

# THE LUMBER INDUSTRY OF FUKIEN



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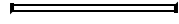
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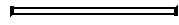
**FUKIEN**

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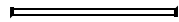


**PAPERS  
BY MEMBERS OF  
THE ANTI-COBWEB SOCIETY  
Foochow, Fukien, China**

**Christian Herald Industrial Mission Press  
Foochow  
1933**



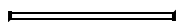
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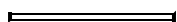
**BY  
CHAS. P. CULVER**

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**THE LUMBER INDUSTRY  
OF  
FUKIEN**



BY  
CHAS. P. CULVER



**Paper read before the Anti-Cobweb Society  
on March 20th, 1931  
Foochow**

# THE LUMBER INDUSTRY IN FUKIEN

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The Province of Fukien for centuries has been famous for its forests. The timber chiefly exported is known as Shan-mu fir and Sung-mu pine. The former is by far the more plentiful and furnishes what is usually called Foochow soft wood and planks. The latter is a superior kind of wood, full of resin, and resembles the Swedish pine. Because of its greater strength it is largely used in ship building. Cabinet makers find it very useful in making up the medium grades of furniture for the bottoms, backs and tops of wardrobes etc., and for the sides and bottoms of drawers. Carpenters use it extensively in making panelling for doors.

The principal forests in Fukien are situated in the following districts:

Yenping prefecture, 6 districts

Kienning , ,	5 , ,
Shao wu , ,	4 , ,
Ting chow , ,	8 , ,

nearly all of which are exceedingly mountainous. In the above 23 Hsien there has always been an abundance of timber, but districts in Yenping prefecture produce most of all.

Lumbering in Fukien is still in a primitive stage. The lumber company is generally without a sawmill, and simply does what we call the transfer business for the logging company. Therefore the logging company and the lumber company as well as the sawmill are really three independent organizations, and each of them performs functions of its own. The logging

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company purchases trees from the forest owners, the lumber company sells the logs with permission or agreement of the logging company, and the sawmill manufactures lumber. The sawmill and the lumber company are permanent – provided there is no financial trouble or surplus of bandits, while the logging company is disorganized as soon as the particular forest or stand of timber has been lumbered.

Contrary to all Chinese custom the timber forests are not in the hands of any guild of monopolists, but are owned by private individuals or families. There is little or no devastation by fire of these forests. Fires that do occur are usually of incendiary origin of malicious intent, or for the purpose of driving out wild beasts or destroying the strongholds and hiding places of bandits. Occasionally farmers in the lower valleys, finding their soil needs renewing, will set fire to forests in the mountains above them in order that the ashes may be carried down by the rains to enrich the soil, a most stupid and expensive procedure, which lends credence to the story of the way the Chinese first learned the taste

of pork.

Timber merchants desiring to purchase wood send their own men up country who go directly to the owners of the forests and make all arrangements personally, and not through a middleman. The purchaser, although he is spoken of continuously as a stupid pig, is, nevertheless, usually a very astute and experienced logging man who is able to gauge accurately, and never overestimates the approximate value of the stumpage as he passes through a forest. By a general glance, the purchaser can tell the percentage

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of diseased trees, insect-attacked trees, and trees with numerous knots and empty piths, all of which must be considered in the evaluation. The reason why the man who puts through a big timber deal and lands the lumber in Foochow is called by all with whom he comes in contact " a stupid pig " is because of the seeming utter reckless abandon with which he almost throws money around in getting his cut of timber landed in Foochow. The manner in which this is done will be explained later. The average age of the trees cut for timber is about 60 years, although the tree does not attain its maximum height before eighty years. They range in height from 35 to ninety feet and from 16 to 36 inches diameter at the stump. The size of the trees depends naturally upon the location and the condition of the soil. Trees on top of a ridge exposed to the winds rarely exceed fifty feet, are of large diameter and taper greatly. Trees located on protected slopes and in good soil grow to a great height and with small taper. Efforts have been made to prevent the felling of young trees, but the loggers nevertheless cut many that yield but one or two logs. Those engaged in the firewood trade cultivate whole hillsides of pine which is felled in eight to fifteen years. Besides the enormous amount of firewood that is shipped to Foochow, the annual export amounts to a million and a half bundles.

