westmorland, (including the present County of Albert,) numbered no less than 3,421 horses, 20,754 head of neat cattle, and 27,553 sheep, besides 16,545 swine. The increase of Stock has since been very considerable, but no data exist from which to compile an accurate

accurate account. Although very large quantities of Butter are annually sent to market from Westmorland, yet there is reason to believe that the dairy capabilities of this County are as yet only beginning to be developed. The introduction of capital and labor, with skill and science, would tend greatly to develope fully the numerous and abundant resources of Westmorland, and would undoubtedly render this County one of the finest districts in all British North America for grazing purposes, and for the pursuits of agriculture generally.

The Science of Agriculture has made very considerable advances, under favorable circumstances, in that part of Westmorland known as the Parish of Sackville, where the proprietors of farms are reaping the rich reward of their skill and industry. Among the numerous Acadian French inhabitants in the Parish of Dorchester, on the fertile banks of the Memramcook and Petitcodiac Rivers, an onward movement has been commenced through the exertions of the Reverend Ferdinand Gauvreau, their Pastor, who, at his own expense, has not only imported some of the latest and most improved agricultural implements, and put them in actual use, but has also, by precept and example, endeavored to induce his parishioners to adopt improved modes of farming and feeding stock. If this class of inhabitants can be induced to depart from the mode of cultivation introduced by their forefathers, and followed without deviation from generation to generation, it will materially increase the wealth and advance the prosperity of Westmorland.

Of the products of this County, a large proportion is sent to Saint John and passed over to Nova Scotia, without any account being taken of the quantities.

The following Table of Exports from Dorchester is given with the view of shewing the increase of Trade of late years, and not as giving an accurate statement of the Exports of the County :—

ARTICLES.	1835	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845
Timber—Tons,	400	2,316	27	628	384	1,003	3,949	3,009	3,972	1,827	3,752
Boards and Planks—M.	830	201	602	16	110	..	..	201	85	..	375
Masts and Spars—No.	7	6	152	5	5	11	58	404	58	1,999	..
Deals—M. feet, .. .. .	..	..	..	32	479	490	603	994	1,017	1,156	2,184
Lathwood—Cords,	17	39	9	18	3	24	88	49	43	36	72
Shingles—M. .. .. .	..	..	..	..	..	..	..	40	..	..	..
Staves—M.	5	11	7	2	16	5	19	23	7	20	14
Dried Fish—Quintals, .. .. .	..	..	..	..	..	20	..	..	..	..	..
Herrings—Barrels,	917	..	..	..	..	120	..	..	..	..	..
Salmon—Barrels, .. .. .	..	..	..	..	..	..	2	1	..	..	..
Shad—Barrels, .. .. .	..	..	..	..	..	..	2	276	..	..	..

The number of Vessels cleared outwards from the Port of Dorchester for the years mentioned, is thus stated :—

	Vessels.	Tons.	Men.
In 1842,	23	4068	169
1843,	20	4253	166
1844,	22	3528	156
1845,	25	6539	247

During the past year (1846,) the vessels which loaded at Shediac, have cleared at the Port of Dorchester, and the Return stands thus for three quarters of the year ending 10th October last :—

	No. Vessels.	Tonnage.	Men.
To Great Britain,	13	5,285	182
To Ireland,	17	4,759	173
Totals,	30	10,044	355

The Exports the past season from Dorchester and Shediac consisted of White and Red Pine Timber, Birch Timber and Planks, Larch Timber, Railway Sleepers, Scantling and Treenails, Spruce Deals, Battens, Oar Rafters, Spars, Small Poles, Scantling, Boards and Plank, Hemlock Lathwood, Pine Boards and Plank, Laths and sawed Palings, and Ash Hogshead Staves, all for the United Kingdom.

During the last few years the Shad Fishery has been prosecuted to a considerable extent, on the River Petitcodiac, as well as at Sackville, and has proved very profitable

to those engaged in it. In the season of 1846, there were two hundred boats engaged in taking Shad on the Petitcodiac, each boat having two men. One hundred and sixty of these boats were fitted out and manned by the Acadian French, and the remaining forty boats by English Settlers. The catch of each boat averaged twelve barrels of Fish, although some boats took upwards of twenty barrels. These quantities are over and above what were consumed fresh, of which an estimate can scarcely be formed; the quantity must be very large however, as fresh Shad are said to constitute a principal portion of the food of the inhabitants during the Summer.

The quantity of Shad now caught and cured annually at Dorchester and Sackville has been estimated at three thousand barrels, the Market value of which was five thousand pounds. The Fishery may be prosecuted to a still greater extent, and is well worthy of encouragement.

The ledges of Sandstone at Cape Maranguin furnish Grindstones of superior quality, and the business of making them is prosecuted to some extent. A number of persons engaged in making Grindstones reside on the Cape, and each man makes on the average four hundred Stone, by measurement, during the season. The "Stone," by measurement, is two feet in diameter, and four inches thick, the value of which at the Cape is two shillings, or a little more. The Grindstones when made, are principally bought by persons from the opposite shore of Nova Scotia, at the South Joggins, and shipped to the United States, where they are in high repute and extensively used for grinding and polishing tools and cutlery. The largest Grindstone made at the Cape the past season was six and a half feet in diameter and twelve inches thick. The whole quantity made annually does not fall far short of 18,000 stone by measurement, and the quantity may be increased to any desired extent, as the ledges are extensive and seem to be almost inexhaustible.

At Grand Aunce, to the northward of Cape Maranguin, there is an extensive deposit of Gypsum close to the shore, and superior Flag-Stones have been shipped from a quarry near the Gypsum.

The project of connecting the Bay of Fundy with the Gulf of Saint Lawrence, by means of a Canal, having been for the present abandoned, a Railway for effecting that object has been proposed. As this Railway would, to a certainty, intersect the Trunk Railway from the Atlantic to Quebec, should such be established, and would lead to a more extensive prosecution of the Fisheries in the Gulf of Saint Lawrence, as well as a large and increasing trade and intercourse with Prince Edward Island, the proposal is worthy the most serious consideration. Without adverting to the advantages which would necessarily arise from this Railway forming branches of the Trunk Railway, which would be matter for future consideration, it becomes in the first place necessary to indicate the most eligible line of country, with the best port, as well on the Gulf Shore as on the Bay of Fundy.

The Honorable Captain Owen, R. N., states, that Dorchester, if ever adopted as a Commercial Port, has many great and important advantages, which no other place in its vicinity can ever obtain. There is never less than five fathoms water near Dorchester Island at low tide; and it is in fact the only Ship-Harbour in this part of the Bay of Fundy, where vessels can load at all times with perfect safety and facility. During the past season, a Steamer has run from this place to Saint John, and made the trips regularly in eleven and twelve hours.

The distance from Dorchester Island to Shediac Harbour, (at the mouth of the Scadouk River) was ascertained to be 25½ miles, by the Survey of Captain Crawley, R. E. That Officer commenced his Survey at the Bridge over the Scadouk River, near its mouth, and proceeded one mile and a half up the Scadouk River, to a small Brook called Underwoods; thence in a south westerly direction, crossing the low lands through which the Scadouk winds its course, to the Memramcook River; thence more southerly, following the general course of the Memramcook, to Dorchester Island. Whatever obstacles may exist on this route to prevent a Canal being made, there would seem to be none to prevent the establishment of a Railway. The dyked Marshes in the Valley of the Memramcook would afford a dead level for more than one-third the whole distance, while the Valley of the Scadouk offers a level plain for another third of the route. The intermediate distance between these two Valleys is not by any means an elevated country, not sufficiently so even to prevent a Canal being made

at moderate expense, had there been a sufficient supply of water on the summit level.

The following Estimate of the probable average cost, in the Province of New Brunswick, of one mile of Wooden Railway, the Wood prepared by "Payne's Process," was published in the Royal Gazette of the 24th December, 1845:—

	Currency.	Sterling.
To clearing and stumping one mile in length by 50 feet in width, of Wilderness Land,	£158 0 0	£125 0 0
The average cost of Bridging and Viaducts, deduced from 150 miles through the Province of New Brunswick,	110 0 0	91 13 4
Grading and Levelling,	1,500 0 0	1,250 0 0
Cutting and hewing 2,112 Sleepers of Spruce or Hemlock, 8 feet long and 9 inches square, equal to 237½ tons of 40 cubic feet @ 4s.	47 10 0	39 11 8
Hardening the above by "Payne's Process," equal to 190 loads of 50 cubic feet, @ 20s.,	190 0 0	158 6 8
Cutting and squaring 812 Trams or Rails of Beech, Birch, or Maple, 13 feet long, and 6 inches square, equal to 66 tons of 40 cubic feet, @ 5s.	16 10 0	13 15 0
Hardening the above by "Payne's Process," equal to 53 loads of 50 cubic feet @ 20s.,	53 0 0	44 3 4
212 Iron Screw Bolts and Nuts,	20 0 0	16 3 4
To framing, trimming and laying 320 Rods of Railway, @ 30s.,...	480 0 0	400 0 0
	<u>£2,567 0 0</u>	<u>£2,139 3 4</u>
20 ½ cent. for expense of Engineering and Contingencies, ...	513 8 0	427 16 8
Cost of one mile,	<u>£3,080 8 0</u>	<u>£2,567 0 0</u>

The foregoing Estimate is founded on authentic information, and the current rates of the Country. It has been ascertained by actual survey, that the very worst grades, in a *direct* route, and confined to a limited extent of country, do not exceed one in fifteen, and they are, in most cases, easy of reduction, while the greater portion is ascertained to be very favorable. It must also be recollected that from the abundance of timber on the spot, an immense saving may, in many situations, be made, by substituting substantial wooden structures in lieu of embankments, &c. The purchase of valuable property, which in this country may be safely considered as a part of the contingent account, does, in some Districts, most materially augment Railway Estimates.

JOHN GRANT, *Civil Engineer.*

It may be remarked, that a Railway could be constructed on Wood upon the dyked Marshes, along the Valley of the Memramcook, much below this estimate. In the dyked Marshes wood never decays, and is not liable to be thrown out of its place or upheaved by frost, which are very important points.

With reference to the Harbour of Shediac, the following information has been obtained from the most authentic sources, and from personal observation.

Captain Bayfield, R. N., Marine Surveyor in the Gulf of Saint Lawrence, in a Letter dated 25th January, 1841, states as follows:—"Shediac is the only Harbour of New Brunswick, eastward of Miramichi, which a vessel in distress could safely attempt to enter in heavy northerly gales, its entrance being less difficult and dangerous than that of any other on the coast." By Captain Bayfield's observations, Shediac Island is in latitude 46° 15' 15" north, and longitude 64° 32' 10" west; Longitude in time, 4h. 18m. 8-40s.; variation of the Compass, 19° west.

Those well known and most intelligent Pilots at Shediac, Messrs. James and William Milne, state that during the Summer Solstice, the time of high water at the full and change of the Moon, is 7 A. M.; and during the Winter Solstice, at 12, noon. The verticle rise of a medium spring tide they state to be from three to four feet, and the neaps from one and a half to two and a half feet. In the fair-way or ship-channel, at the distance of two and a half miles from the Harbour, twenty five feet of water is to be found, which is continued up to the entrance of the Harbour with little variation; from thence there is nineteen to twenty feet in the channel, gradually lessening until off the anchorage at Point Du Chêne, where sixteen and a half feet will be found at one third of a mile from the shore. The anchorage is good all over the fair-way to the northward and westward of the Medea Bank, in blue clay, with three to five fathoms water. Vessels discharging ballast lay in sixteen feet water, off Point Du Chêne, alongside a bank upon which there is only three to five feet water, and cast out

out their ballast in tubs. The Messrs. Milne further state, that they have taken loaded vessels safely out of Shediac Harbour drawing eighteen feet water; and that there is only fourteen feet water to be relied upon at Cocagne, and eleven and a half feet at Buctouche.

During the season of 1846, ten Ships and Brigs, in all 4546 tons, loaded at Shediac with Timber, Deals, and Railway Sleepers, for Ports in England and Ireland. A number of Schooners also sailed for Saint John's, Newfoundland, with Boards. Two Packets ply regularly every week to Bedeque, Prince Edward Island; and it is proposed to run a Steam Boat next season to Bedeque and Charlotte Town regularly.

As a communication by Railway between Dorchester and Shediac, and a communication thence by Steamers to Prince Edward Island, would cause a large portion of the Agricultural Exports of that fertile Island to be sent over by such communication to Dorchester, to be shipped from thence to a market, it becomes important to inquire into the value and character of the Imports and Exports of the Island.

The following Account shews the total value of Imports, distinguishing each Port in the Island, for the year ending 5th. Januay, 1846:—

PORTS.	From Great Britain.	British West Indies.	British North American Colonies.	Foreign Countries.	Total
					Sterling.
Charlotte Town,	£39,487 1 10	£1,049 10 11	£58,444 15 8	£2,753 8 4	£101,739 16 9
Bedeque,	204 0 1	0 0 0	1,497 13 0	0 0 0	1,701 13 1
Malpeque,	5,169 15 10	0 0 0	3,039 1 6	0 0 0	9,208 17 4
Three Rivers,	0 0 0	0 0 0	6,282 8 8	45 0 0	6,327 8 8
Cascumpec,	0 0 0	0 0 0	790 9 8	0 0 0	790 9 8
Colville Bay,	0 0 0	0 0 0	2,169 11 10	0 0 0	3,169 11 10
Total,	£44,860 17 9	£1,049 10 11	£73,224 0 4	£2,803 8 4	£121,937 17 4

The following Account shews the value of Exports, distinguishing each Port in the Island, for the year ended 5th January, 1846:—

PORTS.	To Great Britain.	British West Indies.	British North American Colonies.	Foreign Countries.	Total
					Sterling.
Charlotte Town,	£10,120 11 7	£1,229 0 2	£20,044 7 9	£2,853 2 0	£34,247 1 6
Bedeque,	2,830 16 6	0 0 0	5,770 2 5	0 0 0	8,600 18 11
Malpeque,	3,622 13 7	0 0 0	4,475 15 0	0 0 0	8,098 8 7
Three Rivers,	4,809 4 1	0 0 0	6,896 17 1	212 8 0	11,918 9 2
Cascumpec,	129 14 0	0 0 0	1,683 10 6	0 0 0	1,818 4 6
Colville Bay,	0 0 0	0 0 0	5,521 9 6	0 0 0	5,521 9 6
Total,	£17,512 19 9	£1,229 0 2	£44,397 2 3	£3,065 10 0	£70,204 12 2

It will be observed that nearly two-thirds of all the Imports of the Island are drawn from the other North American Colonies, and that the same proportion of its Exports are sent to the same Colonies. The Imports consist principally of British manufactured Dry Goods, Coals, Iron, Cordage, Sail-cloth, Soap, Salt, Stationery, Nails, Tea, Tobacco, Wines and Spirituous Liquors, Sugar, and Molasses. The following is an account of the quantities of Agricultural Produce and Stock exported in the year ending the 5th January, 1836, and the products of the Fisheries:—

Wheat	Bushels,	2,030	Beef,	Tierces,	61
“ Flour,	Barrels,	374	“	Cwt.,	25
Barley,	Bushels,	20,822	Butter,	Firkins,	117
Oats,	“	227,760	“	Cwt.,	9
Oatmeal,	Barrels,	572	Cattle,	Head,	389
“	Bags,	288	Horses,	“	16
“	Cwts.,	52	Sheep,	“	656
Potatoes,	Bushels,	227,731	Pigs,	“	75
Turnips,	“	9,694	Dry Fish,	Quintals,	3,425
Pork,	Barrels,	259	Pickled Fish,	Barrels,	987
Beef,	“	89			

In the year 1845, the number of vessels launched and registered in the Island was 88, with a total of 9,649 tons; and certificates previous to registry were granted for four other vessels, with a total of 664 tons, making in all, 92 vessels, 10,313 tons.

The

The number and tonnage of vessels belonging to the Island, engaged in the Foreign and Coasting Trades in 1845, was as follows:—

Foreign Trade,	38 Vessels,	7,352 Tons.
Coasting Trade,	233 “	9,636 “

Twenty three Fishing passes were granted to small vessels in the year 1845.

A census of the Island was taken in the year 1841, from which it appears, that the whole population then amounted to 47,034 souls. The number of acres of arable Land is returned as 141,560. The Crops of the year 1840 are thus stated:—

Wheat,—Bushels,	153,459	Oats,—Bushels,	611,824
Barley, “	83,299	Potatoes, “	2,250,114

The quantity of Stock on the Island in 1840, is thus stated;—

Horses,	9,861	Sheep,	73,643
Neat Cattle,	41,914	Hogs,	35,521

If facilities were created for transporting the surplus produce of Prince Edward Island to Shediac, and thence to Dorchester for shipment, a certain market could always be found for such produce at remunerating prices, and the imports of the Island would find their way there by the same channel. The exceeding fertility of the Island, and its capabilities for producing Grain and Potatoes to an immense extent, are well known facts; and it needs only a steady market to increase its population and its products, and render it a wealthy and flourishing Colony.

The Port of Shediac is well adapted as a station for carrying on the Fisheries in the Gulf of Saint Lawrence, at the Magdalen Islands, and on the coast of Labrador; yet only one small vessel was fitted out there for these Fisheries during the past season. A fishing vessel was fitted out last Spring at Campo Bello, for the Labrador Fishery, and on the voyage, to the southeastward of Shediac, took one hundred barrels of Spring Herrings. This vessel put into Shediac, sold the Herrings, procured a fresh supply of Salt, and sailed for Labrador, where a full fare of Fish was taken. At the end of the season this vessel returned to Campo Bello, after having made a very profitable voyage. The long voyages to and from Campo Bello must have been a great drawback; and this case is mentioned to indicate the advantages of fitting out such vessels at Shediac, if a Railway or other ready communication existed between the Bay of Fundy and the Gulf of Saint Lawrence.

It only remains to mention, that some very superior Steam Saw Mills have recently been erected at the mouth of the Scadouk River, in Shediac Harbour, and that very extensive water power for manufacturing purposes, exists on the Scadouk and Shediac Rivers, at the head of the Tide on each River, and within short distances of the Harbour of Shediac. A Quarry of Sandstone of superior quality for Grindstones has recently been opened on the Scadouk River, which is about to be worked; an out-cropping of Coal has also been noticed on this River, as also at Tedish River, to the southward of Shediac, but no examinations have yet been made to ascertain the existence of large deposits of this valuable mineral.

COUNTY OF ALBERT.

Up to the year 1845, this new County formed part of Westmorland, as stated in the preceding notice of that County. The area of Albert County contains 433,560 acres, of which 233,700 are granted and located, and 199,680 acres remain ungranted and vacant. The present population is estimated at 5,660, and the quantity of cleared Land upwards of 25,000 acres.

