

OBSERVATIONS

ON THE

RIDEAU CANAL,

BY

EDWARD JOHN BARKER, M. D.

Inscribed (by permission) to His Excellency Sir John Colborne, K. C. B. Lieutenant Governor of the Province of Upper Canada.

KINGSTON, U. C.

**PRINTED AND PUBLISHED AT THE OFFICE OF THE
BRITISH WHIG.**

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*To His Excellency Sir John Colborne, K. C. B.
Lieutenant Governor of the Province of Upper Ca-
nada, and Major General Commanding His Ma-
jesty's Forces therein, &c. &c.*

MAY IT PLEASE YOUR EXCELLENCY,

I should not have presumed to have offered the following trifling production to Your Excellency's acceptance, if I had not been aware, that owing to the intrigues of interested individuals at Montreal, it would be necessary to place upon the title page of my pamphlet the approbation of some distinguished personage, to obtain for it any thing like fair criticism or circulation in the Lower Province. The bare fact that you have allowed me to use your name, will be to the emigrant and stranger, a sufficient guarantcc, that this trifle is not a mercenary speculation, got up to induce them to take the Rideau Route on their way to the Upper Province, in preference to that of the St. Lawrence.

With many wishes for Your Excellency's prosperity,

I have the honor to be,

With great Respect,

Your Excellency's Obedient Servant,

EDWARD JOHN BARKER, M. D.

Kingston, U. C. August 1st, 1834.

Note.—The hasty manner in which this pamphlet has been written and printed, amid the daily labors of conducting a semi-weekly newspaper, must stand the author's best excuse for the many errors of composition and typography to be found in its pages.

British Whig Office, Kingston, U. C. August 1st, 1834.

OBSERVATIONS.



A CANAL to join the waters of the Rivers St. Lawrence and Ottawa, appears to have long been an object of much anxious solicitude, on the part of the British Government as well as on that of the Province of Upper Canada. As early as 1790, various plans were formed and partial estimates given in by sundry individuals, but nothing appears to have been acted upon, prior to the year 1822. The Provincial Parliament having experienced the extreme difficulty of bringing Goods and Stores up the St. Lawrence during the last war, were anxious that on a similar occasion, the same difficulties should not occur, and passed an act in that year, "to make provision for the improvement of the Internal Navigation of this province." In consequence of this act, Commissioners were appointed (of whom John Macaulay, Esq. of Kingston was President) to determine upon the practability of the undertaking, who under the advice and direction of their Engineer, Mr. Clowes, made several reports, all of which in the year 1825, were referred to a Joint Committee of the two Houses of the Provincial Legislature, from whom a recommendation emanated to *dig* a Canal of the following dimensions:

"On a scale of 5 feet in depth, 28 feet in width at the bottom, and 48 feet in width at the surface of the water; the banks to slope 2 feet to 1 foot perpendicular; the locks to be of stone, and 80 feet in length by 15 in width, with turning bridges, 15 feet in the clear, and 10 feet wide: cost, £145,802. 7. 8½."

This recommendation was not followed by a grant, for the British Government taking into consideration

the importance of the projected work as a Military Canal, and the comparative poverty of the province, with that magnificent generosity which has ever distinguished the actions of Great Britain towards her Colonies, resolved to take upon itself the whole expense. In the year 1826, the Board of Ordnance dispatched Lieut. Colonel By, of the Royal Engineers to Canada, to survey the route proposed by the Civil Engineer, Mr. Clowes. Having passed along the whole line, Lieut. Colonel By made several alterations, the principal of which were : by erecting Dams to flood back the waters upon the rapids, instead of excavating extensively; to make the entrance of the Canal above the Falls of the Rideau at Bytown, instead of below them; and to terminate the Canal at Kingston Mills, instead of bringing it into the Bay three miles above Kingston. The two former of these alterations time has proved to have been highly judicious; the latter has not been so happy in its consequences.

When Lieut. Colonel By first commenced his labors at Bytown, he had orders to complete the Canal upon the same scale as that at Lachine and the Canal then in progress at Grenville on the Ottawa River, viz : with locks 80 feet long, 20 feet wide and 4 feet deep. Upon this scale eleven locks were partly finished and contracted for, when towards the close of the year 1827, Lieut. Colonel By made a special remonstrance to the Board of Ordnance, against the propriety of completing the Canal upon so diminutive a scale, when by the trifling outlay of about £53,000 above the then given-in estimate, a much more extensive Canal could be perfected, with Locks 150 feet long, by 50 feet wide, and having five feet depth of water instead of four. Together with this suggestion or remonstrance, he inclosed a more carefully compiled estimate of the probable

cost of the Canal upon the Lachine scale, amounting to £174,844,00, a sum vastly different from that for nearly the same work estimated by Mr. Clowes.

These documents of Lieut. Colonel By were referred by the Board of Ordnance to a Committee of Engineers in London, who reported unfavorably towards Lieut. Colonel By's project, and even went so far as to recommend the substitution of wood in place of stone for the remaining 36 Locks unfinished or not contracted for. The Marquess of Anglesey, at that time Master General of the Ordnance, not content with this Report, referred the matter to the Honorable Wm. Huskisson, Colonial Secretary, who being of opinion that Lieut. Colonel By's suggestion was worthy of more consideration than that paid by the Committee, recommended a Commission to be sent out from England by the Board of Ordnance, to determine upon this very material point. Consequently in the spring of 1823, Lieut. Colonels Faishawe and Lewis arrived in Canada to form a Commission of which His Excellency, Sir James Kempt, Governor General of the Canadas, was the President, who in June of the same year reported to the following effect:

“After a careful consideration of all the circumstances attending this very great undertaking, and a most anxious desire not unnecessarily to involve the Mother Country further into an extent of expenditure little contemplated in the outset, at the same time not to sacrifice any large portion of the expenses already incurred or engaged for by specific contracts, the Committee recommend that the whole Back Water Communication should be completed, with five feet depth of water; and the locks uniformly adapted for the passage of steam-boats 30 feet wide over the paddle boxes, and for spars 108 long, besides ample space for working the gates.”

This was not however the final alteration; for the same Commissioners in examining the works then in progress on the Grenville Canal, recommended that the remaining Locks on that Canal should be enlarged to correspond with those of the Rideau Canal, which were then finally ordered to be of the following dimensions: 110 feet long, clear of the Gates, 34 feet wide and 5 feet deep, adapted to the navigation of Steam Boats, 33 feet broad across the paddle boxes. The estimate was now increased to £576,757, a sum however large it may appear, proved to be wholly inadequate to the completion of the Canal upon this scale; for in March 1830, the estimate was still further increased to £762,679, including the sum of £69,230 for 22 Block-Houses, 15 Bridges, &c. These increasing estimates which were regularly laid before the House of Commons and voted, proved to be so much beyond the original intention of the House to grant, that they became alarmed and voted an Address to the Crown, requesting the whole correspondence between the Treasury, the Colonial Secretary, the Board of Ordnance and Lieut. Colonel By, together with all official documents to be laid before them, which being done in February 1831, they were ordered to be printed, forming a folio volume of considerable pretensions, from which the preceding facts have been collected.

During this time, Lieut. Colonel By lost no time in prosecuting his great work; having the confidence of the Ministry and the Board of Ordnance, unlimited capital appeared to be at his disposal; Dams, Locks, Basins and Bridges rose in the wilderness, as if by the magic lamp of Aladdin, and contrary to the expectations of every one but the chief architect and his immediate friends, the Canal was declared fully completed in the spring of 1832, just ten years

from the passing of the Provincial Act. On the 27th May, 1832, Lieut. Colonel By and Family, arrived at Kingston from Bytown in the old Steam Boat *Pumper*, having passed through the whole line of the Canal, and examined with attention the state of the works. This important project being finished, Lieut. Colonel By returned to England, where a most material change having taken place in the councils of the country, he experienced some difficulties in the passing of his accounts.

Of the total cost of the Canal, it is difficult to obtain any correct or authentic information, without special application to the proper authorities at home. The last estimate came near £800,000, and it is known that that was materially deficient, for all the erections for which it was granted were not completed; particularly the 22 Block Houses and 15 Bridges, and many claims for flooded Lands remain unliquidated to this day. The Report of a Committee of the House of Commons upon the Canada Canals, dated June 20th, 1832, copied into one of the Canada newspapers, states, "that the excess of Lieut. Colonel By's accounts show an expenditure of £22,750, beyond the votes of Parliament, and an estimate of £111,181, beyond the same votes for the completion of the Canal;" but as at that time, all Lieut. Colonel By's accounts were not delivered in, and as the same Committee in another part of their report recommend a larger grant to complete the Canal than that asked for by the Minister, in order to meet an expected excess, it is impossible to come at the real cost of the Canal. This report appears to have been the last printed public document on this subject. It is easy to see from the general tenor of the language used, that this Committee were of a different stamp from the gentlemen who first patronised and supported Lieut. Colonel By.

In the absence therefore of real facts, it may not be too much to estimate the cost of the Canal in its present state of completion, at One Million Sterling, as many important charges are not included in the grants, particularly the expenses of the Corps of Royal Engineers and the four Companies of Sappers and Miners. When the length of the Canal (126 miles,) the nature of the ground and the roughness of the country is considered, this sum appears not to have been high; at any rate no Canal in Europe or America, of the same size, was ever completed for any thing like that money.

The enemies of the Lieut. Colonel, (and every good or great man has his enemies,) have not scrupled to accuse him of speculation and favoritism: of the former crime not a title of evidence worthy the name can be adduced; like other men of original genius, his mind soared beyond his means, ample as they were, leading him to incur expenses, which had not previously been calculated upon, laying thereby him open to the attacks of his traducers; but it cannot be shewn, that one shilling of the public money was pocketed by him: of the more venial offence he must plead guilty; being a Scotchman, he favored his Countrymen, but not exclusively; and when it is recollected, that the competitors for his favor were mostly either Scotchmen or Americans, and that some of the latter had failed in their contracts, and if successful would carry with them to a foreign land the fruits of their labors, it is not much to be regretted that he was somewhat partial.

The Rideau Canal is not a canal properly so called, but rather a succession of raised waters by means of dams, with natural lakes interspersed.— One end of it empties into the Ottawa, half a mile above the falls of the Rideau, intersecting the up-

per and lower villages of Bytown; and the other end terminates at Kingston Mills, six miles above the town of Kingston, at the head of the bay or piece of water known by the name of the Great Cataract. In tracing the Canal from the St. Lawrence to the Ottawa, it may not be uninteresting to the distant reader, to give a slight description of the towns and villages through which it passes.

