FARMING IN JAPAN

TRAVELS AMONG THE PEOPLE WHO PAY THE WAR BILLS.

A Vast Country of Garden Patches—Plowing With Mattocks—A Look at the Villages—What a Farmhand Gets—How the Government is Educating the Farmers — The Japanese Horses — The New Agricultural Societies—Two Hundred Experiment Stations and Three Hundred Farm Lecturers—Government Banks for Farm Loans.

[Special Correspondence.]

OSAKA, Japan.—During the past two months I have been traveling through the farming districts of Japan. They should be an object lesson to the United States. The country is kept like a garden, and it is as fat as the valley of the Nile. A great part of it, however, is covered with forests, much of it is mountainous and, all told, the cultivated parts are half as big as the state of Ohio. Nevertheless, this small area is now feeding more than 50,000,000 people, or more than one-half as many as we have in the United States. It produces every year 160,000,000 bushels of rye, barley and wheat; 250,000,000 bushels of rice, and nearly 100,000,000 pounds of tobacco. It grows 56,000,000 pounds of tea, 10,000,000 bushels of silk cocoons, as well as buckwheat, millet, beans, linseed, cotton and hemp. The rice crop alone is worth $200,000,000 per annum.

AMONG THE FARMS.

I can give you no idea of the intensive cultivation which is going on here. The whole country is divided up into patches, ranging in size from that of a bed quilt to tracts of an acre or so, and every bit of it is as clean of weeds as a government flower bed. There are no fences, and one looks over a crazy quilt, made up of patches of many colored crops, bound together with the green grass which forms the boundaries of the fields. The Japanese farms are, on the average, not more than two acres in size, and only 15 per cent of all the holdings are of more than four acres.

The ownership is widely scattered. There are, altogether, about eight million families engaged in agriculture, and many of these have their whole living from two acres of ground. Others have small tracts of their own and rent more. As it is today, only about one-half of the land is worked by the owners. The rest is farmed by tenants who pay a proportion of the crops as high money rents.

But come with me and take a look at the farming country. It is nothing like that of America. There are no barns nor hay stacks. There are no big fields and no cattle nor horses. The ordinary Japanese farmer would look upon a Pennsylvania bank barn as a temple, and worship in it if he saw it. He would look upon our sheep as so many wild animals, and a Percheron horse or a Shorthorn cow would be as much out of place on his little tract as the traditional bull in the china shop. This is so, notwithstanding there are something like two million cattle and horses in Japan. Most of them, however, are used for freighting or as draft animals to carry goods over the country. They are always kept up and one never sees them roaming about or feeding along in the fields. The cart is the chief farm vehicle and it is more often hauled by men or bullocks than by horses.

ALL HAND LABOR.

On the other hand, the American farmer would be lost if he came to Japan. If he brought along a reaping machine, his horses would tramp down his neighbor's crops while turning it around in his fields; and, as for a thresher, the people would mob him for taking away the work from the laboring classes. He could not use his plows without he bought up a whole county, and his fences would be useless to say the least. He would be surprised at every step at the methods of good cultivation. He would see wheat, oats, and barley planted in nurseries and transplanted again in rows a hand's breadth apart. He would see these crops weeded as we weed onions, and would eventually see them reaped with sickles close to the ground. After cutting, the straws are laid end to end in little sheaves and tied with a wisp at the bottom. Each sheaf is then pulled apart, and hung over a rope or a pole, like washing, to dry. Later on, the heads of the grain are cut off with a knife, and thrashed out with a flail. In many places the grain is winnowed by throwing it up into the air, and in others the farmers use separators or hand fanning mills turned by a crank.

PLOWING WITH MATTOCKS.

The work of preparing the land is quite as hard as the planting and harvesting. The most of the country is dug over again and again every year. It is chopped with mattocks, which have blades four or five inches wide and as long as your arm. These are so made that the man or woman who uses them must bend double while digging. I have seen women with babies tied to their backs thus working in the rice fields. Their kimonos are tied up over their knees, and they wade through the mud as they set out the plants. I know of no crop which takes so much work as rice, and this is the money crop of Japan. It ranks here as wheat does with us, and Japan is rich or poor according ast the rice crop does well or ill. In times past the royal taxes were paid in rice, and today the financiers watch the growth of this crop as our people do corn, cotton and wheat.

