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RECONSTRUCTION OF NEW YORK STREET RAILWAYS.

In view of the deadlock which has occurred in the matter of providing New York city with a system of underground rapid transit, it is satisfactory to note the remarkable energy and ability with which the Metropolitan Street Railway Company is improving the vast network of surface railways which is included in its system. It is largely and almost entirely owing to the enterprise of this company that the New York traveling public has been able to travel to and fro on Manhattan Island with any approach to comfort or dispatch, at least during the past few years of the city's growth. In proof of this we have merely to consider what would be the present state of the transportation problem if those six great arteries of travel, Second Avenue, Lexington Avenue, Madison Avenue, Fourth Avenue, Sixth Avenue, and Eighth Avenue, were still served by the tedious horse car. It is safe to say that the Broadway cable line would have had to face an actual deadlock and that the elevated roads would have been congested to a degree that would have rendered travel upon them well nigh intolerable.

The system of the Metropolitan Street Railway Company has grown to its present proportions in the brief space of a dozen years, the expansion dating from the time when the first of the many smaller lines were added to the original Broadway road. At present the system includes 228½ miles of road of all kinds, of which, when the present changes are completed, about 90 miles will be mechanically operated.

The peculiar shape of New York city, which stretches out over an island 13 miles in length by only 1½ to 2 miles in width, renders the transportation problem peculiarly difficult. The business portion of the city lies at the southern end and the residence districts are located in the center and the northern half of the island. As a consequence the travel to the business portion gathers volume as it moves "down town," in the morning, converging toward the main thoroughfare known as Broadway. As Broadway was a cable road and the adjacent and parallel lines were operated by horse cars, the bulk of the travel sought the former road. To meet the demand the headway of the cable cars was reduced in the lower part of the city until in 1895 it was only six seconds. In order to relieve Broadway and confine the east and west side traffic to its proper avenues, the company last year abolished the horse car from Second, Fourth, and Madison Avenues, and installed in its place the underground trolley system, and this year a similar change is being carried out on Sixth and Eighth Avenues, while at the same time electric conduits are being laid on Broadway and the necessary equipment put in for the electric operation of this road.

When these improvements are completed, there will be over fifty miles of road under electric operation. With improved transportation on the parallel roads there will be no tendency on the part of the public to flock to the Broadway line. Instead of the down town traffic concentrating upon Broadway at Twenty-third Street, the Second and Fourth Avenue lines now tap the main thoroughfare at the Post Office and Astor Place, and the Sixth and Eighth Avenue lines make connection at the City Hall Park and Canal Street. The effect upon the Broadway road and the elevated roads (as far as the traveling public is concerned) has been excellent. While the overcrowding is still at certain hours of the day excessive, it is not nearly so marked as it was two years ago, and when the Sixth and Eighth Avenue improvements are completed, the improvements will be yet more marked.

Looked at from the engineering standpoint, the work of reconstruction now nearing completion on these two thoroughfares is of the highest merit, both for the magnitude of the work and the speed with which the change was accomplished without materially interfering with the city's traffic. The work to be done included the taking up and removal of fourteen miles of double track in two of the busiest thoroughfares in the world, replacing them with the heavy 107-pound rails, yokes, and equipment of the underground trolley system, and making the necessary changes in the various systems of electric light, telephone and telegraph subways, and in the gas and water pipes and sewers of the city. It was decided to do the work by paid labor under the company's engineers, in place of letting the work, as before, by contract. The old material taken out and the new material to be put in were distributed in the side streets, street crossings were boarded over (the work being done under cover), and every care was taken to interfere as little as possible with the city traffic. The vast array of mechanics and laborers was distributed along the works, and a simultaneous attack commenced at all points. In a few months, and with remarkably little interruption to traffic (considering the magnitude of the work), the change has been made. The cars ceased running on July 21, and the electric cars will be running on both roads by November 1 of this year.

The work of reconstruction has involved the removal of 3,600,000 cubic feet of earth and 1,130,000 superficial feet of paving. In each mile of the new track 275,962 separate pieces had to be handled and fastened in place, and the completed structure contains 50,000 cubic yards of concrete and a total weight of 8,500,000 tons of material. In the first two months of reconstruction 6,287 men and 460 carts were employed daily on the work, and latterly the force was increased to 812 carts and 9,000 men.

It will interest the public to know that this system of roads alone took in last year 60 per cent as many fares as all the combined steam railroads of the United States, that is to say, over half as many fares were taken in on 228½ miles as on 180,000 miles. This comparison surely establishes the claim of New York city that its street railway traffic is the densest in the world. The introduction of the transfer system reduced the car fare per passenger in 1887-88, when 1,996,871 transfers were issued, from 5 cents to 4·75 cents, and in 1897-98, when 90,000,000 transfers were given out, the average car fare was reduced to 3·48 cents, and for this sum a passenger, if he is so disposed, can make a continuous trip of over 20 miles.

The managers of this system are well disposed toward the proposed underground rapid transit scheme, as they consider that its construction would increase their own receipts by relieving their cars of the long-distance travel and leaving them to take care of the short-distance passengers. It is more profitable to carry three separate passengers for three trips of three miles each than to carry one passenger for the whole nine miles, and it is considered that the tunnel road would secure chiefly the long-distance travel.

This is the proper view to take of the proposed underground road, and the relief which it will afford to every form of transportation in the city will be in the nature of a surprise when the road is eventually built.

A NEW PROFESSION FOR YOUNG MEN.