Kingston is said to be the oldest town in Upper Canada; it is well situated for commercial purposes at the foot of Lake Ontario, and also at the foot of that extensive inlet, dividing Prince Edward from the Midland District, called the Bay of Quinte. It is built on the Lake, or more correctly speaking, on the River side, directly opposite the large island in the St. Lawrence, named Wolf or Long Island, that separates Upper Canada from New York State, from which Kingston is distant only eleven miles. In commercial importance it is the second town in the province, and were it blessed with a population as enterprising, as wealthy and respectable, it would soon have no equal. The town, including the suburbs of French Village and Barriefield, contains over 5000 inhabitants, exclusive of the Military and their families; of whom about 1000 souls are quartered in the several barracks. Kingston can boast of six places for Divine Worship; an Episcopal and Catholic Church, a Scotch Kirk, a Reformed Presbyterian, and two Methodist Chapels. Four newspapers, one semi-weekly and three weekly publications, contribute to the intellectual amusement and edification of the inhabitants; while during the season, twenty steamboats are in the constant habit of trading to its harbor, of which nine are owned in the place. Kingston is situated equi-distant between Montreal and Toronto, and is remarkably well adapted, in case of a union between the Upper and

Lower Provinces, to become the seat of Government; being the only place on the frontiers that is capable of being successfully defended against an enemy. The harbor is formed by a low peninsula called Point Frederick, running into the Bay to the eastward of the town, at about half a mile distant, on which is situated the King's Dock Yard; the whole well commanded by the cannon of Fort Henry, at present in a state of erection on an elevated promontory still further to the eastward. The town is connected with Point Frederick and the suburb called Barriefield by a long wooden bridge over the Great Cataract; the draw-bridge of which may be termed the entrance to the Canal on the Kingston side, since although it is said to begin six miles higher up, yet as large sums of money have been expended in perfecting this part of the navigation as in other parts of the Canal; which for want of a better term, must still be used to designate the Rideau navigation.

Upon leaving the bridge, the channel of the Canal is on the eastern side for about a mile, until Bell's Island, a small wooded islet, appears to block the passage further up; passing on the eastern end of this island, the channel soon becomes so crooked as to defy any description of its course, but still winds its serpentine way to the northward, with a uniform depth of water not exceeding five feet at the outside. It is on both sides flanked by low marshy lands, covered with water in spring and fall, but yielding quantities of coarse rank grass during the summer months. The course for a vessel to steer is marked by long poles stuck in the soft mud, but so imperfectly, as to render it almost impossible to run this part of the route during the night, unless the moon shines brightly. About a mile below the locks, the channel is excavated for about 100 yards

through soft mud, and piled on both sides to prevent filling in. This was done last winter on account of a large rock lying in the centre of the proper bed of the channel, upon which there is seldom more than three feet of water. It was this obstacle which last summer retarded the progress of the larger steam boats, and compelled them to stop at Kingston Mills until the present channel was dug. On passing this obstruction, the shores immediately narrow and the mouth of the Cataraqui Creek is seen, with lofty granite rocks on both sides continuing all the way to the first locks, which are constructed not far from the spot where the Cataraqui was wont to tumble down a precipice of some thirty feet high. During this distance the creek is not more than 120 to 130 feet wide, but the shores are bold and steep, with six feet of water in the shallowest parts. On the whole route from Kingston to Bytown, there is no natural part of the Canal which impresses the beholder with more fearful delight than this portion of the Cataraqui Creek; the awful sublimity of the towering rocks inspires a species of pleasure difficult to describe, and although the scenery on the Rideau River and on some of the Lakes is hardly to be surpassed both for splendor and loveliness, yet it yields in point of grandeur to this spot.

The lift to be overcome at Kingston Mills, is $46\frac{1}{2}$ feet, divided into equal portions of 11 feet 8 inches each. The original fall was not so high, but the water has been raised 20 feet to overcome two small rifts between this place and Brewer's Lower Mill. The Locks are four in number, and being the first on the canal, require a short description which may serve for all the rest, as all are built in nearly the same way. They are composed of cut lime or sand stone, (a species of freestone of almost eternal duration,) which are the only building materials used on the

entire line. They are 110 feet long, clear of the gates, 33 feet wide, with 5 feet depth of water over the sills. The gates are framed of oak, and are put up in a most substantial manner. The crabs, chains, and other iron works were manufactured in England, and at Three Rivers, Lower Province, and the heavy smith's work was done at Bytown. They are of the very best materials, and of the most approved patterns. Between the third and fourth lock is a capacious basin, built in the same manner as the locks, sufficiently large for the largest sized steamboat to turn or pass. The time of passing the locks will occupy twelve minutes each upon an average, so that if a steamboat has a barge in tow, nearly two hours are lost in detention. The locks themselves are situated on the western side of the old falls, and the site they now occupied was blasted out of the solid granite rock, nearly 23,000 cubic yards of which were removed. To raise the waters at this place, a dam and two extensive embankments are made: the Dam is built with rough lime stone, is about 350 feet in length, is 34 feet high in the centre, and is flanked at the east end by the waste weir; one embankment to the eastward extends 2600 feet, and the other to the westward of about 3200 feet in length. The height of these embankments is various, the highest part about 23 feet, and the lowest not exceeding so many inches. They are well built with stone and clay, but are not perfectly water tight. Over the locks is thrown a long and lofty wooden bridge, the high road to Montreal passing through the village. The probable cost of these works, which are third in point of extensiveness on the line, was about £60,000, the last estimate given by Lieutenant Colonel By amounting to £52,274. The sole contractor and architect was R. Drummond, Esq. of

Kingston. During the period of erection, the place was very sickly, and 500 laborers are said to have lost their lives. The works at Kingston Mills and as far as the Isthmus are under the superintendence and personal inspection of Mr. Thomas Burrows who resides on the spot, to whom the writer is under obligation for much valuable information, particularly for the geological description of the country through which the Canal passes. The village at this place is small, comprising two taverns and about a dozen scattered houses; the country round is not thickly settled, nor is the land generally called good.

The only difficult part of the Navigation on the entire Canal route, lies between Kingston and Kingston mills. The channel of the canal from the time it leaves the Locks at the latter place until it comes within a mile of Kingston, is remarkably narrow, winding, and in many parts extremely shallow, so that it is with much trouble that vessels drawing about five feet of water pass to and fro without grounding. This difficulty may be entirely overcome by throwing a Dam across the Cataraqui Waters, either at Bell's Island or Tete de Pont, and raising the waters ten feet. For the hindrance of such a project no natural impediments occur. The shores on both sides are bold and rocky all the way, and if the Dam were erected at Tete de Pont over to Point Frederick, two small embankments only (in addition to the Lock) would be necessary: a small one on the low ground immediately above the Bridge on the Point, and a larger one from Tete de Pont to the Western Shore. From opinions given by experienced Engineers, the whole expense of such an undertaking would not exceed £25,000, a sum comparatively trifling, when the important advantages are called into recollection, and which sum

upon proper application, the Provincial Parliament would be inclined to grant.

The advantages arising from such a plan are four-fold. *In the first place*, the navigation of the Rideau Canal would be perfected. *Secondly*, the low marshy, sedgy lands which are now partially overflowed, through which the canal winds its way, and from which during the hot summer months a poisonous miasma arises, pregnant with disease and death, would be entirely covered. This ought to be a matter of great moment to the inhabitants of Kingston, when they reflect upon the excessive mortality of the year 1833, occasioned by bad air. *Thirdly*, a great water power would be brought into the heart of the town, the privileges of which might be let for an immense sum, since twenty mills could be turned with the superabundant water. And lastly, a large piece of land would be recovered from the water, between the Western Shore and the Bridge, which if sold in town and water lots, would materially contribute to defray the expence of the undertaking.

The difficulties in the way of this project are neither few nor trifling. 1stly.—The Home Government, whose property the canal is, may neither feel inclined to expend any more money on the canal, nor allow any other persons to do the same; they may object to the circumstance of any independent control existing over any portion of the canal. At present the canal ends at Kingston Mills; should the improvement take place, the canal will then end at Kingston, and if the province or individuals should build the Dam and Lock, they must also keep it in repair at some annual expence, which to provide for, and to maintain Lockmen, it will be necessary to lay on a toll. The two interests may then clash. The only remedy in this case would be for the pro-

vince or others building the Lock and Dam, to present them when completed to the Home Government, to become an integral part of the Rideau Canal. 2dly.—The Catarqui Bridge Company may not like having a Dam placed near their Bridge. This is a chartered Company and may stand upon their vested rights. This obstacle may be overcome in two ways; firstly, by allowing the Company the exclusive privilege of passing the Dam as a Bridge when completed; which considering the delapidated condition of the present bridge, and the imperishable nature of a well constructed dam, will be an exchange much to their advantage; and secondly, in case they should prove refractory, by making the Dam at Bell's Island. And lastly, the owners of the marshy, sedgy lands which would be covered, and from which they at present procure some twenty tons of coarse hay annually, will be claiming extravagant sums of money as compensation for injuries done to their property. An Act of the Provincial Parliament must pass if this scheme be carried into effect, and in a clause, commissioners might be named to determine the fair demands of the claimants.

Perhaps nothing can be of more vital importance to the prosperity of an inland commercial town like Kingston, than the possession of water power. The inhabitants of the adjoining state appear to be widely awake to this truth. Rochester is a remarkable exemplifying instance; long after Kingston had become a place of some consequence, the trees where Rochester now stands were growing. Look at the present contrast between the towns. Little Falls and Watertown, as their name indicate, owe their existence to their local situation; and Oswego is as much indebted to the mill privileges arising from its canal, as to the canal itself. Were Kingston a ma-

nufacturing town, no reasonable bounds could be placed to its increase, and that it can easily so become, has been sufficiently shown to make its inhabitants take some steps to ascertain the fact.

The appearance of the Canal from the Locks at Kingston Mills is that of a small desolate lake, the waters having flooded the lands to some extent, leaving the trees standing on the uncleared parts, in a rapidly decaying state. As a matter of course the channel of the old creek is lost, but the canal route is marked by stakes driven in the ground, and by marks on the trees. The distance to the next lock (Brewer's Lower Mill) is ten miles, and the creek is followed all the way, except in those places where its course is so winding, that partial deviations are made to prevent unnecessary travel. In general excavation is not needed, for the waters are raised so much beyond their ordinary level, that all that is necessary is, to cut a passage between the decaying trees. Within two miles of the lock the excavations become more extensive as the creek shoals, and on passing the lock, the bed of the creek is deepened nearly all the way to the next locks, (Brewer's Upper Mills) a short two miles. The width is extremely various and uncertain, from half a mile to fifty yards, but as the trees are mostly left standing in the water, the width does not appear to the eye so great as it really is.

