

## DISCUSSION.

Mr. W. DALY said the paper of Mr. Murphy was only another of the valuable contributions which that gentleman had made to the society. He thought that, even before any intervention of Government the railways might be made to pay better than at present.

Mr. M'CURDY GREER said he was disposed rather to agree with Mr. Murphy than with Mr. Hancock with respect to whether the Government should take in all the railways, or only those which were decidedly losing speculations. The Government, by taking the railways generally, would have a surplus of £300,000 or £400,000 to begin with, and that might be applied in the reduction of fares, which reduction could be afterwards extended as the increased revenue rendered it possible.

Mr. MOWATT said he never heard such a scheme propounded as that put forward by Mr. Murphy and Mr. Greer. The Post Office system had been referred to as a great success of Government intervention. The fact was that it was a most expensive system.

Mr. CONN (of Waterford) said that, as the introduction of railways into the country had done away with nearly all the various former modes of conveyance, the public were entitled to demand from the Government such intervention in the railway system as was become necessary for the public interest. At present the railways of Ireland were, as a whole, very badly managed. It was impossible now for a third-class passenger to get from Dublin to Waterford in less than two days, and to return it would take him 13 hours.

Mr. GERNON thought that want of liberality to the public underlay all the railway mismanagement of Ireland.

Mr. Michael O'SHAUGHNESSY spoke in favour of Government intervention.

Mr. SPROULE was of opinion that the passenger traffic of Ireland was a limited quantity, which could not be increased by reduced fares.

After some further discussion on the part of the members,

The CHAIRMAN (Mr. HAUGHTON, V.P.) said he should like to see the Government take the matter in hands, but he did not believe the results would be so very beneficial as some gentlemen conceived.

Mr. MURPHY replied ; and

Mr. HANCOCK observed that Mr. Greer seemed to mistake Dr. Hancock's views as to the purchasing of railways. He did not mean that the purchasing up should be confined, except in the first instance, to those badly circumstanced.

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### III.—*Notes on the French System of Railways.* By Alexander McDonnell, Esq.

[Read Tuesday, 19th June, 1866]

At the present time, when there is a good deal of interest taken in the question of railways, it appears to me that a short account of the French railway system may be interesting.

When the French began the construction of their railways, there was a good deal of discussion as to what system they should adopt; whether the English, of leaving the construction to private companies; or the Belgian, of the government constructing them. It appeared likely that private enterprise in France would not be sufficient, while the inclination of the government was to take charge of the railway enterprises. However, the government hesitated to adopt the Belgian system, because the amount of capital required for all the lines likely to be made in France would be very great. In 1842 a system was established; the state taking part of the expense, while private companies completed the lines and obtained the right of working them for a certain number of years. The amount of assistance given by the state to the different railways varied considerably. For instance, on the line from Strasbourg to Paris the state executed the earthworks, bridges, and stations, and found the land, while the company provided the rails and rolling stock, and laid the line. The company worked the line, and divided with the state the surplus, after paying 8 per cent on their own capital. On the line from Nantes to Tours the state executed the earthwork and bridges only. Other lines received subventions of fixed amounts, and others, as the Orleans, the Lyons, and the Lyons and Mediterranean, had money lent on advantageous terms. The concessions were given for various periods, after which the lines would become the property of the state, and all companies, I believe, receiving assistance, divided the surplus profit above 8 per cent. with the state. In 1842 there were 363 miles of railway open. During the next ten years the lines were constructed at the rate of 184 miles a year, nearly the same at which the concessions were given. From 1852 to 1858 the rate of construction increased considerably—the average being 344 miles a year—but concessions were given in great numbers, so that not half the length of railway conceded in these six years was made. At the end of 1857 there were 4631 miles of railway made, and 3982 miles conceded, but not made. In order to insure the construction of the lines conceded, it became necessary for the government to interfere, and the law of 1859 was passed. The law of 1842 gave birth to the railways and that of 1859 insured their execution.\*

In virtue of this law, almost all the railways were amalgamated so as to form six large companies. The government gave a guarantee of a minimum of 4.65 per cent. for 50 years on a certain amount of capital, and in some cases subventions. The concessions were all equalised and made for 99 years. The government reserved to itself the right of buying up the railways after they were opened for 15 years. The acts of concession gave the minimum rates for passengers and goods. The companies cannot alter their rates without the sanction of the government, and if a rate is lowered it cannot be raised until a year after it was lowered. The postal service will

\* "La première a fait naître les chemins du fer; la seconde a assuré leur exécution."—*Report on Local Railways, by M. Le Hon, in the Moniteur, June 9th, 1865.*

be gratuitous, after a certain number of years, on all lines. The working of the lines is under the control of the state, and no debt can be contracted without its sanction. This law of 1859, which seems to have been slightly altered in 1863, had the desired effect, and the French railways now seem to be in a very satisfactory condition.

