OBSERVATIONS

ON

IRISH RAILWAY STATISTICS:

A PAPER READ BEFORE

THE DUBLIN STATISTICAL SOCIETY:

' BY

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Observations on Irish Railway Statistics. By James W. Murland, Esq.

As the railway system has now been considerably extended in Ireland, it becomes a matter of interest to mark its progress, and to examine the parliamentary and other public returns of traffic, for the purpose of discovering how far it has fulfilled or surpassed the expectation formed of it by the late Mr. Drummond, and other gentlemen who sat on the Railway Commission in this country ten years ago. It will also be interesting to inquire, to what extent railways have increased the intercourse and developed the resources of those districts where they have been opened; and whether the experience we have had points out any obstacles in the way of their further progress, which ought to be removed by the legislature.

I am aware that, in considering this subject at present, two difficulties present themselves. The first is, that a great portion of the railways in this country have been so short a time in operation, that we have not yet had an opportunity of fairly testing their effect. The second difficulty is, that the condition of this country has been such for the last two years, in consequence of the failure of the potato crop, and the depressed state of trade attendant on it, that we cannot form any just estimate of what the traffic on Irish Railways will be in ordinary times, from the re-

turns of traffic for the last two years.

Though these difficulties certainly do exist, still I think we have sufficient data to enable us to arrive at some conclusions which may not be altogether uninteresting. At the commencement of the last year, the whole extent of railway open for public traffic in Ireland only amounted to $209\frac{1}{2}$ miles* whereas at the same period there were no less than 3,527 miles of railway in operation in Great Britain; thus, the extent of railway in Great

⊧ Viz	Dublin and Kingstown	<i>:</i> :	8 1	files
	Ulster		25	,,
	Dublin and Drogheda .	: .	$35\frac{1}{8}$	**
	Great Southern and Western		90	**
	Midland		36	12
	Londonderry and Enniskillen		 15	19
	*		2094	

Britain was rather more than seventeen times greater than in this country, and the amount expended in their construction was probably nearly forty times greater; but we have no returns from which we can ascertain this latter fact with accuracy. During the past year, 131\frac{3}{4}\text{ miles*}\text{ additional of railway have been opened, and the line from Drogheda to Castleblayney is now completed, and will be opened for public traffic in the course of two or three weeks, making in the whole 383 miles in actual operation. Still the three great lines of railway from the metropolis to the north, south, and west of Ireland are far from complete, and it is evident that until we have an uninterrupted communication with Belfast and Cork, in the north and south, and at least as far as Athlone in the west, we shall not have an opportunity of fairly appreciating the advantages which that superior mode of conveyance is likely to confer on the country.

The traffic on such of the Irish railways as were in operation before the failure of the potato crop, continued to increase regularly from year to year until that calamity took place. This will be seen from the following statements:—

DUBLIN AND KINGSTOWN.

Years ending	Number of	Years ending	Number of
February.	Passengers.	February.	Passengers.
1840	1,280,761	1845	2,234,433
1841	1,519,024	1846	2,348,613
1842	1,632,085	1847	2,303,910
1843	1,758,881	1848	2,228,146

ULSTER.

Year ending 1st March.	Number of Pas- sengers.	Amount received for Fares.	Amount received for Goods.	Total Receipts.	Except Mails.
		£	£	£	
1843	425,864	16,021	5,124	21,145	
1844	436,317	16,875	8,269	25,144	
1845	604,388	19,299	9,268	28,567	
1846	652,071	22,844	8,951	31,795	
1847	690,477	24,295	11,471	35,766	
1848	685,124	24,183	16,497+	40,680	
Half-year ending 31st August, 1848, 104 additional miles	327,625	13,715	8,024	21.739	

			Miles.	`1			Miles.
* Great Southern and We	stern	(conti-		Open on 31st Dec. 1847			209 1
nuation)	• •	• •	20	Opened during year 1848		••	
Midland (to Mullingar)		• •	14	Junction to Dundalk		• •	215
Waterford and Limerick			24	Dundalk and Enniskillen			20
Waterford and Kilkenny			11	ļ			
Irish South Eastern		••	101	Total	••		383
Ulster (to Armagh)			11				
Belfast (to Ballymena)		• •	371	1			
Belfast and County Down			4	1			
			-	1			
			1314				

[†] Though the ordinary goods traffic on the Ulster Railway fell off in the year ending 1st March, 1848, yet the deficit was considerably more than made up by the extraordinary quantity of foreign corn carried inwards from the port of Belfast.

