

## THE FIELD

### CHAPTER II

#### I. DELIMITATION OF FIELD

To carry out intensive study of the life of the people, it is necessary to confine oneself to the investigation of a small social unit. This is due to practical considerations. The people under investigation must be within easy reach of the investigator in order that the latter can observe personally and intimately. The unit of study, on the other hand, should not be too small. It should provide a fair cross-section of the social life of the people.

This general problem has been discussed by Professor A. Radcliffe-Brown, Dr. Wu Wen-tso, and Dr. Raymond Firth.<sup>1</sup> It is agreed that in the first stage of such a study, a village would be the most appropriate unit. "To start with a single village as a centre," says Dr. Firth, "investigate the relationships of the persons composing it, in terms of kinship, the distribution of authority, economic organization, religious

<sup>1</sup> Professor A. Radcliffe-Brown gave a lecture in Yenching University, Peiping, in 1935 on the problem of intensive study of Chinese villages. Following this lecture, Dr. Wu Wen-tso has published a series of articles on the problem in *Social Research Weekly*, Yih Shih Pao, Tientsin. Recently Dr. Raymond Firth has discussed the problem in his article, "Stability in North China Village Life," *The Sociological World*, Vol. X, in Chinese.

affiliations, and other social ties, and try to see how these relationships affect one another and determine the co-operative life of the small community. From this centre the investigation will radiate out following the personal relationships into other units in adjacent villages, economic linkage and social co-operation."<sup>1</sup>

A village is a community characterized by its being an aggregate of households on a compact residential area, separated from other similar units by a considerable distance (this may not hold good in some parts of China where households are scattered), organized in various social activities as a group, and possessing a special name of its own. It is a *de facto* social unit recognized by the people themselves.

A village as such does not enter formally into the new administrative system in China—Pao Chea<sup>2</sup>—which is artificially created for certain specific purposes (VI-5). Since this system was introduced to Kailsienkung only in 1935, it is very difficult to say when these *de jure* units, through increasing administrative function, will cause a shift in the existing *de facto* groupings. But at present, in actual practice, the Pao Chea system is still largely a formality. Thus the unit of our study, the aim of which is to understand the life of the people, must follow the real existing functioning unit—the village.

To take the village as the unit of study at the present stage of investigation, does not mean that it is a self-contained unit. The inter-dependence of territorial groups, especially in economic life, is very close in China. It can even be said that the Chinese people

<sup>1</sup> *Op. cit.*, English Abstract, p. 435.

<sup>2</sup> Chinese terms are transcribed in this book following the conventional Wade system. But for special local terms, broad phonetic transcriptions are used, and printed in italics. In phonetic transcription, I adopt *j* as sign for *jet*isation.

have during the last half century entered into the world community. Western goods as well as ideas have reached very remote villages. The economic and political pressure of the Western powers is the prime factor in the present change of Chinese culture. In this connection, one can ask what understanding of these changes and of the external forces causing them can be gained by a field investigation in a small area, such as a village.

It is obvious that the investigator in the village cannot analyse the outside forces in their wide perspective. For instance, the decline of the price of native silk in the world market as a result of the world economic depression and of the technical improvement of the silk industry in general, has produced such effects in the village as deficiency in the family budget, shortage of food, postponement of marriage and the partial breakdown of the domestic industry. The field investigator in this case must record as fully as possible the forces that affect village life but he will of course leave the further analysis of these forces themselves to other sciences. He will take these facts for granted and limit himself to tracing the effects which can be directly observed in the life of the village.

Generalizations made from such an intensive study of a small social unit may not be applicable to other units. But they can be used as hypotheses and as comparative material for further investigation in other fields. This is the soundest way to obtain really scientific generalizations.

## 2. GEOGRAPHICAL FOUNDATION

The village chosen for my investigation is called Kailsienkung, locally pronounced *kei'ing'on*. It is

situated on the south-east bank of Lake Tai, in the lower course of the Yangtze River and about eighty miles west of Shanghai. It is in the geographical region of the Yangtze Plain. The geographical foundation of this region has been described by G. B. Cressey: "The Yangtze Plain is a land of rivers and canals. Probably nowhere else in the world is there an area with so many navigable waterways. The Yangtze Kiang, the Hwai Ho, and their tributaries provide a splendid highway through the length of the region. In addition to the many rivers there are a series of great lakes, chief among which are Tungting, Poyang, Tai, and Hungtse Hu. It is the canals, however, which give the most characteristic note to the landscape. These canals are the very arteries of life. In the region of Yangtze Delta they form an intricate network and serve as an artificial drainage system which takes the place of rivers. Their length in the south delta alone is estimated by F. H. King, at twenty-five thousand miles.

"This region is compound alluvial plain, the accumulation of sediment laid down by the rivers during long ages. There are a few isolated hills, but for the most part the land is level. The country is flat, but innumerable grave mounds and the trees about the villages break the view. Both rural and urban settlement is more congested than in the region of the North, but factors of climate and location combine to make this the most prosperous part of China.<sup>1</sup>

"The Yangtze Plain is . . . distinctly influenced by summer-monsoon conditions. . . . Here, too, are felt the greatest effects of continental cyclonic storms.

"Owing to the southerly latitude, the summers are

subtropical with temperatures which frequently rise to 38° C. (100° F.). . . . The average (rainfall) for the entire region is about 1,200 mm. (45 in.). . . . Most of the rain falls during the spring and summer, with June the rainiest month. The period from October to February is comparatively dry with clear skies and stimulating temperatures, making this the most pleasant season of the year.

"Winter temperatures seldom remain below freezing for more than a few days at a time. Ice forms only in thin sheets on the colder nights and there is little snow. . . . The average of summer maximum temperature for Shanghai is 37° C. (91° F.), and the average of winter minimum is -7° C. (19° F.).

"The Yangtze Plain has climate conditions which are favourable for agriculture during most of the year so that the growing season lasts for about 300 days."<sup>1</sup>

The commanding position of this region in Chinese economy is due partly to its superior natural environment and partly to its favourable position in the system of communications. It is located at the crossing point of the two main water routes: namely, the Yangtze River and the Grand Canal. They connect this region with the immense territory of western and northern China. Being a coastal region, it has become more and more important since the development of international trade by ocean transport. Shanghai, the seaport of this region, has developed into the biggest metropolis in the Far East. The railway system in this region is also well developed. From Shanghai, two important lines have been built, one to Nanking, passing Soochow, and one to Hongchow, passing Chianhsing. Recently in 1936 a new line between

<sup>1</sup> *China's Geographical Foundation*, 1934, p. 283.

<sup>1</sup> *Op. cit.*, p. 295.

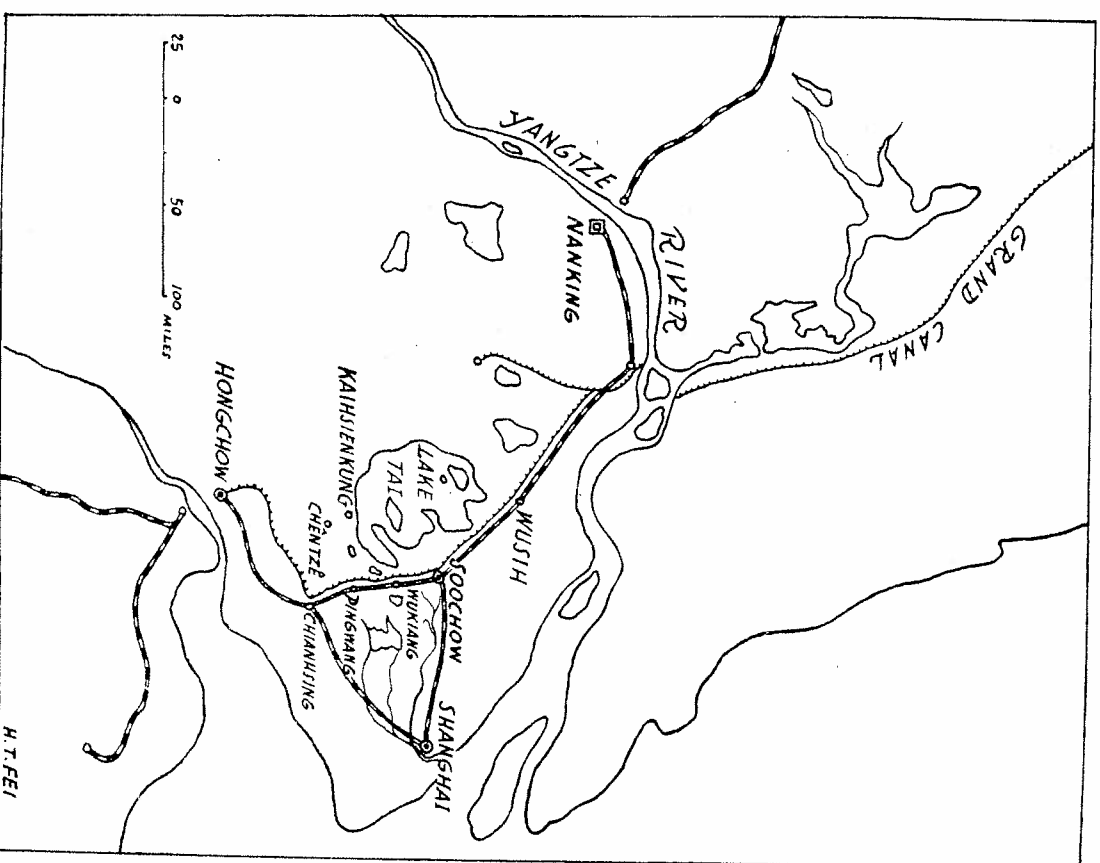
Soochow and Chianhsing was added to form a circuit between the above-mentioned two main lines. Motor roads have been built for the intra-regional communication ; and besides there is an extensive use of the canals and canalized streams.