At the beginning of last year there were 8130 miles of railway opened, which were divided amongst the different companies as follows:—

Nord	1,184	Kilometres
Est	2,490	"
Ouest	1,682	"
Orleans	1,922	"
Lyon-Méditerranéan	3,164	"
Midi	1,311	"
Victor Emmanuel and some short lines	313	"

The expense of these has been—capital of companies, £221,200,000, capital of state £38,800,000; total £260,000,000. This gives the average cost, £32,000 a mile. The state has given a guarantee at the rate of 4.65 per cent. on £151,780,000.

In the year 1863 the number of passengers on the French railways was 71,874,589, travelling a mean distance of 26 miles, giving a total receipt of £6,737,275 or 1s. 10½d per passenger, and 8,840 passengers per mile of railway.

In the same year there were 29,793,000 tons of goods carried a mean distance of 84½ miles, giving a total receipt of £10,754,903 and an average of 7s. 2½d. per ton.

When the period of the concessions has expired, it will become a question how the railways in France are to be worked; and I think that, generally speaking, the French are decidedly opposed to the government attempting to work the lines when they become the property of the state.

In writing on this subject, M. Perdonnet, in a small book on railways, says, "Y a-t-il lieu de croire que les gouvernements en feront usage? Nous ne le pensons pas. La question de l'exécution et surtout de l'exploitation par l'état nous paraît aujourd'hui résolue. Si le système de l'exécution et de l'exploitation par les compagnies laisse beaucoup à désirer, il est cependant infiniment préférable à celui de l'exécution et l'exploitation par l'état." The writer (M. Lavollier) of an extremely interesting article in the *Revue des Deux Mondes* of the first of January last, on French railways, is of the same opinion; thinking that in undertaking the general management of transport, the state would assume a position which does not belong to it, and a responsibility contrary to its nature, "Are," he says, "the monopolies of the state so good as to make it desirable to increase them. We ask ourselves what would the public gain by meeting in their relations with railways nothing but the servants and agents of authority. It is complained that the companies are too powerful; the state in their place would be crushing. It is not to be wished either for the public or the state

"that the system of working should be altered, and we have no doubt as to the solution the future reserves for the question."\*

Last year another law was passed for the development of what the French call local railways, and there is a long report on the project of this law published in the *Moniteur* of the 29th June and two following days, 1865. In 1858 it was proposed to construct several branch lines of railway in the Department of the Bas-Rhin, the earthwork and bridges being done according to the conditions of the law of 1836 as a common road, by the Department with the concurrence of the Communes. The permanent way was to be laid, and the line worked by either a new or an existing company. The expense of the earthworks and bridges was estimated at £1,600 a mile, and the expense of the permanent way and rolling stock at 3,200 a mile. A great delay took place on account of the Eastern Railway Company refusing to do more than find the rolling stock and work the line, and demanding besides a guarantee of a minimum traffic of £10 per mile per week. A subvention was then received from the state of £960 a mile. Wisely, the works were not commenced until the arrangements for money were completed; but, in 1864, three branches were completed when they were absorbed into the general system of the Eastern Railway. The capital for these lines which together were 56 miles, was found by the Department, the Communes, the State, and the Eastern Railway Company in the following proportion per mile :—

The Departments	£1,403	...	18 7 per cent.
The Communes	1,433	...	19 1 "
The State	1,201	...	16 0 "
The Eastern Railway	3,468	...	48 2 "

The Eastern Railway estimate the gross receipts of these lines at £640 per mile per annum, or about £12 per mile per week, which should give about 4 per cent. on the capital. It is estimated that similar lines could be made in France now exclusive of rolling stock for from £4,200 to £6,500 a mile. The law of 1865 is generally as follows :—A railway of local interest is declared of public interest by a decree of Council of State on the Report of the Minister

