

abouts, and also the dishonest trader who in arranging a fraudulent failure may be striving to open many new accounts. The unusual demands for reports respecting such a one lead to careful investigation. Instead of a restrictive tendency a mercantile agency promotes the expansion of credit and yet permits of proper conservatism. It opens to the trader as a market for his merchandise every new and trustworthy account. It curbs speculation, stimulates diligence in business, habituates punctuality, and develops character. When we remember that the present annual internal commerce of our country is estimated at about 800,000,000 tons of merchandise carried an average distance of 120 miles, and that this volume of trade is worth over \$10,000,000,000, we are forced to admit that the unique system of these credit agencies has done much to further and make possible this commercial prosperity.

## FINANCE, TRADE, AND TRANSPORTATION

### IX. BONDS

#### UNITED STATES, STATE, AND MUNICIPAL BONDS

WHEN a country borrows money it gives a guaranty that the money will be returned at a particular time and that interest will be paid at regular intervals at a fixed rate. This guaranty is called a bond. In actual practice, instead of borrowing the money required and then giving bonds for its return, countries usually issue the bonds first, and sell them to the highest bidder. For instance, if our government needed to borrow \$1,000,000 it would issue bonds for this amount, stating definitely the rate of interest to be paid, and call for bids. If the rate of interest were four per cent. and a buyer paid more than \$1000 for a \$1000 bond he would, of course, make less than four per cent. upon his investment. Such bonds are absolutely safe and always marketable on account of our strong financial standing among the nations of the world. Similar bonds are issued by States, cities, towns, school districts, etc. They are not mortgages in the ordinary sense, and their worth consists entirely in the ability of the issuer through its taxing power to meet the obligations incurred. Municipal bonds are issued by cities and other municipalities to raise money for local improvements.

## BONDS AND CERTIFICATES OF STOCK

A bond is evidence of debt, specifying the interest and stating when the principal shall be paid; a certificate of stock is evidence that the owner is a part owner in the company, not a creditor of the company, and having no right to regain his money except by the sale of the stock or the winding up of the company's business. Bonds issued by stock companies and corporations are really mortgages upon their resources. Such a bond is usually secured by a mortgage upon the company's plant, franchises, and assets, or some part thereof. Corporate bonds can only be issued by the consent and direction of the shareholders of the company or corporation.

At the present time a mortgage securing the payment of corporate bonds is usually placed in the hands of a trustee—generally some trust company—which is supposed to act in behalf of the bondholders as a unit and which is empowered by the language of the bond, in the event of the failure of the corporation to perform the obligations it assumes in said bond, to foreclose the mortgage and divide the proceeds of sale among the bondholders.—CARROLL.

## CLASSES OF CORPORATION BONDS

Corporation bonds are of many classes, differing widely in their value as securities. Only a few of the more important classes can be mentioned here. FIRST MORTGAGE BONDS constitute, as the name implies, a first lien upon the property of the company issuing them. It is important in estimating the value of such securities to know whether they include only the property of the corporation at the time the bonds were issued or whether they are so worded as to include all property owned or acquired by the cor-

poration. Second and third mortgage bonds are second and third liens. The interest upon second and third mortgage bonds is paid only after the interest upon first mortgage bonds is satisfied.

When bonds are issued to take up and put into one fund all previously issued mortgage bonds, the new bonds are sometimes called CONSOLIDATED MORTGAGE BONDS. Holders of previously issued bonds are not obliged to exchange them for any new securities.

INCOME BONDS are usually secured by a mortgage on the earnings of the corporation issuing them. Interest on such bonds must be paid before dividends are declared to stockholders. It is customary when such bonds are issued to set aside a percentage of the earnings as a sinking fund to meet the bonds at maturity.

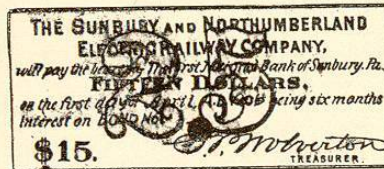
Bonds are issued against all conceivable kinds of securities. Not only are properties of many kinds used to issue bonds upon, but many kinds of bonds are often issued upon the same properties. This is especially true of railways, where mortgages of various kinds often lap and overlap in almost endless confusion.

## SINKING FUNDS

Money set aside by a municipality or corporation to *sink* a debt at a certain future time is called a SINKING FUND. For instance, if a city should issue twenty-year bonds for \$100,000 to secure money for street improvements the entire debt would fall due in twenty years, but to avoid having such a large amount fall due in one year, a proportional sum is set aside each year as a sinking fund—that is, to *sink*, or reduce, or wipe out the indebtedness when the bonds mature. Bonds are not paid in advance of maturity.