DUBLIN AND DROGHEDA.

Year ending 31st December.	Number of Pas- sengers.	of Pas- received received Received		Total Receipts.	Except Mails.
1845 1846 1847 Half-year ending 30th of June, 1848	£ 572,856 584,819 472,826 188,077	# 30,749 30,866 32,355* 14,411	5,614 6,969 8,664 3,944	£ 36,363 37,835 40,999 18,355	

Thus we find in each of these railways a steady increase of traffic till the end of 1846; from that time there has been a falling off. This is most marked in the case of the Ulster Railway; for when the increased mileage is taken into account, the falling off in the last half-year will be found to amount to about 24 per cent. as compared with the average of the two preceding years.

As the cause of this falling off is of a temporary nature, we may reasonably expect that when this cause shall cease to operate, the traffic on Irish railways will resume a course of gradual developement. In the meantime, in estimating the traffic on those lines which have been opened since the present depression commenced, it is necessary to make allowance for the effect of that depression.

We will now proceed to compare the returns with the estimate of traffic formed by the Railway Commissioners. This will enable us to discover to what extent it has been increased in the

districts traversed by railways.

It is generally known that in the year 1836, the late Mr. Drummond, Sir J. Burgoyne, Professor Barlow, and Mr. Griffith were appointed Commissioners "to inquire into the manner in which railway communication could be most advantageously promoted These gentlemen made very accurate inquiries as to the passenger and goods traffic, in the various parts of the country, particularly along the great lines to the north, south, and west, and the report which they presented is of considerable value as a statistical work, illustrating the industrial condition of the country at that time. They ascertained, by a most careful investigation, the average number of passengers which then travelled daily along each of the assumed lines. These they divided into two classes, taking the 1st to the 2nd in the ratio of about 3 to 2, and they estimated that, in consequence of the increased facilities for travelling which railways would afford, the first class would be increased 100 per cent., and the second class 50 per cent. In this way they formed the following estimate of what would be the number of passengers daily on each of the three leading lines of railway in this country when completed:-

^{*} In the year 1847, notwithstanding the falling off in the number of passengers, the amount received for fares increased in consequence of the fares having been raised.

On the Northern ... 437On the Southern ... 330 On the Mullingar ... 264±* ...

Now, let us first take the northern line. The commissioners, we see, computed that 437 passengers would travel over the whole of the northern line daily. We will compare this with the traffic on the Ulster (which is a portion of the northern line)—we will take it before the traffic was affected by the recent depression.

The parliamentary return for the year ending 30th of June, 1847. states the whole number of passengers travelling by the Ulster Railway as 705,977. Many of these, of course, only travelled short distances. However, as we have the amounts received from each class of passengers given, and also the charge per mile, we can compute with accuracy the number which this was equivalent to, travelling along the whole extent of the line. This we find to have been, for the year, 312,440—and for each day 856. The Commissioners, we have seen, computed it at 437—about one-half of what it has turned out to be.

Again, the Commissioners estimated the quantity of goods likely to pass daily between Armagh and Belfast at 87 tons; making a large allowance for increase on former traffic, in consequence of the improved mode of conveyance. We find, by the parliamentary return for the year ending 30th June, 1847, that, exclusive of live stock, 63,733 tons of goods were carried on the railway, being equal to 207 tons per day—more than twice as much as the Commissioners anticipated, allowing that some portion did not traverse the whole 25 miles then open.

