

HISTORY OF RUBBER INDUSTRY IS GIVEN

Far East Replaces Brazil as Greatest Producer.

CEYLON NOW IS CENTER

Few Seeds Taken From Brazil by British Officer Effects Big Transformation.

The following interesting account of the expansion of the rubber-growing industry in Ceylon and the far east is furnished by the United States Rubber company:

Through one of those mysterious coincidences as nicely timed that they are regarded by many as a distinct act of Providence, there were set in motion in the early '70s two separate activities which were to coalesce more than a generation later and make possible the great automobile industry of America and the attendant tremendous expansion of the rubber and petroleum industries.

One of these activities was the effort of Selden to produce an automobile engine. Here was the inception of what has been termed the most gigantic mechanical enterprise of the ages. It took many years for the flower to bloom; but from the day of those first experiments the advent of the automobile was constantly imminent.

As if the unseen forces that guide human affairs were fully cognizant that within a brief period this effort of Selden's was to blossom fully in the great automobile industry of today, another man in another quarter of the globe, and with no thought of the automobile in mind, took at about the same time the steps which have made it possible to supply the rubber industry the large supplies of rubber on which automobiles are so vitally dependent.

Rubber Near Necessity. What the automobile would be without rubber tires would be hard to imagine. Without rubber some automobiles would undoubtedly be manufactured, but they would certainly be rattling affairs of slow speed and much vibration. It is quite true that following the invention of a successful engine, automobile development has been conditioned very largely upon the development of tires.

This fact is amply demonstrated today through the revolutionary changes taking place in motor truck construction due to the adaptation of the pneumatic tire to use on motor trucks. Germany had a chance to find out what automobile tires were like during the war and she did not relish the experience.

It is the purpose of this article to show how it happened that when the automobile industry burst upon the world, with a need for rubber which the recognized sources of supply could not have been expected to supply so adequate that the progress of the industry has not been halted for a second by any shortage of rubber. In other words, this is the story of the rubber plantations in the far east.

Until ten years ago rubber meant rubber from Brazil. There were some other sources of supply of inferior grades, but practically all the prime rubber came from Brazil. In less than a decade the far east has jumped to the front and is now producing nine-tenths of the rubber of the world.

Brazil First Producer. The history of the passing of the glory of Brazil in this particular has a touch of romance in it. In the '50s an Englishman named H. A. Wickham spent much time in Brazil in the rubber field. He conceived the idea that the rubber trees which grew wild in Brazil could be cultivated and grown on plantations. But he was ahead of his time and found little encouragement.

Wickham finally enlisted the interest of Sir Joseph Hooker of Kew Gardens, London, who had been considering the possibility of introducing the trees to India. Hooker in turn interested the government of India in the project, with the result that Wickham was given a permit to introduce the Indian government for the introduction of the Brazilian tree into India.

How to fulfill the commission was the problem. Hooker had already tried to effect it, but without result in spite of the resources of Kew. Wickham was given the task of introducing the tree into India. He was to be paid for his services by the Indian government for the introduction of the Brazilian tree into India.

