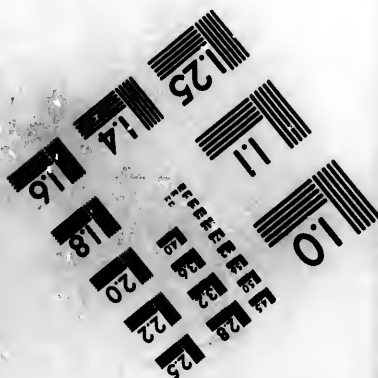
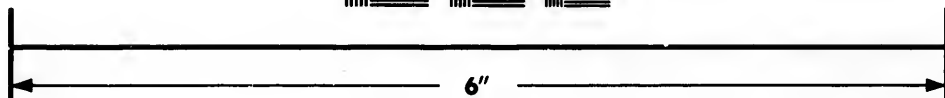
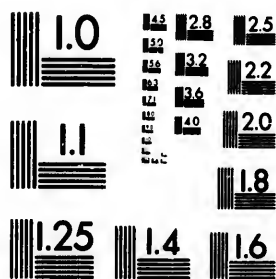


**IMAGE EVALUATION
TEST TARGET (MT-3)**



**Photographic
Sciences
Corporation**

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

**CIHM/ICMH
Microfiche
Series.**

**CIHM/ICMH
Collection de
microfiches.**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1984

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion
along interior margin/
La reliure serrée peut causer de l'ombre ou de la
distortion le long de la marge intérieure
- Blank leaves added during restoration may
appear within the text. Whenever possible, these
have been omitted from filming/
Il se peut que certaines pages blanches ajoutées
lors d'une restauration apparaissent dans le texte,
mais, lorsque cela était possible, ces pages n'ont
pas été filmées.
- Additional comments:/
Commentaires supplémentaires:

- Coloured pages/
Pages de couleur
- Pages damaged/
Pages endommagées
- Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached/
Pages détachées
- Showthrough/
Transparence
- Quality of print varies/
Qualité inégale de l'impression
- Includes supplementary material/
Comprend du matériel supplémentaire
- Only edition available/
Seule édition disponible
- Pages wholly or partially obscured by errata
slips, tissues, etc., have been refilmed to
ensure the best possible image/
Les pages totalement ou partiellement
obscurcies par un feuillet d'errata, une pelure,
etc., ont été filmées à nouveau de façon à
obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	16X	20X	22X	24X	26X	28X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X			

The copy filmed here has been reproduced thanks to the generosity of:

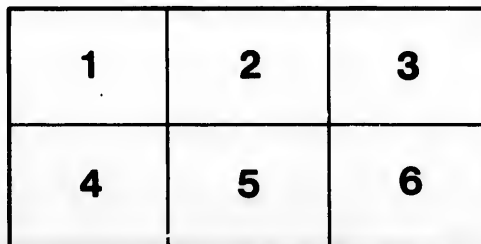
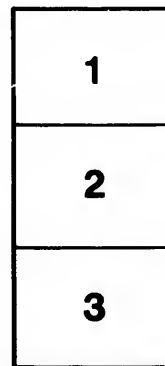
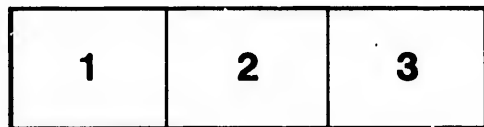
Library of the Public
Archives of Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol \rightarrow (meaning "CONTINUED"), or the symbol ∇ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

La bibliothèque des Archives
publiques du Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole \rightarrow signifie "A SUIVRE", le symbole ∇ signifie "FIN".

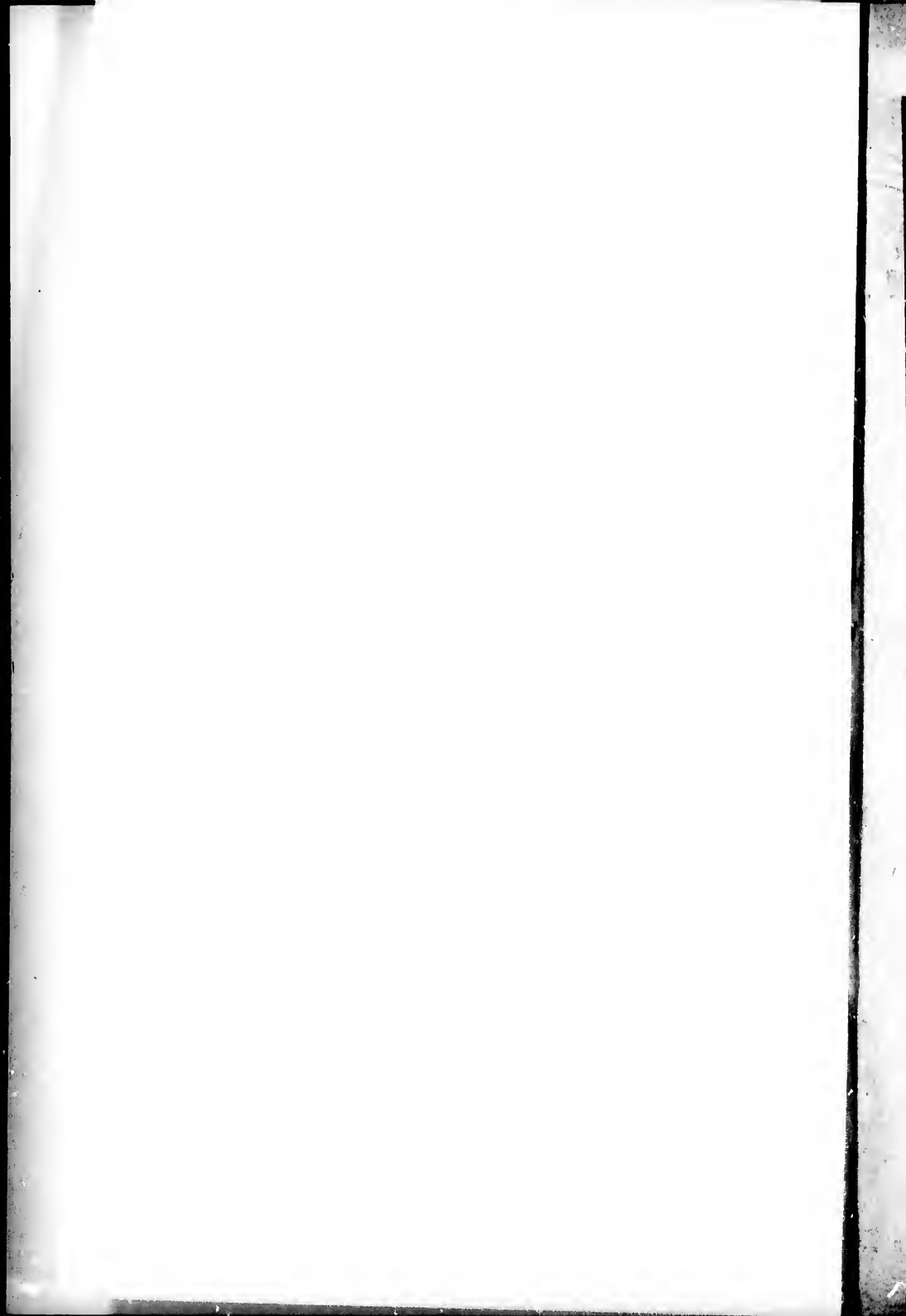
Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

ails
du
modifier
une
page

rata

elure,
à

12X



Hon. W. Hamilton Merritt

PHILOSOPHY
OF
RAILROADS,

PUBLISHED

AT THE REQUEST OF THE DIRECTORS

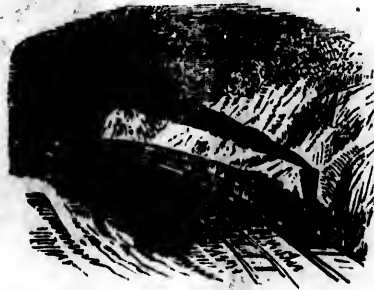
OF

The Montreal and Lachine Railroad.

BY

THOS. C. KEEFER, CIVIL ENG^r.

THIRD EDITION.

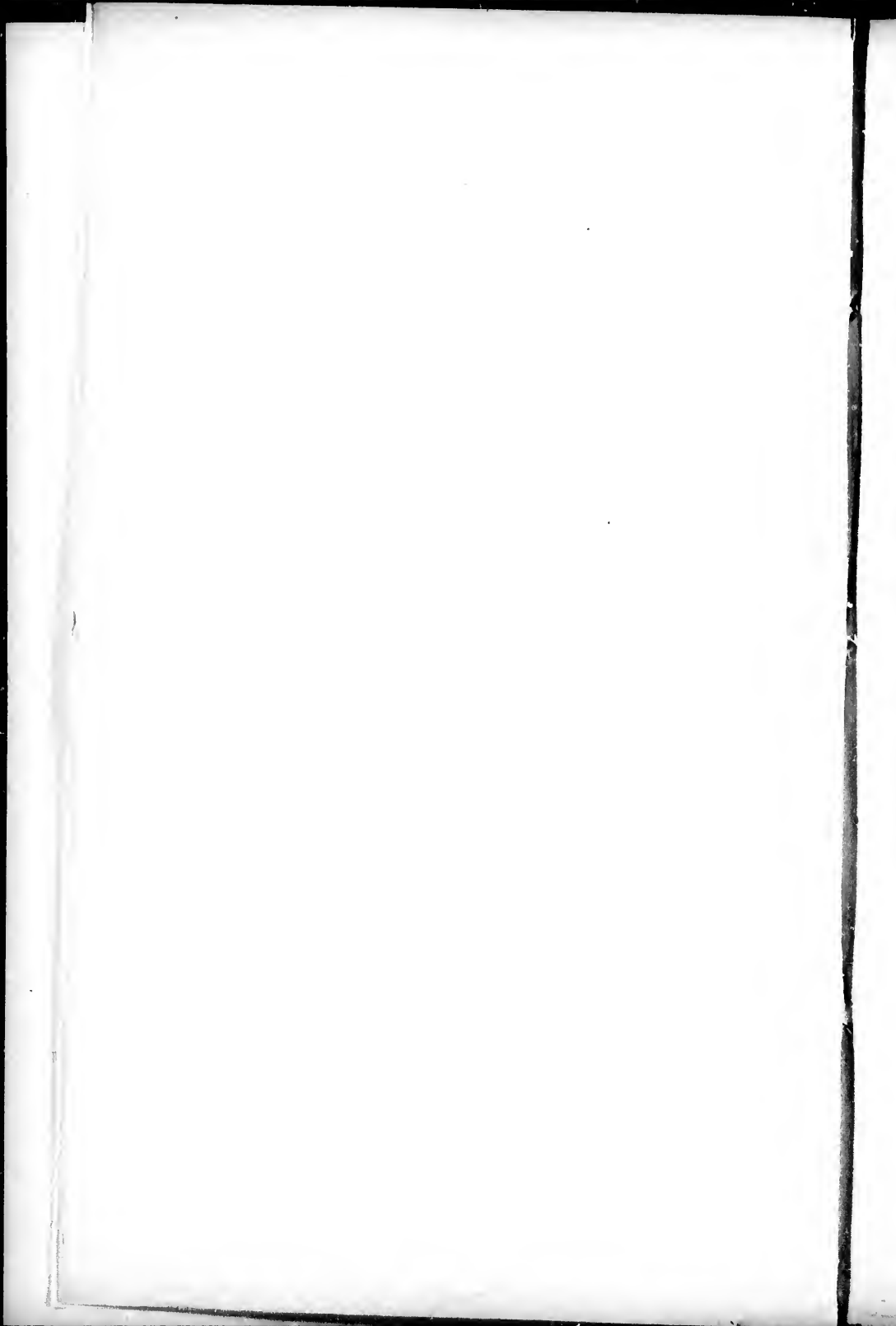


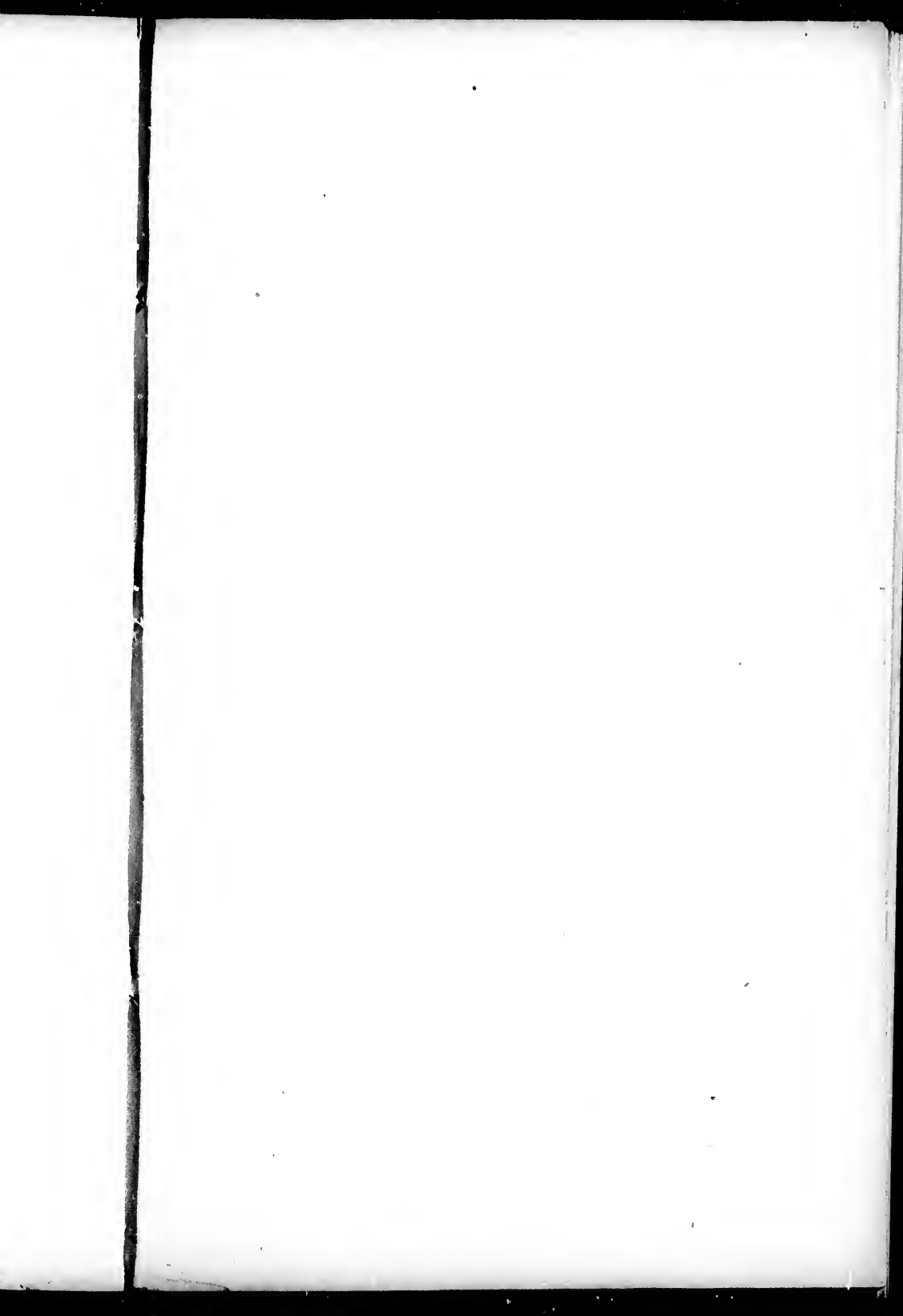
MONTREAL:

