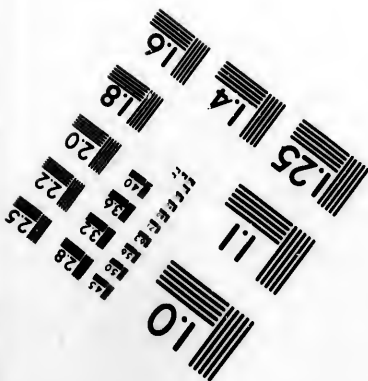
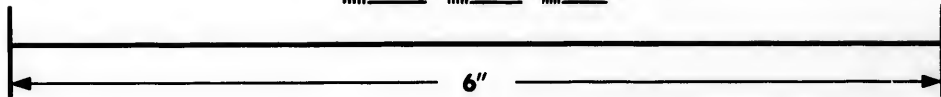
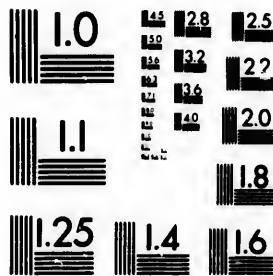


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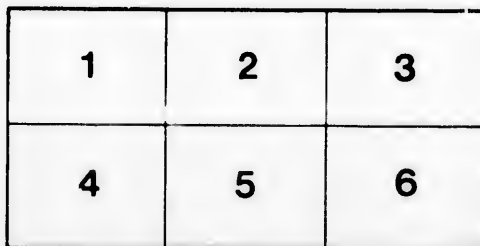
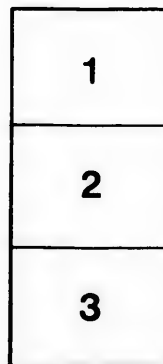
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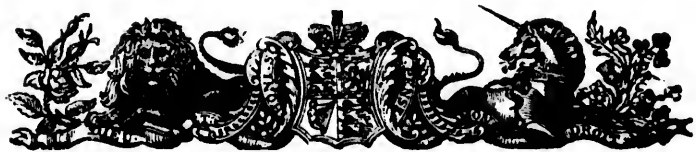
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SIXTH
ANNUAL REPORT
OF
THE CHIEF COMMISSIONER
OF
PUBLIC WORKS.
1860.



FREDERICTON.

J. SIMPSON, PRINTER TO THE QUEEN'S MOST EXCELLENT MAJESTY.

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GENERAL REPORT

OF THE

CHIEF COMMISSIONER OF PUBLIC WORKS

FOR THE YEAR 1860.

OFFICE OF PUBLIC WORKS,

Fredericton, February, 1861.

TO HIS EXCELLENCY THE HONORABLE JOHN HENRY THOMAS MANNERS-SUTTON,
*Lieutenant Governor and Commander in Chief of the Province of New
Brunswick, &c. &c. &c.*

MAY IT PLEASE YOUR EXCELLENCY,

In accordance with Section 2 of the Act 18 Vic. cap. 7, establishing a Board of Works in this Province, by which it is required that the Chief Commissioner make an annual "Report to the Lieutenant Governor in Council of all the Great Roads, and any other Provincial Work upon which Public money has been expended," the undersigned has the honor to submit such Report for the year ending 31st October last, and to subjoin (Appendix A) Statements of Expenditure during that period in the order following:—

No. 1.—Statement shewing the amount paid on Government Buildings in Fredericton, from 1st November 1859, to 31st October 1860.

No. 2.—Statement shewing the amount paid for improving the Inland Navigation during the year.

No. 3.—Statement shewing the amount paid on Great Bridges.

No. 4.—Statement of General Expenditure on Great Roads.

No. 5.—Statement shewing the amount of Special Expenditure on the Great Roads.

No. 6.—Schedule of Warrants on the Provincial Treasury received by the Board of Works.

No. 7.—Statement shewing the amount of Expenditure on the occasion of the visit of His Royal Highness the Prince of Wales.

No. 8.—Statement shewing the total amount of Payments and Receipts by the Board of Works, for the year ending 31st October 1860.

GREAT ROADS AND BRIDGES.

The expenditure on the various lines of Great Road during the year ending the 31st day of October last, including two Bye Road appropriations, amounts to the total sum of £22,678 5s.

Of this sum £11,892 18 11 has been applied to the erection of new Bridges; £2,180 1 10 to necessary repairs and improvements of old ones, and £8,605 4s. 3d. to erecting and repairing culverts or cross-drains, to renewing and repairing turnpike, to gravelling, and to such other usual labour and attention as appeared most necessary to the good order of these works.

The lines added to the Great Road Establishment by Act of Assembly in 1858, and referred to at page 31 of the last Annual Report, have considerably increased the requirements of this Branch of the Public Service.

The additional Roads have been found to be much out of repair and quite inferior to the other Great Roads. Many of the Bridges are old and unsafe, and will require renewing with the least avoidable delay. They are nearly all built of hemlock or spruce timber, though in many of the localities, cedar could have been obtained with but little, if any, additional cost. Both in rebuilding and in repairing these structures two objects should be prominently kept in view. 1st.—The employment of the most durable materials which may be available. 2nd.—The restriction of the use of plank flooring to as limited extent as the case will permit.

Hemlock and spruce timber will remain sound only from 10 to 14 years, whilst the duration of cedar may be depended upon for at least 50 years. The plank flooring is also a great source of expense, especially when subject to a constant and large traffic. Such a flooring cannot be safely depended on for a longer period than five years. Hence the repairs to planked Bridges form a considerable item in this branch of the annual expenditure.

During the past year thirty eight new Bridges have been erected, comprising a total length of 5,726 feet, of which 584 feet only have been floored with plank. Of these Bridges twenty five are built entirely of cedar, four are composed of cedar and pine, two are entirely of pine, one of spruce and fir, and four of hemlock, as severally stated in the following schedule. In all of these, with the exception of the extent of plank above stated, the roadway ordinarily consists of not less than seven to thirteen inches of the best gravel to be obtained, resting upon a flooring of close laid sound cedar poles, with a layer of fine brushwood interposed.

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Duncan
Fergus
Glenn
Greer's
Gordon
Groom's
Garden
Haye's
Haye's
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Milner's
M-Nab's
Morton's
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NAME OF BRIDGE.	Total length.	Length of Plank flooring. Feet.	Timber employed.
	Feet.		
Atkinson's Brook,	57		Cedar.
Bathurst,	2,500	114	Cedar.
Cook's Brook,	120		Cedar.
Charles Brass' Brook,	50		Cedar.
David Martin's,	100		Cedar.
Duncan's Brook,	24		Cedar.
Ferguson's Brook,	190		Cedar.
Glenelg,	90	60	Cedar, with pine truss.
Greer's Brook,	20		Cedar.
Gordon's Brook,	40		Cedar.
Groom's Bridge,	110	18	Hemlock, with Stone.
Garden's Creek,	183		Cedar.
Haye's Brook,	40	12	Hemlock and Hackmatac.
Haye's Mill,	60	40	Spruce and Fir.
Harding's Brook,	78		Pine.
Indian Brook,	50		Cedar.
John Boyd's Brook,	120		Cedar.
Leveque,	57	22	Cedar.
Little River deCache,	30		Cedar.
Little New River,	86	36	Cedar and Pine.
Milner's Brook,	30		Cedar.
McNab's Brook,	36	12	Cedar.
Morton's Brook,	160		Cedar.
Maetaquack,	272	77	Cedar.
Mitchell's Brook,	25	6	Cedar and Pine.
Milliken's Brook,	35		Cedar.
Patterson's Brook,	85		Cedar.
Rafting ground Brook	60		Cedar.
Sheila,			Partly renewed with hemlock & pine.
Salmou Creek,	150	30	Cedar.
Sullivan's,	65		Cedar.
Sterling's Creek,	50	20	Hemlock.
Seeley's Brook,	40		Pine.
Stoney Creek,	275	38	Cedar.
Thomas (yarn),	136		Cedar.
Three Brooks,	22	20	Cedar.
Upton,	110	35	Cedar with pine superstructure.
) on St. Fran.	65	22	Cedar.
) Road.	105	22	Cedar.
Total	5,726	584	

Before the close of the past year, the claims on this Department were suddenly augmented by the effects of a storm of unusual violence, which on the evening of Saturday the 6th of October, visited the eastern side of the Province, and raged with destructive force for a period of about twenty four hours, comprehending in its range the whole of the Coast from Cape Tormentine to Bay Chaleur, with more or less damage both to private and public property; and delaying the transportation of the Mails for a whole day. Its influence on the tide is reported to have been to raise it at Richibucto higher than ever previously known, and at Miramichi to about 6 feet above the level of the ordinary springs. The extensive Bridges slightly

elevated above the usual rise of water, which intersected the wide and exposed estuaries of Cocagne and Little Buetouche, were consequently swept away, the latter entirely, and the other nearly so. The length of the Cocagne is 1,950 feet, and of the Little Buetouche 1,450 feet. The loss of these Bridges forms the heaviest item of damages to this class of works. Amongst the Bridges which sustained injury may be enumerated those over the Big and Little Aboushagan, respectively 990 feet and 630 feet in length, the Shediac Bridge and others in the vicinity, the Kouchibouguais and several others; the Little North West, partly destroyed, and on the Road from Chatham to Point Esequimaux, those over Little Branch Black River, Horton's Brook, McInnis' Creek, Dennis' Creek, Aubert's Creek, and Eel River, five in all, were quite destroyed, and several smaller ones more or less injured. The Ferry Slip at Chatham was also so far injured as to be impracticable for horses. But though the storm further extended along the Gulf Coast to Miscou, and along the Bay Chaleur as far as Dalhousie, its effects were more moderate, and have caused no material damage to public property northward of Miramichi.

The total cost of replacing the above enumerated works destroyed, and of repairing those which have been injured, is estimated at about £4,500.

No. 1.

From Saint John to Nova Scotia Line.

132 Miles.

The Railroad is now completed contiguously to this Line of Highway from Saint John as far as Moncton, a distance of about 90 miles, and the Trains have been running the whole distance daily, to regular time, since the first of August last. This portion of the Road has therefore been to a large extent relieved from the heavy traffic to which it has heretofore been subjected, especially during the construction of the Railway.

On the section from Saint John to Hampton Ferry, distance about 22 miles, has been expended £170 11 5 since the first of May last. Of this sum £10 12 6 was applied to the renewal of five small Bridges or Culverts; £22 to the repairs of old Bridges; £45 1 4 to the repair of damage occasioned by the sliding of a portion of the Road into Lawler's Lake, and £92 17 7 in general repairs and improvements required along the Line.

On the section from Hampton Ferry to Hayward's Mills, the Bridge at Morton's Brook, adverted to in last year's Report, has been replaced by a permanent structure, 160 feet in length, 25 feet in height, and 20 feet in clear width. The timber employed is cedar of a large size, and the whole extent of roadway is floored with poles of the same material, and covered with gravel, at a cost of £215. Necessary repairs have been made to the several Bridges at Hampton Ferry, Millstream, Trout Creek, and Salt House; in

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addition to the expenses of which the sum of £72 17 9 has been laid out in filling up holes, gravelling, and other requisite labour throughout the line. Though for the ensuing season, no new Bridges will be required on this section, unless as the consequence of an unusual freshet or other casualty, yet the Road is generally in a very defective state, and should receive a proportionate expenditure; after which a small annual outlay may be expected to keep it in good travelling condition.

From Hayward's Mills to the Nova Scotia Line, repairs to Bridges have been made at the ten following places:—Hayward's Brook, Burnham's Creek, Jones' Brook, Perrigo's Creek, Parker's Brook, Steeve's Lake Creek, Robertson's Creek, Memramcook River, Brunell's and at Robb's Stream, at a total cost of £42 6 9. Towards the repairs of the Au Lac Aboideau the sum of £142 10 6 has been paid, being the proportion agreed upon with the Marsh Commissioners, and £125 10 5 has been expended in filling up holes, and otherwise repairing the turnpike, gravelling the same, and in such labour generally as appeared most needed along the line.

No. 2.

From Saint John to Saint Andrews.

66 Miles.

On the eastern section of this Road extending from Saint John to Lepreau River, the sum of £92 15 4 has been expended during the past year. Of this amount £15 7 10 has been applied to the erection of five small Bridges, comprising a total length of 126 feet, built of cedar logs, floored with poles of the same material, and covered with gravel; £22 10s. to the formation of 300 rods of turnpike; £39 18 6 to the gravelling of 736 rods; and the remainder to various necessary repairs.

From Lepreau to Saint Andrews the expenditure for the past year has amounted to £175. In part of which a new Bridge of cedar has been built at Little New River, 86 feet in length, and of 2 feet greater height than the previous Bridge, at a cost of £52 10s. Two small new Bridges of the same material have cost £17 12 6. The several Bridges at Little Pocologan, Magaguadavic, Digdegnash, Bocabee, and Cowley's Mill, have been repaired at a total cost of £11 15s. The sum of £30 has been applied to the formation of 400 rods of turnpike, and £18 15s. to the renewal of 25 cross-drains with cedar. None of the large Bridges on this line is expected to require rebuilding during the ensuing season.

On the whole distance the proportion of expenditure necessary for the reconstruction of small Bridges proved, upon renewed examination, to be greater than was anticipated the previous year. During next season three other small ones should be renewed, the estimated total expense of which will be about £50.

No. 3.

From the Bend of Petitcodiac to Shediac.

15 Miles.

This line of Road having been to a great extent relieved by the Railway from the traffic which it heretofore sustained, only £35 15 6 has been expended on it during the past year; of which sum £35 was laid out in graveling, and the balance in filling up holes and ruts. None of the Bridges are expected to require renewal during the coming season.

No. 4.

From Dorchester to Shediac.

16 Miles.

The expenditure on this line for the past year has been chiefly for renewing the turnpike, and for graveling. No new Bridge has been built; but the dilapidated condition of that over the Memramcook River may require its reconstruction during next Summer.

No. 5.

From Shediac to Richibucto.

36 Miles.

A large portion of the Shediac Bridge has been renewed at a cost of £196. The sum of £55 has been expended in repairing the Bridges at Big Buetouche, Weldon's Creek, Howard's Creek, and several others of smaller extent. A sufficient portion of each of the Bridges at Richibucto and Buetouche, to permit the passage of new ships, has been taken up and replaced at a cost of £4 18 6 in one case, and £6 12 6 in the other.

Though a considerable sum has been further laid out in general repairs along the line, yet the Road is far from being improved to the condition which is desirable. As noticed in last year's Report, many parts of the turnpike are low and flat, and much exposed to deterioration by imperfect drainage. More attention than heretofore should therefore be given to this Road during the next season.

The Bridges over the Coeagne and Little Buetouche Rivers, respectively 1,950 feet and 1,450 feet in length, were, as already stated, carried away by the great storm in October last. Plans and Specifications have been prepared, and arrangements made for rebuilding these works during the early part of next Summer.

No. 6.

From Richibucto to Chatham.

40 Miles.

The repairs which have been effected on this line of Road during the past season, have been sufficient to place it in a much better state than its continuation from Richibucto to Shediac. An extent of 906 rods of turnpike

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has been renewed, and 282 rods have been improved by gravelling, at a cost of £44 13 9. A large number of small Bridges and cross-drains have been renewed or repaired in the course of the Summer, and other repairs, where found to be most required, have been made along the line.

Several of the Bridges, as before stated, were injured by the severe storm in October last, and a considerable part of that over the Little North West was entirely carried away. All these damages were repaired with as little delay as circumstances would permit. The damage to the Ferry Slip at Clatham, before adverted to, was also repaired, at a cost of £9 19 9.

It has not been necessary to rebuild any of the large Bridges during the last year; but that over Clark's Cove, 198 feet in length, and that over the Kouchiboguis are becoming too old to be relied on, and may both require partially or wholly renewing next season.

No. 7.

From Miramichi to Pokemouche.

62 Miles.

This line has been extensively repaired and improved during the past season.

Six new Bridges of the smaller class have been erected, the timber used in all of which being entirely of cedar, and in each case without plank flooring. The following is an enumeration of these works with their length and cost:—

Name.	Length.	Cost.
1. Garden's Brook,	40 feet,	£21 11 6
2. Milner's Brook,	30 "	11 14 0
3. Indian Brook,	50 "	13 4 6
4. Little River deCache,	30 "	10 8 0
5. Charles Brass' Brook,	50 "	11 15 0
6. John Boyd's Brook,	120 "	25 0 0
Total, 320 feet.		£93 13 0

For the above shewn extent and cost, the six Bridges have been built of wood the best and most durable for the purpose, and in a thorough and substantial manner.

The railing on Tabusintae Bridge has been completed, and the structure in other respects put in good order, at an expense of £89 11 9. Sundry smaller Bridges have been repaired at a cost of £6 0 4.

The sum of £30 12s. has been expended in turnpiking an extent of 689 rods; £30 12s. in gravelling 160 rods, and the balance of the appropriation in general repairs and improvements along the line.

The Bridge over Goodfellow's Brook, and two others of smaller extent, will require renewal, at the total estimated cost of about £40.

No. 8.

From Bathurst to Pokemouche.

51 Miles.

No expenditure has been necessary for the renewal, and but little for the repairs of the principal Bridges on this line during the past season. The outlay has therefore been directed chiefly to the maintenance of the Road in travelling condition, which has been effected at comparatively small expense.

A portion of the gravel covering was washed off the new Bridge at Caraqueet by the storm in October last, but no other material damage was done to this work.

The Bridges over the Pokeshaw and Waugh Streams have become quite dilapidated by age. The former, which is 520 feet in length and about 30 feet in height, was considerably injured by the gale in October, but was sufficiently repaired to be temporarily safe for public use.

A ferry continues to be the means of crossing the Pokemouche. A Bridge over this River would be a great boon to the inhabitants of the vicinity, as well as to the public generally.

No. 9.

From Bathurst to Belledune.

23 Miles.

Agreeably to arrangements mentioned in last year's Report, the building of the long Bridge over Bathurst Basin, on this line of Road, was let by public competition, on the 27th January last, to Joseph Morrison of Bathurst, for the sum of £2,940, the work to be completed by the 31st day of October ensuing.

Mr. Morrison failed to fulfil his contract within the stipulated time, but succeeded in having the structure sufficiently advanced for public use before the close of the season.

The Bridge over the Tattagouche Stream has been repaired, by raising and replanking the roadway, at a cost of £6. The Road has been gravelled for an extent of about 7 miles, and the remainder of the line has been repaired where most necessary.

The Bridge over Belledune Stream requires new flooring and railing. That over Little Elm Tree Brook is much decayed through age, and will require some repairs.

No. 10.

From Belledune to Metis.

62 Miles.

This line of Road runs parallel with the southern shore of the Bay Chaleur to the Town of Dalhousie, and thence along the right bank of the Restigouche River, through the Town of Campbellton, to the commencement of the Metis

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Road on the Canadian frontier, a total distance of 62 miles. The whole extent is in a condition not inferior to that of any other line in the Province.

During the past season a new Bridge, 24 feet in length, over Duncan's Brook, has been built wholly of cedar at a cost of £7.

Six of the old Bridges, as particularized below, have been repaired.

1. At Louison's Brook, by renewing stringers, railing, and covering with cedar and spruce timber, at a cost of £19 7s.

2. At Nash's Brook, by renewing stringers and covering with cedar logs and gravel, at a cost of £21 14s.

3. At Eel River, by blocking up one of the old piers which had become undermined, at a cost of £4 10s.

4. At Campbellton, by filling up holes and repairing other injuries occasioned by the action of the tide, at a cost of £7 2 6.