This region has supported a very dense population, most of which is resident in villages. A bird's-eye view shows a cluster of villages. Each village is separated from its neighbour by only a walking distance of, on an average, twenty minutes. Kaisienkung is but one of these thousands of villages crowding on this land.

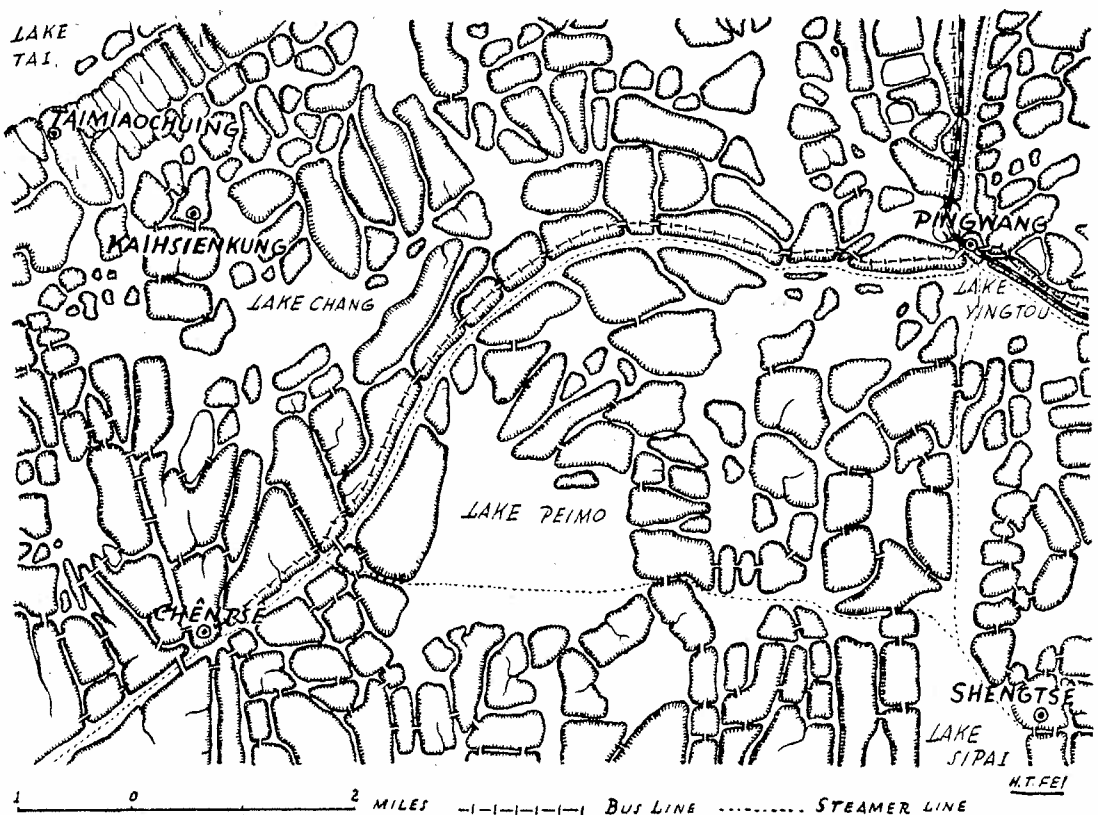
In the centre of several tens of villages there is a town. The town is the collecting centre of the basic produce from the surrounding villages and the distributing point for manufactured goods brought from the outside cities. The town on which Kaisienkung depends is called Chên Tsê, about four miles south of the village. It takes about two and a half hours for a single trip by boat. Chên Tsê lies about six miles south-east of Lake Tai and eight miles west of the Grand Canal and the Soochow-Chianhsing line. At present it is connected with the nearest station, Ping Wang, both by motor boat and bus services. By the existing railway lines, one can reach Shanghai from the town within eight hours. The geographical position of Kaisienkung in relation to the above-mentioned towns and cities is shown in the accompanying maps (Map I and II).

### 3. ECONOMIC BACKGROUND

Here the human geographer will be right in inferring the occupation of the people from the natural conditions of the land they occupy. A traveller in a train.



Map I.—The Lower Yangtze Valley



Reproduced from the official map of the district government  
MAP II. —Surroundings of Kaihsienkung

## THE FIELD

15

passing through that region, would not lose sight of the rice fields for more than intervals of a few minutes. In Kaihsienkung, according to estimates, more than ninety per cent. of the land is used for rice cultivation. This single village produces, on the average, eighteen thousand bushels of rice every year (X-2). Only a little more than half of the produce is consumed by the people themselves (VII-5). Very few households in the village are entirely free from agricultural work. About seventy-six per cent. of the total number of households are engaged in agriculture as their main occupation (VIII-1). The time spent in cultivating rice amounts to six months in the year (IX-3). From this crop the people earn more than half of their income (XII-2). Thus from any angle, rice is of primary importance.

But rice is not the only produce of the land. Wheat, rapeseeds and various vegetables are grown too, although they are insignificant as compared with the chief crop. Moreover, the water provides fish, shrimps, crabs, and different kinds of water plants which are all used locally as food.

The mulberry tree plays an important part in the economic life of the villagers. It enables them to develop their silk industry. Wright wrote early in 1908, "Raw white silk, the *tsatlee* silk of European markets, is produced by the hand reeling of the Chinese silkworm farms. . . . The best white silk comes from the district surrounding Shanghai, which contributes by far the greatest proportion of the value exported."<sup>1</sup>

Silk industry is common to the whole region but it

<sup>1</sup> Arnold Wright, ed. *Twentieth Century Impressions of Hongkong, Shanghai and Other Treaty Ports of China*, p. 291.

is specially well developed in the villages around Lake Tai. This specialization is due, according to the local people, to the good quality of the water. It is said that the so-called *tsatlee* silk is produced only in the area about four miles in diameter around Kaihsienkung. How far this statement is true is another question, but the importance of the village in rural industry is beyond doubt. During its prosperous period, this area not only contributed a large part of China's silk export but also supplied the demand for raw material for the domestic weaving industry of the neighbouring town Shang Tsé (Map II). The weaving industry of that town before its decline had been known to be able to produce "ten thousand pieces a day."

The rural silk industry began to decline when the modern factory for silk manufacturing with its improved technique of production was introduced both into Japan and China. This industrial revolution changed the fortunes of the domestic rural industry.

"Previous to 1909 . . . the quantity of Chinese silk exported had been larger than that of Japanese silk. In 1907, for instance, the two were almost the same. It was only in 1909, however, that Japanese silk export began to exceed that of China, and this advantage the former has been able to keep up ever since. In fact, in recent years, the Japanese export was nearly three times that of this country. From the point of view of our foreign trade, silk also decreased in significance since 1909. Before that date it used to constitute from 20 to 30 per cent. of our total exports, but the average for the years 1909-1916 fell to 17 per cent."<sup>1</sup>

The amount of produce, however, had been increasing although irregularly up to 1923. But owing

<sup>1</sup> D. K. Lieu, *The Silk Reeling Industry in Shanghai*, 1933, p. 9.

## THE FIELD

17

to the fall in price, the increasing amount of export did not mean necessarily an increase of return. The amount of export has declined steadily ever since that time. During 1928 to 1930, the percentage of decrease was about twenty.<sup>1</sup> The rate of decrease was more rapid in the period between 1930 to 1934. "As Japanese silk was dumped on the American market in the latter part of the year (1934), China's silk export dropped to the lowest point accordingly. The volume of silk exported amounted to only one-fifth of that in 1930, a fact which is indicative of the depression of the Chinese silk trade."

"The price of raw silk dropped to a new low level in 1934. . . . The 1934 price level for the same quality of silk was only one-third of the 1930 price level."<sup>2</sup>

The internal market for silk has shrunk at the same time due to the same forces of industrial revolution affecting the weaving industry. The consequence of the shrinkage of the market is the break-down of the traditional domestic silk industry in the rural district. The traditional specialization in the silk industry and its recent decline form the background of the economic life of the village in the present analysis.

## 4. THE VILLAGE SITE

Let us examine the village itself. The land occupied by the people in this village consists of eleven *yu*. *Yu* is the local term for the unit of land surrounded by water. Each *yu* has its own name. Its size is determined by the distribution of streams and thus varies. The total area of land of this village is 3,065

<sup>1</sup> *Op. cit.*, p. 9.

<sup>2</sup> *The Chinese Year Book*, 1935-36, "Foreign Trade," p. 1094.

*mow* or 461 acres. The names and size of these eleven *yu* are given in the following table, according to the official survey of 1932. Two of the *yu* belong in part to other villages, and, since there are no clear boundaries, I can only make a rough estimate of the portion belonging to Kaishienkung.

