

LECTURE III

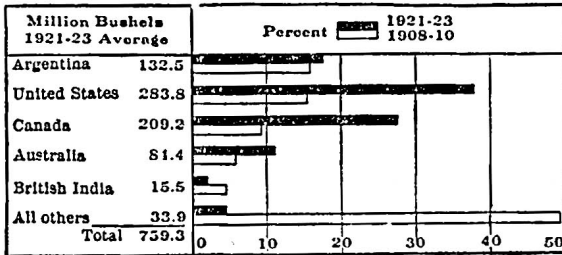
LESSON XII

THE topic of this lecture is the food problem. The food problem is the fundamental problem of a nation. A Chinese proverb says, "A nation regards people as its foundation and the people regard food as their heaven." The importance of the food problem can be shown by the situation in Germany during the war. German armies and navies were always victorious; but Germany after all lost the battle because she was blockaded by the Allies and many of her people died of starvation. She was unable to fight any longer.

The country with the most supply of food is the United States. She exports every year to Europe large quantities of foodstuffs. Russia comes next. She has a large territory and sparse population, but a rich production of foodstuffs. Australia, Canada, and Argentina all depend upon food products as a source of national wealth. During the European War, as steamers were commandeered for the transportation of armies and ammunition, very few boats were available for the transportation of foodstuffs from Australia, Canada, and Argentina. European countries were

consequently short of food supplies. It was very fortunate that China did not have any droughts or

FIGURE 1. WHEAT AND WHEAT FLOUR EXPORTS,*
THREE-YEAR AVERAGE



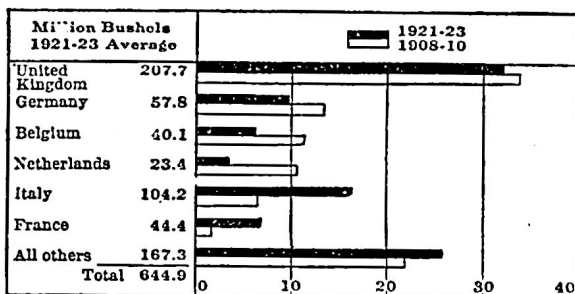
floods during those years. Her crops were good, so she did not suffer from the want of food.

Most countries have insufficient food supplies. The British Isles produce only enough food for three months' consumption. The food required for the rest of the year must be imported. When the battle was started during the European War, German submarines blockaded British seaports and Great Britain was in great danger of starvation. Japan is another country with insufficient production of foodstuffs, but she is short of only one month's supplies. The food supply of Germany is sufficient for ten months, and for the other two months foreign supplies have to be imported. This was her principal cause of defeat, because, as a number of her farmers were sent

* This and the following six charts are reproduced from the "Industrial and Commercial Geography," by J. Russell Smith (1925).

to the front, her agricultural production was greatly reduced and her need for foreign food supplies was intensified.

FIGURE 2. WHEAT AND WHEAT FLOUR IMPORTS,
THREE-YEAR AVERAGE



When only one individual or one family needs food it is an easy problem to solve; but when a whole nation is in a state of starvation, it is a serious problem. Food supplies imported by Kwangtung every year amount to the value of seventy million dollars. If for one month no rice were imported from other provinces, the people in Kwangtung would suffer from starvation. There are several provinces which are similar to Kwangtung.

Though the territory of China is a little larger than that of the United States, yet our population is three or four times greater. In connection with food, China is not so richly supplied as the United States. But if we compare China with European

countries, France, for instance, China ought to have more than enough food for her people. France is self-sufficient in food supplies. Her population is forty million, while that of China is four hundred million. Her territory is about one twentieth of that of China. Thus China has ten times more population, but twenty times more territory. Should our production be as large proportionally as that of France, we would be able to produce twenty times more food supplies than France, and such supplies would be enough to feed eight hundred million people.

Should it be so, we would have no fear of famine but could export our surplus food to foreign countries. Now every year thousands of our people die of starvation. When we are visited by droughts, floods, and other disasters, the number of people starved is still greater.

According to the investigations made by foreigners, the Chinese population in 1924² was three hundred and ten million. During the last decade, therefore, China lost ninety million people. Was that not a terrible loss? The chief reason for this loss of population was insufficient food. Why should China lack food supplies? The most important cause is the backwardness of her agricultural industry. The second cause is foreign economic pressure. It was remarked in a previous lecture that the annual loss to China

on account of foreign economic pressure amounts to twelve hundred million dollars. Do we actually send out twelve hundred million dollars in silver or gold to foreign countries? No, the amount is not sent in the form of silver or gold, but partially met by the export of foodstuffs.

