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TRANSPORTATION IN INTERIOR CHINA

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WE sometimes forget, in the midst of this age of machinery and railroads, that we are only one or two centuries removed from the day of primitive hand labor, of the cumbersome wagon and sailing vessel. If we look back to the seventeenth century we find our ancestors making use of methods of transportation, manufacture and agriculture which differ only in a minor way from those now used in China. The isolation of the Chinese has prevented them from joining in the great industrial revolution which is going on in western lands. Previous to this sudden development, ten or fifteen centuries had brought very little advancement in the mechanic arts in Europe. China was then undergoing a similar slow development, and has continued somewhat longer along the same path before reaching its point of expression in the present decade.

Except for the innovations of the last few years, the Chinese employ the same methods of transportation and manufacture that were used by many previous generations. All are primitive, according to our western ideas, and all are very slow and tedious. Machinery of any kind is almost unknown in the interior, and the little which they have is laughable to us in its crudity. But, if the signs of the times do not deceive us, these primitive ways are soon to be superseded by modern methods of greater rapidity and efficiency. It may require many decades, yet the change promises to be rapid as compared with the long lapse of centuries which preceded it. In view of this expectation of the awakening of China, it may be interesting to consider in some detail the conditions which the new order of things is to supplant.

In a country so large as China there is of course great diversity of climate and topography, and consequently there are many differences in the means of transportation employed in this province and in that. The densely populated plains, of which we hear so much that we come to think of them as including most of the empire, comprise only one-twentieth of the land. A much larger part, lying principally in southeastern China, is hilly but is capable of supporting a large population in its broad valleys. The northern and western provinces, however, are largely mountainous, and only a scanty number of people live in the deep, rocky valleys. Obviously the modes of travel in these various regions differ greatly according to the conditions.

Among the mountains, pack-animals and men afford almost the only means of transportation. Carts are available locally in the broader valleys, but they cannot cross the rugged passes from one valley to another, and hence the commerce of such regions is largely dependent upon pack-

carriers. The two northwestern provinces, Shen-si and Kan-su, are thus situated. All goods which they import from the rich Yang-tze valley to the southeast are carried across the Tsin-ling mountains on the backs of pack-animals or coolies. Passengers must travel in a similar way. Many ride ponies, while the few who can afford such luxury are transported in "chairs" or palanquins, which are carried by coolies. Traveling by chair represents the acme of comfort, according to the Chinese idea, and is possible only for the official class and the wealthier merchants. There are, of course, no sleeping cars on such a route. The traveler spends the night in a wayside inn or village, after making a day's march of only twenty or thirty miles. The American reader will appreciate readily enough the advantages to be gained by the introduction of railroads into such a country, but, strange to say, the Chinese are not so easily convinced. They are rarely in a hurry, and the discomforts of their own method do not appear to them as such.

Transportation on the backs of men or beasts of burden or by boats laboriously tracked up the rivers are the only means now available in the mountainous provinces of western and much of northern China. In the lowlands of the east, conditions are more favorable, although the means used are in most cases quite as crude.

The wonderful system of canals which forms a network of routes for traffic in the plains of eastern China has been described by many writers. It affords a cheap and safe, even if not a rapid, means of travel throughout the length and breadth of the eastern lowlands. The horde of junks, large and small, which ply their waters, carry millions of tons, both of native and foreign goods, each year. Nor is there any easier or more comfortable mode of travel to be found in China than by boat through these interior canals. Provided one fits out his own boat it lacks nothing but the speed which the westerner demands from carriers in his own country.

Along the river banks at nearly all of the large cities of eastern China, there is a mass of junks and smaller boats so densely packed that the traveler is moved to wonder how each owner ever finds his own boat. The bare masts make a veritable forest around such great cities as Hankou and Canton. As is well known, these junks are used as permanent habitations by thousands of families who spend most or all of their lives in these movable homes. The internal traffic carried on by means of the junks is enormous in volume but has never been reduced to figures. When the wind blows in the right direction, the skipper of the junk hoists the familiar sail strengthened with bamboo slats. But at other times—and these probably seem to the poor coolie all too numerous—the boat must be dragged or "tracked" by the crew wearily tugging at the long hawser made of thin twisted strips of bamboo. In this manner for generations nearly all of the rice used by the Manchu troops and by much of the populace of

Peking has been transported up the Grand Canal from the rice fields of the southern provinces.

On land two vehicles are most in use for both freight and passenger traffic—the cart and the wheelbarrow. The carts are small cumbersome affairs, very heavy in proportion to the loads they carry. This heavy construction has probably been adopted because the roads are so bad that a lighter cart would be shaken to pieces. In western countries local or general governments build and maintain the principal roads, but in China this is not the practice. Until very recently there has been no spark of public spirit among the natives—no appreciation of the fact that what benefits the public as a whole adds to the advantage of the individual. The idea of doing anything for the common good seems utterly foreign to Chinese thinking. Thus it happens that instead of improving roads so that large vehicles may be used and drawn at a fair speed, both the vehicles and the speed are adjusted to the inexorable demands of roads which are usually as bad as they could possibly be.