Thus the Ulster Railway, though a short line, affords a remarkable proof how much this mode of conveyance tends to increase the intercourse and develop the resources of the country; for we have seen that the passenger traffic, for example, is about four

times greater than it was before the railway was opened.

We will now take the end of the northern line next Dublin. The parliamentary return for the year ending 30th June, 1848, shows that 596,547 passengers travelled on the Dublin and Drogheda Railway, and calculating from the amount received, and rate of fares, as in the former case, we find that this was equal to 278,130 persons travelling along the whole line in the year, or 762 persons travelling along the whole line daily. We have seen that the Commissioners estimated the number which would pass along the whole northern line daily at but 437. This would lead to the conclusion that the numbers of persons passing between Dublin and Drogheda had been increased more than three-fold, in consequence of the opening of the railway.

^{*} The Commissioners had ascertained that coach proprietors in Ireland were in the habit of receiving for parcels about one-tenth of the amount they received for passengers; accordingly they added one-tenth to what they found to be the amount of traffic by public coaches, and thus made the total amount for the northern line 456, for the southern 341, and for the Mullingar 272. But as we are considering passenger traffic alone, I have deducted the numbers so added for paraels.

I have instituted an inquiry which proves the same fact with great accuracy. I have caused an account to be kept of the number of passengers arriving at the Drogheda terminus by public conveyances, for four weeks ending the 18th November last. was found to amount to 488 per week on the average. The Commissioners found it, when they made their inquiry, to amount to 480 per week-showing that the through traffic from the north of Ireland, though it probably had increased a little after the opening of the Drogheda Railway, yet, at the depressed time this account was taken, was very little more than it had been in 1837. On the other hand, it was found that the passengers going by the railway from Drogheda to Dublin during the same period, amounted to 1,183 per week on the average. Deducting from this the number which came from the north of Ireland, we find that 695 persons came from Drogheda alone each week by the railway; whereas, before the railway was opened, the number travelling by public conveyances was only 232 per week-just onethird of the present number. If this account had been taken in summer, the increase would have appeared greater.

From the way in which portions of the Southern and Western, and Midland lines, have been opened during current half-years, it is impossible, from the public returns of traffic on them, to make calculations similar to those we have made as to the northern lines. I have, however, been favoured with a return of traffic on the Midland for eight weeks, ending the 28th November last, which shows that the average number of persons who travelled over the whole line was 362. The Commissioners estimated that the number who would travel over the whole line to Mullingar daily would be 264, considerably less than have actually used the line during the months of October and November last, though the number at that season was of course much below the average of the whole year; and a further allowance of 24 per cent. should

be made for the depressed state of the country.

I have also been favoured with a return of passenger traffic on the Southern and Western for eight weeks, since the opening of the line to Tipperary, which states that the average number of persons who travelled daily over the whole line at that time was 530. The Commissioners' estimate was 330.

In this case also an allowance must be made for the state of the

country.

Having considered the increase of traffic which has actually taken place in the districts traversed by several of our Irish lines of railway, we may now briefly consider the advantages which the public derive from them. It has been calculated that, as the fares of railways are about one-half of coach fares, therefore the amount saved by travellers in consequence of the use of railways is just equal to the gross sum received by all railways for passenger traffic. This mode of calculating evidently does not apply to all railway travellers, many of whom would not travel at all by coach;

but when we consider, in addition to the saving in fares, the further saving in time (for time with most men is of some value), it is probably not saying too much to state that the pecuniary advantages derived by railway passengers themselves is equal to the gross receipts of the companies from that branch of traffic, without putting any value on the superior comfort of railway travelling.

However, the advantage to be derived by a country like Ireland from the use of railways for carrying passengers, can be but very inadequately measured by merely calculating the money which each passenger saves by adopting this mode of travelling instead of a stage coach. I believe the greatest advantage this country will derive from railways will be from their effect in diffusing knowledge and civilisation. It was observed some ten years ago, by the French Minister of Public Works, that "railways were assuredly, next to the invention of printing, the most powerful instrument of civilisation which the ingenuity of man had ever devised;" and the Irish Railway Commissioners have quoted this observation in their Report, remarking that it does not seem to them in the slightest degree overstrained.