Hsi Chang <i>yu</i> . . . . .	986.402 <i>mow</i>
Ch'eng Kioh Hsi Tou <i>yu</i> . . . . .	546.141
Kuei Tsü <i>yu</i> . . . . .	458.010
Ch'eng Kioh <i>yu</i> . . . . .	275.110
Liang Kioh <i>yu</i> . . . . .	261.320
Hsi Tou <i>yu</i> . . . . .	174.146
P'an Hsiang Pa . . . . .	173.263
Tou Tsü <i>yu</i> . . . . .	70.540
Wu Tsü <i>yu</i> . . . . .	56.469
Peh Cheng Kioh . . . . .	55.858
Hsin Tien <i>yu</i> . . . . .	8.545
TOTAL . . . . .	3,065.804
or . . . . .	461.12 acres

The land can be roughly divided into two parts; namely, that used for cultivation and that used for dwellings. The residential area occupies rather a small portion. It is found at the junction of three streams and the houses are distributed on the margin of four *yu*. Names of these *yu* and number of houses on each are given in the following table:

I. Ch'eng Kioh <i>yu</i> . . . . .	133
II. Liang Kioh <i>yu</i> . . . . .	95
III. Hsi Chang <i>yu</i> . . . . .	75
IV. T'an Chia T'eng (Wu Tsü <i>yu</i> ). . . . .	57
TOTAL . . . . .	360

The plan of the residential area must be studied in relation to the communication system of the village. In this region, boats are extensively used for heavy and long-distance traffic. The land routes connecting

different villages and towns are mainly used for pulling the boats against unfavourable currents and winds. People usually come to the village by boats, except a few pedlars. Nearly every household possesses at least one boat. The importance of the boat in communication means that the houses must be near the water and consequently determines the plan of the village. Villages grow up along the streams; at the junction of several streams, bigger villages are found. As we can see from the accompanying map, the backbone of Kaishienkung village is formed by three streams, designated here as A, B, and C. Stream A, the main one, runs like an arc, and from this the village gets its name. Kaishienkung literally means open-string-bow.

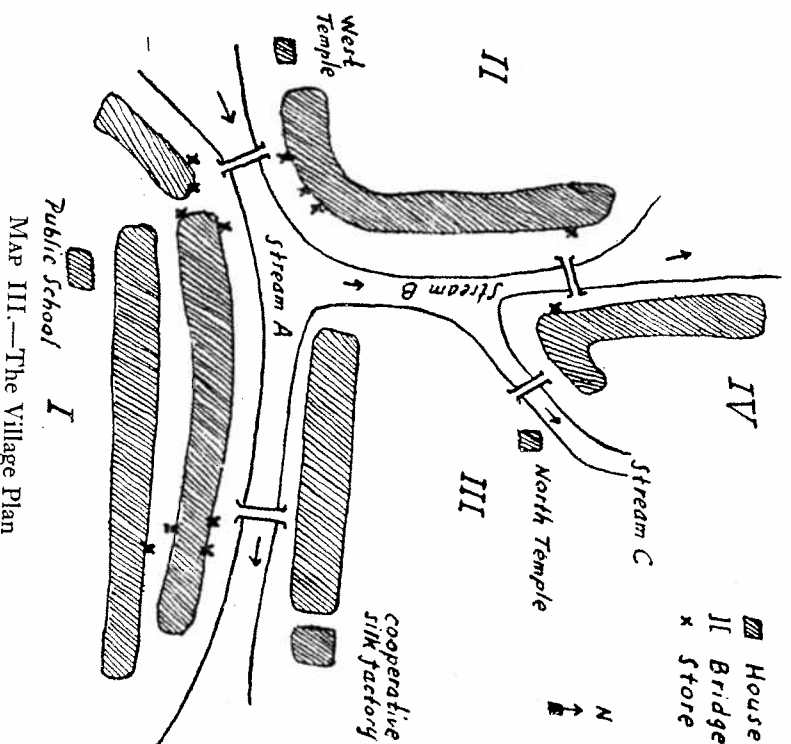
Boats are not convenient for short distances or very light traffic inside the residential area. Roads are built for communication between the houses. In this case, the streams represent obstacles to communication and the separated *yu* must be connected by bridges.

The road system of this village does not form a complete circle. In the northern part of *yu* III, a large part of the land is used for farming. In that part, there are only small paths among the farms, and they are not convenient for walking, especially during wet weather. Owing to this fact the bridge at the west end of stream A is the central point in the system. Small shops are concentrated largely around the bridges, especially the bridge at the west end (XIV-8).

Nevertheless, in the village plan, there is no special place where the public life of the people is concentrated. Except for the informal gatherings in the summer evenings around the bridges, there has been no

organized public gathering for more than ten years, since the annual opera performance was suspended.

The headquarters of the village headmen is at the east end in the co-operative silk factory. The position of the factory was selected for technical reasons. The



Map III.—The Village Plan

current of Stream A runs from west to east. To avoid adding the dirt of the factory to the stream which provides the daily water supply of the people along the stream, the factory was built at the lower course.

Two temples are found on the outskirts of the

## THE FIELD

21

residential area; one at the west end and the other at the north end. But the position of the temples does not mean that the religious life of the people is concentrated on the outskirts. In fact, their religious life is largely carried on in their own houses. It would be more correct to regard the temples as the residences of priests and gods, who are not only segregated some distance apart from the ordinary people but are also separated from everyday community life except on special ceremonial occasions.

The public school is at the south end. The building was originally used as the office of the silk reform bureau. It was given to the school when the factory was established.

The residential area is surrounded by farming land, which is low owing to the irrigation system (X-1). The area suitable for buildings has been covered by houses and for a long time has not expanded. The newly introduced public institutions such as the school and the silk factory could only find their location at the outskirts of the old residential area. Their location is an expression of the process of change in the community life.

## 5. THE PEOPLE

A census of the village was taken in 1935. Because no continuous registration of births and deaths has been properly carried out, I can take this census only as the basis for my analysis. In the census, all the residents in this village, including those temporarily absent, are recorded. The figures are summarized in the following table:



## PEASANT LIFE IN CHINA

Age	Male	Female	Total
71+	4	15	19
66-70	10	19	29
61-65	14	32	46
56-60	30	39	69
51-55	40	38	78
46-50	26	29	55
41-45	45	38	83
36-40	69	55	124
31-35	64	45	109
26-30	75	61	136
21-25	63	52	115
16-20	68	54	122
11-15	72	61	133
6-10	73	59	132
- 5	118	87	205
?	—	—	3
TOTAL	771	684	1,458

Those temporarily residing in the village but living in definite households are recorded in the census in a special class called "Persons living together"; these are not included in the above table. The total number in this class is 25.<sup>1</sup>

The density of population (excluding surface of water in computation) is about 1,980 per square mile. This cannot be compared with the average density of the province. The latter is calculated from the general area of the province which includes the surface of water and uncultivated land; it is a gross density. My figure represents the actual ratio between men and land used. The gross density of the province (Kiangsu), as quoted by Professor Tawney, is 896 per square mile.<sup>1</sup>

Not all those who reside in the village are indiscriminately considered as villagers. If the inhabitants are asked which are the people who belong to the village, we shall discover that distinction is made locally

<sup>1</sup> *Land and Labour in China*, p. 24.

## THE FIELD

23

between natives and outsiders. This is not a legal distinction; from the legal point of view those who reside in a district for more than three years become members of the local community.<sup>1</sup> But this does not constitute, in the people's eyes, real membership of the village.

To analyse this distinction, it may be better to take concrete cases of those who are considered as outsiders in the village. There are ten such households, and their professions and birth-places are as follows:

Barber	.	.	.	2	Chenkiang (Kiangsu)
Miller and shoemaker	.	.	.	1	Tanyang (Kiangsu)
Grocer	.	.	.	1	Hengshan (A village in the same district)
Spinner	.	.	.	1	Wuchashen (A village in the same district)
Priest	.	.	.	1	Chên Tsé
Operator of the pumping machine	.	.	.	1	Ningpo (Chekiang)
Silversmith	.	.	.	1	Shaohsing (Chekiang)
Bamboo artisan	.	.	.	1	Chinhua (Chekiang)
Medicine dealer	.	.	.	1	Wuchen (Chekiang)

Their common characters are (1) that they are immigrants and (2) that they are engaged in special professions. But I have no information about the necessary period of residence in order to attain the status of being a native villager. I have, however, known cases of children of the "outsiders" born in the village being treated like their parents. It appears that the distinction is not made solely on the consideration of period of residence.

On the other hand, the fact that none of the outsiders are farmers is significant. Although not all special professions are filled by them, they constitute one-third of the whole group (VIII-2). It prevents them from quick assimilation.

The villagers as a group possess certain cultural peculiarities. One of my informants mentioned three outstanding items to me: (1) that the villagers tend to palatalize the words such as *gon*, *jeu*, etc., in speech, (2) their women do not work on the farm, and (3) their women always wear skirts even in the hot summer. In these respects, they differ even from the people from the nearest town, Chên Tsé.

Those who are regarded as outsiders have not been culturally assimilated. I noticed their non-native accent in speech and non-native way of dressing; for instance, the women in the medicine shop did not wear skirts.

As long as the outsiders preserve their own linguistic and cultural difference, and those are noticed by the natives, they will live on more or less symbiotically in the community. The distinction of natives and outsiders is significant because it has been translated into social relations. The fact that outsiders are all engaged in special professions and possess no land is alone sufficient to indicate that the distinction has far-reaching economic consequences.

#### 6. REASONS FOR SELECTING THE FIELD

The village as described is of interest in the following respects.

(1) It has been one of the important centres of domestic silk industry in China. The village can therefore be taken as a representative case of the process of change in Chinese industry; the change has been chiefly concerned with the substitution of the factory for the domestic system and the social problems rising therefrom. This is a general process, still going on in China, and also has parallels in different parts of

the world. The problem of industrial development in China has its practical significance, but has never been studied intensively with a full knowledge of the social organization of the village. Moreover, in this village an experiment at industrial reform has been made during the past ten years. The social reform activities are of great relevance to the social changes in China; they should be carefully analysed in an objective way. It is possible that through such an analysis certain important but hitherto unnoticed problems may be revealed.

(2) Kaihsienkung is located in an area where, owing to superb natural resources, agriculture has been developed to a very high degree. The institution of land tenure also has here peculiar elaborations. The village would provide a good field for the study of land problems in China.

(3) The extensive use of water communication in that region, with its net-like distribution of water ways, has led to a special relation between town and village, which is different from that found in North China. We are thus able to study a typical case of a marketing system based on water transport.