This County contains much good Land, and excellent dyked Marshes of considerable extent. A large proportion of the vacant Land is of good quality, well adapted for settlement and cultivation, offering many advantages to Settlers. The Settlement formed by Saint John Mechanics in 1842 on the Pollett River, and since called the “Mechanics’ Settlement,” is in Albert County. It is now in a flourishing condition, needing only good Roads to cause its rapid advancement, very considerable progress having been made by the Settlers, under very discouraging circumstances.

The resources of Albert County consist of Timber and Lumber, Agricultural Produce, Fish, Gypsum, Grindstones and Freestone. The Timber of various kinds is generally

generally shipped on the Petitcodiac River, and shipped as from the Port of Dorchester. The sawed Lumber is sent to Saint John generally for a market, as also the surplus Agricultural Produce. Owing to the recent organization of this County, no Agricultural Society has yet been established, nor can any account be given of its Exports.

A large deposit of Gypsum of the best quality exists in the Parish of Hopewell; and Freestone and Building Stone are shipped from Grindstone Island.

There are quarries at Mary's Point, opposite Grindstone Island, of dark red Freestone of very fine grain, and easily worked. It may be obtained in blocks of the largest size required for building purposes. This stone has been highly approved in New York; it has been analyzed by a celebrated American Professor, and pronounced equal, if not superior, to the well known Freestone of Connecticut. The stone procured above the tide is very compact, smooth-grained, and entirely free from defects, and has been found to resist the influence of the atmosphere and frost as well as any Freestone in North America.

The Shad Fishery is prosecuted by the inhabitants along the Bay Shore, which bounds the County on the South.

The following extract of a letter from the Honorable Captain Owen, R. N., to His Excellency the Lieutenant Governor, dated 8th December, 1845, is here given, as it embraces various points of interest with reference to the New County:—"It is known that from the *debouche* of Petitcodiac River, at Folly Point, (very near, and immediately opposite, and southwest from Dorchester Island,) the opposite shore of Albert, all the way down to New Horton, or nine or ten miles, is covered by a mud flat, which renders it most inconvenient for water communication; and no part of it offers a point where even landing can be conveniently effected for any considerable time, or more than two hours from high water, and not one spot that can be considered a Port or Harbour at all.

"It is very true that a Ship may lay at anchor in Five Fathom Hole, near Grindstone Island, and so she may in any part of the sea-approach to Cumberland or Westmorland, even as low as Cape Enrage, and Apple River, and thence all the way up to Dorchester Island, and even a few miles up the Petitcodiac, above the Ferry, and it appears to me that no one point of the coast-line affords a convenient spot for continued and uninterrupted intercourse by water, all the creeks and rivers being absolutely dry three fourths of every tide.

"In choosing a site for the County Town of Albert, I am of opinion, that we should not for any partial interest or policy lose sight of the great principal, viz:—'that facilities of external intercourse do best promote the real interests of any local community, in peaceable relations with their neighbours.'

"The present Ferry between Ferry Point and Dorchester Island, (the latter being a terminus of the Great Road of Communication with the eastern section of the County of Westmorland, and with Nova Scotia,) has been adopted practically, as the most convenient place on the side of Albert, for maintaining most efficaciously this intercourse, and it would seem to have been adopted, because found practically to be the most convenient. The Point, therefore, is in my opinion, the most suitable for the County Town, and from thence a Road will ere long be opened across the country, which would materially shorten and facilitate the communication with Saint John.

"At the most convenient point for Ferry communication, improvements might be made by Legislative aid and enactment, to render the passage across (about three miles) to Dorchester Island, available at all times of tide, and a Steam Ferry might be established there; and to the improvement of that Point for the purpose of facilitating convenient intercourse, it should, I conceive, be the first object to which to direct the energies of the new County of Albert, to which nothing can more contribute than to keep them under the eye and immediate regards of all their local authorities, and in which their locomotive facilities and conveniences are so intimately connected.

"The part of the river between Ferry Point and Dorchester is unquestionably the best and most convenient anchorage above Grindstone Island, as Your Excellency might have observed of the Columbia's anchorage, on your late visit to Albert; she never had less than five fathoms of water at low tide; and Dorchester, if ever adopted as a mercantile Port, has many great and important advantages, which no other place in its vicinity can ever obtain.

"The

“The River (so called) of Shepody, and Five Fathom Hole, can never become a place of any general importance or utility, and all intercourse with the shore is precluded for nearly three fourths of the time; and a Ferry from them must either go to Dorchester, nine or ten miles, always against a strong counter-tide going or returning, or to Point Maranguin, four or five miles, with similar inconvenience; and then the high road to Nova Scotia, through Westmorland, would require to be brought to the same point, which after the best arrangements, would not be so convenient as the Ferry between Dorchester Island and Ferry Point now is. In my opinion, there is not a point on the whole sea coast of Albert, northward of Cape Chignecto, more objectionable for the site of the County Town for Albert, than the (so called) Shepody River.”

With reference to a new line of Road from the County Town of Albert to the City of Saint John, alluded to by Captain Owen, it may now be stated, that by an exploration recently made eastwardly from the Mechanics' Settlement, it has been ascertained that the prolongation of the main Road which passes through that Settlement on a due east course, will strike the new County Town, and will shorten the present Road to it by at least twenty miles. If the Road through the Mechanics' Settlement be prolonged westerly through the Baskin and Donegal Settlements, along Bye Roads now opened to the Dutch Valley, and thence follow the new line of Great Road to Saint John by way of Loch Lomond, the whole distance between the County Town of Albert and the City of Saint John will be shortened at least thirty five miles. By the establishment of this line as that of the Great Road of the County of Albert, great benefits would be conferred on that County, a number of new Settlements, now languishing for the want of Roads, would immediately become populous and thriving, while a large quantity of vacant land of superior quality would at once be brought into request for settlement and actual cultivation.

If it be determined to try the experiment of settling new land by Emigrants or others, upon the principle of making a portion of the land pay the expense of making Roads through it, no line of country in New Brunswick, at the present moment, would seem to offer so favorable an opportunity of giving the scheme a full and fair trial, as this line from Saint John to Albert.

CITY AND COUNTY OF SAINT JOHN.

The number of acres in this City and County is 414,720, being the smallest quantity in any County in the Province. The quantity of granted and located Land is 309,147 acres, leaving only 105,573 acres vacant, situate chiefly at the extreme eastern and western limits of the County. The quantity of vacant Land sold in 1845 was 3,859 acres. The population of the City of Saint John in 1840 was 20,716, but the populous Suburb of Portland would add at least 5,000 to the number. The population of the City and the Suburb of Portland may now be safely estimated at 30,000, and the rest of the County at 8,000 souls, in all 38,000 souls, equal to one fifth the whole population of the Province.

As the County of Saint John stretches along the northern shore of the Bay of Fundy for nearly ninety miles, and is just of sufficient breadth to include those elevated ridges of primary rocks which give such a forbidding aspect to the coast, it cannot be expected that much good land would be found within its limits. Yet in the valleys and less elevated parts of the County, the soil, although not of the best description, produces good crops of Oats, Potatoes, and Turnips, while considerable advance has been made in the culture of Wheat. The Agricultural Society of the County are using their best endeavours to induce the farmers to avail themselves of the advantages afforded by the vicinity of a large town and the abundance of lime, for making compost. At the Society's Annual Fair in October last, three samples of Wheat, the growth of the County, were exhibited; one sample weighed 64lbs., and the other two, 63lbs. per bushel. Twenty samples of Oats were exhibited, all weighing above 40lbs. per bushel—the two best samples weighed 47lbs. per bushel. Some very excellent samples of Turnips were exhibited, and the produce of the fields where they were grown was stated to be at the rate of 800 bushels per acre.

The

The City of Saint John draws largely upon the Counties of King's, Queen's, and Westmorland, for supplies of beef, pork, mutton, butter, and all descriptions of Agricultural produce. The establishment of Railways throughout the Province would enable the farmer in the most distant situations to participate in the steady markets, not only at Saint John, but at Miramichi, Saint Andrews, and the other Sea Ports of the Province. The Trade of those Sea Ports also would be increased by facilities of communication with the interior, and by the trade arising from the various products of the soil, which could be readily and cheaply transported to the coast for shipment. The country, instead of remaining, to a great extent, in a state of almost unbroken wilderness, would soon be covered with an industrious, thriving, and numerous population; large towns would spring up at all the available ports of shipment, and manufacturing villages would be established near the Railway Stations, and upon the banks of the numerous Rivers and Streams in the Province, which from their character, furnishes such an extraordinary extent of water-power, cheaply obtained, and existing for ever.

The principal Exports of the Port of Saint John from 1819 to 1825, and from 1835 to 1845, are given in the following Table. From 1825 to 1835, the returns of Exports include Saint John and Out-Ports, and it is not now possible to separate the accounts so as to exhibit the Trade of Saint John only:—

ARTICLES.	1819	1820	1821	1822	1823	1824	1825
Timber—Tons,	247,894	207,899	262,597	86,642	76,583	114,116	175,360
Boards, Plank and Deals—M.	26,545	20,970	25,216	8,277	10,732	11,534	13,238
Masts and Spars—No.	6,232	8,001	6,653	2,417	2,185	1,918	4,620
Lathwood—Cords,	6,099	5,039	7,260	10,047	1,108	1,435	1,037
Shingles—M.	6,616	11,682	18,249	2,242	1,041	491	580
Staves—M.	5,850	6,837	6,023	2,392	1,664	1,923	812
Oars—No.	10,910	14,114	8,379	59,285	1,556	2,103	2,902
Handspikes—No.	15,871	9,405	4,967	7,933	4,271	595	2,756
Hogshead Shoos—No.	19,890	12,958	5,614	268	284	4,461	..
Dried Fish—Quintals,	40,073	49,063	45,895	20,817	14,260	15,102	26,948
Pickled Fish—Barrels, .. .. .	..	..	..	5,840	..	9,868	8,559
Herrings—Barrels,	11,436	6,243	12,508	..	8,691	..	..
Smoked Fish—Boxes, .. .. .	..	..	..	548	6,861	6,961	380
Salmon—Barrels,	362	372	836	..	..	..	..
Salmon—Smoked, .. .. .	..	..	..	2,271	..	3,662	..
Fish Oil—Barrels,	523	564	453	216	186	168	380

ARTICLES.	1835	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845
Timber—Tons,	101,322	92,573	90,916	92,713	91,750	109,526	85,864	63,881	105,924	113,688	162,000
Boards and Plank—M. ft.	32,000	33,421	36,286	4,124	5,469	3,057	2,513	4,750	6,231	5,692	7,026
Deals—M. feet, .. .. .	..	..	..	28,100	46,181	48,755	41,324	37,877	56,413	79,297	84,000
Masts and Spars—No.	1,737	1,736	1,854	1,056	1,633	1,232	2,117	1,160	1,498	2,383	1,565
Lathwood—Cords,	1,034	1,023	963	1,182	1,217	933	1,157	1,008	1,496	1,515	2,077
Shingles—M.	1,166	2,145	2,325	1,908	1,467	1,277	1,526	1,409	1,125	1,484	1,059
Staves—M.	738	633	666	302	68	51	46	190	30	10	20
Oars—No.	5,072	3,560	3,537	5,236	4,676	4,006	9,607	6,400	3,703	2,511	1,912
Handspikes—No.	1,298	836	768	300	406	242	2,084	100	1,466	173	508
Dried Fish—Quintals,	11,327	12,702	16,279	8,694	14,071	7,441	5,797	6,062	1,810	3,374	1,316
Pickled Fish—Barrels,	3,170	2,619	2,414	3,239	1,267	279	57	64	206	139	313
Herrings—Barrels,	11,579	8,451	1,042	1,539	3,964	706	1,671	1,177	723	604	1,280
Alewives—Barrels, .. .. .	..	..	5,384	3,814	5,295	4,666	6,805	8,050	11,303	11,817	9,551
Smoked Fish—Boxes,	5,483	5,880	11,915	14,121	13,391	22,275	19,534	7,157	5,389	7,308	10,058
Salmon—Barrels, .. .. .	..	..	99	..	81	..	8	129	140	4	8
Do. Kitts, .. .. .	..	..	120	8,261	5,600	2,276	2,653	1,232	155	5,430	1,261
Do. Smoked,	9,404	6,944	6,073	..	10,201	1,059	4,853	1,858	900	306	80
Fish & Whale Oil—Galls.	140,644	77,013	208,797	211,943	104,290	162,317	119,936	205	83,418	1,884	77,294

By the foregoing Table, it will be seen, that the Export Trade of Saint John is large, and steadily on the increase. As the outlet of the extensive River Saint John, and its numerous tributaries, with a Harbour never impeded by ice, the City of Saint John must always be a place of considerable importance, and one which is sure to increase as the interior of the country becomes settled.

The number of new Ships launched and registered at the Port of Saint John during the last twenty one years, will be found in the accompanying Return; and it will thereby be seen that Ship Building has been an important branch of business. The superior Steam Saw Mills in Saint John and its vicinity, supply a large proportion of the

the Spruce Deals now shipped from the Port; and that branch of manufacturing industry increases annually. The manufacture by steam power, of Pine Clap Boards and Shingles for the markets of the West Indies and the United States, has recently been commenced, and bids fair to be successful. The several Iron Foundries, (at which Steam Engines are also made,) the Grist Mills, Tanneries and Breweries in Saint John, are on a respectable scale, and all of them employ Steam Engines in their several operations. There are also in Saint John numerous workshops for Blacksmiths, Boat Builders, Carriage Makers, Sail Makers, Riggers, Carpenters, Joiners, Tailors, Shoe Makers, Painters, Cabinet Makers, Bakers, and a variety of other Mechanics and Tradesmen. It is matter of regret that no effort has yet been made to ascertain the condition of these several branches of industry, the number of persons employed, or the value of the manufactured articles they produce.

As the Commercial Capital of New Brunswick, with a Port open at all seasons of the year, the City of Saint John would naturally appear as the terminus of several Railways, extending throughout the Province in all directions. A line of Railway from Saint John to Fredericton, and thence to the Grand Falls, on the Western side of the Saint John, has already been projected, and an Act of Incorporation has been obtained, which awaits the Royal assent; but as no preliminary survey or exploration of the intended route has yet been made, no information can be offered on the line of country to be traversed.

Another Railway from Saint John to the westward, will at a future day be of importance, and a project for establishing such a line has already been some time under consideration by persons largely interested in the wilderness lands of Charlotte County, and of the western parts of Saint John and King's Counties. But the Line of Railway which in all probability will hereafter become of the greatest importance to Saint John, would be one extending to the eastward, through the fertile vale of Sussex, to Shediac, in Westmorland, and thence along the northern coast of the Province to its utmost limits. Such a Railway would connect the Port of Saint John, which is always open, with the richest Agricultural and Mineral Districts of New Brunswick; it would transport their abundant products to the place of shipment, and a market; the Salt and Gypsum of Sussex and Studholm would be rendered valuable, and the immense deposits of Iron Ore in Springfield would be brought into profitable working. The Coal Mines of Queen's County would become of the utmost consequence for smelting the Iron Ore, for working the Line, and furnishing traffic in its transport to all parts of the country. A considerable proportion of the Trade of Prince Edward Island, and of the northern portion of New Brunswick, both import and export, would pass over the Railway, as would also the products of the Fisheries in the Gulf, which might then be safely prosecuted to an almost unlimited extent.

In the absence of precise statements as to the value and extent of the numerous elements of wealth existing in the districts mentioned, few but such as have visited those districts, and ascertained the abundance of their resources in Timber, Coal, Iron, Salt, and various products of highly fertile soils, can form any just idea of the tide of riches which their development would pour in upon the City of Saint John, or the immense influence which a Railway would exercise in producing that development. To a large and valuable portion of New Brunswick, this Line of Railway would be of paramount importance, and the various matters connected with it are suggested as fitting subjects for further inquiry.

COUNTY OF CHARLOTTE.

This County occupies the south west angle of New Brunswick, and is the last of the Maritime Counties which remains to be noticed. It contains 783,360 acres, of which 317,245 acres are granted and located, leaving 466,115 acres still ungranted and vacant. The population of the County in 1840 was 18,178, and the estimated quantity of cleared land 35,135 acres. The quantity of vacant land sold in 1845 was 3,786 acres.

Charlotte may be described as a hilly country, with ridges of granite rocks along its northern boundary. Yet there is much good land in the County, especially in the vallies of the numerous Rivers which intersect it in all directions. These Rivers have afforded the means of bringing large quantities of Timber from the interior to places

of shipment; and the value in pounds sterling of the Imports and Exports of the County for the last ten years are given in the following Tables:—

IMPORTS—(Blue Book.)

Years.	From Great Britain.	BRITISH COLONIES.			United States of America.	Foreign States.	TOTAL.
		West Indies.	North America.	Elsewhere.			
1836	31,189	10,090	10,570	2,541	9,678	...	64,064
1837	12,044	11,258	10,924	...	10,281	411	44,918
1838	17,324	10,195	26,745	15	15,572	618	72,469
1839	29,420	430	13,940	777	32,797	2,366	79,370
1840	11,541	11,467	3,653	...	43,232	9,124	79,017
1841	13,056	704	8,384	...	38,587	7,549	68,280
1842	2,794	1,788	5,359	...	24,986	581	35,508
1843	7,321	393	5,147	...	19,868	1,842	34,571
1844	7,230	166	5,963	...	17,318	2,680	33,357
1845	18,477	878	12,216	...	23,636	...	55,204

EXPORTS—(Blue Book.)

Years.	To Great Britain.	BRITISH COLONIES.			United States of America.	Foreign States.	TOTAL.
		West Indies.	North America.	Elsewhere.			
1836	51,512	36,715	5,167	...	3,361	181	96,936
1837	24,063	32,902	4,240	...	1,017	1,246	63,468
1838	29,002	71,821	14,199	494	4,583	...	120,099
1839	31,251	70,451	9,787	134	4,644	1,185	117,452
1840	20,422	12,011	78,328	...	2,242	684	113,687
1841	14,060	43,477	7,670	...	2,112	1,231	68,550
1842	22,467	65,700	8,673	...	6,012	...	103,852
1843	23,180	40,270	5,249	...	4,083	1,089	73,871
1844	28,580	11,873	4,286	...	2,058	270	47,067
1845	48,704	7,958	3,388	...	4,478	...	64,530

The extent of Ship Building in this County during the last twelve years, will be found in the next Return on that branch of business, under the head of Saint Andrews.

