

China's Industrial Revolution Now In Progress

Chow Tsz-Chi, Former Minister of Commerce and Agriculture, Points Out the Opportunities In His Country for Americans

By Chow Tsz-Chi,
Former Minister of Commerce and Agriculture.

Chow Tsz-Chi, until recently Chinese Minister of Commerce and Agriculture, wrote the following article at the suggestion of two American women journalists. He discusses the industrial revolution that is sweeping through his country and suggests means for development of trade between the United States and China. One of his chief ambitions is to bring China and America into closer social and commercial relations. Chow Tsz-Chi has since the first revolution been Director General of the Bank of China, Vice Minister of Finance, Minister of Communications, Finance, War, and Governor of Shantung.

Although Minister of Agriculture and Commerce for a comparatively short period, he instituted many reforms and created bureaus of research and investigation that have fertile possibilities for the future of China, if placed in the control of honest and patriotic citizens. Having lived twelve years or more in America, his point of view has been influenced by American ideals and his sympathy is decidedly American. He was sent to America in 1896 as student attaché to Washington, and studied for four years in George Washington University. Later he was Consul in New York, Consul General in Havana, six years Secretary of the Legation in Washington, and Consul General in San Francisco.

TO the uninitiated who knows China only through books that have not followed the changing times, and to the tourist who cannot penetrate beneath the surface, the Celestial Empire means dusty temples falling into ruin, yellow and jade tiled roofs, porcelain dragons, beggars and bargaining for bits of faded brocade. To them, China is a country of strange superstitions, picturesque customs, and archaic methods of doing business. They do not realize that China is discarding its mediaevalism very swiftly, and striving to catch up to the Western countries in internal development, commerce, and industry. Her old indifference to the material development of the West is being replaced by a new spirit introduced by a generation of young men who realize that China must turn the way of her ancestors into the sterner and more efficient mold of the twentieth century, if her future is to be assured among the congress of nations.

During the four years of the republic

this spirit has had an opportunity to produce actual results. The Government salt monopoly has been completely reorganized on an efficient basis, a comprehensive railroad scheme embracing seven lines with a total mileage of more than 7,000 has been projected, and partly put through in spite of the European war and the inavailability of foreign funds; a Bureau of Irrigation is making a preliminary survey for channels, a Bureau of Conservancy is engineering and carrying on a war against the floods which devastate certain large areas yearly, cart roads are being built in the provinces, mining is being encouraged by more favorable regulations, large loans have been subscribed by the people of China for the reform work of the Government, and trade and commerce are generally being stimulated.

Perhaps no single force has been more responsible for introducing improved methods of agriculture and encouraging industry than the Department of Commerce and Agriculture. Under the direction of this department, the first Bureau of Forestry has been established with a young American forestry expert as co-Director; model farms and experiment stations have been opened; a Bureau for Collecting Statistical Data from the various provinces in regard to their trade and commerce has been created; steps have been taken to organize on a large scale the principal industries of the country, such as tea and silk, and to standardize them for purposes of export trade; and in every way the most earnest efforts are being put forward to lift merchants out of their narrow ruts into the wider fields of world commerce.

Agriculture has from time immemorial been the occupation of the masses in China, and therefore the prosperity of the country largely depends on the well being of the farmers. The old Emperor always took a great interest in agriculture. The Temple of Agriculture in Peking, where the Emperor, dressed in a peasant garb of imperial yellow, offered up prayers for the harvest in a festival very much like the American Thanksgiving, and a vast bonfire of many different kinds of wood was made, and the Temple of Earth, where he came every year during the Summer solstice

to make an offering at an altar composed of white, yellow, red, and black earth, testify to the dignity of the agricultural occupation.

The most impressive imperial recognition was that made at the famous Temple of Heaven, where a compound was set aside for harvest prayers. In the first year of the republic these ceremonies were abandoned, but the people were so displeased that the President was forced to restore the annual pilgrimage to the Temple of Heaven. During the Manchu dynasty a Board of Agriculture, Commerce and Industry was actually established, but nothing was ever accomplished in a serious way. An experimental station was opened just outside the walls of Peking on the road to the Summer Palace, but it was really only for the amusement of the old Empress Dowager, who wanted to see what farming was like. No serious work of a scientific nature was attempted.