THE RICE CROP.

The greater part of the rice crop is raised by irrigation. The fields are made at different levels, and the water from the hills is run by canals from one to the other. The ground is prepared during the winter. It is covered with manure and made as level as the floor. Along about the 1st of April it is broken up with a hoe or spade and then flooded.

In the meantime the rice plants have been grown from the seeds in nurseries. They are taken up and scattered over the water as needed. Then the men, women and children of the family tie up their clothes and wade out in the mud. They set the plants out in rows of bunches of four or six plants each. They are so close together that it takes from 1,500 to 3,000 bunches per acre. The water is left on and the rice rapidly grows.

The planting is done about June. The rice soon appears above the water and within a few weeks the whole of the country is a beautiful green. Almost every plant is watched. One sees big hatted farmers dressed in blue gowns trotting along through the fields. If they see a plant out of shape or not deep enough in the water, they will reach down and fix it and in this way, every rice stalk yields its best product. As to the amount of labor required for such cultivation, if you will imagine one of our farmers sprouting his wheat in a seed bed, and then setting out each plant with a dibble and weeding and cultivating it, you will get some idea of it.

HARVESTING RICE.

The harvesting of the rice is even more difficult than harvesting wheat. After the grain is cut, it has to be pulled from the straw and be husked before it can be used. If you will take a sheaf of ripe oats, and then pull them over a cross-cut saw, fastened to a piece of wood about the height of a table, so that all the grains are torn off, you will have a fair idea of how the Japanese get their rice from the straw. The grains are still in the husks, and the husks have to be taken off before it can be used. This is mostly done by hand, the grains in the shell being put in a mortar and pounded with a wooden pestle until the kernels are free. Some of the farmers have rice mills, worked by water, and others hulling machines, worked by hand. Much of the rice is winnowed by machinery, small hand mills being used.

A good rice field ought to produce 40 bushels to the acre, and some of the best lands here produce more. Japan has altogether almost 200 different kinds of rice, and it raises some of the best rice of the world. Its finest varieties are so valuable that much of them are exported to other countries, the nation importing poorer kinds at lower prices for its own food.

IN THE FARM VILLAGES.

The Japanese farmers seldom live on their farms. They have little villages of wooden houses, thatched with straw. Here they come at night and from here they go out in the morning to work. The people generally work in gangs. You seldom see a man alone in the fields. A whole family, father, mother, boys and girls, all work together. There are many hired hands, and the wages paid are exceedingly small. It is a poor part of the United States where a farmhand is not worth 50 cents a day and his board, or where he gets less than $15 a month, if employed the year round. The wages here without board are 16 cents per day for men and 10 cents for women, with much less for children. The work goes on from sunrise to sunset, and it is fully as hard as any on our farms at home. Hands employed by the year receive proportionately less. Including board, men are paid about $58 a year, or less than $5 a month; the women get about $50, or a little more than $4 a month. In a government report of 1906 I see that male farm laborers were getting less than $20 a year, and females less than $10. There is a steady rise going on in wages of all kinds, and these cannot remain as they are.

In some cases, farm laborers hire out to work only on alternate days, devoting themselves to their own little tracts of land during the rest of the week. Boys are often bound out to farmers for terms of from five to seven years, their pay being little more during the time than their board and clothes. Of late, I understand, there has been a considerable movement of the farming classes to the cities, and just now there are many who are emigrating to Korea and Manchuria.

EDUCATING THE FARMERS.

Indeed, the farmers of Japan are rapidly changing. There are public schools everywhere and the boys and girls of the country communities attend them. Nearly every man can read and write, and most of the landholders know what is going on as to scientific cultivation. The government is doing a great deal along the lines of agricultural education. It has big agricultural colleges at Tokio and Sapporo; and there are 36 smaller colleges which are teaching theoretical and practical farming in the towns and prefectures. There are special colleges in Kyoto devoted to the art of silk culture, and instruction is also given in tea raising and in the other specialties of Japan.

