

Chekiang, the Richest Silk Region of Asia

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CHEKIANG, China, Jan. 6.—(Special Correspondence of The Bee.)—This is written in the heart of the silk regions of China. For a week I have been floating along through one canal after another with Consul General Goodnow in his house boat through a country which is one vast orchard of mulberry trees. There are thousands of these trees on every side of me as I write, and by getting off on the bank and climbing to the top of one of the bridges which arch the canal at every few miles I can see trees by the millions, extending on and on until they cut the horizon. They border the waterways and are only broken here and there by clumps of peach trees or the taller shade trees of some farm village and the pit-like fields flooded for raising rice.

Silk is produced in almost every part of China, but Chekiang produces more and better silk than any other. It raises vast quantities of cocoons every year for export to France, Germany and Japan and bales of raw silk go from here to our factories in the United States. There are thousands of farm houses in which silk reeling is done and great silk filatures with the finest of modern machinery put up by the French, English and other foreigners, as well as by the Chinese, to turn the cocoons into thread. The Chinese use more silk themselves than any other people; they have tens of thousands of looms, and their silk millionaires are numbered by scores.

Among the Mulberry Trees.

I wish you could be with me in this ride

sprouts have reached several feet in height they are transplanted five or six feet apart in regular rows. This is done in December. After this the trees are carefully cared for. They are pruned year after year, and never allowed to grow more than six feet in height. The cutting does not injure them. A sound mulberry tree will last for fifty years, and when fully matured will annually yield as much as 100 pounds of leaves. In some parts of Chekiang the seeds of the wild mulberry are sown and the young sprouts grafted from the cultivated mulberry. This is thought to produce better leaves.

The trees have to be carefully watched for insects. There are silk tree borers much like cur peach tree borers, worms which can enter the bark and must be dug out, and there are insects which eat the leaves and must be killed by fumigating or spraying.

Rearing Silk Worms.

I have been interested in learning how the Chinese rear silk worms. They have reduced the business to a science, and it is still so important that the empress starts it every year. Indeed, the first silk worms of China were reared by an empress. This was the wife of Hwang-ti, who lived 2,600 B. C., and who is known as the goddess of silk. The present empress sacrifices to her every April in the palace grounds. April is the best time for hatching silk eggs, and it is at this time that the moths are started laying. The Chinese can tell the male moths from the female ones while they are still in the cocoons. They know



PARTIAL VIEW OF A SILK FACTORY—IN THIS ROOM 700 GIRLS WERE REELING SILK.



SOOCHOW SILK FILATURE, OPERATED AND OWNED BY CHINESE.

through the mulberry orchards. Our mulberry tree grows about as big as an elm, and it is not out of place among the trees of the forest. The mulberry trees here are small. Most of them are trimmed down to four feet, the sprouts being cut off year after year. The orchards look more like thickets than forests, and the trees are seldom larger than a three-year-old peach tree. They are as knotty and gnarly as an olive tree and as ragged as a guinea bush. They are planted in rows only a few feet apart and so carefully cultivated that not a weed is to be seen anywhere. Here and there garden stuff is raised between the trees but nothing grows close to the trunks and a continual fertilizing and hoeing goes on the year around. All kinds of manure are used, but the chief fertilizer comes from the canals which are fed by the Yangtze river. The Yangtze Kiang is as full of silt as the Nile. It brings down vast quantities of rich mud every year, and drops it into the canals. The Chinese dredge this out and spread it over the ground. They scoop it up in nets or in canvas bags with heavy iron rings about them. They have great tongs made of bamboo poles with spoon-like baskets on the ends, looking for all the world like giant sugar tongs, with which they pinch up a quart of mud at a time and pull it into their boats. Later on they throw it on the banks and spread it around the trees, covering the whole surface of the ground. The Chinese save every bit of fertilizing material, even to their hair cuttings and finger nail parings. I see the children everywhere going about and picking up filthy stuff of all kinds to add to the manure heaps.

How the Country Looks.

I frequently get out and walk through the orchards. There are no roads anywhere. You could not possibly ride over the country in a cart, for many of the fields are pits made at different levels so that they may be flooded from time to time as the crops demand. There are only footpaths between the fields, and these wind about going this way and that without regard to distance. The only highways are the canals, which are filled with traffic even as the country roads of our rich farming districts are filled with wagons.

Through an interpreter I have learned how mulberry trees are grown. The seeds are first planted in nurseries and when the

just how to handle them so they will lay at the proper time. In some places the eggs are laid on clean paper and in others on white linen or grass cloth.

One moth will lay as many as 500 eggs. This job takes her seventy-four hours, after which she lives five or six days without eating and then dies. It is important to have good eggs, and the strongest cocoons are chosen for the purpose. The eggs are first washed and then sprinkled with salt. They are next covered with ashes of burnt mulberry leaves, and so kept for ten days, after which time they are ready for hatching.

In many silk districts the people have human incubators. The warmth of the body furnishes the heat, the most approved variety being a lusty woman, who puts the eggs inside her clothes upon her bare bosom and keeps them there until she knows by their tickling that the silk worms are coming out. The silk worms are as fine as a thread and black when first hatched. The hatching usually takes place between 8 o'clock in the morning and noon. In other places the eggs are hatched in warm chambers and in other ways.