The advantage derived from the use of railways, in conveying

goods and cattle, is more easily reduced to calculation.

For example: the combined receipts for goods on the Ulster and Drogheda Railway, for 1847, amounted to £25,161; dividing this by 601, the entire mileage of both railways, including the Howth branch, gives £416 per mile per annum. This we may take as the saving to the public, and is a moderate estimate; for the cost of carriage by the common roads is more than double the charge made for carriage by railways in Ireland. The average goods traffic of the two lines we have taken, including the Howth branch (on which no goods are conveyed), is probably below the average of the goods traffic which there will be, on the leading lines in Ireland, when they are completed, and the effect of the potato blight shall have ceased; as most of them pass through fertile districts, and lead from seaports to the interior.* we take 416, this, multiplied by 383, the number of miles of railway completed, gives us £159,328 per annum as the saving to the public in the carriage of goods alone.

It has been found that agricultural countries are particularly benefited by railways. I will state a few of the results which have been arrived at on this subject by gentlemen of experience.

Mr. Wyndham Harding sums up the advantages of railways to farmers thus:---

1st-In driving live stock. The loss in weight from driving stock a distance of 100 miles, has been calculated by Mr. Hyde Clarke as being equal in the case of beasts to two per cent. of the

^{*} The saving effected by railways in England in the carriage of goods is less than in Ireland, as the greater part of England has the benefit of canals.

† Facts bearing on the progress of the Railway system in Great Britain, by Wyndham Harding, Esq. being a paper read before the Statistical Section of the British Association.

whole weight; in the case of pigs, to five per cent. of weight; and in case of sheep, to ten per cent. of weight. Very nearly all this

is saved by the use of railways.

2ndly—In the facility of sending meat. Railways are used in England to a considerable extent for this purpose; and on the Ulster Railway a large portion of the goods traffic consists of pork.

3rdly-In the facility for conveying lime, coal, and all the

various appliances of modern agriculture.*

4thly—In the facility for transporting farm produce, and in

giving the farmer the command of more markets.

Mr. Smith, of Deanston, in his evidence before the Railway Acts Amendment Committee in 1846, gave it as his opinion, that on a farm of 200 acres, where the produce had to be transported 15 miles to market, there would be a saving effected of £102 7s. 6d. per annum, by using the railway instead of the common road; consequently the rent of such a farm would be 10s. per acre more with a railway than without one.

Considering the low state of agriculture at present in most parts of Ireland, the advantage to the farmer here would, no doubt, be less than Mr. Smith's estimate; but it points out clearly how rail-

ways operate in promoting agricultural improvement.

On the whole, therefore, it appears very evident that the public are great gainers by the formation of railways, let the result to the shareholders be what it may; and this consideration should make them more liberal in their dealings with railway companies than they generally are.

We will now very briefly consider the further progress of the railway system in this country, and the obstacles which we find,

by experience, to lie in its way.

The observations I am about to make do not apply to these leading lines which are in progress. When Acts of Parliament have been procured, the land purchased, and a portion of the work done, it is alike the interest of the country and of the shareholders that such lines should be completed as soon as possible. And when the companies cannot at present raise the funds requisite, if the Government were to advance money at all, to assist in affording employment to the people during the present crisis, it would be difficult to discover any way in which they could lend a moderate sum more advantageously, than for the purpose of completing the leading lines of railway.

But, passing by these main lines, which must now in any event be made, we may state generally that the chief obstacle to the further progress of railways in this country is the great expense

of construction.

^{*} Mr. H. Browne, M. P., in his pamphlet entitled "Irish Wants and Practical Remedjes,' states that "in 1845, the gross amount of manure_carried on railways was reckoned to be 400,000 tons. In Ircland there will probably be a large quantity of lime conveyed on railways. At present, the expense of carriage deprives many parts of the country of this useful fertilizer.