The government has 310 traveling lecturers, who go from town to town and from district to district preaching advance agriculture to the farmers and instructing them as to insects, fertilizers and various crops. Some of these men are present at every agricultural show, and attend also to the experimental farming carried on at the public expense.

Japan has now more than 200 experimental stations, and there are other experimental stations established by the farmers themselves. The first of these stations were organized by men from our agricultural department, and there have been many American professors in the colleges. Among the experimental stations is one for the study of the tea plant and of all modes of curing the leaves and preparing them for the market. There is also an imperial silk farm and imperial cattle and horse breeding establishments.

STOCK FARMING.

Within the past few years Japan has done a great deal to improve its livestock. It had practically none of much value at the time that Commodore Perry came here. It has now a million cattle and a million horses, and one can buy good beef at all of the ports. When I first came to Japan it was impossible to get anything else but tinned butter. There are now numerous dairies, and fresh butter, unsalted, is sold in most of the cities. The masses of the people use neither butter nor meat. They live upon fish, rice and vegetables, which they eat with a sauce called soy.

The most of the soldiers who went from the farms to Manchuria to fight the Russians there made their first acquaintance with beef in the consumption of canned meats from America, and it is probable from this that a demand for meat may spring up.

As to cattle, the government has now an imperial breeding farm which is supplied with animals purchased by experts who were sent abroad for the purpose. The favorite cattle are Ayrshires and Simmenthals, a number of each being kept.

JAPANESE HORSES.

The Japanese are doing all they can to improve their horses. The emperor has a number of studs and horse farms, and his men are importing animals for their improvement every year. He has Arabs, trotters, thoroughbreds and hackneys, altogether numbering about 500 stallions and mares. There is now a horse administration bureau, which is under the control of the cabinet, with an ex-minister of state as its chief. The business of this is to improve the Japanese stock, with the especial object of furnishing better animals for the army. I understand that 1,500 stallions of foreign breed are to be purchased and distributed to the chief breeding centers, where they are to be paired with native mares. The improvement program is to extend 30 years.

At present most of the horses here are stocky ponies of Mongolian breed. They have been somewhat crossed with Percherons, and as a result they are very strong and hardy. I see some of them hauling enormous loads on carts through the streets of the cities. They are always hitched up singly, and the driver invariably walks, leading the horse.

As to imported horses, a number were brought here from America in 1872, and after the war with China systematic introduction of foreign stallions began. At present there are 1,274 such animals in the various government depots and studs.

NEW AGRICULTURAL SOCIETIES.

I am surprised at the interest that the farmers are taking in improved agriculture. They have something like 1,000 different societies, and new methods are being discussed in every town, village and farming district. They are alive to the use of artificial fertilizers, and of late have been importing a vast quantity of sulphate of ammonia. They understand the use of manures better than we do, and by applying them directly to the plants are able to get better results. Every bit of stable manure is saved, and notwithstanding the comparatively small number of animals that are now used in a year is valued at almost twenty-five million dollars. Another fertilizer which is largely purchased is fish guano. This is made by boiling down herring for their oil, the refuse being sold to the farmers. Such manure brings in millions of dollars a year, and just now a great deal is coming from Sagahalien, the lower part of which island Japan got from Russia. The herring fisheries there are valuable, yielding an oil cake which is shipped to Japan.

One of the most important fertilizers of the Japanese farmer is night soil, which is used to the amount of 72,000,000 annually. This is saved in city, village and country, and it has a regular market value. You can meet the wagons carrying this stuff at certain hours every night in our Japanese city, and at these hours it is best to remain in one's hotel. Such manure is fermented in wells covered with straw matting to keep out the rain. It is diluted, cut up in nuggets and sprinkled directly upon the plants. For this reason the average foreigner who understands anything about Japanese gardening will not eat salads nor any raw vegetables unless cooked.