Besides these considerations, I had special facilities in investigating this village. My investigation had to be limited to a period of two months. It would have been impossible in this short time to carry out any intensive study, if I had worked in an entirely unfamiliar field. Kaihsienkung is a village belonging to the district of Wukiang of which I am a native. I thus started with certain linguistic advantages. Differences in Chinese dialect is one of the practical difficulties in carrying out field investigation. The people in villages usually cannot understand any other dialect

beside their own. Being a native of the district, it was not necessary for me to spend time in learning the local dialect. The community feeling of being a native of the same district also enabled me to penetrate into more intimate life without arousing suspicion.

Above all, in this village I could fully utilize the personal connections of my sister, who, being responsible for the silk reform, had gained the confidence of practically every person in the village. I could without any difficulty secure the best possible co-operation of the villagers in general and the village heads in particular. Having understood my intention, they not only supplied me with all possible material, but made very intelligent and valuable suggestions and explanations to facilitate my investigation. Furthermore, I had visited the village several times before and had been kept continuously informed by my sister about the conditions there. Thus I could go directly into the problem without wasting my time in preliminary work.

My investigation covered the two months of July to August, 1936. Within this time limit, I was naturally not able to follow the complete annual cycle of social activities. However, these two months are significant in their economic life. They cover the last part of the silk industry and the first part of the agricultural work. Supplemented by oral information and my past experiences, the material so far gathered concerning their economic life and the related social institutions is enough for a preliminary analysis.

# CHAPTER VIII

## OCCUPATIONAL DIFFERENTIATION

*Agriculture as the Basic Occupation—Special Occupations—Fishing*

### 1. AGRICULTURE AS THE BASIC OCCUPATION

In the process of consumption there are no essential classifications into which the villagers must be divided, but in the process of production occupational differentiation is found. According to the census, occupations are classified under four headings: (1) agriculture, (2) special occupations, (3) fishing, and (4) non-occupied.

These classes are not mutually exclusive. Persons not classified as agricultural may nevertheless be partly engaged in agricultural activities. Agriculture is the fundamental occupation common to nearly all the villagers except among the landless outsiders. The difference is only a matter of emphasis. Those who are classified under the heading of agriculture do not depend on land exclusively but are also engaged in raising silk-worms and sheep, and in trade ventures. The fourth category includes households whose adult male members have died and where the widows or the children are living on the rent of the leased land but not through their own productive effort.

The occupation of a Chia is recorded in the census

### OCCUPATIONAL DIFFERENTIATION 139

according to the occupation of its head. Members of the Chia may be engaged in different occupations—for example, the children of the store-keeper may be engaged in agriculture and the farmer's daughter engaged in industrial work in the town. This, however, is not indicated. The number of Chia in each category is given in the following table:

I. Agricultural	274
II. Special occupations	59
III. Fishing	14
IV. Non-occupied	13
<b>TOTAL</b>	<b>360</b>

The above table shows clearly that more than two-thirds, or 76 per cent., of the total population are mainly engaged in agriculture. Owing to the limited time of my field work, my investigations were chiefly concerned with this group. A fuller analysis of the productive activities of the group will be given in the following chapters. Other occupational groups I can only describe briefly.

### 2. SPECIAL OCCUPATIONS

A further analysis of the second category is given in the following table:

The first heading includes only those Chia whose heads are living in the town engaged in trade or in other occupations. The girls working in the silk factories outside are not included.

Silk spinners represent a special occupation. They work for the silk houses in the town, which collect the native raw silk from the villagers. The quality of the silk is irregular, and it must be sorted out by means of spinning before it can be exported or sold

to the weaving factories. This sorting work is done by the villagers. The collectors distribute the raw material to the spinner and collect the silk again. Wages are paid according to the amount of work done.

I. Engaged in special occupations in town	14
II. Silk spinners	6
III. Retail traders	10
IV. Agent boats	4
V. Crafts and Professional Services	25
Carpenters	4
Tailors	3
Staff Members of the Co-operative factory	3
Basket makers	2
Barbers	2
Millers	2
Operators of modern pumping machines	2
Mason	1
Midwife	1
Priest	1
Shoemaker	1
Silversmith	1
Weaver	1
Total	59

A description of the retail traders and of the agent boats is given in the chapter on marketing (XIV-4-6).

The whole group of craftsmen and professional men includes only 7 per cent. of the total households in the village. This low percentage is striking. It is due firstly to the fact that such work is not exclusively specialized. Tailoring, shoemaking, and milling are common work in all households. Wood, bamboo, and mason's work of a crude type requires very little knowledge and skill and the necessary tools are found in most houses. The modern pumping machines are not in wide use, and are used mainly in time of emergency. Childbirth does not always need expert help. In the above list, besides the work of the

# OCCUPATIONAL DIFFERENTIATION

141

operators of the modern pumping machines, perhaps only the work of the barbers, the temple keeper, the priest, and the staff members of the co-operative factory is so specialized as not to be more usually undertaken by the farmers themselves.

Moreover, when the people need goods or services, they do not necessarily depend on the supply available in the village. Wood, bamboo, and metal articles of better quality can be bought from the town. Even the barber once complained to me that the villagers were gradually tending to have their heads shaved in the town. In the case of funeral ceremonies priests are sent for from distant temples. Serious cases of childbirth cannot be trusted to the village midwife.

All the outsiders living in the village are traders and craftsmen and form, in fact, one-third of the total number of that group (II-5). I have no information showing whether the trades and crafts were originally novel occupations introduced from outside, but there is good reason to suspect that new crafts are often introduced by their agents from outside. Since technical knowledge is usually transmitted through the kinship line, it is often not easily assimilated by the indigenous population. Moreover, even when the crafts are open for apprenticeship, parents who are able to provide their children with the opportunity of tilling land like to keep them on the farm. Land in the village is insufficient to support an increase of population. It is, therefore, difficult for an outsider to acquire land, and land in any case seldom comes into the market. Thus, as mentioned above, at present all the outsiders are landless and the only means for them to find a living is to engage in certain new crafts or in trades.

## 3. FISHING

There are two groups of fishing households, differing in methods of fishing and in their residential areas. The first group, living at the west end of the village on Yu I and II, only follow fishing as a supplementary occupation. Their method is by nets and hooks. Their heavy work is in the winter. At that time, when agricultural work is at a pause, they start their large scale "circle fishing." Several boats co-operate together to form a team. Small hooks are hung close to each other on a strong and long rope, to which are added several heavy weights. The fishing team distribute themselves in a circle, letting the hooks sink into the bottom of the lake. In cold weather, especially when snow has fallen, the lake does not freeze, but the fish are all half-hibernated in the mud, and, as the hooks drag through the mud, the fish are easily gathered. This "circle fishing" is sometimes continued for several weeks and yields a large return. On ordinary days the fishermen spread their large nets in the water and collect fish from them several times a day. This kind of fishing can be done only by those whose houses are near the lake. That is the reason for the localization of this group in the area at the west end.

Shrimps are collected from the lake by a kind of trap, made of basketry. Shrimp trapping is a common occupation of those households which live near the lake. According to reports I gathered in the summer of 1935, there were forty-three boats engaged in this work. The traps are connected by cords to a long line and put into the water. Every four hours they are cleared, because the shrimps will die if they are allowed to remain too long in the traps, and dead

## OCCUPATIONAL DIFFERENTIATION

shrimps are of less value on the market. The average income is one dollar per boat per day worked by two persons.

The other group of fishing households are found along the middle course of Stream B, on Yu II. These raise fishing birds, which will dive into water to catch fish. Raising and training these birds requires special knowledge which is transmitted in the family, and thus this occupation is hereditary. These families form a special group and co-operate with their fellow professional men even in other villages. Since they may need to go very far from the home village and the birds must be carefully sheltered at night, they form a super-residential group based on their common professional interest. All the fishermen engaged in the same profession are obliged to extend their hospitality to their fellows.

## CHAPTER IX

# CALENDAR OF WORK

*Systems of Time-Reckoning — Three Calendars — Time-Table of Economic and Other Social Activities*

## I. SYSTEMS OF TIME-RECKONING

To study the productive system of a community, it is necessary to investigate how their activities are regulated in time sequence. It is especially so in analysing a rural economy because crops are usually directly dependent on climatic conditions.

The knowledge of the seasonal cycle of the organic world is of practical importance to the people. Their activities in production are not individualistic and spontaneous. They need collective actions and preparations. They must know when the seeds can be germinated in order to determine the date of sowing. They must know how long it will take for the bud to develop into the young shoot, so that they can determine when they should prepare the soil and transplant the shoot into the main field. The knowledge of the right time for certain actions cannot be secured without a system of time-reckoning.

Recognition of time is not a result of philosophical contemplation or of astronomical curiosity. As Professor B. Malinowski has clearly pointed out, "a system of reckoning time is a practical, as well as sentimental, necessity in every culture, however simple.

## CALENDAR OF WORK

145

Members of every human group have the need of coordinating various activities of fixing dates for the future, of placing reminiscences in the past, of gauging the length of bygone periods and of those to come."<sup>1</sup>

The functional approach to the problem of time-reckoning leads us to examine the calendar in detail in order to see how the system regulates and is defined by the social activities.

The traditional calendar used in the village is based on the lunar system. The principle of the lunar system is as follows: the full moon is taken as the night of the fifteenth day of a month. Thus the number of days in each month is either twenty-nine or thirty. (The synodic lunar month consists of 29.53 days.) Twelve months will be counted as a year which contains 354.36 days. The total number of days fails to make the required total of 365.14 days a year for the solar system. An intercalary month is added every two or three years to make good the annual deficiency. But the seasonal cycle of the organic world is due more to the relation between the earth and the sun than to the relation between the earth and the moon. Although the two systems are adjusted in the long run by the intercalary month, the date of one system can never regularly correspond with that of the other.

