

THE CARRYING TRADE.

LAST issue we dealt somewhat at length with the lake trade, its volume and character, and we gave approximate land and water rates of carriage. The contrast was greatly in favor of slack water carriage compared with railroads. While the lakes and rivers have received much attention at the hands of the governments of the United States and Canada, it is questionable whether a proportionate expenditure has been extended to them when contrasted with the vast sums advanced by the Governments to the railways. The volume of trade has increased so rapidly that the governments could hardly pause to nicely adjust proportionate expenditure. It is now, however, clearly shown that both the railways and waterways are required to relieve the congested condition of the carrying trade, and no doubt more attention to the waterways will be given in the future. Much can yet be done by more accurate surveys, increasing the number and efficiency of light-houses, signals and fog whistles, as well as removing interruptions to continuous voyages. The chief and most costly improvements, however, are the removal of all impediments to deep and more extended water navigation. Compared with the advantages to be gained, a moderate expenditure would enable vessels drawing deep water to pass from the ocean to the head of Lake Superior. It was long a problem whether the railroads would not supercede the water ways, and beyond question close-water barge canals cannot compete with the railroads and are almost entirely behind the age. It is now quite clear that for heavy freights, deep slack water far exceeds the railroads.

Human invention is equal to furnishing anything essential to the existence or comfort of the race. Up to the present we were content to adopt uniform railroads. Nearly the entire system in North America has been brought to the standard gauge of 4 feet 8½ inches, and we have pressed for uniform waterway capacity. The requirements of trade have led ingenious engineers to contrive of late a combination of water and railways that will overcome impediments to shipping at much less cost and with much speedier carriage. The invention of the ship railway so constructed as to lift vessels of any tonnage freighted with full cargoes, carry them over the impediment and safely land them in the water on the other side, is but now matured, and has not been yet tested on a large scale suitable to ordinary business purposes. There is no doubt, however, that this can be accomplished with perfect ease and safety. There will in the near future be: (1) The railways. (2) The water ways, slack and close water. (3) A combination of both, being part water and part rail. There will therefore shortly be introduced a new factor in the carrying trade that will play a prominent part in this far-reaching question.

Of late few have doubted that the lake trade would be permanent or that its volume would continue to increase. Freight can be carried from St. Louis, by way of Chicago and the lakes, for upwards of a dollar a ton less than by way of the Mississippi, through the Gulf of Mexico and Atlantic Ocean to New York city. This fact will clearly show to those who have given the subject any consideration that if a line be extended West from St. Louis to the Pacific the country north of it from that ocean will be within the carrying influences of the lakes, and the inhabitants will be able to avail themselves of the waterways with their reduced rates, or will be able to obtain rates from the railways affected or moderated by the lake charges. This territory north of such a line includes thousands of miles of inland water communication on the Mississippi and Missouri and their tributaries, besides the enormous trunk railway systems leading from the west across the country to the lakes. This immense country is yet, where inhabited, sparsely populated, but much of it is entirely unsettled. A few years only in the future will pour from 20,000,000 to 30,000,000 additional population on to this territory in Canada and the States within the carrying influences of the lakes. There is no unoccupied position of the globe that is equal to the territory above indicated as a fertile agricultural country. Both animal and vegetable life attain to the healthiest and greatest perfec-

tion. It is well known that in the east on the other hand the manufacturing population is increasing, and as there is unrestricted freedom of trade between all the States of the union it is quite apparent that the west will continue as now to raise agricultural products for the east, while the east will continue as now to manufacture those utensils required in the west. We have then the one set of producers in the west increasing and the other in the east also increasing, separated by long distances and the lakes lying between them. It is therefore manifest that large as the present volume of freight is it only gives indication of its future gigantic proportions.

The question then naturally arises, is it possible to afford such facilities for the transportation of freight, by any or all the known methods, as will lessen the rates in the interest of both producer and consumer? Is it possible to increase the speed of transit and the safety of the carriage at a less cost than present paying rates?

Until some enterprising company takes a new departure, and improves upon the present gauge, the construction of the rolling stock, and the carrying capacity of the car, the railway charges cannot be greatly lessened for rough freights.