It is on this portion of the route, that the green vegetable matter floating on the surface of the water is so prevalent; this weed goes by the name of 'Fever and Ague;' this arises from a vulgar error of its generating that disease, but since the waters have been raised and kept at their present level, intermittents have not been so prevalent as in former days, when the old creek used to rise and overflow its banks, which it generally did every spring and fall.

The country was then so unhealthy as hardly to be habitable. This is explained upon natural principles, and is equally applicable to other parts of the Canal, where the same result, that of healthfulness, has been produced by the raising of the waters. The excessive mortality among the laborers on the entire line gave a gloomy promise of a sickly country, a foreboding which has not been realized; for intermittents and other fevers are not so frequently met with as in the more interior parts of the country. During the present summer, when the writer passed along the canal twice, he did not see nor hear of a single case of sickness. It must nevertheless be acknowledged, that the large quantity of decaying vegetable matter, standing and drifting into the Canal, must have a tendency to generate miasma and destroy the purity of the atmosphere, but not to the extent that was generally imagined: it is however an evil that is gradually diminishing as the trees are cut down or die of themselves; and as the country becomes more settled, the banks of the Canal will become more contracted and defined, and the artificial swamps be in time all recovered from the waters.

This part of the route has a gloomy and desolate appearance; the quantity of dead and dying timber horribly offends the eye, and the total absence of human life inspires anything but pleasure. From Kingston Mills to the locks at Brewer's Upper Mills, not a single human habitation is passed except two cottages at the Lower Mill, nor the least appearance of a farm or clearing: all is solitude, save the scream of the water fowl or the snorting of the fiery steam-boat as she wends her way among the trees in these dreary waters. The sportsman might however find pleasure where no one else would look for it, for fish and fowl abound; of the latter the

wood ducks are most plentiful, the trees serving as convenient places to build their nests in.

At Brewer's Lower Mill, (the site of a saw mill now in ruins,) there is one lock whose lift is 13 feet 2 inches. The lock, dam and waste weir are built of sand stone, and were erected by Mr. Drummond. There is no lock house at this station, and the only habitations are the small cottages in which the lock master and his two laborers reside. From hence to the Upper Mills, the scenery as before described continues, except that as the excavations are deeper and more numerous, the drowned lands are less.— There is no scarcity of water, and the depth is never less than five feet, and in many places much more.

At the Upper Mills, there are two locks; one of 12 feet 6 inches lift, and the other of 6 feet, built of the same material and by the same architect as the last. The dam and waste weir are also of stone, the former exceedingly strong and 18 feet in height. The waters are raised 8 feet, and are backed to a prodigious extent in all directions, this being the outlet of many waters, including Dog Lake, Loughborough Lake, Cranberry Marsh and Lake, and the other lakes more in the interior, with which the above waters communicate. At this place the road to Perth from Kingston crosses the Canal, and there is a small hamlet of a dozen houses, with a grist-mill and saw-mill worked with the surplus water from the waste weir. Mr. James Mathewson, an extensive lumber merchant, is the occupier of the mills, who for public accommodation adds the keeping of a tavern and Dry Goods' store.

About three quarters of a mile from the Upper Mills is the excavation at the Round Tail. At this place which formerly was the head of the Cataraqui Creek, stood a wooden dam, of which many strange tales are yet told. It derives its name from being er-

roneously supposed to have been originally formed by round tailed Beavers, but was placed in reality by the proprietors of mills at White Fish Falls, to prevent the water running down the Catarqui. To give the reader an imperfect idea of the waters in this section of the Canal, a knowledge of which can only be obtained by actual observation, it is necessary to premise, that the western branch of another and larger stream, called the Gananoque River, rises in this neighborhood, the waters of which came down Jones' Falls from the Opinicon and Sand Lakes, and thence down the White Fish Falls into the lake below, into which the eastern branch also empties, flowing from thence into the St. Lawrence twenty miles below Kingston. As mills were erected at White Fish Falls, it became necessary for the proprietor to dam up the waters, which flowing back upon the low grounds, flooded a large extent of country, known then and still called by the name of the Drowned Lands. By this inundation an artificial communication was effected between the heads of the two streams Gananoque and Catarqui, so that it became imperative to erect a dam at the Round Tail to maintain the level. Through these 'drowned lands' the Canal now passes, and by the Dam already described at Brewer's Upper Mills, and by another at White Fish Falls, raised upon the base of the old one, in all 18 feet high, Cranberry Marsh, Cranberry Lake, and the Drowned Lands are now raised and kept at their present level, without inundating much more land of any value. From the peculiar formation of the country, all the good land lies high, and marshy lands principally are covered by means of the two dams. It was in contemplation by Mr. Clowes, the provincial engineer, but afterwards abandoned by Lieut. Colonel By, to have descended the White Fish Falls into the lake of the same

name, and thence through a swamp called Plum Hollow to Irish Lake and the Rideau River.

It will be observed, that the original idea of passing through Plum Hollow, founded on a presumption that the lowest summit would be found in that quarter, and adopted also on account of that place, lying nearly in a direct line from Kingston to the mouth of the Rideau, was abandoned, on its being ascertained that Plum Hollow, which appears low to the eye from its position in the neighbourhood of elevated ridges, was actually 156 feet $49\frac{1}{2}$ decimals higher than Lake Ontario, and consequently 2 feet 39 decimals above the bottom level of the present summit pond. There were other difficulties to be surmounted on this route; to supply the summit level, a feeder would have been required 10 miles in length from the big bay in the Rideau Lake, the construction of which would be a serious affair, as an intervening ridge of limestone, 36 feet above the level, would have occasioned a heavy expenditure of money. The summit pond itself would not have extended beyond a few hundred yards, while the cost incurred for supplying it with water, would have tripled that of the route by Jones' Rapids and the lakes. Besides these objections to the route by Plum Hollow, two summits would have been requisite on that line. The flats between the Round Tail and the White-Fish Falls would have become the first summit, from which there would have been a descent by two locks at White-Fish Falls into one of the Gananoque Lakes, called White-Fish or East Lake. From thence the route would have led through the Bastard Lakes to the second summit at Plum Hollow, and have reached the River Rideau by way of Irish Lake and Creek. The line of the Canal is undoubtedly lengthened about 20 miles by abandoning this course and as-

suming the more circuitous one by the lakes; but the great saving of expense in the latter, and the benefit which is derived from the rising settlements near the Rideau Lake, added to various other considerations, more than outweigh the disadvantages of increased length.

On giving up the route by Plum Hollow, it was endeavoured to avoid the expensive work at Jones' Rapids, by discovering, if possible an easier way of encountering the rise to the summit at some point westward of those rapids. With this view Loughborough, August and September Lakes were examined, on the supposition that they might be connected with the Opinicon, which lies above Davis' Lake; but Loughborough Lake was found to be elevated 177 feet $37\frac{1}{2}$ decimals above the level of Lake Ontario, and 23 feet 27 decimals higher than the summit pond. Another level, through Dog, Troy, and Traverse Lakes, to Davis' Lake, failed, as a rocky summit of 70 feet above the level, presented an impassable barrier between the two latter lakes. Various other attempts of a similar description proved equally abortive, and it became eventually necessary to return to the western branch of the River Gananoque, and devise the best means of surmounting the impediments at Jones' Falls; of which before a description is attempted to be given, a return must be made to the Round Tail, the place where the Canal was last traced to.

The old dam at the Round Tail as a matter of course has been removed, having been superseded by the one at Brewer's, but as the outlet is small and rocky, an excavation has been made on the east side of the rock through alluvial soil into Cranberry Marsh above. This place, as its name implies, was formerly a marsh covered with cran-

berry bushes, and subject to be continually overflowed when the waters were high, but in consequence of the present increase is converted into a spacious lake, covered with floating islands or bogs; for strange to say, the cranberry bushes and the soil to which they were immediately attached, rose to the surface simultaneously with the water. These floating bogs have at times been exceedingly troublesome, by shifting so much as to impede the navigation, at present they are stationary and it is said are fast decreasing. Leaving the Marsh, Cranberry Lake is then entered, an irregular piece of water, three miles long, on passing which, the Drowned Lands commence and continue all the way to Jones' Falls, twelve miles from Brewer's Upper Mills.— About two miles on the hither side of the Falls, a large rock, or small mountain, called Rock Dunder is seen to the right, and through a cliff in it, the Gananoque tumbles down a declivity of 26 feet at the place so often mentioned, White Fish Falls. Here it may be said that the Cataraqui waters terminate, but as the water from the Upper Lakes is prevented by the dam at the White Fish Falls from running down the Gananoque, and made to descend towards Kingston by the outlet at the Round Tail, the head of the Cataraqui cannot now be elsewhere than at the summit pond of the Canal in the Upper Rideau Lake.

It is at Jones' or Long Falls, variously termed from the name of the proprietor and the length of the fall, that the most stupendous works on the Canal are erected. The difficulty here to be overcome was a rapid $1\frac{1}{2}$ miles long, in which the stream fell 61 feet over a narrow rocky channel, confined within precipitous banks of great elevation, which retired more or less from the bed of the river. A certain rise in the line of the Canal was inevitably to

be encountered, and no place could be found presenting fewer obstructions. The works consist of an immense Dam, a By-wash or Waste Weir, four Locks and a large basin; which must all be described separately.

The Dam is built with Blocks of Freestone, backed with rubble masonry to the thickness of 27 feet, the wall is 62 feet high from the foundation and is about 400 feet long; it is strengthened by clay and gravel to the thickness of 301 feet at the base, but slopes up to about 60 feet at top. It forms an arch against the water raised by it, and is placed at the foot of the rapids, immediately across the bed of the stream, between lofty rocks. This dam is without exception the most stupendous and perfect of its kind in the world, and is alone worth the expense and trouble of a journey to visit. The locks are formed in the solid rock to the westward of the dam, at a short distance below it, and are of the prodigious lift of 15 feet each. Although built in the same manner and of the same material as the other locks, yet their size and beauty of workmanship have deservedly rendered them celebrated as the master piece of the Canal; they owe however no small portion of their reputation to the color of the sandstone, which is of a peculiarly bright hue, and to the excellent order in which they are maintained and preserved. Between the third and fourth locks is a capacious basin, formed on a natural rocky ledge, of which proper advantage has been taken. The By-wash or Waste Weir is placed away from the dam, on the east side of the entrance to the locks, and is excavated out of the solid rock. The water-fall is nearly as high as the dam, but does not descend to the ravine below in a solid sheet, being broken by several ledges. The works were executed by Messrs. McKay and Redpath, and

their total cost cannot be estimated at much less than £100,000.