This play farm of the Empress Dowager has been reorganized as the Peking Agricultural Station to help the farmers of Peking and vicinity, and to serve as a radiating force for all the experimental work done in the provinces. Exhibitions and lectures, distribution of seeds and fertilizers, night classes and classes for children, and expert information freely given out at any time gradually are bringing the farmers to appreciate the difference between their own poor and generally unsatisfactory products and the products grown on the model farm. There are now twenty-two experimental stations distributed throughout the various provinces, under the supervision of graduates of the provincial agricultural colleges. Two months ago the administration of the provincial experimental stations was reorganized under the control of the central experimental station at Peking, which is to act as a kind of clearing house for the reports of all other stations. These reports form a basis upon which inspectors will be sent out to give definite assistance where it is needed. Besides the experimental stations, many model farms have been established. In the vicinity of Peking alone there are four such farms, and in the metropolitan district in which Pe-

king is situated there are twenty, each extending its influence over a radius of twenty or thirty miles. Important services are rendered in the improving and analyzing of the soil, in practical demonstration of scientific farming, in distributing improved seeds—wheat, maize, millet, and soya beans; in distributing fertilizers, and in destroying injurious insects.

Another means extensively adopted is the special public exhibit and the annual provincial exhibit of agricultural products, at which selected seeds are distributed, for it has been proved that one great cause of bad crops in China is the deterioration in the quality of seeds. Finally, in more than twenty provinces conferences of farmers have been held, and local farmers' organizations have been established in 207 districts. Agricultural experts are being trained more and more in the provincial agricultural colleges, but large numbers of them have gone to foreign countries, principally Japan and the United States, to receive their education.

Closely allied to the educational propaganda and scientific experiments in agriculture are the efforts of the department to induce merchants to form organizations for mutual benefit, and to improve the quality of standard articles for exportation. It is almost as difficult to get the business men to co-operate and adopt progressive methods as it is to make the farmer see the necessity of farming scientifically. The tea trade, which should be one of the most prosperous of all in China, has been rapidly declining before the increasing popularity of Ceylon and India tea, partly because there has been no association among merchants to push sales abroad and control market prices, and partly because no effort has been made to improve the color and taste, so that China tea can compete with teas from other countries.

The Ministry of Commerce and Agriculture has established an experiment station at Keeman, Anhui Province, which is the best tea-producing centre, to show the producers how to plant, fertilize, gather, manufacture, and put the tea on the market. Rewards and bonuses have been offered to the most successful producers, and the tax on tea lowered for their benefit. Circulars have been sent to the Provincial Governments giving concise instructions regarding the treat-

ment of the tea plant in the early Spring, and picking and packing. Bureaus have been established in Hankow, Shanghai, and Foochow, to try to do away with artificial coloring and other irregular practices, such as mixing the tea leaves with buds and stems.

The tea trade is concentrated in Hankow and Shanghai. A Central Chinese Tea Association, with general offices in these two cities, has just been formed for the purpose of raising the standard of Chinese tea, and of standardizing it as a product by means of trademarks and uniform prices for different grades so that it can be ordered from samples. Finally, the association will launch a vigorous advertising campaign for the purpose of popularizing Chinese tea in foreign markets.

Tea merchants are beginning to look to the department for assistance. Recently the Hankow merchant sent a memorial to the Ministry, requesting that immediate steps be taken to encourage the manufacture of red tea to meet adequately the demands of the market. The Hankow authorities and the Ministry cooperated to meet the situation, and in a short time the merchants and growers were receiving considerable profit. The measures taken to improve the tea trade have already resulted in the best tea season that China has had in ten years, the export to Great Britain alone showing an increase of 15 per cent. from 169,198,000 pounds for 1913-14 to 189,250,000 pounds for 1914-15. With the increasing interest in making a better article for export there is no reason why China should not take its place with Java, Ceylon, and Japan in tea production and exportation.