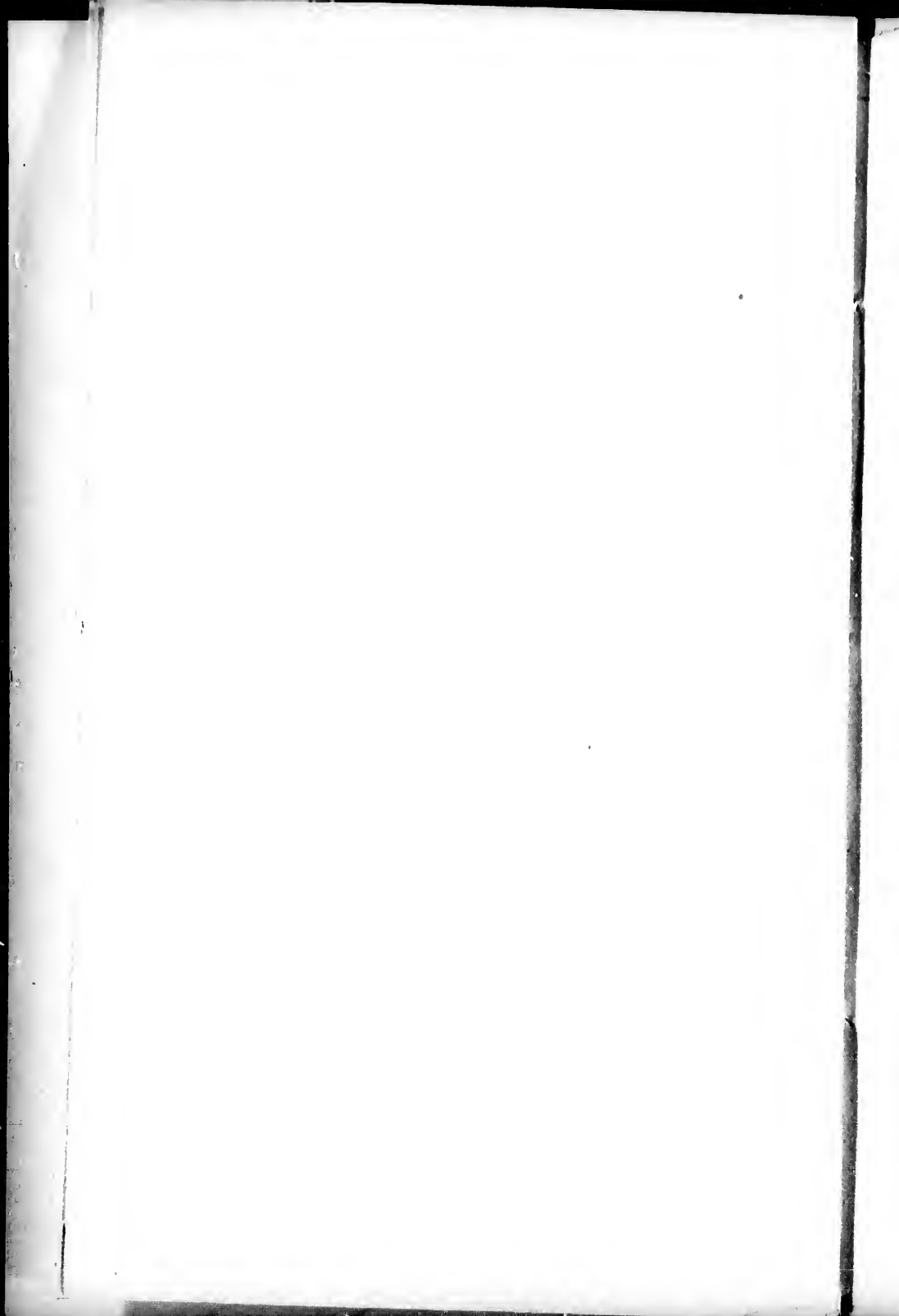
ARMOUR & RAMSAY, ST. FRANCOIS XAVIER STREET;

TORONTO:—AND W. H. ARMOUR AND CO., KING STREET.

1850.







PHILOSOPHY OF RAILROADS.

PUBLISHED AT THE REQUEST

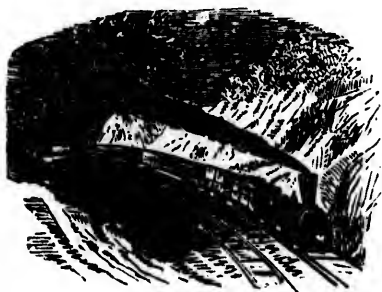
OF THE

Directors of the Montreal and Lachine Railroad.

BY

Chas. C. Keefer, C. E.

THIRD EDITION.



MONTREAL:

ARMOUR AND RAMSAY, ST. FRANCOIS XAVIER STREET;

TORONTO:—AND W. H. ARMOUR AND CO., KING STREET.

1850.

LOVELL AND GIBSON, PRINTERS,
MONTREAL AND TORONTO.

OLD Winter is once more upon us, and our inland seas are "dreary and inhospitable wastes" to the merchant and to the traveller;—our rivers are sealed fountains,—and an embargo which no human power can remove is laid on all our ports. Around our deserted wharves and warehouses are huddled the naked spars,—the blasted forest of trade,—from which the sails have fallen like the leaves of the autumn. The splashing wheels are silenced,—the roar of steam is hushed,—the gay saloon, so lately thronged with busy life, is now but an abandoned hall,—and the cold snow revels in solitary possession of the untrodden deck. The animation of business is suspended, the life blood of commerce is curdled and stagnant in the St. Lawrence—the great aorta of the North. On land, the heavy stage labours through mingled frost and mud in the West,—or struggles through drifted snow, and slides with uncertain track over the icy hills of Eastern Canada. Far away to the South is heard the daily scream of the steam-whistle,—but from Canada there is no escape: blockaded and imprisoned by Ice and Apathy, we have at least ample time for reflection—and if there be comfort in Philosophy may we not profitably consider the

PHILOSOPHY OF RAILROADS.

NEW commercial enterprises, however well supported by dry and accurate statistics, are not often undertaken upon imperfect information—through the representations of theorists or politico-economical writers—or even when supported by bright analogies, and the most authentic records of the success of similar undertakings amongst similar communities. It is true, that well-established systems become the subjects of stock-jobbing and speculation by parties ignorant of their uses or real value; but their origin and maturity are the work of the well-informed few, whose foresight has been rewarded

frequently before it has been acknowledged. In older countries the feasibility of public projects and their value as speculations are more speedily ascertained than in our young and thinly populated Province, and any attempt to transplant a system, or found arguments for the latter from the experience of the former, is at once met with disparaging and "odious" comparisons. The intrinsic merit of the question,—the absolute instead of the comparative value of our own projects,—are not often investigated, because the nature of such investigations are not familiar to us, while they have long since become unnecessary and are therefore not canvassed in those countries where an established system exists.

Thus it is with the Railway System in Canada. We see, and to our cost, feel its effects around us;—we acknowledge its importance, the great results it has achieved, and the substantial expression of public opinion in its favour in the hundreds of millions which have been freely devoted to its extension in other civilized countries.* We have talked about it for years—we have projected a great deal, and done very little, because the public,—the real estate owners large and small,—have not taken up the subject. Our Representatives have lately acquitted themselves nobly in this matter, but they have rather led than followed public opinion, and have themselves been acted upon by a "glorious" minority, to whom the actual and efficient execution has hitherto been confined, and who have contended with the chilling influences of popular apathy, ignorance, and incredulity.

An attempt to investigate the Railway System in its applicability to new countries,—to define its limitations by shewing where and why its application becomes justifiable,—to disseminate popular information upon a too unpopular subject, and turn a portion of that earnest and eager covetousness of foreign prosperity back upon our own neglected resources,—will it is hoped be received with public favour—or at least with public charity.

At the outset it may be objected that there is an insufficiency of disposable circulating capital in Canada, to construct a tithe of the length of projected Railways, and that *therefore* the discussion is premature. The premises will be admitted to any reasonable extent, but the conclusion, instead of the discussion is, we hope to show, premature.

The population, soil, and wealth of Canada are not inferior to Vermont, New Hampshire, Michigan, Georgia, and other States which have Railways; and the local resources of some portions of our Province, where Railroads are wanting, are at least equal to those in Ohio and many other States where these advantages have been enjoyed for years. Whatever is or was the condition of the circulating capital in the States mentioned, they have *found a way* to build their roads. This we believe has been done through the energy and perseverance of the local proprietors of real estate, who have convinced capitalists that they could have no better security for their investments, than that contingent upon the certain increase of population, wealth, and traffic, in rising countries like our own;—and thus have they

* See Appendix N.

secured improvements from which the land is the first to benefit, and without which its value in Canada is stationary; and this too, under circumstances when to stand still is to recede. The projectors of the Welland Canal were not Rothschilds; yet the untiring perseverance of one gentleman secured the construction of a work which for importance has no parallel in America.

There is a greater amount of unemployed capital amongst our agricultural and trading population than is generally supposed; and of fixed capital and absolute wealth there is more than sufficient both to need and to warrant the construction of all the roads proposed. A very considerable class of the stockholders in New England roads are farmers, with investments from £50 to £500.

Railway stocks, unlike most others, are a species of real estate immovably attached to the soil, and have therefore become of late years favourite channels for investment with all classes of capitalists.* Banks may fail,—commerce may languish or be partially diverted,—manufactures be rendered unprofitable,—even the earth may for a time refuse to many a return for the capital invested in it; but as long as there are men to profit or to lose by speculations, there will be people to sustain a Railway; and if universal ruin be inevitable, *they* will be the last public works to succumb to the general prostration. The cart road is succeeded by the turnpike, this again by the macadam or plank roads, and these last by the Railway. The latter is the perfected system and admits of no competition—and this characteristic pre-eminently marks it out as the most desirable object for investment in the midst of an enterprising and increasing population.

With an *assessed* value of about thirty-five millions of dollars—with cultivated lands worth thirty-six millions of dollars, and an annual crop, valued at ten millions of dollars, in Upper Canada alone,—with population, production and wealth, doubling in about ten years, we offer a security upon the industrial character and the increasing wants of a progressive people, for all judicious commercial investments. We therefore believe—although we could not borrow a dollar for any other purpose,—that as the unavoidable customers of a well placed Railway, we have only to secure its receipts to those from whom we ask assistance and take those necessary preliminary steps which none but ourselves can take, in order to obtain the capital required to construct our works. This can scarcely be contested from the experience of the past, because the value of Railway investment is of comparatively recent discovery—and is even now but partially appreciated. Did we not find it so difficult to foresee the inevitable future instead of looking backward, we must acknowledge that with the same future as past progress, there will have taken place in the natural order of things, *before* such works as we propose to consider *could be* brought into perfect operation, such an improved change as is now only demanded by the most incredulous in order to secure their sanction to a Railway System for Canada.

What we need most is that faith in the works themselves which will produce

* See Appendix A.

sufficient fruit to bring them within the munificent provisions of our late Railroad Act. It is to present something of the "substance hoped for," and the unseen evidence required to produce these works, that these remarks have been offered to the public.

The initiative must be taken by us: we cannot expect the accumulated capital of commerce or of older countries to seek out *our* investments. We must do as others do—lay our projects before the money holders, and shew our earnestness and confidence by taking stock to the extent of our means;—but, above all, we must inform ourselves and them fully of the grounds upon which we found our expectations. Zeal and enterprize, directed by a knowledge of our subject, are more rare and efficient commodities than the mere possession of capital; because they will carry capital and all other things with them.