At some pains, a comparative statement has been procured, shewing the quantities of the principal articles exported from Charlotte County in the years 1825, 1830, 1835, 1838, 1841, 1842, 1843, 1844, and 1845, which statement is as follows:—

ARTICLES.	1825	1830	1835	1838	1841	1842	1843	1844	1845
Timber—Tons,	27,820	25,774	15,568	4,062	2,362	4,895	182	463	3,100
Boards & Plank, M. feet,	4,311	12,600	13,005	26,446	17,077	23,368	19,614	20,185	27,819
Deals—M. feet,	3,118	2,994	9,699	8,821	6,718	8,233	8,746	..	272
Masts & Spars—No.,	1,779	1,334	2,353	2,204	2,041	1,160	1,698	4,246	2,034
Lathwood—Cords,	887	581	491	193	53	108	32	114	272
Laths—M., .. .. .	..	..	1,220	1,570	814	1,732	15,330	3,910	4,264
Shingles—M.,	3,231	11,023	3,265	20,439	20,247	29,736	13,886	11,834	10,319
Staves—M.,	77	142	367	56	59	57	19	..	2
Oars—Feet,	3,476	9,600	19,726	19,891	19,220	20,664	8,972	5,144	1,064
Cedar Posts—No., .. .. .	..	..	..	1,100	660	630	740	..	..
House Frames—No., .. .. .	..	..	..	232	367	390	33	40	33
Clapboards, .. .. .	..	..	1,500	95,625	95,750	163,925	29,725	175,212	196,430
Pickets, .. .. .	..	..	..	..	64,110	67,109	56,750	..	..
Dried Fish—Quintals,	6,233	9,250	3,536	4,977	2,108	1,493	883	200	30
Pickled Fish—Barrels,	897	5,355	2,675	1,462	677	1,702	210	87	459
Smoked Fish—Boxes,	1,207	1,666	1,342	5,904	8,160	7,017	3,270	555	3,522
Lime—Casks, .. .. .	..	..	..	743	9,732	13,739	..	6,520	7,626

The Fisheries in this County, in the vicinity of West Isles, Campo Bello, and Grand Manan, are excellent, and have been prosecuted to some extent. That the exports of Fish should be so small as above stated, is somewhat singular, and requires explanation. These Fisheries might be prosecuted with advantage on a much larger scale, but they need protection against foreign aggression, and judicious encouragement. A plan for encouraging the Coast Fisheries of Ireland, has been adopted by the Irish Fishery Board, which is deserving notice. It was stated to a Committee of the House of Commons by J. Redmond Barry, Esquire, the Director General of Coast Fisheries in Ireland, that the Board had, within a few years, adopted the plan of small loans to enable the peasantry upon the coast to avail themselves of the advantage of their contiguity

contiguity to the Fisheries. Mr. Barry stated that the plan had worked admirably well. Many persons who were an incumbrance and burthen to society, no better than paupers, had become productive, useful, and industrious, and had repaid, with the most extraordinary degree of punctuality, these small loans. Mr. Barry being asked by the Committee, if there had been any other operations of the Fishery Board which had a tendency to develop and stimulate productive industry, replied that the Board had been engaged in the building of small piers upon different parts of the coast, for the purpose of encouraging the Fisheries. These piers had proved extremely useful for agricultural purposes, for landing sea manure, and for the general purposes of trade; it was added, that the piers had been built by grants in aid of local contribution.

The encouragement of the Fisheries of the Province generally is a subject of very great importance; and the establishment of Fishing Loan Funds, for aiding and assisting the poor but hardy and industrious fisherman, is a matter well worthy immediate attention.

An Agricultural Society has been established in Charlotte County nearly thirty years, and their annual Reports show that activity and enterprise have always prevailed among its Members. In the twenty third annual Report of the Society, presented in 1843, it is stated, that the bounty granted by the Society on Lime, had induced Members to try it as a manure, and wherever it had been applied on land sufficiently drained, the benefit had been obvious, and in several instances the yield of crop, especially of Wheat, had been extraordinary. One acre in the vicinity of Saint Andrews, thus treated, had yielded fifty bushels of good wheat, weighing 59lbs. per bushel.

The twenty seventh annual Report of the Society was presented on the 12th January instant, and it states that the past season having been one of the most favourable for agricultural pursuits with which the County had been blessed for many years, the different kinds of produce had amounted to a full average crop. The various kinds of grain had been very productive, and had been harvested in good condition. The potato crop in Charlotte was a total loss in the year 1845; this Report states the gratifying fact, that seed having been imported into the County, the potato crop of 1846 has been of good quality, and generally free from disease; and that with reference to the quantity planted, the crop had been a fair one.

There is abundance of both lime and marl in this County, as well as sea manure, and in those respects Charlotte possesses advantages over most other Counties in the Province.

In 1836 an Act was passed to incorporate the "Saint Andrews and Quebec Rail Road Company," which still remains in force, and under which a Company has very recently been organized in terms of the Charter. A deputation from the promoters of this Railway proceeded to London in 1836, and submitted the project to Government, with a petition to His Majesty for aid. A sum of ten thousand pounds was thereupon granted for an Exploration and Survey of the Line, about £9,000 of which was expended in prosecuting the objects for which it was made, principally under the superintendence of Major Yule of the Royal Engineers, whose Report is extremely favourable to the undertaking.

In consequence of a remonstrance from the United States Government in 1837, further proceedings were suspended, and that suspension has continued until the past season, when measures were adopted for opening the Line as far as Woodstock, and the Company was organized.

On inspecting the Plans of Survey, and Sections of the Line prepared by the several Surveyors under Major Yule's direction, it appears, that the Survey commenced at Katy's Cove, (on the east side of the Town of Saint Andrews,) and thence proceeded on a course nearly north, to the foot of the Chamcook Lake; thence around the eastern shore of that Lake, and after crossing its inlet, thence northerly on the western shores of the second and third Chamcook Lakes, to the Valley of Waweig, which River it reaches at ten miles from the starting point; thence north eastwardly to the Valley of the Digdeguash, the western bank of which River is struck at twenty miles on the line; thence northwardly and westwardly, up the Valley of the Digdeguash, on its western side, to the sources of that River, at forty miles on the line; thence north eastwardly, through the Basin of the Little Digdeguash River, to the Valley of Cranberry Brook, which Brook is crossed precisely at the fiftieth mile; thence nearly

nearly due north, and almost on a dead level for ten miles, through the Valley of the Shugomock River, a branch of which is crossed at the sixtieth mile; thence north-westerly, through the Howard Settlement, to the north western bank of Eel River, which it touches at the seventieth mile. From this point the surveyed line followed a north west course, until near the Boundary, and thence proceeded northerly, along the Boundary between Maine and New Brunswick. In order to connect the line with the populous and thriving Village of Woodstock, it is now proposed to cross Eel River at the seventieth mile, and thence proceed on a course nearly north, until the west bank of the River Saint John is reached at or near Meductic Point; and thence to follow the level alluvial bank of the Saint John to Woodstock; the whole distance from Saint Andrews being about eighty two miles. None of the levels from Saint Andrews to Eel River exceed thirty feet per mile, being a gradient of 1 in 175.

It is proposed, at present, to commence the construction of this Railway, not at Saint Andrews, but at Waweig, ten miles from Saint Andrews, and thence proceed northwardly. There is a good harbour for shipping of the largest class at Waweig, and it is stated that each mile the Railway advances from that point, will develop abundant resources, the transportation of which to the place of shipment will render the line profitable from the commencement.

It is also proposed by the Saint Andrews Company to adopt Wooden Rails; in fact, to construct the whole Railway upon wood; and to use upon their Carriages Prosser's Patent Railway Guide Wheels, which are peculiarly adapted to Wooden Rails. The following brief description of these Guide Wheels, and of the manner of constructing the intended Railway, is condensed from information furnished by the President of the Company, and is offered as possessing peculiar interest at the present moment.

The Guide Wheels are the invention of Mr. Prosser, the Patentee, who projected them in order to improve the mode of guiding carriages along the rails, and to diminish the friction and wear and tear of machinery, thus enabling him to construct cheap lines, by the substitution of a less expensive material for rails than iron.

The four principal wheels which support the carriage are without flanges, and present a perfectly flat surface to the rail. It is evident, that upon encountering the slightest curve in the rails these wheels would be quite inadequate to keep the carriage upon its destined route. The remedy provided is in four extra, or anti-friction wheels; these are placed, two in front and two behind the carriage, upon axles, at an angle of forty five degrees with the main axles. A deep groove formed by two flanges is made in their circumference, exactly corresponding to the inner and upper angle of the rail, and thus they serve as the guiding wheels to the whole machine. When the Railway is in the direction of a right line, only one of each pair of bevel wheels can be in action at the same time, according to the tendency which the carriage may have to move on either side from the centre of the rail. On a curve, the difference is simply, that the outside bevel wheel of the front pair, and the inside one of the back pair, come into play, and counteract the disposition there is in the carriage to fly off at a tangent with the curve. Another very important function performed by the bevel wheels is, that in case of an accident occurring to the running wheels, they would act as supporters to the carriage, and carry it on in safety. In traversing curves, the advantage of the bevel wheels is stated to be very great, as with these wheels a curve of six hundred feet radius may be traversed with safety at a speed of twenty five to thirty miles per hour. The rails may be made of beech, or other hard timber, six to eight inches square, let into wooden sleepers, and secured by wooden wedges, forming one great frame or wooden grating of longitudinal and cross sleepers.

The bite of the wheel upon an iron rail is stated to depend much on the weight of the engine, which is generally made to weigh from 16 to 18 tons. This weight on moderate gradients, and at a speed of 20 or 30 miles per hour, enables it to draw from 80 to 100 tons. The carriages are built to weigh about three tons; this strength being found necessary to withstand the concussion, abrasion, and oscillation. An Engine weighing ten tons, running on wood, is alleged to have more tractive power than one weighing 18 tons running on iron; and as the concussion and abrasion is comparatively but trifling, carriages built to weigh one and a half tons will be as strong as those having to run on iron weighing three tons.

An important question connected with this subject is the durability of the materials of which the rails are composed. A short experimental line of wooden Railway was laid down near Vauxhall Bridge, and a second experimental line nearly two miles long was afterwards laid down on Wimbledon Common. The Engine employed for the experiment weighed about six tons; it passed over the rails during the two months it ran, 8000 times, in every variety of weather, which is stated to be nearly equal to seven years' traffic of twelve engines per day. The rails were made of larch, (prepared by Payne's Patent Process for preventing dry rot,) about nine feet long and six inches square; yet upon examining them after the severe test to which they had been subjected, they exhibited no appearance of wear from the friction of the wheels on the upper surface, as the saw-marks were not even effaced, nor had the bevel wheels exercised any abrasing effect on the edges, which remained as sharp and well defined as they were when first laid down.

It is stated, that the result of a series of experiments, made to ascertain the proportionate power of the bite of wood over iron, has fully borne out the assertion of the Patentee, that the bite of the driving wheel on wood, is nearly double that on iron. A consequence of this difference is, that railway trains may be propelled up much steeper inclines on a wooden railway than could be overcome on iron rails; and as the cost of making Rail Roads depends greatly on the quantity of earth to be removed, the vast expenses of deep cuttings and lofty embankments, and above all, the necessity of costly tunnels, may be avoided by the adoption of the wooden rail.

From the very level character of the country already surveyed for the Saint Andrews Railway, and the abundance of excellent Timber along the line, the Directors are impressed with the belief that they can construct a Wooden Railway to Woodstock at an average cost of one thousand pounds per mile. If a good working Railway can be constructed on this line, at even double that amount per mile, there can be very little doubt that the investment would prove an extremely profitable one. The anchorage at Waweig is the point nearest to Woodstock, which can be reached by Ship Navigation; and the great difference in distance alone must give this line several very decided advantages.

From Saint John to Fredericton, by the present Post route,							
the distance is	....	....	....	....	....	....	65 miles.
From Fredericton to Woodstock,	....	....	....	....	....	....	61 "
							—
Total,	....	....	....	....	....	....	126 "
From Waweig to Woodstock, the distance is	....	....	....	....	....	....	72 "
							—
Difference in favour of the Waweig line,	....	....	....	....	....	....	54 "
From the anchorage at Newcastle, on the Miramichi, to Boies Town, is	....	....	....	....	....	....	65 miles.
From Boies Town to Woodstock (direct), is	....	....	....	....	....	....	60 "
							—
Total,	....	....	....	....	....	....	125 "
The distance from Waweig to Woodstock being	....	....	....	....	....	....	72 "
							—
The difference in favour of the Waweig line is	....	....	....	....	....	....	53 "

The Reports state, that there is much good vacant Land on the surveyed line of this Railway, which also passes through and near some very thriving settlements. It is also stated, that extensive groves of valuable Timber of large size exist in the vicinity of the line, which, from their situation, will probably never be brought to market, unless by means of a Railway.

A Rail Road to Woodstock, from any accessible point on the sea-board, is a matter of very great moment, as connected with the supply of the upper part of the Saint John with a large amount of Merchandize, yearly on the increase, and the ready transport to a Port of shipment of the products of the Forests, of the Soil, and of the Mines and Quarries, which may be worked extensively in the County of Carleton.

 KING'S COUNTY.

This County contains 849,920 acres, of which 662,752 acres are granted and located, leaving 187,168 acres ungranted and vacant. The quantity of vacant land sold in 1845 was 12,896 acres. The population in 1840 was 14,464 souls; the estimated quantity of cleared land, 69,452 acres. There has been a considerable addition to this amount of cleared land since 1840, settlement and cultivation having made great advances subsequently to that period.

King's is an Agricultural County, and the land in the eastern division is of superior quality, and settling rapidly. The western division of the County, with the exception of the flourishing Parish of Greenwich, is almost in a wilderness state. The Parish of Westfield is very broken and hilly, with numerous lakes and streams, abounding, however, with valuable Timber.

There are no statements existing from which any account can be given of the quantity of agricultural produce raised annually in this County. The amount, however, must be very large, and the surplus finds a market at the City of Saint John. It has been previously stated that salt and gypsum are abundant in Sussex Vale; the deposit of iron ore near Bull Moose Hill, in Springfield, is very large, and, it is stated that the ore is of good quality. A Railway through the Vale of Sussex, even if constructed on Prosser's principle, with wooden rails, with branches or feeders from the Valleys of the Mill Stream, Smith's Creek, Ward's Creek, and Trout Creek, would open up a most valuable country, abounding in resources of every description. Among the advantages of wooden railways, not the least is the cheapness and facility of their construction, especially in a country abounding in timber well adapted for the purpose. If it be deemed more advantageous to construct long lines of railway with iron rails, still the feeders from towns or settlements within their reach, may be accommodated with railway communication, at an expense which their more limited traffic will enable them to bear. These branch railways would pour into the main line a great accession of traffic, and all parties would thus be benefited.

A great eastern line of Railway from the City of Saint John, through King's County, to Westmorland, and the Northern Counties on the Gulf Shore, would, in a few years, be maintained profitably by such feeders, which would be constantly adding to their number; and, by promoting the settlement of the country on a large scale, would increase its productions, and cause the development of its valuable resources. The County of Albert would be immensely benefited by such a line of Railway, and in return, would most certainly prove a valuable supporter, from the large quota of traffic which it alone might furnish.

The line of the proposed Railway from Saint John to Fredericton, on the western side of the River Saint John, will pass through the western division of King's County, and will, when constructed, lead to the immediate settlement of the great wilderness district in that part of the County.

The valuable quarries of excellent granite, now largely worked at the head of the Long Reach, must not be omitted in estimating the resources of King's County.

 QUEEN'S COUNTY.

The great extent of rich alluvial land in Queen's County renders it exceedingly valuable for all the pursuits of agriculture. The quantity of land in this County is 961,280 acres, of which 514,204 acres are granted and located, and 477,076 acres remain ungranted and vacant. The quantity of vacant land sold in 1845, was 5,793 acres, all in small lots, chiefly for immediate settlement. The greatest quantity sold to one individual in that year, was 265 acres; two lots of 200 acres each were sold to settlers, and all the remaining quantity was disposed of in lots of 25 acres and upwards.

The population of Queen's County in 1840, was 8,232 souls, and the estimated quantity of cleared land, 43,089 acres. The population and quantity of cleared land have been steadily on the increase since the census of 1840, and the population of the County is now estimated at nearly 12,000 souls.

This County has furnished the Port of Saint John with large supplies of Timber for a great number of years, and appears likely to do so for some time to come.

There is stated to be an extensive bed of iron ore at Coote Hill, to the westward of the River Saint John in this County, which requires further examination, no researches having yet been made to ascertain the extent of the deposit, or the value of the ore. As connected with Railways, every deposit of iron ore in New Brunswick now requires to be carefully examined.

In almost every part of Queen's County, east of the River Saint John, a seam of coal has been found at 20 or 30 feet from the surface, varying from 18 to 21 inches in thickness. This coal is highly bituminous, possessing the rich caking qualities of the Newcastle coal of England, and has, at different places and periods, been worked to some extent. Researches have also been made to ascertain if thicker beds of coal existed at a greater depth from the surface, and, on one occasion, the borings were continued to the depth of 410 feet, passing through several thin seams of coal, but without indicating a thick bed. There is some reason to believe, however, that the borings were not made in the best situations, or that the parties conducting the borings had neither sufficient skill or science for so important an undertaking. The existence of deep beds of coal in this County remains to be determined; but, in the meantime, the actual presence of a seam of good quality, easily worked, and extending over a wide extent of country, is a most important fact in connection with the proposed establishment of Railways, and is a matter of the greatest consequence to Queen's County, and to the Province.

An Agricultural Society has been but recently established in Queen's County; but no statements exist from which the amount of the annual Agricultural products of the County can be ascertained.

A striking instance, well authenticated, of the progress made by an Emigrant who settled in this County some years since, having lately come to the writer's knowledge, it is here mentioned, not as a solitary case, but as one among many others of similar character, and as exemplifying what may be effected by prudence and industry in New Brunswick.

The Emigrant landed at Saint John from Scotland, in the year 1820, with a wife and five children, (the oldest 13 years of age,) but without any means. He obtained employment during the summer as a Stone Mason's labourer, and by the most severe economy and frugality, saved the sum of eighteen pounds in that Season. With this sum he procured a grant of Land in the New Jerusalem Settlement, then first forming in Queen's County, and went to his lot in the Wilderness, three miles distant from any settler. He had no neighbour for three years, nor during that time any road to his clearing; and it was some time after that before anything approaching to good roads were opened or made. Yet here he pursued a steady course of industry, his family increasing to eleven in number, five boys and six girls, some of whom have married, and he has been able to settle them comfortably by giving them Farms and an outfit. This settler now owns 500 acres of Land, part of which is in a good state of cultivation, with three Farm-houses, five Barns, an Oat Mill and Kiln, and a large amount of Stock upon it. A valuation of this Emigrant's property was made in this month of January, 1847, for the purpose of a division among the children, and, at a moderate estimate, was found to amount to three thousand pounds. A large family has been brought up decently and comfortably, and are now in a position to become independent and wealthy.