Since China is insufficient in food supplies, how can she export food to foreign countries? By an examination of China's foreign trade, we find that among our exports one hundred million eggs have been exported to Japan and England every year. In Hsiakwan, Nanking, we can see a great building where all kinds of meat are packed for export. In North China, wheat, barley, and soy beans are annually exported in large quantities. During recent years, North China has suffered from several serious famines. Many people were starved to death, but at the same time there were large quantities of wheat and beans exported to foreign countries from Newchwang and Dairen. This is an evidence of foreign economic pressure, because when we were in great need of food supplies ourselves, we had yet to export them to foreign countries.

LESSON XIII

TO CARRY out the Principle of Livelihood, we want to see that our four hundred million

people are all supplied with food. They should be able to get it cheap and plentifully. When this object is reached, we may consider that we have solved the problem of livelihood.

What are the things we live on? There are four essential kinds: air, water, meat, and vegetables. To realize the importance of air for our lives, we may close our nostrils for a minute and feel the discomfort. We breathe air 23,040 times a day. If the supply of air is stopped for only a few minutes, we die of suffocation.

Water is another important food. We may stop our meals for five or six days, but when we drink no water for five days, we die.

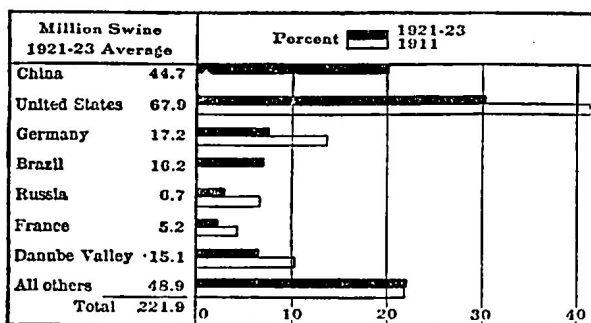
Vegetables form another important class of food. Chinese eat more vegetables than meat because their civilization is older. Barbarians eat only meat. Meat is therefore an important food.

All these four things are essential to life. Air and water are, however, free and provided by nature. Meat is not free. The primitive barbarians got meat by hunting and fishing. The more civilized people till the land and live on cereals and vegetables. The cultivation of cereals and vegetables requires a long time.

China has been an agricultural country from very early days. Farming has been her principal

industry, but not much improvement has been made. We use only human labor. Although the quality of our crops is good, yet we still need to increase the quantity. To encourage agriculture we must protect farmers. At present eighty to ninety per cent of our whole population are

FIGURE 3. WORLD DISTRIBUTION OF SWINE, THREE-YEAR AVERAGE



farmers, but most of their hard-earned food is taken away by landlords. What the farmers get is almost insufficient for living.

How can we protect the farmers? To achieve this object, it is necessary to have the equalization of landownership. The farmers must have their own land. Although there are no large landowners in China, yet ordinary farmers are not landowners. The land that they till belongs to the landlords, who are themselves no farmers, but receive a large part of the produce as rent.

This important problem should be solved immediately ; otherwise the problem of livelihood cannot be solved. According to our investigation made in the country sections, sixty per cent of the agricultural produce goes to the landlords and only forty per cent is retained by the farmers. Should this situation keep on, when the farmers have better knowledge, they would not be willing to work hard on the farms. But if the farmers should get all the yield of the land, they would be glad to produce more. Otherwise, many less productive fields would be left uncultivated.

Besides the problem of liberating farmers, there are seven methods with which we can increase production and of which we ought to make a study: (1) the use of machines, (2) the use of fertilizers, (3) the rotation of crops, (4) the prevention of pests, (5) the preservation of food, (6) the method of transportation, and (7) the prevention of disasters.

The Use of Machines. For thousands of years China has used only human labor for agriculture. If machines should be introduced, our production would at least be doubled, while on the other hand expenses would be reduced to one tenth or even one hundredth. If by human labor China should be able to feed four hundred million people, then by machinery she would be able to feed eight hundred million. Many fields

which are incapable of being cultivated at present because they are too high for irrigation may be supplied with water by pumping machines. Then they will become good fields yielding rich crops. Such pumping machines as are used at present are imported from foreign countries, but if they were to be used all over the country, we should manufacture them ourselves.