The date in the lunar system does not indicate consistently the position of the earth with reference to the sun and consequently the seasonal climatic changes. For example, supposing the people catch the right time for sowing at the seventeenth day of the fourth month this year, they will, owing to the intercalary month, be too late if they sow at the same date next

<sup>1</sup> "Lunar and Seasonal Calendar in the Trobriands," *Journal of the Royal Anthropological Institute*, Vol. LVII, pp. 203-215.

year. The discrepancy between the lunar system and the seasonal cycle renders the former ineffective as a guide in time-reckoning in agricultural activities. This theoretical consideration leads to a further examination of the traditional calendar.

In the traditional calendar, in fact, there is an underlying solar system. It indicates the exact position of the earth in its solar orbit at various periods. The unit in this system is Chieh, meaning section or joint. The whole solar year is divided into twenty-four Chieh. The total number of days of the twenty-four Chieh in 1936 was 364.75. It shows that there is still a slight difference of 0.59 day with the synodic solar year. The principle in determining the Chieh system is not known to me. But in the old-type calendar book, one can always find that the exact time for the commencement of each Chieh is defined in terms of Shih (two-hour) K'ê (quarter-hour) and Fen (minute). The intercalation takes place in the slight variation between the lengths of different Chieh in different years. It therefore needs no special indication for it. The following table gives the name and the time of commencement of each Chieh in the year 1936.

Name of the Chieh	Traditional Calendar and Time	Western Calendar and Time
Li Ch'un (Beginning Spring) <sup>1</sup>	13th of 1st month Ch'en Ch'u 3 K'ê	Feb. 5—7.45 a.m.
Yü Shui (Rain Water)	28th of 1st month Yin Ch'u 2 K'ê 10 Fen	Feb. 20—3.30 a.m.
Ching Che (Waking of Insects)	13th of 2nd month Ch'ou Ch'u 3 K'ê 12 Fen	March 6—1.57 a.m.

<sup>1</sup> The translations follow Derk Bodde, *Annual Customs and Festivals in Peking*, 1935, p. 107.

## CALENDAR OF WORK

Name of the Chieh	Traditional Calendar and Time	Western Calendar and Time
Ch'un Fen (Spring Equinox)	28th of 2nd month Yin Ch'u 3 Fen	March 21—3.3 a.m.
Ch'ing Ming (Pure Brightness)	14th of 3rd month Ch'en Ch'u 1 K'ê 2 Fen	April 5—7.17 a.m.
Ku Yü (Corn Rain)	29th of 3rd month Wei Ch'eng 1 K'ê 14 Fen	April 20—2.44 p.m.
Li Hsia (Beginning Summer)	16th of 3rd (intercalary) month Ch'ou Ch'u 14 Fen	May 6—1.14 p.m.
Hsiao Man (Grain Full)	1st of 4th month Wei Ch'eng 1 K'ê 13 Fen	May 21—2.28 p.m.
Mang Chung (Grain in the Ear)	17th of 4th month Mao Ch'u 3 K'ê 10 Fen	June 6—5.55 a.m.
Hsia Chih (Summer Solstice)	3rd of 5th month Hai Ch'eng 3 K'ê 4 Fen	June 21—10.49 p.m.
Hsiao Shu (Slight Heat)	19th of 5th month Shen Ch'eng 1 K'ê 11 Fen	July 7—4.26 p.m.
Ta Shu (Great Heat)	6th of 6th month Ssu Ch'u 3 K'ê 9 Fen	July 23—9.54 a.m.
Li Ch'in (Beginning Autumn)	22nd of 6th month Ch'ou Ch'eng 1 K'ê 5 Fen	Aug. 8—2.20 a.m.
Ch'u Shu (Stopping of Heat)	7th of 7th month Yu Ch'u	Aug. 23—5.0 p.m.
Pai Lu (White Dew)	23th of 7th month Mao Ch'u 13 Fen	Sept. 8—5.13 a.m.
Ch'u Fen (Autumn Equinox)	8th of 8th month Wei Ch'eng 2 K'ê	Sept. 23—2.30 p.m.
Han Lu (Cold Dew)	23rd of 8th month Hsu Ch'eng 2 K'ê 8 Fen	Oct. 8—8.38 p.m.
Shuang Chiang (Frost's Descent)	9th of 9th month Tzu Ch'u 2 K'ê	Oct. 23—11.30 p.m.
Li Tung (Beginning Winter)	24th of 9th month Tzu Ch'u 1 K'ê 4 Fen	Nov. 7—11.19 p.m.



Name of the Chieh	Traditional Calendar and Time	Western Calendar and Time
Hsiao Hsiieh (Slight Snow)	9th of 10th month Hsü Chêng 2 K'è	Nov. 22—8.30 p.m.
Ta Hsiieh (Great Snow)	24th of 10th month Shen Ch'u 2 K'è 3	Dec. 7—3.33 p.m.
Tung Chih (Winter Solstice)	Fen 9th of 11th month Ssü Ch'u 11 Fen	Dec. 22—9.11 a.m.
Hsiao Han (Slight Cold)	24th of 11th month Ch'ou Chêng 10 Fen	Jan. 6—2.10 a.m.
Ta Han (Great Cold)	8th of 12th month Hsü Ch'u 1 K'è 7 Fen	Jan. 20—7.22 p.m.
Li Ch'un (Beginning Spring)	23rd of 12th month Wei Ch'u 2 K'è 4 Fen	Feb. 4—1.34 p.m.

The western solar calendar has been also introduced into the village since it has been adopted as the legal system. It differs again from the traditional solar system because it takes a round day as a unit and consequently has a regular intercalary system. Thus they cannot have exact corresponding dates in different years.

## 2. THREE CALENDARS

These three calendars are all used by the villagers. But each has its own function and is used in its own particular context. The western system is used in connection with those newly introduced institutions such as the school, the co-operative factory, and the administrative office. These institutions have to adjust their work with the outside world where the western system is employed.

The traditional lunar system has its widest use in such situations as remembering sentimental events and making practical engagements. It serves as a system of names for the dates in the traditional social activities.

## CALENDAR OF WORK

In the sphere of religious activities, the lunar system is largely used. Regular sacrifices are offered to the kitchen god on the first and fifteenth day of each month. The people visit temples and observe vegetarian ritual also on these dates. Ceremonies of ancestral worship are carried out on the dates of birth and death of the ancestors and on regular festivals; though among the festivals some of them are regulated according to the traditional solar system.

The traditional solar system is used not as a system of dates but of climatic changes. With this general system, each locality can adjust its calendar of work according to its local conditions.

This system is used chiefly in reference to productive work. Beside daily conversations, the following folk song will document this statement:

*Balou ba mimi* . . . . . Pai Lu white indistinctly (referring to the blossoms of the rice).  
*Tchiu fen da shiou tchi* . . . . . Ch'iu Fen rice bears fruit completely.  
*Tson gian gien tzaao da* . . . . . Shuang Chiang reap early rice.  
*Li dong i tchi dao* . . . . . Li Tung all completely fall.

A part of a letter from my informant can also be quoted:

People in the village have two periods of leisure every year. The first period is in the autumn from Ch'u Shu to Han Lu and lasts about two months. . . . The second period is in the winter from Ta Hsiieh to the end of the year, also covering two months. During this leisure time, we go out for trade ventures.

The villagers remember and predict their sequence of work in terms of the traditional solar system. But this system cannot stand alone because it is very difficult to understand without a system of dating. The system of date in the village is the lunar calendar.

The people have to learn what is the corresponding date for each section in different years. For instance in the above table, the first Li Ch'un is on the 13th of the 1st month and the second is on the 23rd of the 12th month. Therefore it is also correct to say that the lunar calendar regulates the sequence of work of the people through the Chieh system.

The villagers do not arrange their calendar themselves. They simply follow the published calendar in the form of a little red booklet bought from the town. The principle of these systems is not understood by them. They even do not know where the calendar is issued and who is the authority. Since the government prohibited the traditional calendar, publication of these booklets has been illegal. I was not able to find out who was the publisher responsible.

The government's action had not in any sense affected the popularity and prestige of the booklet. It is to be found in any house and in most cases it is the only book in the house. It is usually put on the stove before the kitchen god, and regarded as a kind of amulet. It is consulted not only for arranging work but also for various social activities and personal affairs. In the booklet, each day has a column indicating those things which are lucky or unlucky. For illustration I give a few columns below :

March 1st (1936), Sunday ; 8th of 2nd month.  
 Birthday of Chang Ta Ti (God of flood).

Good for : Offering sacrifice, praying, asking for posterity, making petitions, visiting relatives, trading, accepting office, arranging marriage, offering marriage gifts, weddings, entering new houses, changing lodging, tailoring, mending buildings, laying foundations, fixing beams, mending storerooms, opening market, making contracts, opening storerooms, planting, breaking soil, burying dead.

Bad for : Thatching roof, introducing water to the field, hunting.

March 2nd, Monday ; 9th of 2nd month.

Good for : Visiting relatives and friends, catching animals.

Bad for : Making accusations in court, curing diseases, taking medicine. (Plants begin to bud.)

March 16th, Monday ; 23rd of 2nd month.

Good for nothing.

Bad for everything.

March 27th, Friday ; 5th of 3rd month.

Good for : Taking a bath, fishing, catching animals, clearing houses.

Bad for : Fixing a bed, buying land and other properties. (Beginning of thunder.)