There is no village at this station, nor any Block or Lock house, the lock-master and his assistants residing in the substantial dwelling houses erected for the accommodation of the principal workmen. The land is stoney, and little of it is in cultivation, but about five miles to the eastward there are good and long settled farms. Up to this spot it may be truly said that the canal passes through a wilderness, but from hence to Bytown, the country is more thickly settled, and away from the shores of the lakes and along the Rideau River, the land is excellent.

At Jones' Falls the proper lake navigation commences, the distance from which to the first locks on the Rideau River is 34 miles, and is a constant succession of lakes, communicating with each other by short and rapid creeks. By means of the dam, Jones' Rapids are readily navigated; the course is winding, and some beautiful scenery is passed, particularly the entrance into Sand Lake. This lake is a small piece of water about four miles long in its greatest extent, and is like all the other lakes through which the Canal passes, thickly studded with islands, whose appearance is much spoiled by the dead timber on the edges of the land, in consequence of the water being raised above its natural level. This is the case with all the lakes, and is a serious drawback to the otherwise endless variety of landscapes they display in almost as much profusion, as the Lago di Como or the most celebrated in existence.

The route of the Canal crosses Sand Lake, pursuing a westerly course, and is marked by large barrels painted white stuck upon the top of poles, and placed at the water's edge, with here and there an occasional direction board. Three miles and a

half from the Falls is the lock at Davis' Mill, the lift of which is 9 feet; it is built near the bed of the creek which connects Sand Lake with Lake Opinicon; a dam of rubble masonry and gravel abutts against the upper end of the Lake, occupying the bed of the creek, the other end of it is near the remains of the Old Saw-Mill from which the place derives its name. There are only three houses at this place two of which are occupied by the lock-master and his assistants, the other by a farmer;—a waste-weir has been formed by excavating through a narrow rocky ridge, Opinicon Lake is next entered, and the foot of it crossed to the lock at Chafey's Mill, a distance of two miles.—This latter lake is similar in its features to the one just passed, and its greatest extent is six miles by two. At Chafey's Mill, the lock has a lift of 10 feet 6 inches, and is like the last built of sand stone; there is to the west of the lock a small stone dam and a by-wash. There are three or four habitations here; the widow of the late Mr. Chafey who owned the property and kept the mills now moved, still residing on the spot, together with the houses of the lock master and his assistants.

The creek leading to Indian Lake above (the next lake that is crossed) has been deepened in some places and made wider, but is of no great extent; a small portion of this lake is passed through, and a cut made from it, 200 feet long and 50 feet wide, into Clear Lake, a small piece of water about five miles in circumference lying between Indian and Mud Lakes. It derives its name from the transparency of its waters, which are somewhat singular, as Clear Lake is connected with two of the muddiest lakes on the line. There are some fine thriving settlements on this lake, and the country generally begins to show the appearance of life and

animation. Mud Lake is of larger extent than the four described, and takes its name from its muddy bottom; there are no low lands visible from the line of canal, and its shores are of a similar description to the other lakes, bold and rocky, abounding with pine and hemlock, with now and then a better description of timber. The entrance from Clear Lake is not good and needs improvement; it is narrow, crooked and rocky, with barely room enough for a steam-boat to pass with a barge in tow.

Among the marvellous tales told at Montreal to deter emigrants from coming to the Upper Province by the Rideau navigation, is the following: "on entering Mud Lake, a large scoop or shovel is placed into the hands of each passenger, who will be compelled to enter the water, and make a way through the soft mud for the steam-boat to pass, the passage filling up as the vessel passes." The water upon all the lakes has been raised several feet, and the depth in no place is less than six or seven feet, but often much more.

Between Mud Lake and the Upper Rideau Lake is a neck of land about a mile long, technically distinguished on this navigation as 'The Isthmus.' Through this neck of land an excavation has been made, partly through clay and partly through rock, of the depth of from 3 to 26 feet, being in places banked up to maintain the level, with a width of 48 feet on the surface of the water. A lock with 4 feet lift is placed on the Mud Lake side, but no dam or waste weir is needed. A substantial Block House, capable of garrisoning a company of infantry is erected a short distance from the lock; its basement story is square and built of stone, surmounted with a heavy frame upper story, much in the shape, though not so large, as the ordinary Block Houses in Kingston and other parts of the province. The

western end of the cut which communicates with the Upper Rideau Lake is somewhat difficult to navigate, owing to the trees having been cut down, leaving stumps about two or three feet high standing in the water, which has been raised by the dam at the Narrows to the required height. The immediate channel is not easy to keep in dark nights, as the only guides to steer by are two long poles placed 50 yards apart in the deep water, through which all vessels must enter or depart. It would be easy to remedy this inconvenience, by making the entrance to the cut more conspicuous and broader, and by staking it on both sides all the way to the mouth of the excavation.

During the progress of the works this spot was very unhealthy, but since their completion, and the waters have been maintained at their present level, the place has nearly lost its character for insalubrity. The works were partly contracted for and partly executed by persons in the immediate employ of Government. There is a small and increasing village now erecting at this interesting situation; the country on either side is fast settling and in a thriving state, and every thing bids fair to indicate future prosperity; indeed there are few places on the Rideau Navigation to which a preference could be given with propriety by the merchant, lumberer or agriculturist.

The Upper Rideau Lake is the summit level of the Canal. This lake originally formed part of the great Rideau Lake, but a dam having been erected at a spot called the Narrows, it has been formed into a separate lake; it is of the same size as Mud Lake, but in addition to its own waters, there are several extensive lakes lying west of the line on the same level or above it with which it communicates, besides an arm of the Rideau called the West Ri-

deau Lake, which stretches off in a south-westerly direction. There can be no cause to dread a scarcity of water, for with the most extensive trade that can be anticipated, the summit pond will still remain an inexhaustible reservoir during the most arid seasons. The elevation of the summit level above Lake Ontario is 161 feet 10 inches, and above the waters of the Ottawa 292 feet 5 inches. In one or two printed documents this elevation is differently stated, but according to the lifts of the locks it is as is here given. The distance from Kingston to the centre of the Lake is $41\frac{1}{2}$ miles, from Bytown 85 miles, and from Brockville 40 miles.

In this neighbourhood there are many flourishing settlements, and a small village lies to the west. This is a tract of country highly worthy the attention of the emigrant, for the land is generally good, the best timber being continually to be met with, and in addition to the low price of land, which varies from five to fifteen shillings currency per acre, the easy and speedy conveyance of produce to the best markets, Kingston, Bytown and Montreal is an advantage that cannot be overlooked.

The whole of these waters abound with the finest fish; those commonly met with are Salmon Trout, Black Bass, Pike, Pickerel, Catfish and Siscoes; the abundance of which would be sufficient of itself alone to maintain twice or three times the present population of the country. Among the birds that are commonly seen may be enumerated, various kinds of Water Fowl, Pigeons, Black-birds, Woodpeckers, Cranes, Fish-Hawks, King-birds, with an occasional bald-headed Eagle. Deer are very numerous in the woods, as is also that species of the Pheasant known in Canada by the name of Partridge, but differing essentially from the english bird of the same name.

At the Narrows, $4\frac{1}{2}$ miles from the Isthmus, there is a wooden dam extending across the water a distance of 400 yards, dividing the Upper Rideau from the Rideau Lake. The lock, whose lift is 4 feet 9 inches, is built of sandstone, and is the last formed with this beautiful description of building material. From Brewer's Mills to this place inclusive, all the locks are built of sandstone; from hence to Burritt's Rapids a grey or silicious limestone is used, and from thence to Bytown another description of the same stone, termed compact limestone, is made use of.— There is a Block House at this station not quite finished, of the same form and dimensions as the one at the Isthmus, which with a few scattered cottages comprise the extent of habitations.

From the lock at the Narrows the Rideau Lake is entered; this magnificent sheet of water is 17 miles long, with a breadth varying from half a mile to 7 miles, studded with islands in every part, and abounding with the most interesting and variegated landscapes. The route of the canal crosses this lake in its extreme length, and descends the Rideau River, of which it is the head water, to the locks at the 1st Rapids a distance of $19\frac{1}{2}$ miles. Many small rivers and creeks empty themselves into the Rideau Lake, among which the Tay is the most important; this river flows out of a lake to the westward, waters Perth, a small town containing 1000 inhabitants, the capital of the Bathurst District, and discharges itself into the Rideau Lake at its northern extremity. To Perth a small canal has been made by a Joint Stock Company, with the authority of an act of the Legislature. As the last report of the directors contains a description of this Canal it is here subjoined.

* REPORT.

The Directors of the Tay navigation Company in laying this report before the Stockholders, think

proper to explain, that although they did not communicate the progress of the works at the close of the year 1832, they nevertheless felt much anxiety to gratify those whose means had enabled the Company to commence operations; but the unfavorable nature of the weather during that season and the swollen state of the River, together with the prevailing sickness, prevented the Directors from prosecuting the work as they contemplated when they made their report at the close of the year 1831.— Now however after the close of another season the Directors have much pleasure in bringing the subject under the notice of the Stockholders, and in announcing to them the entire completion of the works from the Rideau Lake to the Town of Perth, with the exception of the hanging of one pair of Lock Gates, so that at the opening of the Spring, the navigation will be in perfect readiness for all the commercial purposes of that section of the province, and as the several parts of the work have been executed in the most substantial manner, there cannot exist a doubt but that the ensuing year will test the advantages to be derived by the public from the improvement of the navigation of the River Tay, and also the return which the Stockholders may expect to derive from the funds which they so liberally contributed in aid of an undertaking, which confers the benefits of a water communication with a populous part of the Province hitherto rendered almost inaccessible by the bad quality of the principal roads.

At an early period of the undertaking, it was thought by the Engineer, Mr. Jackson, that four dams, and an equal number of locks would be found sufficient to surmount the obstacles in the navigation, but after the completion of lock No. 3 it was ascertained that the necessary height to raise the water to the head of McVitie's rapid, would cause much damage to private property by the overflowing of a considerable quantity of land, which induced the Directors to lower this level and construct one lock more than was originally intended. This extra expenditure, altogether unforeseen by the Company, induced the Directors to build this lock

of timber, but they have every reason to hope that the quality of the workmanship, and materials will ensure its duration for many years. It remains now for the Directors to explain the nature and extent of the several parts of the work which the Stockholders entrusted them with the management of, and in doing so it is respectfully hoped that if in bringing the undertaking to a close, the period of time has extended to one year more than they at first assured the public was sufficient for its entire accomplishment, they cannot but flatter themselves that under the embarrassing circumstances with which they have had to contend, the public will admit that few instances will be found where so much has been done with means so limited as those placed in the hands of the Directors.