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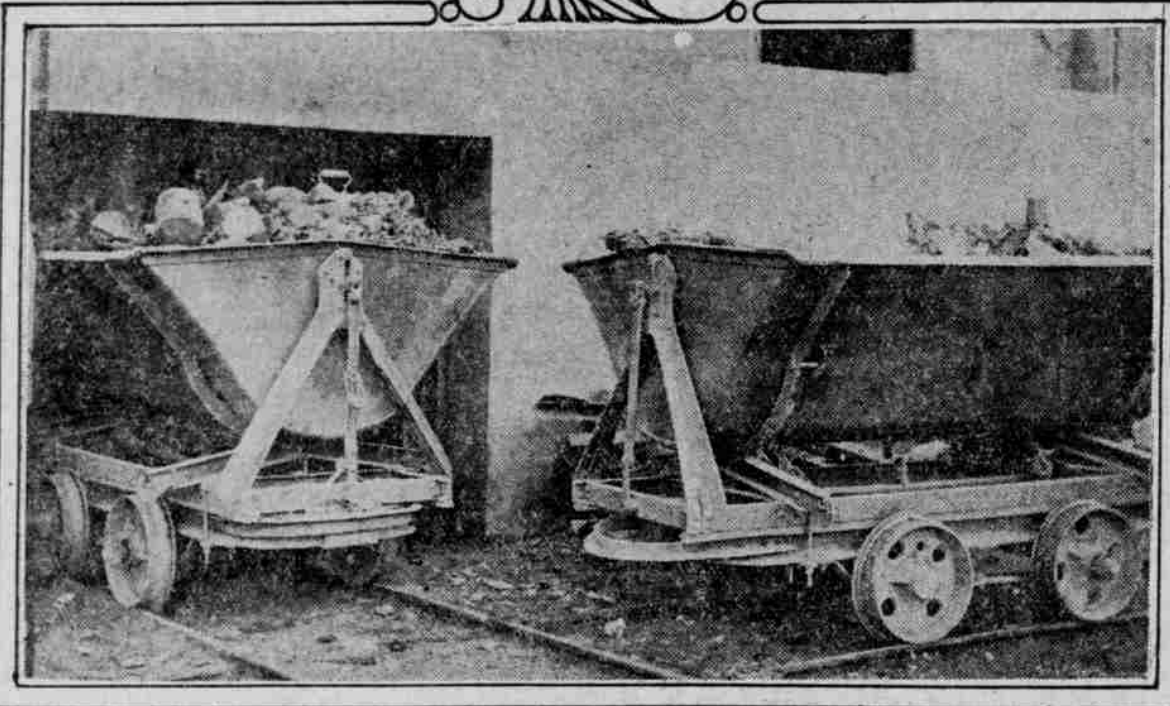
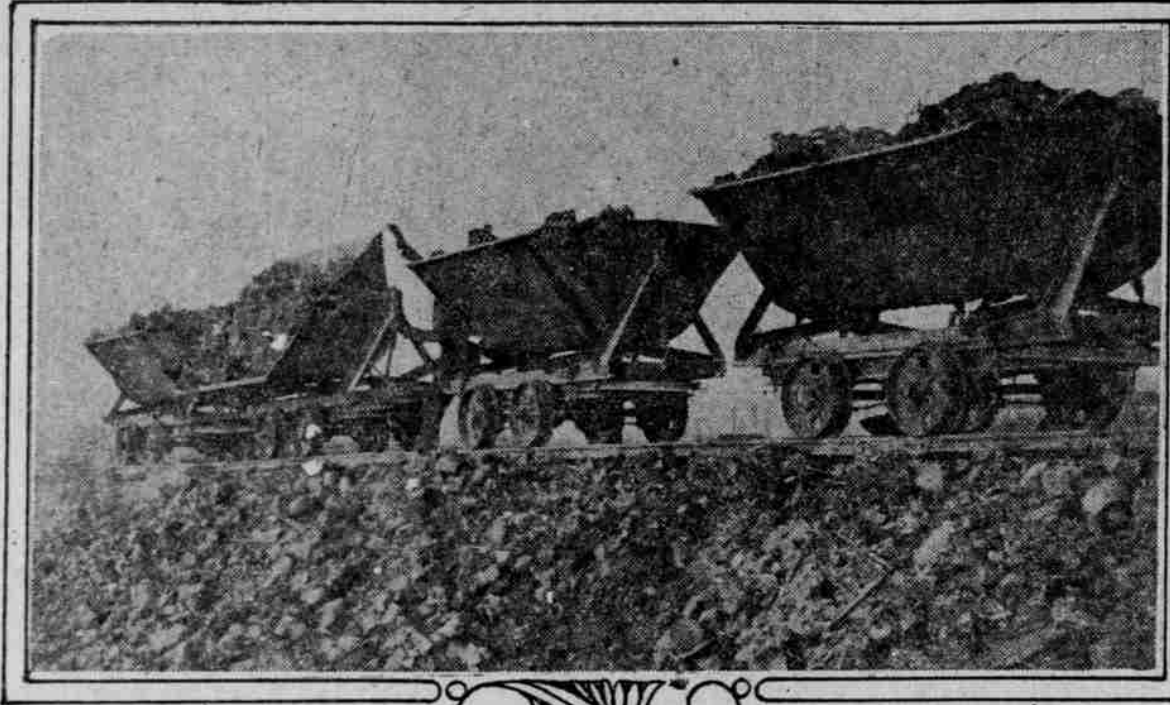
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LEE TRAILER BODIES SUCCESSFULLY INVADE NEW FIELD.