The extreme Western portion of Queen's County, like that of King's, is nearly all in wilderness state. The proposed Railway from Saint John to Fredericton will probably traverse this portion, and in such case will add materially to its value and importance.

COUNTY OF SUNBURY.

When the whole Province of New Brunswick formed a part of Nova Scotia, it was designated the County of Sunbury. At present, the County bearing that name is the smallest in New Brunswick, with the exception of Saint John. It contains 782,080 acres, of which 377,078 acres are granted and located, and 405,002 acres remain ungranted

ungranted and vacant. The population in 1840 was 4,260 souls, and the quantity of cleared land 12,262 acres. The quantity of vacant land sold in 1845 was 2,114 acres, in lots from 50 to 130 acres, except one lot of 240 acres.

Lumbering has always been followed by the inhabitants of this County to a greater or less extent, and greatly to the neglect of agriculture. The first British settlement in New Brunswick was made in 1762 on the alluvial banks of the River Saint John, in what are now styled the Parishes of Maugerville and Sheffield. The Report of the Sunbury Agricultural Society for 1842, says—"Much remains to be effected in removing prejudice, and producing reform. There are still allotments of land, containing 500 acres each, which have been settled or occupied from 50 to 70 years, which have not yet 30 acres cultivated, although in the centre of the Province, and bounded on the beautiful River Saint John, within ten miles of Fredericton. Thousands of acres of valuable alluvial land in this County are still unreclaimed, and there are many acres of old worn-out meadow-land which has been annually mown in the summer, and pastured in the fall, for more than 50 years, without ever having been ploughed in that time, and which, although naturally a superior soil, now produces but a light crop; and we still see the barnyard drained across the highway into the river, to the great annoyance of the traveller, and loss of the owner."

Some of the finest land in this County is on the North and South Branches of the Oromocto, and many farms there, for picturesque beauty and fertility, may compare with any in the Province. The new Settlements, too, in that quarter, are in a thriving condition; and farming, generally, appears to be there conducted in a more thorough and energetic manner than in that part of the County which has been long settled.

The writer had occasion to examine this part of Sunbury last season, and can state that the rivers generally flow through wide valleys, with very level alluvial land in the bottom, and gently sloping hills bounding them on either side. Through these valleys a more direct and much more level route between Fredericton and Saint John can be found than by the Nerepis Road. A series of bye roads now pass through the Maryland Settlement, the Rushagonis Settlement, and thence, by Hart's Mills, to the valley of the South Branch, whence the valley of Back Creek is followed through the Patterson Settlement, and down the valley of the Douglas to the Nerepis Road, a short distance above the Eagle Cliffs, at the Bridge over the Douglas River. The distance between the Seat of Government and the City of Saint John, by this route, is only sixty miles, instead of sixty five by the Nerepis Road; and it has the advantage of being a much more level country, where a good road can be readily and cheaply made, with no large rivers to cross, and no danger of the road being rendered impassible by back-water in the spring. This line of country offers great facilities for the establishment of an excellent line of great road between Saint John and Fredericton; and the promoters of the New Brunswick Railway will doubtless avail themselves of the advantages it offers for their line of Railway.

YORK COUNTY.

This is one of the largest Counties in the Province, containing 2,201,600 acres, of which 940,914 acres are granted and located, and 1,230,686 acres remain vacant and at the disposal of Government. The population in 1840, was 13,995 souls, and the estimated quantity of cleared Land, 44,818 acres. The population of the Parish of Fredericton in 1840, was 4,002 souls; but the Town of Fredericton alone is now supposed to contain 6,000 souls.

Although Lumbering has been prosecuted to some extent by the people of York, yet Agriculture has not been altogether neglected. As the capabilities of the County are great, and it possesses some advantages in being placed almost in the centre of the Province, in a favorable position on the River Saint John, and with the Seat of Government within its limits, Farming has been prosecuted to some extent, and with marked success.

An average crop of Oats in this County, of the best quality, is stated to be thirty bushels to the acre; but in the season of 1846, there were fields in and near Fredericton which yielded sixty bushels to the acre. In 1842, before the Potato disease was known, land of good quality, in proper condition, yielded an average of six hundred bushels

bushels of Potatoes per acre. The Wheat crop in this County has suffered greatly from the ravages of the Weevil of late years. The weight of a bushel of Wheat grown in York averages about sixty pounds. The Potato crop, which was almost an entire failure in 1845, suffered but partially in 1846; it is hoped that if the season of 1847 prove favorable, the disease will disappear altogether.

Two very striking instances of the success attending the formation of new Settlements in the Wilderness, by associations of Settlers, having the privilege of making their own Roads at a reasonable rate, can be adduced in this County. The Harvey Settlement was formed in 1837 by a party of Emigrants from the North of England, who landed in New Brunswick in a very destitute condition. A Report upon this Settlement was presented to His Excellency the Lieutenant Governor, by the Honorable L. A. Wilmot, the Commissioner who formed it, on the 9th February, 1844, accompanied by a statistical Return. This Report states, that it is shewn by the Return, that from land where not a tree was felled in July, 1837, there had been taken, during the preceding autumn, 260 tons of Hay and Straw, and 15,000 bushels of Grain, Potatoes and Turnips; and that the great success which had attended the labours of these industrious and valuable Settlers, afforded an unquestionable proof of what might be done on the millions of Wilderness Land in New Brunswick. The Return shows the number of Settlers to be forty five, and the value of their improvements to be £4,289 10s. The Settlers accompanied the original Return with the following observations:—"The climate of New Brunswick agrees well with the constitution of Englishmen; the air is salubrious, and the water as pure and wholesome as any in the world. During the six years of our location but two deaths have occurred, while there have been thirty nine births without the presence of Medical aid. Six years' experience have convinced us, that notwithstanding the privations to which new Settlers are exposed, diligence and perseverance must ensure success."

The "Teetotal Settlement" was formed in 1842, under the same Commissioner, by a party of destitute Emigrants from the South of Ireland. In a Report from the Commissioner, dated 25th January, 1844, it is thus stated:—"The results of this the second effort in which I have been engaged in forming Settlements in the Wilderness, have afforded me the most unmingled satisfaction. Where but two years ago stood a dense forest, there have been gathered by thirty five Settlers, during the past autumn, 7,236 bushels of Grain, Potatoes and Turnips. The accompanying Return shews an estimated value of £1,137 in buildings and clearings, and when there is added to this the market value of the crop, exceeing £800, we have about £2,000 return (exclusive of the making four and a quarter miles of Road) from a tract of Land, which in its wilderness state, would not in the same time have produced one shilling. I cannot now consider the successful occupation of our Wild Lands by associated bodies of Settlers, having the privilege of making their own Roads at a reasonable rate, as a doubtful experiment. No antagonist theory can prevail against the practical experience which can now be referred to. Similar management must produce similar results, and I am well persuaded, that no other system is so well calculated to promote the improvement of our millions of wilderness acres, and thus to advance the population and commerce of the Province."

The central position of the Town of Fredericton, its importance as the Seat of Government, its recent establishment as a Free Port for the admission of British Vessels, and the advantages of its situation with reference to the Great Highway of the River Saint John, point it out as an eligible focus for Railways extending to various parts of the Province. The New Brunswick Railway already mentioned, is one of these. Another eligible line might be formed by passing up the valley of the Nashwaak, thence across the Portage to Boiestown, there to connect with a Railway from the Towns on the lower part of the Miramichi. The determination of a line for the Trunk Railway from the Atlantic to Quebec would also determine the various branch lines which might be profitably formed to intersect that line, and act as feeders for its support.

COUNTY OF CARLETON.

This is by far the largest County in the Province, containing no less than 5,292,000 acres, of which 811,402 acres are granted and located, and the remaining 4,480,598 acres are vacant, and at the disposal of Government. A portion of this County, containing by estimate, 2,700,000 acres, (of which 280,600 acres have been, at various times, granted and located by the Province of New Brunswick,) has been claimed by the Province of Canada since the settlement of the Disputed Boundary with the United States by the Treaty of Washington. The Government of New Brunswick has ever exercised jurisdiction over this portion now claimed by Canada, and has borne all expenses occasioned by its management and protection. A portion of New Brunswick which lies north of the Restigouche, and eastward of the due north line from the monument, is not included in the estimate of the number of acres in Carleton.

An Act of Assembly was passed in 1844, with a suspending clause, for erecting the upper part of this County into a separate County, by the name of Victoria; but, owing to the unsettled state of Boundary with Canada, the Act has not yet come into operation.

The population of the County of Carleton in 1840 was 13,381 souls, and the estimated quantity of cleared land, 49,553 acres. The quantity of vacant land sold in 1845 was 5,871 acres, all, with one exception, in lots less than 200 acres.

An Agricultural Society was established in this County six years since, and the Annual Reports show that the members have been both active and diligent. The soil of Carleton, generally, is of very superior quality, and the portion already cleared and cultivated produces crops of Grain and Potatoes quite equal to any in the Province, both in quantity and quality. Some very superior Stock has also been introduced by Charles Perley, Esquire, who, at very considerable expense, has imported animals of the best breed in the United Kingdom, and thereby greatly improved, not only the stock of this County, but the stock of several other Counties. The County of Carleton, from this gentleman's spirited exertions, may boast the best breeding stock in New Brunswick.

There is some land of very superior quality in the Valley of the Tobique, which, as yet, is almost wholly in a wilderness state. Whenever this Valley is rendered accessible to settlers by highways or Railways, it will be one of the districts to which there will be a rush of settlers.

There are extensive deposits of gypsum on the Tobique River, and very fine slate for roofing purposes near its confluence with the River Saint John. Near Woodstock there is a deposite of iron ore, which the Geologists of Maine have ascertained to be of very great extent, and of excellent quality. The County of Carleton furnishes a large proportion of the squared Pine Timber sent down the River Saint John, and it possesses an almost inexhaustible supply of the best Timber of all descriptions. The establishment of Railways from Saint Andrews and Saint John, or from either, to Woodstock, will throw open the vast resources of this County in Timber and Iron, and rapidly develop its agricultural capabilities. As a station for supplying the upper country on the Saint John River, Woodstock is of some importance. The formation of Railways from Saint John or Saint Andrews, would almost certainly lead to the establishment of other Railways from Woodstock to the Grand Falls, (another most important station,) to Boiestown, and to Campbellton, and Dalhousie, on the Restigouche, with which it is highly desirable a communication across the country should be opened.

So great an extent of this County remains in a wilderness state, that it is difficult to state its resources or capabilities; but from what is already known, it may be safely stated that they are not inferior to those of any other County in New Brunswick.

Table of the estimated value in Pounds Sterling of the Imports of the Province of New Brunswick, from all parts of the world, from the year 1828 to the year 1845, both years inclusive.

Years.	From Great Britain.	BRITISH COLONIES.			United States of America.	Foreign States.	TOTAL.
		West Indies.	North America.	Elsewhere.			
1828	295,526	60,237	162,686	...	123,662	1,470	643,581
1829	291,598	72,773	138,527	395	133,976	827	638,096
1830	285,871	92,795	165,796	1,571	146,767	763	693,563
1831	301,729	63,595	159,285	1,785	77,476	...	603,870
1832	314,097	...	261,544	...	123,192	5,216	704,049
1833	295,939	61,311	192,668	4,227	136,432	1,022	694,599
1834	373,297	70,718	213,859	10,029	109,606	3,658	781,167
1835	521,479	59,801	277,879	7,247	102,839	615	969,860
1836	734,391	53,120	340,315	3,614	112,713	5,381	1,249,537
1837	565,721	47,605	272,089	1,927	121,991	45,714	1,058,050
1838	682,843	65,578	320,560	1,196	121,160	13,292	1,185,629
1839	813,179	27,574	381,792	1,229	219,298	37,132	1,513,204
1840	773,281	17,809	254,686	1,126	254,134	35,281	1,336,317
1841	610,066	2,044	171,094	236	195,678	22,940	1,002,058
1842	217,282	3,561	150,864	685	162,442	5,477	540,307
1843	337,240	2,217	145,645	570	140,259	13,725	639,686
1844	451,630	3,581	146,174	...	207,484	38,230	850,099
1845	617,152	4,172	158,649	791	312,273	12,921	1,105,958

Table of the estimated value in Pounds Sterling of the Exports to all parts of the world from the Province of New Brunswick, from the year 1828 to the year 1845, both years inclusive.

Years.	To Great Britain.	BRITISH COLONIES.			United States of America.	Foreign States.	TOTAL.
		West Indies.	North America.	Elsewhere.			
1828	241,573	133,161	55,802	181	18,084	6,054	457,855
1829	271,238	159,388	49,096	6,840	26,959	698	514,219
1830	335,132	133,160	65,568	5,131	30,372	611	570,307
1831	266,247	72,629	60,418	6,357	18,017	3,650	427,318
1832	433,584	...	175,018	...	30,798	2,400	641,800
1833	337,594	87,795	91,077	8,140	29,462	1,259	558,627
1834	392,347	71,451	88,125	5,832	20,411	738	578,904
1835	475,809	69,602	74,312	6,350	24,299	1,782	652,154
1836	431,229	66,773	118,225	2,222	29,221	4,612	652,645
1837	448,259	67,905	99,105	3,965	25,185	6,196	650,615
1838	528,224	103,710	128,560	3,961	25,598	2,056	792,119
1839	531,208	110,003	137,740	1,921	35,472	2,947	819,291
1840	501,096	38,997	181,022	1,695	23,808	3,418	753,036
1841	343,675	57,910	76,933	83	13,987	3,051	495,629
1842	303,307	72,411	67,789	3,260	29,453	1,259	487,479
1843	410,107	50,589	56,171	2,572	16,199	2,963	538,592
1844	491,022	21,189	59,347	4,367	16,909	3,903	598,837
1845	667,937	17,529	67,101	3,814	27,930	3,392	787,624

Return of the New Vessels registered in the Province of New Brunswick, and their Tonnage, in each Year from the Year 1825 to the Year 1845, both Years inclusive, including Vessels built for owners in the United Kingdom, and sent home under Certificate.

Years.	Ports.	No.	Regis. Tonnage.	Total Tons.	Years.	Ports.	No.	Regis. Tonnage.	Total Tons.
1825	Saint John & Miramichi,	102	24,421	28,893	1826	Saint John, Miramichi, Saint Andrews,	81	24,679	29,643
	Saint Andrews,	18	4,472			8	3,147		
	<i>Vessels,...</i>	120				11	1,817		
1826	Saint John & Miramichi,	116	27,914	31,620	1827	Saint John, Miramichi, Saint Andrews,	64	19,493	27,288
	Saint Andrews,	14	3,676			21	5,895		
	<i>Vessels,...</i>	130				14	1,900		
1827	Saint John & Miramichi,	94	20,097	21,806	1828	Saint John, Miramichi, Saint Andrews,	82	19,893	29,167
	Saint Andrews,	5	1,709			19	5,478		
	<i>Vessels,...</i>	99				21	3,796		
1828	Saint John & Miramichi,	63	14,379	15,656	1829	Saint John, Miramichi, Saint Andrews,	108	30,454	45,864
	Saint Andrews,	8	1,277			27	9,837		
	<i>Vessels,...</i>	71				29	5,573		
1829	Saint John & Miramichi,	55	6,678	8,450	1830	Saint John, Miramichi, Saint Andrews,	108	42,922	64,104
	Saint Andrews,	9	1,772			31	12,231		
	<i>Vessels,...</i>	64				29	8,943		
1830	Saint John & Miramichi,	40	8,178	9,242	1831	Saint John, Miramichi, Saint Andrews,	78	30,449	47,140
	Saint Andrews,	12	1,064			31	13,632		
	<i>Vessels,...</i>	52				10	3,058		
1831	Saint John, Miramichi, Saint Andrews,	40	6,476	8,571	1832	Saint John, Miramichi, Saint Andrews,	54	12,558	22,840
		8	1,173			20	7,129		
		13	922			13	3,153		
1832	Saint John, Miramichi, Saint Andrews,	61		14,081	1833	Saint John, Miramichi, Saint Andrews,	87		14,550
	<i>Vessels,...</i>	70				40	8,745		
						14	3,967		
1833	Saint John, Miramichi, Saint Andrews,	55	11,465	14,081	1834	Saint John, Miramichi, Saint Andrews,	10	1,838	24,543
	<i>Vessels,...</i>	70				64			
1834	Saint John, Miramichi, Saint Andrews,	63	12,835	17,837	1835*	Saint John, Miramichi, Saint Andrews,	54	13,292	24,543
		7	1,804			25	9,266		
		27	3,198			8	1,985		
1835*	Saint John, Miramichi, Saint Andrews,	97		24,140	1844	Saint John, Miramichi, Saint Andrews,	87		28,972
	<i>Vessels,...</i>	92				56	21,883		
						21	5,563		
1835*	Saint John, Miramichi, Saint Andrews,	72	19,920	25,796	1845	Saint John, Miramichi, Saint Andrews,	15	1,526	28,972
		13	3,690			92			
		12	2,186						
	<i>Vessels,...</i>	97							

*For owners in the United Kingdom—
5 Vessels, 916 Tons.

**Report and Estimate concerning an Electro-Magnetic Telegraph between
Fredericton and Saint John,**

*Addressed to Sir William M. G. Colebrooke, K. H., &c. &c., Lieutenant Governor of the Province
of New Brunswick.*

Fredericton, 25th January, 1847.

SIR,—At the desire of Your Excellency we have prepared a short Report upon a line of Telegraphic communication between Fredericton and Saint John.

It has been drawn up with as much care as the novelty of the subject, and the means of judging at our command have allowed, and, in submitting it, we desire to say that it will always be our anxious wish to assist Your Excellency in forwarding this most important and laudable undertaking.

A revolution in the Telegraphic system has been recently effected by the aid of a force called Electro-Magnetism, and this application of the force in question, seems to be fraught with consequences not less important to mankind than those which have resulted from the application of steam to the purposes of locomotion.

The Electro-Magnetic Telegraph can be made to convey intelligence in a few or in many words, on matters of trivial or of vital importance, openly or with secrecy, for one or for one thousand miles, by night or by day, in winter or summer, at a cost not greater than is incurred by the present Post Office system, and with a velocity which is only comparable to that of a thought or a sensation, or to a ray of light, or a flash of lightning.

Not only are all these marvellous effects asserted to be possible, but they have been demonstrated, and are capable of being realized wherever it is thought worth while to try.