Let us take a case of which Canada (we are proud and sad to say) presents more than one instance. A well cultivated district, in which all the lands are occupied (perhaps by the second generation) with or without water power, but situated twenty to fifty miles from the chief towns upon our great highway, the St. Lawrence, and without navigable water communication with it. The occupants are all thriving and independent farmers, the water power is employed only to an extent to meet their local wants, and the village is limited to the few mechanics, and the one store required for this rural district. The barter of the shopkeeper is restricted by the consumption of his customers, and he becomes the sole forwarder of the surplus product of the district. There is no stimulus for increased production—there are less facilities for it: the redundant population have all been accustomed to agriculture, and as the field for this is unrestricted, they move Westward to prevent a subdivision of the homesteads, and to become greater landowners than their fathers. There exists the well known scarcity of labourers for the harvest, because there is no employment for them during the remainder of the year; and they have not yet been led by necessity to that subdivision of labour and that variety of employment which are the results of an increasing and more confined population. Each farmer has his comfortable house, his well stored barn, variety of stock, his meadows and his woodland; he cultivates only as much as he finds convenient, and his slight surplus is exchanged for his modest wants. Distance, the expense of transportation, and the absence of that energy which debt or contact with busier men should produce, have prevented any efforts to supply the commercial towns on the part of the contented denizens of our "Sleepy Hollow." To themselves, to the superficial observer, their district has attained the limit of improvement. If they have no water power, or one limited to the supply of the needful grist or saw mill, it is clear to their minds that they were never destined for a manufacturing people; and if they have abundant water power, their local market would not support one manufactory, while land carriage, want of people, money, and more than all, *information*, precludes the idea of their manufacturing for a distant market. It is still more evident, from their position, they are not to become a commercial people and build up large cities; they, therefore, jog along with evident self-satisfaction—the venerable church-

yard is slowly filling up with tombstones—and the quiet residents arrive at the conclusion that they are a peculiarly favoured people in having escaped the rage for improvement. They are grateful that their farms have not been disfigured by canals or railroads, or the spirits of their sires troubled by the hideous screech of the steam-whistle.

We will now suppose, (we would we could more than suppose), that two of our cities should be moved to unite by the iron bond of a Railway, which in its course will traverse the district just described. Excitement prevails in the "Hollow;"—sleep has deserted her peculiar people—the livelong night is passed in mutual contemplation of farms "cut up" or covered over,—visions of bloody skirmishes between "Far downs" and Corkonians,—of rifled gardens and orchards, of plundered poultry yards and abducted pigs. The probable mother of a possible child bewails her future offspring "drawn and quartered" on the rail by the terrible locomotive, and a whole hecatomb of cattle, pigs and sheep, are devoted by imagination to this insatiate Juggernaut. The Engineers who come to spy out the land are met with curses both loud and deep,—the laws of property are discussed,—the delinquent Member for the County denounced,—until a handsome Rodman, by well-timed admiration of Eliza Ann, the rural spokesman's daughter, succeeds in obtaining comfortable quarters for his party, with board, lodging, and washing, at 12s. 6d. per week. The work has commenced; the farmer is offered better prices for his hay and grain than he ever before received:—even milk and vegetables,—things he never dreamed of selling,—are now sought for; his teams, instead of eating up his substance as formerly in winter, are constantly employed, and his sons are profitably engaged in "getting out timber" for the contractors; he grows a much larger quantity of oats and potatoes than before,—and when the workmen have left, he finds to his astonishment that his old friend the storekeeper is prepared to take all he can spare, to send by the Railroad "down to town."

And now some of the "city folks" come out and take up a water privilege, or erect steam power, and commence manufacturing. Iron is bought, cut into nails, screws and hinges. Cotton is spun and wove, and all the variety of manufactures introduced, because here motive power, rents and food are cheaper, and labour more easily controlled than in the cities, while transportation and distance have by the Railroad been reduced to a minimum. A town has been built and peopled by the operatives—land rises rapidly in value—the neglected swamp is cleared and the timber is converted into all sorts of wooden "notions"—tons of vegetables, grains, or grasses, are grown where none grew before—the patient click of the loom, the rushing of the shuttle, the busy hum of the spindle, the thundering of the trip-hammer, and the roaring of steam, are mingled in one continuous sound of active industry. While the physical features of our little hamlet are undergoing such a wonderful transformation, the moral influence of the iron civilizer upon the old inhabitants is bringing a rapid "change over the spirit of their dreams." The young men and the maidens, the old men and the matrons, daily collect around the cars: they wonder where so many well-dressed and rich-looking

people come from and are going to, &c.,—what queer machines those are which they see passing backwards and forwards. They have perhaps an old neighbour whose son had long since wandered off, and now they see him returned, a first class passenger with all the prestige of broadcloth, gold chains, rings, gloves, and a travelled reputation: the damsels rapidly impress upon "the mind's eye" the shapes of the bonnets, visites, &c., of that superior class of beings who are flying (like angels) over the country, and *drink in*, with wide-mouthed admiration, the transcendent splendour and indescribable beauty of "that 'ere shawl." All are interested, all are benefited, *cuique suum*. Is he a farmer? he has a practical illustration of the superior cheapness of transportation by increasing the load—the cart is abandoned for the waggon—for he sees the Railroad, notwithstanding the great cost of the cuttings, embankments, tunnels, bridges, engines, cars, and stations, carrying his produce for a less sum than his personal expenses and the feeding of his horses would amount to. Is he a blacksmith? he determines his son shall no longer shoe horses, but build engines. Is he a carpenter? he is proud of his occupation as he surveys the new bridge over the old creek. Even the village tailor gathers "a wrinkle," as he criticises the latest effort of Buckmaster or Gibb, whilst the unconscious advertiser is swallowing his coffee. Thus curiosity and emulation are excited and the results are discernible in a general predilection for improved "modes." A spirit is engendered which is not confined to dress or equipage, but is rapidly extended to agriculture, roads, and instructive societies, and finally exerts its most powerful influence where it is most needed,—in the improved character it gives to the exercise of the franchise. This right is now enjoyed by too large a class, whose chief contact with public affairs has been limited to an occasional chat with ambitious retailers of dry goods, groceries, hardware, and political mysteries—or to a semi-annual sitting in a jury box, unconsciously absorbing all the virtuous indignation of some *nisi prius* wrangler, whose "familiar face" is shortly after presented to them at the hustings, generously proffering to defend or advocate anything for four dollars per diem and a prospective Judgeship. He is opposed, perhaps, by the public-spirited shopkeeper, who, with mortgages, long credits, tea and tobacco,—aided by a "last call" to all doubtful supporters,—incites the noble yeomanry to assert their rights as "free and independent electors." If the "natives" can overcome these prejudices of local associations, or if the lawyer's "collections" and "notes" are sufficiently diffuse, ten chances to one the greatest talker is elected, and an improved judicature, instead of an improved country, is the result.

Nothing would be a more powerful antidote to this state of primitive, but not innocuous simplicity, than the transit of Railways through our agricultural districts. The civilizing tendency of the locomotive is one of the modern anomalies, which however inexplicable it may appear to some, is yet so fortunately patent to all, that it is admitted as readily as the action of steam, though the substance be invisible and its secret ways unknown to man.

Poverty, indifference, the bigotry or jealousy of religious denominations, local dissensions or political demagoguism may stifle or neutralize the influence of the best intended efforts of an educational system; but that invisible power which has waged successful war with the material elements, will assuredly overcome the prejudices of mental weakness or the designs of mental tyrants. It calls for no co-operation, it waits for no convenient season, but with a restless, rushing, roaring assiduity, it keeps up a constant and unavoidable spirit of enquiry or comparison; and while ministering to the material wants, and appealing to the covetousness of the multitude, it unconsciously, irresistibly, impels them to a more intimate union with their fellow men.

Having attempted to illustrate the influence of a Railway upon a district supposed to have culminated, let us proceed to notice some of the general characteristics of the system before we apply the results of our investigations to our own particular wants.

We are not backward in importing improvements or transplanting systems *which we understand*: at the same time, those which are new to us, we have curiosity enough and distrust enough to challenge until their principles are defined—when, with the materials before him, with a particular individuality, each man arrives at his own conclusions as to the practicability of their proposed application to this country. It is to this broad principle of “common sense,” judgment, or whatever you will, we prefer to appeal rather than to the “availability” or elasticity of statistics.

Steam has exerted an influence over matter which can only be compared to that which the discovery of Printing has exercised upon mind. These two great discoveries,—pillars of cloud and fire which have brought us out of the mental wilderness of the dark and middle ages,—have combined to supply the mind with daily food and illustrate the value of time.* Men have now virtually attained antediluvian longevity; ideas are exchanged by lightning—readers and their books travel together but little behind their thoughts—while actors, materials, scenes and scenery are shifted with the rapidity and variety of the kaleidoscope.

The extraordinary expansion of the Railway System, within the last thirty years, is to be ascribed to the improved appreciation of the Value of Time; since it is *now* universally admitted, that distances are virtually shortened in the precise ratio in which the times occupied in passing over them are diminished.

SPEED, ECONOMY, REGULARITY, SAFETY, AND CONVENIENCE,—an array of advantages unequalled—are combined in the Railway System. These we will notice separately.

The importance of **SPEED** in the transport of goods is annually increasing; even now the more valuable descriptions of merchandize take the rail in preference to the slower and cheaper route by canal; and since the cost of transport upon a Railway varies in an inverse proportion with the business of the road, it is annually becoming less, so that economy of time and economy of transport are becoming less and less antagonistical, and are approaching each

* Steam Printing.

other so rapidly, as to render the establishment of any line of demarcation exceedingly difficult if not impossible.

ECONOMY.—Compared with all other land communications, their freighting capabilities may be inferred from the consideration that a horse usually draws from fifteen to thirty hundred weight on a good turnpike or macadamised road (exclusive of vehicle), four to six tons on a plate rail tram road, and fifteen to twenty tons on an edge rail including the waggons;—the friction on a level Railway being only from one-tenth to one-seventh of that upon the roads above mentioned. If this be the effect of the rail alone, it is needless to enlarge upon its power when travelled by an iron horse, with which hunger and thirst are but metaphorical terms, which knows no disease nor fatigue, and to which a thousand miles is but the beginning of a journey, and a thousand tons but an ordinary burthen.

But it is in a more extended sense than the mere *cost* of transport that the economy of the Railway is vindicated. While upon the best roads traveled by horses, the cost and time of transportation increases rapidly with the distance, it is clear that there is a point from whence the transport of certain articles becomes unprofitable or impracticable. Milk, fruits, and vegetables, for immediate use, will not bear ten or twelve hours jolting over fifty miles of the best turnpike to reach a market; while fresh meats, fish, eggs, cattle, pigs, and poultry, lumber, staves, shingles, and firewood, and many other necessaries of life, either could not afford the time or the cost of a hundred miles transport by horse-power. The production of these articles, therefore, is very limited in certain districts; but wherever a Railway takes its track their extensive production becomes at once a new element of wealth, and the Locomotive a public benefactor—making “two blades of grass grow where only one grew before.” Thus the essence of a Railway system is *to increase its own traffic*, adding twenty-five per cent. to the value of every farm within fifty miles of the track, doubling that of those near it, and quadrupling the value of timbered lands through which they pass. Railroads are in one respect more economical carriers than canals, in as much as they are both freight and toll receivers, and are therefore content with one profit.

REGULARITY.—The superior speed and safety of Railway travel over the most expeditious water communications are scarcely more important than its extraordinary regularity; to which latter circumstance it is chiefly owing that in every country the Railway has been selected for the transportation of the mails. This monopoly of mails and passengers enables them to transport goods proportionally cheaper—thus becoming powerful rivals to the most favourable water communications. From this principle of regularity, Railways in the winter season have no competitors; and, working the whole year round, without delay of lockage, wind or tide, fog, frost, or rain, they, with a full business and fair “grades,” can compete with ordinary canals in price, while they can make two trips, to one on the canal, in less than half the time.

SAFETY.—The comparative safety of Railway travel with that upon steamboats is best appreciated by the reflection, that the causes which endanger human

life upon the former are limited to collisions or leaving the track—both to be avoided by ordinary care: whereas in the latter, explosion, fire, collision, or wrecking, are attended with imminent risk to all, the only choice often being—the *mode* of death. Explosion of a locomotive boiler, besides being exceedingly rare, is scarcely ever attended with any danger to the lives of the passengers. The remarkable safety of well managed Railways may be further illustrated by the statement of Baron Von Reden, that upon the Railways of Germany only one person in every twelve and a quarter millions of passengers was killed or wounded from defective arrangements of the road, one in every nine millions from his own misconduct, and one in every twenty-five millions from his own negligence. The Germans are undoubtedly a prudent people.

CONVENIENCE.—The convenience of the Railway System lies chiefly in its adaptation to its peculiar traffic;—artificial navigation is restricted to favourable ground and supplies of water, but modern improvements have enabled the Locomotive to clamber over mountains and penetrate the most remote corners of the land; there is therefore no limit to the number of its auxiliary branches, which can be multiplied and extended until their ramifications give the required facilities to every wharf and every warehouse—to the solitary mill or factory, or to the most neglected districts as an outlet to otherwise worthless products.

Having noticed some of the characteristics of Railways, we for the present will proceed to examine their capabilities as rivals or auxiliaries to canals and rivers,—their winter operation,—their effect upon manufactures,—the comparative merits of long and short lines,—“through” and “way” travel,—and other advantages or peculiarities.