Above—New type of dump cars recently installed at the city incinerator in North Portland. The old carriages have been supplied with new Lee line side-dumping bodies, such as have come into popularity lately in connection with light auto trucks and trailers. Below—Close-up view of loaded trucks ready for the incinerator. The new dump bodies were sold to the city by the William L. Huggins company, distributors of the Lee line in this locality.

polite, full of mutual compliments in the best Portuguese manner, enabled us to get under way as soon as the captain had got the dingy hauled aboard.

"I got the captain to put me ashore at Kew and then posted over to Kew and saw Sir Joseph Hooker, so as to dispatch a night goods train to meet the ship on arrival at the Liverpool docks."

Sir William Thistlethorpe speaks interestingly of the next step:

Precious Seeds Planted. "I can assure you that on the 14th of June, 1875, when Mr. Wickham arrived at Kew in a hansom cab with his precious box of seeds, not even the wildest imagination could have contemplated its result. I saw Mr. Wickham's seeds planted. We knew it was touch and go, because it was likely the seeds would not germinate."

The seedlings were sent to Ceylon because it was decided that the climate of the island was better suited than that of India for the rearing of the precious trees. The gardens at Heneratgoda, 15 miles from Colombo, were opened as their permanent resting place.

The first tree flowered at Heneratgoda in 1881 and in that year the first experiments in tapping began. The plantations were thinned out in 1885 and in 1893 250 seedling plants were raised, most of which were distributed to planters in Ceylon and similar numbers were disposed of in the years immediately succeeding, the seeds being eagerly taken up at a price of 10 rupees, about \$1.20 a thousand.

Ceylon Industry Grows. From the few plants thus cared for in their youth, many of which have now grown to be monster trees, have sprung the whole of the Ceylon industry, as well as a great part of that existing farther east.

In 1877 25 trees reared in Ceylon were sent to Singapore, in Malaya. Some were planted in the Singapore gardens and the rest taken to Perak. Some of these original trees are still standing and one of them is believed to be the biggest tree in the world yet recorded among the plantations. The tree fruited in Singapore first in 1881 and the seed was sent to Borneo and elsewhere.

In 1891 samples of Malaya rubber were sent to London and pronounced good in 1889 some sheets were sent in London. The planters in Ceylon did not take hold of rubber planting with the same eagerness as did the planters of Malaya. In Ceylon they were making good profits in tea growing and had no need to make a change. But in Malaya the planters and the financial interests in Europe who had sent them were sick to death of the struggle to make a living out of coffee, and

though in fear and trembling, began to plant this new thing, rubber, hoping if possible to save their estates from abandonment.

Lucky was it for Malaya that she fostered this new enterprise, for now within her territory lie the greater part of the rubber plantations of the world.

It was very difficult at first to induce planters in Malaya to look with favor on cultivation. Trees were planted wherever possible. At length the sudden rise in the price of rubber, mainly due to the development of the automobile industry, forced the idea of cultivation on the attention of the planters and the investing public, especially that of Great Britain. A few pioneers began to cultivate their trees and in a few years there arose a boom in cultivation such as has never occurred in any other industry.

Great Demand Developed. The plantation produce first attracted serious attention in the manufacturing world about 1898; but it was not until 1905 and the two following years that the rush into rubber took place, which forms the most striking episode of this story.

To show how lightly the plantation product was regarded by European and American rubber manufacturers, it is only necessary to state that it took from 1905 to 1907 for the annual production of plantation rubber to grow from four tons to 43 tons. In 1907 the output reached 1000 tons, in 1911 14,500 tons, in 1915 107,800 tons and in 1919 285,225 tons. In comparison, the Brazilian output grew from 27,336 tons in 1910 until it reached its maximum of 42,410 tons in 1912, since which time the annual output has averaged about 35,000 tons.

The romance of plantation rubber is the old, old story, a few resolute men working in eastern jungles, having faith in the ultimate success of the work they had undertaken, and that of those daring to put their capital in the hands of such men. A few years ago that practically all the planters were feeling acutely the pinch for funds to tide them over the early stages of the enterprise. Many cases could be cited where 15 years ago \$25,000 to \$50,000 could not be found to carry on estates being planted in rubber, which are valued today at \$400,000 to \$500,000.