## INTEREST COUPONS

Most bonds have INTEREST COUPONS attached. These are cut off and presented for payment as they mature.



Specimens of interest coupons.

For instance, a four per cent. bond for \$1000 would draw \$40 interest yearly. This sum would be paid in two instalments of \$20 each. If the bond were for twenty years there would be at the date of issue forty interest coupons, each calling for \$20 and collectable at intervals of six months.

## FINANCE, TRADE, AND TRANSPORTATION

## X. TRANSPORTATION BY RAIL

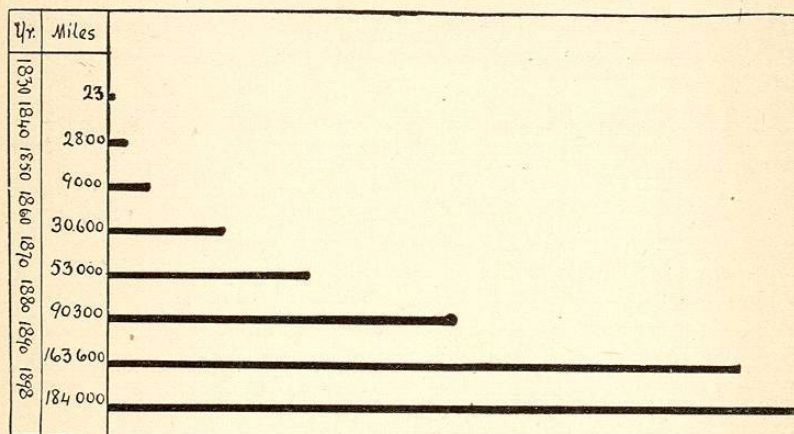
## THE GROWTH OF OUR RAILROAD SYSTEM

A RAILWAY map of the United States shows that most parts of our country have a thickly woven net of railroads. The mileage of our railroad lines is now 184,000 miles, the actual length of track on these roads being about 245,000 miles. The significance of these large figures becomes more manifest when a comparison is made between the length of our railroads and the length of those of Europe and those of the world. The railroads in the United States comprise over four ninths of the total railway mileage of the world, and are considerably longer than the railroads of all the countries of Europe combined. The facts are shown graphically by the following diagram:

Mileage in Europe	155,000	
Mileage in U. S.	184,000	
Total for the World	434,000	

The history of the construction of American railroads covers a period of seventy years. The greater part of

our mileage has been built since 1870. The following table and diagram illustrate the growth of our railway net during each decade:



It will be noted that the decades of most rapid railway development were the one from 1850 to 1860, following the discovery of gold in California, and the two between 1870 and 1890. We added 70,000 miles to our railway net between 1880 and 1890 — a record that no other country has equalled. By 1892 we seem to have met the more urgent demands for new lines, and we are now annually building less than 2000 miles of new roads. The face value of the capital now invested in American railroads is \$11,000,000,000. The number of persons employed in the railway service is 850,000.

#### THE RAILWAY CORPORATION

The agents that do the work of transportation by rail are the railway corporations. These “artificial persons”

are created by the several States and intrusted with the performance of services of a public nature. In all the German states and to a large degree in many other European states, the governments themselves provide the means of transportation by rail; but in the United States the ownership and management of the railroads is rightly regarded to be a task of greater magnitude than the administrative department of our government is as yet able to cope with.

The growth of the railway corporations of the United States has been typical of the evolution of industrial organisation in this country. The early railway corporations were small. The Philadelphia, Wilmington and Baltimore Railroad, for instance, comprised the lines of four companies. In 1850 the road connecting Albany and Buffalo included the lines of seven companies. During the last fifty years most of the small companies have united to form the corporations which now operate our large railway systems. Though the last statistical report of the Interstate Commerce Commission — the one for the year ended June 30, 1896 — contains financial reports from 1985 companies, there were only 782 “independent operating roads,” the remainder of the companies being subsidiary organisations. This report shows that forty-four of these operating companies have an aggregate mileage that equals nearly six tenths of the total railway mileage of the United States. Indeed, the statistician to the Interstate Commerce Commission declared in 1894 that “over 83 per cent. of the business of the railways and 82 per cent. of their earnings fall under the control of less than forty associations of business men.”