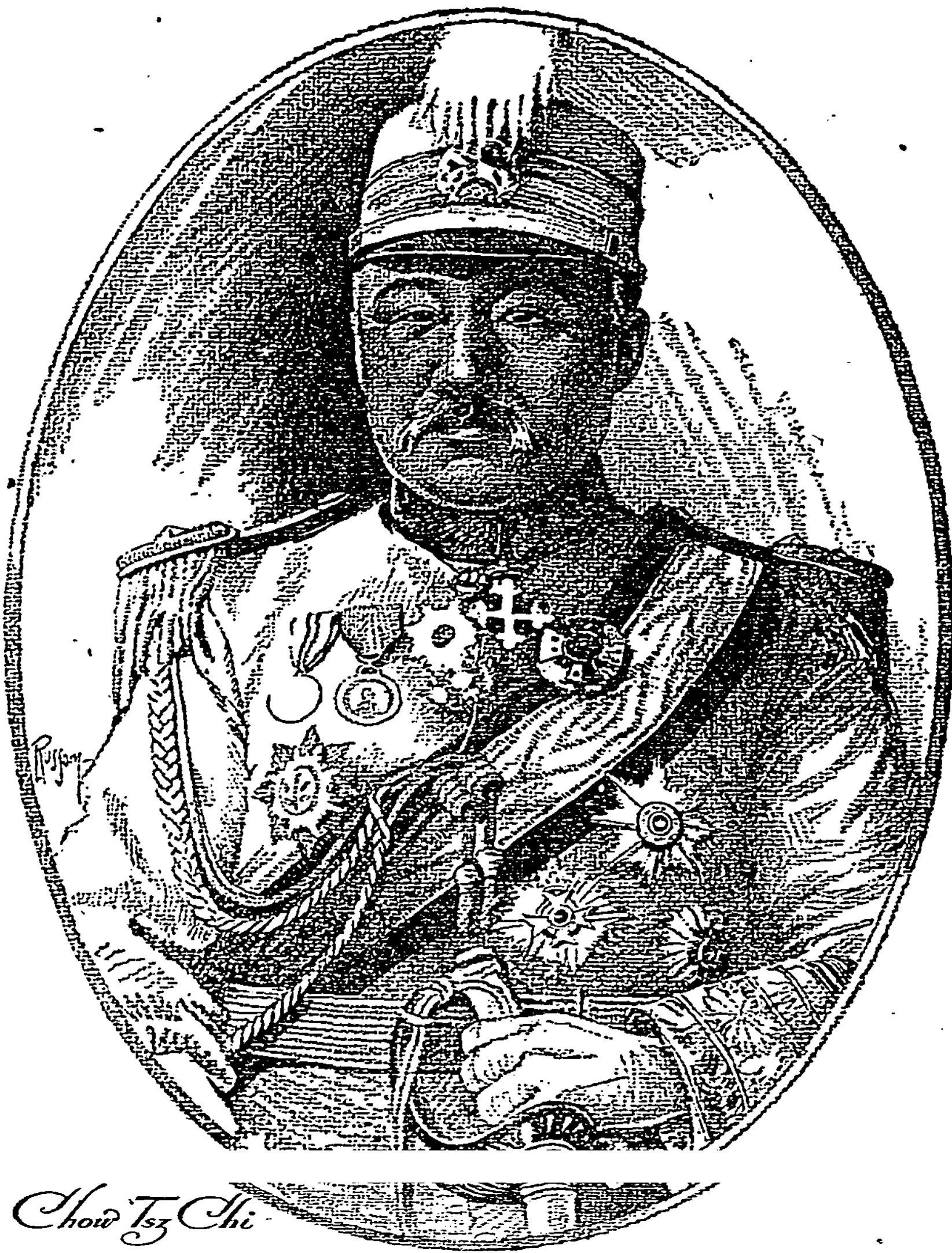
In the silk industry not much interference or assistance is necessary on the part of the Government. The silk merchants are among the most wealthy and progressive business people of China, and if they are shown the first necessities in the manufacture of silk for foreign markets they will continue independently along progressive lines. The importation of weaving machinery is being introduced. Collections of samples are being made under the direction of the department of the kinds of silks wanted in foreign markets. Already a large assortment has arrived from the United States. A special mission is being sent to the silk-producing provinces with an exhibit of these samples, and definite instructions regarding the needs and tastes of the foreign buyer. In addition, millions of mulberry trees have been distributed to the farmers of Chihli, Shansi, and Shantung Provinces, and at the same time improved methods of sericulture are being taught.

There are no cotton factories belonging to the Government, but special efforts are being made to develop the cotton industry, and a regular campaign has been inaugurated. An American cotton expert, H. H. Jobson, has been engaged to direct the work of the new bureau, pamphlets on improved cotton growing are being distributed, and men sent out to lecture in the provinces where cotton is grown.

China ranks second in the import of cotton manufactures of all kinds, India taking first place; it takes first place as an importer of yarn, and third place in cotton production, the United States and India exceeding it. About 70 per cent. of the cotton exported from China goes to Japan, the remainder going to the United States. The raw cotton coming into China is imported from the United States and India.

According to the last available statistics, there are approximately 1,000,000 spindles in operation in the Chinese cotton mills, and about 4,500 looms. Over thirty modern cotton factories have been established in six provinces, and more are being built. Recently a contract was placed with a Boston firm for two large spinning mills of 25,000 spindles each, to be built in Tien-tsin. They will be the most modern and well-equipped mills in China. Important factors which make China a splendid field for the development of cotton manufacture are the large market for yarn and cloth of a coarse quality which does not necessitate skill in production, a good supply of locally grown cotton, an abundance of cheap labor, and cheap power, owing to the proximity of coal supplies.