When a market for plantation rubber began to develop the needy planters were astounded at the fabulous estimates of profits which they figured out of their estates and dared not present them to financiers until they had divided the probable profits by four. Even then these estimates appeared in the light of a fairy tale and London financial men shrugged their shoulders, buttoned up their pockets and thought they had done a good day's work when they had got rid of the importunate planter and his castles in the air.

When the estimated profits began to be fulfilled the British public rushed madly to secure an interest in every venture placed before them. They were as anxious to risk their money to get a share of the wonderful profits as are Americans today to part with their liberty bonds, in order to partake of visionary dividends in alluring oil ventures. Conditions became such that respectable newspapers refused to carry any advertisements of rubber projects.

The excitement culminated in the historical and regrettable "boom" of 1907.

By good fortune the bubble was deflated without bursting and now the financial affairs of the plantations are on a very substantial basis.

The area of plantation rubber in acres was 116,509 in 1905. In 1919 a fairly accurate estimate placed the acreage at 2,910,730. While Europe and especially England—was devoting its attention to the growing of crude rubber, America was concerning itself with the production of rubber manufactures, and the success of the European investment in plantations has been a direct result of the enormous market created for rubber by the energy of American manufacturers.

American interest was attracted to the plantation industry in 1910, when the British and other Europeans had invested between \$300,000,000 and \$400,000,000 in estates. The United States Rubber company, the largest consumer of crude rubber in the world, was one of the first of the American concern to investigate the possibilities and enter the field.

The Dutch island of Sumatra was chosen for the company's activities. This American corporation has established there the largest single rubber plantation in existence. The tract contains more than 70 square miles of trees in a high state of cultivation and close to 20,000 employees are at work in the great orchard. The high standards of administration and scientific culture which have marked this project have implanted in the minds of the dwellers in the far eastern clime a thoroughgoing respect for American efficiency.

While the \$800,000 cars of the United States firm, along with their tires made of plantation rubber, one cannot but pause to wonder again at the curious coincidence that has made possible the furnishing in abundance of the necessary rubber.

Few of the planters who embarked in the early days on the plantations of the automobile industry had any idea of the vitality of the automobile industry, causing it to advance in times of depression.

This situation is not due solely to the creative brains of the automobile industry. It rests on an even firmer basis—the insistent demand of modern civilization for better transportation, coupled with the breakdown of street railway lines in many suburban communities, which are the result of great automobile industry of today.

AUTO TRIP INEXPENSIVE MACHINE GOES 3094 MILES ON \$65.15.

Willys-Knight Car Drives Across Continent Without Change of Air in Tires.

Sixty-five dollars and fifteen cents was the cost of a week's railroad transportation in these days of high railroad rates and Pullman tariffs. But that's exactly what it cost E. L. Dafoe of Flint, Mich., to drive his new Willys-Knight car on a pleasure trip to San Francisco and to take many side trips en route.

Mr. Dafoe's trip marked an unusual record in cross-continent driving. Including side trips, Mr. Dafoe and his party covered 3094 miles between Flint, Mich., and San Francisco. Despite a heavily loaded car, the Willys-Knight made the trip on exactly 155 gallons of gasoline. The car used only nine quarts of oil.

This trans-continent trip, over all kinds of roads and in all kinds of weather, brought forth a mark with the Willys-Knight of only a fraction under 20 miles to every gallon of fuel used and an average of about 1370 miles to the gallon of oil. The total expense for gasoline and oil was \$65.15.

But Mr. Dafoe regards as even more remarkable two other phases of the car's performance. There was no stop for repairs of any kind. The car made the trip without trouble. And it arrived in San Francisco with Flint, Mich., air in every one of the tires. On the entire 3094-mile run not a single tire was changed.

TOTAL 1921 FACTOR IN TRANSPORTATION

Every Business and Every Product Is Affected.

WASTE TO BE REMEDIED

President of National Automobile Chamber of Commerce Says Cars Will Solve Problem.

BY CHARLES CLIFTON. (President National Automobile Chamber of Commerce.)