It is not true that people always follow the advice of the column. But they actually consult the booklet in such activities as building houses, arranging marriages, starting long trips, etc. They generally distinguish "good day" and "bad day" according to the length of the column of "good for." They avoid taking any important and adventurous activities on these bad days, especially those which are explicitly stated as "good for nothing." At the end of the column every few days, there is an item, given in parentheses, indicating certain recurrent natural phenomena such as "Plants begin to bud" and "Beginning of thunder," etc. It is an additional system of reckoning time by recurrent natural phenomena.

### 3. TIME-TABLE OF ECONOMIC AND OTHER SOCIAL ACTIVITIES

With these systems of time reckoning, we are now able to tabulate the time-table of various economic and social activities in the village. It will serve as a system of reference for the further analysis. Explanations for specific items will be given elsewhere in their appropriate connections.

Other Social and Religious Activities According to Section System	Agriculture	Silk Industry	Section System	Climate (in Shanghai)		Western Solar System	Lunar System	Other Social and Religious Activities According to Lunar System
				Temp. (F.)	Rain (mm.)			
Sacrifice to kitchen god	Wheat { Rapeseed }	Main crop { Hatching eggs Third exuviae Cocoons Domestic reeling Second crop	Li Ch'un	39°	57	Feb.	I	1st : New Year, Sacrifice to Buddha, Reception of new kitchen god, Visiting temples. 1st-8th : Men visiting relatives. 8th-15th : Women visiting relatives. 5th : Sacrifice to god of wealth 10th-30th : Good for wedding.
Sacrifice to kitchen god			Yü Shui					
Prohibition of house building { Sacrifice to ancestors and god of silkworms Visiting tombs Sacrifice to kitchen god Rejoicing feast Visiting relatives' silkworms }			Ching Che	46°	70	March	II	
			Ch'un Fen					
	Ch'ing Ming		56°	90	April	III		
	Ku Yü							
	Li Hsia		65°	90	May	III (Inter-calary)		
	Hsiao Man							
1st busy agricultural period { Sowing seeds Young shoot in nursery farm Preparation in main farm Transplantation Weeding and irrigation }	Mang Chung		73°	166	June	IV	5th : Tuan Yang, rejoicing feast, sacrifice to kitchen god.	
	Hsia Chih							
	Hsiao Shu		80°	127	July	V		

First trading venture { } Second trading venture { }	Agricultural interval { } Second period of busy work in agriculture { } Wheat { }	Rice in blossom Rice bears fruit Reaping Husking Storing Selling	Ta Shu				VI	3rd, 15th, and 23rd : sacrifice to kitchen god.
			Li Ch'iu	80°	148	August	VII	
			Ch'u Shu					
			Pai Lu	73°	118	Sept.	VIII	3rd : Birthday of kitchen god, sacrifice.
			Ch'iu Fen					
			Han Lu	63°	73	Oct.	IX	15th : Chung Ch'iu, full moon, rejoicing feast. 24th : Birthday of kitchen goddess, sacrifice.
			Shuang Chiang					9th : Ch'ung Yang, rejoicing feast, sacrifice to kitchen god.
			Li Tung	52°	46	Nov.	X	1st : Sacrifice to ancestors' new rice.
			Hsiao Hsueh					
			Ta Hsueh	42°	29	Dec.	XI	
			Tung Chih					
			Hsiao Han	38°	54	Jan.	XII	24th : Farewell sacrifice to kitchen god. 30th : Sacrifice to ancestors
			Ta Han					

the land and the crop possessed by the people themselves as expressed in their technology and beliefs.

To start our analysis from the material substratum we will first attempt a description of the farm. The lay-out of the farm, based on technical considerations, has far-reaching effects on the organization of labour, on land tenure, and on the kinship organization. The study of it will be the best introduction to these more intricate aspects of the relation between man and land.

#### 1. LAY-OUT OF THE FARM

The lay-out of the farm depends on what kind of crop the people select for cultivation. In this village the chief crops cultivated are rice, rapeseeds and wheat. Rice starts in June and ends at the beginning of December. It is the main crop. After this crop a part of the higher land can be used for cultivating wheat and rapeseeds. But these two crops are only supplementary. The produce is only enough for domestic consumption.

More than 90 per cent. of the land is used for these crops. Along the margin of each *yu*, ten to thirty metres of land is left for plantation of mulberry trees and a wider space for house building. This land on the margin is higher. It also serves as a dyke for the farm.

The land used for the growing of crops is divided into farms. Rice cultivation requires a regular supply of water. Thus the lay-out of the farm depends on the measures for water regulation.

My informant said: "Water is the most important thing in the farm. The rice will die if the soil begins to break due to dryness and it will also die if water

## AGRICULTURE

### CHAPTER X

*Lay-out of the Farm — Rice Cultivation — Science and Magic — Organization of Labour*

The importance of agriculture in the village economy has been shown in the above pages. More than two-thirds of the households are engaged mainly in this occupation. Nearly eight months are spent in work on the land. And for foodstuffs the people are entirely dependent on the produce of their own farms. Thus in a study of the problem of production, agriculture must come first in view.

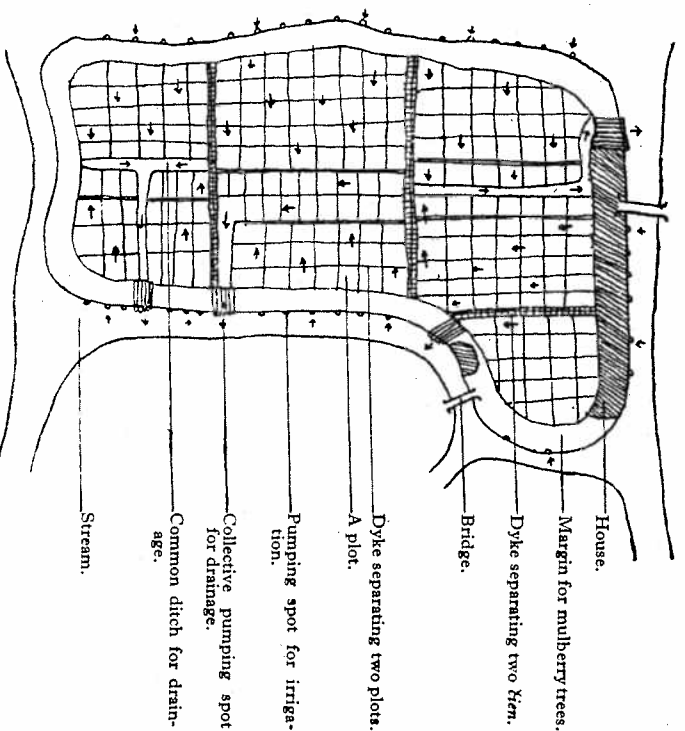
The term agriculture is used here only in a narrow sense, and refers to the use of the land for cultivating desirable crops. The study of how the land is used must start with an analysis of the land itself. The chemical composition of the soil, the topography of the land and the climate—all these are conditions governing agriculture. It is also necessary to know the biological nature of the crop. But these analyses, essential as they are, demand special knowledge which an anthropologist does not usually possess. However, the land that enters into agriculture is more than a natural entity. It has been transformed by culture into farms. Moreover, what immediately directs human labour in agriculture is the knowledge about

covers its 'eye'." The "eye" of the rice is the upper joint of the leaf with the stalk. When this point is covered by water, according to local opinion, the rice will wither within six or seven days. It may not perhaps be strictly true that this point in the rice plant is so vulnerable; nevertheless the "eye" is used as a mark for the proper level of water in the farm. This level must be adjusted to the growth of the rice and effort must be made to irrigate the farm when the level is too low and to drain it when the level is too high. Water regulation is one of the main tasks in agriculture and dictates the topography of the farm.

The land is divided up by streams into tiny pieces which are called *yu*. Each *yu* is surrounded by water. The accessibility to water of each particular farm depends on its location in the *yu*. The farther one goes into the centre of the *yu*, the more difficult is it to get supplies of water from the stream. In order to make it possible for the centre part to obtain water, the levels of the *yu* must be graded like a dish. But this dish-shaped surface creates a difficulty in the storage of water. The water tends to find its level and, instead of there being an equal distribution of water over the farm, there will be a pool in the centre with the marginal land left dry. Dykes, therefore, have to be constructed, parallel to the margin. Another difficulty is that water must be brought in from the lower level of the stream. Pumps must be used to carry the water up to the higher level. To fix the pump, a spot must be selected along the bank and a ditch is dug out leading to the interior parts. Each strip of land, depending on water supplies from the same pumping spot, is marked out by dykes perpendicular to the margin. These two kinds of dykes,

crossing each other, divide the farm into small pieces which are called *be* or plots.

Within each plot, the level must be even in order that there should be an equal distribution of water. This is a frequent cause of dispute among cultivators of the same plot when it is not owned by the same Chia.

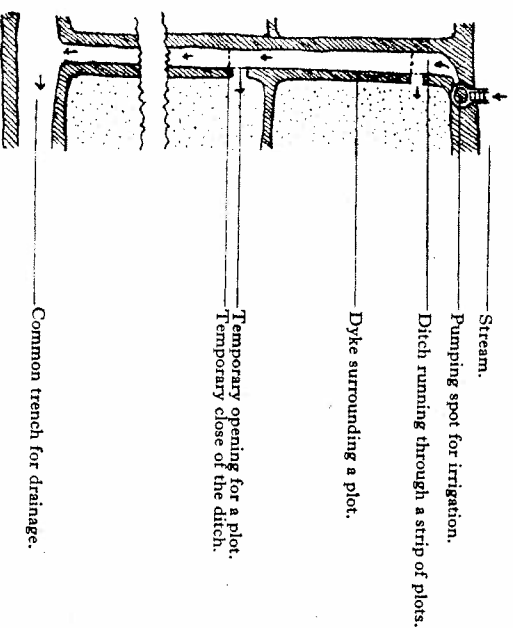


MAP IV.—Lay-out of the Farms in Hsi Chang Yu.