5. At Garven's, by levelling and covering the roadway with spruce deals at a cost of £25.

6. At Gordon's Brook, by erecting a new breakwater of pine timber and stone, at a cost of £12 10s.

The sum of £54 12 8 has been applied to the renewal of 982 rods of turnpike; £99 0 1 to gravelling an extent of 2,068 rods; £12 2 2 to the repairs of several culverts and the renewal of others; and the remainder of the appropriation to filling up holes and ruts, and to such other repairs as most required attention.

The Bridge over Jacquet River has become much decayed through age and should be renewed, but all the other Bridges are in good condition, and will require but small expense during the coming season.

No. 11.

From Newcastle to Bathurst.

50 Miles.

From Newcastle to Tabusintac, distance about 21 miles, the Road is in good condition. The expenditure on Bridges consists of £44 for the partial renewal of that at Mill Cove, by rebuilding the north end with pine timber, and of £4 for repairing the covering of that at Tabusintac. An extent of 359 rods of the Road has been turnpiked, at a cost of £16 3 2, and 135 rods have been gravelled.

The repairs on the remaining distance to Bathurst have also been material, but before the close of the season that portion of the line was very much cut up and injured by the hauling over it of large quantities of Ship Timber and Spars.

No. 12.

From Fredericton to Newcastle.

102 Miles.

A large portion of the amount laid out on this line of Road during the past year, has been in the erection and repairs of Bridges. That over Cook's Cove, 120 feet in length, has been rebuilt with cedar logs, covered with poles of the same material, at a cost of £100.

Other Bridges, as enumerated below, have received repairs, at a total cost of £284 11s.

Tay's Brook, by new planking; Doak's Bridge, by erecting two new "heaters" and two new "shears" with cedar and stone, at a cost of £201; Boiestown, by building a new "shear" of cedar and stone, at a cost of £23; Abel Pond's, by levelling with gravel at each end, at a cost of £7 6s.; John Pond's, by renewing the covering with spruce plank, at a cost of £2; and Thomas Wilson's, Ferguson's Brook, Glebe Brook, and Wilson's Brook, by renewing the covering with hewn spruce plank, at an aggregate cost of £46 5s.

The corners of the piers of the North West Bridge, which are built of cedar, have been to some extent injured by the floating ice, and without suitable protection would soon sustain serious damage. Arrangements have therefore been made with a view to protect the exposed corners by means of hardwood or juniper fenders, which are to be bolted to the same from low water level to the requisite height.

This is a line of Road passing for a long distance through a country thinly settled, and furnishing a proportionally small amount of statute labour to assist in keeping it in order. The Bridges are also numerous, many of them over large streams, and consequently expensive; and all except those recently built, are composed of hemlock or other equally perishable timber. For these reasons it will require a large yearly expenditure for some time to come to preserve the line in good condition.

No. 13.

From Fredericton to Saint John.

66 Miles.

Material improvement has been made on this line of Road during the past season. On the section extending from Fredericton to the lower line of Sunbury, the amount of £179 2 6 has been expended in renewing and gravelling the turnpike, a large portion of which was done by days' work, under the superintendence of Timothy Killeen. Four of the Bridges have been repaired at a total cost of £27 10s., and the sum of £35 18s. has been laid out in general repairs. No new Bridges have been erected on this section, and none will apparently be required during the coming season.

On the section from Sunbury line, through Queen's County, 182 rods of the turnpike have been renewed and partially gravelled at a cost of £18 1 8; two hills have been improved by cutting down; several culverts have been

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renewed, and others repaired, at a cost of £27 18 10, and such other general repairs as appeared most necessary have been made.

On the remaining section extending from Queen's County to Saint John, the small Bridge over Greer's Brook has been rebuilt with cedar timber and covered with gravel. Portions of the Road have also been turnpiked and gravelled, and several culverts and cross-drains renewed.

No. 14.

From Fredericton to Woodstock.

63 Miles.

The two Bridges contracted for early last Winter have been substantially and durably built, entirely of cedar, without any plank flooring, and may be expected to require but little, if any, further expense during the ensuing half century.

There are on this line of Road twenty one of the larger class of Bridges. Ten of these have within the last five years been rebuilt with durable materials, of which, nine consist of cedar timber, and one of a permanent stone culvert and earthen embankment. Should a similar course of improvement be hereafter pursued for an equal period of time, the remaining temporary structures may be renewed in a manner alike durable and exempt from expense during a long series of years. Nearly all the old Bridges have been repaired during the season, and will require more or less attention and expense from year to year until replaced by new ones.

The outlay incurred on different parts of the line for the renewing of the turnpike, putting on gravel, and for other repairs, has been of comparatively large amount.

In the early part of October last, it was unexpectedly discovered that parts of the truss work of Kelley's Creek Bridge had given way. Upon examination the timber in the abutments proved to be so much decayed, that the Board deemed it advisable to have a new Bridge erected immediately, as the only course of safety to the public. The furnishing of the necessary cedar timber, stone, and other materials, was therefore contracted for by public competition, and the building of the Bridge was commenced on the 16th day of October, and finished sufficiently for public use about the 10th of November following.

This work consists of two abutments of 36 feet in height, one of which is 70 feet, and the other 134 feet in length, with an intervening span of 70 feet, making a total length of 274 feet. The cedar timber employed is hewn, the work well bolted together, and the panels are filled with stone from bottom to top.

Each abutment has two wings, one presented to the up stream side as a protection from the force of the freshet of the Creek downwards; and the other for a like protection from the reverse pressure of the ice and driftwood borne down by the freshets of the main River.

The superstructure, including the truss, consists of pine, and is well and strongly made. The construction was done by days' work, and the total expense was £373, including the value of about 100 sticks of cedar and pine timber which remain on hand, and are intended to be used in the repair of three Bridges a short distance below.

No. 15.

From Woodstock to River duChute.

40 Miles.

On this line have been renewed the four following small Bridges:—Calkin's Brook, 70 feet in length; Melville's Brook, 85 feet in length; Estabrook's Creek, 50 feet in length; and Kinerson's, 40 feet in length; all of durable materials, at a total cost of £35 10 6.

The Bridge over Big Presqu'ile River, has been thoroughly repaired under the superintendence of Mr. Tomlinson, and is now considered safe for some time. The Little Presqu'ile Bridge has also been repaired by adding two top stringers with a swing-girt underneath; by renewing the railing and covering, and by such other improvement as appeared necessary.

Several of the smaller Bridges have been repaired at an expense amounting to £80 9 1; and the sum of £61 0 6 has been laid out in general repairs and improvements along the line.

The building of the Bridge over M'Canes Creek, 100 feet in length, the material to be of cedar, was contracted for by James Fenimore, for £35.—He failed to fulfil his contract; but arrangements have been made to have the Bridge completed early in the ensuing Spring. This circumstance will account for a balance of considerable amount, which, as shewn by the Auditor's Report, remains in the hands of the Supervisor.

No. 16.

From River duChute to Grand Falls.

50 Miles.

No new Bridges have been built on this section during the past year. The sum of £10 19s. has been applied to the repairs of the several Bridges over M'Neal's Stream, Arestook River, and Watson's Creek; £38 12 4 to the re-turnpiking of 244 rods of the Road; £16 8s. to putting on gravel; £45 18s. to improving 92 rods of Road by ballasting and removing rocks, and by "wharfing" with cedar logs where insecure; and the remainder of the appropriation to building culverts and general repairs.

None of the Bridges are expected to require renewing within the current year. Further repairs will be necessary to that over the Arestook River. Though new longitudinal flooring was put on over the old plank in 1855, the whole covering now appears to be quite decayed, and will require to be partially or wholly renewed this year. New covering will be necessary also to three smaller Bridges.

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No. 17.

From Grand Falls to Canadian Boundary.

50 Miles.

The three following new Bridges have been erected on this line during the past year:—1. Over Thomas Ryan's Brook, 136 feet in length, wholly of cedar, at a cost of £79 10s.; 2. Over David Martin's Creek, 100 feet in length, wholly of cedar, at a cost of £24 10s; 3. Over Leveque Stream, 57 feet in length, wholly of cedar, at a cost of £24.

Of the other Bridges the seven following have been repaired:—1. At Grand River, by putting on longitudinal sheathing, to the width of 12 feet, of spruce plank, at a cost of £18 13 7; 2. At Power's Creek, by repairs to covering, at a cost of £2 7 6; 3. At Quisibis, by furnishing to the old portion of the structure one new bent, and otherwise repairing the same, at a cost of £8 15s.; 4. At Green River, by replacing flooring, at a cost of £2; 5. At Little Falls, by repairing approaches; and at two other places, where the Bridges are small, by renewing the roadway with cedar and gravel.

The remainder of the appropriation has been expended in miscellaneous improvements and repairs where most needed along the line.

Several of the Bridges on this section are becoming untrustworthy through age. Arrangements have been made for rebuilding one near the Canadian Boundary, and in the course of the year the same attention with regard to others may be necessary.

No. 18.

From Little Falls to St. Francis.

32 Miles.

During the past year two new Bridges on this line have been built, both of cedar, of the respective lengths of 105 feet and 65 feet, and at the joint cost of £49 10s. Five others have been repaired at a cost of £47 7 6. The remainder of the expenditure has been in renewing the turnpike, putting on gravel, and in general repairs.

The course of this Road is along the left bank of the River Saint John, from the confluence of the Madawaska at Little Falls, to that of the Saint Francis on the frontier of Maine, passing in that extent over much new ground, and intersecting numerous streams and deep ravines, which require Bridges and embankments. The existing works compare unfavourably in character and condition with those of most other Roads in the Province.

No. 19.

From Grand Falls to American Boundary.

3 Miles.

The Bridge over Deep Gully has been improved by putting new railing on the abutments, by flooring the roadway with cedar poles, and covering the same with brush and gravel.

The expenditure in repairs on the turnpike and culverts, and in railing on the hill side, has amounted to £5 12 6.

No. 20.

From Pickard's Store to American Boundary.

5 Miles.

Of the expenditure on this line £5 12 6 has been applied to turnpiking 100 rods; £33 8s. to gravelling 120 rods, and the remainder to general improvements and repairs.

No expense in the erection or repairs of Bridges has been necessary during the past, nor is likely to be required during the current year.

No. 21.

From Florenceville to American Boundary.

9 Miles.

Much improvement has been made on this line during the past Summer. Of the expenditure, the sum of £9 10s. was applied to reducing a hill, by cutting down the summit and removing the material to the adjacent hollow; £13 5s. to removing stone and putting on gravel; £8 to renewing and improving cross-drains, and the balance to filling up ruts and holes, and to such other repairs and improvements as appeared to be most needed.

No expense has been required in the erection or repairs of Bridges.

No. 22.

From Woodstock to Houlton.

11 Miles.

This line of Road is intersected at Richmond Corner, about five miles from the Town of Woodstock and six from that of Houlton, by the line of the "New Brunswick and Canada Railway" now in progress of construction, and intended to be opened for traffic to that Station in the course of the ensuing Summer. In such event, a greatly increased transportation may be expected to be imposed on the common Road.

During the past year no expense has been incurred, either in the rebuilding or repairs of Bridges. An extent of 142 rods of the turnpike has been renewed, at a cost of £17 10s., and 128 rods have been gravelled, at a cost of £20 8 6. The remainder of the outlay has been for temporary repairs, and such improvements as were most necessary to the good condition of the Road.

No. 23.

From Fredericton to Saint Andrews.

78 Miles.

The state of the Road is now better than at any time heretofore, and all the Bridges, with one exception, are in good order. The long approach to Digdeguash Bridge has been finished at a cost of £38, and is deemed a great

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improvement on the previous facility at this point. Six other Bridges have been repaired at a total cost of £28 3s.

An extent of 3,128 rods of the Road has been turnpiked at a cost of £147 11s. 6d., and 484 rods have been gravelled at a cost of £20 17 6; 27 new culverts or cross-drains have been made at a cost £16 8 4, and such general repairs as were most required have received attention.

The old portion of the Bridge at Johnstone's cove is so far defective as to require immediate care, and its renewal will probably be necessary in the course of the ensuing Summer.

No. 24.

Warcig to Saint Stephen.

9 Miles.

No expenditure for new Bridges has been incurred on this line during the past or is likely to be called for in the present year. The flooring of that over the Millstream has been repaired, under contract, by planking longitudinally with 3 inch spruce, for the sum of £7 10s. Of the remainder of the grant, £26 15 11 has been laid out in the renewal of 330 rods of turnpike; £1 17s. in gravelling 31 rods, and £5 12 6 in skirting the Road and in minor repairs.

No. 25.

From Roix's to Oak Bay.

16 Miles.

The contract for the "Glenelg Bridge," as mentioned in last Annual Report, has been completed. This work is 90 feet in total length, consisting of two abutments built wholly of cedar timber, filled up with stone, and a king-post truss of pine over the intervening span. The whole expense has been £136 12 6, including the sum of £3 17 6 for extra material and labour.

The flooring and railing of the Bridge over Gilmore's Intervale have been renewed, at a cost of £7 10s., and the sum of £19 15s. has been laid out in ordinary general repairs.

Some of the old Bridges will need repairing, but none are likely to require renewing during the current year.

No. 26.

From Oak Bay to Eel River.

74 Miles.

On the section of this line extending from Oak Bay to the Little Digdeguash River, the chief portion of the last year's expenditure has been for the improvement of the Road formation, consisting of the sums of £170 15 10 for making 899 rods of turnpike, £28 9 3 for gravelling 202 rods, and £11 3s. for removing rocks, making cross-drains, and for ordinary repairs.

A new Bridge of cedar timber has been erected over the Stream known as the "Three Brooks," at a cost of £11 14 5. One of the abutments of the Bridge at Brown's Mill has been rebuilt of stone, and the superstructure repaired by supplying new cedar stringers, flooring, &c. The other Bridges on this section are in good condition.

The section from the Little Digdeguash to Eel River has been materially improved, chiefly by grading and turnpiking, but no new Bridges have been erected during the past season.

No. 27.

From Dead Water Brook to Saint Stephen.

17 Miles.

The contract made last year for rebuilding the Upton Bridge on this line has been completed for £99 15s. the sum stated in the Annual Report. The work is 111 feet in length, consisting of blocks of cedar, and superstructure of pine, substantially and durably built.

The sum of £4 has been expended in new covering and in other repairs to the Bridge at Moore's Mills, and £2 12 6 in repairing that at Dunham's Brook with cedar and stone.

An extent of 568 rods of turnpike has been made at a cost of £62 1s. and 363 rods have been gravelled at a cost of £21 19 9. The remainder of the appropriation has been expended in removing stones and in general repairs.

This line is now opened from Saint Stephen to its intersection by the New Brunswick and Canada Railway at Lawrence's, a distance of 13 miles. From thence to Dead Water Brook the Road is yet sufficiently prepared only for winter travelling, but has been much improved during the past year, and as far as completed is in fair condition. The Bridges are all good, except that over the northwest Branch of the Digdeguash.

No. 28.

From Lower Trout Brook to the Town of Magaguadavic.

38 Miles.

The first portion of this Road to the extent of about 5 miles, is yet unprepared for wheeled carriages. From thence to the Upper Falls, a distance of 26 miles, the Road has been much injured by the transportation of heavy loads of timber on wheels, whilst the surface was imperfectly formed, and is consequently in a bad state. For the remaining distance of seven miles to the Town of Magaguadavic, the Road is ordinarily good.

An extent of 228 rods has been turnpiked at an expense of £28 10s., and 1,280 rods have been cleared and graded at an expense of £37 6 8. The Bridge over Milliken's Brook, 35 feet in length, which was destroyed by fire in the early part of the Summer, has been rebuilt of cedar, at a cost of £6 17s. 6d. The sum of £3 2 6 has been laid out in the repairs of other Bridges, and the remainder of the grant in general improvements along the line.

No. 29.

From Salisbury to Harvey.

44 Miles.

Since last year none of the Bridges on this line has required renewal. Those over Ransom's Brook, Decker's Brook, and Petiteodiac River, have been repaired at an aggregate cost of £59.

The sum of £14 19s. has been laid out in turnpiking 133 rods, £52 in putting on gravel on 500 rods, £50 in the improvement at "Breakneck Hollow," made by filling up the large fault known by that name, and the balance of the expenditure in general improvements and repairs.

The Bridge over Bennett's Upper Brook unexpectedly gave way in the month of October last, during the passage of a team loaded with iron; but fortunately no material injury was sustained. Arrangements have since been made for the erection of a new Bridge at this place, to consist wholly of cedar timber. It will be in length 180 feet and in height 40 feet, and is contracted for by John Dully for the sum of £284.

No. 30.

From Isaac Derry's to Point Wolf.

25 Miles.

Since last year no new Bridges of the larger class have been required on this line. A portion of the covering of that over Salmon River has been replaced and the iron fastening improved at an expense of £5.

The condition of the Road has been materially benefited by the expenditure of the year, which consists of £92 10s. for turnpiking 810 rods; £7 7s. for gravelling 49 rods; £23 for building two culverts or small Bridges, and the balance for repairing culverts, removing rocks, cutting down hills, elevating low places by covering them with brush and gravel, and for such other repairs as most required attention.

No. 31.

From Saint John to Crooked Creek, County of Albert.

73 Miles.

From Saint John to King's County line, a distance of about 51 miles, the sum of £288 11 3 has been expended chiefly in repairs of the Road; of which amount £181 12 11 has been applied to turnpiking 797 rods; £24 15s. 9d. to the preservation of the Bridge over Schoale's Brook in a safe condition, and the balance of the sum allotted for this section, to general repairs along the line.

On the remaining distance extending to Crooked Creek, 841 rods have been turnpiked at a cost of £105 2 6; 50 rods have been gravelled at a cost of £7 10s. and the balance of the sum appropriated has been applied on this section to reducing hills, raising low places, making culverts, and to general repairs.

Arrangements have been made for the erection of a new Bridge over Schoale's Brook, the only one expected to be required during the current year.

No. 32.

From Saint John to Quaco.

30 Miles.

None of the Bridges on this line has required renewing during the past year. Those over Mosher's and Wilmot's Brooks have been repaired; the former by wharfing with timber, brush, and stone, and otherwise securing where the abutments had become undermined by the action of the tide; and the other by repairing the abutments with spruce timber, brush, and stone, and by renewing the stringers. In addition to these, six small Bridges have been put in order, at the total expense of £33 13 9. The sum of £29 has been expended in gravelling 116 rods, and the remainder of the grant in general repairs.

The whole of this line of Road is now in fair travelling condition, and the section from the City of Saint John to Loch Lomond is very good.

No. 33.

From Great Road near Hay's to Belleisle.

5 Miles.

This line is comparatively new, the last being the second year only of its establishment as one of the Great Roads, during which the expenditure upon it has amounted to £47 2 6. Of this sum £13 10s. was applied to the erection of a small Bridge over Hay's Mill Brook; £27 to cutting out and grading an extent of 225 rods, and the remainder to draining and other improvements along the line.

Three of the smallest Bridges are expected to require rebuilding during the coming season.

No. 34.

From Scribner's to Belleisle.

25 Miles.

During last year two new Bridges, of the total length of 130 feet, principally of hemlock timber, have been erected on this line at a cost of £72. Two others have been repaired at a small expense, and the remainder of the outlay has been applied to renewing the turnpike, putting on gravel, and to other repairs.

The flat character of much of this line requires the roadway to be raised, portions of it to be gravelled, and the side and leading drains to be cleared out.

The Bridges are all in ordinarily good repair. None is expected to require renewal, or more than trivial expense during the present year.

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No. 35.

From Nerepis to Gagetown.

23 Miles.

The only expenditure for Bridges on this line during the past year has been the sum of £6 10s. for the rebuilding of two small ones of pine and hemlock timber. The Road has otherwise been materially improved by turnpiking and gravelling an extent of 632 rods at a cost of £60 14 8. The balance of the appropriation has been applied to cutting down a small hill, repairing cross-drains, and to such other repairs as were most needed.