The year 1921 will be a transportation year. Every business and every product is called upon to face its part in the reconstruction. Waste must be cut. Extravagance must be eliminated. Efficient methods must prevail.

The salesman who goes afoot or depends on irregular train service when he could double his productivity by using a car must go into the discard. The real estate man who depends on trolleys alone will find his business seriously curtailed. The farmer who depends on a team to connect him with the town will find his family discontented, his farm shunned by the hired man and his profits reaching the zero point.

Farmers Heaviest Buyers. The farmer, moreover, is the heaviest buyer of cars, owning over a third of all automobiles registered. The rural districts of the United States purchased 60 per cent of the 1920 motor-vehicle output. Of the cars in this country, 33 per cent are owned in communities of 1000 population or under, and 55 per cent are owned in districts of 5000 population or under. This is to be a year of conservatism, when the weak will go to the wall and the strong will add to their strength.

People will want cars. But they will not ask as in years gone by: How much speed? How much comfort? How much prestige? The test will be: How much economy in transportation? How much gain to my business?

Let us examine the fundamental business conditions. The country is rich. Products abound. Eventual prosperity is inevitable. The 1920 harvests have been better than average. Labor is more plentiful and more efficient than during the war and post-war years.

Business contraction has been due to a shortage of credits, not to a lack of goods. After the war, after the high prices and speculation, a period of pruning was inevitable. When one looks back to 1873 and to 1903, one realizes that the readjustment has come with surprisingly small discomfort. Price declines have taken place rapidly, and as soon as the public realizes that the lowest price levels have been reached there will be a resurge of trade.

Automobile Record by Years. The degree of business ability to be found among the manufacturers of cars and trucks is shown by the growth of the industry. For 20 years the making of motor vehicles has been gaining steadily. One exception is to be found in the passenger cars, voluntarily curtailed their output in order to make airplanes, parts, and instruments of war. Here is the record:

In 1905 general business conditions were bad, but motor vehicle production advanced over the only preceding year for which statistics had been gathered (1899) and probably showed some gain. In 1906, however, there were no records kept for 1900, 1901, 1902. The 1899 figure is from the government census, whereas not until 1908 had the motor vehicle industry statistics for the industry as a whole.

Output Curtailed in 1907. In 1907 the output of many industries was heavily curtailed, but it records for the making of automobiles were broken. This gives some idea of the vitality of the automobile industry, causing it to advance in times of depression.

This situation is not due solely to the creative brains of the automobile industry. It rests on an even firmer basis—the insistent demand of modern civilization for better transportation, coupled with the breakdown of street railway lines in many suburban communities, which are the result of great automobile industry of today.

There are 7,000,000 cars in the country and about 800,000 trucks. The passenger mileage of automobiles in 1919 was 48,000,000,000, whereas the passenger mileage of railroads was 49,000,000,000. Of the motor cars 90 per cent are used more or less for business, 10 per cent for pleasure.

Trucks have always been sold by serious merchandising campaigns, yet there is room for expansion here. An example of this is the truck chassis for motor busses.

Readers of current magazines have doubtless seen in the newspapers or magazines the fact that the compiled testimony of thousands of car owners shows that the user increases his productivity 57 per cent as a result of owning an automobile.

Suburbanite Knows Value. City readers may feel that this is a large figure, but the suburbanite knows the value of the car. The farmer who has suffered from rail strikes, the country banker, the doctor will know that this figure is a moderate expression of an every day human experience.

But before leaving the city dweller let us examine the facts concerning his coming and going. Official records of New York City show that 154,700 cars and trucks enter and leave the metropolis daily, bringing 420,000 persons for their errands in and out of New York.

The trend of population to the cities is certain to make the suburban market for cars an important factor in the industry. This is but one consideration, however, in the growth of the automobile industry. Various classes of business and professions are finding out that cars are essential.

DODGE BROTHERS BUSINESS CAR

It attracts those who are thoughtful about the quality of the things they use, but who also keep a careful eye on their spending and saving.

The gasoline consumption is unusually low. The tire mileage is unusually high.

Washington at Twenty-first

Covey Motor Car Co.

Washington at Twenty-first

Washington at Twenty-first

Washington at Twenty-first

Washington at Twenty-first

Washington at Twenty-first

Washington at Twenty-first

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