We have said that Railroads, with fair grades and a full business, can compete successfully with ordinary canals. We do not mean that any Railroad can compete with canals connecting long lines of navigable waters such as we have in Canada, where the canals are of a size to prevent transshipment or the navigation so sheltered as to permit boats to be towed its entire length; but we do believe, that wherever a transshipment is unavoidable and the Railroad is called upon to transport from one end of the canal route to the other, it will, with ordinary grades, be found the most eligible. We make this comparison assuming that a paying rate of tolls be placed upon the canals as well as on the road, and we base it upon the consideration that the road can do all which the canal would do, and a great deal which the latter would *never* do, viz., carry passengers, mails, fruits, vegetables, milk, fish, &c., which would never take the canal; and that it would be in operation when the canal was useless. This assertion involves the capacity of Railroads, and it is not difficult to prove that a Railway would transport far more in a twelvemonth than the majority of the English or American Canals and some of our own. It would be unfair to select such very imperfect navigations as the Rideau for a comparison, because, having no towing path the attendance of tug boats is required with every barge, or fleet of barges the lockage of which is an additional delay while its employment is a heavy expense; and because the

absurd size of the Grenville locks nullifies half the capacity of those upon the Rideau. We will therefore take the best Canal and Railroad in America, and see what they have done. The number of tons which arrived at tide water by the *Erie Canal*, was in the years

1846.....	1,107,270	} Total, 3,722,859 tons of 2000 lbs.
1847.....	1,431,252	
1848.....	1,184,337	

On the *Reading Railroad*, in the years

1846.....	1,233,141	} Total, 3,799,524 tons of 2240 lbs.
1847.....	1,350,151	
1848.....	1,216,232	

The length of the Erie Canal is 363 miles,—opening to the Great West.

The length of the Reading Railroad is 94 miles,—opening to a coal district.

The difference in estimating the tonnage makes more than ten per cent additional in favour of the Railroad. This statement simply shews the down freight or movement in one direction;—had the Railroad been as favourably situated for up freight as the Canal is, greater proportional superiority would have been shown by the road, which having a double track the up movement would not be delayed by down freight as on the canal. As it was, however, in 1847 the "total movement" on the road in tons of 2000 lbs. amounted to upwards of 1,700,000, which if we compare with an equal length of the Canal will still maintain the supremacy of the Railway. The number of tons of coals transported in 1847 upon the York and Newcastle Railroad in England was 1,620,163. The freighting capabilities of a Railroad will be better understood, by giving a short account of the road which we have just compared with the Erie Canal.

This road employs about seventy locomotives and over five thousand freight cars; it has six side tracks at the Delaware Terminus and seventeen wharves in that river with a double track upon each; a storage for 195,000 tons of coal, and room for the simultaneous lading of ninety-seven vessels of 700 tons burthen each. Three or four engines are constantly employed in distributing cars to their respective wharves, and the Company's principal workshop employs several hundred men. An engine upon this road has drawn 150 iron coal waggons in one train, of 1268 tons weight, over a distance of eighty-four miles in eight hours and three minutes. The cost of the road has been \$11,500,000; the gross earnings in 1846 were \$1,889,713, and the net earnings \$1,037,795. Of the gross earnings, \$1,600,667 were for freight upon coal. The actual cost of transporting coal per ton over the whole distance of ninety-four miles, including the expense of bringing back the empty cars, was *thirty-eight and nine-tenths cents*, or less than two shillings currency; being four and one-tenth mills per ton per mile. At this rate the cost of transport of a barrel of flour the length of the Erie Canal (363 miles) would be ninepence currency, or fifteen cents, which is about the actual cost to the carrier on that Canal. Of course no tolls to the road are

included. The gross receipts of this Railroad for July, 1846, exceeded \$240,000. There is a Canal (competing with the Railroad for the same traffic) which has lately been enlarged, and the cost of which is about half that of the Railroad while it only does about one-third of the business, and has been at times rendered useless by freshets.*

We will not go so far as to say that a Railway could now compete with an established work having such wonderful advantages as the Erie Canal, but we feel confident with the present experience in these works that if the Canal were not in existence and a choice of communication were now to be made, the Railway would be selected. The lateral Canals of the State of New York it must be remembered, do not pay any dividends; the receipts and disbursements being about equal notwithstanding the great advantages which they derive from their connection with the Erie Canal. The extraordinary extent of sheltered and inland navigation in America render the Canal system more applicable to this country than to many others, but it cannot be denied that the mania which followed the unparalleled success of the Erie Canal induced an extension of the system into districts, particularly in the more northern climates, where the Railway would have been more applicable. The Railway route from Albany to Buffalo is 326 miles; the cost of these roads, including the late relaying with heavy rails, has been \$12,302,507 92.

Cost of the Old Erie Canal,.....	7,143,789 86
Enlargement to September, 1848,.....	19,086,490 80
Total,.....	26,230,280 66

Several millions of the cost of the enlargement have been for interest paid during its suspension. We may however assume that, before the enlargement of the Erie Canal and the remodelling of the Railways be completed, the State of New York will have expended above forty millions of dollars (including the Railroad) for her communications between Lake Erie and the Hudson River. We will leave our readers to judge what sort of Railroad facilities this sum would have ensured.

The existence of the Railroads has proved of the greatest service to the Erie Canal not only in furnishing rapid communications between all points of this great thoroughfare, but in securing the forwarding of freight when frost or accident obstruct the navigation.

The navigation of the St. Lawrence is subject to the great drawback of being occasionally closed when the business is most urgent and most heavy. To obviate the great loss and inconvenience of wintering over large supplies at Montreal the Portland Railroad has been undertaken. But the scheme will be incomplete, and the St. Lawrence route under great disadvantages until a Railway is extended from Lachine to Prescott or Kingston, securing to the Western producer the certain transmission of his produce should frost or accident to the St. Lawrence Canals, (of which we have had no less than two instances in the last summer) detain it at Prescott.

* See Appendix G.

The necessity for this step will soon be so apparent that the Government will be compelled to lend every possible assistance to the project. Our shipping being limited, a sudden rise of prices produces a corresponding rise of freights and want of vessels, and as the result a portion of our exports will be sent through the more numerous and better supplied channels of our neighbours. In these critical times of high prices shippers cannot risk delay and will take the route that offers the most chances of getting on: moreover they want the means of communicating with their produce and business depots after the suspension and before the opening of navigation.

Perhaps the impression exists that a Railway upon this route could not compete with the river; but for through passengers up and all business passengers down,—mails,—all winter travel and freight, and all *way* passengers and freight, the River would offer no competition to the Railway, because the cars from Montreal would reach Kingston almost while the steamer was passing through *one* of the Canals; while in the spring, autumn, and in case of accidents, the latter becomes a necessary auxiliary to the former.

The Hudson River Railroad has been undertaken, upon the most substantial and expensive scale, by the side of a river where water transport has been brought to a perfection unequalled in the world; *because* New York can no longer do without a winter communication with the interior. The New York Railroads, situate along the line of the canals, transported in the fourteen months ending December 1848, 57,188 tons of freight, paying the Canal tolls, which amounted to \$107,786. The Albany and Schenectady—the last link with the Hudson—received from this source alone \$14,000 in the months of May and April, 1848.

It is a mistake, therefore, to suppose that Railroads will not carry freight by the side of a water communication—especially in winter. The State of New York only permits her Railroads to take freight from the canals by paying canal tolls. If these restrictions were removed we should see a greater freighting business done by the Railroads: but as it is—freight is carried by them in every month in the year to the extent of upwards of 1000 tons in each of the summer months, and as high as 11,500 tons in the month of December.

It is the assertion of the best authorities and the result of the best experience, that freight and travel upon every highway are quadrupled in a remarkably short space of time by the construction of a Railway.

Canada loses every year, by the want of Railroads and a winter market, enough to construct fifty miles of Railway. If we look at the price of flour for the last six years, we will see that it has been highest in the winter months (from October to May); and we have not forgotten when in 1847, we with nearly half a million of barrels of flour for exportation in Montreal alone, were regaled with accounts of winter sales at double the usual rates, in Boston, New York, and other Atlantic ports, from which *for the want of Railways alone* we were shut out,—not even having the privilege of paying the American duty.

As soon as the Western farmer secures his crop his whole time is required

to get in the new one before the frost,—for he sows fall wheat. Necessity alone makes him thrash out and take a portion of his grain to market. The winter is his idle season—then is his most convenient time for thrashing and bringing his produce to sale. The Eastern farmer sows spring wheat, but as the snow forms his best and cheapest road,—the winter is also his proper time for coming to market. The same is the case with the farmer in the back Townships who has no summer road—he must wait for the snow and frost to bring out his grain to the best advantage. The chief part of their produce, therefore, lies on their hands with that on those of the miller until the ensuing season. Our mills must therefore stand still because like the bees we are sealed up in the winter, idly consuming the fruits of our summer's industry. With a Railway we could make flour in winter of a better quality and cheaper proportionally, because we have more time, cooler weather, and cheaper transport of the wheat—while our chances of high prices would be better and risk of souring less.

Nothing would tend more to the extension of Manufactures, particularly the numerous and valuable ones of Wood,—the only description we would for some time export,—than the existence of Railways;—nothing would more rapidly build up, what every country should have, a *home market*—place the consumer near the producer—keep our surplus population at home—promote the growth of wool,—the cultivation of hemp,—the settlement of waste lands,—the employment of our unlimited water power,—and the expansion of national enterprise.

If we would *now* have manufactories, (cotton for instance,) we must lay in our winter stock of raw material in November and allow our manufactures to accumulate until April or May before they can be distributed: while in New England, the train which takes up the wool to the water power upon Monday returns with the manufactures of that wool in the same week. These quick returns beget small profits, with which under our system it is vain to attempt competition. When we consider the amount of unprofitable capital “winter killed,”—the loss of winter prices on the seaboard,—the cost of transport by waggons,—the feeding of horses, and the rate paid in the towns for a scant supply of articles, valueless in the country, we repeat again,—Canada loses by the want of Railroads and winter markets enough to build fifty miles of Railway every year!

There are some who, while they admit that a Railway from Montreal to Prescott would be desirable and profitable on account of the delay in ascending the canals, &c., yet believe that a road from thence to Kingston, Toronto, and Hamilton could not compete with the lake and river. We need not consider the question beyond Hamilton, because it is admitted upon all hands that the Great Western route is the best unoccupied one for a Railway in America. We start then with the assertion that a Railway from Montreal to Hamilton, passing through such towns as Brockville, Kingston, Belleville, Cobourg, Port Hope, and Toronto, would be more profitable than if it were to stop at Prescott.

Long lines are always more desirable and profitable than short ones for the same reason that long rivers discharge more water—by draining a greater area. The expenses of management do not increase proportionally with the distance while the powers of competition are diminished by it. Thus while a locomotive would only gain five hours upon a steamer descending from Prescott, it would gain at least sixteen hours upon one descending from Hamilton to Montreal in fair weather, and more in foul. So far from the lake and river being injurious to the interests of the road they are invaluable to it. They protect it from the competition of Southern roads by forcing the traffic to keep the North side of the lake—and it has no more northern outlet. And lastly, the route of one good natural highway is the proper place to put a superior one upon (as all will admit a Railway to be), for there we are sure to find people, wealth, and business.

It is no objection to this route that it seems to be unilateral: that is, that it would run along the lake shore drawing apparently only from the land side. If there were a more northern route to be proposed there would be some force in this objection; but from the peculiar position of Canada, this road would traverse the vital portion of the whole Province collecting the business without effort where it has accumulated at the towns and cities which are the only outlets of the back country. On the one side of the road there will be water,—but it must not be forgotten that the road by being brought occasionally near the water, will do the business of the back country as effectually as if it bisected it, and that the water *may* supply a greater business to the road than any tract of land, however rich or populous, which could reasonably be tributary to it. This will especially be the case in spring, fall, and perhaps even winter, as the lake is always open above Kingston harbour.

This road would do the business of over 400,000 people in Upper Canada alone, occupying an area of 14,440 square miles, giving a population of about twenty-eight to the square mile.

Now it is the estimate of the most competent authorities, that a Railway of this length draws to its support, from the inhabitants of any district through which it passes, a net income of between ten and fifteen shillings per head on the total population tributary to it. The net earnings of the Massachusetts Railways exceed sixteen shillings and threepence per head for each inhabitant of that State. The New York and Erie Railroad passes for 425 miles through a grazing country, with a population of 532,000 persons, supposed to be dependent upon it, and the estimate of net earnings per head upon this route (*founded upon the experience of those portions in operation*) is twelve shillings and sixpence per head. The area tributary to this road is 12,000,000 of acres, and the population twenty-eight to the square mile. The area tributary to a road from Montreal to Hamilton would at least equal this—the population be as dense, the cost of construction much less per mile, the line shorter, and the “grades” far superior, as any one familiar with the two routes will acknowledge. In locating such a road, not the shortest or most direct route, but the most probably productive one should be adopted; because the local capital is

centered in the towns and villages and therefore the way travel from the one to the other,—the supply of necessaries from the country, and from the east and west to the towns, will be the most certain and profitable business of the road.