The Bridges generally are in good condition, with the exception of that over the Otnabog Stream, which is old and requires immediate attention.

No. 36.

From Fredericton to Jemseg.

30 Miles.

From its commencement at a point opposite the City of Fredericton to its termination at the Jemseg, near the outlet of Grand Lake, this line of about 30 miles, runs nearly parallel with the left bank of the River Saint John. In its course through the Parish of Mangerville, it is for a long distance directly exposed to the force of the ice and driftwood and the wash of the current during freshets, so that much of the original roadway has disappeared, and some portions have become so narrow as to be used by the public only at great risk.

A considerable part of the expenditure during the past year has therefore been applied to widening the Road, and to its future protection along the portions exposed to waste, by continuing the process of driving piles in the manner adverted to in previous annual Reports. The additional number of piles driven is 673, including those contained in a jetty or ice-breaker erected at an exposed point with the like view of diverting the force of the current from the Road below. The proprietors of the land along the line, being benefited by these works, are bound by agreement to contribute a portion of the expense.

The small Bridge over Sterling's Brook has been renewed, at a cost of £20; two others have been new floored, at a cost of £17 1s.; and the floating Bridge at Jemseg has been supplied with new flooring, new chain, mooring posts, &c., at a cost of £9 18 6.

No new Bridge, or more than trivial expense for the repair of Bridges, is likely to be required during the current year.

Further expense will be requisite on the bank of the River Saint John, at Mangerville.

No. 37.

From Jemseg to Fingert Board.

29 Miles.

This line of Road has been very much improved during the past year. An extent of 434 rods of the turnpike has been renewed, and portions have been gravelled, at a total cost of £39 4 6.

The northern approach of the Bridge over Summerville Millstream has been repaired, and the covering and railing of this Bridge will require renewal during the coming season. All the other Bridges on this line are in good order.

No. 38.

From Cole's Island to Cape Tormentine.

40 Miles.

The past year's expenditure on this Road has been exclusively in repairs, of which £5 8s. only was applied to Bridges. The sum of £33 11s. has been laid out in turnpiking 180 rods, and in gravelling 82 rods, and the balance in such ordinary general repairs as appeared to be most required.

As no expense is expected to be necessary for the renewal, and only a small amount for the repair of Bridges during the current year, the usual grant will be quite sufficient to keep the line in good travelling condition.

No. 39.

From Fredericton to Kent County Line.

56 Miles.

On the section of this line extending from Fredericton to Queen's County, a distance of nearly 40 miles, the sum of £89 9 10 has been expended, of which £24 12 6 has been laid out on the four following Bridges:—1. At Little River, by repairing wing with timber and stone, and gravelling one end, at a cost of £14 10s.; 2. At Salmon Creek, by renewing covering and railing, at an expense of £6 5s.; 3. At Newcastle, by renewing covering, and by repairs to approach, at a cost of £3 2 6; and 4. At Burpee's Millstream by gravelling and other small repairs.

The sum of £42 17 3 has been applied to turnpiking 391 rods; £13 3 3 to skirting, making, and repairing cross-drains and filling holes; and the remainder to general repairs.

On the remaining section extending to the County of Kent, a new Bridge has been erected over Watson's Brook, 150 feet in length, wholly of cedar timber, at the cost of £65; and another over Sullivan's Creek, 65 feet in length, also of cedar, at the cost of £14 19s. A part of the planking of the Bridge over Gaspereau River has been renewed. An extent of 100 rods of the Road has been turnpiked, at a cost of £10, and gravel has been laid on 200 rods, at a cost of £4. The sum of £5 14s. has been applied to reducing a hill and to repairing cross-drains, and the remaining expenditure to ordinary repairs.

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No. 40.

From Kent County Line to Richibucto.

44 Miles.

No part of the last year's expenditure has been employed, either in the renewal or repair of Bridges, but exclusively in the general improvement of the Road, by turnpiking 223 rods, at a cost of £65 5s., and in the repairs most needed as far as the remainder of the £150 appropriated would permit.

As no expense is expected to be called for in any way for Bridges during the current year, the whole appropriation may be employed in continuing the same course of perfecting the condition of the Road; which, though ordinarily good from Richibucto as far as Pine's, still requires from thence to Queen's County, a large outlay in order to make it equal to that of other Great Roads.

No. 41.

From Tilley's Landing to Little River.

12 Miles.

During the past year a new Bridge has been erected on this line over Ferguson's Brook, 190 feet in length, built of cedar timber, floored with poles of the same material, and covered with gravel, at a cost of £57 5s.

The sum of £39 6 6 has been expended in the repairs of Bridges, principally of that over the water-way known as the "thoroughfare."

The remainder of the grant has been laid out in improving the landing at which the Road commences, in making and repairing turnpike, removing stones, and in general repairs along the line.

No. 42.

From Sussex Vale to Upham.

12 Miles.

No expenditure, either for the renewal or repairs of Bridges, has been necessary on this line during the last year. An extent of 291 rods of turnpike has been made, and portions of the same gravelled, at a cost of £29 11 3. A large number of cross-drains has been renewed, others have been repaired, and the line is now in a fair condition.

None of the Bridges is likely to require expense during the current year, that over Spear's Brook excepted, the abutments of which may need repair or partial renewal.

No. 43.

From South West Bridge to Gaspereau River.

26 Miles.

The southern end of this Road, commencing at the Gaspereau Bridge, is now opened for travelling, a distance of 6½ miles, and is in good condition. During the past Summer an extent of 372 rods on this end have been turnpiked, at a cost of £90 4 2.

On the northern end, the forest has been cut out a width of 20 feet, the ground cleared of trees, stumps, roots, and stones, and levelled or graded ready for turnpiking, for a distance of about seven miles, of which 853 rods, or $2\frac{2}{3}$ miles were done last year, at a cost of 2s. 1d. per rod.

No. 44.

From Bailey's Brook, by way of Douglas Valley, to the Church on the Nerepis Road,
40 Miles.

This line is one of those recently placed on the Great Road Establishment, and has been one year only under the direction of this Department.

It leaves the Great Road, No. 13, already described, at Bailey's Brook, about two miles below Fredericton, and proceeding southerly, a distance of about 8 miles, crosses the Rusiagonis at Peabody's Mills, and at 18 miles reaches the Northwest Oromocto at Hartt's Mills. From thence it continues in the same general direction, crossing the South Oromocto, proceeding up the Back Creek Valley and down that of Douglas Stream, until it reunites with No. 13, where known as the Nerepis Road, and near the Church at that point.

From Bailey's Brook to Peabody's Mills, the land along the line is not settled. On this distance, of about 8 miles, an extent of 1,274 rods was cleared of trees and levelled during the past Summer, and much outlay will yet be required in order to make this part of the line available for carriages.

Between Hartt's Mills and the Church, 592 rods have been turnpiked, at a cost of £54 7 2; a distance of about 3 miles has been straightened and improved, at a cost of £34 4 3; six of the Bridges have been repaired at a cost of £79 13 2; and the balance of the expenditure has been for new cross-drains, and other improvements and repairs on different parts of the line.

No. 45.

From Chatham to Point Escuminac Light House.

40 Miles.

This line commences on the Great Road from Richibucto to Chatham, at about 8 miles from the latter, and leads down the left or northerly bank of Little Black River, a distance of 4 miles, where it crosses the main Stream. Proceeding eastwardly, a further distance of $6\frac{1}{2}$ miles, it crosses the Bay du Vin River, and thence successively M'Innis', Dennis', and Auberts' Creeks, Eel and Portage Rivers, and the succeeding plains, to the Light House on Point Escuminac.

During the past season an extent of 698 rods of this line has been turnpiked, and portions of the same gravelled, at a cost of £50 2 6. The five Bridges respectively over Cameron's, M'Innis', Dennis', and Auberts' Creeks, and Eel River, have been repaired at a total cost of £40 16s. The remainder of the appropriation has been applied in making cross-drains and general repairs.

The Bridges on this line which were destroyed by the storm in October last, have (page 6,) been already enumerated, the probable cost of replacing which, and of repairing others on the same line which were injured, is included in the general estimate of the damage occasioned by that casualty.

No. 46.

From the Salisbury & Harvey Road, near Coverdale River Bridge, to the same near M-Latchey's Bridge.

26 Miles.

The course of this line is from near Coverdale River Bridge, in the Parish of Coverdale, along the right bank of Petiteodiac River, crossing the Turtle Creek and the several smaller streams, Stony Creek inclusive, until it reunites with the Salisbury and Harvey Road near M-Latchey's Creek. The new Road has all been formed and turnpiked, and passes for the whole distance through a well cultivated and valuable agricultural district.

During the past season the Bridge over Stony Creek has been rebuilt; and in order to relieve the steep approaches occasioned by the high banks on either side, has been raised 12 feet higher than the previous Bridge. By this improvement, teams are enabled to cross with much more ease and with heavier loads than heretofore.

Two small Bridges have been repaired at a cost of £7 1s. An extent of 1,051 rods of the turnpike has been renewed, and such other repairs and improvements along the line as were most required have been made.

No. 47.

From Robert Hopper's to Elgin Corner.

18 Miles.

This, as one of the lines recently added to the list of Great Roads, has been one year only under the supervision of this Department. During that time, the small Bridge over Miller's Brook has been rebuilt, 104 feet in length, at a cost of £14; and that over Steeves' Brook, 74 feet in length, at a cost of £8. The three following Bridges have been repaired:—1. Over Colpitt's Mill Brook, by the erection of two new abutments, replacing the covering and other repairs, at a cost of £17; 2. Over Pollet River, by sundry small repairs, at a cost of £3 10s.; and 3. Over Barchard's Brook, by replacing one abutment, renewing bolts, and improving the covering, at a cost of £4 12 6. An extent of 334 rods has been turnpiked, at a cost of £29 12 3, 323 rods have been skirted and otherwise improved, at a cost of £24 4 6; and the sum of £11 10 9 has been laid out in sundry other repairs.

The Bridge over Pollet River is old and much decayed, and should be rebuilt during the ensuing season.

No. 48.

From Great Road No. 1, near Teakle's Mills, to Elgin Corner.

12 Miles.

The route of this line is from Great Road No. 1, by way of Teakle's Mills, in King's County, along the right or northern bank of Salmon River, thence by way of George Jonah's, Stevens', and the Midland Settlement, to Elgin Corner, in the County of Albert.

That portion of the line extending from the boundary between the two Counties to Stevens' Corner, so called, a distance of about 5 miles, runs principally along the side of a steep hill, on which the roadway has heretofore been so narrow as to allow teams to pass each other only with difficulty. In order therefore to sufficiently widen the roadway where necessary, the sum of £37 10s. has been expended in blasting rocks, and in other labour.

The balance of the outlay has been applied to renewing the turnpike, and to general repairs along the line.

No. 49.

From Shediac to Cape Tormentine.

40 Miles.

The route of this line is from the Dorchester Road at Shediac, by way of the Scadouc Bridge at Scovill's Mills, the Railway Station and the Acadian Settlements, to Aboushegan River; thence continuing along the shore of Northumberland Strait, crossing the Tedish, the Big and Little Shemogue, and other small streams, to Cape Tormentine.

The line has been for the last year only under the control of this Department.

Several of the Bridges, and especially those over the Big and Little Aboushegan Rivers, were damaged by the great storm in October; but were promptly repaired, so that the public suffered but slight inconvenience. Of the whole expenditure of the year, the large proportion of £134 8 8 has been absorbed by the repairs of Bridges. An extent of 311 rods of the turnpike has been renewed, at a cost of £15 13 2; the sum of £51 9 6 has been laid out in gravelling, and the remainder of the expenditure in general repairs.

The probable necessity of renewing the Bridge over the Scadouc River within a short time, was intimated in the Annual Report of 1858. The arrangements for this purpose have recently been made, and the work placed under contract, with the view that the new Bridge may be available to the public at an early period of the ensuing Spring.

No. 50.

From Great Road No. 1, at Salisbury Corner, to Great Road No. 39, at Salmon River.

50 Miles.

This line of Road is comparatively new, and has been for the last year only under the supervision of this Department. It commences at the Great

Road near the Railway Station at Salisbury Corner, in the County of Westmorland, from whence it proceeds northerly, crossing the North River and Hoar's Brook, and takes in its course the upper part of Butternut Ridge, New Canaan, and the heads of Cumberland Bay and Grand Lake, to its junction with the Fredericton and Richibucto Road at Salmon River.

By means of the Bridge over the last named River, now in progress of construction and hereinafter more fully noticed, this Road will also have a northern extension by Road No. 43, communicating with Road No. 12 at Doak's Bridge on the South West Miramichi.

The new Bridge over Canaan River, described in two previous Annual Reports, is upon this line. The Bridges over Hoar's, Wilson's, and Alward's Brooks, have severally been repaired, at a total expense of £14 8s. An extent of 480 rods has been turnpiked, which, including survey repairs, amounts to a further expense of £84 15 3.

Of that portion of the line extending from the north fork of Canaan River to Salmon River, a thorough survey was made in November last, by Duncan McLean, Esquire, Deputy Surveyor of the District, who marked out and located the distance intervening between existing Roads. He reports that a considerable part of the wilderness land on the route is of a good quality for settlement, and favourable for the construction of the Road. The distance as ascertained by him from the north fork of Canaan River to the new Bridge on Salmon River is 31 miles and 74 rods, of which 10 miles and 182 rods are yet unopened.

No. 51.

From the Town of Chatham, on the south side of the Miramichi River, to Newcastle.

5 Miles.

This short line is one of those recently placed on the List of Great Roads. It was described at page 41, in the Annual Report for 1858. As there stated, it has only one Bridge, which is 200 feet in length. This is now so far injured by age that it will shortly require to be rebuilt.

No. 52.

From the Great Road in the Parish of Addington, County of Restigouche, to the Quatawankedgwick River.

38 Miles.

This line is a continuation of the Great Road No. 10, previously described as far as its termination at Glenlivett, opposite the Metapedia on the Canadian frontier, from whence it proceeds along the "Flatlands," so called, on the bank of the Restigouche River, to the Upsalquitch, a distance of 9 miles, and thence southwesterly to the mouth of the Quatawankedgwick, a further distance of 29 miles.

During the last year a small new Bridge of cedar timber, 60 feet in length, was erected over Rafting Ground Brook, at a cost of £12 10s., besides a

small expenditure for the repair of Bridges. The sum of £32 10s. was applied to turnpiking 302 rods; £181 13s. to cutting down hills, grading, and to "wharfing" sidelong places, or cross-slopes, and the remainder of the outlay to minor improvements and repairs.

No. 53.

From the Great Road in the Parish of Inkerman, County of Gloucester, to Shippegan Harbour.

9 Miles.

This line leaves Great Road No. 7, near Pokemouche Ferry, and running northeasterly, crosses the South Branch and main Pokemouche Rivers, terminating at Shippegan Harbour. Its position and character are described at page 43, of the Annual Report for 1858.

No part of the last year's expenditure on this line having been required for Bridges, the whole amount of £64 has been laid out exclusively on the improvement and repairs of the roadway.

No. 54.

From the River St. John, northward of the Tobique River, to Campbellton.

132 Miles.

This line of Road, explored and surveyed by Messrs. Garden and Ferguson in the year 1854, was placed on the Great Road establishment in the Legislative Session of 1859, and in the month of November following came under the charge of this Department. Its length as an unbroken line is equalled by that of one other only upon the list of Great Roads.

It commences at a site, selected as the most convenient for a ferry, on the left bank of the River Saint John, situated northward of the mouth of the Tobique River. From thence it proceeds towards the last named River, and follows the general course of the right or northern bank of the same, for a distance of 53 miles. Here it first crosses the branch called the Nictor or Little Tobique River, and recrosses the same at the distance of 73 miles, and near the outlet of Nictor Lake. At the distance of 102 miles it crosses the southeast branch of the Upsalquitich, and after diverging northwesterly by the right or eastern bank of that River for about 3½ miles, returns to its general course, and unites with Great Road No. 10 at about one mile from Campbellton, and at a total distance of 132 miles from the River Saint John. Some distance at either end of this line has been partially opened, but the intervening space for about 100 miles remains in a wilderness state. This comprises the widest extent of ungranted land in the Province, and a large proportion of it is of the best quality and well adapted for settlement. Other particulars of interest relative to this line are supplied in the description of the same at page 44 of the Annual Report for 1858.

The expenditure heretofore applied, tending to the opening of the whole Road, has been at its two extremes. During the past year a small sum only has been laid out for the general repair of the western or Tobique end.

No. 55.

From Joubert's Ferry, opposite the City of Fredericton, along the eastern side of the River Saint John, to Carleton County Line.

54 Miles.

The course of this line from its commencement at the mouth of Nashwank to its termination, is through a populous country well advanced in cultivation, with other evidences of industry and growing importance. As stated in a previous Annual Report, there are upon it ten Bridges, of which the principal are the Nashwauksis, 234 feet in length; the Keswick, 252 feet; the Mactaquack, 208 feet; Pennington's, 230 feet, and the Nackawikak, 294 feet.

The new Bridge over the Mactaquack, as signified in last Annual Report, has been completed. It consists of one span of 77 feet between abutments of timber 29 feet in height, having an approach on the eastern end, supported by two timber blocks, to the extent of 60 feet, and completed to the further extent of 270 feet by an earthen embankment.

The abutments are formed of hewn cedar well tied and bolted throughout, and the pannels are filled with stone from the bottom to the full height. Each abutment has both a down-stream and an up-stream wing or fender, built in the same manner and of the same material as the body of the work. The span is crossed by two side trusses, each consisting of nine pannels 8 feet in height, sustained and stiffened by queen posts and duplex braces, the whole formed of good white pine timber. The work is in all respects well and faithfully done.

The several Bridges over Curry's, Cliff's, Pennington's, and Hoyt's Brooks, have been repaired, at a total expense of £37 4 9.

No. 56.

From the Upper Line of York County, on the east side of the River Saint John, to Whitehead's, in the County of Victoria.

65 Miles.

This line is a continuation of No. 55, also through country abounding in good soil, more or less cultivated, and in an advancing state of improvement. A large proportion of its course is however over broken and irregular ground, especially in the Parishes of Brighton and Peel. It passes over 19 Bridges, of which the principal are those crossing Shaw's Creek, the Becaguimée River, Buckwheat Brook, the Little and Big Shiktelhawk, and the Munquart Rivers.

During the past year the Bridges over Shaw's Creek and the Little Shiktelhawk have been rebuilt; the former of which is 160 feet in length and 18 feet in height; and the latter 140 feet in length, comprising abutments respectively 30 feet and 55 feet in extent, with two intervening blocks of 16 feet each. Both works are substantially and durably built of cedar timber. Several other Bridges have been repaired, and the remainder of the expenditure has

been applied to such general improvements as were most required at various places along the line.

Contracts have been made for the erection of the seven new Bridges enumerated below, with sufficient time to afford the Contractors the opportunity of providing during the Winter, the necessary materials for completing their engagements early in the ensuing Summer:—

NAME OF BRIDGE.	Length. Feet.	Height. Feet.	Materials.	Contract Price.
1. Hatheway's Brook,	110	11	Cedar.	£24 10 0
2. Masquash Brook,	120	9	Do.	22 0 0
3. Big Shiktehawk,	140	12	Do.	57 10 0
4. Rideout's Brook,			Do.	12 10 0
5. Hayden's Brook,	80	13	Do.	21 0 0
6. Gray's Pond,	90	13	Do.	21 0 0
7. Pokiok,	80	13	Do.	21 0 0

Three separate sites on the Tobique have also been surveyed, and Plans prepared, with the view to the erection of a Bridge over that River.