Prices paid for standing timber are based on the particular circumstances of each lot for sale, viz., location, area of land, number of trees, distance from river or creek, and facilities for transportation to the river. The purchase price includes all trees in the

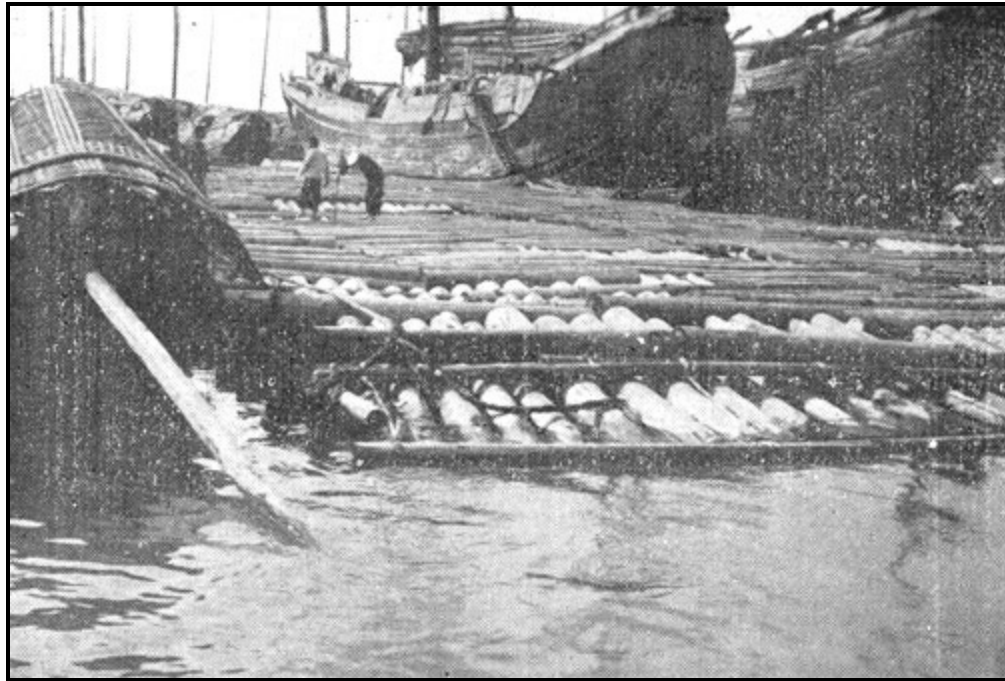
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area, but the evaluation is only made on fir and pine. All hard wood trees, while they are included in the purchase, are considered as of no value whatever to the lumberman. The work involved in cutting them up and the extra trouble in getting them to the river because of their great weight, and the further difficulty of getting them to Foochow on account of their being too heavy to float seems to provide ample reason for their being considered of no value when arranging the purchase of the forest.

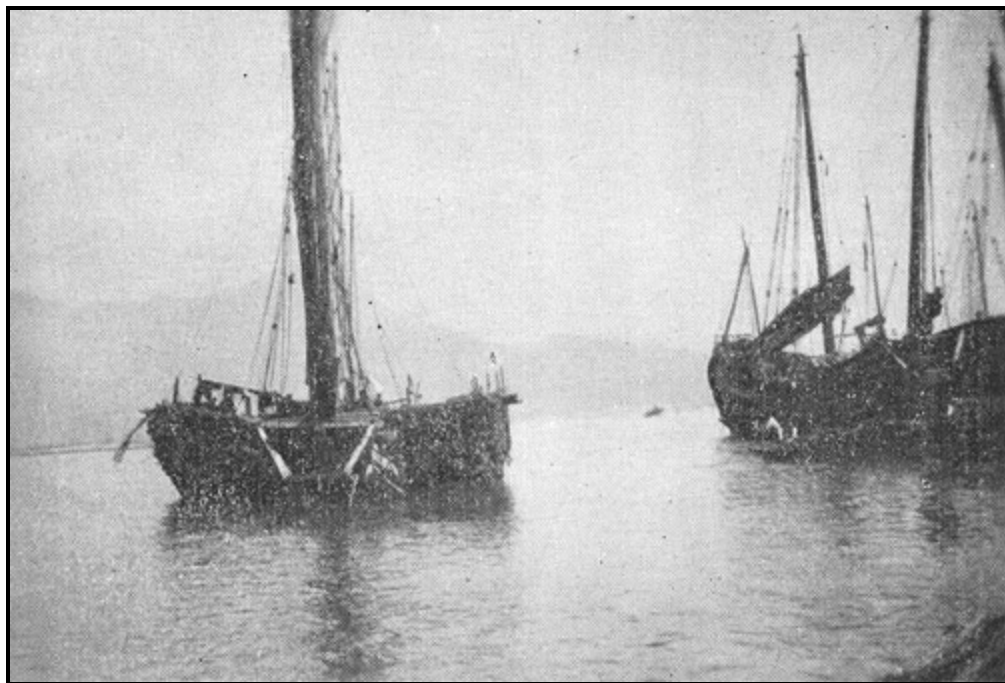
After purchasing the standing timber, the lumberman stays on the job until the log rafts are landed in Foochow. From the moment the felling operations begin, the work is pushed with all possible speed. In order to bring this about money is spent very freely, If operations lag and the output is delayed only a few weeks it may mean a loss of many thousands of dollars for the lumberman ; so money is spent recklessly in order to keep everything moving rapidly.