The great popularity of the wheelbarrow in China is probably due to the fact that a vehicle with one wheel can more easily take advantage of the best parts of the road than one with two; furthermore, it requires no draft animals. The freight-barrow used by the Chinese has a capacity of 600-800 lbs, and, like the cart, is a very stout, heavy machine. It is made of wood throughout. There is no more characteristic noise in China than the incessant squeak which arises from the ungreased axles of the wheelbarrows in town and country. The barrow is not always a one-man vehicle; often a donkey or a mule is hitched to the front of it, after the manner of a plow; and when the wind is favorable the thrifty coolie not infrequently rigs a sail to aid him in his weary struggle with a load which always seems much too big for him. The wheelbarrow as a convenient carrier for small loads about farms and villages is familiar enough in western lands, but in China it is one of the most important means of transporting "through freight," and even passengers. It is not uncommon to see a merchant, returning home from a distant city, riding on one side of a wheelbarrow, while his new stock of goods is packed on the other. There are coal mines in Shan-tung (one of the eastern provinces) whose entire output goes by wheelbarrow to cities and towns 50-100 miles away. In the case of coal, the rapid increase of the freight charges limits the sale to a small district. More valuable commodities are often carried much farther.

At no very distant day, when railroads have been extended widely through the empire, we may expect the most profound changes in the present mode of living among the Chinese. The railroad will not drive out entirely the cart and the barrow, the donkey and the coolie-porter. It will merely supersede them in long distance hauling. Large benefits to the

people will unquestionably accompany this change, and some of these may be pointed out in advance.

It is obvious that the cost of all imported articles in the interior and of exported articles at the coast will be greatly reduced by railway transportation. A more important change is that which will affect low grade commodities such as coal, building stone and grain, which can not now be carried any great distance from their sources, on account of the excessive expense of coolie and cart traffic. One of the wonders of American civilization lies in our ability to buy in almost any city the products proper to almost any other part of the country. Here in Wisconsin we burn coal from Pennsylvania, build our public edifices of limestone from Indiana or marble from Tennessee, and buy at moderate cost the bananas of Cuba or the oranges of California.

Such things are not yet possible in China. The coal from Shan-si, carried on donkeys or coolies, is doubled in price every fifteen or twenty miles, and so can have only a local market. For this reason one sees the peasants of the great Yellow river plain burning corn-stalks for fuel in their cooking stoves and making no pretense of heating their houses during winter. Coal is beyond their reach now, but with railroads they might have an ample supply at \$2 or \$3 per ton.

Building material forms another group of commodities in great demand in China, but now limited to local markets by the primitive methods of transportation. The improvidence of the Chinese, like the reckless extravagance of Americans, has long ago permitted the destruction of the forests, so that lumber has become too scarce to be much used as building material. Mud bricks are the common but unsatisfactory substitute. Of good stone, however, these same deforested mountains could furnish all that would ever be needed. Railroads would carry stone all over the populous plains where it is now too expensive to be used for anything but mill-stones and ornaments. The extension of the use of these two natural products alone would more than justify the building of all the railroads now contemplated in China.

More than any other country, China is subject to famines, especially in the isolated northwestern provinces. The fact depends partly on the lack of free communication between different parts of the empire. In 1900 a severe drought destroyed the crops in Shen-si province and soon reduced three million people to starvation. More than a third of these actually perished for want of food. And yet, at the same time, bountiful harvests were gathered in the eastern and southern provinces. With railroads, supplies could have been imported at moderate cost, and nothing more than a period of "hard times" would have resulted. It would be impossible today to have a famine in Idaho, and yet the topographic situation of Idaho may be well compared with that of Shen-si. The difference in the two cases is largely—railroads.

These examples serve to indicate the sort of benefits which China should receive from the building of railroads. There may be much opposition from the ignorant and the mistaken among the natives, and there may be periods of halting and even retrogression in the process, but the overwhelming advantages of the railroad over other means of transportation on land will eventually crush out all objections in China, just as they did in England in Stevenson's time.

COMMERCIAL BRAZIL

(From *Commercial America*)

BRAZIL has an area of 3,218,000 square miles, or nearly as much as all the rest of South America, and 200,000 square miles more than the area of the United States, exclusive of Alaska.

Brazil is thinly populated, having about 21,000,000 inhabitants, or about 80 per cent. as many as all the rest of South America. New York, Pennsylvania and Ohio combined have as many inhabitants as all of Brazil.

The language of Brazil is Portuguese, while that of all the rest of South America, excepting the Guianas, is Spanish.

The Portuguese made their first settlements in Brazil as early as the year 1500, and the country continued under Portugal until 1822. It was the last of the South American countries to become a republic. In 1891 it adopted a constitution similar to that of the United States, and each of the provinces was made a state with an independent state government as in the United States.

On account of the large exports of coffee and rubber, Brazil has for a long time been one of the most important countries in South America from a commercial standpoint and is now second only to Argentina in the total value of its foreign trade.

The value of the imports and exports is given in the following table:

Year	Imports	Exports	Excess of Exports
1901	\$ 96,175,000	\$194,965,000	\$98,790,000
1910	235,574,000	310,006,000	74,432,000

More than one-half of all the imports came from Great Britain, Germany and the United States.

Great Britain supplies nearly all the coal and three-fourths of all the cotton goods. It also leads in the imports of iron and steel and machinery. Germany leads in the imports of arms and ammunition, cement, leather and paper. The United States leads in the imports of mineral oils, resin, turpentine and electrical apparatus. France leads in butter, drugs and chemicals. Argentina leads in flour; Uruguay, in jerked beef; Belgium, in rails.