The first silk eggs taken to Europe were carried to Constantinople in bamboo tubes and hatched in a manure heap. In the hatching rooms and also in those where the hatched worms are kept the temperature is not tested by a thermometer, but by a man who takes off his clothes and goes in naked in order to tell by the sensations produced upon his body as to the temperature and moisture.

As Delicate as Babies.

The silk worms are watched as carefully as though they were babies. Flies are kept from them. No loud talking is permitted near them, and the people wash themselves carefully before handling them. Thunder is said to alarm them, and only clean hands must touch the leaves, which feed them. The leaves must be cut into fine shreds and the worms eat them so rapidly that you can hear their jaws going. At first they are fed four times a day, and on the fifth day they go to sleep. As they grow older they are fed once an hour and when they have reached their full growth they eat three or four meals a day. They keep on feeding and sleeping until they are three weeks old, casting their skins at each sleep, and then go into a long last sleep, where they remain

until a new and large skin is fully matured. They are full grown at the age of thirty-two days, and are then the color of amber. Each worm is now about two inches long and about as big around as your little finger, and it is ready for its work of making silk.

After this the silk worm takes no more food and begins to spin from its mouth, first fastening the thread to a frame on which it is placed. It moves its head from one side to the other and keeps on doing so until it has woven a cocoon about its body. This requires from two to five days, and at the end it again goes to sleep.

In the province of Chekiang the spinning is done in what is known as silk worm hills. These are bundles of straw placed on mats on platforms about as high as your waist. The worms crawl up on the straw and fasten themselves to it and there spin their cocoons. About 100 worms are attached to each bundle, and fires are built around the tables that they may be kept warm. While they are spinning the noise is like that of a soft shower of rain and when the noise stops the people know the cocoons are completed. After this they are baked or boiled, in order to kill the worms and are then ready for reeling, or for sale.

Selling the Cocoons.

Many of these Chinese farmers raise the cocoons for sale. They do not pretend to get the silk out, but market them in bulk. The cocoons are the money crop of many a farmer. He will raise vegetables, rice and other grains for his food and depend upon his cocoons to supply money for his clothing, opium and salt. The government encourages the people to raise silk worms and urges them to plant mulberry trees. The result is that almost every farmer has his little orchard, and the vast product of silk produced in China comes from small farmers. Many a man does not raise more than twenty pounds of cocoons, for which he gets, perhaps, \$4 or \$5 in silver.

The cocoons must be bought within a short time after they are offered for sale. It used to be that fifteen days were set aside for selling cocoons, but of late the farmers in some way or other have shortened this down to four days. The result is that the foreign and Chinese silk makers must have their men on hand at this time to buy the cocoons.

There are regular market centers to

which the farmers come with their silk. They will go from buyer to buyer and dicker until they get the highest prices, and the buying is therefore exciting. Each merchant has his own scales and he buys by the ounce or pound, paying spot cash. This necessitates a large capital, as all the cocoons used for the year must be bought when the sales are on. There are silk factories in this region which spend annually \$200,000 in gold in purchasing cocoons. They have to fix their price according to the selling prices of silk in Europe, and a sudden fall will make them lose money. On the other hand, a rise may give them an enormous profit.

How the Chinese Make Silk.

Much of the silk of China is woven in the homes of the people. I see reeling going on in many of the farm villages. It is done chiefly by the women, the cocoons being kept for the time in clean boiling water. They are stirred around in this water until the thread ends become loosened and then several of these ends are joined together and the cocoons reeled off on rude reels worked by pedals. If one of the threads breaks it is joined together or replaced by another. It requires considerable skill to do the reeling, for the thread when completed must be of equal thickness and brightness. A good reeler can make about twenty-six ounces of fine silk in a day.

The weaving, as done by the natives outside the factories, is on machinery of the rudest description. Everything goes by hand, from ribbons to velvets and fine brocades. I see women and girls making ribbons in all the cities of this region and in some places find them weaving satins and velvets. At Nanking I went through

the imperial looms which weave satins and velvets for the emperor, the empress dowager and the court. They make about 200,000 pieces there every year, or silks to the value of about \$2,000,000. It is impossible to buy the goods except in an underhand way, for all of it is supposed to go to the imperial household. The wages of the weavers are about 20 cents a day, with rice. The ribbons are usually made on small looms by women and young girls, who get about 10 cents a day and food. There are in all about 200 looms in the imperial establishment, from which were woven during the year of the emperor's marriage \$3,000,000 worth of goods.

China's Modern Silk Factories.

Within the past few years an enormous amount has been invested here in modern silk filatures devoted to reeling the cocoons and making raw silk for export. These establishments have the finest of modern machinery, imported from Europe, and their business runs high into the millions of dollars. There are twenty-five such filatures in Shanghai alone, employing all told more than 20,000 hands. There are some in Hankow, Soochow and at other places in the silk regions.

Most of these filatures are owned and operated by Chinese, although five at Shanghai have foreign managers. It was through the introduction of Mr. Riva, a French proprietor of one of the Shanghai establishments, that I was able to go through the Chinese filature at Soochow. This filature has a brick building covering about five acres. It employs 800 hands and its capital must be at least \$500,000. The Chinese heads of the establishment who took me through the filature

(Continued on Eighth Page.)



CHINESE FACTORY GIRLS—THEY WORK FOR FROM 3 TO 10 CENTS PER DAY.