No. 57.

From Kingston, on the south side of Richibucto River, to James Pine's.

22 Miles.

This line leaves the Great Road from Shediac to Richibucto at Kingston, and passes upwards along the south side of the Richibucto River, a distance of nearly 5 miles, where it crosses the Saint Nicholas at Alexander Robinson's. From thence it continues nearly parallel to the course of the former River, crosses Indian House Creek, and Coal Branch, and unites with the Fredericton and Richibucto Road, (No. 40,) at James Pine's.

This is one of the several lines which have been under the charge of this Department only during the past year. Within this period material repairs have been effected. An extent of 1,361 rods has been turnpiked, including a large proportion which also required stumping and levelling, at an average cost of 1s. 10½d. per rod.

The six following Bridges have been repaired, at a total expense of £43 0 6:—1. At Child's Creek, by increasing the height with hemlock and pine timber, and by renewing and levelling the gravel roadway, at a cost of £7 5s.; 2. At Wheaton's Brook, by renewing the covering with timber, brush, and gravel; 3. At James Pine's, by partly renewing the covering; 4. At Saint Nicholas River, by renewing 120 feet of the railing, and other repairs, at a cost of £14 5s.; 5. At Coal Branch, by repairing covering and railing, at a cost of £13 10s.; and 6. At Lewis's Creek, by slight improvements, at a cost of £1. The remaining expenditure has been for the repairs of cross-drains, and for other improvements.

No. 58.

From Moore's Mills, in the County of Charlotte, to the Oak Bay & Ed River Road.
9 Miles.

This line connects Great Road No. 27, at Moore's Mills, by way of Shearman's Mill and the Baillie Settlement, with Great Road No. 26, at M-George's Corner. As one of those recently placed on the Great Road list, it has been under the charge of this Department during only the last year. Within this period no expense either for the reconstruction or repair of Bridges has been incurred, the only two on the line being as yet in a serviceable state. An extent of 313 rods has been turnpiked, and portions of the same gravelled, at an expense of £38 10 9. The balance of the expenditure has been laid out in drainage, in the removal of rocks, and in other necessary labour, by which the line has been placed and maintained in good order.

Contract Price.

£24	10	0
22	0	0
57	10	0
12	10	0
21	0	0
21	0	0
21	0	0

NEW ROADS.

At the last Session of the Legislature, applications were made to the House of Assembly for the establishment as Great Roads, of eighteen existing or proposed new Lines, which were severally referred to this Department for the Report of the Chief Commissioner.

During the recess the Board have by personal inspection and from other sources within their reach, obtained such information with regard to the position, general course, extent, and condition of each of the lines proposed, as will enable the Legislature to judge of its importance and of the practicability of placing the same upon the Great Road Establishment.

These lines, distinguished in order from A to R inclusive, are as follow :—

A.

From the Court House in Woodstock to River D'Chute.

31 Miles.

The course of this Road is from Great Road No. 15, at the Court House, Woodstock, northwesterly about 2 miles, northerly about 3 miles, and generally westward of north for the remaining distance of 26 miles, where it reunites with No. 15, near the discharge of River D'Chute. The principal streams which it crosses are the Little and Big Presqu'ile, and the Guisguitt. Over the second of these, distant about 20 miles from the Court House, is a Bridge about 270 feet in length, of inferior construction, which has become frail and requires to be rebuilt. The first 27 miles of the Road are made and in a good state, but in some places much narrower between the fences than the legal width. The remaining distance of 4 miles has been some years since cut out, but during subsequent neglect has again grown up with bushes.

Much of the line is about equi-distant from the boundary of Maine and the River Saint John. As far as it is opened it is much travelled, and intersects

one of the most dense and flourishing interior settlements of the Province. As a Great Road of communication it is easier for traffic than that along the bank of the main River, and is several miles shorter in distance.

B

From Jones' Mill Creek, in the Parish of Greenwich, through the Counties of King's, Queen's, and Sunbury, to Perry's, on the Nerepis Road.

28 Miles.

This proposed line was examined by the Honorable James Brown, in the latter part of October last, whose Report is as follows:—

“The proposed line from Perry's, in the County Sunbury, through Queen's, and thence to Jones' Mill Creek in King's, will commence at the Nerepis Road, a short distance from Perry's; thence extend through the Victoria Settlement in the County of Sunbury, to the Queen's County Line, thence through the Clone's Settlement to the Church in Jerusalem, and thence to Jones' Mill Creek, at the River Saint John, in the County of King's, the estimated length being 28 miles.

“The district through which it is intended to pass is generally fit for cultivation; a large proportion of the soil is good, and much of the land settled. Some of it is stony, and from Jerusalem to the River Saint John, especially, much of the distance is hilly. A careful exploration, in the first place, is therefore absolutely necessary, in order to lay out the Road in the proper place. The Settlements above named have Bye Roads through them, but how far any of them might be made available in the construction of the proposed line as a Great Road can be determined only after careful exploration. It has been urged, in my hearing, as the chief reason for constructing this line of Road, that it would very much shorten the travelling between Fredericton and Saint John. This is a great mistake; the distance would be about the same, if not greater.”

C

From the Post Office at Harvey Corner, in the County of Albert, to the Albert Quarries.

3 Miles.

This Road leaves the Great Road No. 30, at Harvey Corner, so called, in the Parish of Harvey, and runs down the right bank of the Shepody River about one and a half miles, from whence it crosses a sand-bar which connects the main land with Mary's Point, and passes through the centre of the latter to the Albert Quarries, a total distance of about 3 miles.

The course of the line is through a well-settled farming district, and is already made for the whole distance. It has no Bridge of importance. It is much used, especially in connection with the business of the Quarries.

D

From the Great Road at Kouchibouguac, by way of Point Sapin, to the Great Road at Eseuminae.

30 Miles.

The distances of the points proposed to be connected by this Road are as follow:—From the Great Road No. 6, at the north end of Kouchibouguac Bridge, to Tweedie's, $3\frac{1}{2}$ miles; thence to the north end of Point Sapin, 17 miles, and thence to Eseuminae, $9\frac{1}{2}$ miles.

Between the Kouchibouguac and Point Sapin the Road is only partially made, and would require a considerable outlay to complete it sufficiently for public use. From Point Sapin to Eseuminae there is no practicable carriage road. Following the course of the Gulf Shore the distance to the Light House is about 10 miles.

If the proposed line be placed on the Great Road establishment, it should be thoroughly explored and permanently located previously to any expenditure for its construction.

E

From Chatham, by way of the southern bank of the South West Miramichi and of Cain's River, to the Fork of the latter, and thence to Great Road No. 43, leading to Salmon River.

63 Miles.

The first part of this line coincides with that of Great Road No. 51. The distance from Chatham along the southern or right bank of the South West Miramichi to Stewart's, Indiantown, is about 22 miles by a waggon road; thence to the Forks of Cain's River, about 15 miles by a line cut out; from thence to Sabbie's River, about 7 miles by a waggon road; from thence to the "Horse Shoe" on Cain's River, about 5 miles by a line cut out; and from thence to Great Road No. 43, about 14 miles over ground not yet surveyed. The whole distance is about 63 miles.

The following is a Report on the line from William Parker, Esquire:—

This Road "begins in the Town of Chatham, and following to a great extent the courses of the River, crosses Clark's Cove, Crocker's Cove, Flett's Cove, Foley's Cove, Barnaby's River, and Clark's Brook, to Stewart's, Indiantown, 22 miles from Chatham. This section is a good waggon Road all the way. The Bridges over the Streams and Coves noted are in a good state of repair, with the exceptions of those over Clark's Cove and Crocker's Cove. The former of these is very nearly rotted down, and the latter is very little better. The cost of a cedar Bridge at Clark's Cove would be £150; at Crocker's Cove £40.

"From Stewart's to the Forks of Cain's River, the distance is 15 miles. This section is cut out and levelled with the exception of the last two miles, but little has been done in the way of turnpiking. There are no Bridges of any size on this section—the Brooks being small and easily spanned.

“From the Forks the Road leads up the easterly side of Cain’s River, crossing Cold Brook, Salmon Brook, and Sabbie’s River at the Mill Establishment of T. W. Underhill, Esq. This section is 7 miles, and is a good waggon Road all the way. The Bridges at Cold Brook and Salmon Brook are tolerably good. The one over Sabbie’s River requires to be built; estimate of cost £30.

“From Underhill’s Mill to the ‘Horse Shoe’ on Cain’s River, the distance is 5 miles. This section is cut out, but no turnpiking has been done. From the ‘Horse Shoe’ to the Gaspereaux Road, the line has not been located. The difficulty in the way is ‘Six Mile Brook,’ which has very high banks, and no suitable place has been found to cross that stream. The route of travelling is to cross the Cain’s River at the ‘Horse Shoe,’ and follow the Road opened up at the north side, and recross the River at the Gaspereaux Road. I made no examination of Six Mile Brook, but from enquiries I am lead to believe that a proper place can be found where that stream can be crossed. An exploration would therefore be necessary, and the line located from the Horse Shoe up the south side of Cain’s River, crossing Six Mile Brook and connecting with Gaspereaux Road. This section would be about 14 miles, and the only difficulty is Six Mile Brook, which no doubt can be overcome by an exploration.

“You will at once see that it would make materially against this line of Road if the Cain’s River has to be crossed at the ‘Horse Shoe,’ and re-crossed opposite the Gaspereaux Road. In order to avoid this, and form a connection on the south side with that Road, an exploration will be necessary, and the line marked out over the 14 miles already referred to.”

F

From Dawson Steeves’ to the Albert Mines.

4 Miles.

This Road commencing near Dawson Steeves’, on the Great Road No. 29, leading from Salisbury to Hopewell, runs in a northwesterly direction, a distance of about 4 miles, connecting the Village and Works of the Albert Mines with the Town of Hillsborough.

These Works are prosecuted by a Company whose enterprize has within five years caused a Village of importance to spring up in their neighbourhood. During the last season the quantity of coal or asphalt raised from the Mines, and shipped from the Company’s Wharf at Hillsborough, was 15,000 tons, of the estimated value at the place of shipment, of \$225,000. The total produce of oil from this coal will be about 1,500,000 gallons, which at 80 cents per gallon, would be in value equal to \$1,200,000. Only a part of the mineral is converted into oil in this Province, yet in the mining and manufacturing processes together, employment is given to a large number of people, and the great benefit, both to industry and property, flowing and likely to flow from the working of these Mines, is manifest.

On the proposed Road there is no Bridge of importance, and the line is formed and turnpiked the whole distance.

From the Finger Board to D. P. Sherwood's Mills.

10 Miles.

The proposed Road is situated in the Parish of Norton, in the County of King's. It leaves the Great Road No. 1 at the Finger Board, so called, and at the distance of about 10 miles in an easterly direction reaches D. P. Sherwood's Mills. Much of the country over which it passes is rough and hilly. The Road is in a practicable state for about 5 miles, and the remainder of the distance is opened, but much inferior. There are eleven Bridges on the line, but chiefly very small.

II

From Oromocto to Gagetown.

23 Miles.

The proposed line is that known as the "front Road," leaving Great Road No. 13, at the Village of Oromocto, and following the western side of the River Saint John, by way of the Sumbury Court House and Burpee's Mill, to the lower Baptist Meeting House in upper Gagetown, and diverging thence by way of Dingee's Mill, to the Shire Town of Queen's County, the whole distance being estimated at 23 miles. The Road is all formed, and has been long in public use. It is with slight exception in good order, and can be so maintained at a moderate expense.

I

From Indiantown in the Parish of Derby, to the North West Miramichi near M^cKendrick's, thence down the north side of that River, to the Great Road from Fredericton to Newcastle.

20 Miles.

This line commences on the Great Road last named, at the place known as Indiantown, a short distance below the discharge of the Renous River, and from thence takes a northerly direction to M^cKendrick's Mills, on the North West Miramichi River, an estimated distance of about 7½ miles; thence upwards along the right bank of that River to Matchett's Ferry, crossing which it returns by a course nearly parallel to the opposite bank of the same River, reuniting with the Great Road eastward of the North West Bridge, the total estimated distance being about 20 miles.

The following is a Report in detail from William Parker, Esquire, Deputy Surveyor of the District:—

"I made an examination of the line of Road from Indiantown in the Parish of Derby, to the North West River, connecting with the line of Road from 'Matchett's Ferry' to Newcastle, and now report 'the probable distance, and its state and condition.'

“ You will notice by the enclosed plan, that the new line commences at the Post Road from Newcastle to Fredericton, near Robert Jardine's. From thence it pursues a northerly course, crosses ‘Lake Brook,’ and intersects the Road to ‘Matchett's Ferry’ at M'Kendrick's Mills. The probable distance is seven and a half miles through a level forest country, and will require only one small Bridge, viz. at ‘Lake Brook.’

“ In consequence of cedar land intervening in the direct route from one point to the other, the line was varied as marked on the plan, in order to make it suitable for the future settlement of the District, to cross ‘Lake Brook’ where the banks were low, and to secure dry land for a good permanent Road.

“ A grant of £61 was expended this year on the southwest end, in cutting out the Road twenty feet wide, clearing off all roots, stones, &c., and levelling where required. A distance of 622 rods was opened up in this way through a thick forest, at a mean price of 1s. 10d. per rod. There was also a small grant of £25 expended on the north end three years ago, and 224 rods cut out twenty feet wide. From M'Kendrick's Mills the Road leads up the southerly bank of the North West River to ‘Matchett's Ferry,’ thence down the north side of the River, crossing ‘Little Mill Stream,’ ‘North West Mill Stream,’ ‘M'Kay's Cove,’ ‘Oxford Brook,’ and forms a junction with the Great Road from Newcastle to Fredericton, near the North West Bridge.

“ This last distance is about 12 miles, and is a waggon Road all the way from its intersection of the Great Road near the North West Bridge to M'Kendrick's Mills.

“ The principal Bridges are those over the Streams already noted. There are a few smaller ones not necessary to refer to particularly. Those over ‘Little Mill Stream’ and ‘North West Mill Stream’ have been recently built, and are therefore in good condition, the one at ‘M'Kay's Cove’ has only been built a few years, but the one at ‘Oxford Brook’ should be rebuilt the ensuing year. The cost of a cedar Bridge at this Brook would not exceed £30.

“ Some of the culverts and small Bridges are out of repair, and will require attention next year, and there are portions of the Road requiring to be turnpiked, and additional culverts put in to carry off the water; beyond this the Road is in a tolerable state of repair.

“ From the tracing on the plan you will at once see that the new line from Jardine's to M'Kendrick's Mills, will form a connecting link between the Post Road at Indiantown, and the Road at Matchett's Ferry, and when opened up there will be a continuous line from the Great Road near the North West Bridge in the Parish of Newcastle, up the north side of the North West River, through the most thickly settled portion of Northesk, through to the South West River, and intersecting the Post Road near the westerly line of the Parish of Derby.

“That you may have a correct idea of the importance of this Road, considered in its whole connection, I would observe, that from its starting point in the Parish of Newcastle, to Matchett's Ferry, it passes through some of the most important Settlements on either branch of the Miramichi River. I would particularly notice the ‘M'Kay Settlement’ below the North West Mill Stream, and the ‘Whitney Settlement’ above. This district of country for beauty of natural scenery—the quality of the soil—well cultivated farms, and the general appearance of prosperity, is second to no rural district in our County, and it must ever command a prominent position in our agricultural operations, from year to year.

“At M'Kendrick's, where the new line strikes the North West River, there is a large Mill Establishment, and it is the centre of the trade and business on the south side of the River. The Road through to Indiantown passes through a tract of good land, well adapted for settlement, and from enquiries made of me, as Deputy Surveyor, I have no doubt the vacant land will soon be located all along the line.

“I would also remark, that the well known North West Meadows—the great hay producing district, is in close proximity to this Road, lying immediately above Matchett's Ferry. When the Road is opened through to Indiantown, this great hay depot can be reached from any point of the compass, and its stores distributed, as the wants of the County may require. A few miles above the hay district, on the Sevogle River, a quarry of lime stone has been discovered, (the only one yet known in our County,) of superior quality and inexhaustible in quantity. Our lime heretofore has been manufactured from imported stone, and as a consequence its use as an article of manure has been confined to the farming districts near the Towns of Chatham and Newcastle. By means of this quarry, lime will come into more general use, and will be a mine of wealth to the farming districts remote from the lime manufactories in the Towns. When increased facilities are furnished for the transit of this article, not only will the Parish of Northesk have lime in abundance, but by means of this Road from Indiantown to the North West River, the inhabitants of the upper Parishes on the South West Branch will have a ready communication to the lime quarry.”

J

From Chatham, crossing the head waters of Barnaby's River, and thence through the Counties of Kent, Queen's, and King's, to the Great Road between Sussex and Saint John.

90 Miles.

No survey or exploration has been made consecutively across the country by the route described as that of the proposed line. The total distance would be upwards of 90 miles, through portions of the four Counties of Northumberland, Kent, Queen's, and King's. At least two-thirds of that distance will be through a wide central tract as yet unsettled, and further exploration is necessary to determine whether the line as indicated may not unfavourably

intersect the barrens known to occupy much of the summit level separating the sources of streams flowing oppositely into the Gulf of Saint Lawrence and into the River Saint John.

The following is Deputy Parker's Report relative to the proposed line :—

“ There is no line of Road from Chatham, across the head waters of Barnaby's River, to Salmon River. An exploration was made some years ago by Commissioners Crocker and Goodfellow, but according to their Report no suitable line could be found. A Road has been opened up from the Town of Chatham, crossing the Napan River, through the Welfield Settlement, to Black River. This distance is about 10 miles. The Bridges across the Napan and Black Rivers are small and in a tolerable state of repair, and the Road is turnpiked all the way. A continuation of the Road has been marked out from Black River, crossing Vondy's Brook, to the 'High Landing' on Barnaby's River, a distance of $4\frac{1}{2}$ miles, $1\frac{1}{2}$ miles of which are cut out. A tracing of this Road is given on the Plan.

“ There has been a good deal of interest manifested to have a Road explored and opened up from Chatham to the Salmon River, and the prevailing opinion is that a good line may be found by the necessary exploration. The frequent surveys I have been called upon to make on the head waters of the Barnaby and Sabaas Rivers, in defining the boundaries of timber berths, has made me pretty well acquainted with these localities, and I have no hesitancy in saying that a good line of Road may be found throughout. If considered advisable it may be extended from the 'High Landing,' which would make available the $14\frac{1}{2}$ miles already located. The country is wonderfully level, and there are as fine tracts of land for settlement on the route as can be desired. The only difficulty would be to avoid these stretches of barren that make in from the Kouchibouguac and the head waters of the middle branch of Barnaby's River, which no doubt can be done by the necessary exploration in locating the line.”

K

From Richmond Corner to Eel River.

14 Miles.

This line leaves the Great Road between Woodstock and Houlton at Richmond Corner, and lies exclusively in the Parish of Richmond, in the County of Carleton. It runs in a southerly direction through land chiefly settled and of good quality, for the whole extent of about 14 miles to Eel River, the north western boundary of the adjacent County of York. Much of the line is in the vicinity of the New Brunswick and Canada Railway, with which it communicates at Richmond Corner.

L

From the Bridge at Thompson's on the Nashwaunksis, along the Royal Road, thence through Cardigan, Hamtown, Pidgeonville, Boydeville, Stanley, via Nashwaunk, passing the Miramichi, towards the Restigouche.

This line leaving the Great Road No. 55, near the mouth of the Nashwaunksis, on the eastern side of the River Saint John, taking in its course a part of the Royal Road, and passing through the places enumerated, would reach Stanley in the probable distance of about 25 miles. From thence the course indicated is through country chiefly unsettled, and the greater part of which has never been surveyed or explored.