The articles for which the Erie Railroad is an outlet are chiefly the products of a grazing country—milk, butter, cattle, calves, sheep and pigs. Of the former article, milk, so important is the business that a special train known as the "milk-train" is run each morning for the supply of the citizens of New York, whose daily wants are thus administered to from cows feeding beyond the Shawangunk Mountains and drinking the waters which flow into the Delaware.* The freight upward to this grazing district is chiefly groceries, salt, *lumber*, iron, *flour and meal*, dry goods, salted provisions, &c. Now, if the construction of a Railway of 425 miles, through such a mountainous, difficult, expensive, and thinly settled region is profitable with the Erie Canal and its parallel Railroads within a few miles on the north, and the Pennsylvanian Canals and Railroads on the south, competing for the business, are we not justified in asserting that it is not only prudent and profitable but *imperative upon us* to commence at once a Railway route from Montreal through the easy valley of the St. Lawrence to Hamilton,—a route which can have no competitor north of the St. Lawrence? It will be said that the Erie Railroad counts much upon the Western trade to be reached at Lake Erie. This argument would apply equally to the Canada road. But we maintain that our own local and provincial resources, our freights, passengers, and mails, will, before it can be completed if now commenced, support our own road. We consider all roads depending *chiefly* upon "through" travel as inferior investments: there must be a good country and a local business—either existing or being developed—dependent upon the road;—resources which cannot be diverted. How can we depend upon a business over which we have no control? Of what value will the Champlain road be hereafter, unless incorporated in a line from Highgate to a ferry at Montreal? Of what value is the Lachine road *now*? Only seventy-four miles of the New York and Erie Railroad were in operation at the last official returns—and upon this distance the number of *way* passengers was 259,774, while the *through* passengers were only 28,324. The receipts from *passengers* \$125,722, and from *freight* \$185,190, and a dividend of \$133,437 was announced. Even upon the great thoroughfare from Buffalo to Albany, the number of *way* passengers between Auburn and Rochester, one of the longest routes, is greater than those going "through," while upon the Syracuse and Utica, and Utica and Schenectady they are nearly equal.†

Upon the Western Road from Albany to Boston the *way* passengers are more than nine times as numerous as the *through*. The *freight* receipts in

* See Appendix B.

† The route being divided into so many Corporations, a passenger who goes *over one road* is set down as "through," although he does not travel half through the State. Even on this direct line between the East and the West, the "through" passengers are not believed to exceed one half of the total number which pass from Buffalo to Albany.—(See Appendix F.)

October last were about four times those of *passengers*. In short, the business of the New England roads is almost wholly *local*, or business created by the road and derived from residents who cannot abandon it; therefore these roads are the best paying ones in America.*

The "through" freight or travel has the choice of many routes and should only be viewed as auxiliary and occasional support, of which we have as good grounds for expecting our share as our neighbours.

We have thus endeavoured to show that it is not necessary for us to have a guarantee of the through travel from the West, or to wait until we ascertain whether the St. Lawrence will become a favourite route Eastward and from the Ocean, before we would be warranted in commencing a main arterial road from our chief seaport to our principal Western town; but that on the contrary, such a work will be one of the chief and now indispensable means for the attainment of so desirable and vital an object. We have also in the introduction suggested that we are not too poor to afford such a work, but rather that we are too poor to do without it, and that the initiative must be taken at *some time* and by *somebody* amongst ourselves, before we can expect capitalists to suggest what we seem so indifferent about. If we first do all we can, the experience we will obtain in the effort will enable us to do more than we at first hoped. We must first assert our own confidence in the project before we invite that of others. We have offered no illusive estimates, held out no flattering inducements: we believe the deliberate judgment of the country has never been pronounced upon this question,—that it has never even been exercised upon it; and that it is only necessary to present the elements required for the investigation to ensure that attention and decision which so important a subject merits. The details we leave to local Corporations;—of these the number would probably be half a dozen, having a length of road sufficient to bring them within the provisions of the Railroad Act of last Session.

The little commonwealth of Massachusetts, with an area of 7500 square miles and a population of about 800,000, has expended \$50,000,000 in building 1000 miles of Railway, the most important of which now yield to their enterprising projectors an average of seven per cent; and she is now extending these feeders at the rate of 300 miles per annum.† Canada, in area, in population, in fertility of soil, water power and mineral wealth, is vastly her superior, and can surely with such securities procure the means of constructing one iron track, which can have no competitor north of the St. Lawrence.

The partial failure of our Portage Railways, particularly the Lachine, have undoubtedly had a prejudicial effect upon the Railway movement in Canada. It is difficult to conceive how or why any other result could be anticipated for a Railroad less than ten miles long, situate almost wholly in a valuable suburb, with a turnpike on one side and canal and river on the other, and which with its present length must lie buried one-third of the year in the snow.

* See Appendix E.

† See Appendix A and H.

Before the Lachine Road was in operation, the writer of these remarks published in a newspaper the following opinion:—

"The Lachine is the last of the projected Railways about Montreal; this will be soon in operation and in its present shape *must prove a partial failure*; the sooner the better as thereby there will be a strong interest enlisted in the extension of this road to Upper Canada, as the *only* means of procuring a profitable return. The Lachine Road will be a *partial failure because the route is too short* and the expense very great. The cost of furnishing and managing will be as great as for a road ten times its length, while only one-tenth of the fare can be exacted. The cab fare to the Montreal Terminus will be, (in addition to the fare on the cars) as much as coach fare direct to Lachine; and as the difference in time, between the train and a coach, will be confined to a few minutes, (the Corporation of Montreal compelling slow speed through the town for Locomotives,) the Company must always compete with the inordinate number of public conveyances in that city for less than an hour's drive over an excellent road,—or drive them off by low and unprofitable fares. The expense of land damages, fencing and stock for this road must run up the cost per mile proportionally very much higher than upon roads of greater length and through less valuable property."

In that article, (advocating the commencement of a Railway from Montreal to Toronto), were some remarks which will apply with peculiar force to the present position of Montreal.

Montreal being then not only the Metropolis of Canada, but as she still is, the first Commercial City of British North America, the writer felt that the initiative of any great public enterprize should emanate from that quarter; and as the whole question was one of such peculiar importance to her citizens as a community, he took the liberty of criticising with no unfriendly *animus* their apathy upon the subject. Whether it was contempt for the production, or the apathy spoken of, the article was not then (July, 1847,) copied into any of the Montreal newspapers. In the hope that, chastened by affliction, they may now permit a fellow Canadian to offer some suggestions upon a subject with which he has been for many years professionally interested, he ventures to republish some further extracts from that article:—

"Montreal, our beautiful capital, with all its splendid buildings, noble wharves and fine steamers, is yet far behind any city of its population in any part of America. It is difficult at this day to account for the apathy of that city to those simple questions of improvement upon which the prosperity, health and comfort of its citizens depend. However satisfied they may feel with their present condition, it is obvious that ere ten years have passed the question of "to be or not to be" must be determined by her citizens. They think ships will come to Montreal, houses and rents go up and flour stay up, *because Montreal is the Seat of Government*. So is Washington the Seat of Government of twenty millions, and yet it is not New York, Philadelphia, Baltimore, Boston New Orleans, Cincinnati, Buffalo, or Albany, all of which without being National Seats of Government, (yet not without

" Railroads) are far ahead of Washington. Toronto, *since the removal of the*
 " seat of Government from that place, has improved much rapidly than ever,
 " and Kingston has not; because with cities (as with men) there must be
 " some *inherent* properties upon which their success will depend, and which
 " *must be intrinsic* in order that they may not be diverted. Toronto has a
 " back country, but Kingston has not; the former depends upon her farmers
 " in the rear,—the latter upon her commerce, which anchors alone retain in
 " her harbour. And now what are Montreal's advantages? On the north and
 " south shores of the St. Lawrence, and to the westward between the Ottawa
 " and the St. Lawrence, lies a country as rich as America can boast of,—but
 " where is Montreal? Upon an Island,—an *island* to this hour. The Capital
 " of Canada can be approached from the wealthiest and best half of the Pro-
 " vince, at two seasons of the year, only by *scows* breaking the ice before
 " them. On the south shore a miserable flat bar Railway has been in opera-
 " tion for several years, but its Terminus is nine miles from that city;—con-
 " structed because the nature of the ground seemed to invite the experiment,
 " upon the cheapest principle, and depending upon the curiosity of strangers
 " for its support, the only Railway using Locomotives in Canada is enabled
 " by high fares to pay a respectable dividend to its proprietors. (How long
 " will this last?)

" The St. Lawrence and Atlantic Railway is a much more important pro-
 " ject to the inhabitants of Montreal, inasmuch as it will pass for upwards of
 " 100 miles through an agricultural country naturally depending upon Mon-
 " treal for its supplies. But it is much to be feared, nay almost certain, that
 " before the respectable Rip Van Winkles of our Metropolis can be aroused,
 " the several American lines leading from Boston will be pushed up to the
 " head waters of the Connecticut, and that market offered to our Eastern
 " Townships which we have so long and so criminally withheld from them.
 " But this road cannot be brought *into the City*, and must be but an imperfect
 " means of supplying its wants. Its hopes are more upon the "through"
 " trade and travel. As an outlet however for the agricultural productions of the
 " districts through which it passes, and as a means of supplying the city with
 " firewood, vegetables, fruits and articles which without a Railway would not
 " reach the market, (*and as a means of promoting manufactures*) it will be
 " successful beyond a doubt. This trade, the Railroad makes for itself,—it will
 " always keep, and be the means of increasing.

" But as a means of supplying the City, no route can be projected which
 " will be able to compete with the extension of the Lachine Railroad toward
 " Prescott. Thousands of pounds worth of firewood, butter, eggs, milk,
 " vegetables, fruits, poultry and live stock of every kind, would reach the
 " city daily, which will *never reach* it without a Railway. Instead of milk
 " and water, bad butter and stale vegetables, we would have pure milk, taken
 " from cows fifty miles in the country at five in the morning, delivered in the
 " City for our breakfast,—the price of fresh butter, vegetables and firewood
 " reduced, and a constant supply received. We would not see, as in last

“ December, three feet wood scarce at 30s. per cord, because nature was
 “ lazy in building her bridge over the waters which surround Montreal. The
 “ value of property (within the Island,) along the route would be increased
 “ fourfold, and farms fifty miles distant would be placed in a better position
 “ than those which are now ten miles off; while the increased activity given
 “ to business in the city by the Railway, would keep up rents, and business men,
 “ particularly in the present unhealthy season (July), could have their dwell-
 “ ings ten or twenty miles out of town, where the difference in rents, supplies
 “ and other advantages, would more than compensate them for the Railway
 “ fare in and out daily, and the half hour's time on the road.

“ This road could be located so as to do the business of the Ottawa River
 “ and Bytown, (destined to be the third or fourth city of Upper Canada.)
 “ The Ottawa steamboat navigation is imperfect and tedious. The lumber
 “ trade on that river, employing a capital of £500,000 annually, is of the
 “ highest importance; the constant through travelling of the lumberer would
 “ be a great source of profit to the road. If Montreal, the natural market of
 “ Bytown and the Ottawa, does not exert herself, the latter will make no great
 “ effort to avoid a connection with Ogdensburgh, which can be done in less
 “ than half the distance to Montreal. It may be that our Canadian aristoc-
 “ racy and capitalists think these Railway “notions” vulgar considera-
 “ tions of coppers;—if so, they forget the connection between the trade and
 “ politics of a country, they forget that even now *the question of our contin-*
 “ *uance as a Colony* is to be decided by the solution of the problem, whether
 “ flour can be carried from Upper Canada to Liverpool cheaper by New
 “ York than by Montreal?

Since the above was written the Lachine Railway has turned out a partial failure;—the Champlain Railway has been rebuilt with heavy rail;—the St. Lawrence and Atlantic has been opened for thirty miles and its construction aided by the City of Montreal;—the Seat of Government has been removed;—and lastly the people of Montreal have seen with a vengeance “the connection between the trade and politics of a country.”

Perhaps the design of that article (which was to advocate a road from Montreal to Toronto) was considered too extensive, but the inference which it was hoped would be drawn was that it ought at once to be commenced by the extension of the Lachine Road such a distance only as would be warranted for the supply of Montreal without reference to Western trade or travel. We wished to show that a city like Montreal with a population of 50,000 inhabitants, required as an indispensable addition a Railway in some direction of about fifty miles in length, penetrating a good agricultural country for the supply of the daily wants of her own citizens; and communicating directly with the city at all seasons of the year. That it was a disgrace to such a city (the Metropolis) to remain in her insular position where it could be avoided, (the bridge at St. Eustache was not then built), and that the Railways on the south shore would ever be unsatisfactory, because their ferries were too long,—at certain seasons of the year there would be no intercourse, and at

all seasons, delay, risk, and transshipments. That although the partial failure of the Lachine Road as projected was unavoidable, its construction was to be hailed as an earnest that one Corporation would be compelled in self defence to take the course so necessary to the well-being of the city.

We now repeat that if the Lachine Railroad be extended fifty miles through a good country toward Prescott it will soon pay more than legal interest upon the whole investment. With reference to the side of the Ottawa to be selected for the extension, this should be determined by thorough examinations; *cæteris paribus*, we should say that as a part of the Main Western line "grades" would have much to do with the decision. If these are found to be equally favourable, then the route which would comprehend most villages, water power, and agricultural products, would be the most productive.

With the power of extension we believe the Lachine Road will become one of the first Railway stocks in Canada. As the last link in the iron chain which must ere long connect the Great West with the seaboard at Montreal, this road would have borne over it the accumulated freight and travel of six hundred miles of a pathway from the St. Clair, through the very *vertebra* of Canada to ship navigation;—while as a minister to the daily wants of an increasing population, and large foreign and coasting fleets, it would have never failing sources of wealth, if all foreign helps should fail. As Montreal is the largest city in the Province,—so long as it continues so a Railroad terminating within the city limits must do the largest *local* business of any road in Canada. But the most important advantage which the first Corporation leading from Montreal westward will enjoy over the more remote ones, is that a large amount of the earnings of the road will be upon *freight of a local character, which will either not bear long transportation or pays a higher rate than products of the same description from the interior can afford*—and lastly the Western trains will make up the load for this division so that the engines will be worked up to their full capacity, thus diminishing the cost of transport.