The value of such a mode of transmitting intelligence cannot be over-estimated, and we feel confident that, within a few years, the adoption of this system will become general in all civilized countries. The thoughts, the feelings, and the wishes of one man will be conveyed to another, one hundred miles off, as fast as they can be uttered or intelligibly expressed to himself, or to his nearest neighbour, and we will at length have acquired a power over time and space as great as that which we have already acquired over matter.

As these remarks are based upon a consideration of what has been already achieved and done by means of the Electro-Magnetic Telegraph, it remains still to determine whether the importance of the communications between any two given places is sufficient to justify the outlay required to secure the advantages of such rapid transmission.

Although we do not feel that it is our province to decide upon the importance of the communications now going on between the Seat of Government and the chief seat of Commerce in New Brunswick, yet we cannot refrain from stating our decided conviction that, if the present communications are not of sufficient importance, the mere fact of the establishment of an Electro-Magnetic Telegraph would soon make them so.

These considerations are entirely apart from any that might attach to a line of Railway from Saint John to Fredericton, or to the connection of our Telegraphic Circuit with others from Quebec to Fredericton, or from Saint John to Halifax; we speak at present in favour of a line between this place and Saint John, and of that line as being worthy of immediate adoption.

By the estimate which we have attempted to make, the cost of construction and maintenance for the first year would not much exceed five thousand pounds currency, and the permanent charges would not exceed one thousand pounds a-year, so that we may be justified in saying that the outlay is not great in comparison of the public advantages which would result from its establishment.

But it is not all expenditure: there is a certainty of considerable returns, at both termini, in the course of every year. If these exceeded the interest on the money expended, it might fairly be asked whether, in view of the responsibility connected therewith, the Government was not entitled to secure and maintain the Telegraph as a source of Provincial Revenue; or, supposing that the returns did not cover the interest on the investment, whether the Government ought not to assume the loss, in consideration of the public benefit derived therefrom. It is to be doubted, after all, whether private parties would be likely to take up an enterprise of so novel a character; whether

whether they could give it the same title to public confidence; or whether they could, so efficiently as the Government, protect it against wanton or malicious injury.

There has been considerable difficulty in preparing the estimate herewith annexed, and there are several of the rates which we state with great diffidence; yet, on the whole, we apprehend that the general charge will be found adequate to meet the several heads of expenditure.

It will be necessary to make some further explanatory remarks upon the various charges, which, it will be seen, refer—1st, to the apparatus and the wires; 2nd, to the posts which sustain the wires; and, lastly, to the salaries and office expenditure.

The system which we advise for adoption in New Brunswick is that of Professor Morse, of New York. His method is not only cheaper than all the others, but likewise excels them in the important peculiarity which it offers of *registering upon paper* all Telegraphic communications.*

It would be only fair to Professor Morse to ascertain how far the adoption of his system in this country, without reference to him, would prejudice his rights. At all events, we are not now prepared to recommend any system which does not *register upon paper* the Telegraphic dispatch.

We suggest that a double circuit should be established in the first instance, and that this be attempted with two wires only, the earth being, by a peculiar arrangement, rendered available in both circuits. If a third wire, or other circuits, were found to be necessary, they could be added at any time, and at an outlay for the wire only.

The estimate has been made out for a line of sixty five miles, which, we believe, is the length of the route to Saint John, by the valley of the Nerepis River; and we have preferred the present highway to any other line, because it is already well cleared of trees, and, therefore, less likely to endanger the wires and posts by "windfalls," &c. A shorter line through the woods might, no doubt, be found; but, in such a rough country, and in such a tempestuous climate, it would be liable to accidents which would be always difficult to detect, and almost impossible speedily to repair. On the present highway the wires would always be under inspection, and there would be no difficulty in proceeding with any occasional repairs.

By the route proposed, the wires would keep the right bank of the River Saint John as far as the Falls, where nature has very greatly favored their transmission across the River to the City of Saint John.

We suggest that posts, eight inches square below, six inches square above, and about twenty feet long, with a board capping (to prevent the lodgment of water or ice about the wires) and strongly braced, and loaded with two or three tons of stone, should be set upon the ground, at distances not exceeding two hundred feet apart. Where the ground is favorable for sinking, the posts might be set in the ground, but it would be necessary to enter them to the depth of five or six feet, a cross sill having been previously fixed at their lower extremity, to prevent the disturbing action of the frozen soil upon them.

Where the posts are thus sunk, we conceive that a considerable saving might be effected in the estimated charges for scantling, for framing, and for loading with stones.

Whatever method of securing the posts is adopted, it must never be forgotten that their stability and sufficiency are of paramount importance.

It would seem, at first sight, that metallic tubes placed under ground would be safer and better conductors of the wires; but the expense of trenching and the difficulty of seeing and remedying defects, forbid their adoption in the present case.

If the Telegraph was adopted by Government, and put under the control of the Post Office authorities, we imagine that the requisite accommodation for the apparatus might readily be found in their offices, at the respective termini; and the charges for transmission of correspondence and intelligence need not exceed the average rate under the present method.

The salary of the Chief Superintendent of construction ought not to be less than £500. His familiarity with all the chemical and mechanical details must be undoubted; while his personal presence on the line would be continually required, and no portion of the work could be completed without his most thorough supervision and warranty. The above charge need not, however, become a permanent one, although those for the

* See a description of the American Electro-Magnetic Telegraph by A. Vail, Philadelphia, 1845.

the Clerks and Messengers undoubtedly would remain. The Clerks would have to acquire a familiarity not only with the Telegraphic characters, but also with the details of the galvanic battery and register.

The estimated average cost per mile of this line is considerably greater than that which has been adopted as the ground of action elsewhere; but it does not at present seem possible to establish a double circuit in this Province at any thing so low as £41 per mile.

All which is most respectfully submitted by your Excellency's most obedient and humble servants,

J. ROBB, M. D.

J. B. TOLDERVY, M. D.

To His Excellency Sir Wm. M. G. Colebrooke, K. H., Lieutenant Governor, &c. &c.

Estimate of Charges in establishing and maintaining, for one year, an Electro-Magnetic Telegraph between Saint John and Fredericton.

130 miles (for two circuits) of prepared Copper wire, at £12 10s. per mile	£1,625	0	0
Delivering and fixing the wires, at 10s. per mile	32	10	0
Batteries, Registers and Apparatus, for two stations, at £75 per station	150	0	0
	<hr/>		
			£1,807 10 0
1,716 Posts, 20 feet long, 8 in. x 8 in. below, and 6 in. x 6 in. above, with two cross-sills below, 10 feet long, and 8 in. x 8 in. thick, and four braces, 7 feet long, and 8 in. x 8 in. thick, or 68 feet of scantling, at about 12s. 6d. per 100 feet (lineal s. d. measure,) say			7 6
Planing, framing, and capping the Posts, say, at 4 foot			7 6
Preparing ground, hauling and setting each Post			3 0
Coal Tar, and Painting each Post			2 0
Loading for each Post, viz. two perches of stone, at 2s. 6d. 4 perch			5 0
			<hr/>
			25 0
			<hr/>
			2,145 0 0
Salary of the Chief Superintendent of construction for one year, ...	£500	0	0
Two Clerks at £200,	400	0	0
Two Messengers at £50,	100	0	0
Two Offices, Rent and Charges at £40,	80	0	0
			<hr/>
			1,080 0 0
			<hr/>
			£5,032 10 0

Average cost per mile, about £77.

Fredericton, 4th February, 1847.

SIR,—In reply to Your Excellency's note of the 30th ultimo, requesting us to extend our estimate for an Electro-Magnetic Telegraph from Saint John to Halifax, we beg to state for Your Excellency's information, that we are inclined to believe that it might be continued at nearly the same rate of outlay as that at which we have already estimated it between Fredericton and Saint John.

The distance from this place to Saint John, by the Nerepis Road, is 65 miles, or exactly one fifth part of the distance from here to Halifax, so that the charge for establishing the whole Line of Telegraphic communication from here to Halifax, would be somewhere near £25,000.

It will be seen that our estimate for this distance is as great as that assumed by the parties in Quebec, as sufficient for the whole Line from Quebec to Halifax, but we frankly avow our inability to reduce it to a figure so low, and we doubt whether they can have taken up the details of the subject with sufficient accuracy. They also seem to think that a short saving of distance by the Metis Road and the Gulf Shore, might induce them to carry a Line in that direction, but while all the difficulties of maintaining the Line in an unsettled country would thus be greatly increased, almost all the advantages

advantages of a Telegraph would be lost to this Province. Thus we at once decide against the feasibility of any Line in the direction above referred to.

In the present state of our knowledge regarding the maximum distance to which the powers of a Galvanic Battery and its conducting wires are limited in practice, it would be premature to decide minutely upon the number of points or stations along the Line, where it would be necessary to take up and repeat the Telegraphic Despatch; but as it will always be a matter of the greatest consequence to be able to discover where interruptions have arisen, it would not be prudent to place these repeating stations more than sixty or seventy miles apart. In this view of the case, one repeating station between Saint John and the Nova Scotia Frontier, would be sufficient, and again, another between that point and Halifax, making in all, three stations intermediate between Saint John and Halifax.

The small outlay required for this undertaking, when compared with the immense advantages which must accrue from it, seem to warrant us in the belief that it might be proceeded with immediately. If there was a Line of Railway actually in existence, no doubt the Telegraphic Line would accompany it; but as many years must elapse before the Rail Road is completed, it becomes a matter of consideration whether the Telegraph should be doomed to the inevitable delay to which the other is obviously subject: and again, were the present plan adopted, the commercial advantages of the Telegraph would be at once secured at places which the Line of Rail Road might not probably approach.

All of which is most respectfully submitted by Your Excellency's most obedient and humble servants,

J. ROBB,
J. B. TOLDERVY.

To His Excellency Sir Wm. M. G. Colebrooke, &c. &c. &c.

**Reports of Mr. Wilkinson on Electro-Magnetic Telegraphs and Railways
in the United States.**

Fredericton, 24th February, 1847.

MAY IT PLEASE YOUR EXCELLENCY,

In obedience to an instruction communicated to me, at the instance of Your Excellency, on the 8th ultimo, that I would take the opportunity of my intended visit to the United States, to obtain for the Government such practical details respecting the construction and expense of Wooden Railways and the Electric Telegraph, as would be likely to be useful in reference to the project of establishing the same in this Province, I have, with a view to these objects, employed the necessarily short period at my command, embraced in a month's absence, including going and returning.

In order to report to Your Excellency in a manner sufficiently full and intelligible, with regard to both Railway and Telegraph, it is probable that a longer time will be necessary than may be desirable in relation the Telegraph separately.

As I was in fact prevented by want of time from applying to all the sources of information I should have wished to consult respecting the Telegraph, I am the less disposed to speak minutely on the details of construction, or to claim for my observations generally higher authority than would be due to those of any intelligent observer of what is passing amongst our neighbours, during an excursion of a few days through the most populous, active and improved parts of their country. I therefore beg Your Excellency's permission the more generally to treat of this object, and to report on the other separately, and with the more particular consideration which, I trust, it will be found to claim.

The Magnetic Telegraph is now so well established, and its results have become so divested of uncertainty, that it can no longer be considered as a subject belonging only to the progressive investigations of science. Like other high achievements which have preceded it, it is now in full energy, exerting and daily extending its influence upon the affairs and relationships of communities and of the world, but more than all others does it exhibit a capacity of rapid and universal extension.

In the year 1844 the first American line of Telegraph was completed by Professor Morse, of the United States, under the sanction of Government, and extended between the Cities of Washington and Baltimore, a distance of forty miles. This experimental line fulfilled all that was promised by its projector; but continued the only one in operation until the Spring of 1846, when, by the exertions of Joint Stock Associations, Philadelphia and New York were also connected with the Cities first named; and from that time, within a few short months, the system embraces an extent of upwards of thirteen hundred miles, connecting the following important points of the United States and Canada:—

From New York to New Haven, Hartford, Springfield and Boston,....	265
From New York to Albany, and the intermediate places to Buffalo,....	507
From New York to Philadelphia, Baltimore and Washington,	225
From Philadelphia to Harrisburgh,	100
From Boston to Lowell,	26
From Boston to Portland, unfinished, say,	55
(The whole distance is 110 miles, and all the posts are erected.)	
From Auburn (on the Albany and Buffalo Line) to Ithaca,	40
From Troy to Saratoga,	31
From Buffalo, U. S., to Toronto, in Canada,	125
Total,	1374

In addition to these, besides several contemplated inferior Lines, a principal one of nearly 1400 miles is represented as already contracted for, and most probably is in progress, extending from Washington, by way of Charleston and Mobile, to New Orleans. In fact no Schedule of Telegraphic Lines can now be relied upon for a month in succession, as hundreds of miles may be added in that space of time. So easy of attainment does such a result appear to be, and so lively the interest felt in its accomplishment, that it is scarcely doubtful that the whole of the populous parts of the United States will, within two or three years, be covered with a Telegraphic network, like a spider's web, suspending its principal threads upon important points along the sea-board of the Atlantic on one side, and upon similar points along the Lake frontier on the other. The experiment has proved that no important intelligence of general interest could touch any one point, but that, if need be, it would be instantly and simultaneously understood at every other point of such a system. This is assuming, however, that a net-work so liable to derangement by accident or by wanton injury, is at the moment in perfect working order. It is found not to be exempt from such occasional derangement; yet that the defect is, in most instances, such only as may be speedily detected and repaired. The whole range of wire being exposed to observation along a public way, it can be examined nearly as rapidly as the inspector can travel by the ordinary modes of conveyance adapted to such way.

This difficulty is therefore not considered of much weight against the more important recommendations of the Telegraph as at present constructed. It is besides surrounded by the moral and social protection of a well-understood common interest and benefit; so that a wilful injury to the Telegraph would bring upon its author, if detected, besides the proper civil penalty, also the disgrace which would be due to an odious offence against the public.

The confidence in the efficiency of Telegraphic communication has now become so established, that the most important commercial transactions daily transpire, by its means, between correspondents several hundred miles apart. Ocular evidence of this was afforded me by a communication a few minutes old between a merchant in Toronto, and his correspondent in New York, distant about 632 miles. The advantages of this rapid mode of communicating and of spreading intelligence, are also not less experienced by other classes, and especially by the farmer, who can thus, as promptly as the merchant, avail himself of a knowledge of changes in the market. This effect was remarked after the arrival of the *Hibernia* last month, with heavy orders for agricultural produce, and the news of the scarcity in Great Britain, Ireland, and elsewhere. Within four days from the time of the Steamer having touched at Boston, and almost as soon as the news could ordinarily have reached them, the farmers from the interior

of the State of New York, informed of the state of things by the Magnetic Telegraph, were thronging the streets of Albany with innumerable team-loads of grain, whilst the freight-trains of the Railways from thence to New York and to Boston, were wholly inadequate either to the conveyance of the accumulating supply, or to meet the urgent demands at the shipping ports.

From such general facts alone it may be inferred that the extension of the Magnetic Telegraph between important points, has not only so far been practically advantageous and successful, but, on the Great Lines at least, financially a good investment. The profits, in fact, are represented to exceed, on some Lines, the expectations of the projectors; but no authentic statements, I believe, have yet been put forward. The first dividend publicly declared on Telegraphic Stock is said to be on behalf of the New York and Buffalo Company, being 3 per cent. for the first four months—from 7th September, 1846, to the 7th January, 1847. It must be understood, however, that the right of the Patentees is agreed at one-half, whence the dividend of 3 per cent. to the Stockholders is only half the actual profit. This right does not at present extend to the British Provinces; yet all lines established in the latter would undoubtedly more or less contribute to the profit of those Lines which are beneficial to the Patentees. The claim of the American Patentees is chiefly, if not solely, to the mode of registration, which, because more simple, efficient, and certain than European modes, has been altogether adopted in the United States. But another mode is, I believe, before the public, claiming the superiority of legibly printing at once, on slips of paper, the ordinary letters of the alphabet, instead of the substitutes of lines and dots.

To this assumed improvement, however, Professor Morse has himself devoted much study; and, though he admits it to be practicable, does not acknowledge it to be susceptible of equality with his Telegraphic alphabet for the purpose of rapid communication; and that such improvement can besides be attained only at the expense of simplicity, and consequently increased risk of derangement in the mechanism employed. For these reasons he considers it unlikely to supersede the Register at present in use.

There is, however, another difficulty in the way of adopting different modes of registration, not very dissimilar to that of the break of gauge on Railways; wherever it occurs a certain delay must be the consequence. No doubt a method of printing the letters of the Roman alphabet at once, if unattended with any serious practical objection or difficulty, would be preferable to any other, and it would be desirable that its adoption should be general. But when a different system, answering so well, has already been widely extended, some time would be necessary to effect a change. Within the British Provinces, where Telegraphic communication has only commenced, any approved method might be adopted with less disadvantage, as only one point of communication, that by way of the Niagara, with the whole American system, would perhaps be established for some years to come. At that point only would the interruption and re-transmission of each communication be necessary, but would unavoidably incur serious delays when communications should follow each other in uninterrupted succession, unless the two modes of registration were equal to each other in point of dispatch. The accumulation of delay would vanish in the proportion that this equality should be attained; and when perfected, the inconvenience would be reduced simply to the loss of time incurred by each re-transmission.

With regard to the method and the expense of construction of Lines of Telegraph, the extensive demand in the United States has there created a class of persons who have acquired skill and experience which enable them to contract at a moderate rate for Lines of any extent, including all materials, excepting the Registers and Batteries, which make comparatively a small part of the whole cost of a long Line. The New York, Albany and Buffalo Line is reputed to be one of the most efficient in the United States. From such information as I deem to be reliable, the portion of this Line between New York and Albany was constructed by sub-contractors at about \$125 per mile, including all materials, with two Copper wires of 100lbs. each to the mile.

A Line between Halifax and Quebec, along the only Post Road at present in use, 668 miles, estimated at the same rate, would cost as follows:—

Construction,

Construction, 668 miles, at £31 5s. per mile,	£20,875	0	0
Equipment, say 10 Telegraphic Stations, requiring for each 2 Registers, at £11 5s., 2 Receiving Magnets, at £5,	325	0	0
	<u>£21,200</u>	<u>0</u>	<u>0</u>

To the above must be added the expense of cutting down trees which may be likely to fall within range of the wires. On the whole Line of the Saint Lawrence, from Quebec to River du Loup, the Road passes through cleared country. A very large proportion of the remainder of the Line to Halifax is also cleared; but an examination would be necessary in order to judge safely of the expense of clearing away such trees and such portions of the forest as might interfere with the wires.

I am personally ignorant of the character of the land route from Saint John to Halifax; but, assuming the obstacles on an average on that portion of the Line not to exceed the same from River du Loup to Saint John, I should conceive that it would, by judicious arrangements, cost less than £5,000 to remove the whole; and that this sum, with the view to an approximate estimate, may be assumed as a maximum. This would make the total cost of the Line £26,200.