M

From William Smith's, in Geary, by way of Hartt's Mills and the southwest side of the Oromocto Lake, to the New Brunswick and Canada Railway.

50 Miles.

The proposed line leaves the Great Road from Fredericton to Saint John at William Smith's, in Geary, and proceeds in a westerly direction by way of Ralph Seeley's; thence crossing the South Branch of the Oromocto River, it takes in its course Hartt's Mills, John M. Nason's, and the intervening country, to the southwest angle of Oromocto Lake; and thence continues to the Dumbarton Station of the New Brunswick and Canada Railway.

The first 19 miles of the Road are already made, through settled country, and are in good travelling condition. The succeeding 3 miles to Hardwood Creek, including a Bridge over that stream, were opened during last season. From thence, for a distance of about 16 miles, the line is not definitely surveyed. For the remaining distance of about 12 miles, it will probably coincide with Great Road No. 23.

There is much ungranted land of good quality on the central portion of the route above indicated; and settlement is already advancing in that direction.

N

From the Town of Magaguadavic, by way of the lower Bridge and John Dewar's, to the Roix Road.

6 Miles.

The following is the Report of the Honorable James Brown on this line, dated 19th November last:—

“It is, as far as I can judge, about 6 miles long, and in tolerable condition as a Bye Road the most of the way. The greater part of it is level, or nearly so; but it passes over several unavoidable hills. There is on it, or near it, much good material for road-making; and some of it, passing through wood-land, requires skirting. There are thirteen or fourteen families settled near it, besides those who inhabit that portion of the Town of Saint George which lies on that side of the River. The lower Bridge over

the Magaguadavic is on this line of Road, which is the principal cause of the application to put it on the Great Road establishment, this Bridge being required to unite the two portions of the Town, and at the same time the most difficult on the River to construct and maintain. This Bridge is being repaired just now under the direction of Mr. Benjamin Williams."

O

From Great Road No. 1, at the Bend, by way of the MacLachlan Road, to Great Road No. 57, near the Richibucto River.

30 Miles.

The first 12 miles of the proposed line, extending from the Bend to the Cocagne River, are in travelling order. The abutments of the Bridge over that River, built 4 years ago, are good, but the covering is defective. From thence onwards there are only 2 miles turnpiked, and but little other labour has been performed. Bridges of 100 feet and 180 feet in length respectively, will be required over the South Branch and main Buctouche Rivers, and four intermediate Bridges of about 50 feet each. The land is generally favourable for the construction of the Road, with the exception of one swamp, of about 2 miles in length, between the Cocagne River and the South Branch of Buctouche.

P

From Tracey's Mills, by way of Israel Smith's, through New Maryland, to Fredericton.

22 Miles.

This line leaves the North West Oromocto River at Tracey's Mills, and proceeds by a northerly course through the principal Settlements of New Maryland, in the County of York, to Fredericton. It is connected also with the Settlements on both sides of the North West Oromocto, by a Bridge over that River. There are no other Bridges of magnitude on the line.

The Road has been for many years practicable for loaded teams. Much of it is good, and the material favourable for the improvement of the remainder.

Q

From the Latta Farm on Salmon River, in the County of Queen's, to Great Road No. 37, at the Den, (so called.)

34 Miles.

The following is in substance the Report of John Robertson, Esquire, of Cambridge, on this line :—

Its course from the Latta Farm is chiefly along the eastern shore of the Grand Lake, and through a settled district. The first 6 miles are not in a bad state, and the dry soil of this part of the line is favourable for its improvement. The succeeding four miles are swampy, without suitable drainage, and in a bad state. The remaining 24 miles are in good condition, with the

exception of $2\frac{1}{2}$ miles between Cumberland Bay and Young's Cove. A portion of the line to the extent of about 200 rods is liable to be overflowed in the Spring, an inconvenience which can be avoided, by diverting the Road in that situation further from the margin of the Lake.

There are three Bridges of the larger class on the line:—

1. That over Red Bank Stream, which, including the approaches, is 320 feet in length, and 25 feet in height from the bed of the stream to the top of the roadway. It was built 14 years ago on four blocks of pine and hemlock timber. The stringers, covering, and railing, are now in a dangerous state, and will require renewal early in the ensuing Spring. The width of the water-way is 130 feet. The approaches are on bents, built 13 years ago, which are still sound, and with trifling repairs are likely to remain so for some years longer. The whole original cost of this work was £150.

2. Over Cumberland Bay Creek, 363 feet in length including approaches, on 17 bents, built six years ago in a faithful manner, of the best pine and haemataek timber, and not likely to require repairs for at least ten years hence. The total cost £130.

3. Over Wasson's Brook, 130 feet in length, built five years ago. The abutments, covering, and railing, are wholly of pine timber, and cost £30. It is not probable that repairs will be necessary during the ensuing ten years.

There is no Bridge over Coal Creek, which is a cause of much inconvenience and sometimes heavy loss of property. The situation may be deemed favourable for the construction of a Bridge on pile bents, as there is no current or run of ice in the Spring. The width of water-way is 329 feet, and the approaches will be 160 feet in extent. The depth of water in the main channel is 10 feet, and in the north channel 5 feet. The height of the Bridge above low-water should be 20 feet.

The small Bridges have all been built anew within the last few years, and these as well as the culverts are all in good condition.

R

From Cody's, through the Hebrinian Settlement, by way of Brown's, to Great Road No. 32, near Quaco.

15 Miles.

The following is the Report of John Jordan, Junior, Esquire, relative to this line:—

“The general course of this line from Cody's to Quaco, in Saint Martins, is about east-north-east, and the length of Road 15 miles. It is generally in a passable state, except some broken culverts and bad ruts, which render it rather rough, and none of the Road having been thoroughly made and gravelled, it becomes in Spring and Fall very soft and muddy.

“Taking the Bridges in rotation towards Quaco, the first is about a mile and a quarter from Cody's.

" 1. This crosses one of the branches of the Black River, commonly called Hayne's Brook, is 40 feet long, recently built of cedar and pine timber, with stone approaches, and is substantial and good.

" 2. A small Bridge within a quarter of a mile of the first, 30 feet in length, repaired last Summer with spruce timber, and is in good condition.

" 3. This Bridge is within a mile of the Hibernian Settlement, crossing the western or main branch of the Black River. It is in length from bank to bank 300 feet. The stream is 100 feet wide, but the ground on each side is low and liable to be overflowed, consequently the Bridge requires to be the full length above named between the high banks at the ends. It is all spruce timber, old and much dilapidated, and requires to be rebuilt.

" 4. Across the Gardner Creek, 132 feet in length, was built in 1855 of squared spruce timber, and is yet good and substantial.

" 5. Over a branch of the Ten Mile Creek, 54 feet in length, very old, of spruce timber, and requires to be rebuilt.

" 6. Crossing another branch of the Ten Mile Creek, is 66 feet long, was built in 1854 of spruce timber, and with some trifling repairs would last several years longer."

BRIDGES BUILT BY THE BOARD OF WORKS.

No. 1.

Bathurst Basin Bridge.

The new structure at this place was fully explained and described in last year's Annual Report. The contract for its erection was entered into on the 27th January 1860, with Mr. Joseph Morrison of Bathurst, for the sum of £2,940; the work to be completed on or before the 31st October, following. The Bridge having not been finished, as already mentioned, within the time specified, it cannot be fully completed before the ensuing Spring. It was, however, early in November sufficiently advanced to be available for public use in the meantime. The material used by the Contractor is of the best description, and the work, so far, has been well and faithfully performed.

The following is the Report of Mr. George Wilson, the Inspector, dated 28th December last:—

"I beg leave to lay before you the following Report of the present state of the work of the new Bridge across the Basin at Bathurst.

"Of the handrailing remain to be finished, 1,000 feet on the lower side, and 1,930 feet on the upper side, but the material for the same, within a small quantity, has been supplied. No part of the finished railing has been painted.

"Two spans remain to be kneed with 14 knees each, the material for which, including the iron, has not been supplied.

"The whole of the fenders are yet to be put on, but nearly sufficient timber is on hand, and in part prepared. None of the iron has been supplied.

"There is sufficient iron on hand for about one-half the unfinished railing.

"I estimate the expense of completing the work, including the supply of necessary materials, in a satisfactory manner, at about £125 to £150.

"The height of the Bridge throughout, averages about 9 inches higher than required by contract, and the work as far as finished, is well executed and according to agreement.

"The Bridge has been used by the public for upwards of a month, and is in a sufficiently complete state to be safe for traffic with ordinary care."

No. 2.

Maetaquack Bridge.

The erection of this Bridge was contracted for with Mr. John Kilburn, of Douglas, in the County of York, in February last, for the sum of six hundred and fifty pounds, the work to be completed on or before the 1st day of October following.

The structure consists of one span of 77 feet, having on the left an abutment of 45 feet in length, and on the right an abutment and timber approach of 80 feet, the latter extended and completed by an earthen embankment of 270 feet in length. The span is crossed by two side trusses of nine panels each, 8 feet in height, having a width of 16 feet between them. They are strengthened by queen posts, 18 feet in height, and arch braces. The width between the railing of the approaches is 18 ft. 9 in., and on the top of the embankment 20 feet.

The abutments are built with wings or fenders both up and down stream, at angles of 45 degrees with the face of the work, and carried up with a batter of 1 in 12 to the height of 19 feet; the purpose of the up-stream fender being to resist the lateral pressure of the ice and driftwood borne down by the Spring freshets of the River Saint John. For the remaining height of 10 feet, the abutments are carried up vertically. The timber used for both the abutments and wings is exclusively cedar, flattened, and hewn to a fair face, the whole being thoroughly ballasted with stone and well bolted with best iron. The trusses and handrails are of white pine, and the swing girts and floor timbers of tamarac. All the materials furnished are of the best quality, and the workmanship has been faithful.

No. 3.

Salmon River Bridge.

This Bridge is over Salmon River, near the confluence of the Gaspereau River, in Queen's County, at the termination of the proposed Great Road leading from Salisbury Corner, in the County of Westmorland, through New Canaan, to the Fredericton and Richibucto Road, and uniting both of

these Roads with Great Road No. 43, leading to the South West Miramichi at Doak's Bridge.

A careful examination of the stream was made in September last, and the site of the new structure determined; agreeably to which a design and specification were prepared. On the 15th of October, a contract was entered into with Mr. Alexander Thompson for the construction of the work, for the sum of £520.

The total length of the Bridge is 220 feet, consisting of two abutments of 20 and 32 feet respectively, two spans of 64 feet each, and one of 16 feet, with two intermediate blocks of 12 feet each. The clear height above the bed of the River is 19 feet, and the width between the railing is 20 feet. The abutments are to be built with wings on the up-stream side, and the blocks or piers with heaters or ice-breakers; the timber above low water level is to be of sound hewn cedar, well fitted and bolted, and the pannels are to be filled with stone from the foundation to the top. The 64 feet spans are to be crossed by substantial queen post trusses, 19 feet in height, of white pine, with swing girts of the same material or tamarac. A substantial handrailing of like materials is to extend from end to end of the whole structure. The roadway over the abutments will be finished with gravel 12 inches in depth at the sides, and 18 inches at the centre, and substantially connected with the Road at either end. The spans will be covered with 3 inch pine or tamarac plank. Both the trusses and railing are to be framed from scantling accurately sawn to dimensions without planing, and are to be painted with three good coats of approved mineral paint.

The whole is to be satisfactorily finished on or before the 31st July next.

No. 4.

Bennett's Upper Brook Bridge.

The Bridge at this place having in the month of October last, as before stated, unexpectedly given way whilst a team loaded with iron was passing over it, arrangements were forthwith made for its reconstruction. The total length will be 180 feet, comprising two abutments with one intervening span of 20 feet. The height of the finished level will be about 40 feet above the bed of the ravine. The material will be cedar timber, and the roadway will be covered with gravel. The work has been undertaken by contract for the sum of £284, to be finished on or before the 1st July next.

No. 5.

Little Buctouche Bridge.

In consequence of the destruction of the Bridge at this place by the storm in October last, a design and specification were prepared for a new structure, and a contract has been made with Mr. P. King, of Moncton, for the erection of the same, for the sum of £1,500.

The total length of the work will be about 1,450 feet, and the roadway is to be two feet higher than that of the previous Bridge. Beginning at the

northern end the construction will be arranged as follows:—1. An abutment or solid causeway 274 feet in length; 2. Two spans of 40 feet each with an intervening or channel block of 26 feet; 3. Nine blocks and nine spans in alternate succession, of 16 feet each; 4. A southern abutment or solid causeway of 782 feet in length.

The foundations are to be prepared by levelling up all holes with logs. After which a flooring of spruce poles, each 30 feet in length, and not less than 5 inches in diameter at the small end, is to be laid closely, evenly at the ends, and transversely to the line of the Bridge, as the first course of each part of the solid work. Upon this are to be laid successive courses of sound hemlock or spruce logs, in four equi-distant lines longitudinally, and 10 feet from centre to centre transversely, to the height of ordinary low water. Above this level the timber is to be of cedar, except where otherwise specified, and laid in like manner. In the channel block is to be provided a close laid flooring of cedar poles, affording a clear depth below the top of $3\frac{1}{2}$ feet, to be filled and levelled with stone. In all other parts of the solid work a like flooring is to be provided for a clear depth of $2\frac{1}{2}$ feet of stone. Upon this is to be laid by hand a sufficient coat of brush, to be succeeded by a covering of good shore gravel, not less than 7 inches in depth at the sides, and rounded to not less than 18 inches at the centre. The roadway will be 18 feet in clear width between the handrailing.

The forty feet spans are to be bridged by six equi-distant stringers of good sound pine, each 14" x 10" stiffened to the extent of five feet at each end, by projecting timbers 12" x 10" and by tamarac knees, well bolted and secured to each stringer and to the solid work of the block. The covering will be four inch pine or spruce plank.

The sixteen feet spans have each six equi-distant cedar stringers covered with cedar flooring, and finished with brush and gravel in conformity to the roadway over the abutments and blocks. A substantial handrailing of cedar or pine is to be erected and thoroughly secured for the whole length of the structure. The work is to be satisfactorily completed, including painting as specified, on or before the 14th day of September next.

No. 6.

Cocagne River Bridge.

A design and specification for this work were prepared concurrently with the same arrangements for the Little Buctouche Bridge, last described. The general character of both works, the materials employed, and the details of construction are so nearly similar as to render unnecessary a separate description. The difference is chiefly in the lineal extent and in the number and spaces of the subdivisions, which for the Cocagne Bridge, are as follows:—

	North abutment or solid causeway,	988 feet.
	Four spans and four blocks of 18 feet each,	144
Channel.	{ Span,	43
	{ Block,	23
	{ Span,	43
	{ Block,	23
	{ Span,	24½
	{ Block,	26
		182½
	Thence six spans and six blocks of 18 feet each,	216
	Southern abutment or solid causeway,	419½
		1,950

The construction of this Bridge was contracted for by Mr. John Duffy, for the sum of £1,940; the work to be satisfactorily completed on or before the 14th day of September next.

No. 7.

Seadoue River Bridge.

The length of this Bridge is 664 feet, including one central span of 50 feet, and two spans on the western side of 30 feet each. It crosses the estuary formed by the junction of the Seadoue with Shædiac Harbour, where there is but slight current and a rise of tide not exceeding from 4 to 6 feet.

The large local traffic at this point, chiefly in connection with the Railway terminus, required that the new Bridge should, if possible, be available for public use at the earliest opening of the Spring. A design and specification were therefore prepared, with the view that it should be sufficiently advanced for the public accommodation on or before the 15th day of April next, and be satisfactorily completed prior to the 1st June following; and a contract to this effect has been made with Mr. S. J. Welling, for the sum of £449 15s. A surplus quantity of hemlock logs originally provided for the Railway works and lying near the place could be commanded for expediting the work of the Bridge, whilst a more durable timber could not be readily procured.

These considerations determined the choice of the material for the block work. The logs will be of hemlock, not less than 10 inches in diameter at the small end. The foundation of the old work being sound to the level of half-tide, the new work will be carried up from this line to the requisite height, varying from 7½ to 11½ feet. An increase of the clear height under the central span, for the convenience of the navigation, is obtained by giving an inclination to portions of the roadway on each side. The roadway over the block work is provided for by a close flooring of hemlock logs, not less than 9 inches in diameter at the small end, sufficiently covered with brush, and finished with gravel 7 inches deep at the sides, and rounded to 13 inches at the centre, the whole secured laterally by pine curb-pieces 12 x 10, well bolted to the work below.

The 50 feet span is bridged by two side trusses 8 feet in height, sustaining two swing girts and five equi-distant lines of stringers.

Each of the 39 feet spans is bridged by five equi-distant stringers, the outside ones being trussed by bent beams, which sustain a central swing girt, relieving the strain on the remaining stringers.

The covering of the spans will be 4 inch pine or tamarac plank.

The material for the trusses and handrailing will be white pine or tamarac, accurately sawn to dimensions, so as to be framed without planing, the due protection of all which by painting is provided for and included in the contract.

No. 8.

Grand Falls Bridge.

The new work at this place was fully specified in last year's Annual Report. The construction is now complete and the Bridge open for public use.

On the 30th day of November last, John Wilkinson, Esq., Civil Engineer, proceeded to the Grand Falls, with the view to make a careful and thorough examination of the whole work, including a test of the strength of the Bridge itself, in order to ensure the future safety of the travelling public.

Mr. Wilkinson's Report is as follows:—

Office of Public Works, 8th December 1860.

"SIR,—Information having been received from Mr. Tomlinson, superintending the construction of the new Bridge at Grand Falls, that he was preparing to load the same in such manner as would afford a satisfactory test of its strength; on the 30th ult., at your request, I proceeded to the place in order to inspect such test and its result, as well as otherwise to report generally upon the character of the work.

"The immediate object of loading the Bridge was permanently to adjust the cables to the anchorage, in order to close up the masonry connected with the latter before the season should be too far advanced. The platform was therefore only temporarily laid for this purpose.

"The intention of Mr. Tomlinson in the first instance was to apply a load of 100 tons, in addition to the permanent weight of the suspended structure. The latter consisted of the cables, the suspension rods, the main transverse beams, and the 4 inch plank of the floor. The intermediate transverse beams, the trussed railing and their appurtenances were not added, but in point of weight were according to his estimate fully equalled by the temporary staging, extra plank, and other materials, as well as the men, horses, and sleds employed without interruption upon the work.

"He commenced the deposit of the stone on the platform about the 12th ult., by hauling it in sleds from the waste material quarried on the eastern bank of the River, first to a scale, prepared for the purpose, on the eastern approach of the Bridge, adapted to weigh one ton at a time. Here the stone was carefully weighed and removed, ton by ton, to the suspended roadway,

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on which it was laid in equal quantities on each side, first on the eastern and then on the western end, the central portion being loaded the last. It was so piled on the sides as to leave a sufficient way for a single horse and sled freely to pass from end to end at all times, as well as for the convenience of the workmen in continuing without intermission the completion of the cables and their attachments.

After the deposit of 58 tons equally distributed in the manner described, the roadway became so encumbered that any additional material would have impeded the necessary passage of teams, as well as the free movements of the workmen, for which reasons Mr. Tomlinson desisted from increasing the load until the arrival of some one authorized to inspect the result. Having waited until the 26th ult., when the advanced state of all other parts of the work and the lateness of the season, rendered it necessary that the trussed railing and the platform should be permanently attached and completed, he commenced removing the load westward off the Bridge, by sleds, in the same manner in which it had been brought on. At the time of my arrival therefore the removal had been going on six days, and but a few tons remained on the platform, but sufficient to shew the manner in which the whole had been laid and distributed. The stone which had been hauled off was also pointed out to me, from a view of which, I had no reason to doubt the correctness of the total weight above stated. Mr. Tomlinson further explained that each ton from the scale was purposely made over weight, so that the exact weight of the whole could not be less than 60 tons.