The following is an estimate from the best authorities, of the value of the annual consumption of articles of country produce *by the inhabitants* of the city of New York, for 1841:—

Fresh beef,	1,470,000
" veal,	365,000
Fresh mutton and lamb,	335,000
Fresh pork,	600,000
Poultry, game and eggs, &c.,	1,000,000
Vegetables and fruits,	1,200,000
Butter, cheese and lard,	1,500,000
Flour, meal and other breadstuffs,	3,000,000
Hay and oats,	750,000
Firewood and coal, (exclusive of steamboat fuel,)	2,500,000
Salted beef, pork and hams,	1,200,000
Milk,	1,000,000
Not enumerated, &c.,	580,000
	<hr/>
	15,500,000

During the six months ending Sept. 30th, 1843, 2,991,161—say 3,000,000—quarts of milk were furnished to the city of New York, from the first fifty miles of the New York and Erie Railroad, when that work came into operation, at a price 33 per cent. less than former rates: this of course reduced the price of the whole consumption of 16,000,000 of quarts, from six cents to four cents—thus effecting a saving to the city upon this article alone of £80,000 per annum.* The consumption of these articles of country produce amounts to about \$50 (£12 10s.) per head of the population of New York.

Now we believe the inhabitants of Montreal eat and drink as much per head as their leauer brethren in the good city of Gotham. It has been charged against us by our rectangular cousins,—that we have been too much inclined to waste our substance in riotous living;—that one evil arising from our Colonial position is our inclination to imitate our rich relations upon the other side of the Atlantic—in ostentatious hospitality—in lugging harlequin footmen around the streets for the amusement of children or the admiration of Iroquois, instead of “footing it” ourselves—and in making our stomachs a disputed territory between wine and Caledonia water,—pastry and blue pills,—“hot-stuff” and soda. If however we consume more than we really require, it is to be hoped that prudence and patriotism will induce us to imitate the temperance and frugality of those New Englanders who live within their incomes and invest their surplus in Railways or manufactures, instead of supporting foreign vineyards—feeding extra horses, “lions,” “tigers,” “bulls,” “bears,” *et hoc genus omne*—animals which could be better employed in agriculture or would be fitter subjects for the chase.†

We think however, we will be safe in assuming the annual consumption of country produce for Montreal, as above described, to be £10 per head yearly, which is twenty per cent less than it is in New York: this will make the annual value of the city’s consumption (assuming the population at 50,000) amount to £500,000.

Now, we have seen that upon one article alone, milk, the saving effected by fifty miles of Railway amounted to 33 per cent.—and there is no good reason to doubt that a similar saving was effected in the other items of consumption. But we are rather chary of estimates, and think none will quarrel with us if we say that five per cent., at least, would be the reduction effected upon the cost of *all* these articles to the city of Montreal by the extension of a Railroad, from the St. Antoine suburbs fifty miles into a good agricultural region. This would amount to an annual saving of £25,000—a sum which would pay the interest upon the cost of such a road!

Some sanguine persons would place the saving at two, three or four times this amount: we dare not say what we think, nor need we do so, for we feel confident that it only requires to be viewed in this light to force an universal acknowledgment of its importance. We may be accused of exaggeration in having said that *Canada* loses annually, by her want of Railroads and a winter

* The quantity supplied by this road in 1847 exceeded seven millions of quarts.

† See Appendix A.

market, enough to build fifty miles of Railway: no apology for this opinion will be necessary if it be admitted that *Montreal* alone could save annually enough to pay the interest upon so much road.

The earnings of the Boston and Worcester road for 1848, amounted to \$4,600 per mile *more* than the Western Road. The first-mentioned road forms the last forty-five miles of the route from Albany to Boston. The earnings on the line from Utica to Albany are more than double the amount per mile of those upon the Buffalo and Attica road, which is the first of the series between Buffalo and Albany. The same comparative superiority of the eastern sections over all others could be shewn upon all the outlets from the west; in fact it is as certain and unchangeable as the increase in the volume of streams as they approach their embouchure. This is the position of the Lachine road:—"It is always the darkest just before day." We feel confident that however disheartened the Directors of the Lachine Railroad may feel at the unavoidable but to them unexpected result of their enterprise, they will very soon see their true policy and their great advantages over any other Canadian road, and will apply themselves with renewed vigour not only to the working out of their own interests but to the supply of that great want of their fellow-citizens, an uninterrupted daily communication with the *main* land and the west. The eyes of Canada,—of America, are upon them. If Montreal aspires to rival New York in the trade of the West she *must* offer equal facilities. The value of time is becoming daily more and more appreciated. A Western Canadian merchant can now reach New York from the Niagara frontier in thirty hours (and as soon as the Hudson river road is completed, in twenty hours,) in the month of March, and make his purchases to be shipped by the first opening of the navigation,—or he can receive weekly supplies of the lighter or more valuable articles by Railroad from Boston or New York,—when he would not risk his neck or his health, *staging it* for four days to Montreal at a season when it would be impossible to bring goods out of that beleaguered city.

Railroads have changed the usual system of doing business. Many Western dry goods merchants have abandoned the old method of laying in spring and fall supplies. Weekly invoices of goods are brought in by the Railroad,—quick returns are made,—the newest patterns are secured,—no dead stock is allowed to accumulate,—and the saving in time, in interest, in depreciation and loss from too large or unsuitable a stock, more than compensates for any extra cost of transport by Railway—a mode which is known to be preferable for certain descriptions of merchandize.

In conclusion—as a people we may as well in the present age attempt to live without books or newspapers, as without Railroads. A continuous Railway from tide water to Huron upon the north side of the St. Lawrence, we *must* have, and as it will be the work of years we should lose no time in commencing it. It is instructive to view the grounds upon which these projects are undertaken in countries where their operation is understood. In projecting the Petersburg and Shirley Railroad, in Massachusetts, the "friends of the

enterprise" take up the townships through which the road would pass, and thus "calculate:"—

"Townsend has 7,000 acres of wood and timber land, averaging from forty to fifty cords per acre. After supplying fuel for home consumption, we estimate the actual growth to be equal to one cord for every three and a half acres, per annum, which will be 2,000 cords for market, exclusive of sawed lumber and ship timber.

"The north easterly part of Shirley, the north part of Lunenburg and the west part of Pepperell, together with the towns of Brookline, Mason and Ashby, have an aggregate of wood and timber land, nearly or quite three times as large as that in Townsend, and quite as heavily covered.

"The town of Sharon has now a steam mill that cuts one million feet of sawed lumber annually. This town and Temple, having large quantities of wood land, and being too far from a depôt at West Townsend for the transport of wood, will therefore do the coal business that is now done in the towns below them—and this branch of business will furnish at least three thousand tons of transport to the road annually.

"It is a well known fact that the towns of New Ipswich, Temple, Mason, and Ashby, are rich in agricultural resources, and will supply much tonnage of produce to the road. It is not unfrequent for farms in Mason to grow 1000 bushels of potatoes each (weighing about $37\frac{1}{2}$ tons), for the starch factory in Wilton, present average prices about twenty-two cents per bushel. This article could be transported to West Townsend much easier than to their present market, and the average price in Boston is such as to command this business.

"The manufacturing interest in this section is also well known to be somewhat extensive. The present transport of casks of all kinds from Townsend to Boston is \$6,750 annually. Brookline has this branch of business to nearly the same amount of freight, and both of these towns have much unimproved water power, and great facilities for brick making, much of which is in the immediate line of the contemplated road."

How much unimproved water power have we in Canada? Have we no farms which grow 1000 bushels of potatoes each? no saw-mills cutting 1,000,000 feet per annum? The writer knows one establishment in Canada which cuts more than 10,000,000 feet annually. There is a large growing trade along the whole extent of our Frontier in this article,—which we can produce *ad libitum*, and the whole value of which is from labour applied here. Our exports of sawed lumber to the United States will probably double, in 1849, those of any former year, amounting to more than one hundred millions of feet:—Railroads alone will bring out the distant reserves of this article.

Have we no facilities for brickmaking, or do we still continue to import bricks from England as we did a few years since? The truth is,—men have starved upon the richest soils and in the finest climes, as in India, Ireland, or Mexico, while the children of the "Pilgrim Fathers" have grown rich from their granite, their wood, and their ice:—they see "sermons in stones," and

wealth in shoepegs at two dollars a bushel. The chief elements of the extraordinary success of the Americans are such as we in a great measure possess, although we have obtained them too recently to have yet experienced their effects, viz., the control of our own trade,—and *facility of association*,—hitherto hampered by legislative requirements at every step.

It is true that we have been stimulated—by legislation in which we had no voice—to an over production of food for which we have no home market, and upon which we must submit to a discount, until we can make one.* We have also political incertitude, for the continuance of which we have no one to blame but ourselves. The habit of association in New England, (for there it has become a *habit*, as we trust it will soon be here), is the prominent instrument in their prosperity. In a mistaken love of sole proprietorship, (in imitation of the wealth of the Mother Country), we either do not move at all in a promising enterprise because the investment is beyond our reach, or we place our necks in the halter by borrowing to such an extent that the first “pull up” invariably produces strangulation. If we would but contemplate the almost illimitable powers of association for manufacturing or commercial purposes, compared with the largest individual efforts, we would be forced to acknowledge the existence within ourselves of a mine of wealth and power, unheeded now, but which, if relieved from the pressure of indifference and incredulity, will expand into useful activity. In a town of but moderate population the humble mechanic may have his house lighted with gas and supplied with water—luxuries which the seigneur in his lordly country mansion cannot aspire to.

Perhaps the most striking instance of great results from small contributions is the penny post;—but everywhere examples meet us—in the news-room,—in public baths,—and even in the factories of New England, many of which are owned by the operatives and small farmers.

A Railroad from Montreal to Hamilton would have half a million of customers exclusive of those beyond the termini, for it would exact tribute from the industry or consumption of every soul upon or adjoining the line. If it be 400 miles long, and can be built for £7,500 per mile, the cost will be £3,000,000; and if the net earnings be taken at ten shillings per head, (instead of twelve shillings and sixpence, the proportion of the agricultural counties on the line of the Erie Railroad), we have £250,000,—or eight and a half per cent. Before the road could be completed, the population and wealth will have increased, and the expenditure of such a sum upon the route will have added so much to the ability of that route to support the road.

Is it time then to move in this matter? Do we not want this road now? Will we not need it before it can be constructed? Will it not be indispensable as soon as the Montreal and Portland Road is opened? We lost millions of dollars in the winter of 1846–1847, because we could not get our produce to the seaboard. If a demand springs up again in December upon

*The construction of Railroads is the first step towards attaining this desirable object.

the seaboard for our flour, butter, ashes, or lumber, must we again wait until May before we can move, and when the Mississippi will have flooded the markets?

If the liberal provisions of our Railroad law prove inefficient to produce association and corporate effort, shall we allow it to drop? Shall we not rather as a *people*, through our Government, take it up, "*coute qui coute*." We cannot any longer *afford* to do without Railroads. Their want is an actual tax upon the industry and labour of the country. Men may talk, says an eminent New Englander, about the burden of taxes to build Railroads, but the tax which *the people pay* to be without them is an hundred fold more oppressive.

In 1836 Massachusetts became a Stockholder to the extent of \$1,000,000 in the Western Road, and by three subsequent Acts issued State scrip for \$4,000,000 more, for the same object. The city of Albany gave for the same purpose \$890,425—the amount subscribed by private Stockholders only being one-third of the cost of the road. Georgia, Michigan, Delaware, States all inferior to Canada, have been equally liberal. They could not wait for the overflowing of accumulated capital, to seek out these projects. They considered the State "but one wide extended charity to aid, protect and benefit each other"—the patron of the public good. Massachusetts looked upon the Western road as a State work; and upon the interests of the people at large as paramount to any individual or corporate ones which might desire this work. Canada must so consider a Railway from her seaport to the heart of her Western territory. The towns and cities on the route contain sufficient commercial intelligence and wealth to lend their credit for a large portion of the stock, and if the agricultural interests hold back, their representatives should be further appealed to. An hundred thousand pounds may be obtained by pledging the honour and the industry of a corporate town, where five thousand could not be spared by the *individuals* composing that town;—because the interest only will be required,—of the burden of which the road upon completion will relieve them, and at the same time undertake the extinguishment of the principal.

Upon the same principle with still less inconvenience, the Canadian people at large, through their Government, may with equal propriety and benefit, procure the means for constructing any eligible line of Railway, by paying, for two or three years, the deficient interest on its cost. But it is highly desirable that wealthy individuals and corporate towns and bodies should take the lead and management. The Government stand ready under the late Act to second their efforts—and we have no doubt would advance a step further to meet private action, rather than see a deserving project fall to the ground.

Our present financial difficulties should be no obstruction, for in a very few years our public canals will relieve us from all uneasiness upon this head, and if we only make the same determined provision for the future payment of our liabilities, as has been made by our more deeply indebted neighbour—the State of New York—our credit will at once, *for all judicious investments,*

stand as high as here. New York, Pennsylvania, Maryland, Ohio, Illinois, and Louisiana, are all more deeply in debt than we are—but in them public improvement has not been suspended.

Our unoccupied routes have in themselves a value—but until there are charters, organization, and a fitting spirit and appreciation of Railways shewn, there is nothing to attract the passing capitalist.

Mr. W. Harding, in his "Facts bearing on the Progress of the Railway System," read before the British Association in August, 1848, says :

"No limit can be assigned to the number of travellers which cheapening and quickening the means of conveyance will create. The introduction of the Railway, even where Steamboats already afforded a most pleasant, rapid, and cheap communication, increased the number of travellers (between Glasgow and Greenock) from 110,000 to 2,000,000—2,000,000 being *five times* the population of the district. In 1814 the number of passengers per annum between Glasgow and Paisley was only 10,000. In 1842 the number was upwards of 900,000 :—the *population* during this period has only doubled itself, while the *traffic* has multiplied itself ninety-fold—that is to say, for every journey which an inhabitant of Glasgow or Paisley took in 1814, he took forty-five journeys in 1843.....The Railway System has doubled itself in three years. The importance and value of the traffic in goods and *cattle*, relatively to the passenger traffic, have become more apparent..... Whatever falling off in dividends there may have been is to be attributed to the *capitalization* of loans and the creation of fictitious capital by the purchase of Railways at premiums, and therefore at sums beyond what they cost."