Lock No. 1, is a substantial piece of rubble masonry, and is entirely finished, with the exception of the lower pair of gates, which it was found impracticable to hang in consequence of the great depth of water set into the lock by the works on the Rideau Canal: the resident Engineer at Bytown having kindly promised to lower the level of the Rideau Lake, the Company will thus be enabled to finish that very difficult part of their labor, which has already cost many hundred pounds in vain attempts to exclude the water from this lock. Besides the dam connected with this lock, there is a regulating dam on the natural channel which is used as a waste weir to this and the next lock.

Lock No. 2, also of stone, with its dam and conduit are in a state of perfect completion, and has frequently been used during the past season.

Lock No. 3, a stone structure of similar workmanship to those described, is also, with the dam and flood gates connected with it, in perfect readiness for the business of the spring.

Lock No. 4 built during the past season, of timber, together with the necessary dam, and a separate waste weir are also ready for use, except the hanging of the gates which will be done the middle of next month.

Lock No. 5, of stone, built also during the present year, has been frequently used and has been

found to answer exceedingly well; the dam of this lock raises the water up to the level of the Town of Perth, where it was found necessary, in order to afford convenient room for steam-boats, to excavate a basin in a piece of low ground in the centre of the town. The work was one of much difficulty, owing to the swollen state of the river during the two last summers, and especially in consequence of the wetness of the weather in the months of August and September in 1832. It is satisfactory however to be able to state, that the excavation is finished, and the water let into the basin, and that it is faced round with a stone wall of three feet in thickness, and presents a convenient sheet of water of 160 feet by 120, with a wharf of 40 feet wide surrounding it. Besides these works the Directors have built two swing bridges for the passage of vessels at places where bridges were constructed previous to the passing of the Act incorporating the Company.

Thus it will be observed that the Directors have erected 5 locks, 6 dams and waste weirs, 2 swing bridges, besides several embankments in order to render the Tay navigable to the Town of Perth for vessels of nineteen and a half feet beam and drawing 3½ feet water. The whole distance from the Rideau Lake to the basin above described is eleven miles.

With respect to the financial concerns of the company, the Directors have to state that the expenditure for the whole of the works detailed above, amounts to £5000. £2000 are owing by the company for loans received upon the security of property which they possess at Perth, and a balance of little short of £1000 is still due to mechanics, laborers and others for services, materials, and provisions; to meet this debt the company have no funds, and as many of the individuals are in circumstances of necessity, the Directors feel deep concern on the subject.

W. MORRIS,—President,	} Directors.
J. MCKAY,	
G. H. READE,	
R. MATHESON,	
W. R. F. BERFORD,	
A. FRASER,	
H. GRAHAM,	

Perth, 21st December, 1833.

During the present summer, several attempts have been made to hang the gates of the lower lock, but hitherto without effect, so that in point of fact the canal is at present almost useless. When this difficulty is overcome, which appears to be of a trivial nature, the Tay Canal will form a useful adjunct to the Rideau navigation, as the settlements round about Perth are of a highly important character. An abbreviated table of the tolls charged on this Canal is annexed.

TOLLS CHARGEABLE ON THE TAY NAVIGATION.

	s.	d.
Dry Goods, Wines, Spirits, &c. per ton,	5	0
Iron and Sea Coal, do.	2	6
Flour per Barrel,	0	3
Salt, do.	0	2
Pot and Pearl ashes per do.	0	9
Beef, Pork, Apples, do.	0	6
Plaster of Paris, do.	0	6
Cider and Whiskey, do.	0	6
Wheat, per bushel,	0	0 $\frac{3}{4}$
Oats, do.	0	0 $\frac{1}{2}$
Other grain, do.	0	0 $\frac{1}{2}$
Oak Timber per cubic foot,	0	0 $\frac{1}{2}$
Other Timber do.	0	0 $\frac{1}{8}$
Saw logs each,	0	1 $\frac{1}{2}$
Pipe Staves per 1000,	10	0
Plank and Boards per 1000 feet,	1	0
Shingles per 1000,	0	4 $\frac{1}{2}$
Mill Stones per pair,	5	0
Grindstones per ton,	2	6
Charcoal and Lime per 100 bushels,	1	0
Sand do.	1	0
Each passenger,	0	3
Neat Cattle and Horses each,	0	9
Sheep, pigs, and calves each,	0	3
Carriages, waggons &c. each,	1	3
Articles not enumerated per cwt.	0	3

The Rideau Lake and the country back on all sides are full of flourishing farms and rising settlements. The valuable and romantic property of the Provincial Surveyor and Lumber Merchant, Reuben Sherwood Esq. lies on the east side of the lake a few miles from the Narrows, and still further down the village of Portland is discovered, a place which bears promise of being soon of some notoriety. The mail from Brockville to Perth crosses the lake at a contracted part, named Oliver's Ferry, about a quarter of a mile wide, 13 miles from the Narrows and 7 miles from Perth. The Navigation Tay Company have erected a Warehouse on an island, where they receive and ship goods to and from Perth by the passing steam boats. Although this lake is of such extent, no vessel except the regular steam boats is seen on its waters, and the only boats in use appear to be only a few birch or log canoes, dangerous to handle at all times, but particularly so to inexperienced persons. One would imagine that the many accidents occurring from the exclusive use of these fragile craft would teach the inhabitants the propriety of employing some more substantial vessels for the transport of themselves and property.

The Rideau River at the place it issues from the lake is about a furlong wide, but its natural width has been much increased by the dams formed to give a thorough depth of water over the rapids and shoals. Its banks, which are sufficiently steep to prevent much land from being overflowed, are covered with fine timber of every kind, but the most of it is in a decaying state from the raising of the water. A small bay, called Saw Log Bay is passed on the left hand, at the head of which a small stream discharges into the Rideau. Four miles from the Rideau Lake are the 1st Rapids, at which place a wooden dam is thrown across the stream

The dam which is made of wood, backs the water sufficiently to allow the canal to enter an excavation on the right bank of the river; this excavation and all the others from hence to Bytown, are over fifty feet wide on the surface, with sloping banks; the soil of this is partly clay and partly rock: half a mile from the entrance of the cut, one lock is erected; its lift is 7 feet 9 inches, and the canal enters the river again half a mile below it. Opposite the lock, Cockburn Creek discharges itself into the Rideau at the head of a large bay formed by a bend in the river; the inhabitants of the neighboring townships, have lately manifested an intention to connect the canal with the Mississippi Waters by means of this creek and an excavation not exceeding five miles in length. The improvement, if completed, will open a boat navigation for sixty miles, through the townships of Beckwith, Ramsay, Lanark and Dalhousie, as well as form a feeder to the canal. A small hamlet, called by an uncouth East Indian name, which deserves not to be recorded, is built at this place; it is in a languishing condition, not more than half a dozen houses or rather huts being tenanted. The first Rapids are half way between Kingston and Bytown, being 63 miles distant from each town.

Two miles and a half below the first Rapids, the village of Smith's Falls is situated. The canal works, which are on the right bank of the river, consist of four locks, (1 detached and 3 in continuation,) a large basin, a waste-weir and a moveable bridge. A stone dam is thrown across the river below the first lock, passing which an excavation and basin are entered, and the 3 locks then approached. Over the 3rd lock the moveable bridge is pushed aside when needed. The lift of the four locks combined amounts to 33 feet 9 inches. The height of

the dams at Smiths' Falls and some other stations on the Rideau River is not given, by reason of various sources of acquired information materially differing in their statements; the writer's notes say 9 feet, some printed papers give 28 feet, while others again diminish the altitude to 7 feet. It may appear singular that a matter so easy of being ascertained as the height of dams, could not readily be procured; but strange as it may seem, the fact is so; and lest the publication of this pamphlet should be deferred to an indefinite period, by allowing time for an application to the Board of Ordnance in England, it has been sent to press in its imperfect state. In places however where the height of the dam is given, it may be relied upon as correct. The embankments at the basin and other parts of these extensive works are said not to be in the most perfect state of repair, several leakages having made their appearance, which threaten much expense in effectually remedying.

Smith's Falls, upon which some mills were situated, owned by a man of the name of Smith, derives its name from a succession of rapids or small falls in the Rideau; it is the most flourishing village on the whole line of the Canal; it is built on the opposite side of the river to that on which the locks, &c. are situated, and a rough though strong wooden bridge connects them. The streets of the village are regularly laid out; it contains 6 merchants' stores, 1 grist and 2 saw mills, 2 taverns, post office, and about 30 or 40 houses. Two resident clergymen belonging to the Established Church and Kirk of Scotland dwell in the village; two miles distant there is an Episcopal Church, and a Presbyterian chapel is about to be erected, a grant having passed the last Synod; in addition, 1 physician and sundry mechanics are settled and doing well. The country

on all sides is in a good state of cultivation, and the extreme facility of conveying produce to market, and procuring supplies in return from Montreal by the Canal, must inevitably, in the course of a few years, raise this rising and promising village into a town of second rate importance.

It should have been observed before, that the Rideau River when it leaves its parent lake, takes an almost due easterly course, which it maintains until Maitland's Rapids are passed, a distance of 15 miles; it then shapes its course more to the northward for about 20 miles, when having received the south branch of the Rideau in the Long Level, it takes a due northerly direction all the way to the Ottawa. This is mentioned to account for the fact of the three principal villages, Smith's Falls, Merricksville, and Kemptville being all equi-distant from Brockville and Prescott; the latter being only 26 miles from Merricksville, from which places the whole of this latter part of the country used to be supplied with European and other manufactured goods. The Canal at present bringing these commodities to the farmers' very doors, and taking away at the same time the means of payment, has so much bettered their condition, as to cause a very different appearance in the state of their houses and farms to be already visible.

About a mile below Smith's Falls, at a station called Old Slys, there are two continuous locks erected, with a combined lift of 15 feet 6 inches.—They are built on the same side of the river as the last locks; and on passing them, the canal enters a cut by the side of the river of about a mile in length. There is a stone dam immediately below the locks.

One mile lower down on the opposite side of the river, at the station called Edmonds, there is 1 lock of 10 feet 10 inches lift, previous to passing which,

an excavation of a furlong in length is entered. An extensive stone dam, 300 yards long, is built below the lock, with a fall of water through the sluice of 11 feet.