In a statement prepared by me, at your request, last year, it was assumed that the greatest incidental load to which the Bridge could probably at any time be subjected would be about 132 tons, and that adding 35 tons for the permanent weight suspended, the gross maximum load equally distributed would be 167 tons. The proportion which this would bear to the breaking strain of each of the several parts executed according to specification was shewn to be as follows,—

On the Cables as	...	...	...	1 to 5
Suspension Rods,	...	...	...	1 to $4\frac{1}{2}$
Anchor Irons,	...	...	...	1 to $7\frac{1}{2}$
Transverse Beams,	...	...	...	1 to $9\frac{1}{2}$

With confidence in the materials and workmanship Mr. Tomlinson was therefore justified in his intention of subjecting the Bridge to a test of 100 tons, had time and circumstances permitted. Nevertheless, the test actually imposed much exceeds that which may be deemed necessary, or is usually applied to the Bridge of an ordinary highway, even in comparatively populous countries. The maximum test in France is stated to be equal to about 41lbs per superficial foot of platform, imposed during 24 hours. In the case of the Grand Falls Bridge, the test applied was a dead weight of about 45lbs. per superficial foot of platform, imposed during ten days, increased in the meantime both by the operations of the workmen and the continual transit of passengers, horses and vehicles, not only of those connected with the

works, but occasionally others from the neighbouring settlements, permitted to avail themselves of the temporary privilege. No trace of weakness in any part of the structure was observable as the effect of this ordeal.

Without a reasonable doubt of the accuracy of the facts above stated, I can have no hesitation in certifying the generally substantial character, faithful construction, and redundant strength of the Bridge. It may therefore be deemed superfluous to extend this report by reference to minute details. In some of these Mr. Tomlinson found it expedient to make slight deviations from the design, for the more convenient and perfect execution of the work, which he satisfactorily explained, and which appeared to be judicious.

The wire for the cables being found to be somewhat smaller than the specified size, a proportionately increased number of wires has been introduced, so as to afford the intended sectional strength. The number of wires specified for each cable was 931. The number used is 1030 of equivalent weight.

To each of the suspending rods a rigorous test was applied before attaching the same to its position. After being forged and completed in all its parts it was subjected to a tension of $1\frac{1}{2}$ tons, and in this state struck forcibly several blows with a sledge hammer. Under this treatment five instances of imperfect welding were detected, but no fault in the material. The welding in each of these cases was carefully perfected, and exposed to a repetition of the test. The maximum strain to which each suspension rod is assumed to be liable is $2\frac{1}{2}$ tons.

To give stability to the platform during exposure to violent winds, girds formed of $2\frac{1}{2}$ inch wire rope, with efficient fastenings and adjustaments, will be diagonally attached to the same at one quarter of the span, and anchored to the precipice on each side.

It was explained to me by Mr. Tomlinson that much tedious labour connected with the masonry of the towers and with the anchorage of the cables is unavoidably not apparent in these works. The hard igneous character of the only suitable stone found in the vicinity, proved to be a cause of much waste in procuring blocks of the requisite dimensions, free from defects; and for the same reason such blocks when obtained, were dressed with difficulty, and after much labour had been bestowed would not unfrequently fracture under the tool and become useless.

The stone made use of has, however, in the finished work, a neat, strong, and appropriate appearance. There are from three to five through or bond stones distributed through the height of each tower, and not more than two stones on each side in each course. Between the base and capping, a height of 20 feet, are fifteen courses in each tower. The cap stones of the eastern towers are formed of single blocks. Those of the western consist of two blocks. On all these the cast iron bed-plates, appropriately planed, are accurately levelled and leaded in position, supporting the rollers, saddles, and their permanent load, with due freedom of self-adjustment under changes of temperature. To protect these parts from the spray of the Falls in Summer,

and the accumulation of snow and ice in the Winter, Mr. Tomlinson has provided for each tower a covering of wood, incased with tin, painted the color of the masonry, and so designed as to have the effect of a neat finish formed of a single block of stone.

“The same difficulty of the refractory quality of the rock had to be contended with in sinking and preparing the anchor pits at each end of the Bridge; a few inches per day being sometimes the greatest progress that could be made. The eventual perfection of the anchorage is however proved by the absence of any visible disturbance after the severe test to which it has been exposed. The several anchorages have been permanently protected from the weather by housings of masonry designed by Mr. Tomlinson, in character with the other masonry of the Bridge.

“The cables have been charged first with “elastic paint,” and afterwards covered with cotton cloth, saturated with white lead and oil, previous to serving. But the serving, and also the trussed railing, with the exception of the iron work, will require further protection by painting at a favourable time during the ensuing Summer.

“Notwithstanding the strong and reliable character of the work, it is desirable that horses and carriages should be restricted to a walking pace in passing over this as over other Suspension Bridges on the same principle.

I have the honor to be, &c.

J. WILKINSON.

The Hon. W. H. STURVES, Chief Commissioner.”

INTERNAL NAVIGATION.

GRIMROSS CANAL.

In the Session of 1853, an appropriation of £3,000 was made by the Legislature, for the purpose of excavating a passage or Canal through the small Peninsula in the County of Queen's, known as Grimross Neck, in order to complete the Steam Boat navigation between the Creek running in front of Gagetown and the Main River Saint John.

In the same year Messrs. Wilkinson, Hatheway, and Goodfellow, were appointed Commissioners, who, after examining the vicinity of the proposed work, agreed upon a site, which was surveyed by Mr. Wilkinson, and a plan of the survey was prepared shewing the particular line with a section of the same.

Though considerable interest in this work has continued to be manifested both by a large portion of the inhabitants of Queen's County and their representatives in the Legislature, yet it has remained in suspense until last year, during which the necessary plans and specifications were prepared, and tenders invited with a view to its execution. The contract has been taken by Mr. Amos Keith, for the total sum of £2,721, consisting of £2,398

for the excavation, and £323 for a Jetty below the River entrance of the Canal, both works to be satisfactorily completed on or before the 1st day of September next.

Further information on the subject is given in a Report by Mr. Wilkinson. (Appendix B.)

The work has been in progress since October last and is already far advanced.

DREDGING MACHINE.

On the 20th day of March last, Captain Barker proceeded to the Washademoak Lake, where, during the Winter, the Dredge had been secured, and on the 22nd commenced the necessary repairs to the same. The long continued action and strain of the machinery had so weakened the hull, that it was found necessary to attach strengthening beams beneath the deck, and also under the engine. This required the machinery to be raised about 18 inches. The hull of the Dredge and the scows were caulked and otherwise repaired as much as necessary to insure their efficient working. The machinery also required considerable outlay. The chain to which the buckets are attached was so worn and broken that its renewal was indispensable, and several of the buckets were also replaced.

These repairs were completed by the 2nd day of May, and on the day following the Dredge re-commenced operations, and on the 16th of the same month finished the channel at which the work had been suspended on the previous Summer.

During this period were removed 243 scow loads, containing 6,075 cubic yards of material.

The Dredge was then removed to the Oromocto Shoals, and on the 23rd of May was employed in extending the channel made during the two previous seasons. The work was continued here until the 28th September; at which date 39,275 cubic yards of material had been excavated since the commencement in May.

The new channel cut at these shoals is about half a mile in length and about 100 feet in width.

Early in November the Dredge was removed to the Harbour of Saint John, and on the 6th of that month was employed to deepen the Ferry landing on the Carleton side, but from the inclemency of the weather it was found inexpedient to continue the work. The machine was consequently secured in one of the slips at Carleton for the Winter.

A considerable outlay will be necessary to put the Boat and Machinery in efficient order before resuming work in the coming season. A Report with return of quantities by Captain Barker for the past year is appended. (B.)

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SAINT JOHN RIVER.

The works on this River during the past year have been principally in continuation of the improvements made the previous season, and have been conducted under the supervision of the same persons, Thomas C. Atherton and Stephen Glasier.

Mr. Atherton has, besides further improving the channel at Mednetic Falls, applied a portion of the outlay at Betts' Rapids, Shaw's Rocks, and Cronk's Island, by blasting and removing such rocks and boulders as impeded the passage at those places. The total amount expended by him is £230 10s.

The expenditure under Mr. Glasier's direction amounts to £106 9s. This was incurred at Bear Island Bar, by deepening the channel and removing a portion of the old dam.

Special Reports of these improvements will be found in the Appendix. (B.)

SOUTH WEST MIRAMICHI RIVER.

The continuation of the improvement in this River during the past season, has been under the supervision of the former Commissioner, Mr. Robert Swim.

The work was commenced at a place known as Duff's Bar, about five miles below Boiestown, and continued downwards.

A particular description of the character and extent of the improvements effected will be found in Mr. Swim's Report. (Appendix B.)

LIGHT HOUSES.

The new Light House on Swallow's Tail on the Island of Grand Manan, as specified in last year's Annual Report, has been completed and put in successful operation. The light was first shewn on the evening of the 7th July last, and has been continuously exhibited from sunset to sunrise since that time with satisfactory effect. From the Keeper's Monthly Returns, it appears that no less than 433 vessels anchored in view of the Station within a period of three months after the first exhibition of the light. Other information relative to this, and the several Lights of the Bay of Fundy, is supplied in the Report of Mr. Woodward, the Chief Superintendent, hereto appended. The Report of the Commissioners of Light Houses in the Gulf of Saint Lawrence for the past year is also appended, under Letter C.

In the month of May last, John Wilkinson, Esquire, proceeded to Richibucto to examine the Coast at that place, with a view of selecting a suitable site for a proposed Light House. Three different sites indicated as eligible by the figure of the Coast in relation to the approach from seaward, were visited and examined. The most projecting sand point, southward of the entrance of the Harbour, appeared to Mr. Wilkinson the most favourable position. It is low and would require a proportionally high Building, but the land may be deemed valueless for any other purpose. The next eligible, or central site, being on Richibucto Head, would require a less elevated

Building, and from the close neighbourhood of inhabitants probably less expense of maintenance; but the land would require to be purchased. Plans and Specifications are sufficiently advanced, with a view to placing the work under contract early in the ensuing Spring.

Application has been made also for the the erection of Beacon Lights on Fox Island, and a Floating Light in Napan Bay, both at the entrance or inner Bay of the Miramichi River. The necessary enquiries have been instituted in relation to the expediency of these works, and of the sites indicated, and also as to the probable first cost and expense of maintenance.

PUBLIC BUILDINGS.

GOVERNMENT HOUSE.

An unusual claim upon the attention and responsibility of the Board of Works, relative to the condition of this Building and of the outbuildings and grounds connected with it, arose during the past Summer, preparatory to the visit of His Royal Highness the Prince of Wales.

Upon examination of the several apartments and of the building generally, it was found that the expenditure heretofore from year to year had been scarcely adequate to preserve the whole in a sufficiently habitable state, as a residence for the family of the Lieutenant Governor for the time being; that many serious defects, especially in the roof, had through reluctance to incur any avoidable expenditure, been only temporarily or partially repaired, whilst the main evil continued to be aggravated by time. In particular, the room which it was deemed most suitable to appropriate exclusively to the use of His Royal Highness, had fallen nearly into a ruinous state through the defects adverted to, and had for a long time been closed as uninhabitable. The efficient restoration of this room in an appropriate and permanent manner, as well as the several other apartments necessary for the accommodation of His Royal Highness and suite, was accomplished with every regard to economy consistent with the occasion. But the interior finishing and furniture generally required renewal, and the expenditure at this time was only in brief anticipation of that which under ordinary circumstances would have been to a great extent inevitable.

The repairs were extended in an efficient manner, to the several contiguous buildings. The fencing of the grounds was generally repaired and in part renewed, the portions surrounding the lawn and fronting the public road being painted. The gates of the public entrance, which, including the posts, had become entirely decayed, were replaced by substantial wooden gates with posts of stone. The improvements included the introduction of gas for the more convenient and effective lighting both of the approaches and of the principal rooms of the interior of Government House.

The Council Chamber, the Hall of the Assembly, and other rooms of the Legislative Buildings were, at the solicitation of a Committee of gentlemen, resident in the City of Fredericton, temporarily placed under their care to be used for the public entertainment of His Royal Highness and suite, on the evening previous to his departure. Necessary repairs however, were made by this Department, and new carpets supplied to the rooms of the Supreme Court, and to the Speaker's and Clerks' rooms in the House of Assembly. The decayed wooden columns supporting the portico of the principal entrance were replaced by substantial new ones; and these and the whole exterior of the building thoroughly re-painted. An account of the expenditures in relation to the foregoing particulars, including expenses otherwise devolving on this Department on the same occasion, are submitted in the Statement No. 7. Appendix A.

PROVINCIAL LUNATIC ASYLUM.

It was deemed expedient to defer offering for contract the intended new wing of this building, during the continuance of the high price of the principal material required in its construction, which prevailed during the Summer. In the meantime the labour of the inmates of the Asylum has been made available for the excavation of the foundation, and plans and specifications are in readiness with a view to placing the work under contract early in the ensuing season.

Information relative to the general condition of the buildings, the benefit of recent improvements, the repairs which have been made during the past, and others which are called for during the current year, is supplied in the Report of the Medical Superintendent, under letter E of the Appendix.

PROVINCIAL PENITENTIARY.

During the past year the buildings of this Institution have been supplied with lightning rods; and the defective steam boiler has been replaced by a strong one of the tubular construction. The cost of these works, and an estimate of the expense of further necessary repairs, are stated in a Report from the Secretary, hereto appended, under letter F. To this is subjoined a certificate by Mr. W. M. Smith, of the strength and quality of the new boiler.

All the foregoing is respectfully submitted.

W. H. STEEVES,
Chief Commissioner.

Appendix A.

No. 1.

STATEMENT shewing the Amount paid on Government Buildings in Fredericton, from 1st November 1859, to 31st October 1860.

1. On Legislative and other Buildings, exclusive of Government House.

Aitken, T.	...	...	...	£13	6	2
Armstrong, T.	...	...	...	1	1	1
Akerley, S. A.	...	...	...	3	10	0
Allen, T. G. & H.	...	...	...	7	8	4
Barrett, J.	...	...	...	31	18	9
Barker, S.	...	...	...	11	9	1
Brayley, J. W.	...	...	...	53	8	5
Carriek, J. W.	...	...	...	0	1	3
Chestnut, R. & Sons,	...	...	...	3	1	6
Chadwick, A. J.	...	...	...	4	4	3
Casey, D.	...	...	...	3	0	0
Cooper, W.	...	...	...	0	7	6
Central Fire Insurance Co.	...	...	...	50	0	0
Dunn, R.	...	...	...	18	14	3
Duncan, A. B.	...	...	...	6	13	2
Eggar, J.	...	...	...	10	0	0
Elliott, D.	...	...	...	0	12	6
Foster, S. K.	...	...	...	0	13	6
Gas Company,	...	...	...	5	19	11
Gabel, J. R.	...	...	...	0	7	6
Miller, A. P.	...	...	...	3	3	0
Maxwell, J.	...	...	...	1	10	0
Morgan, W.	...	...	...	0	10	0
M'Donald, J.	...	...	...	1	11	10
M'Murtrie, R.	...	...	...	5	5	0
O'Brien, E.	...	...	...	2	5	0
Payne, R. H.	...	...	...	1	12	0
Perkins, C. P.	...	...	...	1	2	6
Perley, G. A.	...	...	...	1	18	0
Rutter, T.	...	...	...	17	14	0
Reilly, J.	...	...	...	0	19	6
Ross, J.	...	...	...	1	16	3
Smiler, C. P.	...	...	...	5	0	6
Stewart, T.	...	...	...	1	7	4
Wiley, R.	...	...	...	2	12	6
Winters, R.	...	...	...	2	18	6
Wright, A.	...	...	...	0	18	9
Williams, Annie	...	...	...	1	0	0
Williams, Mrs. T.	...	...	...	2	13	9
Williams, T.	...	...	...	69	6	2

£351 1 9
Forward,

			<i>Forward,</i>	£351	1	9
2. On Government House.						
Akerley, S. A.	...	...	£11	54	2	
Allen, T. G. & H.	...	...	5	13	6	
Barrett, J.	...	...	9	10	9	
Campbell, G. M.	...	...	3	16	1	
Carter, J.	...	...	1	12	6	
Chestnut R. & Sons,	...	...	6	6	10	
Coys, Asa	...	...	0	1	7	
Duncan, A. B.	...	...	8	5	2	
Davis, J.	...	...	2	0	6	
Davis, D.	...	...	1	2	6	
Elliott, D.	...	...	0	3	9	
Estey, W. S.	...	...	4	1	9	
Friel, W. H.	...	...	0	12	6	
Gapel, J. R.	...	...	3	11	6	
Hains, J. L.	...	...	19	16	5	
Hasland, J.	...	...	2	12	6	
Jackson, S.	...	...	1	4	4	
Kertson, R.	...	...	0	12	0	
Leonard, W.	...	...	47	13	0	
Lemont, M.	...	...	7	12	6	
Miller, A. P.	...	...	11	10	4	
McDonald, J.	...	...	8	18	0	
McKee, S. H.	...	...	0	10	0	
Macpherson, A.	...	...	0	7	6	
Nell, J.	...	...	0	16	6	
Pattison Geo. & Co.	...	...	3	1	5	
Russell, J. (Timman,)	...	...	0	11	8	
Rutter, T.	...	...	3	14	9	
Taylor, W. P.	14	8	0	
Told, George	1	4	3	
Stewart, T.	2	5	6	
Scott & Sutherland,	0	17	10	
Welch, A.	1	17	6	
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Office Public Works, 31st October, 1860.

ASA COY, Sec'y.

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No. 2.

STATEMENT shewing the sums paid for Improving the Inland Navigation from 1st November 1859, to 31st October 1860.

R. Swim, Miramichi River,	...	...	...	...	...	£200	0	0
J. Sturgeon, "	...	...	...	...	...	2	10	0
T. C. Atherton, Saint John River,	...	...	...	...	...	282	9	4
Stephen Glazier, "	...	...	...	...	...	113	12	8
John Emmerson, Madawaska River,	...	...	...	...	...	50	0	0
Expenses of Repairing and Working the Dredging Machine,	...	...	...	...	...	1,511	17	3
Bonnell & Freeman, Grimross Canal,	...	...	...	...	...	£2	15	0
John Wilkinson, "	...	...	...	...	...	1	10	7
A. Day, Landing at Indiantown,	...	...	...	...	...	£201	7	2
T. T. V. Smith, "	...	...	...	...	...	4	15	0
							4	5
							206	2
							2	2
							£2,370	17
							0	0

Office Public Works, 31st October, 1860.

ASA COY, Sec'y.

No. 3.

STATEMENT shewing the amount paid on Great Bridges from 1st November 1859, to 31st October 1860.

Grand Falls,	...	...	...	...	...	£5,742	19	6
Bathurst Bason,	...	...	...	...	...	1,771	11	5
Mactaquack,	...	...	...	...	...	466	15	9
Garden's Creek,	...	...	...	...	...	382	7	6
Stoney Creek,	...	...	...	...	...	404	11	0
Caraquet,	...	...	...	...	...	300	0	0
Morton's Brook,	...	...	...	...	...	215	0	0
New Canaan,	...	...	...	...	...	256	15	10
Sackville,	...	...	...	...	...	163	6	8
Patterson's Brook,	...	...	...	...	...	109	2	6
Presqu'isle,	...	...	...	...	...	91	2	11
Tobique,	...	...	...	...	...	16	17	6
Hampton Ferry,	...	...	...	...	...	3	1	8
Shiktehawk,	...	...	...	...	...	0	17	6
Shaw's Creek,	...	...	...	...	...	0	16	3
Oromocto,	...	...	...	...	...	303	10	4
Aboideau, St. John,	...	...	...	...	...	28	4	4
							£10,257	0
							8	8

Office Public Works, 31st October, 1860.