Lastly—we are placed beside a restless, early-rising, "go-a-head" people, —a people who are following the sun Westward, as if to obtain a greater portion of daylight :—we cannot hold back—we must tighten our own traces or be overrun—we must *use* what we have or *lose* what we already possess—capital, commerce, friends and children will abandon us for better furnished lands unless we *at once* arouse from our lethargy ; we can no longer afford to loiter away our winter months, or slumber through the morning hours. Every year of delay but increases our inequality, and will prolong the time and aggravate the labour of what, through our inertness, has already become a sufficiently arduous rivalry : but when once the barriers of indifference, prejudice and ignorance are broken down,—no physical or financial obstacle can withstand the determined perseverance of intelligent, self-controlled industry.

We submit the foregoing view of the RAILWAY SYSTEM and our position in relation to it, to the generous and patriotic consideration of every intelligent merchant, manufacturer, farmer, and mechanic,—to every Canadian, native or adopted,—and ask them :

Shall we have Railroads in Canada ?

Ohio, Illinois,
them public

til there are
always shewn,

the Railway
ys :

a cheapening
roduction of
asant, rapid,
etween Glas-
ng five times
ers per annum
number was
oubled itself,
ay, for every
14, he took
bled itself in
ds and cattle,
.....
attributed to
the purchase
y cost."

ead" people,
ain a greater
r own traces
dy possess—
ter furnished
longer afford
orning hours.
ong the time
eady become
indifference,
cial obstacle
elf-controlled

SYSTEM and
riotic consi-
armer, and
ask them :

APPENDIX.

A

What Railroads do for the Land and House Owners.

(From Hunt's Merchants' Magazine, December, 1848.)

ALMOST monthly the avenues of trade are increasing, and facilitating the transportation of the rich produce of the interior to the Atlantic border. The demand for capital, for the prosecution of these great lines of traffic, has been a decided cause of the high rate of money on the Atlantic border. Massachusetts has been particularly active in the construction of these noble works. In the last three sessions there have been chartered the following roads :

	Capital.
1846.....18 roads and branches	\$5,795,000
1847.....16.....	4,822,000
1848.....19.....	7,105,000
Stock of roads in operation increased.....	3,945,000
Total.....	\$21,667,000

The total length of roads in New England is 1,126½ miles, and the cost over \$37,000,000.* This large expenditure has been effected only by absorbing all the surplus earnings of almost all classes of society. The accumulating *dividends of capitalists of all grades have sought this direction*, and, as a consequence, a far less amount has been available for the ordinary employments of industry. Even the Savings Bank deposits have been applied in this direction. The direct investments of the Massachusetts' Savings Banks in these works were \$44,389, and loans upon Railroad stock \$300,698. The income of the roads increased from \$1,961,323 in 1846, to \$2,564,190 in 1847. The effect of these multiplied means of communication upon the trade and property of Boston is magical.

Table of the Assessed Valuation of Property in Boston and New York.

Boston.		New York.
Estate, real and personal.		Estate, real and personal.
1841.....\$98,006,600		\$255,194,620
1842.....105,723,700		237,806,901
1843.....110,056,000		228,001,889
1844.....118,450,300		335,960,047
1845.....135,948,700		230,995,517
1846.....148,839,600		244,952,404
1847.....162,360,400		247,153,303
1848.....		254,192,027

*This does not include the debts of the Corporations. The expenditure exceeds \$50,000,000.—(See Appendix H.)

It will be observed, that the different modes of valuation in the two cities are such, that the figures do not give a correct idea of the actual comparative wealth, but in a series of years they show the comparative progress, more particularly in respect of real estate, which, while that of New York has remained nearly stationary, that is to say, was nearly the same in 1847 as in 1841, that of Boston has increased 60 per cent in value. *This has been the direct result of the Railroad influence.* It will be observed, that notwithstanding the number of persons that have moved from Boston into neighbouring towns, the *increased value* of the property taxed is \$74,000,000, nearly *double the whole cost of the Railroads.* That New York has taken a start during the past year, is to be ascribed to the general prosperity and the growing *influence of the Erie Railroad.* The Erie Railroad is now progressing through the lower tier of counties, the population of which was, in 1845, 362, 103, or about the same as the upper tier when the canal was built. The whole area commanded by this road is 12,000,000 acres of the best land, and the population occupying it numbered 532,000 in 1844.

The Reading Road, running 100 miles from the mines to Philadelphia, has cost nearly \$11,000,000, and brought down last year 1,250,567 tons coal, thus establishing the capacity of a Railroad even at enormous cost to carry coal in opposition to a Canal.* * * * *

We shall then realize the fact that the Erie will be the *longest and most important Railroad in the world*, and its income will be commensurate with its importance. It will be observed, that although it will on its completion drain an area of 12,000,000 acres, containing in 1844 a population of 532,000 persons, the section now in operation to Port Jervis communicates with only 40,000 persons, and an area of 428,890 acres. Yet its income is \$1,000 per day, and its nett profits \$150,000 per annum!

[This gives an average nett earning of eighteen shillings and ninepence per head on the population.]

(Extract from *Hunt's Magazine*, August, 1849.)

"It is doubtless the case that, at this moment, capital, as we have slightly indicated, is accumulating throughout the country, with a rapidity never before known; that is to say, there is more wealth being produced, and *less consumed by extravagant living*, through the operation of false credits, than ever before; but the capital so increasing is being converted on an extensive scale, *from floating to fixed capital*; that is to say, *railroads*, public works, buildings, and machinery, all of which, although ultimately they will be productive of a still more rapid development of wealth, for the moment cause a demand for floating capital beyond, perhaps, even its enhanced supply. In the New England States the rapid increase of Railroads has been productive, since their regular operation, *of a rise in the value of property, in Boston alone, to an amount greater than the whole cost of all the Railroads in New England*; and the profits of the enhanced trade they have created in that oporium,

divided among the community, has probably been far greater than the aggregate sum of the dividends paid by all the Railroads to their Stockholders.

"In some of the Western States, particularly Ohio, [and may we not say, Canada,] there is a far greater expenditure of capital, *through individual extravagance in living*, than in the New England States. The increase of Railroads and manufactories in the Southern and Western States is calculated to promote the accumulation of local capital, to cause a husbanding of sectional resources; and while capital is kept in the new States to reproduce itself in industrial occupations, the profits of the Eastern States will become less considerable."

Progress of Railroads in New England in 1849.

Cape Cod Railroad,.....	miles ...	27½
South Shore Railroad,.....	"	11½
Norfolk County Railroad,.....	"	26
Milford Branch Railroad,.....	"	12
Vermont and Massachusetts Railroad,.....	"	35
Connecticut River Railroad,.....	"	11
Cheshire Railroad,.....	"	37
Sullivan Railroad,.....	"	28
Vermont Central Railroad,.....	"	65
Bristol Railroad,.....	"	12
Northern Railroad,.....	"	4
Boston, Concord, and Montreal Railroad,.....	"	36
Passumpscic Railroad,.....	"	40
Worcester and Nashua,.....	"	45
Portland and Lewiston Railroad,.....	"	27
New York and New Haven Railroad to Harlem Railroad,.....	"	60
Section of Ogdensburg Railroad,.....	"	12
Stoney Branch Railroad,.....	"	14
Lowell and Lawrence Railroad,.....	"	12
Total miles,.....		515

[The above is the number of miles of Railroad brought into operation, in New England alone, in the year ending February, 1849; all but one lead directly into Boston, and nearly all are extensions of Massachusetts Railroads, built by her capital and enterprise.]

B

What Railroads do for Consumers.

The Erie Railroad last year (1847) running 53 miles, supplied the following articles to the city of New York:

	Quantity.	Est. Value.		Quantity.	Est. Value.
Milk.....	qts...7,090,430	\$283,616	Calves.....	head.....11,457	\$51,649
Butter.....	lbs...3,758,440	676,519	Hogs.....	.....5,548	38,366
Fresh Meat.....	.....3,007,890	150,490	Sheep or Lambs.....	.....8,198	29,975
Cattle (beef) head...	.....2,362	86,853	Strawberries... bskts.	.....389,920	15,596

In addition to the above, large quantities of poultry, game, fruit, vegetables, &c., are brought to market. The freight received by the road for the transportation of milk alone, was \$35,450.

C

What they do in Ohio—a Farming Country.

MANSFIELD AND SANDUSKY RAILROAD.

The following tables shew the passengers and the principal articles of freight transported over this road, in 1846 and 1847 :—

	1846.	1847.
Passengers,	9,873	20,737
Freight :—		
Wheat,	bushels 306,255	504,081
Corn, oats and barley,	" 4,369	13,713
Flour,	barrels 11,315	62,598
Highwines and whiskey,	" 1,125	3,235
Cranberries,	" 839	1,046
Eggs,	" 56	Not given.
Salt,	" 9,502	6,613
Wool,	pounds 116,833	
Butter and lard,	" 309,742	680,248
Ashes,	230,535	396,560
Tobacco, in hhds,	42,192	80,190
Pork, bacon, &c.,	86,957	1,361,624
Seeds—Clover, flax and timothy,	442,206	1,012,972
Dried fruits,	19,494	181,450
Merchandize and furniture,	1,847	3,110
Potatoes,	bushels	2,912
Shingles,	M.	611
Oil cake,	pounds	47,605
Wool and feathers,	"	210,903

D

What they do in a Granite, Ice, and "Wooden Notion" Country.

Table of Tonnage over the Fitchburgh Railroad (Mass.) for the years 1846 and '47.

	1846.	1847.
Tons transported upward,	47,752	73,219
" " downwards,	41,105	61,979
Total upward and downward,	88,857	135,198

In the above statement ice and bricks are excluded, which amounted as follows :

Ice,	Tons.....73,000	77,505
Bricks,	"39,308	31,772
Total tons, including ice and bricks,	201,165	244,475

Quantity of Wooden Ware, Paper, and Wood, transported over the Road during the year 1847.

Chairs.....	425,702
Pails.....	1,033,958
Reams of Paper.....	166,752
Tubs.....	220,993
Clothes Pins.....	4,228,206
Wash Boards....	101,459
Barrels.....	88,573
Kegs.....	164,295
Cords of Wood.....	9,174
Candle Boxes.....	174,177
Number of Passengers carried in the Cars the past year.....	494,035
Number of Passengers carried one mile.....	8,009,437

E

How they do in the North.

THE WESTERN (MASSACHUSETTS) RAILROAD.

Years.	Pass.	Merch.	Mails, &c.	Total.	Expenses.	Bal. receipts.
1842,.....	\$266,446	\$226,674	\$19,556	\$512,688	\$266,619	\$246,068
1843,.....	275,139	275,696	23,046	573,882	303,973	269,909
1844,.....	358,694	371,131	23,926	753,752	314,074	439,688
1845,.....	366,753	420,717	26,009	813,480	370,621	442,858
1846 (11 mths)	389,861	459,365	29,191	878,417	412,679	463,738
1847,.....	502,321	785,345	37,668	1,325,336	676,689	648,646
1848,.....	551,038	745,909	35,120	1,332,068	652,357	679,711
1849,.....	561,575	745,394	36,841	1,343,810	588,322	755,488

Number of through and local passengers for each year since the road was opened.

Year.	Through pass.	Way pass.	Total.
1842,.....	18,571	171,866	190,437
1843,.....	26,595	174,370	200,965
1844,.....	24,330	195,927	220,257
1845,.....	19,192	204,442	223,634
1846, (11 months),	29,883	235,831	265,714
1847,.....	34,299	354,011	388,310
1848,.....	33,731	371,883	405,614
1849,.....	33,751	402,053	435,804
	<u>220,352</u>	<u>2,110,383</u>	<u>2,330,735</u>

F

How they do in the South.

GEORGIA RAILROAD.

	1848.	1849.	Increase.
Passengers,.....	\$157,694 67	\$166,484 04	\$8,789 37
Freight,.....	280,486 27	376,957 07	96,470 80
United States mails and rents,...	38,871 74	38,573 48	—298 26
Total,.....	<u>\$477,052 68</u>	<u>\$582,014 59</u>	<u>\$104,961 91</u>
Expenses,.....	<u>175,552 84</u>	<u>195,782 88</u>	<u>20,230 04</u>
Nett profits,.....	<u>\$301,499 84</u>	<u>\$386,231 71</u>	<u>\$84,731 87</u>

How they heat Canals.

Coal brought from the Schuylkill Mines by Railroad and Canal.

	Railroad.	Canal.	Total.
1841..... Ton J...	850	584,692	585,542
1842..... "	49,902	491,602	541,504
1843..... "	230,255	447,058	677,313
1844..... "	241,492	598,887	840,379
1845..... "	822,481	263,587	1,086,068
1846..... "	1,233,141	3,440*	1,236,581
1847..... "	1,350,151	222,643	1,572,794
1848..... "	1,216,232	436,602	1,652,834

The Railroad was first opened in the year 1841. The amount of coal previously brought down by the Canal averaged about 450,000 tons per annum for the six years previous to the building of the Railroad, and never in any one year reached 524,000 tons

H

How they pay in Massachusetts.

IN SENATE, March 15, 1849.

The Joint Standing Committee on Railways and Canals, to which was referred the Annual Returns of the several Railroad Corporations in operation within the Commonwealth, Report: That returns have been made by thirty-seven corporations.