The expense of working in an efficient manner may be approximately estimated as follows: say for four principal and six intermediate stations,	} £3,810	0	0
Office rent, stationery, fuel, light, salaries of a superintendent, four operators, four assistant operators, six operators at intermediate stations, messengers, &c.,			
The annual expense of Battery kept in active operation,	250	0	0
Interest on capital, £26,200, at 6 per cent.,	1,572	0	0
Travelling expenses, repairs, and contingencies,	1,368	0	0
	<u>£7,000</u>	<u>0</u>	<u>0</u>

The number of intermediate stations suggested may not at all times be so much demanded by the Telegraphic business at those points, as by the efficient preservation of the Line in working order, and the promptitude they will afford in detecting and repairing injuries. They may also beneficially promote, through the interior country, an intelligent appreciation of the merits of the Telegraph, and create a common interest in the security and perfect working of the Line at all times.

In order to judge of the extent of business necessary to yield a revenue equivalent to the above expense, the Tariff of the New York, Albany and Buffalo Line may be taken as a guide. (Copy annexed.)

Assuming that the Telegraph shall be in operation 300 days in the year, then 188 communications per day, or equal to 94 in each direction, of not exceeding 15 words each, transmitted the whole length of the Line, or 134 communications per day, or equal to 67 in each direction, if exceeding 15 words each, transmitted the whole length of the Line, charged at the rate of 2s. 6d. each for the former, and 3s. 6d. each for the latter, for transmission and delivery, would be necessary to yield the required Revenue: that is to say, without reliance upon profits from the intermediate stations, yet which may prove to be of importance.

In order to estimate the time which the transaction of the above extent of business would occupy at each of the extreme stations, we may take the 94 communications from each to be composed of 7,050 characters; which, at the rate of 80 characters per minute, would require 88 minutes for the transmission, an equal time being simultaneously occupied for writing out and delivery. But a skilful operator can transmit on emergency 100 to 120, or even more characters per minute, or equivalent to the above 7,050 in about an hour.

Gentlemen engaged in mercantile affairs in the principal sea-ports of the British Provinces, are the most competent judges whether the average of about one hour per day be the extreme probable employment that will be given to a line of Telegraph capable of transmitting in both directions, when connected with Montreal and Toronto, almost instantaneous intelligence between all these places and the several ports of the

Atlantic

Atlantic coast, from the Gulf of Saint Lawrence to the Gulf of Mexico. Also rendering the arrival of a British Packet at Halifax equivalent in the effect of the intelligence with which she may be charged, to her arrival at New Orleans, and at every telegraphic station nearly at the same time; and again, her departure from Halifax to Europe, equivalent, in point of intelligence, to her departure, nearly at the same instant, from all the important points of North America.

With regard to the time that would be necessary for the construction of a Line of Telegraph between Quebec and Halifax, all the poles might be deposited in their places, and all materials be nearly in a state of readiness before the present frost be out of the ground; after which the progress of the work will depend much upon the arrangements made and the force employed. If so desired by the respective Provincial Legislatures, and the gentlemen who may actively interest themselves in the accomplishment of the object, and provided the necessary exertions be ordinarily prosperous, the whole line may be fit for the transmission of intelligence by the end of July next.

I have estimated for the cost of a line by way of the Post Road at present used by Her Majesty's Mails, chiefly because the route appears to offer facilities for the prompt construction, and afterwards for the management and preservation of the line, at materially less expense than seems to be practicable by any other route, whether shorter or longer, no other being as yet so well settled or free from natural obstacles. The opening of any other and more eligible line is merely a question of expense. The difference with respect to local objects would be comparatively small.

1. Say distance from Quebec, via Fredericton and Saint John, to Halifax,	668 miles.
Add a Branch from the Bend of Petitcodiac, extending through Miramichi to Bathurst,	138 "
	<hr/> 806 "
2. Say distance from Quebec, via Metis, Campbellton, &c. to Halifax,	657 miles.
Add a Branch from the Bend of Petitcodiac to Saint John & Fredericton,	158 "
	<hr/> 815 "

If I may be permitted to express an opinion as to the reason assigned for preferring a line remote from the American frontier, I should say that it is in a material degree founded in misconception. From the observations already made, it is manifest that there is and must be a common interest in the security and success of such a line, as the principal or trunk line of the most rapid communication between the whole of this Continent and Europe. Our interest in partaking freely of the advantages of the whole American system cannot be less important to us than a like interest in our system to them.

For the present the British Mail is transmitted through New England to Montreal, but the establishment of Railway communication for the same object through the Provinces, will no doubt embrace also the means of telegraphic communication. Yet, independently of this, it is true with regard to both the immediate and prospective importance of a line of Telegraph by way of the Metis, that it holds out the recommendation of touching at several ports along the eastern coast between Quebec and Halifax, and thus promises to benefit in a high degree the shipping and commerce of the River and Gulf of Saint Lawrence, whilst the distance being nearly the same, the heavier cost of constructing and protecting the line, might not, upon investigation, seem to outweigh its advantages; and if once in operation, the same consideration of utility would tend to ensure its permanence, even after a more direct line along the route of the Railway may be established. Should the coast line, therefore, be at all events preferred in Canada, these may be reasons for concurring in its adoption:

In the mean time it is our obvious policy to inspire and advance our frontier population by the encouragement amongst them of every judicious enterprise that may tend to such a result.

All which is with great deference submitted.

I have the honor to be, Sir,

Your Excellency's most obedient humble servant,

J. WILKINSON.

OFFICE OF THE NEW YORK, ALBANY AND BUFFALO TELEGRAPH COMPANY.

Utica, September, 1846.

RATES OF CHARGES:—For the transmission and writing out of every Communication of *Fifteen Words* or *under* (every Figure or Character beyond the Address and Signature being counted as a Word,) viz:—

For any distance—

Not exceeding 50 miles,	15 cts.	For every additional Five Words or under,	10 cts.
Over 50 and under 150 miles,	25 cts.	“ “ “	10 cts.
Over 150 and under 300 miles,	35 cts.	“ “ “	15 cts.
Over 300 miles,	50 cts.	“ “ “	20 cts.

Exclusive of the charge for delivering Communications, which in Cities and Villages will not exceed Two Cents each.

REGULATIONS:—1. *First come, first served.* 2. *Payment in advance.* 3. Communications to be written in plain copy and handed to Manager. 4. No one to occupy more than fifteen minutes, whilst others are waiting. 5. No talking allowed in the Operator's Room during business hours. 6. No admission in the Operator's Department without special permission.

Communications destined for any place beyond the termination of the Telegraph, or branching off from any Station, will be faithfully written out at the last Station, and put into the United States Mail.

THEODORE S. FAXTON, *President.*

C. LIVINGSTON, *Secretary.*

TABLE OF DISTANCES BY TELEGRAPH.

From New York to Troy and Albany, 180 miles.

From Troy and Albany to Utica,	100 miles,	- - -	280 miles distant from New York.
Utica to Syracuse,	50 “	- - -	330 “ “ “
Syracuse to Auburn,	26 “	- - -	356 “ “ “
Auburn to Rochester,	78 “	- - -	434 “ “ “
Rochester to Buffalo,	75 “	- - -	509 “ “ “

(SUPPLEMENTARY.)

Since closing the foregoing Report, I have, at Your Excellency's request, perused the Report and Estimate of Doctors Robb and Toldervy, dated on the 25th ultimo, with regard to a Telegraphic line between Fredericton and Saint John. In their Report generally I entirely concur, excepting with regard to the expense of constructing the line mentioned. In the absence of other data for their guidance, they have very properly, and of necessity, founded their estimate upon the circumstances of perfect novelty and inexperience involved in the undertaking in this Province. They have consequently assumed to be necessary to the efficiency of the Telegraph certain precautions, materially enhancing the cost, which experience in the United States has proved to be dispensable.

1. The insulating of the extended wire, (except at the points of suspension.)
2. The bracing, framing, planing, ballasting, &c. of the poles.

It is found to be sufficient to use a simple pole of Oak, Hemlock, Pine, Spruce, or Hachmatack, in its rough state, with the branches merely trimmed off, and measuring about thirty feet long, eight inches diameter at the butt, and four to six inches at the top. This is inserted in a hole about five feet deep, made by a boring tool contrived for the purpose. Such poles may be obtained in this Province, delivered where required, at from 8d. to 1s. 3d. each, according to situation.

The additional expense of Kyanizing or Paynizing might be advisable. The expense of the former process, which is found to be efficient, is about equal to 2½d. currency per cubic foot. It would probably enhance the cost of the poles about 50s. or 60s. per mile.

Whilst the experiment was yet untried in the United States, Professor Morse estimated the expense of constructing a line on poles at \$350 to \$400 per mile; but, including every thing, the actual cost of the line between Washington and Baltimore largely

largely exceeded this estimate; involving as it did, numerous expenditures of an experimental character. Profiting by the experience thus obtained, and by still more extended trials, it is now found practicable in the United States to construct an efficient line at the comparatively trifling cost exhibited in the Estimate which I have submitted to Your Excellency.

I believe it would not be found difficult to contract with competent persons in the United States to construct a long line at that rate, but probably for a shorter one a higher rate might be demanded.

J. WILKINSON.

Report to His Excellency Sir W. M. G. Colebrooke, K. H., &c. &c. &c.

On some of the results of experience in the United States, with regard to the use of Wood in the construction of Railways, and with reference to the construction of similar Works in the Province of New Brunswick, by J. Wilkinson, of Surveyor General's Department, N. B.

Fredericton, 17th March, 1847.

MAY IT PLEASE YOUR EXCELLENCY,

Agreeably to the instructions communicated to me by direction of Your Excellency on the 8th January last, I have now the honor to submit such observations on Railway experience in the United States, as may be useful in this Province.

The pressure of time on this occasion does not permit me to treat the subject either as fully, or with so much care, as I should otherwise desire; but any further information in my power to communicate is at Your Excellency's command.

In the construction of Public Works, it is doubtless the wisest policy to have regard to the utmost degree of perfection consistent with circumstances and a well-considered economy. Hence the costly degree of perfection generally exhibited in such works in Great Britain and other portions of Europe, and also in the older parts of the United States, where population, trade, manufactures and wealth are so largely disproportionate to the corresponding circumstances here. For this reason there are but few of the more perfect models which we are competent in all respects to imitate. We can understand and profit by the same principles, but the same details of application are, as a general rule, not expedient.

But it does not necessarily follow that we must wait until our social condition be advanced to that of older countries, in order to enjoy, in many respects, equally the advantages of science and mechanical skill in our public works. We are, on the contrary, surrounded by inducements and by natural advantages, which, though associated with some difficulties, hold out the promise of ample success to well directed industry and enterprise, even with very moderate extraneous aid.

The enormous expense of the first Railway experiments in England for the transport of both passengers and freight, did not divert our neighbours on this side of the Atlantic from the incalculable advantages which were assured by an improvement so great and so peculiarly adapted to this Continent. On the contrary, they immediately began to consider the means within their reach of securing its benefits. They had the advantage of experience, purchased so liberally by British enterprise, and also natural advantages of their own, not available in England. In New England, indeed, where population, wealth, and local circumstances, amply justified the attempt, Railways were begun and finished very closely after the English model. But in South Carolina, where the abundance of timber and the favorable character of the country naturally suggested the idea, timber foundations, and also rails essentially of timber, were adopted to obviate the costly alternatives of earthen excavations and embankments, solid masonry, and the heavy iron rail.

A Line of this kind was constructed between Charleston and Augusta, 136 miles, within the years 1830 to 1833. Descriptions of the road, more or less particular, are given in some of the published official reports in relation to the work, on the authority of which I believe that dependance may be placed.

The result appears mainly to have fulfilled the expectations of the projectors, leaving no material difficulty to be provided for besides the consequence of the perishable quality

quality of the structure, which was well understood and anticipated. It was necessary that all the timber should be periodically renewed, or that permanent earthen embankments and masonry should be supplied. The latter alternative was adopted, and the road being in full operation afforded facilities for embanking which rendered the cost comparatively light. But it does not appear from the experiment, that had any certain means of *preventing the decay* of the timber been known and made use of, that any necessity for embanking would have arisen for an indefinite period, if at all.

The manner of construction was, upon well-driven piles when the ground was soft, upon trestles when firm and solid, and simply on longitudinal under sills united by cross-ties, when excavations occurred, or where the grades coincided nearly with the natural surface.

Besides the exceedingly small expense, the advantages of this method in superseding, to a great extent, the necessity of bridges, culverts and drains, and in avoiding the disasters which are so liable to be the result of any insufficiency in these structures, appear to have been very deserving of notice. The adaptation of the plan to large portions of this Province, and to similar descriptions of country everywhere, will appear by the following extract from the Report of the Commissioner of the South Carolina Rail Road, dated May 1st, 1838, being after the first year of trial of that Road:—

“The plan adopted in the construction has been peculiarly fortunate; it has been emphatically called the ‘Inland Bridge’—recently it has proved itself so. At a time when every mail teemed with accounts of the disasters occasioned by the late heavy freshets; when the Savannah River rose higher than it has done since the memorable Yazoo freshet; when serious apprehensions were at one time entertained for the safety of the Augusta Bridge; when the houses in Hamburg were encompassed by water, and all communication between Hamburg, Augusta, and Barnwell Court House was suspended for three days, and resumed on the fourth at the risk of losing the mail and the lives of those entrusted with its conveyance; when the navigation of the rivers was stopped, their banks strewed with fragments of houses, mills, &c.; the highland roads washed into gullies, and the bridges in the low countries in many places washed away—at this period, so destructive to property, and when intercourse between various parts of the country was entirely stopped, it will be gratifying to stockholders to learn, that, with the exception of the sliding of the side of a bank on the road (avalanche) within two miles of Hamburg, the works have not sustained injury to the amount of five dollars. *During this whole period the trips were performed regularly in the usual time and with the usual load, and the passengers experienced no inconvenience, except that resulting from a moist atmosphere.* Had the system of embankment, which is generally resorted to in similar works, in order to preserve the grade over low grounds, been adopted in this work, it is probable that a large portion of it this day would have been a mass of ruins; as human sagacity could scarcely have anticipated the necessity of culverts sufficiently capacious to have afforded an outlet to such immense and overwhelming floods.”

But the security afforded under such circumstances as the foregoing is not the only benefit likely to be derived from the same plan in a climate where deep and drifting snows threaten to interrupt, if not to prevent railway communication for several months in the year. So plainly essential to the success of a railway are certainty and regularity of communication, that without some satisfactory assurance that these are attainable at a limited and reasonable expense, the prudence of embarking in such an enterprise might be justly questioned. When, however, uninterrupted transportation may appear to be feasible by a plan not only avoiding extraordinary outlay, but requiring even a less expense for the whole construction and management than by any other, its claim to consideration in these Colonies seems to be such as will scarcely be overlooked. Such plan appears to be that of an open wooden structure, elevated above the ordinary level of the snow, and presenting slight obstruction to the same in a drifting state. There are questions of detail in relation to this object which may for the present be deferred.

After an eight years trial of their system, the President of the South Carolina Rail Road Company, in a Report dated in 1840, thus speaks of its merits:—

“The superiority of the peculiar construction of our road—the superstructure on piles driven into the ground and embanked afterwards—was shewn very satisfactorily in

in the repairs after the great flood of the Savannah River in May last, which raised the water five feet over the top of the rails, yet not one fourth thus covered were removed; and had it not been for the great weight of timber, houses, and whole trees, which were forced against it with great violence, no part would have been dislodged from its foundation.

“The plan, regarded by many as a great mistake in the building of the Road, has proved an economical one, as well in repairs as original construction.”

The following is from a semi-annual Report in 1843:—“The construction of the Road on piles is becoming more in favor with others, as well as those having the advantage of it. Several Roads at the north are partially on this plan. The New York and Erie Rail Road, to be 446 miles long, is to be about one half built in this way. Over 70 miles of piles have been already driven.

“It saves much of the cost of embanking a Road by being able to transport the earth upon it to fill the vallies and swamps, and before it is necessary to do this, the income of the Road is providing for the payment while it is constructing.

“It preserves the line and level of the Road after the embankment is made. When Roads are built on fills and cuts without piles, the superstructure is continually liable to be disturbed by the sinking of the banks, or water settling in the excavations, much to the injury of passing trains, breaking axles, and otherwise deranging the machinery of the engines.”

The same Report furnishes a statement of the cost of the Road, from which it appears that, for the wooden structure and materials, it amounted to \$584,542 43; or equal to \$4,300 per mile, exclusive of iron and spikes for the plate rail, which amounted to \$125,309 47, or about \$921 per mile. Preliminary expenses, Surveys, Engineer department, workshops and materials, machinery, engines, cars, inclined plane, land, road police, office expenses, &c., amounted to \$241,296 47; or equal say to \$1,774 per mile.

The Road continued in active operation as thus constructed until 1836, when heavy repairs became necessary. At this time, therefore, the whole expense of the construction of the Road, exclusive of the *Iron rail* and the other expenses above enumerated, was no more than \$4,300, or £1,075 Halifax currency, or about £896 sterling, per mile; and including everything, only equal to about £1,460 sterling per mile, under the unfavorable circumstances of a first experiment.

Afterwards the replacing of such timber as had began to decay, the embanking of the piled portions of the Road, and importing heavy flanged iron, increased the whole cost to \$2,506,762 61, or equal to \$18,432 per mile, up to the year 1839. Since then the increase of cost appears to be upwards of one half more. But how this arises, or for what reasons the Company may have deemed it necessary or expedient so largely to increase their permanent expenditure, are questions which do not seem to be involved in that under consideration. It appears that during a period of at least four years the advantages of a Railway were obtained and enjoyed for the small expenditure before stated; but afterwards that the progressive re-construction of the work, at heavy expense, became necessary. It is therefore chiefly desirable to ascertain whether the same advantages might not have been secured for a much longer, or even for an indefinite period, without further extraordinary expenditure, or any serious practical objection to the plan itself, had the material employed in the first construction been *imperishable*.

The opinion of Engineers of long known ability and experience in the United States, as well as of others practically conversant with the subject of Railways, is, that there is no valid objection to a properly constructed wooden foundation, except *the perishable nature of the material*. That as a general rule, to which all must assent, the introduction of perishable materials into works intended to be permanent, is as much as possible to be avoided; and at the present time wherever the means can be commanded, earthwork and masonry are generally preferred. Under different circumstances, however, and where wood is abundant, the piling system is adopted, if the character of the country will permit; for besides being more rapidly executed, it is regarded as an efficient and economical foundation, even at the risk of a periodical renewal every five or six years.