The search for foreign markets may be justly said to have developed in recent times into an exact, specialized science, in which not only individual exporters and associations, but expert government commissions, elaborately organized, equipped and maintained, each play with constant increasing efficiency their co-ordinate roles. The United States has now reached a position which recognizes the usefulness of the export associations and bureaus of information, though the complaint is made sometimes that these organizations are too much in the hands of theorists and unsuccessful men. Some of the European nations have now advanced further in the science of export than we have, and have called into service an expert commission, organized for a specific inquiry, and sent out under government authority to gather precise technical information for the education of the manufacturers and merchants in special lines of production and trade. The efforts of Germany and France in this direction have established new systems to which the attention of American manufacturers and exporters cannot be too soon and too seriously directed. The German Export Commission was sent out February, 1896, to study the markets of China, Korea, and Japan, and returned after a year of thorough and carefully systematized work, bringing a vast collection of not only the art products or other merchandise ordinarily exported from those countries, but also of ordinary textile and other goods made in those countries for the use of their own people or for export to neighboring countries and in the production of which it is thought that German manufacturers, equipped with exact information as to size, quality, price, and extent of demand, might be able to compete. Neither the samples nor special reports made by the commission have been, or probably will be, made public, as they were obtained solely for the benefit of the German manufacturers. The samples were arranged in a suite of rooms at the Palace of the Imperial Diet, Berlin. Admission was only granted by card and had "to be obtained from a discreet official," says Consul-General F. H. Mason, of Frankfort. The collection was subsequently broken up or distributed at points where similar goods were or could be made in Germany, as for example at Crefeld, where the textile samples are in the possession of the Chamber of Commerce. The reports have not been printed as yet, and if they are, they will probably be reserved for confidential distribution among the German manufacturers and merchants who are specially interested in knowing the wants of these Eastern peoples, their ability to purchase goods to meet those wants and the prices they are able to pay for them.

Similarly in France, the commercial commission sent out by the Chambers of Commerce of five manufacturing cities, Marseilles, Roubaix, Lille, Bordeaux, and Lyons, has returned after an absence of nearly two years, and has presented its collection and reports to the Chambers of Commerce directly interested. Although none of these technical reports have yet been, or probably will be, published, it is known that they number more than one hundred, each prepared by an expert committee or individual. The general conclusion reached by the commission is that France's export trade with China, Tonkin, etc., has opened up a great future, provided the manufacturing exporters will make the best use of the specialized information that is now placed in their hands. While the direct and immediate fruits of these well designed and scientific quests for foreign markets will naturally, and justly so, fall to the lot of Germany and France, which organized the expeditions, still there are certain general facts and propositions which are suggested by these proceedings which, if rightly interpreted, may be of value to the exporters of the United States, who, as a class, have much to learn of the science of the export trade.

There is in all the specialized work of the commissions a broad recognition of the fact that in foreign trade it is the buyer, not the seller, who determines the kind of article he wants and the form in which he wants it turned out, labeled, and packed for shipment to him. It is the business of the seller not to force upon the consumer something he has never heard of and does not want, but to ascertain exactly what he has used and what has been sold to him hitherto, and then furnish him with something of the same kind—but better for his money—than he has ever had before. After this has been achieved, there may possibly be some field for the introduction of a new variety of goods and the gradual education of the consumer. At present the Germans are perhaps the ablest masters of this theory of the export trade, and the English are thought to have lost much for want of it, and America will undoubtedly excel in it when once manufacturers realize its importance.

Secondly, the goods must, as a principle, be sold not at home, but abroad. The seller must go to the buyer with samples, prices, and conditions which the latter can see and readily understand. Museums or other collections for sample merchandise are useful as far as they go, but they cannot attract more than a limited number of buyers to the United States, especially while other countries are sending merchants to the spot with a stock of goods, duty paid, and furnish salesmen to show and explain them. The need of our export trade is a class of competent, well trained young men, with good manners, a practical command of French, German, and Spanish, or at least some of these languages, combined with an intimate practical knowledge of a certain class of manufactured goods and commercial methods, currency, weights, measures, and customs of foreign countries. The education of such men requires certain specialized courses of study, which the commercial schools of Germany, and to some extent Belgium and England, furnish. The all-round education provided by American colleges and high schools turns out young men more or less fairly equipped for successful careers at home, but the competition for export trade has now become so sharp as to require the work of experts, which only a special education, supplemented by a practical experience, can provide. It will, henceforth, be necessary for a largely increased class of young men to prepare themselves for and accept definitely, as many thousands do in Great Britain and Germany, the career of mercantile employes in foreign lands, in which social sacrifice, the dangers of alien climates, are balanced by the material advantages which such a career offers to men of perseverance and trained capacity.

Salesmen frequently go to Germany with no knowledge of any language but English, and the commercial traveler puts himself too often in the character of a peddler by attempting to sell goods of wholly different classes and character. The commercial traveler in foreign countries should confine himself solely to one line of goods and should be an expert in that line.

American circulars and catalogues are often very faulty, and they should be printed in the language of the country to which they are sent, the values and weights and measures should be translated to those in vogue in whatever country they are sent to, and above all, the catalogue should state clearly the net price for which the machine or other article will be delivered at a prominent seaport of that country. The subject of discounts should be also clearly set forth. If this is not done, the buyer is forced to spend three or four weeks in writing to the American seller to ascertain his best discount, etc., and the chances are, in the meantime, that his order will go to a European manu-