With the organization of railroads and internal arteries of communication the great mineral regions of China will be thrown open to development. In order to



consolidate all the work relating to mining, a special mining bureau has been created under the Ministry of Commerce, with controllers in the different provinces to promote mining enterprises and encourage the people who wish to engage in this industry. A Bureau of Geology is working on a survey of the utmost importance, which will not be completed for ten years. The same bureau is conducting a metallurgical laboratory for the purpose of research and investigation. New mining laws have been passed, and these are more favorable to the development of mining industries. Recently the taxes have been considerably reduced.

The owners of small mines have found it increasingly difficult to operate under the old conditions, and many have deserted their mining to enter other occupations. As a result, China has actually had to buy iron and brass from abroad at high rates, when great unworked fields are lying neglected at home. Every effort is being made to stimulate interest on a large scale in mining enterprises, by introducing modern methods of smelting ores and modern machinery. If blast furnaces and modern machinery were introduced, the output of pig iron, for instance, would be sufficient to supply not only the home market but the markets of Japan and the United States as well. Under present conditions the annual output is only 300,000 tons.

One of the most important of the minor reforms planned by the Department of Commerce and Agriculture is the standardization of weights and measures. The extreme irregularity of weights and measures in China has a fluctuating effect upon the trade of the country. The carpenters, silk merchants, stationers, and various other tradesmen, all use different measures. In the silk trade alone there are three kinds of measures, and weights vary not only from city to city, but from shop to shop. The Ministry sent a special commission abroad to study the methods of manufacturing weights and measures, and preparations are being made for the ultimate admission of China into the International Congress of Weights and Measures.

A Government factory for making weights and measures has been established in Peking, and, with the co-operation of the police, the old weights and measures are being collected from all the shops in Peking and replaced with those of uniform standard, much against the will of the shopkeepers who carry on dishonest practices through the absence of standardization. Special courses

going to America to make arrangements with American firms for buyers, managers, and salesmen in all the principal ports to collect raw materials and manufacture goods.

One of the chief reasons why American trade in China has suffered in the past is lack of effective commercial organizations. Formerly, most of the American trade in China was handled by German or British firms. The Germans, English, and Japanese have been successful in China because they have given the people what they wanted. The British have been in China a long time, and are respected and known to be reliable. The Germans meet the Chinese half way and are always willing to go to any amount of trouble to make their goods satisfactory and to meet infinitesimal demands. In short, they adapt themselves to the Chinese. The Americans can do no better than to combine the best method of the British and Germans.

The first thing that is necessary is infinite patience, for deals cannot be consummated swiftly. It is necessary to win the confidence of the Chinese, who are by nature suspicious of foreigners whom they do not know. A knowledge of Chinese is exceedingly desirable. Americans make the mistake of trying to deal directly with the Chinese, instead of through the comprador. Most important of all in the future will be the methods of partnerships now coming into practice. The Japanese have found out that this scheme works for common interests, and many of them are looking for Chinese partners. America's greatest asset is the good-will of the Chinese people, who realize that whatever capital Americans may bring or whatever enterprises they may establish in China will have no sinister significance back of them.

of study will eventually be introduced in technical schools all over the country to fit students to be inspectors in this branch of commerce, and it is hoped that new factories, modeled after the central one in Peking, will be established through private initiative.

Factories and machinery are the two crying needs of China today. We need steel corporations, iron foundries, water power plants, electric lighting plants, smelters, every kind of mechanical and engineering apparatus that will put our country on an equal footing with other nations. America can bring us factories and machinery. The mill wheels in use today are the same as those that were used two thousand years ago, and all the tools in every-day use have been handed down unchanged for centuries. China invented almost all the tools in use by other countries, but China continued to employ the crude original, when other countries were continually improving and perfecting them. We need new tools, modern compasses, planes, farming implements, and we must have factories to make these tools. We can make a beautiful carved brass box or an inlaid one, but we cannot make a simple tin cigarette box, because we have no proper facilities. There is a great field in China for American machinery and American capital to establish factories on Chinese soil for making machinery.

There is no reason why a flourishing trade should not be developed between China and the United States. At present America's import trade in China is equivalent to 8 per cent. of China's total imports, and at the same time this is only 1 per cent. of America's export trade. China wants many concerns like the International Banking Company. A China America Import and Export Company, of which Mr. Liang Shih-yi, Director General of the Customs, is one of the chief promoters, has recently been formed, and all the leading merchants of Tien-tsin, Hankow, Canton, and Shanghai are interested. The company will deal with all kinds of products. A large capital has been subscribed to handle the goods in America, and Chinese business men are