LESSON XIV

THE Use of Fertilizers. Fertilizers have been used in farming in China, but they consist of night soil, manure, and decayed plants. No chemical fertilizers have been used. Recently the Chile niter has been used in Canton for growing sugar cane. With the niter the sugar cane grows twice as fast and several times larger. But niter is imported from Chile. It requires too much capital outlay and is too expensive for ordinary agriculture. Besides niter, the phosphorus of shellfish and other living things in the sea, and the potassium on the rocks and cliffs can be used as good fertilizers. If we mix niter, phosphorus, and potassium as fertilizers, they will be good for any kind of plant.

If without the use of chemical fertilizers one mow of land could produce five baskets of cereals, then with the use of them it would be able to

produce at least two or three times more. In order to know how to use fertilizers, it is necessary for us to study science. We can manufacture fertilizers by chemical processes. Raw materials for the manufacture of fertilizers can be found anywhere in China. We used nitrates long ago for the manufacture of gunpowder. Formerly, the world's supply of niter all came from Chile, but now a large part is manufactured by an electrical process. Artificial niter has the same effect as natural niter, but is much cheaper.

The manufacture of fertilizers, however, requires cheap electricity. Electricity generated by steam engines is expensive. Cheap electricity is generated by water power. As water power costs nothing, electricity can become cheap enough to manufacture inexpensive artificial niter. Much water power can be utilized in China. On the West River up to Wuchow there are many rapids. Near Nanning are the Fu-po Rapids. Their water power is very great. So navigation is very dangerous. If we dam up the water for generating electricity and open a passage for navigation, we shall be doubly benefited. It is said that the water power of this river can generate one million horse power of electricity.

The Fo and Hung rivers in Kwangsi have also a number of rapids, which can be used for generating electricity. The Weng River in Kwangtung,

according to the report of an engineer, can generate many thousand horse power of electricity. If this electricity were used to supply light and factory power in Canton, it would be quite sufficient for the whole city, and probably even to electrify the Canton-Hankow Railway.

The water power at the Yangtze Gorges is even greater. It is said that it can generate thirty million horse power of electricity. When this power is utilized, not only can we supply electricity for all the railways and factories in China, but we can use it to manufacture large quantities of fertilizers. The Lungmen Waterfalls of the Yellow River can also produce several million horse power of electricity. This shows that China has rich resources. By utilizing the water power of the Yangtze and Yellow rivers alone, an electricity of one hundred million horse power can be produced.

Now, one horse power equals the strength of eight strong men, so one hundred million horse power equals the strength of eight hundred million men. At present a laborer works only eight hours, but water power can work twenty-four hours, so water power can do the work of twenty-four hundred million men. With this additional supply of power we can run all our railways and tramcars, manufacture fertilizers, and supply power to our factories in China.

At present, half of our population, namely, children and old people, do not work; and even strong men, such as landowners, depend upon others to do work for them. All these, instead of producing, are consuming. As China has more consumers than producers, she becomes poorer and poorer. When water power is utilized, we shall be able to increase our production greatly, thereby making our country wealthy.

The Rotation of Crops. On a piece of land the plant grown should be changed every year in order to give the land a rest. Or when the same plant is grown, seeds of different kinds may be used; for instance, one year Canton seeds, one year Honan seeds, and another year Szechwan seeds. The seeds sown on new soil and growing in a new climate usually will produce more.

The Prevention of Pests. There are two kinds of pests: weeds and insects. For instance, the rice field is intended for growing rice, but at the same time many kinds of weeds may grow. Weeds grow much more quickly than rice. On one hand, they overshadow and interfere with the growth of rice; and on the other hand, they deprive the rice of nourishment from the soil. So they are very harmful to the rice. The farmers should study science and learn how to get rid of the weeds as well as how to utilize them to enrich the soil in order to increase the rice crop.

Of the insects, the most common are locusts. There are many other kinds of insects which are also injurious to plants during the time when their crops are ripening. For instance, the litchi crop this year (1924) was destroyed by caterpillars.

Scientists have now studied these pests and have devised means to prevent them. In America particular attention has been paid to this matter, and agricultural production has been greatly increased of late. Although there is now an entomological bureau at Nanking, yet it is too small and the results very insignificant. We should use the power of the government, as the United States does, to eradicate all agricultural pests.

The Preservation of Food. Food when kept long or transported to distant places must be preserved. Two methods are usually used in our country: by drying and by salting. For instance, we have dried vegetables, meat, and fish, as well as salted vegetables, meat, and fish. The modern method of preserving food is by canning after cooking. The prepared food is sealed up in tin cans to enable it to be preserved for any length of time. Canning may be used for any kind of fruit, fish, meat, and vegetables.