All work relative to cutting and transportation is put in the hands of the logging company. The first to

arrive on the scene of action are men with hoes. These men hoe all the dirt away from the roots of the trees in order to cut down as deep as possible. Following the hoe-men come men with axes who cut around the tree under the ground. When the tree falls it will be seen that the axemen have cut a rounded head on the tree trunk, and so smooth and accurately has the work been done that taper will not vary more than an inch on opposite sides of the tree. These men do nothing else except this class of work.



Lumber from up-river districts ready for shipment from Foochow.



Junks loaded with logs for shipment to other ports.

Timber is almost always cut during March, April, May and June, when the sap is going up. This makes the bark peel easily. The fallen trees are trimmed, peeled, and cut into logs and allowed to dry

during the hot summer months, which makes the logs much lighter to handle, a factor which must be carefully considered. In order to hasten the drying of the logs a small hole is bored in the end of the log, and about a teaspoonful of t'ung-yu, or wood-oil, is poured into the hole. It is believed that this will help drive out the moisture.

By September or October the summer floods will have receded, and the rafts should be ready to start down the river, so frantic efforts are now made to get the logs to the river with as little delay as possible. Here is where the man in charge begins to earn his title of "stupid pig." At least once during the clearing of each piece of ground, a Chinese boxer comes and stops the work. He is usually quite a powerful man, and goes around telling each group to stop work, and work is stopped. The head man comes to find out the difficulty, and is told that this bully has threatened to beat up any man that goes to work until he tells him to. \$200 is usually the price necessary to pay this bully before he will leave and allow the men to go to work. It is a case where one man can literally put a thousand to flight. Then during the most urgent part of the proceedings, the leader of the local band of tupees comes, and threatens to shoot the workmen unless one, two or three thousand dollars is put in a certain spot. There is never any quibbling; the money is paid over at once, and the work goes on unmolested. This custom is

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The means of getting the logs to the river varies with the localities. In some instances, the logs are all carried on men's shoulders, for a distance of 18 to 30 miles. Often it takes 40 men to carry one log. These men do nothing else, and are almost invariably heavy, thickset fellows. One of these men will take a heavy log and travel rapidly all day with it, emitting a succession of peculiar grunts, which, when kept up by several hundred men, resound through the whole forest. Wherever possible the logs are floated to the river in a creek, skidways, or tracks being built by cutting bamboo in about two lengths and splitting it, and placing the split pieces with the rounded side up. These are held in place with stakes which are driven at each end, the stakes also keeping the logs on the skidway.

There is a problem which presents itself in these small tributaries, and that is that the small amount of water which usually runs in them is not sufficient to float a log. Therefore it often happens that dams must be built every hundred feet or so to back up the water enough to float the logs. These dams are usually made by laying a few logs crosswise and stopping up the chinks with grass. Then, too, there are always a large number of water-wheels along these creeks and the lumberman must pay a heavy toll to pass each one besides going to the trouble of removing and re-installing each one. In cases where the logs are carried to the river, if the carriers must pass through a village, the villagers as soon as they find out about it, hastily dig, build or erect two or

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three graves across the path where the carriers must pass. They then hold up the procession refusing to permit the men to walk over these graves. The headman comes and must pay between \$100 and \$1000 depending upon the size of the village, before his men will be allowed to proceed towards the river.

Before the logs are brought out into the main tributaries they are made up into rafts by a special class



of workers known as raft-makers .... The rafts are made up 10 feet in width and about 100 feet in length. They are made by fastening the logs together with bamboo pegs and bamboo ropes. Each raft is equipped with a bamboo hawser, ropes, long oars, and a wooden anchor. Two men are in charge of each raft. A group of 24 rafts is called I-ch'ang.

The lumberman's troubles are never over until delivery has actually been made. The country people are constantly on the watch for any slight difficulty the raftsmen may have along the way, and are ready to pounce upon their prey. If a raft comes to grief and breaks up through any cause whatever, the villagers immediately pounce upon the scattered logs and only give them up when 1/3 of their value has been paid. Even if a raft should temporarily become caught on a rock and not broken up the villagers will immediately rush out and cut the bands so that they may claim the 1/3 value of the raft, and there seems to be no recourse.