In some of the substantially constructed Railways of New England, small portions founded wholly on wood are to be met with, and which have been so constructed either from the necessity of the case, or from some consideration of present economy. In passing over these the passenger is unconscious of any transition from the earthen foundation.

I was kindly invited to pass over and examine, in company with the Engineer, a portion of wooden foundation adopted on a Branch Railway from Salem to Danvers, just completed and opened for traffic. It had been thus constructed with a view to dispatch and the more immediate benefit of the Railway, leaving the filling up with earthwork to future convenience before the wood should have time to decay. The elevation of the work, substantially constructed on piles, is from five to thirty feet above the natural surface of the ground. During the passage of the train no vibration or unsteadiness was perceptible; and in standing upon the platform behind the last car, as it were in mid air, and in clear view of the open wooden framework below, retreating with a velocity of 25 miles per hour, it was not easy to conceive how it could be more difficult to pass any ordinary depth of our northern snow, and that at rates of speed equal to those attainable under the most favorable circumstances.

The expense of this wooden structure was from two dollars to six dollars per running foot of the Railway. But besides the great elevation of the way, a large proportion of the piles were driven to a great depth, and in deep water. At two dollars per foot, for which a portion of this example was made, the cost would be equal to about £2180 sterling per mile, the elevation being about 10 feet, and the piles driven to a depth of 12 feet. The timber was here, however, comparatively expensive, being obtained from a distance, and as an article of merchandise.

I was favored in a very obliging manner with the opportunity of inspecting the result of a wooden structure on the New York and Erie Rail Road, which is of the broad gauge, and intended as one of the great trunk lines of the Lake and Western Trade. The portion to which I have reference is near its commencement, and consists of a viaduct 60 feet at its highest part above the bed of the valley over which it passes. Thirty feet of this height consists chiefly of an earthen embankment, and partly of a stone bridge; but in order to avoid the delay and immediate expense of so heavy an embankment as that which would be required for the whole elevation, the remaining 30 feet was filled up with strong trestles of white oak. At the time of my visit this had been subjected to a regular traffic of upwards of five years, and still remained strong, steady and sufficient. But in order to provide against the certain effects of gradual decay, the whole structure was in progress of being embanked with earth to the level of the Roadway. Earthen embankments had also been made on this division of the Road wherever the timber structure had in the first instance been employed. But I was assured by the Engineer of the work that no practical or efficient objection existed to this kind of foundation, except that of the perishable nature of the material, and that notwithstanding this objection, where wood was abundant, the plan was the most easy and rapid of execution, as well as in the first instance the most economical, and in a climate where communication was liable to be impeded by snow, it was superior to any other that had been devised.

A large portion of the Line of the New York and Erie Rail Road, where the country was favorable, has been piled; but the financial difficulties of the Company having caused a suspension of their works until recently, they will be deprived of much of the benefit of the wooden structure. It has been exposed to decay during several years, but will still afford the foundation of a Railway, which beside sustaining a regular traffic in the meantime, will facilitate the substitution of earthen embankments in an economical and expeditious manner.

A practical exposition of the merits of this system is afforded by the following extract from the evidence of one of the intelligent and experienced Engineers of the New York and Erie Rail Road, as given before a Committee of the Legislative Assembly of the State of New York, appointed to investigate the affairs of the Company, in the year 1842:—

“ Question 23.—Have you made or examined any tests with the view of ascertaining the comparative merits of a Rail Road constructed upon piles, and one upon a bed of earth or stone, and if so, state the conclusions to which you have arrived, with the facts connected therewith? ”

“ Answer.

“ Answer.—I have made numerous examinations relative to the construction of Rail Roads upon *piles* within the last three years, and have become thoroughly convinced that the piling system is an important improvement in Rail Road construction, and especially in *northern climates*, where *severe frosts* and *deep snows* are common in the winter months.

“ A Road resting upon white oak piles (from eleven to eighteen inches in diameter,) driven to a depth of *five* feet or over, and in all cases reaching a solid foundation, and sawed off two or three feet above the surface of the earth, is not liable to derangement by *frost*, nor obstructions by *snow*, and combines in a greater degree than any other mode that has been adopted in this country, *cheapness and permanency*—the two most essential requisites in Rail Road construction. Piles that have stood in the most exposed situations on the Utica and Syracuse Rail Road for the *four* past winters, and those driven on this division during the summer and fall of 1840, in every variety of *soil*, abundantly prove the fact that *frost* cannot displace them, if they are driven to a depth of *five* feet or over.

“ A piled road is also free from the obstructions and dangers incident to a graded (earthen) road, in consequence of the washing of the banks by floods and rain, and by *settling* when on a *soft* bottom; thereby requiring constant *annual expense* to adjust the road and replace the earth material.

“ It will, I think, also lessen if not entirely prevent the frequent accidents that occur on graded (earthen) Rail Roads, arising from cattle and other animals obstructing the track when trains are passing at high rates of speed.

“ The permanent and uniform foundation that a piled road affords during all seasons of the year, cannot, I think, be too highly appreciated; and for roads calculated to transport heavy freight, its decided superiority over the usual modes of constructing Rail Roads in the State cannot be questioned.

“ From the experience afforded me during the construction of the Syracuse and Utica Rail Road, as well as the two past years on this division,* I have no hesitation in strongly recommending the adoption of a piled road, wherever the nature of the soil, surface of the country, and a supply of suitable timber will admit of the structure. On this division* there is being made over *one hundred* miles of *piled* road, along the valleys of the Susquehannab, Chemung, Tioga, and Canisteo Rivers, of which the piles are now driven for *seventy* miles; and the eight steam pile-drivers are now in operation, driving the residue at the rate of *ten* miles per month.

“ The actual cost of this piling (when sawed off in readiness to receive the superstructure) has averaged less than *two thousand dollars per mile*,† including the white oak pile timber, from eight to thirty feet in length, and from eleven to twenty inches in diameter, costing on an average about three and one half cents per lineal foot, delivered on the line of road. These piles are driven from five to twenty feet, and where required by the looseness or softness of the earth, double piles are driven to the depth of fifty feet or more, and sawed off from two to four feet above the embankment, or the natural surface of the ground.

“ To have substituted a graded (earthen) road-bed in place of this *piled road* in this division would have cost not less than *four thousand dollars per mile* for the whole distance, without including the grading necessary for the piled road, when the surface of the earth requires to be excavated or embanked for the purpose of bringing the earth grade from *one* to *four* feet from the grade-line of the road. No difficulty has been experienced in driving white oak, chestnut, or Norway pine piles below the reach of the *frost*, in sand, gravel, clay, or alluvial soils; and wherever excavations or embankments occur exceeding four feet in depth or height, the cost of removing the additional quantity of earth necessary for a graded road-bed, with its side ditches, *exceeds* the cost of piling, including the piling timber.

“ The excavations for piled road on this division are made twelve feet wide on the bottom, with side slopes of one foot verticle to one and a half feet horizontal. The piles are sawed off one foot above the bottom of the cut, and a ditch of three feet wide and one foot deep is made between the rows of piles, to carry off the water. The earth from the excavations is carried into embankments, where the grade exceeds

* Susquehannab division of the N. Y. and Erie Rail Road.

† Say equal to £417 Sterling.

“ three feet in height. The embankments are made to within three feet of the tops of the piles, twelve feet wide on the top, with side-slopes of one and a-half feet to one foot.

“ From the experience that I have had in the construction of pile road, and from the examinations that I have made relative to the cost of grading, and keeping in repair the ordinary graded roads of the country, I think I am within bounds when I say that the interest of the amount saved by building a piled road instead of a graded road, for the one hundred miles on this division, together with the annual expense in keeping a graded road-bed in good adjustment and repair, will *renew the piles*, should it be necessary, every *five or six* years, so long as suitable timber can be obtained at *twice* its present cost in that division.

“ If the white oak piles should not remain sound more than eight or ten years, the expense of filling around them with earth, at the expiration of that time, with the use of cars to move the earth, would cost at least *fifty per cent.* less than it would now cost to make the embankments to the graded line with barrows or waggons; as most of the earth would require to be drawn from the hills, for great distances, in consequence of the alluvial soil, found along the bottom lands of the rivers, not being suitable for a road-bed for a graded road. Wherever the valleys to be filled are deep, and the excavations from which the earth is to be taken to embank over them, are at any considerable distance off, the hauling of the earth is postponed until the track is laid on the piles, and then done with cars at a great saving of expense.

“ Another consideration in favor of a *piled road* is, that when the piles are partially decayed, the earth embankments can be *cheaply* brought up to grade, as has been shewn, and the strength of the *pile* will, for many years thereafter, keep the road from settling; thus you will perceive that the superstructure having been kept from the ground, and of course in a great measure preserved, the earth being brought to grade, as before remarked, and well rammed under the superstructure, we have a new and permanent road, much more permanent than roads where the rail is laid upon a new, and of course not thoroughly settled embankment.

“ The construction of pile road on this division has, I think, enabled the Company to make contracts with the landholders along the route (where such road is made) for right of way, fencing and farm-crossings, for at least *seventy five per cent.* less than they could have done had a graded road been substituted in its place. This arises from the fact that while the piles remain in good preservation, there will be no necessity of fencing along the Rail Road, excepting the nailing of a few boards upon the piles, while the farmer can cultivate all the land sold to the Company, and which is from four and a half to six rods in width, (until it is required for a graded road,) except the width of eight feet, occupied by the *piles*. The piled road also permits cattle and other animals to pass *under* the track, and thus saves the great expense usually required on graded roads, to make embankments on the roads for farm crossings, or expensive bridges or culverts, to allow teams and cattle to pass under the road. A large amount is also saved in the single item of *cattle guards*, necessary on graded roads, to prevent cattle from passing from private or public roads, on to the track of the Railway, and thereby obstructing the passage of trains; and which occasions a great share of the destruction of life and property on graded roads.

“ As I have before remarked, the great advantages of the *piling system* consist in its *cheapness* and *permanency*; and in regard to its *durability*, it will be seen, that if the perishable material of which it is constructed can be renewed at an expense of less than the *interest* upon the difference in the first cost, and necessary annual expenses, (when compared with a graded road,) it must result in an ultimate *saving of expense.*”

The substance of this testimony, received with that consideration to which the opinions and experience of other competent Engineers support its claim, gives to the question of Wooden Railways a peculiar interest in these Provinces, and places in a striking light the importance of some available method of insuring their durability after their first construction.

The most satisfactory experiments which as yet appear to have been made in the preservation of wood, are by the process of “Kyanizing;” not that they conclusively establish the comparative merits of this process, but because they extend over a longer period

period of time, say than any experiments by the more recent methods which have been introduced to public notice, amongst which the most approved appears to be that of "Paynizing."

No well authenticated instance is known of the failure in the United States of the Kyan process where it has been fairly tried. On the contrary, prepared Railway sleepers of Spruce, one of the most perishable of American woods, exposed in a manner least favorable to its durability, have been found at the end of six years, the full time of its ordinary duration, remaining quite sound and elastic, and even retaining the original marks of the saw. The cost of this process by hydraulic pressure has been found to be 5 12-100 cents, or about equal to 3 1-8d. Halifax currency, per cubic foot. By soakage only, it ought to be much less, as the value of the corrosive sublimate necessary to each cubic foot, does not, according to some experiments, exceed 1 1/2d. currency. The efficiency and economy of this process, as now confirmed by numerous experiments, has tended to create a general confidence and renewed interest in it; the risk of further trials is now freely incurred, and its extensive adoption is highly probable.

The simple process of natural absorption, by immersing the foot of a newly-felled tree in a preservative solution, say the pyrolignite of iron, seems well deserving of consideration and further experiment. By this process it would appear that the vitality remaining in the wood for a short time after it has been cut, causes the artificial fluid to circulate with the natural sap throughout the whole tree. Mr. Bethell claims a right in this process by patent, dated July 11th, 1838. Public attention was drawn to the discovery by Dr. Boucherie, of Paris, in 1840. It would of course be necessary that this process should be practised on the spot where the timber is cut.

It seems difficult to attach too much importance in these Provinces to some feasible and certain method of rendering wood, if not imperishable, at least capable of resisting decay for a long period. The effect would be to place us in a position to prosecute a railway system, and other works, at a cost so moderate as to remove reasonable fears of success. It would probably also give us a large share of additional manufacturing benefit in the staple of the country. For the preservative process seems to be most easy and effectual when applied whilst the wood is in a *green* state.

WOOD AS A SUBSTITUTE FOR IRON RAILS.

So far we have chiefly considered the eligibility of Wood as the principal material in Railway foundations. The entire substitution of Wooden for Iron Rails, and thereby avoiding nearly the whole expense of the latter, has perhaps engaged more attention in these Provinces than in the United States. On first naming the subject of wooden rails in that country, you are understood to mean the wooden rail, or longitudinal sill, upon which a light plate of iron is laid and secured, as in the first experiments there. But this expedient, having been found to be very objectionable and insufficient, especially under heavy locomotives and high velocities, is generally becoming abandoned in favor of the heavy iron rail. The light iron plate of 2 1/2 inches by 1/2 inch, is found to be too flexible, and the wood beneath it too compressible. It is now deemed necessary, even with a continuous wooden bearing, that the iron should possess the stiffness of the usual forms of the heavy iron rail. The failure of the light plate rail, therefore, seems to have created a degree of prejudice against much dependence upon wood, and a dependence upon it altogether is regarded as somewhat chimerical. The results of the limited experiments in England have not apparently had the effect of disturbing in the United States the general conviction of the necessity of employing strong rails of iron in order to sustain a heavy transportation.

It may be allowed that the statements of the experiments as yet made, though calculated to give a favorable impression, do not conclusively settle the question of the safe application of the wooden rail to the various circumstances of a long line of Railway, intended to sustain heavy loads and high velocities. Enough however has been made known to draw attention in these Colonies to the importance of a more perfect investigation of the subject. A few suggestions in relation to it I will venture to submit.

The principle of the wooden rail is acknowledged to be without novelty. Its employment is merely a return to what was in use upwards of two hundred years ago, but

now resumed under the more favorable circumstances of greatly advanced knowledge and experience. The form of the rail appears to have been not materially different from that which has been subjected to recent experiments; but the wheels of the wagons are said to have been, during a long period, only of wood, and of rude construction. Afterwards cast iron wheels were introduced, which, it would appear, from their imperfect adaptation to a rail of much softer material, soon led to the use of cast iron rails. Again a difficulty was experienced. It was found that the cast iron rails, especially *when their surfaces were narrow*, cut the rims of the iron wheels, forming indented grooves, which caused considerable friction, and the frequent breaking of the rails. To remedy this, *the breadth of the surface of the rail was increased*, which diminished the evil to a certain extent, but the expense of repairs was still considerable. A complete remedy was eventually effected by "*case-hardening*" the rim of the wheels in the process of casting. The further improvement of introducing malleable iron rails, was for several years retarded by the same evil which first appeared in the use of the cast iron rail; *the narrowness of the edge* being found to cut the periphery of the wheels. The cast iron rail, with a broader surface, was therefore preferred, because a malleable iron rail, with a surface *sufficiently broad*, was too costly. But eventually a malleable iron rail was produced, the section of which presented *the same bearing surface* as the cast iron rail, combining with lightness the necessary degree of strength.*

Now it seems manifest that these progressive improvements proceeded from a *necessary regard to the relative hardness of the periphery of the wheel and the bearing surface of the rail*. Cast iron wheels were found to cut a soft material like wood, and rendered also cast iron rails *apparently necessary*. But these, when narrow, were found in return to cut the wheels, an evil which was in part remedied by making the surface of the rail *broader*, and more perfectly remedied by making the periphery of the wheel *harder*. It was also found necessary to the success of the malleable iron rail that the *breadth of bearing surface* should be adjusted to the relative hardness of the periphery of the wheel.

These considerations seem applicable to the failure of the iron plate rail spiked upon a rail of wood, as tried in the United States. It is obvious that a thin ribbon of iron, only 2½ inches wide, could do no more than protect the wood from the abrasive action of the wheels. It was too narrow and flexible to prevent the effects of *compression*. Hence nearly the same result might be expected, though in a less rapid and sensible degree, as from the first experiments of narrow cast iron wheels running immediately upon wood. A thin strip of iron, subjected to the rolling action of a heavy pressure, and depending for its stiffness upon a soft and irregularly compressible bearing, must necessarily lose the essential qualities of a rail. It could not remain either uniformly plain or rigid.

For this evil there appears to be three remedies, differing materially in their relative economy.

1. An iron plate rail widened to an extent to be determined by its increased stiffness, and the hardness of its wooden bearing.
2. An iron rail of suitable form, and sufficiently stiff to compensate for its narrowness of bearing upon wood.
3. A rail exclusively of wood, to which the width of the rim of the wheels of the locomotive and of the train shall be duly adjusted.

The second of these remedies is that adopted in the United States, and which involves a minimum of expense of eight or nine thousand dollars per mile for the iron and its fastenings.

Yet without further and satisfactory experiments, there seems to be no sufficient reason to doubt that nearly the whole of this outlay might be avoided by the third proposed remedy; and which is the adoption of a duly proportioned wooden rail, to be acted upon by iron wheels, *the peripheries of which shall be plain, and of a width which shall be adjusted to the weights and velocities to be sustained, and the relative hardness of the wood*, thereby obviating the necessity of a bearing surface of metal in any form.

But

* Wood's Treatise on Rail Roads, pp. 8, 13, 141, 191, 192.

But the experiment should include the substitution for the "flanches" now in use, either the grooved diagonal guide wheels of Mr. Prosser, or plain horizontal wheels to roll against the inner side of the rail, for the same purpose.

I would therefore suggest, in order more perfectly to test the merits of this kind of rail, that such experiments should be made as may be sufficient to determine whether its efficiency does not depend upon a due adjustment of the width of the iron periphery of the wheel as may be due to the relative hardness of the wood under the pressure of given loads, and under the least favorable circumstances incident to railway transportation. It is probable that one result of such experiments would be to show that the diminution of the compression is nearly as the square of the ratio of the increase of the width of the periphery of the wheel, that is to say, by increasing such width twice, thrice, or four times, we relieve the fibres of the rail from the compressing or crushing effect as four, nine, or sixteen times.

Further experiments appear also to be necessary in order to determine the adhesion of the driving wheel upon wood under various circumstances. It has been represented as much more than upon iron. In a dry state this is very probable; but in a perfectly wet state it is doubtful whether it will not be considerably less, and if so, the supposed advantage of being able to ascend steeper acclivities on the wooden rail may cause disappointments against which it is very material to guard. The same expedient, however, which has been beneficially adopted in the iron rail in a wet state, that of sanding, may prove to be equally or more efficacious on wood.

In the meantime there appears to be no sufficient reason to discourage a reliance upon the wooden rail under ordinary circumstances, if abundant breadth be given to the rims of the iron wheels. In the breadth of the wood a liberality can be observed, which in the use of iron is restrained to a minimum by its costliness.