No scientific scheme has yet been advanced by which as great speed can be obtained on the water as on the land. The railroads must therefore in the future as in the past continue to carry all the passengers and light and perishable freights, and these afford no inconsiderable part in the gross earnings of the roads. The great Trunk lines have so lately attained to their present importance that time has hardly established their relation to each other or the public at large. In the past the attitude of the great trunk lines to each other may be briefly said to have been ceaseless war. This severe competition has been the safety of the public in the past, but efforts have already been made to put a period to the prevailing strife. We now hear more of combinations than cutting rates. It is stated that J. Gould is now endeavoring to bring some 75,000 miles of railroad under one joint management. This means nearly half of the railways in the United States. The relationship of the trunk lines to each other and to the public may therefore shortly be entirely changed, not in the direction of reduced charges, but where not held in check by water competition, of increased rates for carriage. Of course the government has always the power of interfering, and might at any time establish a court with wide discretion to prevent exactions and discriminations. Such a court would meet immense hostility, and it is questionable whether with our partizan ideas, any government seeking to enforce its decrees could be sustained on a popular vote. The railways are therefore not likely to voluntarily reduce the charges for carriage.

In an improvement of the waterways, or the waterways and railways combined, the safety to the public lies. Many schemes within the last half century have been projected with the view of accomplishing this purpose. All had the same object in view, though they all differed to some extent. The idea common to all was the necessity for affording free passage-way for vessels of large draught from the great lakes to the ocean. Now that the volume of freight has greatly increased some course must at once be adopted to effect this object. The water-ways are open to all. Any one with sufficient capital can put a vessel on the lakes and defy monopoly or combination, and therefore in the application of a generous policy to the lakes and rivers rests the safety of the public and the relief of the producer and consumer.

Let us indicate some of the schemes projected, all of which have received more or less support, and some of them are still under discussion.

Commencing at the south-east end of Lake Michigan, a ship canal, or ship railway, has been proposed to run to the west end of Lake Erie, thence by that lake to Buffalo; there to be transhipped to the Erie canal (perhaps enlarged) or to the railroads and on to New York city. Part of this scheme includes the enlargement of the Welland canal, or the construction of a ship canal or railway, between Lake Erie and Lake

Ontario. The first part of this route is intended to benefit Chicago chiefly.

In reviewing the lake trade generally, without specially consulting the interests of individual ports, the chief objective point is some distance east and south of the straits of Mackinac, where ships after passing down the Ste. Marie's river from Lake Superior on their journey south and east join those from Lake Michigan. From this point we have proposed improvements of the St. Clair Flats and the navigation generally on to Buffalo, then as before to New York or Lake Ontario.

A canal or railway from the Nottawasaga river to the mouth of the Humber. A canal by way of lakes Simcoe and Scugog into Lake Ontario near Whitby. A canal through Lake Simcoe down the Trent river to the Bay of Quinte.

Finally, a barge or ship canal, from Georgian Bay up French river, through Lake Nipissing, across the divide into Trent Lake, on to the Ottawa river and down to Lachine on the St. Lawrence. A brief examination in a future issue of the above projected schemes will enable us to ascertain how relief to the carrying trade can be best effected.—*Canadian Miller*.

JARRAH WOOD.

The new "Kew Bulletin" contains an interesting section on the properties and uses of the Jarrah wood, a species of eucalyptus, native of Western Australia. The main difficulties in connection with its use in this country are the cost of freight for such heavy timber from Australia and its intense hardness, which makes it difficult for ordinary English carpenters' tools to work it. The tree which produces it grows generally to a height of 100 feet, and sometimes 150 feet. It is found only in Western Australia, extending over the greater portion of the country from the Moore river to King George's sound, forming mainly the forests of these tracts. According to Baron Muelder, when selected from hilly localities, cut while the sap is least active, and subsequently carefully dried, it proves impervious to the boring of insects. Vessels constructed solely of it have after 25 years' constant service, remained perfectly sound although not coppered. It has been tried at three places in the Suez canal, and, after having been down seven years, the trial samples were taken up in order that a report on their condition might be sent to Paris. From certain correspondence between Kew and some London vestries, it appears that jarrah has lately been used by the Chelsea vestry for paving the King's road, and by the Lambeth vest in the Westminster bridge road.—*Engineering*, London.

A LEVEL-HEADED BOY.

A BOY about fifteen years of age applied to a factory on Atwater street for the job of running a small engine in the place of a boy who had quit.

"Have you run an engine?" was asked.

"Yes, sir."

"You understand how steam works, do you?"

"I do."

"You know that water makes steam?"

"Of course."

"How is water got into a boiler?"

"By an injector."

"Suppose you have got too much water?"

"Then I can't get steam enough until I draw it down."

"Correct. Suppose you haven't enough?"

"Then look out for an explosion."

"Correct again. Suppose you found the water almost gone, and couldn't start the injector—what would you do?"

"Come up stairs and notify you to get your insurance policies out of the safe and make a sneak before she busted!"

"You seem to be all right young man, you can come on in the morning."—*Detroit Free Press*.

A fire under a boiler should not be hurried too much but should be left to gain its full strength slowly. This is done easiest by putting in only a small quantity of fuel at a time.