The Pennsylvania system affords a good concrete illustration of railway consolidation. That corporation, with its 9000 miles of road, was built up by the union of over 200 railroad companies, and it now comprises within its or-

ganisation 177 corporations — most, though not all, of which are subsidiary railroad companies. This one railway system does one seventh of the entire freight business performed by all the railroads of the United States and handles one eighth of all the passenger traffic.

#### THE FREIGHT SERVICE OF RAILROADS

The freight business of the railroads of the United States is much larger than their passenger service, the earnings from freight being nearly three times that from the passenger traffic. It is only in some of the New England States, the most densely populated parts of the United States, that the passenger receipts equal the freight earnings. The industrial conditions of the United States necessitate the movement of great quantities of bulky freight long distances. Our principal grain-fields are from 1000 to 1500 miles from the manufacturing districts and seaboard cities. Our richest iron deposits are in the States adjacent to Lake Superior hundreds of miles from the coal-beds of Illinois, Ohio, and Pennsylvania. Most of the cotton crop is moved long distances to reach the mills of New England and Great Britain. In fact, most of the products of our fields, forests, mines, and factories are marketed over wide areas. The average distance travelled by each ton of freight moved during the year ended June 30, 1896, was 124.47 miles; and, as the railroads carried 765,891,385 tons that year, the number of tons carried one mile was 95,328,360,278.

A comparison of the revenues received from the freight and passenger services by the American, German, French, and British railways is instructive. For each dollar received from the passenger traffic the American railroads earn \$2.95 from their freight business, the German

roads \$2.40, the French \$1.31 and the British railways \$1.17. The United Kingdom has the greatest volume of passenger traffic per population of any country in the world.

#### AMERICAN PASSENGER TRAFFIC ON RAILROADS RELATIVELY UNDEVELOPED

The long distances of the United States necessitate a large freight traffic but act as a hindrance to travel. It is a generally accepted but erroneous supposition that Americans travel more than any other people. A comparison of the passenger traffic in the United States with that in the United Kingdom, Germany, and France reveals some surprising facts. The figures are for 1896. The number of passengers carried one mile per mile of road upon the railroads of the United States was 71,705, in France the number was 273,315, in Germany 315,399, and in the United Kingdom 440,000. The average distance which the Briton travels per year by rail is 244 miles; for the American the distance is 209 miles, for the Frenchman 176 miles, and for the German 165 miles. The Englishman takes 24.4 trips per year on an average, the German 11.3, the Frenchman 9.6, and the American 8.2. Americans travel extensively, but it is evident from the foregoing comparisons that the possibility of developing the passenger service in this country has by no means reached its limit.

#### RELATION OF TRANSPORTATION ON RAILROADS TO ECONOMIC ORGANISATION

The economic changes which have accompanied the great development of transportation that has taken place during the last fifty years have revolutionised our indus-

trial and social life. Among the effects of developed transportation upon the economic organisation may be noted: First, that relations of producers and consumers have been fundamentally changed by placing a larger market at the service of both. Many classes of commodities are now bought and sold in a world market that were formerly restricted to local trade. Second, improved transportation has made the prices of commodities more uniform for different producers and consumers. The variations due to situation have been lessened. In a like manner there has been a decrease in those time variations in prices that result from changes in the supply of commodities. Improved transportation also makes prices lower—not only because it reduces the costs of moving the raw materials of manufacture and the finished products of industry, but also because it enables the merchant to turn his stock oftener and thus do business with less expenses for capital.

As a third effect of improved transportation may be mentioned the acceleration which it has given to the growth of cities. Cheap and efficient transportation has led manufacturers to locate their plants where they can command a large supply of labour and where they have the greatest advantages for the distribution of their products. The great manufacturing establishments are now located in Chicago, New York, Philadelphia, Pittsburg, and the other large cities. Conditions of transportation have become a stronger factor than even the location of the sources of raw materials in determining where an industry shall be established. The effect of the railroad upon the location of agriculture has been no less potent. The railroad has brought new agricultural regions into cultivation and destroyed the profits of cereal agriculture in many parts of the Eastern States.

Another important consequence of improved transpor-

tation and communication has been that of bringing the nations of the world into closer economic and social relations. With the growing solidarity of the economic interests of the countries of the world, with the multiplication of the intellectual and other social ties that unite the nations, their political relations inevitably change, and for the better. Nothing is doing more to advance the attainments of the cherished ideal of international amity than is the development of transportation.