ASA COY, Sec'y.

No. 4.

STATEMENT shewing Payments to Supervisors for the General Expenditure on Great Roads from 1st November 1859, to 31st October 1860.

Armstrong, J. ...	£123	12	10	Kilburn, J. ...	£182	7	2
Avard, A. ...	200	0	0	King, R. ...	50	0	0
Burpee, J. C. ...	200	0	0	Menzies, A. ...	125	0	0
Burpee, J. ...	321	0	0	Moore, G. ...	175	0	0
Burnett, G. ...	413	14	6	Morton, G. A. ...	260	0	0
Bubar, J. ...	500	0	0	M'Callum, A. ...	170	0	0
Brait, W. ...	175	0	0	M'Callum, H. ...	175	0	0
Curry, G. W. ...	475	0	0	M'Clelan, T. ...	200	0	0
Charters, S. C. ...	486	0	0	M'Dougall, A. K. ...	312	14	0
Covert, J. S. ...	389	2	7	M'Millan, J. ...	625	0	0
Crocker, R. ...	591	17	6	M'Rae, J. ...	200	0	0
Cottrell, T. ...	50	0	0	Nase, P. Jun. ...	97	16	9
Campbell, D. B. ...	60	0	0	Oulton, G. ...	125	0	0
Dow, Asa ...	220	15	2	Pratt, J. ...	120	17	10
Fournier, F. ...	200	11	9	Parker, W. ...	100	0	0
Fitzgerald, W. ...	300	0	0	Piers, H. ...	100	0	0
Gervin, T. ...	150	0	0	Robertson, J. ...	155	5	8
Gibson, A. ...	150	0	0	Read, J. A. ...	200	0	0
Gross, S. ...	227	10	0	Robinson, T. ...	250	0	0
Gallop, A. ...	275	0	0	Smith, S. ...	90	0	0
Hatheway, G. L. ...	160	16	0	Steeves, F. W. ...	200	0	0
Hazen, C. ...	147	10	3	Steeves, M. ...	175	0	0
Hitchings, H. ...	150	0	0	Tibbits, F. ...	25	0	0
Hoyt, W. E. ...	216	5	0	Wilson, G. ...	325	14	8
Hagarty, J. ...	137	10	0	Woods, F. ...	120	0	0
Jordan, J. Jun. ...	491	2	6	Welling, J. ...	116	5	6
Kelly, W. M. ...	482	2	4				
					£11,970	12	0

Office Public Works, 31st October, 1860.

ASA COY, Sec'y.

No. 5.

STATEMENT shewing Payments for Special Expenditures on the Great Roads from 1st November 1859, to 31st October 1860.

Curry, Z. J.	£5	3	9	Repairing Bridge in Douglas.
Davis, J.	20	5	0	Services on three Bridges.
Grant, David	2	0	0	Repairing Woodstock Road.
Grant, D. L.	4	10	0	Services at Naekawikak Bridge.
Hovey, A.	5	0	0	Services on Miramichi Road.
Kilburn, Isaac	6	16	3	Repairing Sutherland's Bridge.
Do.	5	12	6	Do. Indian Creek Bridge.
Do.	3	10	0	Repairs on Woodstock Road.
Killeen, Timothy	117	7	3	1859.—Turnpiking and gravelling Woodstock Road.
Do.	143	0	0	1860. Do. do. part below Fredericton.
Long, W. H.	2	10	0	Labour at Burdon's Bridge.
Matthews, A.	53	12	8	Timber for protection of Maugerville shore.
M'Devitt, H.	20	4	7	Repairs on Marsh Road near Saint John.
M'Leod, A.	45	1	4	Repairing Road near Lawlor's Lake.
Atherton, G. R.	2	14	0	Teaming, Douglas Valley Road.
Rainsford, W.	2	0	0	Covering Bridge near Spring Hill.
Sloot, James	4	0	0	Repairing Cliff's Bridge.
J. Little	6	0	0	Surveying Road in Kent County.
S. Powell	1	5	0	Richibucto Gully.
	£450	12	4	

Office Public Works, 31st October, 1860.

Appendix B.

INTERNAL NAVIGATION.

1. GRIMROSS CANAL.

Report of J. Wilkinson, Civil Engineer, relative to the proposed Canal at Grimross Neck.

Office of Public Works, Fredericton, 7th Sept. 1860.

SIR,—In compliance with your request, I beg leave to lay before you the following statement, relative to the proposed Canal at Grimross Neck.

A full Report on this subject was made to the Government under date of 22d February 1854, by Commissioners appointed in the previous Summer to carry into effect the intention of the Legislature in making an appropriation of £3,000 for the construction of the work. This Report is inserted in the Appendix of the Journal of the House of Assembly, p. cclxxix. for the year 1854, to which, and to the plans which accompanied the same, I beg leave to refer.

As suggested in that Report, to which I subscribed as one of the Commissioners, I still consider that a cut, excavated in a proper direction, sufficiently capacious to be available at all times for the largest River Steamboats at their ordinary speed, leaving the banks to assume their natural slope without artificial protection, would be the most economical as well as the most efficient plan of accomplishing the desired object.

The site and direction of the cut were maturely considered, and are shown upon the plans referred to, with particular sections of the same, in such manner that the quantity of material to be removed can readily be estimated.

With a view to the protection of the adjacent land from waste, it was, after due examination of the locality, and the consideration of various plans and suggestions, deemed to be ultimately the most economical, as well as permanent, to employ a substantial pitching of stone, resting on a foundation of piles, and rising from the level of permanent low water, at a batter of 1 in 3, to the height of the highest freshets, with a backing of good compact gravel, two or three feet in depth, simultaneously carried up: the whole as shown in the design submitted.

The expense of this mode of protection faithfully executed, including the piling, would, according to our estimate, exceed £2,500, thus absorbing the chief part of the appropriation of the Legislature.

By omitting this expenditure, and confining the work solely to the excavation and sufficient removal of the material necessary to a navigable channel of sufficient capacity and permanency, the following would be the quantities:—

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Sec'y.

	Cubic Yards.
Total excavation above low water or ordinary summer level,	24,273
Total excavation of a prism, 8 feet in depth, 70 feet in breadth at the surface, and 54 feet at the bottom, below the last-named level, and between the water of the main River on the one side and Gagetown Creek on the other, distance 1,167½ feet,	21,438
Excavation under water of the main River,	2,985
The same under water of Gagetown Creek,	2,250
Total, under water,	5,235
Total quantity of material,	50,946

The quality of the material appears to be that of a light alluvial deposit, above permanent low water; and beneath this level, it is supposed to consist of clay and sand, more or less compact.

The skill and experience of the contractor will suggest the most economical method or methods of excavating and removing the material, which should be so accomplished as to ensure the permanency of the navigable channel; for which object the material should be so deposited as not to be liable to be again troublesome, either from the wash occasioned by steamboats, or the force of wind, or as a cause of injury to adjacent lands.

As an auxiliary work, a jetty, at right angles to the main River, extending about one hundred feet from the same, immediately below the entrance of the cut, should be erected for the permanent diversion of a sufficient volume of water, especially during freshets, from the main River into the new channel, in order to maintain the depth of the latter by a current of sufficient force and volume.

The expense of such a work may be stated at £250.

The *maximum* quantity of land liable to waste without protection is estimated at 12 acres.

Assuming the last two items should amount to £600, the sum of £2,400 would remain out of the legislative appropriation to meet the expense of excavating and removing 50,946 cubic yards of material, being at the mean rate of 11 3-10 pence per cubic yard nearly.

I have, &c.

J. WILKINSON, *Engineer*.

The Hon. W. H. STEEVES, Chief Commissioner.

2. DREDGING MACHINE.

Report of James M. Barker, of the work performed by the Provincial Steam Dredge, during the Year 1860.

Fredericton, N. B. December 1860.

SIR,—Having closed my labours with the Provincial Dredge for the year 1860, I have the honor to lay before you a detailed statement of work performed at "Washademoak," "Oromocto Shoals," and at "Saint John Harbour," shewing an excavation of 6,075 cubic yards at Washademoak, 39,275 yards at Oromocto Shoals, and 175 yards at Saint John Harbour.

On the 22nd of March, commenced repairing Dredge, consisting of raising the deck, placing new beams across, replacing machinery, and raising all the latter eighteen inches. This service was attended with a very heavy outlay, but having the assistance of competent workmen, the vessel, as regards the hull and foundation for the machinery, is in a most efficient state, and will not require any further outlay for several years, with the exception of being re-caulked in the Spring, which will require an expenditure of at least one hundred and sixty dollars.

The nature of the material excavated at the Oromocto Shoals, was such as to destroy the chains, running gear, and buckets, more in three months than ordinary digging in mud or clay would in one year; the material excavated being a sharp, gritty substance, acting on the machinery like emery. Owing to this a considerable outlay will be required on the injured portion of the machinery; and should it be determined to place the "Dredge" on the Shoals in the coming season, I would respectfully recommend that at least one thousand dollars be added to the estimate of repairs, as for reasons before alluded to, continual repairs will be required for chains, running gear, and buckets.

My operations with the Dredge commenced at the Washademoak on the 3rd of May, and continued until the 16th. This cut, in my opinion, will meet all the requirements of the public.

We removed and commenced operations at the "Oromocto Shoals" on the 23rd of May, and continued until the 29th day of September. Owing to the arrival of His Royal Highness the Prince of Wales, and the continued repairs required consequent upon the nature of the excavation, much interruption was unavoidable.

This cut is half a mile in length and from eighty to one hundred and twenty feet in width, the excavation from six to seven feet in depth, all a sharp, gritty sand. There is considerable difference of opinion in the public mind as to the permanency of this work, but I would respectfully submit that with the present excavation, you will be able to ascertain, positively, what effect the ice and water may have upon it, and thus be better prepared for future operations. Should the present excavation remain permanent, I am of opinion that to complete the channel, so as to leave twelve feet in depth, (at low water) and one hundred and twenty feet in width, would require an outlay of at least four thousand dollars.

From the Oromocto Shoals we removed to the Harbour of Saint John, and commenced operations on the 6th November, but owing to the inclemency of the season, I was unable to perform the work satisfactorily, and as we were able to work but one tide each day, it was thought expedient, owing to the very heavy outlay, to suspend further operations at this place until the month of March next.

All of which is respectfully submitted.

JAMES M. BARKER, *Master*,

Hon. W. H. STAVES, Chief Commissioner of Works, &c. &c. &c.

A detailed Statement of work performed by the Provincial Dredge during the Summer of 1860.

WASHADEMOAK.

Date.	No. of Scow Loads per day.	No. of Cubic Yards per day.	Date.	No. of Scow Loads per day.	No. of Cubic Yards per day.
1860.			Forward,	86	2,150
May 3	3	75	May 9	32	800
4	20	500	10	28	700
5	25	625	11	25	625
7	10	250	14	22	550
8	28	700	15	32	800
			16	18	450
Forward,	86	2,150			
Total at Washademoak,				243	6,075

OROMOCTO SHOALS.

Date.	No. of Scow Loads per day.	No. of Cubic Yards per day.	Date.	No. of Scow Loads per day.	No. of Cubic Yards per day.
1860.			Forward,	542	13,550
May 23	10	250	June 28	19	475
24	21	525	29	11	275
25	24	600	30	11	275
26	20	500	July 2	19	475
28	24	600	3	19	475
29	20	500	4	16	400
30	24	600	5	21	525
June 1	21	525	6	7	175
2	18	450	7	12	300
4	20	500	9	17	425
5	20	500	11	16	400
6	18	450	12	7	175
7	21	525	13	19	475
8	21	525	14	17	425
9	17	425	16	14	350
11	18	450	17	17	425
12	17	425	18	18	450
13	14	350	19	12	300
14	20	500	20	12	300
15	21	525	21	17	425
16	12	300	23	17	425
18	15	375	24	8	200
19	7	175	25	9	225
20	15	375	26	16	400
21	15	375	27	15	375
22	20	500	28	15	375
23	17	425	30	15	375
25	16	400	31	16	400
26	18	450	August 1	14	350
27	18	450	2	12	300
Forward,	542	13,550	Forward,	990	24,500

OROMOCTO SHOALS—Continued.

Date.	No. of Scow Loads per day.	No. of Cubic Yards per day.	Date.	No. of Scow Loads per day.	No. of Cubic Yards per day.
Forward,	980	24,500	Forward,	1,265	31,375
August 9	9	225	Sept. 5	20	500
10	16	400	6	12	300
11	7	175	7	19	475
13	7	175	8	13	325
14	11	275	10	18	450
15	12	300	11	19	475
16	15	375	12	16	400
17	16	400	13	2	50
20	8	200	14	15	375
21	19	475	15	18	450
22	3	75	17	15	375
24	19	475	18	18	450
25	11	275	19	18	450
27	17	425	20	13	325
28	18	450	21	16	400
29	17	425	22	16	400
30	13	325	24	12	300
31	19	475	25	17	425
Sept. 3	19	475	26	14	350
4	19	475	27	15	375
			28	10	250
Forward,	1,265	31,375			
Total at Oromocto Shoals,			1,571	39,275	

SAINT JOHN HARBOUR.

1860.				
Nov. 7.	3 Scow Loads per day.		75 Cubic Yards per day.	
10.	4 " "		100 " "	
Total,	7 Loads.		175 Cubic Yards.	

JAMES M. BARKER.

Recapitulation.

Washademoak,	...	...	243 Loads,	6,075 Yards.
Oromocto,	...	...	1,571 "	39,275 "
Saint John Harbour,	...	...	7 "	175 "

Total for the year 1860, 1,821 Loads, 45,525 Yards.

JAMES M. BARKER, Master.

during

No. of
Cubic Yards
per day.

2,150
800
700
625
550
800
450

6,075

No. of
Cubic Yards
per day.

3,550
475
275
275
475
475
400
525
175
300

425
400
175
475
425
350
425
450
300

300
425
425
200
225
400
375
375
400
350
300

4,500

3. RIVER SAINT JOHN.

Report of Thomas C. Atherton, Commissioner for improving the River Saint John at Meductic Falls and vicinity.

Southampton, December 9th, 1860.

SIR,—I beg leave to submit the following statement of the character and extent of the improvements of the navigation of the River Saint John, as far as placed under my superintendence, during the past season.

These improvements are in continuation of those reported by me for the previous season, and are situated at Meductic Falls, and at Betts' Rapids and Shaw's Rocks in the same vicinity.

Preparations were made for resuming the work as early as the state of the water would permit. During the first week, with a force of seven men, the boats and breakwaters previously in use were repaired and launched. These in the second week were removed upwards to Betts' Rapids, where, by aid of which, a force of nine men succeeded in removing five large boulders from the channel, and in reducing the tops of three or four ledges near the shore, so as greatly to increase the facility of navigation, both to steamers and tow-boats. At the same time, six men, with a competent foreman, were employed in removing the dangerous boulders called Shaw's Rocks, who succeeded in making the site of these obstacles smooth and perfectly safe.

In the third week, the party at Betts' Rapids, with the boats and breakwaters, were removed to the Meductic Falls, and the number of men augmented to fourteen, which increased force succeeded in widening and deepening the channel, on the right side by reducing the ledges, and on the left by removing the point at the Falls, and thus straightening the passage for steamers.

Whilst this work was proceeding, five men and one pair of horses were employed in clearing a channel on the left side of Cronk's Island, so called, where a material improvement at a small expense has been effected, including repairs to the tow-path.

In the course of four or five succeeding weeks, about fifty boulders, say varying from one quarter of a ton to three tons in weight, were removed from the Meductic Falls, and as many more from Betts' Rapids, Shaw's Rocks, and the channel at Cronk's Island. But others yet remain, the removal of which is desirable, in particular the removal of some very large boulders at the head of the Falls, which obstruct the free passage of the current down the channel, and cause the water to spread over the bar. The point of the ledge on the right of the channel at the foot of the Falls should be further reduced.

During the period of low water, the channel immediately above the Naka-wiekak, is greatly obstructed by boulders, and the tow-path generally is in much need of attention.

I have the honor to be, Sir, your most obedient servant,

THOMAS C. ATHERTON.

The Hon. W. H. SIDNEY, Chief Commissioner.

Report of Stephen Glasier, Commissioner for improving the Navigation
of the River Saint John at Bear Island Bar.

Fredericton, 16th January, 1861.

SIR,—Having been authorized by you further to improve the navigation of the River Saint John, at Bear Island Bar, during the past year, I have to report that the sum of one hundred and six pounds nine shillings has been expended in deepening the channel and removing a portion of the Bar from the point below on the east side, and also a portion of the dam.

I would recommend a further sum to be expended in like manner.

From observation upon the improvements made, I find that steamers can run to Woodstock with fifteen inches less water than in any previous year; and there is no doubt that a judicious expenditure of a further sum would materially improve the navigation in that part of the River.

I have, &c.

STEPHEN GLASIER.

The Hon. W. H. STEEVES, Chief Commissioner Board of Works.

Report of Robert Swim, of the improvement of the South West
Miramichi River, during the year 1860.

Miramichi, 26th November, 1860.

SIR,—At the period of the year which I considered the most judicious for continuing the improvements in an efficient manner, I commenced at Duff's Bar, five miles below Boiestown. This bar was directly in the course of the channel, and, as a consequence, turned the direction of the channel to nearly a right angle to its general course, which made it a great impediment to the navigation. I deemed it advisable to make a raft channel through the bar, and, if possible, change the general flow of the water to the channel thus made. This I accordingly did, and, at the lowest time of the season, obtained a depth of six inches of water. From the way in which ice-jams form in this part of the river, and the force with which they tear along when impelled by a spring freshet, I have no doubt that, from the direct course the new cut will give, they will rush through it, and will thus deepen and make it the principal channel. If the action of the ice-jams be not such as is anticipated, a further deepening of the channel through the bar will be required. In this vicinity I also removed four large rocks by blasting.

Ten miles further down, I improved Wilson's Bar, by means of the plough and scraper, and increased the depth of water from 4 to 8 inches. Near this place, the channel runs close by an island; and a number of overhanging trees gathered quantities of drift-wood, which impeded the navigation. These were all removed, and a clear passage made throughout. Two miles further down, I deepened the Quaw Leach Bar from 4 to 8 inches; Souther's Bar, 1 foot; another bar in this neighborhood, 6 inches; and the bar at Nelson's Island, 6 inches. The increased depth of water on these bars was obtained by means of the plough and scraper. The other bars improved in

this way were below the Doak Bridge, namely: John Arbo's Bar, Dunphy's Bar, Bergen's Bar, and Polly Arbo's Bar.

By reference to my report for 1859, you will observe that I named several rapids, in which there were sunken rocks that required to be attended to this year, viz: Bartholomew's Rapids, Gray Rapids, Black Rapids, Harris's Rapids, Underhill's Rapids, and Mahoney's Rapids. All these sunken rocks were blasted and removed this year, and also a great many others, not directly in the channel, but which interfered with raft-running, timber-driving, and boating, by gathering slabs and other rubbish around them. In addition to the work done in this way in those places already named, the labour was considerably increased by the following circumstance:—An unusually large quantity of lumber was driven down, when the river was very low. A great deal of horse-work was therefore required, and in twitching the logs from the bars and beaches, very many stones were loosened, and several dragged into the channel. These had to be removed, as well as other obstructions made in this way, involving additional time and expense.