We find that the railways which have been completed with a double line of rails, together with working stock, have cost on the gross upwards of £20,000 per mile, thus—

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Per Mile
Dublin and Drogheda, 35½ miles* ...
Ulster Railway, 35½ miles
                                                                                            £734,897 or
                                                                                              706,384 or
                                                                                                                  19,898
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Now though this expense may be admissible, and perhaps necessary on the main lines, or on portions of them adjoining large towns, it has latterly become obvious to persons acquainted with the subject, that so great an expenditure in construction is quite inadmissible in this country (consistently with the prospect of shareholders getting a fair return for their money). For the purpose of discovering what is the cause of so much expense, and whether any portion of it may be avoided for the future, it will be useful to analyse it. We will take the expenses of the Drogheda line for the purpose:—

1—Average expen		e, for parliamentary expenses	••		••	• •	£718	0	0
2-Ditto	ditto	for land and compensation	٠.				1969	0	0
3—Ditto	ditto	for engineering and law expe	nses				830	0	0
4 Ditto	ditto	for double line of rails and sle	eepers.	and la	aving		4389	0	0
5—Ditto	ditto	for earthwork, ballasting, &c.	. • ′		•		8609	0	0
6-Ditto	ditto	for stations, management, and	d sund	lries			2142	Ó	0
7-Ditto	ditto	for working stock				••	2041	ò	ō

We will consider separately these items.

First—The amount paid for parliamentary expenses by Irish companies, though not in general so great as has been paid by the English companies,† is still much greater than it ought to be. If the legislature had appointed a competent tribunal to investigate the merits of the different lines, and had acted on their report without putting companies to the expense of going before committees of both houses, a great deal of money would have been In the case of Irish lines, such a committee could sit in Dublin, thereby not only reducing expenses, but also giving a better opportunity for thoroughly investigating the merits of the lines submitted to them.

It has been justly said, "That it is difficult to conceive why railway bills are passed before two tribunals, (Lords and Commons) instead of before one experienced and competent tribunal." such a tribunal had been appointed four years ago, a great deal of the evils of the railway mania would have been avoided, vast sums which have been wasted in Parliamentary contests would have been saved, and a more judicious and economical system of railways would, no doubt, have been adopted.

It is now too late to remedy those great evils; but it is still desirable to establish a proper tribunal for the consideration of railway bills, that we may for the future reduce this item of expense,

liamentary surveys and contests, the result being 350 miles of railway."

^{*} The amount which appears to have been expended by the last statement of account was £774,875, but as £9,383 was paid for a leasehold estate which the company have to dispose of, and £29,996 was the amount of interest paid to shareholders and discounts, these sums, making together 39378, are of course deducted.

† Mr. Harding states, that "in one district upwards of £800,000 has been spent in Par-

and avoid those contests before parliamentary committees, which have done so much injury to railway property and the public.

The second item of expense is compensation for land. The sum paid by the Drogheda Company for the purchase of land per mile will be found below the general average in this country; still it is nearly twice as much as it should be; and it is desirable that an Act should be passed in the ensuing session changing the law on the subject.

The Railway Commissioners observe in their Report:—"It was much to be desired that Irish proprietors, looking to the great importance of a general railway system, and to their own permanent interest, would be moderate in their demands for land and compensation; but as it was hardly to be expected that such a feeling should prevail in every instance, it must be provided by some legislative enactment that a just and reasonable compensation only

should be granted."

The Commissioners were quite right in their suspicion that Irish proprietors would not be always reasonable in their demands; on the contrary, the compensation claimed for land, especially by those having limited interests, has been generally exorbitant; and the state of the law is such, that Companies are obliged either to pay a great deal more for land than it is worth, or to go before a tribunal, where, though the sum awarded may be very much less than the sum claimed, yet the costs incurred frequently amount to as much as the sum paid for the land. This is well illustrated by the following cases stated by Mr. Kane, (a gentleman who has acted as solicitor for several companies) in a petition he presented last year to the House of Commons, praying for an alteration in the Lands Clauses Act.