The cost of the several Railroads, as appears by the returns, is.....\$46,886,991 93

The debt of the several corporations, as per returns,

is..... 12,420,201 19

The aggregate surplus fund is..... 1,349,230 08

Difference..... 11,070,971 11

Total cost..... 57,957,963 04†

The earnings of the several corporations were..... 6,067,154 02

The expense of working the several roads was..... 3,284,933 38

The net earnings of the same.....\$2,716,920 30‡

The length of the main roads is..... 954.346 miles.

The length of branches is..... 88.810 "

Total..... 1,043.156 "

The length of double track..... 220.212 "

During the past year about 300 miles of Railroad have been put in operation on the various lines leading to Boston, many of which are far from being completed.

* Great freshet which injured the Canal.

† A great portion lately expended, and as yet, unproductive.—See next page.

‡ This is about \$3 40c. (17/0) per head on the population.

The miles of Railroad finished in New York, it is believed, do not exceed 750.

The whole number of miles in the United States is stated at 6,421½, of which nearly one-sixth part is in Massachusetts.

The extent of Railroad finished in England, at the end of the year 1848, and in operation, was 4 120 miles, constructed at a cost of £131,000,000 sterling, or \$628,000,000.

The average cost per mile is about \$142,000.

These roads are thoroughly built, generally with two or more tracks.

There is no road in this country which cost the average of the English lines, excepting, perhaps, the Reading Railroad in Pennsylvania

The traffic on the English roads, in 1848, amounted to £10,092,000, or more than \$47,000,000.

The net returns were about 4¼ per cent. on the outlay.

The expense of working the English Roads is less than fifty per cent. of the gross earnings.

The expense of working the Massachusetts roads is a fraction over fifty-four per cent.

The committee have taken thirteen roads, (upon whose returns reliance can be placed, and none of which commenced operations within the year,) and averaged the dividends upon the cost of the roads.

	Cost.	Dividends.
Berkshire.....	\$600,000 00	\$42,000 00
Boston and Lowell.....	1,800,000 00	144,000 00
Boston and Maine.....	3,249,804 52	252,798 50
Boston and Providence.....	2,893,300 00	175,349 00
Boston and Worcester.....	4,245,175 00	325,500 00
Connecticut River.....	1,234,970 00	69,960 00
Eastern.....	2,655,700 00	239,628 00
Fall River.....	1,050,000 00	68,250 00
Fitchburg.....	2,735,910 00	201,029 50
Nashua and Lowell.....	525,000 00	50,000 00
New Bedford and Taunton...	400,000 00	24,000 00
Old Colony.....	1,601,415 00	91,362 50
Stoughton Branch.....	85,400 00	4,270 00
Taunton Branch.....	250,000 00	20,000 00
Western.....	5,150,000 00	366,000 00
	<hr/>	<hr/>
	\$28,476,674 52	\$2,074,147 50

Mean rate per cent. upon money paid in, 7.283. The above is an approximation to correctness, though not entirely accurate. The Western Road, for instance, paid 8 per cent.; by the table, it is less. The discrepancy is caused by the fact, that new stock has been created the present year, and has been expended in construction, thus adding both to capital and cost of road during the year, while one of the semi-annual dividends was declared upon the last year's capital. The dividends are declared upon the capital paid in, and not always upon the cost, and this will show a difference between the table and the actual dividend, in cases where the cost of road varies from the amount of capital paid in. It should be added, that, in all statements relative to the Western Railroad, the dividends are reckoned upon its chartered capital which

now stands at \$5,150,000. In addition to which, there has been provided for its construction, and received by the corporation £899,000 sterling bonds, payable with interest at five per cent., sold at an advance of not less than 8 per cent.—\$4,319,520; Albany city bonds \$1,000,000, interest 6 per cent., making the total means provided for its construction, \$10,469,650, from which there has been paid, into the several sinking funds, \$459,578 62, leaving, for construction and equipment of road, \$10,009,941 38. The cost of the road to the date of the return is \$9,900,153 76, leaving in possession of the corporation a balance of construction funds amounting to \$109,787 52. The balance of interest paid by the corporation the past year is \$266,380 77. The first dividend was declared upon forty thousand shares, the second upon fifty-one thousand and five hundred, and were each four per cent. Of the surplus of \$47,330 41, \$45,883 34 must be paid into the general sinking fund, which will leave the sum of \$1,497 07 to be added to surplus fund of former years.

L

How they pay in England.

BRITISH RAILWAY STATISTICS.

(From the Civil Engineer and Architects' Journal.)

	Passengers.	Receipts.	Goods—tons.	Total receipts.
1844.....	27,763,602	£3,439,294	9,823,536	£5,584,982
1845.....	33,791,253	3,976,341	12,522,973	6,649,224
1846.....	43,790,983	4,725,215	15,871,179	7,664,874
1847.....	51,352,163	5,148,002	16,699,362	8,949,681*

The capital expended on Railways has been likewise given by Mr. Hackett, from which we can learn the amount expended in each year:

	Whole capital.	Expended.	Miles opened.	Total miles.
1842,..	£52,380,100			1,532
1843,.....	57,635,100	£5,255,000	59	1,586
1844,.....	63,489,100	6,844,000	194	1,780
1845,.....	71,646,100	8,157,000	263	2,043
1846,.....	83,165,100	12,579,000	503	2,610
1847,.....	109,528,800	26,363,700	839	3,449

The total amount of Railway expenditure from 1842 to the end of 1847 was £57,548,700. The total amount of Railway income in these years has been £38,884,181.

Of course, the whole of this income cannot be treated as real capital, no more than can be the whole of the expenditure; but it is a significant fact, that while the *whole expenditure* has been £57,548,700 in five years, from 1842 to 1847, the *receipts* have been £38,884,181, or *more than two-thirds* of that amount. This is deserving the attention of those who direct their attention toward the subject of Railway capital.

* 1848,.....£10,059,006 1849.....£11,013,817

There has been invested in British Railways, up to January, 1850, £200,000,000 (\$1,000,000,000). There are completed 5218 miles, at a cost of £180,000,000.

(From Mr. W. Harding's "Progress of the Railway System.")

The length of Railways sanctioned by Parliament at the commencement of 1848, but not then open, was 7,150 miles. These new Railways are principally designed for the accommodation of the agricultural parts of the country.

When the Railways now in contemplation are completed we shall have 10,000 miles, on which 140,000 persons will be permanently employed at good wages,—representing at five to a family—three quarters of a million of the of the gross population.

Mr. Hyde Clarke shows the increase of travel caused by Railroads :

	Travellers from old coaches, &c.	New travellers.
1844.....	10,300,000.....	17,400,000
1845.....	12,900,000.....	20,800,000
1846.....	16,000,000.....	27,000,000
1847.....	21,300,000.....	30,000,000

Reckoning that each passenger is on the average carried twenty miles, each male adult in this country will be carried that distance six times in the year,—an extent of accommodation which must have a great effect on trade and on the distribution of labour.

An "Observer" in the "London Morning Herald" states that it has been estimated that Railways have effected a saving of £12,000,000 annually on the traffic of the country, although they comprehend as yet but a fraction relatively of the whole traffic of trade.

M

How Railroads catch Fish.

(From Hyde Clarke's "Contributions to Railway Statistics.")

This traffic is of the greater importance, as it gives a positive addition to the supply of food in the country, and is therefore of great national benefit. Railways stimulate the production, or economise the cost of production, of grain, meat, and other articles of food; but all fish that can be carried inland, is thereby added to the resources of the country—In this respect, Railways have done much and can do more, both for the supply of food to the country, and for the promotion of the fisheries.

This traffic is very remunerative and does not bring less than 10s. per ton. The gross tonnage of fish carried on the English Railways may be reckoned as 70,000 tons; or, on the lowest computation, the food of as many individuals. Fresh fish, meat, butter, fruit, &c., cannot be brought from great distances except by Railway. Milk is now largely carried on the Eastern Counties and other Railways, under arrangements by which the companies can bring back the empty cans.

[Codfish, oysters, and lobsters, brought daily by Railway from Halifax or Portland, would be an agreeable change of diet for inland Canadians—and would lighten the *maigre* days.]

ided for
bonds,
ss than
r cent.,
n which
ing, for
he road
he cor-
2. The
77. The
fifty-
surplus
, which
r years.

receipts.
584,982
649,224
664,874
949,681*

Hackett,

al miles.
1,532
1,586
1,780
2,043
2,610
3,449

of 1847
ears haa

pital, no
fact, that
1842 to
of that
attention

17
0,000,000
9,000.

What the World thinks of Railroads.

Table of Railroads in operation, January 1, 1849, and of their cost, including equipments—carefully estimated from official returns, &c.

Countries.	Miles.	Average cost per mile.	Total.
New England and New York,.....	3,952	\$27,500	\$108,186,237
Other parts of the United States,....	4,192	25,000	104,922,179
Canada,	54	32,000	1,731,000
Cuba,.....	273	.....	9,473,000
Total in America,.....	8,471	26,500	224,312,416
Great Britain,	4,721	170,000	802,571,500
France,	1,256	110,000	138,500,000
Germany,	3,371	50,000	168,500,000
Belgium,.....	497	80,000	39,640,000
Holland,.....	163	25,000	4,062,000
Denmark and Holstein,.....	284	40,000	11,281,000
Switzerland,.....	79	50,000	3,650,000
Italy,.....	164	90,000	14,625,000
Russia,	113	60,000	6,781,000
Poland,	188	50,000	9,375,000
Hungary,	157	50,000	7,850,000
Total in Europe,	10,993	\$110,000	\$1,216,875,500
Total,	19,464	\$74,000	\$1,441,187,500

At the close of 1848, the Railroads built and in progress in the United Kingdom and Ireland were 12,481 miles in length, and their estimated cost \$1,567,887,013 ; in France, 3,841 miles, at a cost of \$416,000,000 ; and in Russia, 1,600 miles, at a cost of \$170,000,000.

O

The folly of cheap Engineering.

The following is a list of the Railroads which have been engaged in relaying their tracks with heavy rails during the past year (1848), together with the quantity of iron which has been contracted for, in England, for that purpose :—

Syracuse and Utica.....	tons 2,500	New Haven and Hartford	tons 3,000
New York and New Haven.....	6,000	Concord and Portsmouth.....	4,000
Eastern.....	2,000	Lawrence.....	2,500
Boston and Worcester	4,000	Boston and Lowell.....	1,000
Western	5,000	Utica and Schenectady.....	2,000
Vermont Central.....	8,000	Tonawanda.....	2,000
Vermont and Massachusetts.....	4,000	Buffalo and Attica.....	4,000
Rutland.....	8,000	Ramapo.....	2,000
Old Colony.....	2,000	Somerville (about).....	2,000
Boston and Providence.....	1,000		
Stonington	1,000	Total.....	66,000

Q

What they do for the Graziers and Drivers.

The following are the proportions of cattle, &c., carried on British Railways :

	Cattle.	Sheep.	Swine.	Receipts.
1845.....	286,000	1,200,000	550,000	£102,000
1846.....	370,000	1,250,000	850,000	167,200
1847.....	500,000	2,000,000	*390,000	183,400

* Falling off caused by Irish famine.

The total number of horses carried in 1847 was 99,405 and the receipts £80,216.

Taking the saving by conveyance of cattle on Railways at 40 lbs. per beast, 8 lbs. for sheep, and 20 lbs. for swine, the gross saving in 1847 will be 43,800,000 lbs. of animal food.

Large quantities of dead meat reach the London market by Railway from the country:—it comes in excellent condition from *Scotland*. By means of Railways, great quantities of hind quarters of mutton are sent up from the country,—as the butchers there kill large quantities of sheep and sell the fore quarters at home amongst their own population,—sending the hind quarters by Railway to London. It is the general opinion of butchers that country killed meat is better than town killed meat. It is ordered and sold by telegraph, and is not damaged by the journey, even in hot weather.—*Evidence given in late Report on Smithfield Market.*

R

How they do in the West.

The following are the articles brought to Detroit by the Michigan Central Railroad during the month of November, 1849 :

Flour.....	bbls.	61,962	Whiskey.....	lbs.	202,387
Wheat.....	lbs.	11,155,805	Pig iron.....		40,933
Corn meal.....		331,647	Timber.....		202,704
Ashes.....		94,118	Carriages.....		1,000
Wool.....		5,751	Cattle.....		4,000
Barley.....		259,151	Horses.....		5,000
Cranberries.....		38,097	Sheep and hogs.....		40
Beans.....		26,124	Other 1st class freights.....		154,779
Grass seed.....		16,466	“ 2d “.....		46,341
Beef and pork.....		166,639	“ 3d “.....		9,922

	Through pass.	Way pass.	Total pass.	Receipts pass.	Rec. freight.	Total rec.
1849.....	46,053	91,848	137,901	\$321,114	\$279,872	\$600,986
1848.....	13,409	69,778	83,187	155,771	218,210	373,981
Increase,	32,644	22,070	54,714	\$165,343	\$61,663	\$227,005

Passengers West 78,187; Receipts \$175,895. East 53,714; Receipts \$145,219

Total Receipts 1849, \$600,986; Expenses, \$296,080; Net earnings, \$304,906.

From the above figures it will be seen that the business of this road has been rapidly increasing notwithstanding the prevalence of the Cholera in the last season; and that on this decidedly “through” route,—the way passengers double those going through.

Highways:

0
0
0

\$80,216.

lbs. per
847 will

way from
y means
from the
the fore
quarters
country
sold by
rather.—

Central

s. 202,387
.. 40,933
.. 202,704
.. 1,000
.. 4,000
.. 5,000
.. 40
.. 154,779
.. 46,341
.. 9,922

Total rec.
\$600,986
373,981

\$227,005

s \$145,219

;304,906.

s road has
lera in the
e way pas-