\* Le public serait-il mieux servi, si l'exploitation était remise aux mains de l'état? La question n'offre aujourd'hui qu'un intérêt spéculatif, puisque l'époque du rachat éventuel des concessions est encore éloignée, et il n'est vraiment pas utile de la discuter dans tous ses détails, mais à première vue n'aperçoit-on pas qu'en se chargeant ainsi de l'entreprise générale des transports, l'état usurperait un rôle qui n'est pas le sien, qu'il assumerait une responsabilité qui répugne à sa nature même, et qu'il se trouverait mal à propos jeté dans l'ardente mêlée des compétitions mercantiles? Et puis les monopoles d'état sont-ils donc si tendres qu'il paraisse désirable de les multiplier? Nous nous demandons ce que le public gagnerait à ne plus rencontrer dans ses rapports avec les chemins de fer que des fonctionnaires et des agens de l'autorité. On se plaint de ce que les compagnies sont trop puissantes: l'état, s'il était à leur place, serait écrasant. Enfin, quelle serait l'attitude du gouvernement devant les exigences innombrables et formidables, devant les rivalités et les jalousies qui l'assiégeraient sans relâche et qui mettraient chaque jour en cause sa popularité et son prestige? Non, il n'est à souhaiter ni pour le public, ni pour l'état, que le système d'exploitation soit modifié et nous n'avons aucun doute sur la solution que l'avenir réserve à cette question."—*Revue des Deux Mondes*, 1st Jan. 1866.

of Public Works. The funds may then be created according to the law of 1836 for common roads, partly by the departments and partly by the communes. The state can grant a subvention from a quarter to one half the amount raised by the departments, the communes, and the Company which receives the concession, the amount varying according to the department. The state cannot give in this way more than 6,000,000 francs in one year.

There has been besides this system of local railways another system of still smaller railways proposed, and it is not by any means impossible that they may be made to a considerable extent. There is a report on railways of this kind published in the *Moniteur* of 2nd July, 1865, by M.M. Thrion and Bertina. The first experiment was made by the Orleans Railway Company on a line of 7 kilometres in length, which joins the Orleans main line at Salles-la-Source, and is used for minerals. The gauge of the line is 3 feet  $7\frac{1}{2}$  inches, and it is laid with rails weighing 33 lbs. to the yard, and sleepers placed two feet six inches apart. The wagons contain about four tons, and the line is worked by locomotives weighing nine tons. The cost of the works was £1,376, and of the permanent way £768 a mile; making a total of £2,144 a mile. The cost of the rolling stock was £1,078 a mile, but was probably quite sufficient for a much longer line. The expense of transferring the goods from the branch line wagons to the main line is 1s. 7d. a ton. The cost of working 36,000 tons a year was £136 a mile. The total result was that if it had been an independent enterprise, a rate of  $1\frac{1}{4}$ d. a ton a mile on 100 tons a day would have paid 5 per cent. on the capital, without any passenger traffic whatever. Basing his calculation on this, M. Bertina, in the report referred to, considers that a line can be made in France with rolling stock sufficient for 120 passengers a day, and 100 tons of goods, for £4,500 a mile.

The railways in Norway are of a gauge of 3 feet 6 inches, and they are worked by locomotives weighing 14 tons at 15 miles an hour, over gradients varying from 1 in 40 to 1 in 70.

The narrowest gauge line of which I know, carrying passengers, is the Festiniog line, of which an account was given by Captain Tyler. It is 13 miles long and two feet gauge. The engines have eight inch cylinders, and wheels two feet in diameter. They weigh  $7\frac{1}{2}$  tons; they cost £900, and they can take 50 tons up an incline of 1 in 100 at 10 miles an hour.

In this short account of the French systems of railways, I have been unable to enter on any comparison with the railways of this country, although it might be very interesting to do so. There is, no doubt, much to be learnt from the French. The population is generally not dense, while stations are much closer and fares lower than in this country. Indeed, on the whole, the travelling public is inconvenienced, while the railways pay well. Whether the government brought the railways to the present state at too great an expense, and whether the present monopolies may not be too great, may be a matter of consideration.