In six cases which were tried at one inquisition, the total of the sums awarded by the juries was £2,421 2s. 7d., while the costs which the Company had to pay amounted to £2,202 7s., and as a separate jury was required in each case, the costs taxed for jurors

alone was £141 8s. 9d. per day.

In one case, where the land required was 1A. 1R. 21P., the claimant asked £405. The company offered £150. The jury awarded £156, and the costs of the Company in the case were £242 16s 4d., exclusive of the taxed costs of the claimant, which amounted to £120; so that that piece of land cost the Company £569 4s. 2d., together with the amount paid for the interest of the head landlord. These cases prove that the law requires amendment.

The following plan has been suggested:—That a respectable valuator should be appointed by the Government, who would be sent down to value the land required by the Railway Companies; and if either part felt aggrieved by his valuation, he could appeal to the judge of assize, and have the matter tried as a road traverse

now is, letting the defeated party pay the costs.

Another very heavy item of the expense of constructing railways is the expense of the permanent way. That we have seen is £4,389 per mile for a double line of rails, exclusive of boxing and ballasting. The Railway Commissioners considered that a single line would be sufficient for all Irish railways, by which means there would be a saving of about £2,300 per mile. It may be necessary to have a double set of rails on the main lines, but on the branches a single set would be quite sufficient. In the same way, by making the cuttings and embankments for a single line, a further saving would be effected.

The chief objection to having only a single line of rails is the impossibility of sending numerous trains; but that in this country is no objection, for the traffic is not sufficiently large to support

numerous trains.

By having a limited number of trains, a further saving would be effected, in diminishing the quantity of working stock required.

Thus, on reviewing the various heads of expenditure, we find that if the law relating to railways were amended, and a single line of rails adopted, railways might with economy be constructed in this country for £10,000 or £11,000 per mile—the sum mentioned by the Commissioners.

When the expenses are so reduced, companies may venture to make branches into the more important districts. Even then they should advance with caution; for it is well established that railways can pay only where there is a considerable traffic; and the traffic map prepared by the Commissioners shows that the traffic on our own main lines is very much greater than in the other districts.

Where the traffic is small, the expense of working them is an insuperable barrier to their use, with the prospect of a fair return for private enterprise. It is, however, a serious question, considering the great advantage which railway communication would confer on this country, whether the Government should not, at the public cost, in the manner suggested by the late Mr. Drummond, extend them further than private companies would be justified in doing. If they are left wholly to private enterprise, our experience leads us to conclude that their further progress must be slow and cautious.

In the few observations I have offered to the society, I have shown from public documents that the extent of railways already in operation in Ireland has greatly increased the intercourse in those districts which it traverses, and that it is calculated to con-

fer great advantages on the country.

It unfortunately happened that during the years 1844 and 1845, a delusion seized the public mind on the subject of railways. It was commonly thought that no matter where they were made, or how expensively they were constructed, they would become sources of wealth to all connected with them, and the legislature took no measures to check extravagant projects and reckless expenditure. It seemed to think its only duty was so to limit fares, that Companies might not become too rich. The excitement reached its

climax in the autumn of 1845, and since then public opinion has gone into the opposite extreme, regarding all railways as little better than bubble speculations. These delusions have seriously injured the railway interest in England, where they led to the useless expenditure of vast sums of money, and the construction of many competing and unnecessary lines. This must press for years to come on the resources of English railways. In Ireland, however, this excitement has fortunately done but little injury of a permanent kind, a circumstance which will go far towards equalising the profits of Irish and English railways, notwithstanding the much greater amount of traffic in the latter country. And we may hope that the public will now form more correct opinions on the subject—that they will regard railways as enterprises which, if undertaken after due investigation, and conducted economically and skilfully, are at least as legitimate and safe as any other; and we may also reasonably expect that they will receive that protection and support from the legislature to which they are entitled, in consideration of the important advantages they confer on the community.