The next lock is at Maitlands, distant $4\frac{1}{2}$ miles; its lift is 4 feet 9 inches, and is situated on the same side of the river as the last. There is a small excavation 200 yards long; and a stone dam 400 yards in length, built in a circular form, is thrown across the river. There is nothing particularly striking at these three stations, nor has the river any peculiarities worthy of description; its breadth and depth are nearly uniform by means of the dams, and the country appears tolerably well settled, although not much located on the immediate banks of the river. This is chiefly on account of the great prices demanded by the holders of land in this vicinity; who to their great shame be it said, are holding back from making sales, under the expectation of a great and general demand for land all along the banks of the Rideau. That such will be the case in time there can be no doubt, but it is a moot point, whether it would not be more advantageous to land owners, to sell at moderate or even low prices, and increase their capital by developing the riches and resources of this interesting section of the province.

Two miles below Maitland's, Irish Creek falls into the Rideau, through which it will be remembered, it was first in contemplation to bring the Canal from the Gananoque Lake through Plum Hollow; it is a stream of trifling importance. Merricksville or Merrick's Mills, as it is variously termed, is the next station, distant $8\frac{1}{4}$ miles. Merricksville is the largest village on the Canal; it has sprung up since the commencement of the works, and bids fair to increase and prosper. It is not much larger than Smith's Falls, which place it strongly resembles,

with the exception of being situated on the opposite of the river. It is distant, as before remarked, but 26 miles from Prescott, with a tolerable road; the country has been long settled and is in a thriving state, and although not considered to be quite so flourishing as Smiths' Falls, Merricksville is a good and improving situation for the merchant, trader or mechanic. Merrick's Mills are on the bed of the river before the village, and consist of Grist and Saw mills in active operation.

Two miles below Merricksville is Clowe's Quarry, at which place there is one lock, whose lift is 10 feet 6 inches; this is situated on the western side of the stream: immediately below it, there is a stone dam, 110 yards in length, with a fall of water over it of nine feet; the dam is built in a semi-circular form, and the effect produced by the cataract is extremely beautiful. After getting through the lock, an excavation commences half a mile long: on one side of the excavation, for a third of the distance, there is a stone embankment. Another dam about 100 yards long, with a fall of 7 feet is next passed. On leaving the excavation, the river is kept for a short distance, and the canal enters another excavation on the opposite side. Passing Nicholson's Upper Lock, an extensive basin, 500 yards in length, commences; this basin is narrow, with a stone embankment on one side, and high ground on the other. Nicholson's lower lock is then passed, and the river becomes the canal again. The whole distance between Clowe's and Nicholson's does not exceed three quarters of a mile. The combined lift of the two locks is 15 feet 2 inches.

From Nicholson's to Burritt's Rapids, the next station, is three miles, and the canal passes through the best cultivated, and most populous section of country on the whole line. About a mile before the

lock is reached, the canal enters a natural gully, in some places very deep, which must at some remote period have been the channel of the river. A few yards below the entrance, a wooden dam is built, of height sufficient to divert a portion of the stream into its former water course. Over this gully, and likewise over the Rideau River, a large heavy wooden bridge is erected, similar in structure and appearance to that at Kingston Mills. A rather unusual sight here presents itself—a handsome Episcopal Church upon a rising ground, betokening a state of society not altogether expected.

At Burritt's there is one lock, with a lift of 10 feet 6 inches, which being passed, the Rideau is once more entered and kept for the distance of nearly 27 miles. This station makes the third division on the canal, being together with the Isthmus, the places from which the timber duties are calculated, as will be explained hereafter. It is $40\frac{1}{2}$ miles from Bytown and 86 miles from Kingston. At this station a Block House was commenced, but when the stone work was finished it was abandoned, and it remains doubtful, whether or not it will ever be completed.

From Burritt's Rapids to the locks below Long Island Rapids is what is called the long level of the canal, being a distance of 24 miles without rapid of any kind, and 3 miles more of rapid waters overcome by the works at the foot of Long Island. The river in this part of the canal is a broad and deep stream, raised artificially about 3 feet at Burritt's, and nearly 30 feet at Long Island. Six miles below Burritt's, the south branch of the Rideau enters the greater stream; it is a large river almost equal in size to the latter. Three miles up this branch, the rising and flourishing village of Kemptville is situated, with navigable water to the canal. Kempt-

ville is about equal in extent, importance and population to Merrickville, and like the latter place, bids fair to become a place of some consequence. For the next twenty miles the route is dull and unvarying; few clearings to be seen on either side of the river, and nothing observed in their stead to enliven the dreary solitude. Three miles from the locks below Long Island, the head of that island is passed; the river at this place divides itself into two unequal streams, the largest and eastern branch being the one used for this navigation. From the head of the island to the foot, used formerly to be one continued rapid, highly dangerous and difficult to pass; at present, owing to the dam about to be mentioned, no difference between this portion of the level and those above it can be perceived.

The works below the Island are extensive; they consist of a stone dam 30 feet high and 200 feet wide: three locks in continuation of 27 feet lift combined: two stone waste-weirs near the locks, and a third at some distance up the northern branch, communicating with a cut, down which runs most of the spare water, which enters the Rideau again a few hundred yards below the locks. These by-washes are constructed to meet any extraordinary quantities of water, which by freshets or other causes, may descend the river and impede the navigation. The locks &c. are situated immediately below the island where the two branches unite, and were built by T. Phillips, Esq. of Montreal, who also contracted for the works at Black Rapids.

About a quarter of a mile below Long Island, the mouth of the Goodwood or River Jock is passed. This stream rises to the westward, and after watering the rising village of Richmond, (distant 24 miles from the canal,) empties itself into the Rideau.—Some intention exists of making the Goodwood na-

vigable to Richmond, an enterprize that will assuredly be carried into effect in a very short time. Richmond is a place of some trade and importance ; it is situated on the high road between Perth and Bytown, in the midst of flourishing military settlements.

The next station is at Black Rapids, distance 5 miles ; at this place there is a stone dam with the water flowing over it, and one lock of 9 feet 5 inches lift. This station passed, three miles further down, the celebrated works at the Hog's Back are reached. This station derived its name from a large rock having the appearance of the back of a hog, lying in the midst of the rapids. Two futile attempts were made, at very great expense, to erect a dam sufficiently strong to resist the freshets in Spring and Fall. The present one promises to be permanent ; it is not formed as the other large dams are, of rubble masonry, but to the eye appears to be one extensive mass of rock and stones placed in somewhat regular order across the bed of the river, which is here comparatively of great width. Its height is 45 feet ; the width at the surface is irregular, but averaging 30 feet, while the width at the base must be immense, in consequence of the very gradual slope towards the bottom of the water. The great body of the waters is caused by this dam to fall down two artificial cataracts, on the eastern bank of the river with prodigious force and noise ; and the whole scene, if viewed at a time when the Rideau is at all swollen, is one capable of inspiring the highest gratification.

At the Hog's Back the canal leaves the river, which pursuing its course, falls into the Ottawa half a mile below Bytown. The extensive Flour mills, erected by Thos. McKay, Esq. (one of the contractors on the canal,) at a village of his own, called New

Edinburgh, which ought to be changed to the "Rideau Falls," are built on the eastern bank of the river, on the very precipice over which the Rideau tumbles into the Ottawa, a height of 36 feet. These mills are presumed to be the best in Upper Canada, not excepting those belonging to Messrs. McDonald at Gananoque.

From the Hog's Back to Bytown an excavation is dug, a distance of rather more than five miles. Two locks (one a guard lock) are situated on the western side of the river, in the immediate vicinity of the dam; the lift of these locks is 13 feet 6 inches, combined. The excavation follows the course of the river for a mile on its high banks, until two locks present themselves at the station called Hertwells; the lift of these locks is 11 feet each. From hence to Bytown the excavation in a direct line crosses "Dow's Great Swamp;" this part of the line cannot be called an excavation, since more correctly speaking, it is partly a natural swamp with high embankments, sometimes on one side only, and sometimes on both. It has been regretted by many gentlemen, competent to judge of the project, that the canal did not follow a natural undulation of the land, and enter the Ottawa above the Chaudiere Falls and Rapids. This it is said could have been done with as little expense as taking the canal to Bytown, while the £100,000 expended in the 8 locks and other necessary works in that town, might have been better employed in surmounting the Chaudiere Falls, and rendering the Ottawa navigable to the head of the Lac du Chats.

The canal terminates at Bytown in a large basin, from which steamboats and barges can descend to the Ottawa by eight locks, between a cleft in the high banks of the river, into a capacious bay, protected naturally from wind and current. It is said,

that the advantages of this bay prevented Lieut. Colonel By from entertaining any serious conception of the plan before mentioned.

These locks are a chef d'œuvre in the art of canalizing; they are built in continuation, and the lift of each is ten feet, the first alone excepted, whose lift is 12 feet. A handsome stone bridge, erected by the Sappers and Miners, crosses the canal between the basins and locks, and unites the two villages of Upper and Lower Bytown. A substantial stone warehouse is erected on each side of the locks, occupied by the Engineer Department, under whose especial direction the whole of the canal is placed. A by-wash, with a pair of flood gates issues from the basin, and by means of a long ditch, a disgusting feature in the lower town, communicates with the Ottawa.

Seven years ago, the whole of the population of Bytown consisted of one family, that of Mr. Sparks; at present two large villages are in a flourishing state of existence, with a united population of nearly two thousand souls. The Upper town is divided from the lower by the canal and an extensive military reserve, upon which are erected Barracks and other Government buildings. This situation is exceedingly strong and capable of being fortified as to be nearly impregnable. The lower town is the largest and most populous, the upper town is the better built and in the higher state of prosperity, most of the richer merchants having lately removed thither.