LESSON XV

THE Method of Transportation. When we have surplus food, then it is necessary for us to transport it to places where it is needed. For instance, in Manchuria and the northern provinces there are wheat and beans, but no rice; while in southern provinces there is rice, but no beans and wheat. Then we can transport wheat and beans to the South and rice to the North. Transportation is a serious problem in China. Wastes of food-stuffs are common in some places for the lack of adequate means of transportation. The transportation is not only costly, but also slow. Much of the wealth in China has been wasted that way.

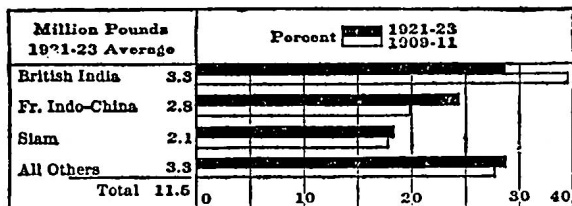
A few years ago I met the chieftain of a tribe in Yünnan. Being a large landowner he received every year much more rice than he could use. He told me that every year he had to burn up thousands of piculs of rice.

“Rice is a precious food; why should you burn it?” I asked him.

“Because I do not need so much rice in my family and the people in the neighborhood are sufficiently supplied. No merchant would come to our place to buy rice because transportation is too difficult. When new rice is reaped people do not want to eat any more old rice. So should

the old rice not be burned, there would be no barn for storing new rice.”

FIGURE 4. WORLD'S RICE EXPORT,
THREE-YEAR AVERAGE



All this destruction was caused by poor transportation. Formerly in Canton there were only porters, but since the construction of modern roads wheelbarrows have been used. One wheelbarrow can carry the load of several coolies. If a motor truck is used, it can carry the load of more than ten coolies. The use of wheelbarrows and motor trucks not only can save waste but also economize time. In the villages, however, coolies must be used, because there are no good roads.

From this we can see that transportation is very important for the solution of the food problem. In earlier days we used rivers and canals for transportation. The Grand Canal from Hangchow, passing through Soochow, Chinkiang, Yangchow, the province of Shantung, and Tientsin to Tungchow near Peking, running about three thousand

li, is the longest canal in the world. Such a waterway is a very convenient means of transportation. If large steamers and motor boats were capable of being used, the transportation of food would be much easier. But this canal has long been neglected in its repairs. To solve the food problem we have to improve waterways, and make use of canal systems, because water transportation is the cheapest in the world.

The next cheapest means of transportation is the railway. If the eighteen provinces of China, and Sinkiang, Manchuria, Koko Nor, and Inner and Outer Mongolia should be supplied with railways, food supplies could be transported from place to place, and the whole nation would be able to get cheap and adequate supplies of food. Railways can, however, reach only busy towns. If extended to small villages where no freight could be secured and not many passengers could be had, they would lose money. To various villages, automobile roads can be constructed from near-by railway stations. Then motor trucks could be used for the transportation of foodstuffs.

Along the Canton-Hankow Railway, from Wongsha to Shiukwan, for instance, there are many villages. If branch rail lines should be constructed to reach all these villages, it would be a losing proposition. But if automobile roads should be constructed and motor trucks used,

the capital requirement would be much smaller and transportation cheaper.

For very small places, even automobile roads may be unprofitable. We have to resort to coolies for transportation. Transportation by coolies is the most expensive of all methods.

The Prevention of Disasters. The flood in Kwangtung drowned all the crops this year (1924). If the value of the crop in one mow should be worth ten dollars, then the loss of the whole province would amount to many million dollars. The prevention of disasters is a very important problem.

How can we prevent floods? The present method of preventing floods in Kwangtung is by constructing high dikes on both sides of a river in the low regions. These dikes are strongly built; and when flood comes, they can prevent the water from overflowing the fields on both sides. But this method of preventing flood is only one of the emergency measures. Besides the construction of high dikes, we should widen the outlet of the river by removing the silt deposited at the harbor, so as to enable water to flow more easily into the sea. Both measures should be taken up at the same time to prevent floods.

Why were there fewer floods in ancient times than to-day? It is because our people cut the wood without replanting. When rains fall, bare

mountains cannot hold water. The water then flows down too rapidly, causing inundation in low regions. As a fundamental means of preventing floods, forestation is necessary. The leaves of trees can absorb water in the air; and the roots, water in the soil. The flow of water on account of rains will be slowed down greatly so that no flood will occur. Forestation on a large scale must be done by the government. Otherwise, it can hardly be successful.