The three principal tributaries by which the rafts come down and join the main River Min are just above Yenping. They are called Kienning-kow, Shanhsien-kow and Yang-kow. Yenping used to be not necessarily of very recent origin but rather has obtained for decades or even longer.

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the first likin station, with four in all before reaching Nantai.

When the rafts reach Foochow they are either anchored, or the logs stacked on shore at a place called Shangwu. No pole rafts are allowed to pass under the bridge before being examined, measured and recorded by customs officials. Customs figures show that the yearly average for several years past is about 15,000,000 poles.

The export figures for soft wood planks exported during 1929 were about 19,700,000 board feet, while in 1930 they increased to 24,000,000 board feet. This is for planks that were first cut in the sawmills in Foochow, an increase of 4,300,000 feet in one year. This was made possible by the low silver exchange enabling the Fukien lumber to compete in North China markets against imports from Japan and the United States.

Foochow does a large business in knock-down boxes for export trade. During 1930 230,500 boxes were made, mostly for the Formosan tea trade, while in 1929 only 133,800 were made, an increase of about 75% in one year. In this connection I should like to state that Vice Consul Mr. Carter R. Whittaker has written an interesting report on the market for boxes, crates, etc., which gives some illuminating information on exports of various commodities for which wooden boxes are used as containers. In this report he shows that there has been a steady decline in exports since 1924. In that year there were about 1,270,000 boxes made, the number decreasing by almost 50% each year, until in 1929 there were only 135,000. However, in 1929, there was an increase of nearly 100,000 pieces.

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I have already stated that the only trees considered as having any commercial value in the forests are the fir and the pine, the fir, known botanically as *Cunninghamia Lancēōlâta*, and the red pine as *Minus*

Massōniána. There are many species of hard woods which might be profitably cultivated, such as maple, oak, cypress, cryptomeria, chestnut, yew, etc, but the Cunninghamia, or fir, has the most important place in forestry in China today, principally because of the easy manner in which it can be reproduced, and the unusually short time required for it to attain a size for commercial use. It reproduces freely from suckers which spring from the stumps of felled trees, and these the following year are cut off and planted. Once planted, they require no attention. The trees are cut and plantations are renewed about once in twenty years. This tree may prove to be the leading coniferous tree in the reforestation of China.

There are about forty different kinds of hard wood trees that grow in Fukien, but I will only mention briefly here a few of the best known varieties.

The " Siong si," or flower-wood is of two kinds. One is known as the white and the other as the black flower-wood. Both are very hard, and are very similar in appearance, the main difference being that the white flower-wood is almost as durable as ebony, while the black flower-wood will rot and crumble away after a few years. This tree grows to a height of fifty to eighty feet, and is from two to four feet in diameter. Since it is very heavy, the lumber is always sold by weight. " Nang Muk " is another tree which is highly prized by the Chinese, it being

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the desire of every Chinese to be buried in a coffin made of " Nang Muk." A single coffin often costs as much as \$1,000 when made of this material. Large pieces of this wood are shipped to Tientsin for use in coffin making for the wealthy. A local lumber dealer told me that he furnished the material for the coffin in which President Feng Guo Chang was buried. Both "Nang Muk" and Flower-wood if they were cultivated on a large scale would add materially to the wealth of the province. As it is, the supply is scarcely sufficient for local needs.

The Cinnamomum camphora, or the red camphor tree is another very valuable economic tree. This tree until recent years was quite plentiful in Fukien, but now it is difficult to obtain. The high price and the great demand for camphor products all but stripped the province of its available supply. There is another tree which is seen growing quite freely here in Foochow, and called the camphor tree. This, however, is the white camphor tree, and does not yield the valuable oil of the red camphor nor the fragrant aroma when made into chests. The appearance of the wood is quite similar, however, and since the cost is less than fifty percent of the red camphor wood, it is used quite freely in making camphor wood chests for sale to the unsuspecting, it being a very simple matter to inject a few drops of camphor oil around the interior of the box or chest, bringing forth "ah"s and "oh"s from the expectant customer when the lid is raised. So far as we have been able to learn, there are no oil-bearing camphor trees growing in or near Foochow.

There are also the wood-oil and the tea-oil trees,

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both of which have considerable economic value, as has also the coir palm, which provides a fibre for the making of ropes, raincoats, mats, etc. The bamboo with its multifarious uses might well be the

subject of an essay in itself. The lac tree which grows readily in the province produces the varnish used in the manufacture of lacquer-ware.

There are also several varieties of fruit trees which flourish in Fukien, not the least important of which is the mulberry, so necessary to the silk industry. Then there are also the peach, chestnut, orange, olive and plum trees, all of which produce fruits in abundance, even permitting considerable quantities to be exported.