HOW THE STATE HELPS THE FARMERS.

This country has a live up-to-date department of agriculture. It is associated with the ministry of commerce, and it deals with almost everything that sends out of the soil. It has gone far to combat diseases, to fertilizers and to stock raising. The nation is doing all it can to make two blades of grass grow where one has grown before, and it is trying to open up new areas to cultivation. Japan has been farmed for more than 2,000 years, and it is difficult to find much good unused land. Every available foot seems to be used, but by changing the hills, and more particularly by consolidating the holdings of owners who have small tracts in the same district, much has been done. As it is now, the fields are of all shapes. Here one spreads out like a fan, there one is square and further on is a triangular patch. The country is made up of patches of all shapes and sizes, but none contains more than an acre or so. The government has persuaded the farmers of certain localities by means of the exemption of taxation on bad lands for certain time to unite or exchange their holdings so that they may make rectangular fields and thus do away with many of the boundaries and paths. This has not only increased the area, but has brought about better farming and bigger crops. Some land has been reclaimed in the Hokkaido or as we call it, Yezo; and there is something like 20,000 acres of new land there. Lands are being opened up in Formosa, and an attempt is being made to fill up the waste lands of Korea.

HOUSE INDUSTRIES CARRIED ON BY FARMERS.

At present the farming country is overstocked with people, and most of the farmers have some sort of house industry which they carry on while not engaged in cultivating the soil. In this way the winters are not wasted as in our country, and the nation materially adds to its manufactured products.

This phase of agriculture is encouraged by the government.

Here are some of the occupations that the farmers follow during the idle seasons. They make straw, cotton rope, jam and dried fruits. They manufacture straw boats, mat factories and the mats used for rearing silk worms. They make baskets of all kinds, bags for charcoal, straw ropes, straw rain coats and straw hats. In many of their homes weaving goes on and in some they manufacture silk and paper. Some of them turn out umbrellas, others make lime and others refine camphor.

BANKS FOR FARMERS.

One feature of the government help is a sort of the Japanese banking system. There is one big bank, the Hypothec, with a capital of $5,000,000, which loans out money to farm districts and to farmers' associations and even to individuals upon real estate security. It gives long time loans, payable by installments and at a low rate of interest, and it also issues savings bonds, in denominations as low as $2.50, for the encouragement of thrift.

And then there is the Industrial Bank of Japan, with a business of somewhat the same nature, which has a capital of about $8,000,000 and a number of agricultural and industrial banks, each of which has a capital of $100,000 or more, which work in combination with the Hypothec bank in loaning to farmers and to the cities, towns and villages upon long time and at low interest. All of these banks pay good dividends and are adding to their surpluses.

FRANK G. CARPENTER.

A SOLAR ECLIPSE.

How it Can Happen, Considering the Size of the Moon.

It has been asked how a total eclipse of the sun can possibly happen, as the moon is smaller than the sun.

A self luminous body, like the sun, scatters light in all directions, and when the rays fall upon a nonluminous body they are intercepted from the space immediately behind it, and a shadow is thrown a certain distance in that direction. Another celestial body, deriving also its light from the sun, will upon entering the area over which this shadow is cast be deprived of its luster either wholly or in part. This is what happens to the earth in a solar eclipse. The sun and earth revolve in the same plane of the ecliptic, and the moon, being but slightly inclined to that plane, interposes between them once in every revolution, so that it happens that they are sometimes all three in the same line. When this occurs a portion of the moon's opaque sphere is seen projected upon the sun's face, intercepting its light, proportionate with the magnitude of the eclipse, which depends upon the distances separating the centers of the sun and moon at the middle of the phenomena. Only in cases where these centers precisely correspond can there be a total obscuration.—New York American.

WHAT "BOROUGH" SIGNIFIES.

The word "borgh" in Saxon stood for "castle," hence towns anciently erected in the vicinity of castles for their protection had this name conferred upon them, and the soldiers who garrisoned these were called burgesses, so the inhabitants of these towns received the same name. These also being formed into a community, the constitution formed for their regular government was denominated the borough laws.