There is a common ditch running through each strip, and each plot in a strip has an outlet to it. When the farmers introduce water to the plots, they start from the marginal plot. They close the ditch just below the outlet of the particular plot so that the water runs onto it. When it is sufficiently irrigated, they close the

outlet and open the ditch to irrigate the next plot in the same way. They go on until the last. Thus the strip is the unit of irrigation (Map V).

When there is too much water on the farm, due to over-abundance of rainfall, the system used for irrigation cannot be used for drainage because the water does not flow from the lower centre to the higher margin. A big trench has therefore to be constructed



MAP V.—System of Dykes and Ditches in the Farm.

in the lowest part of the whole dish-shaped *yu*. This collects the surplus water from all the strips and pumps are fixed at the end of the trench for draining it away. The different system in irrigation and drainage calls for different organization of work, as we shall show presently.

The difficulty involved in the problem of drainage, purely from the technical point of view, is the size of the *yu*. The size is determined by the natural distri-

bution of streams. It varies enormously. For instance, in the village we are describing there are eleven *yu* which vary from eight *mo* to more than nine hundred *mo* (11-2). The bigger the size, the more difficult it becomes to fit it into the process of collective drainage. To meet the need of urgent and efficient work, the big *yu* must be divided into smaller drainage units, which are called *čien*. Larger dykes are constructed to separate *čien* from one another. These dykes are also used as the main roads in the farm.

The plan of the lay-out of the farm is illustrated in Map IV. It is much simplified but sufficient to show the principles just described.

## 2. RICE CULTIVATION

The land is mainly, not exclusively, used for the cultivation of rice. The present study will be restricted to this aspect.

Rice cultivation starts in June. A small piece of ground is prepared as a nursery for the young shoots. Seeds are sown in the nursery. In about one month the rice has grown to about thirty centimetres in length. During this period the young shoots do not need much space but require more care in water regulation. It is thus convenient and economical to keep them in a small space while the main field is under preparation.

Before the young shoots can be transplanted into the main field, the soil must be prepared. Preparation consists of breaking, refining and levelling the soil, and then of irrigation. All the work is done by human labour. One characteristic of the agricultural work in this region is the absence of animal labour. As we shall see later, the size of the farm is small and the

holding of each household is scattered in such widely separated places, that animal labour cannot be used. The farmers use only the implement called *ti'a*, which is an iron hoe with four teeth, fixed on a wooden stick about a man's height. These form a slight acute angle. Holding the implement by the end of the stick, the workman swings the hoe behind his back and over his head. The teeth strike with a considerable momentum and penetrate into the soil at a sharp angle. By pulling the hoe backwards, he is able to break the soil pressing on the teeth. Ploughs are not used in the village.

The surface of the soil, after having been broken, is rough and uneven. The second step is to refine the soil and to level the surface. The same implement is used in these processes. It takes about four days for the preliminary preparation of each *mu* of land by one man.

At this stage water is introduced onto the land. Dykes and ditches must be first examined and repaired if necessary. The water is introduced from the stream by a pump. A pump consists of a long, rectangular, box-like three-sided wooden tube in which there is a series of valves, made of small wooden plates connected by a chain of movable sections and forming a circle. The small valves touch the three sides of the tube and thus form a series of small empty squares in the tube. The chain is connected by a pivot to the wheel. When the farmer tramps on the projections of the wheel, the chain of valves revolve in a circle. The lower end of the tube is fixed in the water and the upper end opens towards a little pool leading to the ditches. The small squares, formed by the valves and the sides of the tube, will be filled with water at

the lower end. The revolving of the chain of valves in the tube carries the water contained in the small squares up to the upper end. As soon as a valve reaches the upper end, the direction of its movements turn upwards and the water falls into the pool. The water is brought up to the pool not through the differential air pressure but through the movement of the valves.

The implement is not very efficient in carrying water to the upper level. The squares formed by the valves and the sides of the tube can never be very tight and the friction is high. It takes about one day to fill one *mu* with ten or more centimetres above the land surface. The inefficiency of irrigation creates a difference in the value of the successive plots in each strip. As I have shown above, the water flows from the margin to the centre passing through successive plots. When water is needed, the central plot must wait until the marginal plot has been irrigated: and when there is too much water, the central plot must remain longer under water while the margin is drained. The length of time spent in waiting for irrigation and for drainage depends on the efficiency of the pump. The unsatisfactory system of irrigation and drainage is certainly a factor in reducing the amount of produce. It is also responsible for a difference in land value. The difference between the marginal plot and the central plot sometimes amounts to ten dollars or one-fifth of the average value of the land.

In the past two years, two air pumps, run by motor engines, have been introduced into the village. One is owned by an individual and the other by the co-operative factory. A fee is charged per *mu* for the regulation of water during the whole year. This

collectivizes the irrigation process and specializes the work. However, these machines have not yet been widely used, mainly because the labour saved by the machine has not yet found any productive use. From the point of view of the villagers, they still prefer working on the old pump to paying a fee and being themselves idle for months. Some told me that someone who was lazy and relied on the air pump had ruined himself in the gambling house in the town because he had nothing to do. It is still too early to see the effect of this labour-saving machine, and the process of collectivization in irrigation, on the social organization as well as the lay-out of the farm.

After water has been brought on to the land, it takes another day for each *mu* of land to be levelled. The total amount of time spent on the land for preparation can thus now be estimated. If there are seven *mu* for one person to work, it will take about thirty-five days, approximately equal to the amount of time needed for the growth of the rice in the nursery.

There is no ritual ceremony at the beginning of the agricultural work and every household is free to determine its own time for starting. The difference in time covers a range of two weeks.

Transplantation of the young shoots from the nursery farm to the main field is a major part of rice cultivation. The people describe this period as "busy in farm." The farmers start in the early morning for the nursery, which sometimes is far from the main field; they must transport the young shoots by boat. Children are brought to help in the work, but not women. The young shoots are planted in the main field in bunches of six or seven stalks. Children make

themselves useful by handing the young shoots to the leaders while they are planting. One person will plant six or seven bunches in one row within his reach without stepping sideways. Finishing one row he will take one step backwards and start another row. Finishing one strip he will start another from the beginning. If there are several persons at work on the same farm, they will form a row and move backwards at the same time. The rhythmic movement of the workers is very impressive. To maintain the rhythm, which is helpful in this monotonous work, they often sing rhythmic songs. Special songs have grown up under the name of *yengo*—"Young shoot song." But since in this region women do not participate in the work, the development of such songs is less than in the neighbouring areas.

Each person can plant about half a *mu* a day. To plant seven *mu* well thus takes about two weeks.

In July it is already summer. In hot weather (80° F.) rice grows very fast. During this period rain is plentiful (5.5 inches); heaven helps people to supply water to the young rice shoot. But nature cannot always be relied on. If there are two or three days without rain, the delicate young shoots will need to be watered by pumping, which calls for human labour. If it rains for three or four days continuously, the people will, on the other hand, be busy in pumping out the surplus water.

The wild grass mixed in the rice grows sometimes still faster. Only one week after the people have finished their work of transplantation, they must again be busy in weeding. A special instrument is used. This is a plate which has many nails on one side and is fixed to a long bamboo pole. The workman handles



the pole by drawing the nails through the mud to uproot the wild grass.

When the field is weeded, the next task is to supply fertilizer for the soil. Fertilizer consists of human and animal manures and bean cakes. Bean cakes are made of the sediment of the soya beans after the oil has been pressed out. The cake is minced into small pieces and is evenly distributed over the farm.

Human manure is preserved in special pits behind the house. Sheep manure is collected from the hut. After long exposure in the air, and after being mixed with grasses, it is distributed over the field. Fresh manure is not used.

When the rice has reached a considerable height, and before it blossoms, the farmer must weed it thoroughly. This time the nailed plate cannot be used, because it might damage the root of the rice. The farmer has therefore to use his hands. To avoid damaging the rice, a saddle-like bamboo basket is attached to the upper leg. This brushes the rice away as the farmer walks in the mud.

Weeding and watering take all the farmer's time from July to September with several short intervals. The amount of work varies according to the amount of rain. In the early part of September the rice blossoms, and at the end of that month it bears fruit. No special work is necessary during that period. This is the long interval in agricultural work. During the latter part of October some of the early rice can be reaped. The instrument for reaping is a long curved sickle. The rice is cut near the root of the stalk, and is carried in bundles to the open space in front of the house. Threshing is done in the open space or in the front room, by striking the ears of the grain against the

side of a big box. Grains are thus separated from the stalk and collected at the bottom of the box. Threshed stalks are heaped on the ground beside the public road.

Grains are hulled in a wooden mill. Husks are separated from the seeds by a whirling machine. The hulled seeds of rice can be sold but cannot be cooked without another process of refined husking. The last process has been entirely taken over by the modern machines. The old instruments of mortar and pestle are not used any more.

### 3. SCIENCE AND MAGIC

The knowledge embodied in the lay-out of the farm, in irrigation, in drainage, in breaking the soil, in transplantation, in weeding, etc., is accumulated from the long experience of the population, transmitted from generation to generation and learned by practical demonstration. It is an empirical knowledge that enables the people to control the natural forces in order to attain human ends. A detailed investigation would show how highly developed is the science of agriculture in this region. The above account has already indicated that the people understood definite general principles of biology concerning the process of growth of the rice, the quantity of water needed during different periods, the function of leaves and roots in plant physiology, and of physics concerning the level of surface and the movement of water.

Their empirical approach to their enterprise is again seen in the way in which they adopt new technique and implements. The selection of implements is solely based on the principle of efficiency and economy. For instance, the air pump is used when there is urgent

need of water regulation, but not when it proves to be expensive.