Bytown contains a Catholic church, an Episcopal church, a Presbyterian church, and a Methodist chapel; these are all handsome edifices and are well attended. The streets are broad and the houses partly built of stone, brick or wood, are erected with a considerable portion of taste and elegance. A branch of the Upper Canada, and an Agency of the

Commercial Banks are here established, and a very large business is at all times carried on, particularly in the timber and provision trades. When the resources of the Rideau Canal become more developed, Bytown must become a place of the utmost importance; and should the two provinces of Upper and Lower Canada become united, it will, in consequence of its inland situation, stand the best chance of becoming the seat of government. Bytown, is situated upon land which was purchased by Earl Dalhousie, then Governor in Chief, for the use of Government when the Rideau Canal was first contemplated. This land was purchased, not only on account of its offering the most favorable site for the first eight Locks of the Canal, but also as affording a valuable locality for a Village, or Town, for the lodging of artificers, and other necessary assistants. Accordingly, when the work was commenced in the Fall of 1826, it was placed in the hands of Lieut. Colonel By, with orders, to have it correctly surveyed, and laid off in lots of certain dimensions, to be granted according to the means of settlers, on payment of an annual ground rent to the Crown of Two Shillings and Six pence sterling. The Location ticket to contain the positive condition, of erecting a house within twelve months, covering not less than thirty feet square of ground, to be placed on the line of street, according to a plan to be made of the same. As soon as his survey was completed, and the lots and streets marked out by stakes and pickets, most of the lots, in what is now called the Upper Town, were immediately taken up. The Lower Town, was then, one continued swamp, and the land considered not worth having. But in the Spring following, when the place was cleared preparatory to the commencement of operations on the Canal, and an establishment of work shops made

it absolutely necessary to drain this swamp, form a road through it, and construct a wharf for the landing of Government stores, it became so much improved, that a great many lots were immediately taken up, at the same rate, and under the same conditions, as those in the Upper Town. Subsequently, as the ground was still further cleared for the purpose of building Barracks, the advantages it possessed for a strong military position, were so evident, that it was a matter of regret to the Government that any part of it had been granted in perpetuity. The Government therefore ordered, that hereafter, instead of granting lots at 2s. 6d. per annum, as heretofore, the lots remaining unlocated, or which had been forfeited by non fulfilment of the conditions upon which they were granted, should be leased for the term of thirty years, to such persons as might be willing to pay an adequate rent for them; the leases to be renewable at the expiration of the term, at an increased rent, not exceeding one fourth of the original rent. In consequence of this order, a great many lots were disposed of to the highest bidders, at different rents, according to the supposed value from the situation, or other advantages they seemed to possess.—A considerable difference thus exists in the rents, paid for lots in Bytown. The lowest sum paid since the original grants being one pound sterling, while some are let so high as ten pounds. It may be proper to mention, that these rents were placed at the disposal of the Commanding Royal Engineer, and directed by him to be expended upon public improvements for the benefit of the Town; in consequence of which, the streets are well laid out, market houses and other public buildings, have been erected, and Bytown is under better regulations, than any Town in the Province.

The scenery round Bytown is picturesque and ro-

romatic; were it the object of the writer to paint the beauties of its varied landscape, it would occupy more time than he has already taken, to describe properly the Chaudiere Falls and its noble bridge alone. The task must be left to abler pens.

The distance between Montreal and Bytown is 120 miles, and the navigation between these two places is made complete by means of five short canals.

The first canal commences at Grenville in Lower Canada, sixty-four miles below Bytown; it is six miles in length, and is made to overcome the rapid, properly called the Long Sault of the Ottawa. It was commenced in the year 1821 by the Engineer Department, and completed early in the spring of the present year. Three of the locks are made upon the scale of the Lachine Canal, viz. 108 feet long and 20 feet wide; but in the year 1823, the remaining four locks to be built, were ordered to be of the same dimensions as those on the Rideau Canal.

The second canal is at Chute a Blondeau, and is about 700 yards long, with one lock of the enlarged dimensions.

The third canal is at Carrillon Rapids, which commence at Point Fortune, and extend about a mile and a half; these rapids are four miles below Chute a Blondeau, and a canal about two miles and a quarter long is made to overcome them, having two locks of the large size. All these canals have stone locks, which are built in the most substantial manner. The distance of interrupted navigation from the foot of the Carrillon Rapids to the head of the Long Sault is twelve miles, and the three canals are usually classed as one, under the name of the Grenville Canal, being completed at the same time and by the same architects.

The fourth canal is merely one lock, built by a private company, styled the 'Ottawa and Rideau Forwarding Company.' Twenty-seven miles below the Carrillon Rapids, at the junction of the Ottawa and St. Lawrence, at the western extremity of the island of Montreal, are the St. Anne's Rapids, which are not navigable for barges. It was originally the intention of the Engineer Department to have made a short canal here also, but for some reasons, the design appears to have been abandoned. In the Vaudricol passage, separated from these rapids by the Isle de Perrot, the private company before mentioned have erected a wooden lock, through which all their own barges pass with freight to the upper country, and the possession of which enables them to command a monopoly of the Forwarding Business. It is however in the power of either the Imperial or Provincial Government, or in fact of any other company or private person, to erect other locks, and thereby take a share of the lucrative trade.

The fifth and last canal is the well known Lachine Canal, commencing at the head of the Lachine Rapids, and extending a length of nine miles to the city of Montreal. This latter is a provincial work.

The trade on the Ottawa River and Rideau Canal during the present year has been very considerable. Many thousand emigrants have arrived in Upper Canada by this route in preference to that of the St. Lawrence, in consequence of the lesser time consumed in the journey, and the absence of those privations and disagreeables which have hitherto always accompanied the passage of emigrants up the St. Lawrence. The passengers are embarked at Montreal in decked barges, which are taken in tow at Lachine by steam boats, and conveyed all the way to Kingston. The time usually occupied is from four to six days, but when the steam boats on

the Rideau Canal are made better adapted to the trade, the journey will be performed in much less time. The cost of the passage for each adult is ten shillings, and proportionably less for children of different ages.

A very large quantity of goods have found their way to the Upper Province this summer by the way of the canal, this moment (Oct. 28th.) a considerable quantity still remains at Bytown waiting for conveyances, so much greater has been the trade than was anticipated. The sum charged for merchandize, is 2s. 9d. per cwt. from Montreal to Kingston, being less than what is usually charged by the St. Lawrence Forwarders exclusive of insurance, which is not needed by the canal route.—The whole of the trade is at present in the hands of the Company before mentioned.

Four steam boats have constantly plied on the canal during the present season, all of which, with the exception of the *Thomas McKay*, are too small and not of sufficient power; of the latter deficiency, even this steam boat cannot be exempted. On the Ottawa, three steam boats have been used; one between Chute a Blondeau and the Carrillon Rapids, and one between the latter place and Lachine. By the opening of the spring navigation in 1835, some important improvements are contemplated in the steam navigation on the Canal and River, which when carried into effect, will more fully display the advantages of this internal communication, than they have been done during the present year.

The "Observations" upon this canal, a work which reflects the greatest honor on the Parent State, are now finished; they might be further increased by a lengthened dissertation upon the advantages which will accrue to the provinces from its use as a Military Canal, but it is not needed; they occur of

themselves to the mind of every well informed man. All that remains is to add a few local particulars.



Brief outline of the Geological Features of the country through which the Rideau Canal passes.

In Kingston Bay, the southern extremity of the canal, the shores are bold, composed of transition limestone, in the upper strata of which orthocerite and a few bivalve shells occur. The lower beds of this series are in general of a dark blue color, very compact, crystalline, fracture conchoidal, with a few traces of sulphate of iron. On nearing the locks at Kingston Mills some granite masses appear, through a cleft of which the waters of the Cataract pass, and which is now used for the canal. These masses rise about 150 to 160 feet high; a great portion of a knoll of this rock had to be excavated, (from 22 to 23 thousand cubic yards,) to obtain sufficient space for placing the locks. In the course of this excavation, great varieties of the granite appeared; from large to fine grained, seinite, a trifling portion of mica, chiefly in cavities, some little sulphate of iron, also in cavities, which were generally found in connection with beautiful specimens of dog tooth spar, &c. &c.

From Kingston Mills the canal passes through an alluvial valley for ten miles to Brewer's Lower Mill; this valley is bounded on the west, at the distance of one mile from the canal, by very high ridges of limestone, which are continuous for nearly seven miles, after which ridges of sandstone make their appearance; these last continue with small exceptions to Brewer's Upper Mills. On the east, sundry granite rocks appear; these, at the distance of

one or one and a half miles, are in most instances covered by transition limestone; in some instances a very hard silicious sandstone constitutes the superior rock, and in many places the several rocks may be traced in their proper order; viz. granite or other primitive rock, covered with sandstone, and that again by transition limestone. No organic remains have been found in the latter. A singular ridge of limestone is to be found in this valley, about two miles from Kingston Mills; this attains to a height of 90 feet, is nearly perpendicular on the east side, presenting an abrupt precipice, and dips off to the west, which side is covered with verdure; the strata of this have a declination westward. This ridge is only about 100 yards wide, and is probably from one and a half to two miles long.

In the vicinity of Brewer's Upper and Lower Mills, the rocks are in some variety; granite, seinite, mica, feldspar, quartz, trappean rocks, chrystaline limestone of a brilliant white color and fetid odor, yellow, white, red, and variegated sandstone are to be found. The same may be traced through the Cranberry vale to Jones' Falls; at this latter place however it may be observed, that the rocks on the west side of the canal are all of them of the primitive kinds; whilst on the eastern side, sandstone predominates. At the abutment of the large dam at this station, a beautiful specimen of large conglomerate is seen; the embedded masses being chiefly of the primitive kinds, such as granite, feldspar, quartz, of which last, some beautiful pieces of the kind denominated rose quartz may be observed. Some of these pieces, which evidently have been rounded by attrition, are large—probably 12 to 16 inches in diameter. Beneath this, some steatite occurs, in which are embedded large chrystals of schorl. No limestone is to be found near this place.

At Davis' Mill the chrystaline limestone again occurs; also, a great variety of primitive rocks, consisting of the granite and trappean kinds; likewise, hornblende, mica in large lamina &c. &c. At Chafey's the chrystaline limestone predominates: some granite appears; also, feldspar, quartz with schorl embedded &c. &c.

At the Isthmus much variety is found in the great excavation at this place, the rocks being granite in great variety. The same general features pervade all the islands and shores of the several lakes through which the canal route passes from Brewer's Mills to Oliver's Ferry. Some limestone may be found on the heights to the north of the Rideau Lake, and near Oliver's Ferry sandstone again makes its appearance.

The country from Oliver's Ferry to Bytown consists generally of plateaus or flats, at the extremity of each of which the rapids and locks are situated. From the upper or first rapids to Burritt's rapids, the country is chiefly paved (at least near the river) with a grey silicious limestone; in many instances this rock is amygdaloidal, the cavities being filled with sulphate of iron and dog tooth spar. A highly calcareous limestone is also to be met with in this section.

From Burritt's to Long Island, the banks of the canal are covered with diluvium to some depth; at the latter place and thence to Bytown, after removing several feet of sand or clay, a (secondary?) limestone is met with; this is in general very compact, and makes excellent building stone. At Long Island, good cement or water lime may be made from some of the strata.

From Hogs' Back to within a few feet of the bridge at Bytown, no rock has been met with in the excavations, although they are for the most part of con-

siderable depth—in many places exceeding 30 feet. On the bank of the Rideau River near the former place, a tenacious clay, in which large boulders of blue limestone were found, was excavated to a depth of from 20 to 40 feet; the sections of this clay presented a very fine view of the different layers; as did also the clay excavation in the canal valley at Bytown, where the first eight locks are situated. Near the embankment at Dow's Swamp, the diluvium consists of a fine sand, beneath which are coarse gravel and tenacious clay; in the gravel were found numerous shells.