A range of rocks a short way below the head of the tide, known as Dillon's Rocks, is a notable obstruction to the navigation, the direction of the current being directly over it, and sweeping into the bend below. I blasted nine large rocks here, some of which required from five to six charges, and reduced them to at least two feet below their former height.

The foregoing is a statement of the kind and extent of work performed, which was done in a thorough manner, and the time employed, divided amongst the different places noted in the way I considered the most advantageous and economical. When a rise in the river occurred, so as to interfere with deepening bars, or blasting sunken rocks, I turned my attention to those rocks already referred to, which were not in the direct track of navigation, but which formed impediments for the reason already stated. By this means, the men could be employed to advantage, and the work continued from day to day.

You will please notice that no work was done above Boiestown this year. In my report for 1859, I recommended the sum of £50 for this portion of the river, and would again direct your attention to the reasons therein set forth. In addition to these, I would observe, that in this district of country all the communication is by water; and the improving of the tow-path would be a great boon to the inhabitants, and also to those doing business on the river.

From Boiestown to Doak's Bridge, a sum of £60 should be expended in blasting rocks, and in increasing the depth of water on some bars. From the bridge to the head of the tide, a grant of £50 can be expended to good advantage in improving bars not yet deepened.

I am convinced it would be advisable in any future expenditure in deepening bars, to let the work to public competition, the depth of water to be obtained and the character of the work to be stated in writing. In this

way, more work could be done for the same amount of money; and there is no reason why it should not be done in as satisfactory a manner as under the present system.

Respectfully submitted.

ROBERT SWIM.

Hon. W. H. STEEVES, Chief Commissioner Board of Works, Fredericton.

Appendix C.

LIGHT HOUSES.

1. Report of I. Woodward, Superintendent of Light Houses in the Bay of Fundy.

LIGHT HOUSE COMMISSION,

Saint John, New Brunswick, January 21st, 1861.

SIR,—I had the honor of reporting to you on the 14th of July last, that the Light House Station at the Swallow's Tail, Grand Manan, was illuminated on the night of the 7th of that month.

I have now to report that it has been in continued operation, nightly, since that time, showing a good light. Since first lighting, an additional Lamp and Reflector has been placed in the Lantern, for the benefit of vessels going to the western part of Long Island Bay, in the direction of Drake's landing, making 5-6ths of the circle lighted, instead of three quarters, as at first.

The amount of the Construction Account for this Station, by the Commissioners, which Account and the Vouchers were sent to the Auditor General on the 10th November last, is £1,279 10 5. A small amount may be required next season for completing the accommodation, of which a slight Bridge to connect the point on which the buildings stand, with the headland on the main Island, will be a part.

The Keeper reports, in his Monthly Returns, that in the month of September, 241 vessels anchored in the Bay within the Light Station, in October 103, and in November 89; to all these, principally fishing vessels I presume, the Light would be a great benefit in weather sufficiently clear.

I have also to report that the work done at Grindstone Island this season, to complete that Station, is now included in the Construction Account, sent to the Audit Office, amounting to £641 11s. adding to which the amount paid by your Department of £360 3 10, and the cost of the Lamps and Reflectors borrowed from Partridge Island Station £150, the value at the Station is £1,151 14 10.

The Steam Whistle as a Fog alarm, put in operation last Spring at Partridge Island Light Station, was continued during Fogs until the 1st of December, after which period it was not considered essential, as Fog rarely

occurs during the Winter; there has not been any this season since that date, neither are there any Passenger Steamers running.

The sounding of the Whistle at the Island, is considered by all interested, as a very important aid to secure an entrance into, as also an exit from this Harbour during Fog.

The Chamber of Commerce of this City, passed a Resolution on the 18th of September last, after it had been in operation over four months, expressive of their opinion, as follows:—

“Resolved, That the President be empowered to address a communication to T. T. Vernon Smith, Esq. giving our full approval of the system of the Fog alarm by Steam Whistle. The one on Partridge Island having proved itself efficient and useful, and all we expected.”

The Captains of all the Passengers Steamers, their Pilots, the Pilots of this Harbour, the Harbour Master, the Masters of the Steam Tugs, and experienced Ship Masters sailing from this Port, have signed a lengthy certificate of the utility and efficiency of the Steam Whistle, and as superior to any thing heretofore adopted as a warning to vessels approaching the land during fog.

The cost of the Steam Whistle, with the erection of the building, procuring water, &c. was £465 16 11. Expense of working it to the 1st November last, £62 1 9. To keep it in operation will not probably exceed £150 for the year, a sum small indeed as compared with the importance of the object as a security to life and property.

It was found in working the Whistle, that a greater consumption of Steam had taken place than was contemplated by the Engineer who constructed it. The Commissioners of Light Houses have now in construction, a Dome or Steam Chest, to be placed on the Boiler reaching as high as the Whistle, to which it will be attached, instead of the present small pipe connecting it with the Boiler; this will increase the steam space, make the Whistle more efficient, and add to the security of the Boiler. It is estimated that it will cost about £50.

The Light Stations were all visited by me during the past season, and were found in good order as far as the same could be kept by the persons in charge; the Keepers and Assistant Keepers discharging their duties with care and attention.

The pointing with cement of the granite wall around the Light Tower at the Gannet Rock, to preserve that important and costly work, as reported to you in July last, as being requisite, was done in the month of August.

The sills of the Light Tower at the Head Harbour Station, reported by me at the same time as the foregoing, as being defective from decay of the wood, were not repaired, as no immediate necessity existed, but it ought to be done the coming season.

The Lanterns and Lighting apparatus of several Stations will require repairs or new ones very soon. The Lanterns of the two Light Houses at the Machias Seal Islands Station, as also the Lamps and Reflectors were,

when originally put up in 1832, of an inferior description and too small. The Reflectors were only tinned, not silvered, and after a wear of twenty eight years they have necessarily become deteriorated. The same may be reported of the Lantern and Lighting apparatus at Cape Enrage Station, although only in operation twenty years, being inferior when placed there.

The Reflectors at Point Lepreaux Station placed in 1831, at Head Harbour in 1829, at Gannet Rock in 1831, and at Saint Andrews in 1833, are of the same inferior description. It would be desirable that the Reflectors at least, should be conformed to the shape and material of those used at the present time, and I would respectfully recommend that a new set of silvered copper Parabolic Reflectors, of the same description as those in the Lantern at the new Light Station at the Swallow's Tail, should be placed in the Lantern at the important Station at the Gannet Rock the coming season; and at the other Stations named, the improvements and alterations should be made as soon as opportunity and the convenience of the service may permit.

I am respectfully, your obedient servant,

I. WOODWARD,

Superintendent of Light Houses, Bay of Fundy.

The Hon W. H. Steeves, Chief Com. Board of Works.

Commission of Lighthouses, Saint John, N.B., May 5, 1860.

SIR,—In accordance with your request of the 2d instant, I herewith enclose you a description of the Light Houses recently erected on Grindstone Island and Grand Manan, and have marked on the tracing the position of the Light House on the Swallow's Tail, Grand Manan.

I have the honor to be your obedient servant,

I. WOODWARD.

Hon. WM. H. STEEVES, Board of Works, Fredericton.

I add survey of the ground purchased from Mr. Small: 6½ acres for £40. The Deed is now at Saint Andrews for record. When received, will send it to your Department.

I. W.

DESCRIPTION OF LIGHT HOUSES RECENTLY ERECTED ON GRINDSTONE ISLAND AND GRAND MANAN.

No. 10. *Light House Station at Grindstone Island, in Chignecto Bay.*

Latitude, 45° 43' 13" N.; Longitude, 64° 37' 25" W.

Erected in 1859; Lighted, October 20, 1859.

Octagonal Tower of wood, painted white.

Iron Lantern.

Four Catoptric Lamps, with 22-inch Reflectors.

Focal Plane of Light, 60 feet above high water.

Fixed White Light, visible from N.E. by E. round by the North to E. by S., or 315° of the circle.

No. 11. *Light House Station at Swallow's Tail, on the Island of Grand Manan, Bay of Fundy.*

Latitude, $44^{\circ} 45' 50''$ N.; Longitude, $66^{\circ} 44' 00''$ W.

Erected in 1859; Lighted, 7th July 1860.

Octagonal Tower of wood, painted white.

Iron Lantern.

Ten Catoptric Lamps, with 20-inch Reflectors.

Fixed White Light, visible on lighting five-sixths of the circle, from S.W. round by the South to N.W.

Focal Plane of Light, 148 feet above high water.

I. WOODWARD, *Superintendent of Light Houses.*

Saint John, N.B., May 4, 1860.

TABLE SHOWING THE LIGHT STATIONS IN THE BAY OF FUNDY.

Erected and supported by the Province of New Brunswick, by Funds received from a Tonnage Duty levied on Ships and Vessels arriving at Ports in the Bay of Fundy in the said Province.

No.	LIGHT STATIONS.	When Erected.	Number of Lamps and Reflectors.	No. of Keepers.	Height of Light above high water.		North Latitude.	West Longitude.	Cost of Building when erected.	Keepers' Salaries.	Expenses for 1860, exclusive of Salaries.	
					FEET.							
1	Partridge Island,	1791	16	2	119	45° 11' 20"	66° 03' 50"	£120 0 0	£165 0 0	£251 16 7	Fixed White Light.	
2	Beacon,	1828	4	1	41	45 15 00	66 03 36	1400 0 0	100 0 0	47 5 2	"	
3	Head Harbour,	1829	8	1	64	44 57 40	66 53 55	456 2 11	100 0 0	21 15 2	"	
4	Point Lepreaux,	1831	10	1	81	45 03 50	66 27 01	579 9 6	109 0 0	59 11 1	Fixed, 2 Lights, 25 ft. apart vertically.	
5	Gannet Rock,	1831	8	2	66	44 30 40	66 42 50	800 6 9	240 0 0	154 10 8	Flash Light.	
6	Maclias Seal Islands,	1832	16	2	48	44 39 03	67 06 10	746 19 3	166 0 0	86 16 7	Two Light House, Fixed Lights.	
7	Indian Point,	1833	4	1	42	45 01 10	67 01 00	290 0 0	50 0 0	18 5 0	Fixed Light.	
8	Quaco,	1835	6	2	71	45 19 23	65 31 55	404 13 11	146 0 0	56 16 5	Revolving Light	
9	Cape Enrage,	1840	6	1	160	45 36 00	64 16 40	600 0 0	160 0 0	36 10 0	Fixed Light.	
10	Grindstone Island,	1850	4	1	60	45 43 13	61 37 25	1151 11 10	100 0 0	42 18 7	Fixed Light	
11	Swallow Tail,	1860	10	1	148	44 50	66 44 00	1279 10 5	*25 0 0	39 1 2	Fixed White Light.	

* For three months.

2. Report of the Commissioners of Light Houses in the Gulf of Saint Lawrence.

Miramichi, 19th January, 1861.

SIR,—We beg to enclose Accounts of the expenditure during the past year for the support of the Lights on Escuminac and Miscou, amounting, with commission, to £212 2 1.

During the past year a supply of colored Chimneys was obtained from Britain for Miscou Light, which, with the other improvements made in ventilating the Lanthorn, have increased the brilliancy of the Light very greatly. An Iron Tank has also been procured, the cost of which exceeded our expectations.

The expenditure of Oil during the past year, at both Lights, was greatly below what was used the previous year.

We are glad to be able to report that the Lights continue to give general satisfaction, and we have every reason to believe that the Keepers faithfully discharged their duty.

As the expenditure for Chimneys was a heavy item in the expenditure of last year, and as we know of nothing being required but for the ordinary supplies for the coming year, we trust there will be a considerable reduction in the Account as compared with the past year.

Respectfully your obedient servants,

JOHN HARLEY,
GEORGE KERR,
RICHARD HUTCHISON,

Commissioners

The Hon. W. H. Steeves, Chief Com'r. Board of Works, Fredericton.

Light Houses in the Gulf of Saint Lawrence erected and supported by the Province of New Brunswick.

LIGHT STATIONS.	When erected.	No. of Lamps and Reflectors.	No. of Keepers.	Height of Light above high water.	North Latitude.			West Longitude.			Cost of Building when completed.	Keepers' Salaries.	Expenses for 1860, exclusive of Salaries.	
					°	'	"	°	'	"				
Point Escuminac.	1811	5	1	70	47	4	30	61	50	30	£1700	£100	£57 6 10	Fixed White Light.
Miscou Island,	1856	5	1	70	48	1	0	61	33	0	2200	125	151 15 3	Fixed Red Light.

Appendix D.

INTERCOLONIAL COMMUNICATION.

Statement of movements of Steamer "Arabian" during season of 1860; also, memorandum of business.

TRIP.	DATE SAILED FROM QUEBEC.	TRIP.	DATE SAILED FROM SHEDIAC.
1	Saturday, May 5.	1	Saturday, May 12.
2	Monday, " 21.	2	Monday, " 28.
3	" June 4.	3*	
4	" " 18.	4	Monday, June 25.
5	" July 2.	5	" July 9.
6	" " 16.	6	" " 23.
7	" Aug. 10.	7	" Aug. 20.
8	" " 27.	8	" Sept. 3.
9	" Sept. 10.	9	" " 17.
10	" " 24.	10	" Oct. 1.
11	" Oct. 8.	11	" " 15.
12	" " 26.	12	Tuesday, Oct. 30.

* Left Quebec on time Trip 3 down, proceeded as far as River du Loup, and then came into collision with the wharf, on Tuesday, June 5. Had to put back to Quebec for repairs, which cost \$1,000, independent of services of whole crew, and took 10 days to get ready for sea again.

Also made an excursion to Prince Edward Island from Chatham and Richibucto, during Prince of Wales' visit.

Deduct 2-13ths from amount of Contract.

PASSENGER TRAFFIC.

DOWN.

From	To	Dalhousie.	Bathurst.	Miramichi.	Richibucto.	Shediac.	Total.
Quebec, . . .		40	27	28	21	123	239
Dalhousie,	4	23	12	27	66
Bathurst,	6	5	20	31
Miramichi,	26	69	95
Richibucto,	25	25
Total, . . .		40	31	57	64	264	456

UP.

From	To	Richibucto.	Chatham.	Bathurst.	Dalhousie.	Canada.	Total.
Shediac, . . .		39	7	13	31	67	227
Richibucto,	4	4	8	10	62
Chatham,	21	48	38	107
Bathurst,	2	33	35
Dalhousie,	63	63
Total, . . .		39	117	38	89	211	494

NOTE.—The above is independent of Excursion to Prince Edward Island; and the word "Canada" in the "Up" statement means all the Ports from Dalhousie to Quebec.

FREIGHT.—Down—Equal to 10,000 Barrels. Up—Equal to 2,000 Barrels.

Toronto, Dec. 4, 1860.

THOS. LEACH, Purser "Arabian."

Appendix E.

PROVINCIAL LUNATIC ASYLUM.

Report of the Medical Superintendent.

Last year I reported to you the erection of partially covered and partially floored enclosures for the use of patients, in Summer to protect them from the heat of the sun, and in Winter from storm. They answer admirably the purpose intended. In them, the poor invalids breathe the fresh air and exercise at pleasure, with the greatest advantage to their health and comfort, when it would be quite improper to allow them to be at large on the grounds.

At the same time, I called your attention to the fact, that many of the rooms in the main centre Building are now unfit for use, from dampness, owing to the plaster having been put on the brick; and stated that they would require to be studded, lathed, and plastered anew. That work, however, has been deferred, believing that it could be done more conveniently and economically when the new wing is being built.

Also in the same Report, I referred to the state of the fence enclosing the grounds, and afterwards, on the spot, invited a personal inspection of it, and obtained your permission to make the alteration and improvements suggested. Before proceeding with the erection of the fence, it was necessary to build stone walls, and to remove large quantities of earth. This preparatory work has been proceeded with, as far as other more pressing claims upon our labour would permit, and is in a considerably advanced state, so far, that early in the Summer, at the latest, we hope to be able to proceed with the alterations and erections of the fence.

The furniture in the best halls, as I stated last year, is far from being what is desirable either in quantity or quality, but nothing has been added since date of last Report. I would earnestly ask your liberal consideration of this matter, and a grant of money to supply the deficiency.

Mr. Quinton has attended to such repairs in the Carpentry department as were needed, and his Account for labour and materials, amounting to £6 4 3, is herewith forwarded.

Mr. Hopkins has made the necessary repairs in Mason work, and his Account is also enclosed, amount £5 15 9.

During high winds, more or less slates are blown off the roof. Mr. Crosby has furnished the materials required to replace them, and has had the work done for the last year, and his Account you will receive, amounting to £1 13 11.

These repairs have been done under my supervision, and to my entire satisfaction, Mr. Graham checking the labour.

Similar repairs will probably be required during the year 1861, and in addition I would recommend a careful examination of the gutters along the cornices, to ascertain if there are any leaks that may be destroying the wood work on which the roof rests, and if so—as I suspect there may be—have them thoroughly repaired.

The putty in some of the windows is perishing, and the cement in many places is falling out. One of the patients, a Carpenter, with one of our indoor employees, have done a large amount of work this Autumn, in restoring putty to windows, and replacing cement around window frames in the lower story, but the upper windows still require repairs.

In September last, the water from Carleton Water Works was introduced into the Asylum. The arrangement which the Commissioners have made, includes a supply for barn and piggery, but to neither have the pipes yet been laid: we are therefore paying for a privilege of which we cannot avail ourselves, in consequence of not having pipe. I have enquired and ascertained that a pipe of sufficient size can be laid to both of these buildings—our opening and closing the trenches—for, say £25, and the plumbing work would cost about £5. Considering that the advantages would be so great, and that the cost would be comparatively so small, I beg strongly to recommend that the pipes should be laid down early in the Spring.

It is cause of deep gratitude, a sincere expression of which I would desire to make on the part of the insane, that the Government have provided £2,000 towards the completion of the north wing.

Preparatory to that work being proceeded with in the Spring, the excavation for the cellar and foundations has been made during last Summer, by the labour of men employed in the Institution, assisted by the patients, and as the house continues to be much over-crowded, it is hoped that the new wing will be in readiness for occupancy, at latest, by the end of August 1862. In the meantime, it will be difficult to accommodate all applicants for admission, as we have hitherto done.

Respectfully submitted by

JOHN WADDELL, *M. D.*

Provincial Lunatic Asylum, St. John, Dec. 31, 1860.

Appendix F.

PROVINCIAL PENITENTIARY.

Report of the Secretary of the Provincial Penitentiary

Saint John, December 27, 1860.

SIR,—During the year ending 31st October last, there were eight hundred and sixty eight feet of Lightning Rods placed on the buildings connected with the Provincial Penitentiary, at a cost of £43 8s, the Accounts for which I am now directed to submit to the Commissioner of the Board of Works for payment.

The Steam Boiler was found to be so unsafe, that in September last, a Tubular one was contracted for, and is now being placed, for greater security against fire, in a small building erected for the purpose, outside the walls of the building used for workshops. I now beg to hand you the Accounts connected with the same, shewing an estimated expenditure of \$1,642.40, and it will be necessary to provide for the immediate payment of these Accounts.

The repairs necessary to the palisade fence and southern end of the granite Building referred to in my Report of 1st February last, as requiring an expenditure of about one hundred and forty pounds should be made during the current year.

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

SAMUEL D. BERTON, *Secretary.*

Hon. W. H. STEEVES.

Saint John, December 18, 1860.

SIR,—I have tested the Boiler manufactured by Mr. T. Ranton, for the Penitentiary, to the pressure required by agreement made by him, viz. 120 lbs to the square inch, and the Boiler stood the test satisfactorily.

I inspected the making of this Boiler in all its stages, and consider it completed in accordance with the Specification.

I remain your obedient servant,

W. M. SMITH.

S. BERTON, Esquire, Secretary, Provincial Penitentiary.

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