Science, however, only rules in so far that the natural factors can be successfully controlled by human effort. There are uncontrollable factors in nature. For instance, the primary need of a water supply can only be partially controlled by human means through irrigation, drainage, and the construction of dykes and ditches. It still largely depends on the rainfall. If there is too much or too little rainfall, rice will die regardless of how hard the people work on their pumps. Locusts may come unexpectedly. In this fateful sphere, and in this only, we find magical beliefs and practices.

It does not mean that the people conceive rain and locusts as supernatural manifestations. They have scientific meteorological knowledge. "When it is too hot, the lake will evaporate too much and when the temperature changes there will be rain." But these natural phenomena are beyond human control. They might be a great menace in practical life and turn all effort to nothing. At this vital point, the people say, "We depend on heaven." The recognition of human limitations gives birth to magic. But magic is not a substitute for science. It is only one means for combating natural disasters. It does not rule out other means. Science and magic go hand-in-hand to attain a practical end.<sup>1</sup>

Magic is not a spontaneous and individual action. It is an organized institution. There is a definite person who is charged with the function and possesses magical powers. Secondly, there is a traditional ritual

to call in the supernatural intervention. Lastly, there are myths to justify the ritual and the ability of the magician.

The occasions for magical performances are threats of flood, drought and locust plagues. Whenever the occasion arises, the people go to the district government and appeal for magical help. By ancient tradition the district magistrate was the magician of the people. In case of flood, he would go to the river or lake to demand the receding of the water by throwing his official belongings into the water. In case of drought he would issue an order to stop killing pigs and would organize a parade with all the paraphernalia suggesting rain, such as umbrellas and long boots. In case of locust plagues he would parade with the idol of *lu-wan*.

The obligation of the magistrate to act as the district magician and his efficiency in this rôle, is explained by the following myth. About a mile outside the north gate of the city of Wukiang, the headquarters of the district, there is a temple worshipping the god called Chang Ta Ti (Chang the Big Emperor), whose birthday is on the 8th of the 2nd month (IX-2). According to the belief of the people he was a magistrate of the district at a remote historical period. During his term of office there was a threat of flood from continuous heavy rain and the overflow of the water in the lake. Going to the lake, he commanded the water to recede at once, and threw his shoes, his clothes, and his official jade girdle one after another into the water. But the water still overflowed, and rain continued to fall. At last, he threw himself into the water. The menace was conquered. At the present time, it is said that whenever there is a threat of flood in the district

<sup>1</sup> Theory of magic and science: see Professor B. Malinowski, "Culture," *Encyclopædia of Social Sciences*.

the gown of the idol will be always very wet because he still performs his function invisibly.

The myth connected with *luicuan* and his function in locust magic is not known in this village, so far as I could find out. But it is very popular in the neighbouring city of Wukiang. *Luicuan* was a historical person. He had been maltreated by his step-mother throughout his life. He was a very mischievous boy and possessed magical power. One night he invited all his friends to a big feast and killed all the cows of his family. In the morning he arranged the heads and tails of the cows in such a way that they looked half buried underground. But before he had finished the arrangement the day began to break. He ordered the sun to wait a minute. The sun went down under the horizon. Even at the present time, it is said, the sun will recede for a minute in the morning. When his step-mother found the cows half buried underground, the cows, owing to the magical power of the boy, lowed towards their master and moved their tails. As the result of his tormenting his step-mother, she treated him outrageously and he at last died. After his death his spirit has been believed to be continuously powerful in magic and able to drive away locusts. This myth testifies to the magical ability of the mischief-making boy and is the charter for the present belief and practice in locust magic of the people.

The magical function of the magistrate runs counter to the modern concept of civil office. Furthermore, the present government regards superstitious beliefs among the people as a great obstacle to social improvement. Various orders have been issued for the prohibition of magical performances of any sort. The present magistrate, therefore, not only denies his

traditional function to be the people's magician, but is supposed to enforce the law against magic. But the natural menaces of flood, drought, and locusts continue to threaten the people. Their scientific knowledge and equipment are still not sufficient to control many of the disasters of nature, and the need for magic remains unchanged.

An ex-magistrate told me how the problem was solved. "Under the pressure of popular demand to do something against the drought, I had to issue an order to stop killing pigs. I considered it to be very useful since epidemics always go together with drought, and vegetable food helps to check an epidemic. This is the real function of the belief. The parade was organized in my absence. It was no good to force the people to do nothing against the drought."

Magic exists in spite of government orders and various justifications, so long as it plays a useful part in the life of the people. A change in theory from conceiving magic as a kind of pseudo-science and obstacle to technological development to recognizing its practical function will throw light on practical measures for dealing with this problem. It is not a thing to be prohibited by order, but to be eliminated by providing more effective human control over nature. Since complete control is inconceivable at present, it is difficult to rule out magic in human culture.

#### 4. ORGANIZATION OF LABOUR

Who are working on the land? On what occasions do the farmers need to co-operate? Who will co-operate? What kind of organization has resulted? Let us examine these questions—still from the technical

point of view and leaving the legal problem to the next chapter.

I have said that the household is the basic economic unit. But the members of a household do not all participate in agricultural work; children go to the farm only occasionally and women are entirely free from it. Agriculture is chiefly men's occupation. This division of labour between men and women is a characteristic of the silk-producing area. It suggests that the development of the silk industry is a factor responsible for the practice. During the period when domestic reeling was prosperous, women were busy in reeling while men were busy in preparing the soil. On the other hand, the income secured from the silk industry was comparable to the income secured from agriculture. It enabled the people to live on small farms. The size of farms therefore remains limited and the amount of labour required in agriculture is correspondingly restricted.

To show how well adjusted are labour and land in the village, some statistics may be cited. The total number of adult men, the real or potential workers on the land, between 15 to 55, is 450. The total area of land, including a small percentage of non-cultivated land, is 3,065 *mow*. If the land is equally distributed among the workers, each will get 6.6 *mow*. In the above section, I showed the rate of work and the length of time needed for the growth of the rice, and came to the conclusion that the amount of land that can be cultivated by a single man is about seven *mow*. From the point of view of technology, I have also shown that the use of the hoe in cultivation has made most of the work very individualistic. Group work yields no more than the sum total of individual

efforts. It also does not increase the efficiency very much. Present technology has fixed the amount of labour required by the size of the land. Thus we have approximately identical figures for the amount of land which can be cultivated by each worker. This fact has far-reaching influence on land tenure, on the scattered system of farms, on the frequency of family division, and on the small size of the household.

The present decline of the silk industry has dislocated the traditional adjustment of economic activities. The size of farms has remained the same while the silk industry has been taken over by modern factories. The small farm cannot absorb the female labour that has been set free by the industrial change. The maladjustment is seen in the leisure enjoyed by the women in the village and the higher mobility of female population from the village to the town. In the neighbouring villages where farms are comparatively large, in the process of adaptation to the new situation female labour has been introduced into agriculture. This shows that the traditional division of labour, originating as a part of economic adjustment, is a practical arrangement and is not due to any non-empirical cause. So far as men work by themselves and so long as the farm cannot be extended, female labour is not needed in agriculture. The only occasion for female labour is during the urgent period of irrigation and drainage. Water regulation sometimes requires prompt action. Women will not hesitate to work on the pump when they are needed.

The male members of a household work together on the same farm. But they have no special division of work. Everybody does the same work, except that in transplantation the children do not take part in

actual planting but supply the young shoots to the adults. Thus the work is largely individualistic.

The need of co-operative work is in water regulation. In the process of irrigation, the members of the household, including women and children, always work on the same pump. In the process of drainage, the water is pumped out from the common trench of a *chien*. The people who work in the same *chien* share a common fate. Hence develops a well organized system of collective drainage. To describe this system, I will take a concrete example of the North *chien* of the Hsi Chang Yu.

This *chien* consists of 336 *mo* of land. The common trench opens on to the stream A at the north margin. At the opening there are fifteen pumping spots. This means that there can be fifteen pumps working at the same time. Each pump requires three workers. The amount of labour contributed by each member of the *chien*, taking the household as a unit, is proportional to the size of his holding. The system of apportionment is calculated in terms of labour units. A unit is  $1/336$  of the total amount of labour in four days. Each of the fifteen pumps shares 22.4 units. Each person working for four days counts as 6 units and the contributor of the pump and manager of the team counts as 4.4 units. This system of counting is called "six *mo* starting." It means that each holder of six *mo* in the *chien* should contribute a person to work every day, each holder of three *mo* should contribute a person every alternate day, and so on. Every *chien*, owing to varying size, has its particular system of calculation.

The members of the *chien* are organized into fifteen teams corresponding to fifteen pumps. Each year one

of a group will be charged with contributing the pump and managing the team. This position is taken in turn by the members of the group. Among the fifteen groups, there is a chief manager. This position is also taken in turn. At the beginning of the year, the chief manager calls the fourteen other managers to a meeting. A feast is prepared as a formal inauguration. The chief manager has authority to determine when the drainage should begin and stop.

Whenever drainage is needed, the chief manager will give orders to the managers. Early in the morning these managers will inform the workers on duty by beating a bronze brace. If anyone on duty does not show himself at the pump half an hour after the signal, the other two charged to work on the same pump will stop their work, take the pivot of the pump to the nearest grocery and bring back to the spot fifty-three pounds of wine and some fruit and cakes, the cost of which will be charged to the absentee as a fine. But if the manager has not informed the absentee he himself must bear the responsibility.

The collective responsibility of drainage has made the introduction of the modern pumping machine difficult, because it requires the unanimous consent of the whole *chien*. It still remains to be seen how this type of organization will adjust itself to the technological change.