THE TOLLS.

The tolls on the Canal are made and regulated by the Lieutenant Governor of the Province, but are placed at the sole disposal of the Imperial Government, and are collected chiefly at Bytown and Kingston Mills. All the lock-masters however may receive tolls for any distance which terminates at their stations.

On the fourth of June, 1833, the following scale of duties was established by proclamation; since which time no alteration has taken place, except in lumber.

From Kingston to Bytown and from Bytown to Kingston.

		s.	d.
Cabin Passengers,	each,	4	0
Children under twelve years of age,	"	2	0
Neat Cattle and Horses,	"	4	0
Sheep, Pigs and Calves,	"	0	6
Dry Goods, Wines and Spirituous Liquors, per ton,		7	6
Iron and Salted Fish, per ton,		3	9
Salt, and Sea Coal, per ton,		1	10

	s.	d.
Wheat, per bushel,	0	0 $\frac{1}{2}$
Other kinds of Grain, and Potatoes, per bushel,	0	0 $\frac{1}{4}$
Rye & Buckwheat, Flour, and Corn Meal per bushel,	0	0 $\frac{1}{2}$
Flour, per barrel,	0	2 $\frac{1}{2}$
Beef and Pork, per barrel,	0	3 $\frac{1}{2}$
Pot Ash, per ton,	2	3
Pearl Ash, per ton,	2	3
Oak per foot, in boats or scows,	0	0 $\frac{1}{2}$
The same in rafts,	0	2
Pine, Elm, and all soft timber in rafts, per foot,	0	1
The same in boats or scows,	0	0 $\frac{1}{2}$
Standard Staves, per thousand, in rafts,	10	0
The same in boats or scows,	5	0
West India Staves, per thousand, in rafts,	.3	4
The same in boats or scows,	1	8
Heading, per thousand,	1	3
Deals per thousand feet, in rafts	2	6
The same in boats or scows,	1	6
Boards and Plank per thousand feet, in rafts,	2	6
The same in boats or scows,	1	6
Shingles, per thousand,	0	3
Lathes, sawed or split, per thousand,	0	3
Tanner's Bark per cord, in rafts,	1	0
The same in boats or scows,	0	4
Lard and Butter, Tallow, Bees Wax and Honey, per barrel,	0	4
The same in kegs,	0	2
Fire Wood in rafts, per cord,	1	0
The same in boats or scows,	0	4
Apples, per barrel,	0	3
Tobacco, per hhd.	0	8
Stone from Quarries, per toise,	0	6
Sand and Lime, per barrique,	0	1
Coaches, Carriages, and Waggon's,	1	3
Caleches, Gigs and Carts,	0	7 $\frac{1}{2}$
Cheese, per hundred weight,	0	2

	s. d.
Beer and Cider, per barrel,	9 3½
All other Merchandize, per ton,	7 6

From Kingston to Oliver's Ferry, and from Oliver's Ferry to Kingston—and from Oliver's Ferry to Bytown, and from Bytown to Oliver's Ferry :

	s. d.
Cabin Passengers, each,	2 0
Children under twelve years of age, "	1 0
Neat Cattle, and Horses, "	2 0
Sheep, Pigs and Calves, "	0 3
Dry Goods, Wines and Spirituous Liquors, per ton,	3 9
Iron and Salted Fish, per ton,	1 10½
Salt, and Sea Coal, per ton,	0 11
Wheat, per bushel,	0 0½
Rye & Buckwheat, Flour and Corn Meal per bushel,	0 0½
Flour, per barrel,	0 1½
Beef and Pork, per barrel,	0 1½
Pot Ash, per ton,	1 7½
Pearl Ash, per ton,	1 7½
Boards and Plank, per thousand feet,	0 10
Lard and Butter, Tallow, Bees Wax and honey, per barrel,	0 2
Ditto, per keg,	0 1
Stone from quarries, per toise,	0 3
Cheese, per hundred weight,	0 1
Beer and Cider, per barrel,	0 2

All other articles to be subject to the same toll as from Kingston to Bytown : and all articles passing one or more of the Locks between Kingston and Oliver's Ferry, or between Oliver's Ferry and Bytown, to be charged with the same toll as if they had passed the whole distance between either of those places.

On the sixth of May, 1804, another proclamation was promulgated, dividing the Canal into three parts for the greater facility of collecting the duties on timber. What follows is an extract from the Official Gazette.

“We have thought fit to appoint, and do hereby appoint and command, that the Rideau Navigation shall from henceforth be divided into and consist of three distinct divisions, viz :—The first division shall be from the Ottawa to below Burritt’s Rapids; the second division, from above Burritt’s to above the Lock at the Isthmus; and the third division, from below the Isthmus to Lake Ontario.

And We do hereby further will and command that the following Duties shall be imposed and levied on all Timber passing or re-passing any of the said divisions :—

FIRST DIVISION.

Oak, per cubic foot,	1½
Pine, per do.	0¾

SECOND DIVISION.

Oak, per cubic foot,	2
Pine, per do.	1

To be levied on Timber passing to the Ottawa or Lake Ontario :

THIRD DIVISION.

Oak, per cubic foot,	1½
Pine, per do.	0¾

And that any Timber passing from below Burritt’s to Lake Ontario, or from below the Isthmus to the River Ottawa, shall be subject to the following duties :—

Oak, per cubic foot	2
Pine, per do.	1

And we do hereby command our respective Collectors and Officers duly authorized, to demand, enforce and levy, the several Tolls above mentioned, pursuant to the provisions of the said in part recited Act ”

Number of Locks, and the distances between each.

	Distance from last Lock.	Distance from Kingston.
	miles.	miles.
4 Kingston Mills,	0	6
1 Brewer's Lower Mill, 10 $\frac{1}{2}$		16 $\frac{1}{2}$
2 Brewer's Upper Mills, 13		18
4 Jones' Falls, 11 $\frac{1}{2}$		29 $\frac{1}{2}$
1 Davis', 3 $\frac{1}{2}$		32 $\frac{1}{2}$
1 Chaffey's, 2		34 $\frac{1}{2}$
1 Isthmus, 4 $\frac{1}{2}$		39
1 Narrows, 1 $\frac{1}{2}$		43 $\frac{1}{2}$
0 Oliver's Ferry, 13		56 $\frac{1}{2}$
1 First Rapids, 6 $\frac{1}{2}$		62 $\frac{1}{2}$
4 Smiths' Falls, 2 $\frac{1}{2}$		65 $\frac{1}{2}$
2 Old Slys', 1		66 $\frac{1}{2}$
1 Edmond's, 1 $\frac{1}{2}$		67 $\frac{1}{2}$
1 Maitlands', 4 $\frac{1}{2}$		71 $\frac{1}{2}$
3 Merrick's Mills, 6 $\frac{1}{2}$		80
1 Clowe's Quarry, 3		82
2 Nicholson's, 2 $\frac{1}{2}$		82 $\frac{1}{2}$
1 Burrit's, 3		85 $\frac{1}{2}$
3 Long Island, 26		111 $\frac{1}{2}$
1 Black Rapids, 5 $\frac{1}{2}$		117
2 Hog's Back, 4		121
2 Hertwell's, 1		122
8 Bytown, 4		126

NOTE BY THE WRITER.—An apology is due to the public for the non-appearance of this pamphlet as advertised; when however two circumstances are taken into account, viz. the Cholera and the death of the late Robt. Drummond, Esq. it is to be hoped, they will of themselves form a sufficient excuse. The cessation of business occasioned by the prevalence of the disease would not much have delayed the publication, had not the death of Mr. Drummond, which followed hard upon, at a time when little more than half the work was written, com-

pletely paralyzed the efforts of the writer. For that gentleman the pamphlet was commenced, he was the authority for most of the facts, and to him was looked for, the chief hope of remuneration. Under such considerations his untimely disease would most probably have prevented the appearance of the pamphlet altogether, if the name of another individual, of higher rank, had not been compromised in its suppression. The permission of inscribing the work to the Lieut. Governor of the Province having been obtained and advertised, it became imperative on the writer's part to finish it, at whatever cost either of mind or pocket. It has been so finished, although it is but fair to say, that if the concluding portions do not equal the former, the falling off is to be attributed to the absence of him, who would have pointed out the defects, and enlarged upon the merits.

In addition to the verbal dictation of Mr. Drummond, the writer is indebted to sundry printed papers, chiefly to some "Returns upon Canada Canals" ordered by the British House of Commons in 1831. If a sentence should be found here and there pillaged entire, the reader is requested to recollect, that works of matter of fact are different from those of the imagination, a slight plagiarism in the former being allowable. The instances however are few, and might easily have been avoided by varying the phraseology of the sentences, had it been deemed worth while. The geological outline is from the pen of Mr. Thomas Burrows, of Kingston Mills, Surveyor on the Canal.

One blunder remains to be acknowledged; in the 10th page it is asserted, that Lieut. Colonel By is a Scotchman, and partially favored his countrymen. The gallant officer is an Englishman, and if he did favor Scotchmen, the cause must have arisen from something else than clanship.

FINIS.

THE BRITISH WHIG.

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TERMS.—For the Semi-Weekly paper, one pound per annum if paid in advance, or within three months from the receipt of the first number; and one pound five shillings, if collected at the end of the year, exclusive of postage.

For the country paper, twelve shillings and sixpence per annum, if paid in advance, or within three months from the receipt of the first number, and fifteen shillings if collected at the end of the year, exclusive of postage.

Companies of individuals who reside in the country, and who may prefer to send to the office for their papers, may have them supplied at ten shillings per copy, per annum, prompt pay.

No subscription received for less than six months, and no paper discontinued until all arrearages are paid up, except at the option of the Publisher.

Advertisements.—Six lines and under 2s. 6d. first insertion, and 7½d. each subsequent insertion. Ten lines and under 3s. 4d. first insertion, and 10d. each subsequent insertion. Above ten lines, 4d. per line for the first insertion, and 1d. per line for every subsequent insertion.

Advertisements without written directions are inserted till forbid, and charged accordingly. Orders for discontinuing advertisements to be in writing.

Produce of every kind received in payment.

* * * No letters taken in, except from Agents, unless Post PAID.

Letter Press Printing.

DOCTOR BARKER having obtained a most superior Press and an excellent assortment of JOB TYPE, is enabled to execute every description of JOB PRINTING with neatness and expedition; upon terms hitherto unprecedentedly low in Upper Canada.

Kingston, August 1st, 1834.