In closing these imperfect observations, it may be proper, with regard to the general recommendations which they convey of wooden foundations for Railways, to remark that it is not pretended that they can always obviate expensive cuttings and embankments, which must in some instance of necessity be encountered.

I have the honor to be, Sir,

Your Excellency's most obedient humble servant,

J. WILKINSON.

To His Excellency Sir Wm. M. G. Colebrooke, &c. &c. &c.

Extracts from Reports of the Honorable Captain Owen, R. N.

On the Port of Whitehaven, and other Ports and Harbours on the Atlantic Coast of Nova Scotia, eastward of Halifax.

(Copy)

COLUMBIA, *Halifax, N. S.*, 5th September, 1846.

SIR,—Your Excellency was pleased to refer to me on the subject of the Ports in the Promontory of Canseau, but as the information I was then (last Wednesday) able to give Your Excellency was verbal, and therefore evanescent, I have presumed it may be more acceptable in an authentic and tangible form.

My attention was directed by His Excellency Sir William Colebrooke, to the necessity of making such a nautical reconnoissance of the Coasts of the Promontory of Canseau, as might assure us that there was at that point a safe Port, easy of access, not incommoded by ice at any season; and, in short, such a Port as might with advantage be used as the junction of sea and land communication between Great Britain and her Colonies in North America, &c.

As I had never before visited any of the Ports at that extremity of Nova Scotia, I examined (by actual visitation) Country Harbour, Torbay, Whitehaven, and the Ports of Canseau and Guysboro', and reconnoitred all the intermediate shores.

There are serious nautical objections to the adoption of any of the points mentioned, which are unnecessary to detail in this communication, except only Whitehaven, of which the Admiralty Charts give very good plans. Lieutenant Shortland, Commander of the Columbia, surveyed the approaches to Whitehaven, and we gave three days to its examination.

Whitehaven

Whitehaven is not only most conveniently situated, being the nearest approachable point of the Continent of North America to England or Ireland, (in latitude $45^{\circ} 10' N.$, longitude $61^{\circ} 8' W.$.) but is a splendid and most commodious Port, whose immediate entrance and its Harbour are never obstructed or incommoded by drift or packed ice.

It has very great facilities of approach, and has only two out-lying dangers or small rocks between the Port and the open sea, and these only about half a mile from the shore; and in short, its nautical facilities of attainment greatly exceed those of Halifax, or any other point on this coast that I have seen. The upper parts of its fine and beautiful Harbour (like Bedford Bason and Halifax Harbour,) in some winters freeze over in part, but never so as to obstruct its external communications, its approach, or its perfect safety; and its configuration, as regards the proximate coasts, prevents the accumulation of drift or packed ice, either to obstruct or incommode it.

Its shores offer no impediments to Rail Road termini, wherever convenient, and the vicinity is (in my judgment) perfectly practicable for Rail communications; and if the new road from Dartmouth to Guysboro' were continued, it would bring Whitehaven within 120 miles of practical road distance; and, (as I have understood,) on a level so unobstructed as to invite to that direct line of Rail Road to Halifax from Whitehaven, should it be adopted as the sea terminus, and this distance in Rail time requiring less than four hours, saving a voyage of sixteen hours under favorable circumstances; and considering the inconveniences at present existing to the nautical commodiousness of the Port of Halifax in times of fog, the advantages of the shorter communication must be indefinitely manifest.

Thus, Sir John, I have certified to Your Excellency this one important fact, that at the nearest available point of North America to England or Ireland, there is a splendid Port—(Whitehaven)—most conveniently placed, and endowed in every way inviting to its use as the junction of Sea and Rail communication between Great Britain and these Colonies.

I have, &c.

(Signed)

W. F. W. OWEN, *Captain, R. N.*

His Excellency Sir John Harvey, K. C. B., K. C. H., Lieutenant Governor.

Extracts from the Reports of the Honorable Captain Owen, R. N., Marine Surveyor, relative to Whitehaven Harbour, near Cape Canseau, to His Excellency the Lieutenant Governor of New Brunswick.

No. 1.—Extract.

Campo Bello, 11th September, 1846.

SIR,—By Your Excellency's suggestion, and since that, by authority of the Lords of the Admiralty, I proceeded with the Columbia, on the first of last month, to make a nautical reconnoissance of the Shores and Ports of the Promontory of Cape Canseau, to ascertain the most proper point or Port therein for the junction of sea and land communication between Great Britain and British North America, with reference to a former Report of mine (in November last) on this subject to Your Excellency.

In the first instance we did not stop to examine Country Harbour, conceiving that point, 1st, as too remote from the north east extremity of Nova Scotia, or the nearest point on this Continent to Great Britain and Ireland; and 2d, that its external dangers, with the distance of pilotage water, were irremediable obstacles to its unobstructed approach in fogs, however safe and convenient the Port might be in other respects. The Columbia entered and reconnoitred Torbay, and found similar objections to its adoption.

On Sunday, 2d August, she entered Whitehaven, by the western channel, and as it appeared at first view to offer all that could be required, I directed Lieutenant Shortland to survey the approaches, and report to me his opinion on those and the Port itself, which Report I enclose for Your Excellency's information. We found the Haven to be a splendid and convenient Port, as capacious as Halifax Harbour between George's Island and Bedford Basin, and as safe and commodious, and its approaches safe, and under any circumstances easily attainable from the open sea, and within the extreme points in perfect shelter and security, not being more than a mile of pilotage water; but the shaft or channel to the Haven itself, although well sheltered and safe, yet

yet is very narrow in some places, for a distance from one to two miles, according to the channel by which entered. Mr. Shortland's plan shows all the dangers we could discover.

The Haven finishes to the northward at Pleasant River, also very convenient and navigable for two miles by vessels of any burden, and for small craft two miles farther still, to its head, which northern extremity is only four miles from the high road between Guysborough and the Port of Canseau.

Whitehead Island, the outer point to seaward of the Haven, is one hundred and forty feet high, and may be considered as the northeast extremity of Nova Scotia, and the nearest available point of this Continent to the British Islands, although itself isolated. The Acadian French Settlement of Molasses Harbour, is separated to the westward by a very narrow isthmus of mere beach from the western part of the Haven, besides which there are not now more than eight or ten establishments around Whitehaven.

Well arranged Light Houses and Fog Signals will be as necessary to the Port of Whitehaven as to other Ports that are much frequented. Under all circumstances and at all times a Light House on Whitehead Island will be extremely well situated for all this coast, and might be seen seven leagues. For the Port of Whitehaven, one Harbour Light on Beacon Ledge would serve for all three of the principal entrances, and Fog Signals might be so arranged as to lead a vessel safely through any of them in fogs.

Our inquiries relative to ice in Winter were very satisfactory. Pleasant River is generally frozen all down to the Haven in January and February, and in severe Winters the Haven has been known to be entirely frozen over, but only once known to have happened to the southward of Fisherman's Island, and the nature of the Coast and entrances preclude the possibility of packed or drift ice accumulating, so that the ingress and egress is always free and open.

It is not more or less subject to fogs than the whole of this southeast Coast of Nova Scotia, which is all seriously inconvenienced by this impediment to comfortable navigation; and the soundings, with attention, may always give sufficient indication of approach; and the rocky ledges of the coast form an almost continued steep barrier of land.

It will not be necessary in this Report to explain the arrangements that may be required to facilitate the safe entrance of this Port from sea in fogs; it is sufficient to say, that it will admit the use of definite signals, to secure at all times a safe and easy entrance.

I forward to Your Excellency a trace of Lieutenant Shortland's survey of the main shaft of communication, from the sea to the Haven, shewing the three principal passages within the anchorage, which is all safe and commodious. There are, for the convenience of small craft, four or five other small passages from the sea, on whose critical examination we gave no time.

The northern shores of the Haven are everywhere safely approached, and capable of maintaining good wharves, &c.

Having satisfied myself of the eligibility of Whitehaven, we proceeded on the 6th August, coasting and reconnoitering towards Cranberry Island Light House, off Cape Canseau, five leagues from Whitehead Island. We passed Raspberry Island and Harbour, Whale Island, and Big Dover Harbour and Bay, Little Dover or White Point, Saint Andrew's Island or Cape Canseau proper, and entered Canseau Harbour, of old the winter rendezvous of the French Navy in these seas, found most of these misnamed on the Charts; and nowhere, any spot, bay, or point, that could at all compete with Whitehaven, the approaches to all being difficult and dangerous in fogs or by night.

The Port of Canseau is very small, and is undergoing serious changes for want of care. The spot called Burying Island is in great part washed away, and soon will all of it be so, if not protected.

The approach to it is intricate and confined; and finding, moreover, that in every Spring, the Port of Canseau, and indeed all the Bay of Chedabucto, are seriously obstructed by drift ice out of the Saint Lawrence, we merely measured the distance from the Light House to the outer Basses, and obtained proper marks for the dangers in the direct route, and then left Canseau by the little Gut, for Guysboro', where

Captain Pipon, the Commissioner, had made an appointment to meet me, and who, seeing us from heights, came on board from Fox Island, as we were passing, and we passed on to Guysboro' on the 8th August, an appropriate point for the junction of the sea route with a Rail Road or land communication, on any point of the shores of Chedabucto Bay, and the approach from sea is simple, safe, and easy; but it is so incommoded every Spring by drift ice, as to render it useless at that season for the purpose in question.

Having determined to return to Halifax, and to pass through all the sea-points with Captain Pipon on board, to enable him to see with his own eyes every one of them that could be brought in question, therefore we quitted Guysboro' on the 11th early, stopped at the Port of Canseau, where Captain Pipon landed to reconnoitre, for some hours, when he re embarked. We left Canseau and coasted the outer dangers to Whitehaven, which we entered by the eastern channel. Captain Pipon from two hills reconnoitred, and remained in the Haven until next morning the 12th August, when we quitted Whitehaven, by the western channel, coasted Torbay, and proceeded along shore to Country Harbour, the channel into which is long, intricate, and in some places shallow, therefore not at all recommendable; nor is the western or open sea-approach unobjectionable, on account of its numerous outlying dangers for nearly three leagues; and the place itself appeared to me too far removed from the northeast extremity of Nova Scotia, as before said. In the afternoon we landed Captain Pipon seven miles up the beautiful and navigable River of Country Harbour, and proceeded to Halifax in the *Columbia*. We put into *Marie et Josef* in a fog on 13th, and on 14th coasted the outer dangers with very foggy weather, and arrived at Halifax at 9 P. M. on the 14th.

I have the honor, &c.

W. F. W. OWEN, *Captain, R. N.*

His Excellency Sir W. M. G. Colebrooke, K. H., Lieutenant Governor.

(Copy)

COLUMBIA, *Halifax, N. S.*, 27th August, 1846.

SIR,—In pursuance of your orders, I have made a rough sketch of the inner part of the entrance of Whitehaven, which, with the accompanying remarks, I beg to submit for your consideration.

In fine clear weather, and by day light, the approach to Whitehaven is easy, the shores being bold and no out-lying dangers, if we except two rocks nearly a mile distant from the shores of White Island, one to the S.W., and the other to the S.E. These generally break and so show themselves.

White Island forms the turning point of the shore of Nova Scotia, as it deflects towards the northward to Canseau. The white rocks, and its elevation of 140 feet, make it stand out prominently, and easily distinguish it.

There are several channels into Whitehaven. Three can be used by Steamers of any size. The middle, which is between White Island and the ledges to its westward, appears to be the best, is about 250 fathoms broad in its narrowest part, and carries bold water on both sides, and is besides the shortest and most direct, not exceeding half a mile in length. However, as the directions of the channels differ, and all radiate nearly from the same point, a sailing vessel can use that most favorable with respect to the winds. The western is also a very good channel, and is preferable for vessels going or coming from that direction. The soundings without this Harbour are (near the shore) very irregular, especially in the approach to the eastern channel, which is also injured for vessels of large draft of water, by a rocky patch with 13 or 14 feet water; it is situated near the entrance, and rather more than one third across channel from the small Island (Grassy Patch) off White Island.

When inside the Harbour care must be taken, as there are several shoal rocky patches (see Plan) which render the navigation difficult to strangers, and require to be well determined and buoyed, should the Harbour be used for commercial purposes. There is an abundance of safe anchorage, with good holding ground, black muddy bottom, land locked, and perfectly smooth.

In foggy weather this Harbour is difficult of approach, especially to a stranger, as the soundings in shore are very irregular, and I have not been able to learn any good indications

indications of its vicinity to be gathered from the lead, so as to render its approach by that means certain; and Torbay, its immediate neighbour to the westward, is a dangerous place to get into.

From the fishermen and small coasters I understand the currents round the point are uncertain, and generally depend upon the wind, though the prevailing current is to the westward.

I experienced the current in a boat when I visited the outer break; it was then setting to the westward at the rate of one and a-half mile per hour at least. I also perceived vessels in the offing setting rapidly in the same direction; the breeze was from the eastward and light, though it had previously blown hard from the same point. We also, in our passage from Halifax to Canseau, during a fog, with the wind from the S. W., experienced an easterly current; but the land once made, the Harbour is easily attained, especially by a Steamer.

A judicious arrangement of Fog Signals, and Light Houses, with Buoys on the principal dangers, and a good survey, with the sea soundings well laid down, would make the approach in the night or during fogs attended with small danger to a careful seaman.

Latitude of Observation Rock, Whitehaven, 45° 14' 0" N.

Longitude " " " 61° 11' 4" W.

Variation 21° 42' 20" W. Rise of Tide from 3 to 6 feet. High water at the change of the Moon, 7h. 40m.

In the Admiralty Plan of this place, the general features and soundings appear correct, if we except some of the inner dangers, which are not noticed; but the scale is discrepant.

I have the honor, &c.

(Signed)

P. FRED. SHORTLAND,
Lieut. and Commander.

The Hon. W. F. W. Owen, Captain, R. N.

H. M. S. COLUMBIA, *Campo Bello*, 23d Sept. 1846.

SIR,—In referring to my Report of the 11th, principally showing Whitehaven to be a port in every way calculated for the purpose designed, it has shown me that possibly there may have been some points neither so fully nor satisfactorily explained therein as might be considered desirable; and principally the deservedly high character of Halifax as a safe and convenient Port, has been not unfrequently adverted to by persons not very conversant with the details of minute navigation, implying that Halifax being so safe and secure a Port, it would not be prudent to establish another Port, and which could not fail to be detrimental to its local interests, (*viz.* of Halifax,) and could not on their assumed suppositions be either so safe or convenient. The comparative advantages of Halifax and Whitehaven must be in the first place decided by their respective Geographical positions, which is proved to be so much to the advantage of Whitehaven, (in the only view here taken of them) that the communications between Great Britain and Halifax (itself) would be accelerated at least twelve hours under any circumstances, and under some circumstances possibly by twice, or even thrice that difference of time. This fact must be decisive in the mere Geographical comparison.

In the second place, comparing the two points nautically, Halifax is a good, capacious, fine, safe harbour; so is Whitehaven, and in nothing that I know, inferior to Halifax.

In clear weather, by night or by day, both are equally available, and equally safe and easy of approach; so that the only circumstance still open to comparison, is in the too common case that at the time when entrance is sought into them respectively, all the points and the ship herself may be enveloped in a dense fog, and possibly her own jibboom-end not visible—the most perplexing and appalling case in precise navigation to seamen.

In case of fog, the attainment of Halifax Harbour requires twenty miles of pilotage navigation; for Whitehaven, never more than three or four; and the last is also more surely beacons. In truth, in the case of fogs, Halifax is difficult, and with the loose management of modern navigators, it is dangerous; in proof of which, it is a well known

known fact, that ships of war and others are sometimes detained outside the Harbour from half a day to three days before they can effect a sure and safe entrance, and serious delay to the Packets frequently occurs; besides, the known fact that one of these (the Britannia) once narrowly escaped wreck with serious damage among the dangers of Sambro, at the entrance of Halifax, near six leagues from the Port, and which must always be passed before that can be attained; and no longer ago than the middle of July last, the same vessel overshot the entrance to Halifax, and very narrowly escaped wreck, with serious damage, among rocks and ledges thirty miles beyond it, about Jeddore.

Both places must be subject to the casualties and accidents arising from mismanagement; but the field of occult movements, (in fogs) and the sphere of uncertainty in the navigation, is full ten times greater at Halifax than Whitehaven.

At the latter I could pledge myself to direct vessels as surely and certainly to any spot within its precincts, in fogs, as by a human voice in a boat ahead of and guiding them. Nevertheless, Halifax is by no means incapable of such arrangements for foggy weather, although no such attempt hitherto can be said to have been made, and they would there also be required on a much more extensive scale than at Whitehaven.

I have, &c.

(Signed)

W. F. W. OWEN, Captain, R. N.

His Excellency Sir Wm. Colebrooke, K. H., Lieutenant Governor.

Table of the portions of time in which European intelligence by Telegraph, and Mails, Passengers, and Freight, by Sea and Rail Road, may reach Montreal, and *vice versa*, from the position of Canseau or Whitehaven, as compared with other points of debarkation on the Atlantic coast of America:—

FOR MONTREAL.	Intelligence by Telegraph will be delayed by intervening time at Sea	Mails, Passengers, and Freight, will be transported by Sea and Rail Road in
Debarking at Canseau, or Whitehaven, Nova Scotia,	0 hours.	S. R. R. 0+25=25 hours.
" Halifax, Nova Scotia,	12 "	12+24=36 "
" Portland, Maine,	48 "	48+9=57 "
" Boston, Massachusetts,	52 "	52+11=63 "
" New York,	70 "	70+13=83 "

At a time when assiduous efforts in the United States are directed to the accomplishment of both Telegraphic and Rail Road communication with Montreal, as a central point through which to draw off the trade of the Canadas from British outlets, and by the advantages of such communication, eventually to supplant British manufactures and British shipping, the above comparison with regard to a countervailing advantage of the highest importance presenting itself to British Capitalists within their own territories, and under the protection of their own Government, may tend to demonstrate the practicability of securing and maintaining British commercial ascendancy in the Canadas, and that a national line of Rail Road, projected from the nearest available point of Nova Scotia, and judiciously and energetically carried into effect, promises, as far as the Canadas are concerned, not only to perpetuate such ascendancy, but also rather to benefit, by rendering tributary to a more extended commerce, all similar works in the United States.

The subject assumes unlimited interest as connected with an eventual overland communication with the Pacific, say at the rate of 14 or 16 days from Europe. The copper and silver mines now working and in progress of extensive discovery on Lake Superior, within the British as well as American territory, on the direct line of such communication, may tend, with other and more important causes, to accelerate the accomplishment of this design.