Besides floods, we have droughts. How can we prevent droughts? In Russia, after the Revolution, droughts occurred successively for two or three years and many people died of starvation. The Russian Revolution was almost a failure. But in this scientific age all disasters are capable of being prevented. What is the method of preventing droughts? It is also by means of forestation. Because forests absorb and hold large quantities of water, they make rains more frequent. Forestation is the fundamental method for the prevention of both droughts and floods. When such disasters are prevented, food supplies will be plentiful.

LESSON XVI

AFTER we have liberated farmers and carried out the seven methods of increasing agricultural production, can we solve the food problem?

No, the problem cannot be completely solved. In Europe and America industries are prosperous. They are giving much time to the study of agricultural problems.

The United States, for instance, frequently sends out specialists to the interior of China, Manchuria, and Mongolia for the investigation of Chinese seeds and farming methods. The information and seeds collected are brought back to the United States for research. During recent years the United States has laid much emphasis upon agriculture, the transportation of agricultural products, and the methods of preventing disasters. Her farmers are using up-to-date machinery. But has the United States solved the food problem? According to my opinion she has not.

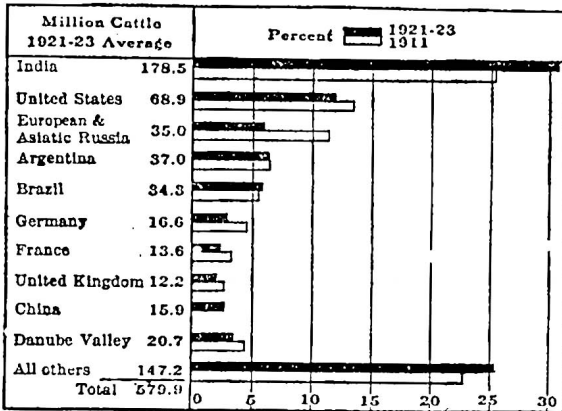
The reason is because American agriculture is still in the hands of capitalists. In the United States the system of private ownership still prevails; so although the method of production has been greatly improved, yet the method of distribution is entirely neglected. This is why she cannot solve the problem of livelihood.

To solve the problem of livelihood we ought to pay attention not only to production but also to distribution. It is impossible to have fair and just distribution under a system of private capitalism, since the sole object of a capitalist is to make money. If the production of food should

be for the purpose of making money, then when famines occur in the country, food would still be exported to foreign countries, because capitalists would not regard the need of the nation when much profit could be made in exporting.

Although we have not sufficient food supplies at present, millions of eggs and large quantities of cereals and soy beans are yet exported to Japan, Europe, and America every year. This phenomenon is similar to that of India. Food supplies

FIGURE 5. WORLD DISTRIBUTION OF CATTLE, THREE-YEAR AVERAGE



are insufficient in India, and every year there are famines, but the exports of foodstuffs from India to Europe still occupy the third place in India's foreign trade. The reason is that India, under

foreign economic oppression, is in the grip of capitalists, who entirely aim at making money and care nothing about famines in that country.

The Principle of Livelihood aims at abolishing the system of private capitalism. Our production should not be for the purpose of making money. We should have sufficient food supplies not only for one year but for at least three years. When we have enough food for three years, then we can export the surplus to foreign countries. The aim should be to feed the people and not to make money. At the present time, owing to foreign economic oppression, we have excessive imports; and because we have no other commodities to balance them up, we have to export foodstuffs which we need earnestly at home. This is the reason why many of our people have died of starvation and the number of births has been reduced. As a consequence, our population has been reduced from four hundred million to three hundred and ten million.

How should we solve the problem of distribution? According to economists, human beings have three wants; namely, food, clothes, and shelter. But in my opinion another important want exists. It is the means of traveling. Not only should we make these four necessities of life very cheap and plenty, but we also want all the people to enjoy them. By applying the Three Principles

we want our people to be wealthy and to live in plenty. This responsibility should belong to the government. Anybody may depend upon the government for these four necessities. On the other hand, the people have also definite obligations towards the government. Farmers must produce food; laborers must manufacture goods; merchants must exchange goods; students must use their ability and education. All citizens have to do their best in order to get the necessities they want.

In solving the food problem the first step is to solve the problem of production and then the problem of distribution. There should be enough food supplies accumulated and preserved, sufficient for at least three years' consumption by the whole nation before any surplus might be exported to foreign countries. Pure theories cannot solve the problem. We must face facts. The people should fulfill their obligations, while the government should be responsible for supplying them with necessities.